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DRC-2020-004161

February 25, 2020

Div of Waste Management and Radiation Control
FEB 27 2020

VIA OVERNIGHT DELIVERY

Mr. Ty L. Howard
Director
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144880
Salt Lake City, UT 84116

Re: State of Utah Radioactive Material License No. UT1900479
White Mesa Mill, Blanding, Utah
Semi-Annual Effluent Monitoring Report for Period
July 1 through December 31, 2019

Mr. Howard:

As required by Utah Administrative Code, R 313-24-4 (incorporating by reference 10 CFR 40.65 (subpart1)), and License Condition 11.3A of State of Utah Radioactive Materials License No. UT1900479, enclosed is the Semi-Annual Effluent Monitoring Report for the White Mesa Mill for the period July 1 through December 31, 2019.

If you have any questions regarding this report, please contact the undersigned at (303) 389-4134.

Yours very truly,

Kathy Weinel

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

cc: David Frydenlund
Terry Slade
Scott Bakken
Logan Shumway
Paul Goranson

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Terry Slade
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Paul Goranson

White Mesa Uranium Mill
Radioactive Materials License UT900479
Semi-Annual Effluent Monitoring Report
(July through December 2019)

Prepared For:
Utah Department of Environmental Quality
Division of Waste Management and Radiation Control

Prepared by:

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

February 25, 2020

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WHITE MESA URANIUM MILL
SEMI-ANNUAL EFFLUENT REPORT, JULY THROUGH DECEMBER 2019

1.0 INTRODUCTION

The White Mesa Mill (the "Mill") has established monitoring programs to evaluate compliance with effluent limitations and to assess the potential for release of radioactive material into the local environment. These monitoring programs were developed and implemented at the time of Mill construction, operated with appropriate adaptation over time, and are consistent with the Mill's State of Utah Radioactive Materials License No. UT1900479 (the "License") and guidelines developed by the United States Nuclear Regulatory Commission ("NRC") (NRC Regulatory Guide 4.14, *Radiological Effluent and Environmental Monitoring at Uranium Mills-Rev. 1, ML003739941)*, 1980).

1.1 Modifications to the Monitoring Programs

As stated above, the monitoring programs implemented to date are consistent with the Mill's License and guidelines developed by the NRC and described in Regulatory Guide 4.14. The Mill's License modifies and expands the effluent monitoring programs implemented at the Mill beyond what is regularly required by NRC Regulatory Guide 4.14. Specific changes to the individual monitoring programs are discussed in the subsequent sections of this report.

In a letter dated July 23, 2014, DWMRC stated that because "Tailings Cell 2 is no longer in operation (receiving tailings), the Division of Air Quality and the Division of Radiation Control agree that Subpart W NESHAPs requirements (40 CFR Part 61) no longer apply; however, at this phase of cell 2 closure activities, the requirements of 10 CFR Part 40, Appendix A, Criterion 6 do apply." The July 23, 2014 letter further requires that radon flux measurements for Cell 2 be collected semi-annually in accordance with methodology specified in 40 CFR Part 61, Appendix B, Method 115 and that the measured results be included in the Semi-Annual Effluent Reports submitted to DWMRC. As a result of the July 23, 2014 letter, Cell 2 radon flux monitoring data are reported herein. Additional details regarding the monitoring and data collection activities for the Cell 2 radon flux are included in Section 9.0.

As specified by the License and the documents described above, the Mill monitors the following environmental media and conditions:

a) Airborne particulate radionuclide concentrations obtained from the following sampling stations:

- North, east and south of the Mill Site: BHV-1, BHV-2, and BHV-8 (north), BHV-5 and BHV-7 (east), and BHV-4 (south). BHV-1 and BHV-8 serve as surrogates for the nearest resident (BHV-1 and BHV-8 are

approximately 1.2 miles north of the Mill, but approximately 0.4 miles closer to the Mill than the nearest resident);

- A background location distant to and west of the Mill (BHV-3) that was monitored for airborne particulates up until November, 1995 (at which time background was established), which is no longer monitored for air particulates; and
- A station specifically requested by the White Mesa Ute Community south of the Mill Site (BHV-6);

b) External (direct) gamma radiation measured at air monitoring stations BHV-1, BHV-2, BHV-3, BHV-4, BHV-5, BHV-6, BHV-7, and BHV-8;

c) Vegetation at three site periphery locations, for uptake of radionuclides;

d) Stack release rates from the Mill's air emissions sources;

e) Surface water at Cottonwood Creek and, when flowing, Westwater Creek, both located west of the Mill;

f) Soil radionuclide activity during the third quarter of each year;

g) Radon-222 at the air particulate monitoring stations (BHV-1 through BHV-8);

h) Meteorological conditions;

i) Radon flux of the Cell 2 cover as specified by the DWMRC in correspondence dated July 23, 2014;

j) Groundwater (up and down gradient) of the Mill facility; and[1]

k) Seeps and springs in the vicinity of the Mill.[1]

This semi-annual effluent report provides the results of the specific monitoring and sampling activities that were undertaken during the subject reporting period.

2.0 ENVIRONMENTAL AIR PARTICULATE SAMPLING

2.1 Program Overview

Prior to 2014, the environmental airborne particulate monitoring program at the Mill utilized four air sampling stations. Four high-volume continuous air sampling stations (BHV-1, BHV-2, BHV-4, and BHV-5) were required by the License. In addition to these

[1] Groundwater sampling and seeps and springs sampling are reported separately pursuant to the Mill's State of Utah Ground Water Discharge Permit No. UGW370004, and are not included with this report.

four environmental air sampling locations, an additional station (BHV-6) was installed at the request of the White Mesa Ute Community. This station began operation in July of 1999 and provides airborne particulate information in the southerly direction between the Mill and the White Mesa Ute Community.

As stated in Section 1.1 above, the air particulate monitoring program has expanded to include the following:

- The addition of two air monitoring stations (BHV-7 and BHV-8);
- The addition of thorium-232 ("Th-232") to the list of air particulate analytes;

These sampling stations serve as sentinels for airborne particulate which could potentially emanate from the Mill site. In addition to its general site monitoring function, BHV-1 and BHV-8 also serve as conservative surrogates for concentrations at the nearest resident, because they are located approximately 1.2 miles north of the Mill just south of the nearest resident but between the Mill and that resident.

With regard to background monitoring, the Mill previously operated a continuous high-volume air sampling station (BHV-3) which was located 3.5 miles west of the Mill site. With the approval of NRC, this station (BHV-3) was removed from the active air monitoring program in November 1995. At that time, NRC determined that a sufficient air monitoring database had been compiled at BHV-3 to establish a representative airborne radionuclide background for the Mill. The NRC approval to remove BHV-3 from the active air monitoring program specified background radionuclide concentrations based on the historic data. These concentrations are shown on the graphs and tables in Tab B3. While air sampling was discontinued at this location, gamma measurements, radon measurements and soil sampling continue at BHV-3.

2.2 Sampling Protocol and Analytical Results

Airborne particulate monitors are operated continuously at each of the high-volume air sampling stations except BHV-3. As noted above, BHV-3 was removed from the active air monitoring program in November 1995, but the NRC specified background concentrations are shown in Attachment B.

Particulate sample collection filters are gathered by site technicians weekly in accordance with the Mill's environmental air sampling procedures and are composited on a quarterly basis for laboratory analyses. The collected filters are analyzed for Unat activity, Th-230 activity, Ra-226 activity, Th-232 activity and Pb-210 activity. Fugitive dust standards for the facility are limited by the Mill's State of Utah Air Approval Order. The specific locations of the Mill's airborne particulate monitoring stations are depicted on the figure entitled Particulate Monitoring Stations included as Attachment A. Station BHV-3, which is no longer sampled for air particulates, is located approximately 3.5 miles west of the Mill facility.

The analytical results of radionuclide particulate sampling for each monitoring station operated during this reporting period are provided in Attachment B under separate sampling station attachment tabs (Tabs 1-8). Each tab contains graphical illustrations of the radionuclide concentrations in log-scale presentation format. The graphs display reported data over time since the 1981 inception of the Mill's environmental air particulate monitoring program or the installation of the locations, whichever is appropriate. The actual analytical results (and associated QA/QC information) reported by the laboratory for the reporting period are provided under Attachment C. In addition to the analyses for radionuclides, particulate loading is determined for each filter and composited as a quarterly mass-loading estimate for review purposes only. Graphs showing particulate loading at each station and the underlying data are included as Attachment D.

Analytical data were reviewed against the laboratory established acceptance limits specified in the data packages. The analytical data are usable for their intended purpose. Any deviations noted did not affect the quality or usability of the data.

For graphical illustration purposes, values reported at zero, values reported at less than the prescribed detection limit ($< 1 \times 10^{-16}$ uCi/ml), and missing values were plotted as 1×10^{-16} uCi/ml concentrations. Where other "less than" values were indicated (i.e., where detection limits for the data varied from 1×10^{-16} uCi/ml), the detection limit concentration was utilized for plotting the data point. This graphing convention is not utilized to formulate station average information, nor is it intended as a precedent for data treatment. Rather, the intent is to provide a conservative viewable depiction of site airborne radionuclide information. This is considered to be a conservative approach, because the actual concentration below the detection limit cannot be determined and, as a result, the plotted point will be at the same or a higher concentration than the actual activity concentration of the collected sample.

2.3 General Observations

The results of environmental air monitoring for this semi-annual period indicate that for all radionuclides at all monitoring stations, airborne radionuclide particulate activity concentrations were well below regulatory Effluent Concentration Limits ("ECL's") and the Mill's ALARA goals, which are set at 25% of the ECLs, except as noted below.

It is noteworthy and expected that Pb-210 concentrations are elevated when compared to the other parent radionuclide concentrations (i.e. U-nat, Th-230 and Ra-226). This phenomenon is due to the well-established controlling effect experienced worldwide as a result of the ubiquitous presence of radon in the earth's atmosphere. Accordingly, the elevated Pb-210 presence in disequilibrium with parent radionuclides measured here is not associated with uranium milling operations. Rn-222 emanates as a decay-chain progeny of the Ra-226 contained in the soil of the earth's crust and is dispersed generally throughout the earth's atmosphere. The electrically charged short and long-lived decay products of Rn-222 attach to ambient dust particles found naturally in the atmosphere and

are carried with the air. Pb-210 is the longest lived of these decay products and is the decay product of the shorter-lived radon progeny. As such, it accumulates as an electrical attachment on the natural ambient dust in the atmosphere and is generally measured at elevated activity when compared to local decay-chain parent radionuclide activity, regardless of uranium milling activity. At the Mill's BHV air monitoring stations, all dust (ambient natural and mill derived) is collected by the sample filter. Because of the natural elevation of Pb-210 accumulated as an attachment to the naturally occurring ambient dust particles collected by the air sampling equipment, Pb-210 is commonly elevated and in disequilibrium when compared to parent radionuclide activity, regardless of the Mill's presence. By way of illustration, average ground-level concentrations have been reported for selected States (NCRP Report 94, 1992) and are summarized in Table 1 in the Tables Tab of this report, demonstrating that elevated Pb-210 activity is present where no uranium milling operations are located nearby. In April 1977, prior to Mill construction and Mill operations, air particulate Pb-210 was measured at the Mill site to be 1.3E-14 uCi/ml (13.0E-3 pCi/m^3)[2].

2.4 Site Specific Sampling Data

The results of airborne particulate monitoring for the period (without background subtraction) are provided by sampling station and radionuclide in Tables 2 through 6 in the Tables Tab of this report. Along with these data, the tables present comparative ECL's and the ECL percentage measured at each of the monitoring stations sampled during the period. A review of these data support the conclusion that airborne particulates are well controlled at the Mill. In all cases, the measured activity concentrations were well within the ECL, as well as the Mill's ALARA goal (i.e. 25% of the ECL). Lower Limits of Detection consistent with NRC Regulatory Guide 4.14 were maintained by the Mill's contract analytical laboratory for this reporting period.

The data obtained since program inception in 1981 indicates that only one individual quarterly measurement (Th-230 at BHV-5 for the 2nd Quarter of 1996) has ever exceeded the ECL at the Mill. While it is important to consider and evaluate an individual measurement exceeding the ECL, it is the average annual concentration that is of primary significance for public dose estimation purposes. In that instance, the average annual concentration of Th-230 for BHV-5 in 1996 was well below the ECL. Data obtained since program inception in 1981 also indicate that, with very few exceptions, the gross (background inclusive) measurements do not exceed the site's ALARA goal (i.e. only ten of the several thousand total gross radionuclide determinations to date exceeded the Mill's self-imposed 25% ALARA goal).

[2] See the *Environmental Report, White Mesa Uranium Project, San Juan County, Utah for Energy Fuels Nuclear, Inc.* prepared by Dames & Moore, January 30, 1978, Section 2.9.1.1

2.5 Radon-222

With the approval of the NRC, Radon-222 monitoring at BHV stations at the Mill was discontinued in 1995 due to the unavailability of monitoring equipment to detect the revised 10 CFR Part 20 standard. Instead, compliance with these limits and the requirements of R313-15-301 was demonstrated by a calculation, authorized by the NRC and as contemplated by R313-15-302(2)(a) which states "A licensee or registrant shall show compliance with the annual dose limit in Section R313-15-301 by: (a) Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed or registered operation does not exceed the annual dose limit;". This calculation is performed by use of the MILDOS code for estimating environmental radiation doses for uranium recovery operations. R313-15-302(2)(a) contemplates demonstrating compliance either through modeling or measurement.

In order to determine whether or not detection equipment has improved since 1995, EFRI voluntarily began ambient Radon-222 monitoring at the BHV stations in 2013. The Radon-222 data collected from 2013 through present are presented in Attachment J. As stated in Section 1.1 above, the Mill's effluent monitoring programs were expanded in 2014. The expanded monitoring programs require the collection of Radon-222 data at all of the BHV stations. For the BHV stations EFRI calculated ECLs using methodology shown in Attachment J. The calculated ECLs for all of the BHV stations are included on the data table included in Attachment J. The radon-222 results are below the calculated ECLs and within the range of historic levels as shown in Attachment J.

Radon-222 monitoring is completed using detectors with an effective reporting limit of 0.06 pCi/L. Field blank detectors are collected quarterly and the results (with background included) are included in Attachment J.

During the reporting period, one field blank was collected during each quarter. Field blanks are opened at the beginning of the monitoring period and immediately sealed in the manufacturer supplied packaging. The field blanks are stored in the environmental office until the end of the monitoring period, when they are packaged with the field samples and shipped to the laboratory for processing. While relatively low concentrations were reported for the field blanks, the field blank data show detections which are greater than the highest detection reported for any of the samples collected at the high volume stations. The field blank data have been consistently higher than the samples. Despite the detections reported for the field blanks, there is no indication that the results reflect contamination during shipping. If the detections on the field blanks indicated contamination resulting from shipment, then all of the detectors would be affected in the same manner and the sample data are below the field blank levels. It appears that the field blanks have been affected by the storage prior to shipping. EFRI is conducting an investigation into the possible causes of the anomalous field blank detections.

3.0 EXTERNAL RADIATION (DIRECT GAMMA)

Gamma exposure rate estimates were measured for the reporting period utilizing optically stimulated luminescence dosimeters ("OSLs"). Previously, these dosimeters were located at each of the Mill's high-volume air sampling stations (BHV-1, BHV-2, BHV-4, BHV-5 and BHV-6) and at the designated background monitoring station (BHV-3). As noted in Section 1.1 of this report, the effluent monitoring programs at the Mill were expanded to include expansion of the gamma exposure monitoring program through the addition of gamma monitoring at the two new air monitoring stations (BHV-7 and BHV-8).

Measurements obtained from location BHV-3 have been designated as background due to BHV-3's remoteness from the Mill site (i.e., BHV-3 is located approximately 3.5 miles west of the Mill site). The results of the environmental OSL measurements and semi-annual cumulative above-background data are provided in Table 7 in the Tables Tab of this report. In addition, measurement data obtained at these locations are graphically presented in Attachment E to this report.

The results for this period indicate that above background measurements for stations BHV-2, BHV-4, BHV-5, BHV-6, BHV-7, and BHV-8 are within historic levels. The BHV-1 fourth quarter mrem data (with background subtracted) is 9.9 mrem, which is higher than the majority of the historic levels for that station. BHV-1 and BHV-8 are at the location of the nearest potential residence. The nearest actual residence is approximately 0.4 miles north of BHV-1 and BHV-8. The annual limit for an individual member of the public is 100 mrem/yr for combined internal and external exposure.

The BHV-1 2019 results were consistent for the first through third quarters with an above background value of approximately 5 mrem per quarter. The fourth quarter result was higher than the first three quarters of 2019, indicating that the fourth quarter result is likely anomalous. The fourth quarter result is being considered anomalous because Mill activity in 2019 was consistent and similar activities were conducted all year. There were no activities in the fourth quarter that would have contributed to this variance. Further, by comparison to BHV-8, which is due west of BHV-1 and somewhat closer to the Mill facility, BHV-8 had reported values of 0.2 mrem above background for the third quarter and 0 mrem above background for the fourth quarter. The dose at BHV-8 is significantly lower (approximately 1%) of the dose at BHV-1. A review of the air particulate data indicates that air particulate for the fourth quarter was higher at BHV-8 than at BHV-1, ruling out air particulate as being the cause of this difference. As noted above, BHV-1 is located at the nearest potential resident. Future results will be reviewed and used to determine if additional activities are necessary. In addition, the OSL results and the laboratory will be investigated to assure results are representative of actual conditions.

4.0 VEGETATION SAMPLES

The NRC Regulatory Guide 4.14 requires that three samples be collected during the grazing season, without specifying exact months or times during the season. Two samples were collected during the January through June reporting period. The third sample was be collected on November 13, 2019. As noted in Section 1.1, Amendment 7 and the associated RFI expanded the vegetation sampling program through the addition of Th-232 and U-Nat.

During the January through June reporting period, samples were collected on April 25, and June 6, 2019. During the July through December reporting period, a sample was collected on November 13, 2019. The data from the sampling events are included in Attachment F.

Graphical log-scale presentation of the vegetation sampling results, together with the analytical results reported by the Mill's contract laboratory (including QA/QC information) for this sampling period, are included as Attachment F of this report. The 2019 data results are within the variation of previous sampling episodes.

Analytical data were reviewed against the laboratory established acceptance limits specified in the data packages. The analytical data are usable for their intended purpose. Any deviations noted did not affect the quality or usability of the data.

The value in the MDC column in the data package is the sample-specific minimum detectable concentration ("MDC"). The MDC is based on the sample moisture, composition and other sample-specific variables. The lower limit of detection which is a limit representing the detection capability of the measurement system is referred to as the Reporting limit ("RL") in the data package.

5.0 STACK SAMPLING

Under Section 5.0 of Tab 1.4 of the Mill's EPM gas stack samples are collected at the Mill in accordance with the schedule shown below:

Stack Sampling Requirements

Frequency	Grizzly Baghouse Stack	North and/or South Yellowcake Dryer Stacks	Yellowcake Packaging Baghouse Stack	Vanadium Dryer Stack	Vanadium Packaging Stack
Quarterly	If operating, U-nat, Th-230, Ra-226, Pb-210, Th-232, Ra-228, and Th-228.	If operating, U-nat, Th-230, Ra-226, Pb-210, Th-232, Ra-228, and Th-228.	If operating, U-nat, Th-230, Ra-226, Pb-210, Th-232, Ra-228, and Th-228.	If operating, U-nat, Th-230, Ra-226, Pb-210, Th-232, Ra-228, and Th-228.	If operating, U-nat, Th-230, Ra-226, Pb-210, Th-232, Ra-228, and Th-228.

The south yellowcake dryer and yellowcake baghouse did not operate during the reporting period. The north yellowcake dryer has not been in operation since the third quarter of 2012, and therefore, has not been sampled since it was last in operation.

The vanadium dryer and vanadium baghouse operated during the reporting period. Vanadium stack samples were collected from the vanadium dryer and packaging baghouse during third and fourth quarter.

The analytical results of stack sampling conducted in the reporting period, as well as for the previous two quarters, are provided in Table 9 in the Tables Tab of this report. The actual analytical results reported by the laboratory for the reporting period (third and fourth quarters 2019) are provided in Attachment G to this report.

It is also important to note that uranium stack effluent concentrations are not comparable to environmental air sampling station ECLs for regulatory compliance purposes. The ECL is a limit that applies to the receptor locations and is not applicable to effluents from mill processes on the Mill site. These stack release data are more appropriately utilized for dose modeling purposes, and dose modeling is not computed for semi-annual reporting purposes.

Analytical data were reviewed against the laboratory established acceptance limits specified in the data packages. The analytical data are usable for their intended purpose. Any deviations noted did not affect the quality or usability of the data.

6.0 SURFACE WATER MONITORING

Under the License, Part 11.2 B surface water samples are required to be obtained annually from Westwater Canyon and semi-annually from Cottonwood Creek. Sediment samples from Westwater Canyon are taken in place of the Westwater Canyon surface water sample where surface water is not available for sampling. Westwater Canyon

surface water was sampled in the first quarter of 2019. The Westwater data are included in the SAER for January – June 2019, which was submitted on August 21, 2019.

The Mill's EPM requires that samples from Cottonwood Creek be analyzed for TDS and total suspended solids ("TSS") quarterly, and the License, Part 11.2 B requires that samples from Cottonwood Creek be analyzed for dissolved and suspended radionuclides including Gross Alpha, U-nat, Ra-226, and Th-230 semi-annually. In accordance with these requirements, Cottonwood Creek was sampled for TDS and TSS and dissolved and suspended radionuclides during the fourth quarter. No sample was collected during the third quarter because there was no water present during the quarter.

The field data sheets for the surface water sampling events, along with graphs showing historic results are included as Attachment H.

Analytical data were reviewed against the laboratory established acceptance limits specified in the data packages. No data issues were noted and the data are usable for the intended purpose.

7.0 SOIL SAMPLING

As mentioned in Section 1.1 above, specific changes to the individual monitoring programs have been made.

In accordance with the Mill's EPM, 52 surface soils were collected in August 2019. The soil samples were analyzed, on a dry basis, for Ra-226, U-nat, Pb-210, and Th-232. The results of these samplings indicate that soil activity levels at the air monitoring stations remain low and within the range of historic levels. A graphical presentation of the soil results, together with analytical sample results for the August 2019 sampling event are provided in Attachment I.

Analytical data were reviewed against the laboratory established acceptance limits specified in the data packages. The analytical data are usable for their intended purpose. Any deviations noted did not affect the quality or usability of the data.

Field duplicate sample results were assessed as required by the SOP. Duplicate results were within the acceptance limits specified in the SOP except as noted in Table I-3. Field duplicate results are shown in Attachment I.

8.0 METEOROLOGICAL MONITORING

As in prior reporting periods, an independent contractor has prepared the White Mesa Mill Semi-annual Meteorological Monitoring Report for the reporting period. This information is retained at the Mill site for agency review.

9.0 CELL 2 RADON FLUX

The July 23, 2014 letter, DWMRC stated that because "Tailings Cell 2 is no longer in operation (receiving tailings), the Division of Air Quality and the Division of Radiation Control agree that Subpart W NESHAPs requirements (40 CFR Part 61) no longer apply; however, at this phase of cell 2 closure activities, the requirements of 10 CFR Part 40, Appendix A, Criterion 6 do apply."

Further, the DWMRC July 23, 2014 letter states that "since the MILDOS-Area Models that have been run to show compliance with dose limits for releases from the Mill were based on a limit of 20 picocuries per square meter second (pCi/m^2-sec), in order to ensure compliance with previously analyzed conditions, the DWMRC will require the licensee to continue to measure the radon flux in accordance with [the latest revision of] 40 CFR 61, Appendix B, Method 115, "Monitoring for Radon-222 Emissions". The measured radon flux for Cell 2 shall not exceed a value of 20 (pCi/m^2-sec) until a new MILDOS-Area Model to analyze a higher radon flux is completed and demonstrates compliance with dose limits based on the releases from the Mill. As required by Method 115, a minimum of 100 measurements are required and shall be performed on a semi-annual basis."

Per the requirements detailed above, EFRI sampled Cell 2 radon flux in April 2019 for the January through June 2019 reporting period and in October for the July through December reporting period. The April 2019 measurement was 0.4 pCi/(m^2-sec). The October 2019 measurement was 2.3 pCi/(m^2-sec). Both of the 2019 measurements were below the 20.0 pCi/(m^2-sec) standard. The full data report for the October 2019 Cell 2 radon flux sampling is provided in Attachment K. The full data report for the April 2019 Cell 2 radon flux sampling is provided in Attachment K of the January through June SAER which was submitted on August 21, 2019.

The 2019 average radon flux is 1.35 pCi/(m^2-sec) which is the arithmetic average of the April 2019 measurement of 0.4 pCi/(m^2-sec) and the October measurement of 2.3 pCi/(m^2-sec). The arithmetic average is below the 20.0 pCi/(m^2-sec) standard.

It is important to note that Cell 2 Phase 1 cover placement/construction commenced in April 2016 and was completed in April 2017. The Phase 1 cover activities include the placement and compaction of approximately 4.5 feet of soil materials.

10.0 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

2/25/20
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- NCRP Report 94-Global Pb-210 Concentration Example

State	Pb-210 Concentration	
	uBq/M^3	uCi/ml
California	600	1.60E-14
Illinois	1500	4.10E-14
Ohio	300	8.10E-15
Massachusetts	700	1.90E-14

Table 2 - Air Monitoring Station Results U-Nat (Comparison to Limits)
3rd and 4th Quarter 2019

Monitoring Station	3rd Qtr.Result (uCi/ml)	4th Qtr.Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCI/ml)	Average Percent ECL
BHV1	1.00E-16	4.00E-17	9.00E-14	7.78E-02
BHV2	2.00E-16	2.00E-17	9.00E-14	1.22E-01
BHV4	1.00E-16	4.00E-17	9.00E-14	7.78E-02
BHV5	1.00E-16	4.00E-16	9.00E-14	2.78E-01
BHV6	7.00E-17	2.00E-16	9.00E-14	1.50E-01
BHV7	2.00E-16	1.00E-16	9.00E-14	1.67E-01
BHV8	1.00E-16	4.00E-17	9.00E-14	7.78E-02

Table 3 - Air Monitoring Station Results Th-230 (Comparison to Limits)
3rd and 4th Quarter 2019

Monitoring Station	3rd Qtr.Result (uCi/ml)	4th Qtr.Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCI/ml)	Average Percent ECL
BHV1	5.00E-16	3.00E-17	2.00E-14	1.33E+00
BHV2	3.00E-17	1.00E-17	2.00E-14	1.00E-01
BHV4	1.00E-16	6.00E-17	2.00E-14	4.00E-01
BHV5	1.00E-16	3.00E-16	2.00E-14	1.00E+00
BHV6	8.00E-17	1.00E-16	2.00E-14	4.50E-01
BHV7	1.00E-16	5.00E-17	2.00E-14	3.75E-01
BHV8	2.00E-16	4.00E-17	2.00E-14	6.00E-01

Table 4 - Air Monitoring Station Results Ra-226 (Comparison to Limits)
3rd and 4th Quarter 2019

Monitoring Station	3rd Qtr.Result (uCi/ml)	4th Qtr.Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCI/ml)	Average Percent ECL
BHV1	8.00E-16	6.00E-17	9.00E-13	4.78E-02
BHV2	3.00E-16	4.00E-17	9.00E-13	1.89E-02
BHV4	9.00E-17	4.00E-17	9.00E-13	7.22E-03
BHV5	6.00E-16	4.00E-16	9.00E-13	5.56E-02
BHV6	5.00E-17	1.00E-16	9.00E-13	8.33E-03
BHV7	3.00E-16	1.00E-16	9.00E-13	2.22E-02
BHV8	1.10E-15	1.00E-16	9.00E-13	6.67E-02

Table 5 - Air Monitoring Station Results Pb-210 (Comparison to Limits)
3rd and 4th Quarter 2019

Monitoring Station	3rd Qtr.Result (uCi/ml)	4th Qtr.Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCI/ml)	Average Percent ECL
BHV1	1.00E-14	1.00E-14	6.00E-13	1.67E+00
BHV2	9.00E-15	8.00E-15	6.00E-13	1.42E+00
BHV4	1.00E-14	9.00E-15	6.00E-13	1.58E+00
BHV5	9.00E-15	9.00E-15	6.00E-13	1.50E+00
BHV6	8.00E-15	1.00E-14	6.00E-13	1.50E+00
BHV7	1.00E-14	1.00E-14	6.00E-13	1.67E+00
BHV8	1.00E-14	7.00E-15	6.00E-13	1.42E+00

Table 6 - Air Monitoring Station Results Th-232 (Comparison to Limits)
3rd and 4th Quarter 2019

Monitoring Station	3rd Qtr.Result (uCi/ml)	4th Qtr.Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCI/ml)	Average Percent ECL
BHV1	7.00E-18	3.00E-18	4.00E-15	1.25E-01
BHV2	9.00E-18	5.00E-18	4.00E-15	1.75E-01
BHV4	3.00E-18	3.00E-18	4.00E-15	7.50E-02
BHV5	6.00E-18	7.00E-18	4.00E-15	1.63E-01
BHV6	4.00E-18	4.00E-18	4.00E-15	1.00E-01
BHV7	7.00E-18	2.00E-18	4.00E-15	1.13E-01
BHV8	9.00E-18	2.00E-18	4.00E-15	1.38E-01

Table 7 - Environmental Optically Stimulated Luminescence Dosimeter 2019

Monitoring Station	3rd Quarter Result (mrem)	4th Quarter Result (mrem)	3rd Quarter Result Less Background (mrem)	4th Quarter Result Less Background (mrem)	Cumulative Semiannual Estimate (mrem)
BHV1	39	45.3	5.1	9.9	15
BHV2	36.5	37.9	2.6	2.5	5.1
BHV3	33.9	35.4	0	0	0
BHV4	32.5	34.2	0	0	0
BHV5	37.6	36.9	3.7	1.5	5.2
BHV6	35	37.1	1.1	1.7	2.8
BHV7	35	36.3	1.1	0.9	2
BHV8	34.1	34.1	0.2	0	0.2

Table 8 Uranium Stack Effluent Concentrations and Release Rates
1st Qtr. 2019
No stack sampling was conducted as the dryers did not run. No packaging was completed during the 1st quarter.
2nd Qtr. 2019
No stack sampling was conducted as the dryers did not run. No packaging was completed during the 2nd quarter.
3rd Qtr. 2019
No stack sampling was conducted as the dryers did not run. No packaging was completed during the 1st quarter.
4th Qtr. 2019
No stack sampling was conducted as the dryers did not run. No packaging was completed during the 2nd quarter.

Table 9 Vandium Stack Effluent Concentrations and Release Rates

1st Qtr. 2019

	U-Nat uCi/cc	U-Nat. uCi/sec	Th-228 uCi/cc	Th-228 uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Th-232 uCi/cc	Th-232 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Ra-228 uCi/cc	Ra-228 uCi/sec
Vanadium Dryer 1	1.09E-12	3.67E-06	0.00E+00	0.00E+00	2.65E-14	8.94E-08	0.00E+00	0.00E+00	1.07E-12	3.62E-06	1.31E-12	4.42E-06	2.79E-13	9.41E-07
Vanadium Dryer 2	9.86E-13	3.69E-06	3.37E-15	1.26E-08	3.74E-14	1.40E-07	3.37E-15	1.26E-08	2.62E-12	9.81E-06	3.37E-13	1.26E-06	7.49E-14	2.80E-07
Vanadium Packaging Baghouse 1	1.57E-12	3.94E-06	3.81E-15	9.55E-09	2.18E-13	5.46E-07	3.81E-15	9.55E-09	1.63E-12	4.09E-06	2.99E-13	7.50E-07	2.72E-13	6.82E-07
Vanadium Packaging Baghouse 2	1.46E-12	3.72E-06	7.87E-15	2.00E-08	3.87E-13	9.84E-07	7.87E-15	2.00E-08	2.54E-12	6.45E-06	4.67E-13	1.19E-06	2.27E-13	5.77E-07

2nd Qtr. 2019

	U-Nat uCi/cc	U-Nat. uCi/sec	Th-228 uCi/cc	Th-228 uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Th-232 uCi/cc	Th-232 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Ra-228 uCi/cc	Ra-228 uCi/sec
Vanadium Dryer 1	3.54E-12	1.06E-05	2.19E-15	6.57E-09	1.25E-14	3.75E-08	2.19E-15	6.57E-09	1.53E-12	4.60E-06	2.81E-14	8.45E-08	1.56E-13	4.69E-07
Vanadium Dryer 2	5.26E-12	1.55E-05	5.40E-16	1.59E-09	6.36E-15	1.88E-08	5.40E-16	1.59E-09	1.57E-12	4.64E-06	4.77E-14	1.41E-07	1.59E-13	4.69E-07
Vanadium Dryer 3	7.43E-12	2.13E-05	6.79E-15	1.94E-08	1.98E-14	5.66E-08	6.79E-15	1.94E-08	9.43E-12	2.70E-05	3.77E-13	1.08E-06	9.43E-13	2.70E-06
Vanadium Packaging Baghouse 1	3.39E-13	4.58E-07	6.34E-16	8.55E-10	6.48E-14	8.75E-08	6.34E-16	8.55E-10	2.06E-12	2.79E-06	4.42E-14	5.97E-08	1.47E-13	1.99E-07
Vanadium Packaging Baghouse 2	4.78E-13	6.41E-07	1.59E-15	2.14E-09	4.05E-14	5.43E-08	1.59E-15	2.14E-09	2.58E-12	3.45E-06	4.91E-14	6.58E-08	1.23E-13	1.64E-07

3rd Qtr. 2019

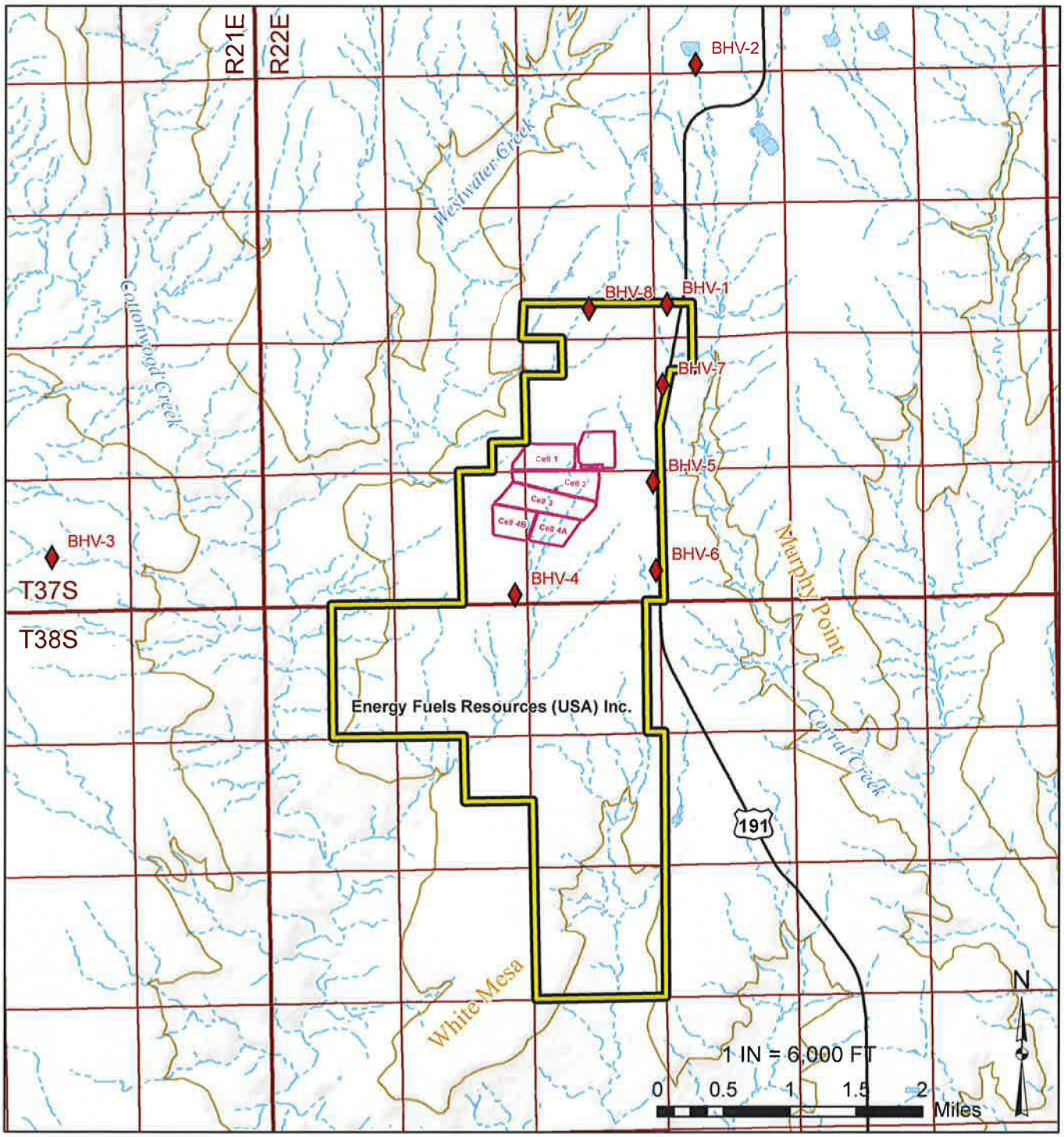
	U-Nat uCi/cc	U-Nat. uCi/sec	Th-228 uCi/cc	Th-228 uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Th-232 uCi/cc	Th-232 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Ra-228 uCi/cc	Ra-228 uCi/sec
Vanadium Dryer 1	8.54E-14	3.00E-07	0.00E+00	0.00E+00	5.34E-14	1.88E-07	0.00E+00	0.00E+00	3.47E-11	1.22E-04	5.34E-14	1.88E-07	1.33E-13	4.69E-07
Vanadium Dryer 2	1.97E-13	6.93E-07	0.00E+00	0.00E+00	6.72E-14	2.36E-07	0.00E+00	0.00E+00	5.51E-12	1.93E-05	5.37E-14	1.89E-07	1.34E-13	4.72E-07
Vanadium Packaging Baghouse 1	1.00E-12	1.20E-06	4.95E-14	5.91E-08	6.76E-12	8.07E-06	3.30E-14	3.94E-08	3.30E-12	3.94E-06	4.95E-14	5.91E-08	1.65E-13	1.97E-07
Vanadium Packaging Baghouse 2	1.26E-12	1.59E-06	7.75E-14	9.84E-08	8.53E-12	1.08E-05	3.10E-14	3.94E-08	1.46E-12	1.85E-06	1.09E-13	1.38E-07	1.55E-13	1.97E-07

4th Qtr. 2019

	U-Nat uCi/cc	U-Nat. uCi/sec	Th-228 uCi/cc	Th-228 uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Th-232 uCi/cc	Th-232 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Ra-228 uCi/cc	Ra-228 uCi/sec
Vanadium Dryer 1	2.92E-13	9.29E-07	0.00E+00	0.00E+00	6.00E-14	1.91E-07	0.00E+00	0.00E+00	1.18E-12	3.76E-06	3.00E-14	9.53E-08	1.50E-13	4.76E-07
Vanadium Dryer 2	4.20E-12	1.36E-05	4.47E-14	1.45E-07	2.39E-13	7.72E-07	0.00E+00	0.00E+00	1.79E-12	5.79E-06	2.98E-14	9.66E-08	1.49E-13	4.83E-07
Vanadium Packaging Baghouse 1	1.18E-12	1.79E-06	2.66E-14	4.03E-08	3.29E-12	4.98E-06	6.26E-15	9.49E-09	6.42E-12	9.73E-06	1.41E-13	2.14E-07	9.40E-14	1.42E-07
Vanadium Packaging Baghouse 2	1.39E-12	2.06E-06	6.42E-15	9.51E-09	2.41E-12	3.57E-06	1.28E-14	1.90E-08	4.49E-12	6.66E-06	8.02E-14	1.19E-07	1.60E-13	2.38E-07

ATTACHMENT A

HIGH VOLUME AIR MONITORING STATIONS



Legend

- Air Monitoring Station
- Property Boundary
- Tailings Cell
- Road
- Canyon Rim
- Township and Range
- Section
- Pond
- Drainage

Coordinate System: NAD 1983 StatePlane Utah South FIPS 4303 Feet

ENERGY FUELS

REVISIONS		Project: WHITE MESA MILL	
Date:	By:	County: San Juan	State: Utah
		Location: -	

ATTACHMENT A

PARTICULATE MONITORING STATIONS

Author: rellis	Date: 2/20/2017	Drafted By: rellis

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ATTACHMENT B

BHV AIR SAMPLING GRAPHS AND DATA TABLES

TAB 1

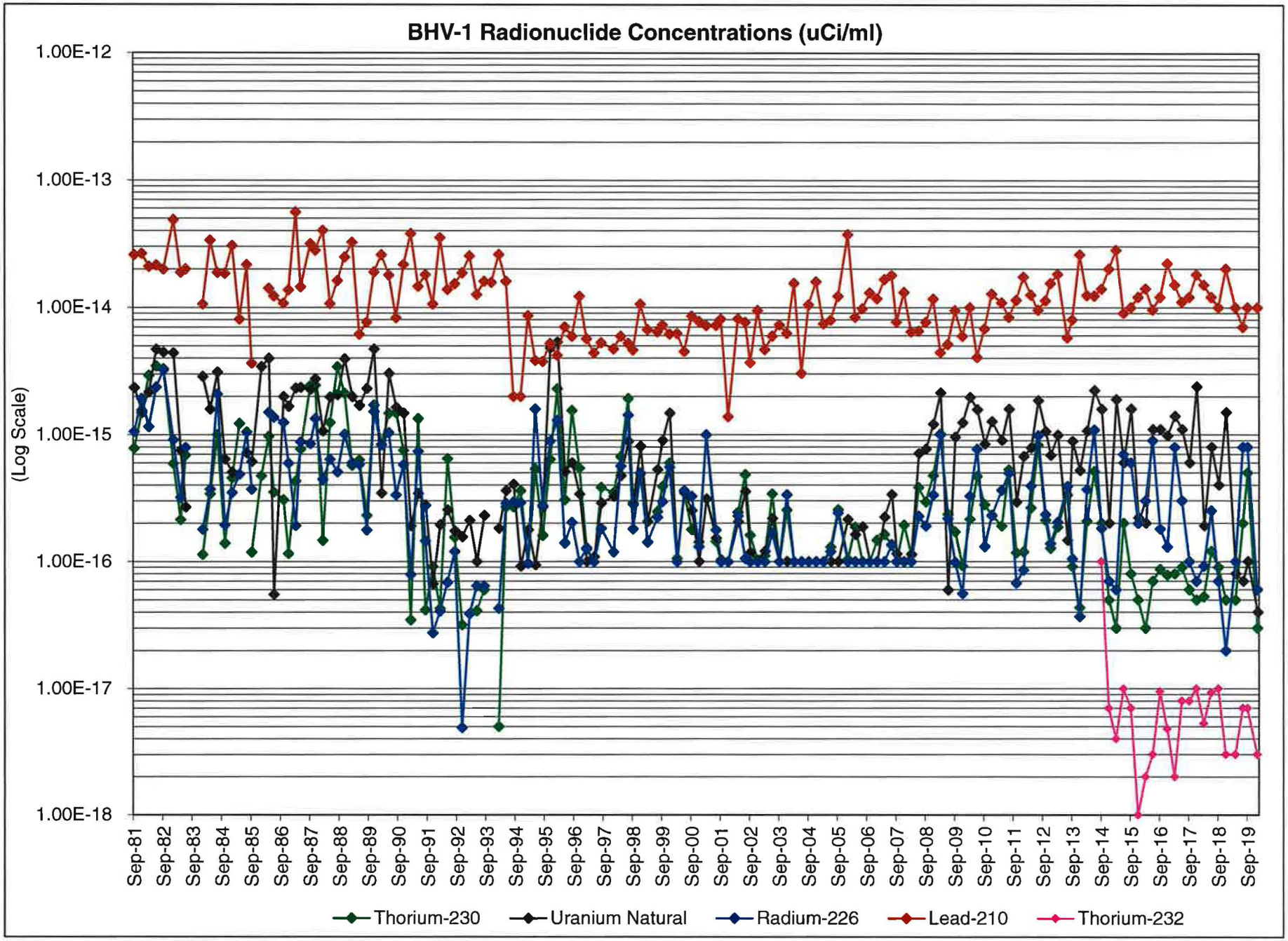
BHV-1 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-1T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	2.35E-15	5.00E-12	1.25E-12	7.82E-16	8.00E-14	2.00E-14	1.06E-15	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/14/1981	1.56E-15	5.00E-12	1.25E-12	1.49E-15	8.00E-14	2.00E-14	1.93E-15	2.00E-12	5.00E-13	2.64E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/29/1982	2.16E-15	5.00E-12	1.25E-12	2.93E-15	8.00E-14	2.00E-14	1.16E-15	2.00E-12	5.00E-13	2.09E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1982	4.69E-15	5.00E-12	1.25E-12	3.46E-15	8.00E-14	2.00E-14	2.38E-15	2.00E-12	5.00E-13	2.14E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/27/1982	4.45E-15	5.00E-12	1.25E-12	3.29E-15	8.00E-14	2.00E-14	3.23E-15	2.00E-12	5.00E-13	1.99E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1983	4.39E-15	5.00E-12	1.25E-12	5.91E-16	8.00E-14	2.00E-14	9.14E-16	2.00E-12	5.00E-13	4.87E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/4/1983	7.51E-16	5.00E-12	1.25E-12	2.13E-16	8.00E-14	2.00E-14	3.20E-16	2.00E-12	5.00E-13	1.88E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1983	2.68E-16	5.00E-12	1.25E-12	6.92E-16	8.00E-14	2.00E-14	7.92E-16	2.00E-12	5.00E-13	2.00E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1984	2.87E-15	5.00E-12	1.25E-12	1.14E-16	8.00E-14	2.00E-14	1.79E-16	2.00E-12	5.00E-13	1.06E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/2/1984	1.59E-15	5.00E-12	1.25E-12	3.40E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.34E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/2/1984	3.10E-15	5.00E-12	1.25E-12	1.00E-15	8.00E-14	2.00E-14	2.09E-15	2.00E-12	5.00E-13	1.88E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/1/1984	6.42E-16	5.00E-12	1.25E-12	1.39E-16	8.00E-14	2.00E-14	1.94E-16	2.00E-12	5.00E-13	1.85E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1985	5.06E-16	5.00E-12	1.25E-12	4.56E-16	8.00E-14	2.00E-14	3.49E-16	2.00E-12	5.00E-13	3.03E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1985	0.00E+00	5.00E-12	1.25E-12	1.23E-15	8.00E-14	2.00E-14	4.88E-16	2.00E-12	5.00E-13	8.06E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/1/1985	7.17E-16	5.00E-12	1.25E-12		8.00E-14	2.00E-14	1.05E-15	2.00E-12	5.00E-13	2.15E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/30/1985	6.13E-16	5.00E-12	1.25E-12	1.18E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.64E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1986	3.42E-15	5.00E-12	1.25E-12	4.74E-16	8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1986	3.98E-15	5.00E-12	1.25E-12	9.74E-16	8.00E-14	2.00E-14	1.50E-15	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1986	5.51E-17	5.00E-12	1.25E-12	3.52E-16	8.00E-14	2.00E-14	1.37E-15	2.00E-12	5.00E-13	1.23E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/27/1986	1.99E-15	5.00E-12	1.25E-12	3.06E-16	8.00E-14	2.00E-14	1.25E-15	2.00E-12	5.00E-13	1.08E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/15/1986	1.67E-15	5.00E-12	1.25E-12	1.16E-16	8.00E-14	2.00E-14	5.98E-16	2.00E-12	5.00E-13	1.37E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/16/1987	2.33E-15	5.00E-12	1.25E-12	4.30E-16	8.00E-14	2.00E-14	1.92E-16	2.00E-12	5.00E-13	5.59E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1987	2.36E-15	5.00E-12	1.25E-12	7.69E-16	8.00E-14	2.00E-14	8.76E-16	2.00E-12	5.00E-13	1.45E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/9/1987	2.27E-15	5.00E-12	1.25E-12	2.44E-15	8.00E-14	2.00E-14	8.51E-16	2.00E-12	5.00E-13	3.14E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/2/1987	2.75E-15	5.00E-12	1.25E-12	2.46E-15	8.00E-14	2.00E-14	1.34E-15	2.00E-12	5.00E-13	2.79E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/16/1988	1.07E-15	5.00E-12	1.25E-12	1.47E-16	8.00E-14	2.00E-14	4.44E-16	2.00E-12	5.00E-13	4.01E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/18/1988	1.98E-15	5.00E-12	1.25E-12	1.25E-15	8.00E-14	2.00E-14	6.40E-16	2.00E-12	5.00E-13	1.07E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/15/1988	2.06E-15	5.00E-12	1.25E-12	3.41E-15	8.00E-14	2.00E-14	5.08E-16	2.00E-12	5.00E-13	1.62E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/14/1988	3.94E-15	5.00E-12	1.25E-12	2.12E-15	8.00E-14	2.00E-14	1.01E-15	2.00E-12	5.00E-13	2.47E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/13/1989	1.99E-15	5.00E-12	1.25E-12	5.73E-16	8.00E-14	2.00E-14	5.99E-16	2.00E-12	5.00E-13	3.23E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/15/1989	1.70E-15	5.00E-12	1.25E-12	6.32E-16	8.00E-14	2.00E-14	5.86E-16	2.00E-12	5.00E-13	6.16E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/14/1989	2.31E-15	5.00E-12	1.25E-12	2.31E-16	8.00E-14	2.00E-14	1.77E-16	2.00E-12	5.00E-13	7.65E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/13/1989	4.72E-15	5.00E-12	1.25E-12	1.71E-15	8.00E-14	2.00E-14	1.52E-15	2.00E-12	5.00E-13	1.89E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/12/1990	3.44E-16	5.00E-12	1.25E-12	8.39E-16	8.00E-14	2.00E-14	8.31E-16	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/14/1990	3.03E-15	5.00E-12	1.25E-12	1.47E-15	8.00E-14	2.00E-14	1.04E-15	2.00E-12	5.00E-13	1.79E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/13/1990	1.64E-15	5.00E-12	1.25E-12	1.49E-15	8.00E-14	2.00E-14	3.34E-16	2.00E-12	5.00E-13	8.27E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/12/1990	1.48E-15	5.00E-12	1.25E-12	7.50E-16	8.00E-14	2.00E-14	5.80E-16	2.00E-12	5.00E-13	2.16E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/11/1991	1.90E-16	5.00E-12	1.25E-12	3.48E-17	8.00E-14	2.00E-14	7.91E-17	2.00E-12	5.00E-13	3.79E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/13/1991	3.42E-16	5.00E-12	1.25E-12	1.34E-15	8.00E-14	2.00E-14	7.39E-16	2.00E-12	5.00E-13	1.46E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/12/1991	2.77E-16	5.00E-12	1.25E-12	4.17E-17	8.00E-14	2.00E-14	1.45E-16	2.00E-12	5.00E-13	1.80E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/11/1991	6.65E-17	5.00E-12	1.25E-12	9.13E-17	8.00E-14	2.00E-14	2.77E-17	2.00E-12	5.00E-13	1.06E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/10/1992	1.94E-16	5.00E-12	1.25E-12	4.28E-17	8.00E-14	2.00E-14	4.08E-17	2.00E-12	5.00E-13	3.51E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1992	2.54E-16	5.00E-12	1.25E-12	6.49E-16	8.00E-14	2.00E-14	6.86E-17	2.00E-12	5.00E-13	1.38E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1992	1.73E-16	5.00E-12	1.25E-12	1.55E-16	8.00E-14	2.00E-14	1.20E-16	2.00E-12	5.00E-13	1.53E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/9/1992	1.56E-16	5.00E-12	1.25E-12	3.19E-17	8.00E-14	2.00E-14	4.90E-18	2.00E-12	5.00E-13	1.86E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/9/1993	2.10E-16	5.00E-12	1.25E-12		8.00E-14	2.00E-14	3.89E-17	2.00E-12	5.00E-13	2.52E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/10/1993	1.00E-16	5.00E-12	1.25E-12	4.11E-17	8.00E-14	2.00E-14	6.43E-17	2.00E-12	5.00E-13	1.26E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-1T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
8/10/1993	2.30E-16	5.00E-12	1.25E-12	6.00E-17	8.00E-14	2.00E-14	6.43E-17	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/8/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1994	1.82E-16	5.00E-12	1.25E-12	5.00E-18	8.00E-14	2.00E-14	4.30E-17	2.00E-12	5.00E-13	2.59E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/9/1994	3.60E-16	5.00E-12	1.25E-12	2.70E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/9/1994	4.04E-16	5.00E-12	1.25E-12	2.70E-16	8.00E-14	2.00E-14	2.94E-16	2.00E-12	5.00E-13	2.00E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/7/1994	9.18E-17	5.00E-12	1.25E-12	3.60E-16	8.00E-14	2.00E-14	2.91E-16	2.00E-12	5.00E-13	2.00E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1995	1.77E-16	9.00E-14	2.25E-14	9.70E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	8.60E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/9/1995	9.40E-17	9.00E-14	2.25E-14	5.36E-16	2.00E-14	5.00E-15	1.60E-15	9.00E-13	2.25E-13	3.84E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/9/1995	2.70E-16	9.00E-14	2.25E-14	1.60E-16	2.00E-14	5.00E-15	2.76E-16	9.00E-13	2.25E-13	3.76E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/11/1995	4.80E-15	9.00E-14	2.25E-14	6.41E-16	2.00E-14	5.00E-15	8.93E-16	9.00E-13	2.25E-13	5.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/5/1996	5.34E-15	9.00E-14	2.25E-14	2.30E-15	2.00E-14	5.00E-15	1.30E-15	9.00E-13	2.25E-13	4.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/6/1996	5.11E-16	9.00E-14	2.25E-14	3.06E-16	2.00E-14	5.00E-15	1.40E-16	9.00E-13	2.25E-13	7.03E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/5/1996	5.99E-16	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	2.03E-16	9.00E-13	2.25E-13	5.94E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/6/1996	3.38E-16	9.00E-14	2.25E-14	5.45E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.25E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	5.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/5/1997	1.09E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.39E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/11/1997	2.88E-16	9.00E-14	2.25E-14	3.83E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	5.29E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/5/1998	3.24E-16	9.00E-14	2.25E-14	3.47E-16	2.00E-14	5.00E-15	1.19E-16	9.00E-13	2.25E-13	4.73E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/28/1998	4.75E-16	9.00E-14	2.25E-14	6.73E-16	2.00E-14	5.00E-15	5.69E-16	9.00E-13	2.25E-13	5.94E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/31/1998	8.84E-16	9.00E-14	2.25E-14	1.93E-15	2.00E-14	5.00E-15	1.43E-15	9.00E-13	2.25E-13	5.22E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/28/1998	2.81E-16	9.00E-14	2.25E-14	2.89E-16	2.00E-14	5.00E-15	1.80E-16	9.00E-13	2.25E-13	4.64E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1998	8.08E-16	9.00E-14	2.25E-14	4.93E-16	2.00E-14	5.00E-15	5.01E-16	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/1999	2.06E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	1.42E-16	9.00E-13	2.25E-13	6.69E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/1999	5.31E-16	9.00E-14	2.25E-14	2.47E-16	2.00E-14	5.00E-15	2.23E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/1999	8.98E-16	9.00E-14	2.25E-14	3.90E-16	2.00E-14	5.00E-15	2.96E-16	9.00E-13	2.25E-13	7.29E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1999	1.48E-15	9.00E-14	2.25E-14	6.00E-16	2.00E-14	5.00E-15	5.57E-16	9.00E-13	2.25E-13	6.19E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/27/2000	1.00E-16	9.00E-14	2.25E-14	1.06E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.23E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/26/2000	3.47E-16	9.00E-14	2.25E-14	3.46E-16	2.00E-14	5.00E-15	3.62E-16	9.00E-13	2.25E-13	4.50E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2000	2.51E-16	9.00E-14	2.25E-14	1.78E-16	2.00E-14	5.00E-15	3.25E-16	9.00E-13	2.25E-13	8.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/26/2000	1.00E-16	9.00E-14	2.25E-14	1.42E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	7.77E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/26/2001	3.10E-16	9.00E-14	2.25E-14	1.00E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	7.19E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/29/2001	1.52E-16	9.00E-14	2.25E-14	1.44E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	7.21E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/24/2001	1.03E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.09E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.39E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/1/2002	2.05E-16	9.00E-14	2.25E-14	2.44E-16	2.00E-14	5.00E-15	2.29E-16	9.00E-13	2.25E-13	8.15E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/1/2002	3.55E-16	9.00E-14	2.25E-14	4.85E-16	2.00E-14	5.00E-15	1.06E-16	9.00E-13	2.25E-13	7.65E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2002	1.17E-16	9.00E-14	2.25E-14	1.61E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.03E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.46E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2003	1.20E-16	9.00E-14	2.25E-14	1.12E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2003	2.18E-16	9.00E-14	2.25E-14	3.40E-16	2.00E-14	5.00E-15	1.67E-16	9.00E-13	2.25E-13	5.96E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.28E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/29/2003	1.00E-16	9.00E-14	2.25E-14	2.54E-16	2.00E-14	5.00E-15	3.35E-16	9.00E-13	2.25E-13	6.25E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.04E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.05E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.42E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/29/2005	1.00E-16	9.00E-14	2.25E-14	1.30E-16	2.00E-14	5.00E-15	1.20E-16	9.00E-13	2.25E-13	7.94E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-1T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/26/2005	1.00E-16	9.00E-14	2.25E-14	2.56E-16	2.00E-14	5.00E-15	2.42E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2006	2.13E-16	9.00E-14	2.25E-14	1.04E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.73E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2006	1.62E-16	9.00E-14	2.25E-14	1.86E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.36E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/2006	1.86E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.77E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/2/2006	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/1/2007	1.00E-16	9.00E-14	2.25E-14	1.47E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.17E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/2/2007	2.23E-16	9.00E-14	2.25E-14	1.63E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.65E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2007	3.35E-16	9.00E-14	2.25E-14	1.34E-16	2.00E-14	5.00E-15	1.36E-16	9.00E-13	2.25E-13	1.78E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2007	1.15E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2007	1.00E-16	9.00E-14	2.25E-14	1.93E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2008	1.14E-16	9.00E-14	2.25E-14	1.13E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2008	7.09E-16	9.00E-14	2.25E-14	3.83E-16	2.00E-14	5.00E-15	2.27E-16	9.00E-13	2.25E-13	6.52E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2008	7.69E-16	9.00E-14	2.25E-14	2.94E-16	2.00E-14	5.00E-15	1.90E-16	9.00E-13	2.25E-13	7.64E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2008	1.21E-15	9.00E-14	2.25E-14	4.76E-16	2.00E-14	5.00E-15	3.34E-16	9.00E-13	2.25E-13	1.16E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/15/2009	2.14E-15	9.00E-14	2.25E-14	1.02E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	4.44E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/15/2009	5.97E-17	9.00E-14	2.25E-14	2.35E-16	2.00E-14	5.00E-15	2.18E-16	9.00E-13	2.25E-13	5.13E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/15/2009	9.55E-16	9.00E-14	2.25E-14	1.71E-16	2.00E-14	5.00E-15	9.87E-17	9.00E-13	2.25E-13	9.47E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/15/2009	1.24E-15	9.00E-14	2.25E-14	9.25E-17	2.00E-14	5.00E-15	5.60E-17	9.00E-13	2.25E-13	5.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2010	1.97E-15	9.00E-14	2.25E-14	2.15E-16	2.00E-14	5.00E-15	3.27E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2010	1.58E-15	9.00E-14	2.25E-14	4.71E-16	2.00E-14	5.00E-15	7.70E-16	9.00E-13	2.25E-13	4.07E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2010	8.42E-16	9.00E-14	2.25E-14	2.80E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	6.80E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2010	1.27E-15	9.00E-14	2.25E-14	2.32E-16	2.00E-14	5.00E-15	2.30E-16	9.00E-13	2.25E-13	1.27E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/4/2011	9.01E-16	9.00E-14	2.25E-14	1.90E-16	2.00E-14	5.00E-15	3.64E-16	9.00E-13	2.25E-13	1.09E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/4/2011	1.59E-15	9.00E-14	2.25E-14	5.31E-16	2.00E-14	5.00E-15	4.99E-16	9.00E-13	2.25E-13	8.38E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/3/2011	2.92E-16	9.00E-14	2.25E-14	1.17E-16	2.00E-14	5.00E-15	6.76E-17	9.00E-13	2.25E-13	1.14E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2012	6.73E-16	9.00E-14	2.25E-14	1.19E-16	2.00E-14	5.00E-15	8.58E-17	9.00E-13	2.25E-13	1.73E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2012	7.87E-16	9.00E-14	2.25E-14	2.64E-16	2.00E-14	5.00E-15	3.95E-16	9.00E-13	2.25E-13	1.25E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2012	1.86E-15	9.00E-14	2.25E-14	8.33E-16	2.00E-14	5.00E-15	9.85E-16	9.00E-13	2.25E-13	9.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/1/2012	1.06E-15	9.00E-14	2.25E-14	2.11E-16	2.00E-14	5.00E-15	2.34E-16	9.00E-13	2.25E-13	1.13E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2012	6.86E-16	9.00E-14	2.25E-14	1.27E-16	2.00E-14	5.00E-15	1.38E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/25/2013	9.91E-16	9.00E-14	2.25E-14	1.86E-16	2.00E-14	5.00E-15	2.04E-16	9.00E-13	2.25E-13	1.82E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2013	1.46E-16	9.00E-14	2.25E-14	3.34E-16	2.00E-14	5.00E-15	3.91E-16	9.00E-13	2.25E-13	5.78E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2013	8.89E-16	9.00E-14	2.25E-14	9.13E-17	2.00E-14	5.00E-15	1.05E-16	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2013	5.21E-16	9.00E-14	2.25E-14	4.34E-17	2.00E-14	5.00E-15	3.70E-17	9.00E-13	2.25E-13	2.59E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2014	1.07E-15	9.00E-14	2.25E-14	2.07E-16	2.00E-14	5.00E-15	3.69E-16	9.00E-13	2.25E-13	1.24E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2014	2.24E-15	9.00E-14	2.25E-14	5.14E-16	2.00E-14	5.00E-15	1.09E-15	9.00E-13	2.25E-13	1.23E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2014	1.59E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.39E-14	6.00E-13	1.50E-13	1.00E-16	4.00E-15	1.00E-15
12/29/2014	2.00E-16	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	7.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
3/30/2015	1.90E-15	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	6.00E-17	9.00E-13	2.25E-13	2.80E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
6/29/2015	6.00E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	7.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/28/2015	1.60E-15	9.00E-14	2.25E-14	8.00E-17	2.00E-14	5.00E-15	6.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
12/28/2015	2.20E-16	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	1.00E-18	4.00E-15	1.00E-15
3/28/2016	2.00E-16	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
6/27/2016	1.10E-15	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	9.00E-16	9.00E-13	2.25E-13	9.60E-15	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
9/27/2016	1.10E-15	9.00E-14	2.25E-14	8.70E-17	2.00E-14	5.00E-15	1.80E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	9.50E-18	4.00E-15	1.00E-15
12/27/2016	9.80E-16	9.00E-14	2.25E-14	7.80E-17	2.00E-14	5.00E-15	1.30E-16	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	4.80E-18	4.00E-15	1.00E-15
3/27/2017	1.40E-15	9.00E-14	2.25E-14	8.00E-17	2.00E-14	5.00E-15	8.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
6/26/2017	1.10E-15	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-1T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/25/2017	6.00E-16	9.00E-14	2.25E-14	6.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
12/26/2017	2.40E-15	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	7.00E-17	9.00E-13	2.25E-13	1.80E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
3/26/2018	1.90E-16	9.00E-14	2.25E-14	5.30E-17	2.00E-14	5.00E-15	9.20E-17	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	5.30E-18	4.00E-15	1.00E-15
6/25/2018	8.00E-16	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	2.50E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	9.30E-18	4.00E-15	1.00E-15
9/24/2018	4.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	7.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/31/2018	1.50E-15	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	2.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
4/1/2019	8.00E-17	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
7/1/2019	7.00E-17	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	8.00E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
9/30/2019	1.00E-16	9.00E-14	2.25E-14	5.00E-16	2.00E-14	5.00E-15	8.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
1/6/2020	4.00E-17	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	6.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15


BHV-1 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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Sep-92
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Sep-01
Sep-02
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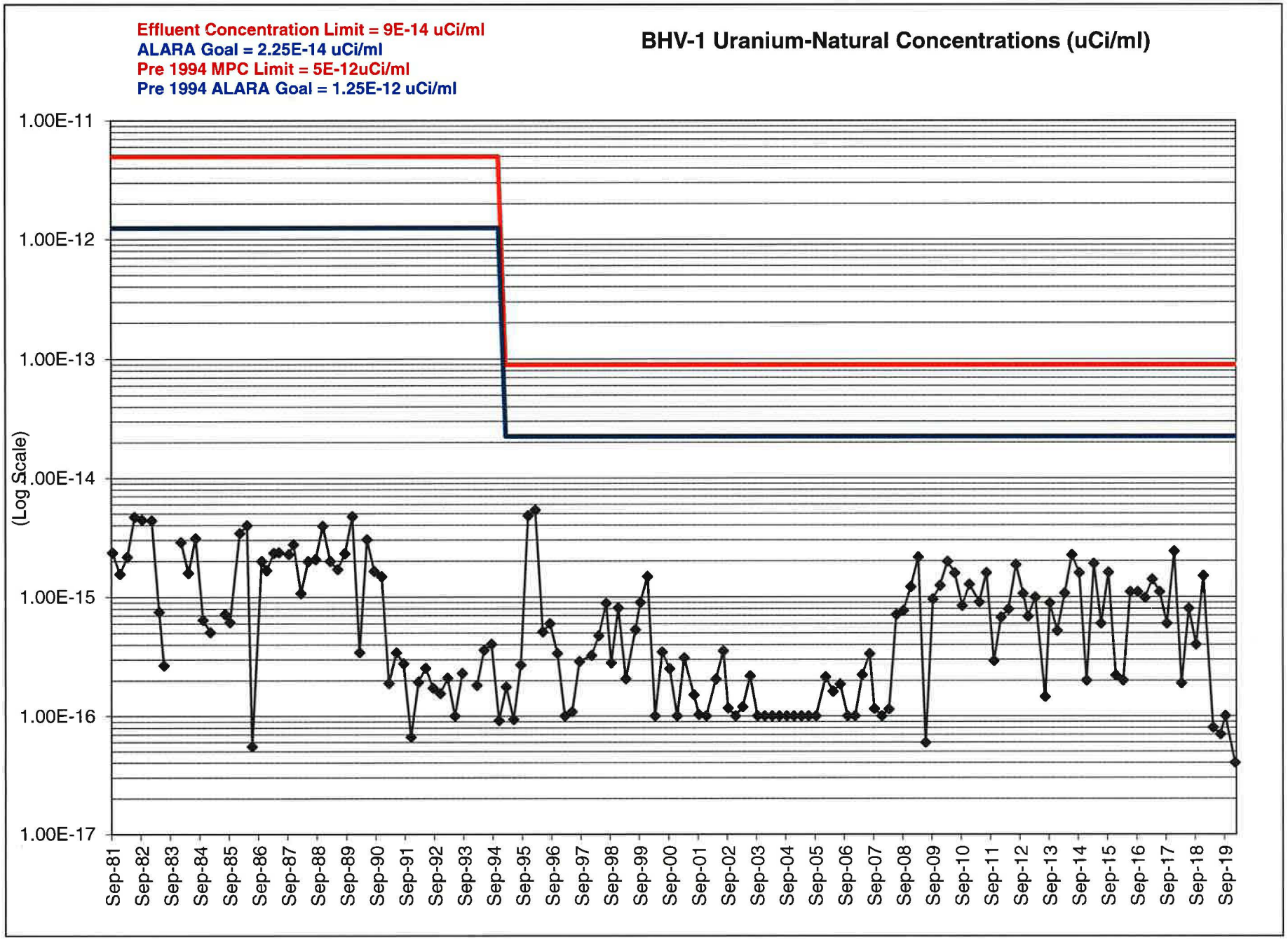
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Thorium-230
Uranium Natural
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-1 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
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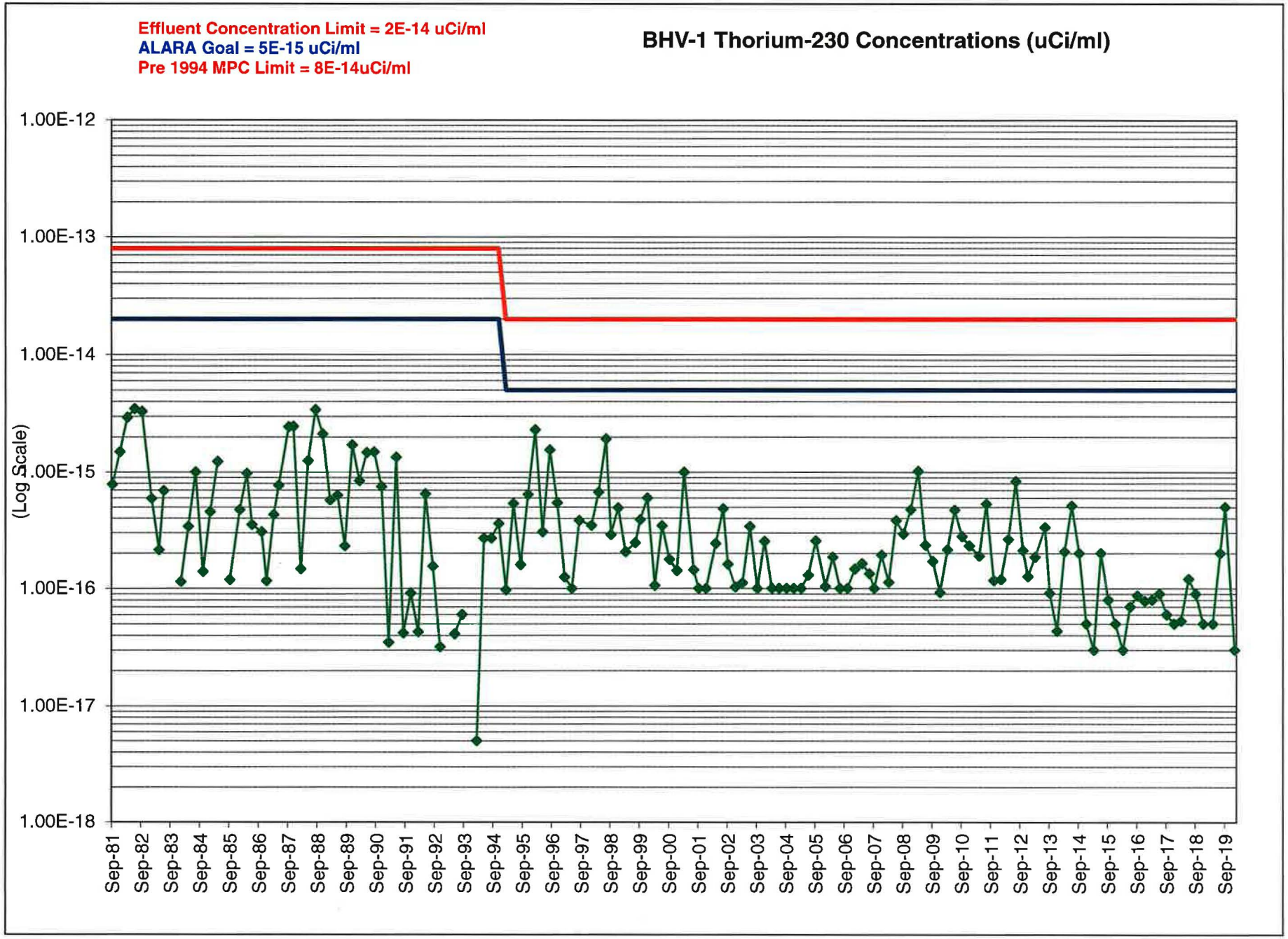
Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-1 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
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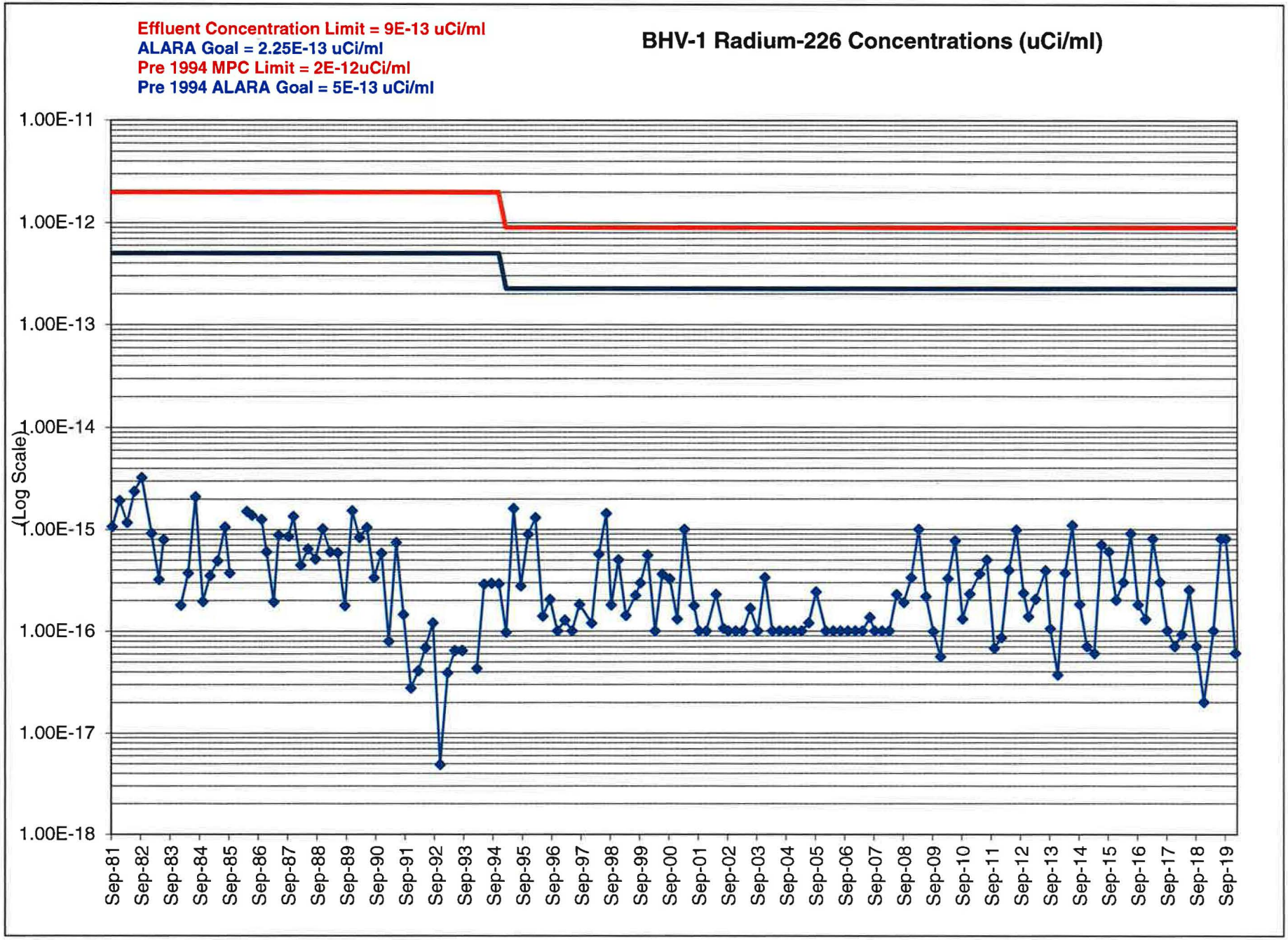
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-1 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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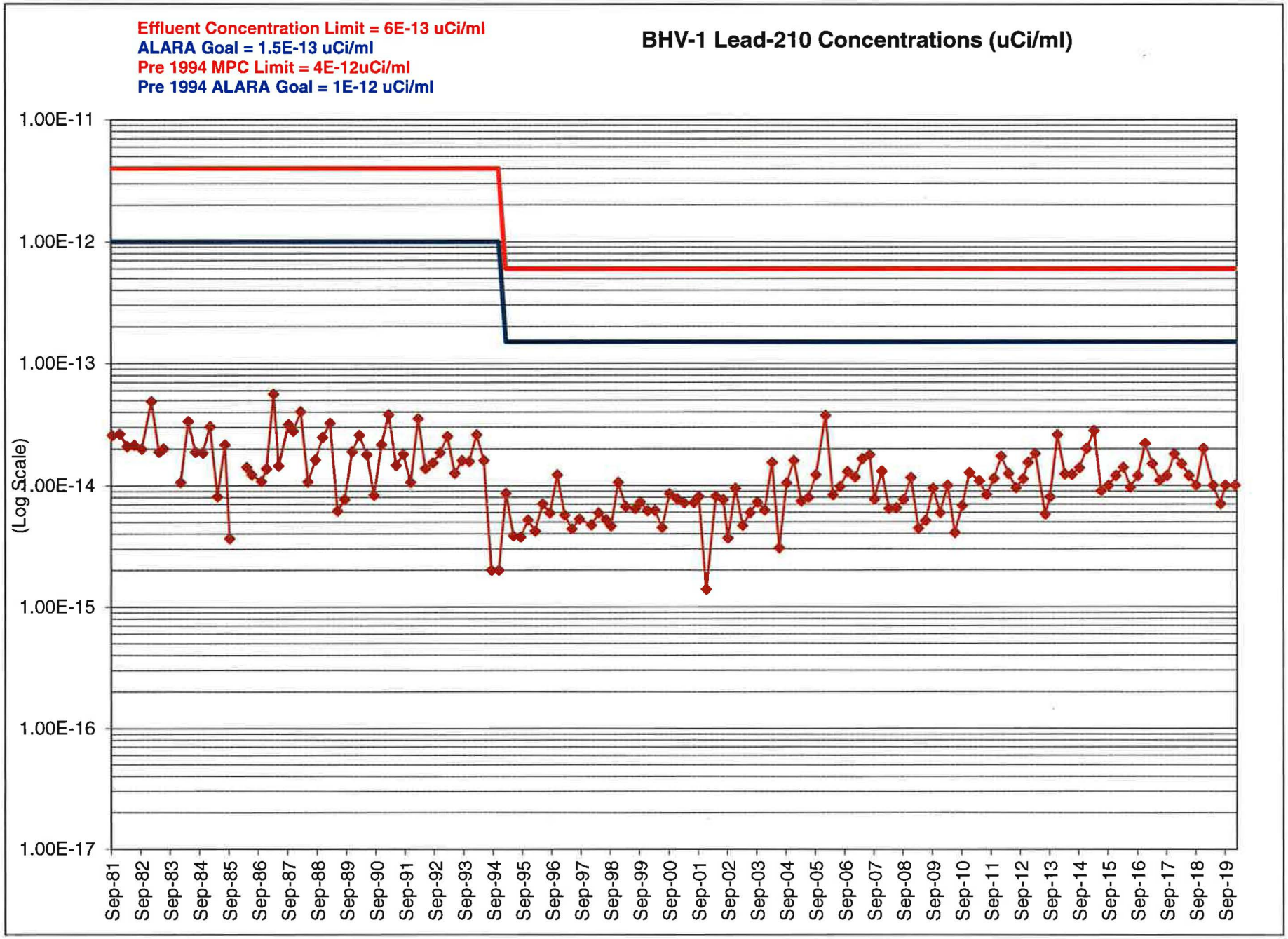
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-1 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
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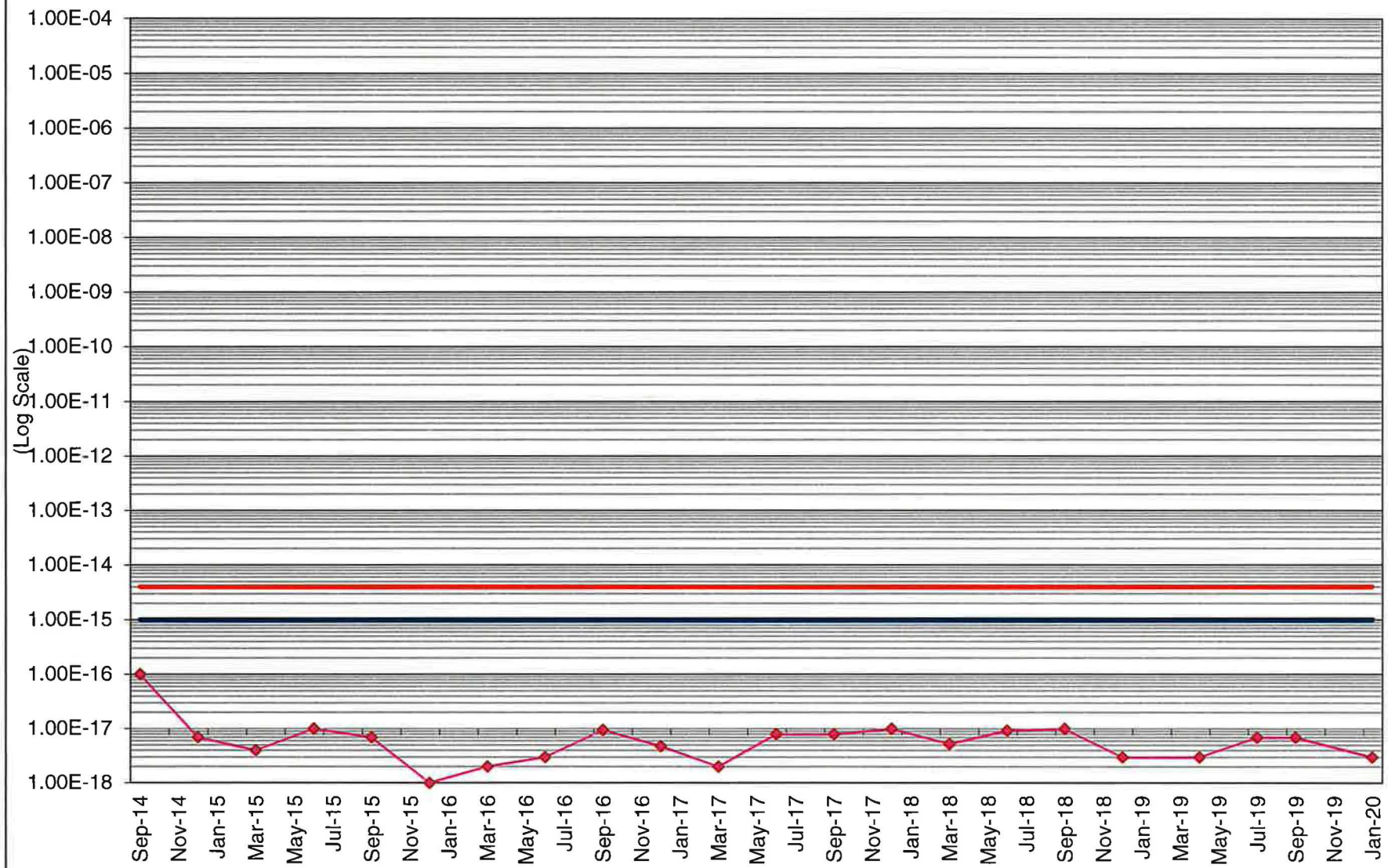
Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml

BHV-1 Thorium-232 Concentrations (uCi/ml)



TAB 2

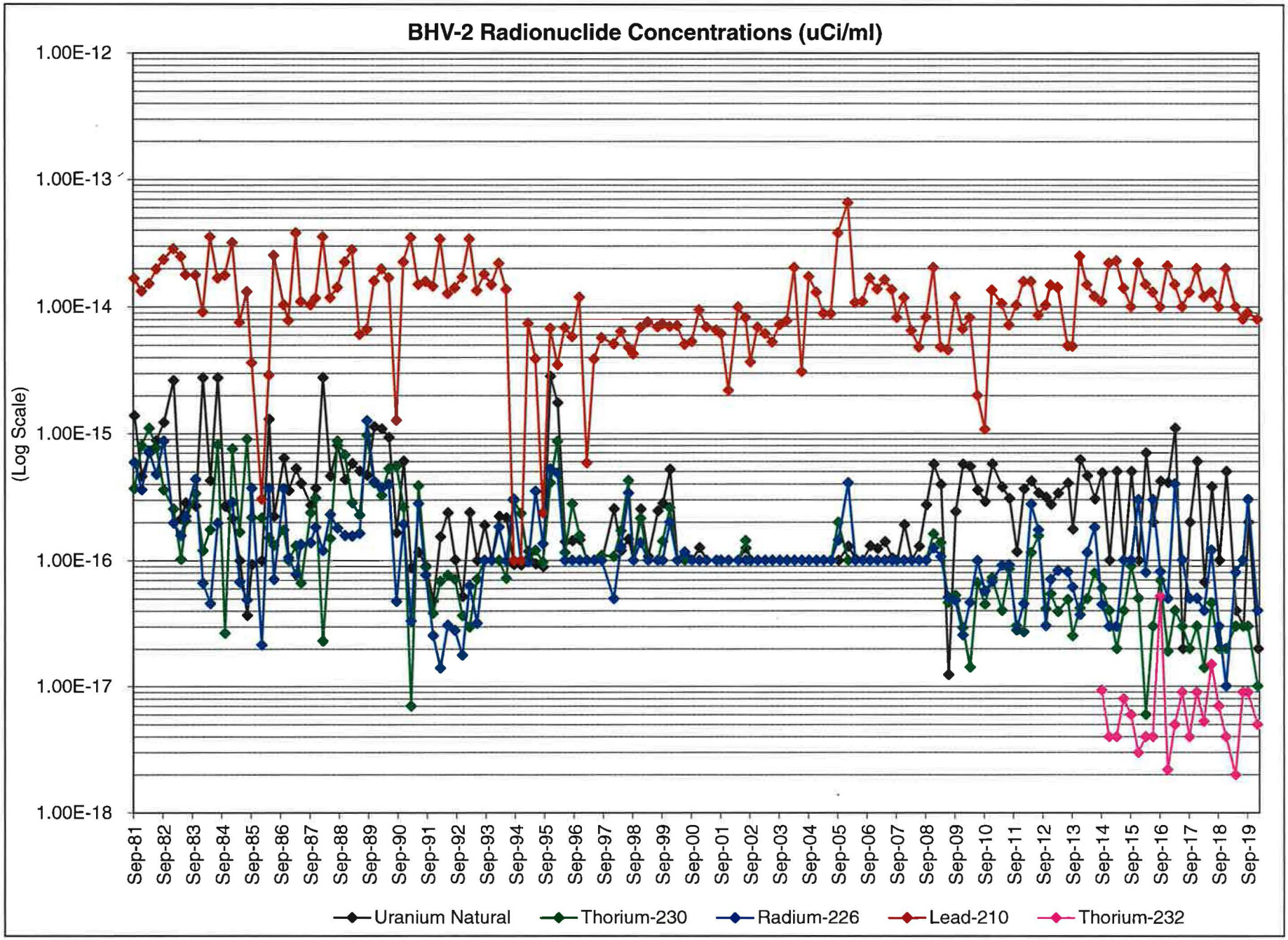
BHV-2 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T230	Effluent Concentration Limit =	9E-15 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-2T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	1.39E-15	5.00E-12	1.25E-12	3.69E-16	8.00E-14	2.00E-14	5.92E-16	2.00E-12	5.00E-13	1.67E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/14/1981	4.62E-16	5.00E-12	1.25E-12	8.03E-16	8.00E-14	2.00E-14	3.62E-16	2.00E-12	5.00E-13	1.33E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/29/1982	7.07E-16	5.00E-12	1.25E-12	1.10E-15	8.00E-14	2.00E-14	7.27E-16	2.00E-12	5.00E-13	1.52E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1982	8.84E-16	5.00E-12	1.25E-12	7.73E-16	8.00E-14	2.00E-14	4.78E-16	2.00E-12	5.00E-13	1.98E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/27/1982	1.23E-15	5.00E-12	1.25E-12	3.60E-16	8.00E-14	2.00E-14	8.73E-16	2.00E-12	5.00E-13	2.35E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1983	2.64E-15	5.00E-12	1.25E-12	2.55E-16	8.00E-14	2.00E-14	1.98E-16	2.00E-12	5.00E-13	2.85E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/4/1983	2.14E-16	5.00E-12	1.25E-12	1.02E-16	8.00E-14	2.00E-14	1.57E-16	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1983	2.85E-16	5.00E-12	1.25E-12	2.06E-16	8.00E-14	2.00E-14	2.24E-16	2.00E-12	5.00E-13	1.79E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/3/1983	2.70E-16	5.00E-12	1.25E-12	3.36E-16	8.00E-14	2.00E-14	4.37E-16	2.00E-12	5.00E-13	1.78E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1984	2.78E-15	5.00E-12	1.25E-12	1.20E-16	8.00E-14	2.00E-14	6.64E-17	2.00E-12	5.00E-13	9.14E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/2/1984	4.28E-16	5.00E-12	1.25E-12	1.75E-16	8.00E-14	2.00E-14	4.57E-17	2.00E-12	5.00E-13	3.55E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/2/1984	2.78E-15	5.00E-12	1.25E-12	8.12E-16	8.00E-14	2.00E-14	1.98E-16	2.00E-12	5.00E-13	1.68E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/1/1984	2.69E-16	5.00E-12	1.25E-12	2.66E-17	8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1985	2.15E-16	5.00E-12	1.25E-12	7.55E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	3.19E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1985	1.00E-16	5.00E-12	1.25E-12	1.67E-16	8.00E-14	2.00E-14	6.75E-17	2.00E-12	5.00E-13	7.56E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/1/1985	3.70E-17	5.00E-12	1.25E-12	9.00E-16	8.00E-14	2.00E-14	4.90E-17	2.00E-12	5.00E-13	1.31E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/30/1985	9.32E-17	5.00E-12	1.25E-12	2.18E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.64E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1986	1.00E-16	5.00E-12	1.25E-12	2.16E-16	8.00E-14	2.00E-14	2.15E-17	2.00E-12	5.00E-13	3.04E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1986	1.31E-15	5.00E-12	1.25E-12	1.50E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	2.90E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1986	2.23E-16	5.00E-12	1.25E-12	1.32E-16	8.00E-14	2.00E-14	7.09E-17	2.00E-12	5.00E-13	2.53E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/27/1986	6.41E-16	5.00E-12	1.25E-12	1.74E-16	8.00E-14	2.00E-14	3.67E-16	2.00E-12	5.00E-13	1.04E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/15/1986	3.56E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.05E-16	2.00E-12	5.00E-13	7.81E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/16/1987	5.31E-16	5.00E-12	1.25E-12	1.30E-16	8.00E-14	2.00E-14	7.74E-17	2.00E-12	5.00E-13	3.80E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1987	4.06E-16	5.00E-12	1.25E-12	6.63E-17	8.00E-14	2.00E-14	1.34E-16	2.00E-12	5.00E-13	1.10E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/9/1987	2.74E-16	5.00E-12	1.25E-12	2.38E-16	8.00E-14	2.00E-14	1.38E-16	2.00E-12	5.00E-13	1.04E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/2/1987	3.73E-16	5.00E-12	1.25E-12	3.11E-16	8.00E-14	2.00E-14	1.83E-16	2.00E-12	5.00E-13	1.17E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/16/1988	2.78E-15	5.00E-12	1.25E-12	2.31E-17	8.00E-14	2.00E-14	1.20E-16	2.00E-12	5.00E-13	3.55E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/18/1988	4.63E-16	5.00E-12	1.25E-12	1.49E-16	8.00E-14	2.00E-14	2.30E-16	2.00E-12	5.00E-13	1.18E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/15/1988	8.06E-16	5.00E-12	1.25E-12	8.69E-16	8.00E-14	2.00E-14	1.80E-16	2.00E-12	5.00E-13	1.42E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/14/1988	4.34E-16	5.00E-12	1.25E-12	6.76E-16	8.00E-14	2.00E-14	1.57E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/13/1989	5.80E-16	5.00E-12	1.25E-12	2.85E-16	8.00E-14	2.00E-14	1.55E-16	2.00E-12	5.00E-13	2.80E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/15/1989	5.06E-16	5.00E-12	1.25E-12	2.28E-16	8.00E-14	2.00E-14	1.63E-16	2.00E-12	5.00E-13	6.05E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/14/1989	4.71E-16	5.00E-12	1.25E-12	9.60E-16	8.00E-14	2.00E-14	1.26E-15	2.00E-12	5.00E-13	6.65E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/13/1989	1.14E-15	5.00E-12	1.25E-12	4.08E-16	8.00E-14	2.00E-14	4.18E-16	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/12/1990	1.09E-15	5.00E-12	1.25E-12	3.25E-16	8.00E-14	2.00E-14	3.74E-16	2.00E-12	5.00E-13	1.98E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/14/1990	9.32E-16	5.00E-12	1.25E-12	5.27E-16	8.00E-14	2.00E-14	3.97E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/13/1990	1.66E-16	5.00E-12	1.25E-12	5.49E-16	8.00E-14	2.00E-14	4.75E-17	2.00E-12	5.00E-13	1.27E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/12/1990	6.05E-16	5.00E-12	1.25E-12	2.64E-16	8.00E-14	2.00E-14	1.93E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/11/1991	8.72E-17	5.00E-12	1.25E-12	7.00E-18	8.00E-14	2.00E-14	3.33E-17	2.00E-12	5.00E-13	3.49E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/13/1991	1.16E-16	5.00E-12	1.25E-12	3.86E-16	8.00E-14	2.00E-14	2.80E-16	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/12/1991	9.02E-17	5.00E-12	1.25E-12	8.82E-17	8.00E-14	2.00E-14	7.65E-17	2.00E-12	5.00E-13	1.58E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/11/1991	4.81E-17	5.00E-12	1.25E-12	3.82E-17	8.00E-14	2.00E-14	2.54E-17	2.00E-12	5.00E-13	1.45E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/10/1992	1.54E-16	5.00E-12	1.25E-12	6.82E-17	8.00E-14	2.00E-14	1.40E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1992	2.38E-16	5.00E-12	1.25E-12	7.63E-17	8.00E-14	2.00E-14	3.07E-17	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1992	1.01E-16	5.00E-12	1.25E-12	7.07E-17	8.00E-14	2.00E-14	2.80E-17	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/9/1992	5.20E-17	5.00E-12	1.25E-12	3.65E-17	8.00E-14	2.00E-14	1.78E-17	2.00E-12	5.00E-13	1.71E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/9/1993	2.39E-16	5.00E-12	1.25E-12	2.97E-17	8.00E-14	2.00E-14	6.31E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/10/1993	1.00E-16	5.00E-12	1.25E-12	7.11E-17	8.00E-14	2.00E-14	3.19E-17	2.00E-12	5.00E-13	1.34E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1993	1.90E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.80E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T230	Effluent Concentration Limit =	9E-15 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-2T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.49E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1994	2.23E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.84E-16	2.00E-12	5.00E-13	2.19E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/9/1994	2.16E-16	5.00E-12	1.25E-12	7.20E-17	8.00E-14	2.00E-14	9.89E-17	2.00E-12	5.00E-13	1.37E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/9/1994	9.29E-17	5.00E-12	1.25E-12	2.96E-16	8.00E-14	2.00E-14	3.04E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/7/1994	9.21E-17	5.00E-12	1.25E-12	2.35E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1995	1.18E-16	9.00E-14	2.25E-14	9.70E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	7.42E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/9/1995	9.40E-17	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	3.50E-16	9.00E-13	2.25E-13	3.90E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/9/1995	8.90E-17	9.00E-14	2.25E-14	9.67E-17	2.00E-14	5.00E-15	1.35E-16	9.00E-13	2.25E-13	2.38E-16	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/11/1995	2.83E-15	9.00E-14	2.25E-14	4.09E-16	2.00E-14	5.00E-15	5.23E-16	9.00E-13	2.25E-13	6.77E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/5/1996	1.75E-15	9.00E-14	2.25E-14	8.66E-16	2.00E-14	5.00E-15	4.86E-16	9.00E-13	2.25E-13	3.50E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/6/1996	1.40E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.85E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/5/1996	1.43E-16	9.00E-14	2.25E-14	2.78E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.83E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/6/1996	1.45E-16	9.00E-14	2.25E-14	1.57E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.84E-16	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/5/1997	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.89E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/11/1997	1.00E-16	9.00E-14	2.25E-14	1.09E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.69E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/5/1998	2.55E-16	9.00E-14	2.25E-14	1.07E-16	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	5.11E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/28/1998	1.20E-16	9.00E-14	2.25E-14	1.71E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	6.40E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/31/1998	1.47E-16	9.00E-14	2.25E-14	4.24E-16	2.00E-14	5.00E-15	3.39E-16	9.00E-13	2.25E-13	4.80E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/28/1998	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.26E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1998	2.54E-16	9.00E-14	2.25E-14	2.15E-16	2.00E-14	5.00E-15	1.38E-16	9.00E-13	2.25E-13	6.88E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/1999	1.07E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.61E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/1999	2.46E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/1999	2.81E-16	9.00E-14	2.25E-14	1.41E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.35E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1999	5.20E-16	9.00E-14	2.25E-14	2.60E-16	2.00E-14	5.00E-15	2.01E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/27/2000	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.12E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/26/2000	1.10E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.16E-16	9.00E-13	2.25E-13	5.07E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2000	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.31E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/26/2000	1.26E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.45E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/26/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.56E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/24/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.16E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/1/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/1/2002	1.25E-16	9.00E-14	2.25E-14	1.43E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.25E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.69E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.91E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.16E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.27E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.23E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.80E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.09E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.73E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.88E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/29/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.85E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2005	1.00E-16	9.00E-14	2.25E-14	1.99E-16	2.00E-14	5.00E-15	1.44E-16	9.00E-13	2.25E-13	3.81E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2006	1.29E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.08E-16	9.00E-13	2.25E-13	6.58E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T230	Effluent Concentration Limit =	9E-15 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-2T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
4/3/2006	1.02E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/2006	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/2/2006	1.30E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.68E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/1/2007	1.24E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.38E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/2/2007	1.40E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.63E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2007	1.04E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.36E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2007	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.24E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2007	1.91E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/30/2008	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.49E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2008	1.29E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.82E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2008	2.73E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.30E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2008	5.71E-16	9.00E-14	2.25E-14	1.61E-16	2.00E-14	5.00E-15	1.25E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/15/2009	3.96E-16	9.00E-14	2.25E-14	1.38E-16	2.00E-14	5.00E-15	1.07E-16	9.00E-13	2.25E-13	4.81E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/15/2009	1.24E-17	9.00E-14	2.25E-14	4.64E-17	2.00E-14	5.00E-15	5.11E-17	9.00E-13	2.25E-13	4.58E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/15/2009	2.43E-16	9.00E-14	2.25E-14	5.28E-17	2.00E-14	5.00E-15	4.84E-17	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/15/2009	5.72E-16	9.00E-14	2.25E-14	2.94E-17	2.00E-14	5.00E-15	2.57E-17	9.00E-13	2.25E-13	6.70E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2010	5.47E-16	9.00E-14	2.25E-14	1.42E-17	2.00E-14	5.00E-15	4.66E-17	9.00E-13	2.25E-13	8.24E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2010	3.58E-16	9.00E-14	2.25E-14	6.64E-17	2.00E-14	5.00E-15	9.90E-17	9.00E-13	2.25E-13	2.01E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2010	2.91E-16	9.00E-14	2.25E-14	4.48E-17	2.00E-14	5.00E-15	5.72E-17	9.00E-13	2.25E-13	1.08E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2010	5.73E-16	9.00E-14	2.25E-14	7.24E-17	2.00E-14	5.00E-15	6.76E-17	9.00E-13	2.25E-13	1.35E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/4/2011	3.79E-16	9.00E-14	2.25E-14	4.01E-17	2.00E-14	5.00E-15	9.11E-17	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/4/2011	3.07E-16	9.00E-14	2.25E-14	8.54E-17	2.00E-14	5.00E-15	9.21E-17	9.00E-13	2.25E-13	7.21E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/3/2011	1.17E-16	9.00E-14	2.25E-14	3.04E-17	2.00E-14	5.00E-15	2.81E-17	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2012	3.65E-16	9.00E-14	2.25E-14	2.72E-17	2.00E-14	5.00E-15	4.54E-17	9.00E-13	2.25E-13	1.58E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2012	4.22E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	2.77E-16	9.00E-13	2.25E-13	1.58E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2012	3.39E-16	9.00E-14	2.25E-14	1.56E-16	2.00E-14	5.00E-15	1.74E-16	9.00E-13	2.25E-13	8.60E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/1/2012	3.13E-16	9.00E-14	2.25E-14	4.13E-17	2.00E-14	5.00E-15	3.04E-17	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2012	2.76E-16	9.00E-14	2.25E-14	5.41E-17	2.00E-14	5.00E-15	7.05E-17	9.00E-13	2.25E-13	1.48E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/25/2013	3.38E-16	9.00E-14	2.25E-14	3.94E-17	2.00E-14	5.00E-15	8.32E-17	9.00E-13	2.25E-13	1.42E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2013	4.06E-16	9.00E-14	2.25E-14	4.89E-17	2.00E-14	5.00E-15	8.06E-17	9.00E-13	2.25E-13	4.93E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2013	1.76E-16	9.00E-14	2.25E-14	2.52E-17	2.00E-14	5.00E-15	6.13E-17	9.00E-13	2.25E-13	4.90E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2013	6.20E-16	9.00E-14	2.25E-14	4.19E-17	2.00E-14	5.00E-15	3.72E-17	9.00E-13	2.25E-13	2.50E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2014	4.63E-16	9.00E-14	2.25E-14	4.97E-17	2.00E-14	5.00E-15	1.15E-16	9.00E-13	2.25E-13	1.49E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2014	3.04E-16	9.00E-14	2.25E-14	7.92E-17	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2014	4.89E-16	9.00E-14	2.25E-14	6.01E-17	2.00E-14	5.00E-15	4.47E-17	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	9.35E-18	4.00E-15	1.00E-15
12/29/2014	1.00E-16	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
3/30/2015	5.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	2.30E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
6/29/2015	1.00E-16	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
9/28/2015	5.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
12/28/2015	1.00E-16	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
3/28/2016	7.00E-16	9.00E-14	2.25E-14	6.00E-18	2.00E-14	5.00E-15	8.00E-17	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
6/27/2016	2.00E-16	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
9/27/2016	4.20E-16	9.00E-14	2.25E-14	6.90E-17	2.00E-14	5.00E-15	8.10E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	5.20E-17	4.00E-15	1.00E-15
12/27/2016	4.10E-16	9.00E-14	2.25E-14	1.90E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	2.20E-18	4.00E-15	1.00E-15
3/27/2017	1.10E-15	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	5.00E-18	4.00E-15	1.00E-15
6/26/2017	2.00E-17	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
9/25/2017	2.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
12/26/2017	6.00E-16	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
3/26/2018	6.70E-17	9.00E-14	2.25E-14	1.40E-17	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	5.30E-18	4.00E-15	1.00E-15

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T230	Effluent Concentration Limit =	9E-15 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-2T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
6/25/2018	3.80E-16	9.00E-14	2.25E-14	4.60E-17	2.00E-14	5.00E-15	1.20E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	1.50E-17	4.00E-15	1.00E-15
9/24/2018	1.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
12/31/2018	5.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	1.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
4/1/2019	4.00E-17	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	8.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
7/1/2019	3.00E-17	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
9/30/2019	2.00E-16	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
1/6/2020	2.00E-17	9.00E-14	2.25E-14	1.00E-17	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13	5.00E-18	4.00E-15	1.00E-15


BHV-2 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
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Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
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Sep-13
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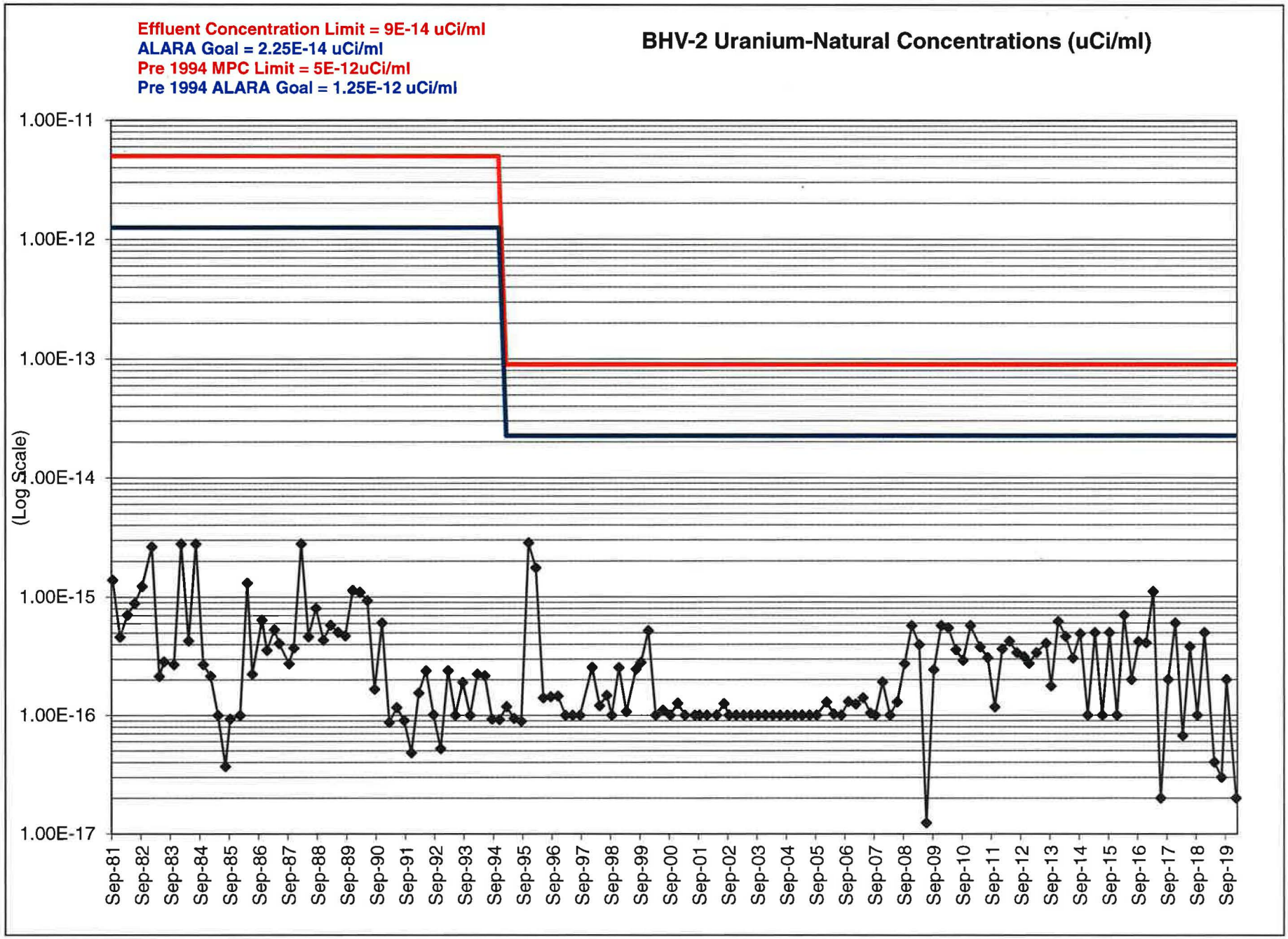
Sep-17
Sep-18
Sep-19
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-2 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
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Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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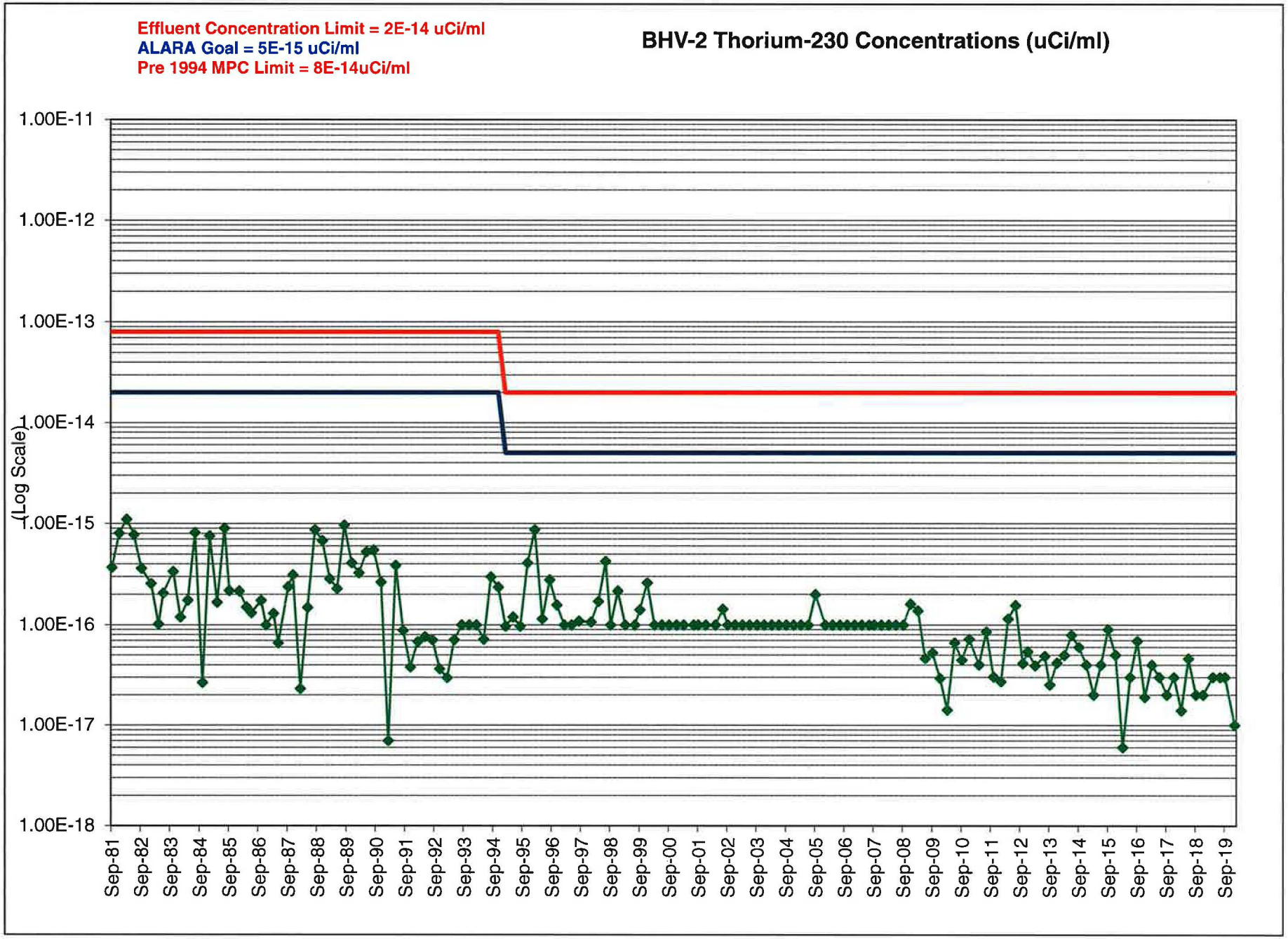
Sep-19


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-2 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
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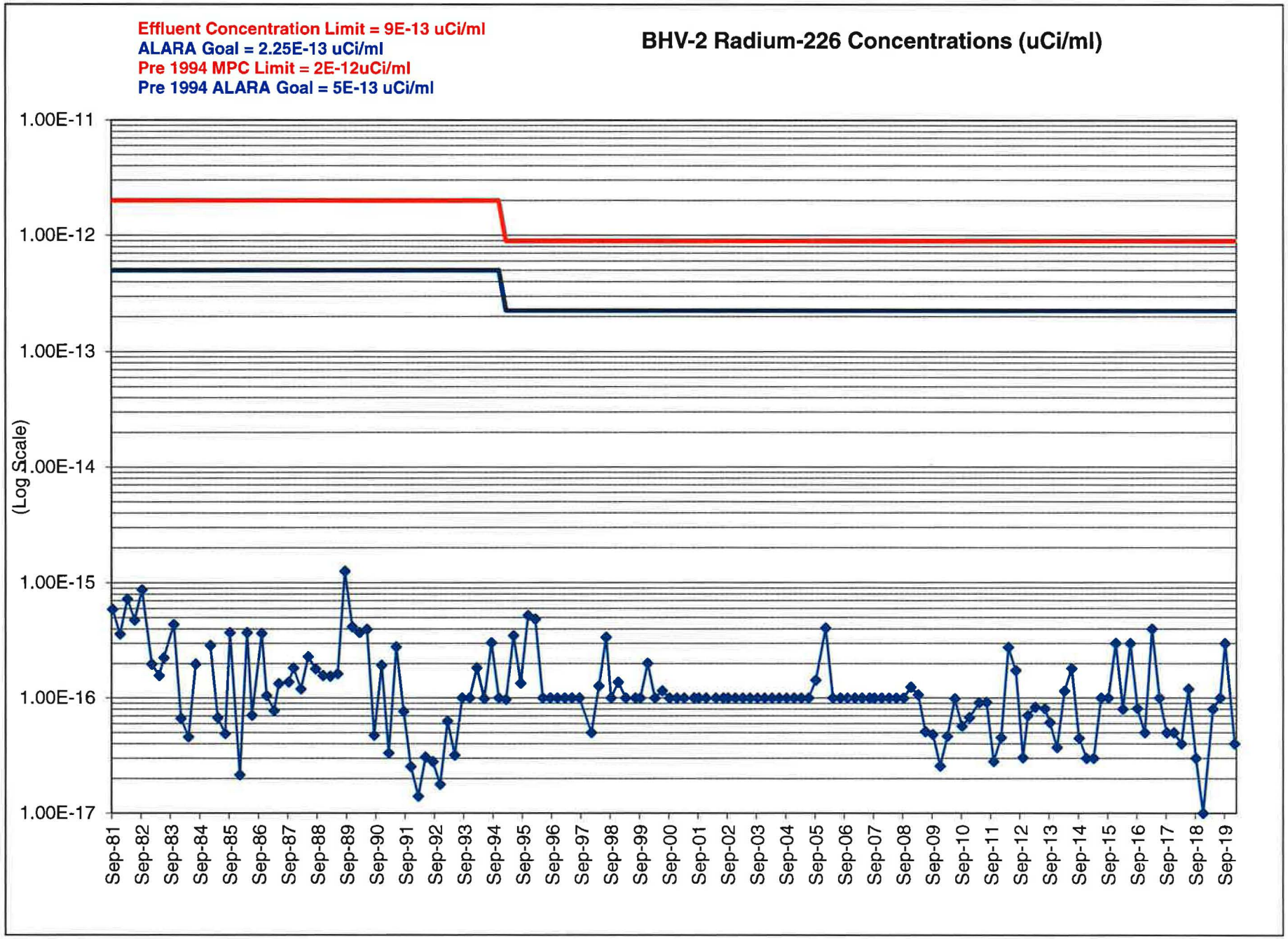
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-2 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
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Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
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Sep-98
Sep-99
Sep-00
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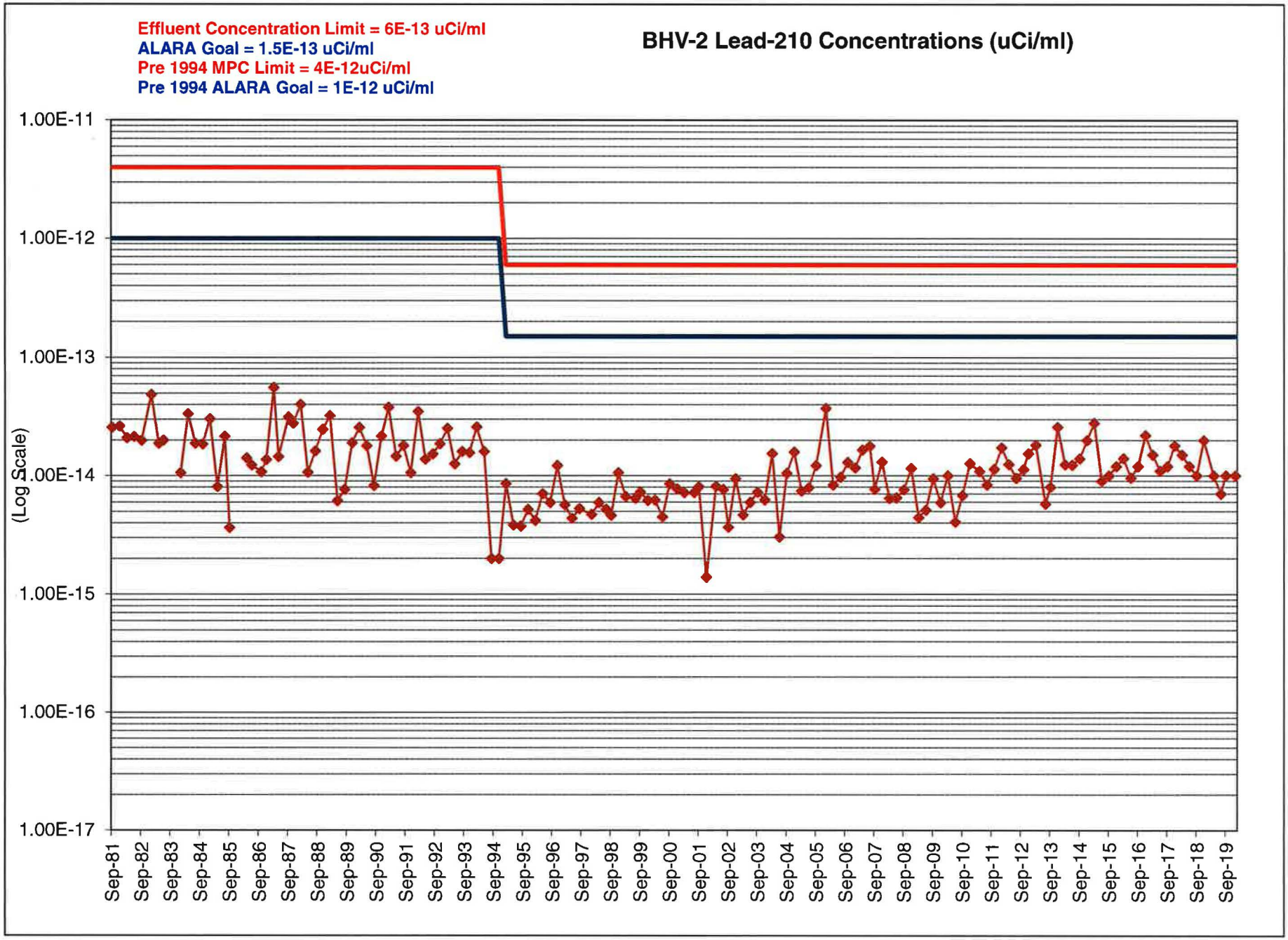
Sep-19


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-2 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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Sep-89
Sep-90
Sep-91
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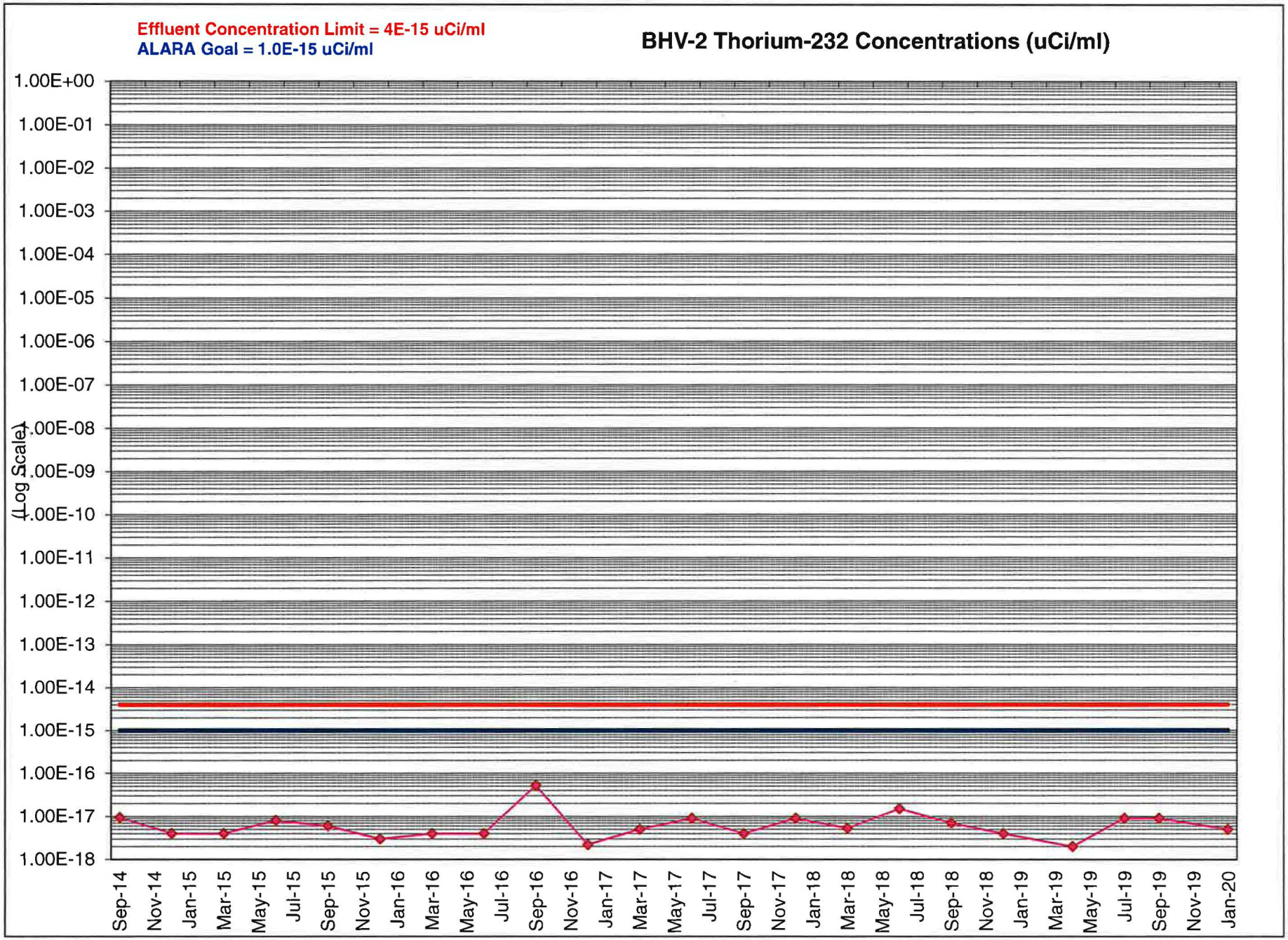
Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-2 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E+00
1.00E-01
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
1.00E-09
1.00E-10
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-14
Nov-14
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
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May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20

TAB 3

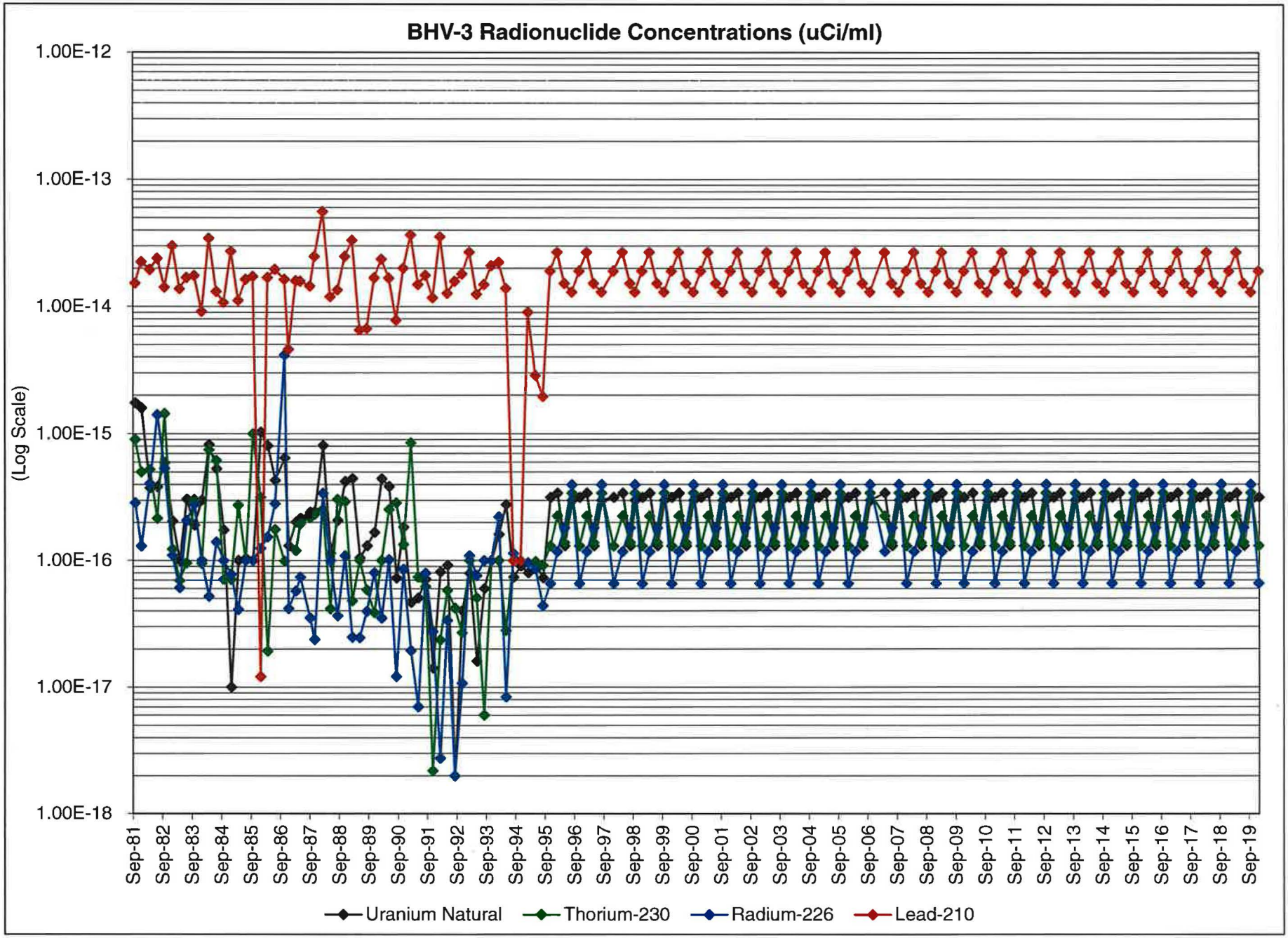
BHV-3 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	1.74E-15	5.00E-12	1.25E-12	9.02E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	1.54E-14	4.00E-12	1.00E-12
12/14/1981	1.59E-15	5.00E-12	1.25E-12	5.03E-16	8.00E-14	2.00E-14	1.30E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12
3/29/1982	3.76E-16	5.00E-12	1.25E-12	5.25E-16	8.00E-14	2.00E-14	4.08E-16	2.00E-12	5.00E-13	1.96E-14	4.00E-12	1.00E-12
6/30/1982	3.83E-16	5.00E-12	1.25E-12	2.16E-16	8.00E-14	2.00E-14	1.41E-15	2.00E-12	5.00E-13	2.40E-14	4.00E-12	1.00E-12
9/27/1982	5.95E-16	5.00E-12	1.25E-12	1.44E-15	8.00E-14	2.00E-14	5.36E-16	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12
1/3/1983	2.05E-16	5.00E-12	1.25E-12	1.23E-16	8.00E-14	2.00E-14	1.10E-16	2.00E-12	5.00E-13	3.01E-14	4.00E-12	1.00E-12
4/4/1983	1.00E-16	5.00E-12	1.25E-12	6.94E-17	8.00E-14	2.00E-14	6.11E-17	2.00E-12	5.00E-13	1.39E-14	4.00E-12	1.00E-12
6/30/1983	3.06E-16	5.00E-12	1.25E-12	9.59E-17	8.00E-14	2.00E-14	2.08E-16	2.00E-12	5.00E-13	1.70E-14	4.00E-12	1.00E-12
10/3/1983	1.91E-16	5.00E-12	1.25E-12	3.05E-16	8.00E-14	2.00E-14	2.79E-16	2.00E-12	5.00E-13	1.76E-14	4.00E-12	1.00E-12
1/3/1984	3.01E-16	5.00E-12	1.25E-12	9.51E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	9.17E-15	4.00E-12	1.00E-12
4/2/1984	8.22E-16	5.00E-12	1.25E-12	7.52E-16	8.00E-14	2.00E-14	5.20E-17	2.00E-12	5.00E-13	3.47E-14	4.00E-12	1.00E-12
7/2/1984	5.29E-16	5.00E-12	1.25E-12	6.18E-16	8.00E-14	2.00E-14	1.40E-16	2.00E-12	5.00E-13	1.32E-14	4.00E-12	1.00E-12
10/1/1984	1.74E-16	5.00E-12	1.25E-12	7.10E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.08E-14	4.00E-12	1.00E-12
1/2/1985	1.00E-17	5.00E-12	1.25E-12	7.10E-17	8.00E-14	2.00E-14	7.80E-17	2.00E-12	5.00E-13	2.73E-14	4.00E-12	1.00E-12
4/1/1985	1.00E-16	5.00E-12	1.25E-12	2.76E-16	8.00E-14	2.00E-14	4.10E-17	2.00E-12	5.00E-13	1.12E-14	4.00E-12	1.00E-12
7/1/1985	1.04E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.64E-14	4.00E-12	1.00E-12
9/30/1985	1.00E-16	5.00E-12	1.25E-12	1.00E-15	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.73E-14	4.00E-12	1.00E-12
1/2/1986	1.03E-15	5.00E-12	1.25E-12	3.17E-16	8.00E-14	2.00E-14	1.25E-16	2.00E-12	5.00E-13	1.21E-17	4.00E-12	1.00E-12
4/1/1986	8.04E-16	5.00E-12	1.25E-12	1.93E-17	8.00E-14	2.00E-14	1.54E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
6/30/1986	4.29E-16	5.00E-12	1.25E-12	1.77E-16	8.00E-14	2.00E-14	2.83E-16	2.00E-12	5.00E-13	1.97E-14	4.00E-12	1.00E-12
10/27/1986	6.45E-16	5.00E-12	1.25E-12	9.89E-17	8.00E-14	2.00E-14	4.16E-15	2.00E-12	5.00E-13	1.64E-14	4.00E-12	1.00E-12
12/15/1986	1.31E-16	5.00E-12	1.25E-12	0.00E+00	8.00E-14	2.00E-14	4.16E-17	2.00E-12	5.00E-13	4.60E-15	4.00E-12	1.00E-12
3/16/1987	2.01E-16	5.00E-12	1.25E-12	1.20E-16	8.00E-14	2.00E-14	5.73E-17	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12
5/11/1987	2.16E-16	5.00E-12	1.25E-12	1.96E-16	8.00E-14	2.00E-14	7.38E-17	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
9/9/1987	2.41E-16	5.00E-12	1.25E-12	2.18E-16	8.00E-14	2.00E-14	3.52E-17	2.00E-12	5.00E-13	1.46E-14	4.00E-12	1.00E-12
11/2/1987	2.44E-16	5.00E-12	1.25E-12	2.32E-16	8.00E-14	2.00E-14	2.37E-17	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12
2/16/1988	8.08E-16	5.00E-12	1.25E-12	2.55E-16	8.00E-14	2.00E-14	3.42E-16	2.00E-12	5.00E-13	5.61E-14	4.00E-12	1.00E-12
5/18/1988	1.14E-16	5.00E-12	1.25E-12	4.14E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12
8/15/1988	2.08E-16	5.00E-12	1.25E-12	3.06E-16	8.00E-14	2.00E-14	3.65E-17	2.00E-12	5.00E-13	1.36E-14	4.00E-12	1.00E-12
11/14/1988	4.21E-16	5.00E-12	1.25E-12	2.93E-16	8.00E-14	2.00E-14	1.09E-16	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12
2/13/1989	4.45E-16	5.00E-12	1.25E-12	4.78E-17	8.00E-14	2.00E-14	2.47E-17	2.00E-12	5.00E-13	3.34E-14	4.00E-12	1.00E-12
5/15/1989	1.05E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	2.45E-17	2.00E-12	5.00E-13	6.56E-15	4.00E-12	1.00E-12
8/14/1989	1.31E-16	5.00E-12	1.25E-12	5.85E-17	8.00E-14	2.00E-14	3.97E-17	2.00E-12	5.00E-13	6.75E-15	4.00E-12	1.00E-12
11/13/1989	1.67E-16	5.00E-12	1.25E-12	3.87E-17	8.00E-14	2.00E-14	8.03E-17	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
2/12/1990	4.43E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	3.50E-17	2.00E-12	5.00E-13	2.37E-14	4.00E-12	1.00E-12
5/14/1990	3.84E-16	5.00E-12	1.25E-12	2.54E-16	8.00E-14	2.00E-14	1.02E-16	2.00E-12	5.00E-13	1.68E-14	4.00E-12	1.00E-12
8/13/1990	7.27E-17	5.00E-12	1.25E-12	2.87E-16	8.00E-14	2.00E-14	1.21E-17	2.00E-12	5.00E-13	7.86E-15	4.00E-12	1.00E-12
11/12/1990	1.84E-16	5.00E-12	1.25E-12	1.34E-16	8.00E-14	2.00E-14	8.53E-17	2.00E-12	5.00E-13	2.01E-14	4.00E-12	1.00E-12
2/11/1991	4.66E-17	5.00E-12	1.25E-12	8.48E-16	8.00E-14	2.00E-14	1.94E-17	2.00E-12	5.00E-13	3.69E-14	4.00E-12	1.00E-12
5/13/1991	5.05E-17	5.00E-12	1.25E-12	7.40E-17	8.00E-14	2.00E-14	7.00E-18	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
8/12/1991	7.14E-17	5.00E-12	1.25E-12	6.22E-17	8.00E-14	2.00E-14	7.95E-17	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12
11/11/1991	1.41E-17	5.00E-12	1.25E-12	2.19E-18	8.00E-14	2.00E-14	2.75E-17	2.00E-12	5.00E-13	1.18E-14	4.00E-12	1.00E-12
2/10/1992	8.12E-17	5.00E-12	1.25E-12	2.35E-17	8.00E-14	2.00E-14	2.76E-18	2.00E-12	5.00E-13	3.57E-14	4.00E-12	1.00E-12
5/11/1992	9.18E-17	5.00E-12	1.25E-12	5.80E-17	8.00E-14	2.00E-14	3.36E-17	2.00E-12	5.00E-13	1.28E-14	4.00E-12	1.00E-12
8/10/1992	2.00E-18	5.00E-12	1.25E-12	4.19E-17	8.00E-14	2.00E-14	2.00E-18	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
11/9/1992	4.00E-17	5.00E-12	1.25E-12	2.68E-17	8.00E-14	2.00E-14	1.07E-17	2.00E-12	5.00E-13	1.81E-14	4.00E-12	1.00E-12
2/9/1993	7.94E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.09E-16	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12
5/10/1993	1.60E-17	5.00E-12	1.25E-12	5.07E-17	8.00E-14	2.00E-14	7.64E-17	2.00E-12	5.00E-13	1.26E-14	4.00E-12	1.00E-12
8/10/1993	6.00E-17	5.00E-12	1.25E-12	6.00E-18	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	2.10E-14	4.00E-12	1.00E-12
2/7/1994	1.61E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	2.22E-16	2.00E-12	5.00E-13	2.23E-14	4.00E-12	1.00E-12
5/9/1994	2.77E-16	5.00E-12	1.25E-12	2.80E-17	8.00E-14	2.00E-14	8.37E-18	2.00E-12	5.00E-13	1.40E-14	4.00E-12	1.00E-12
8/9/1994	7.39E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.14E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
11/7/1994	9.05E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
2/7/1995	7.99E-17	9.00E-14	2.25E-14	9.60E-17	2.00E-14	5.00E-15	9.60E-17	9.00E-13	2.25E-13	9.05E-15	6.00E-13	1.50E-13
5/9/1995	9.40E-17	9.00E-14	2.25E-14	9.80E-17	2.00E-14	5.00E-15	8.60E-17	9.00E-13	2.25E-13	2.88E-15	6.00E-13	1.50E-13
8/9/1995	7.30E-17	9.00E-14	2.25E-14	9.20E-17	2.00E-14	5.00E-15	4.40E-17	9.00E-13	2.25E-13	1.96E-15	6.00E-13	1.50E-13
11/11/1995	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
2/5/1996	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
5/6/1996	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
8/5/1996	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
11/6/1996	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
2/6/1997	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
5/5/1997	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
8/11/1997	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/5/1998	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/28/1998	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/31/1998	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/28/1998	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/28/1998	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/29/1999	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/3/1999	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/27/1999	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/28/1999	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/28/2000	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/26/2000	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/26/2000	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/26/2000	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/26/2001	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2001	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/24/2001	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2001	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/1/2002	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/1/2002	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2002	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/30/2002	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2003	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2003	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/29/2003	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/29/2003	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/29/2004	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/27/2004	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/27/2004	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/27/2004	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/28/2005	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/29/2005	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/26/2005	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/3/2006	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
4/3/2006	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/3/2006	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/2/2006	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/1/2006	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/2/2007	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2007	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2007	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2007	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2008	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2008	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2008	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2008	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/15/2009	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/15/2009	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/15/2009	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/15/2009	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2010	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2010	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2010	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2010	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/4/2011	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/4/2011	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/3/2011	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/3/2012	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/3/2012	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2012	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/1/2012	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2012	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/25/2013	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2013	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2013	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/30/2013	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2014	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2014	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2014	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/29/2014	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/30/2015	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/29/2015	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/28/2015	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/28/2015	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/28/2016	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/27/2016	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/27/2016	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/27/2016	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/27/2017	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/26/2017	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/25/2017	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/26/2017	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
3/26/2018	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/25/2018	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/24/2018	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2018	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/1/2019	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/1/2019	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2019	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/6/2020	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13


BHV-3 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
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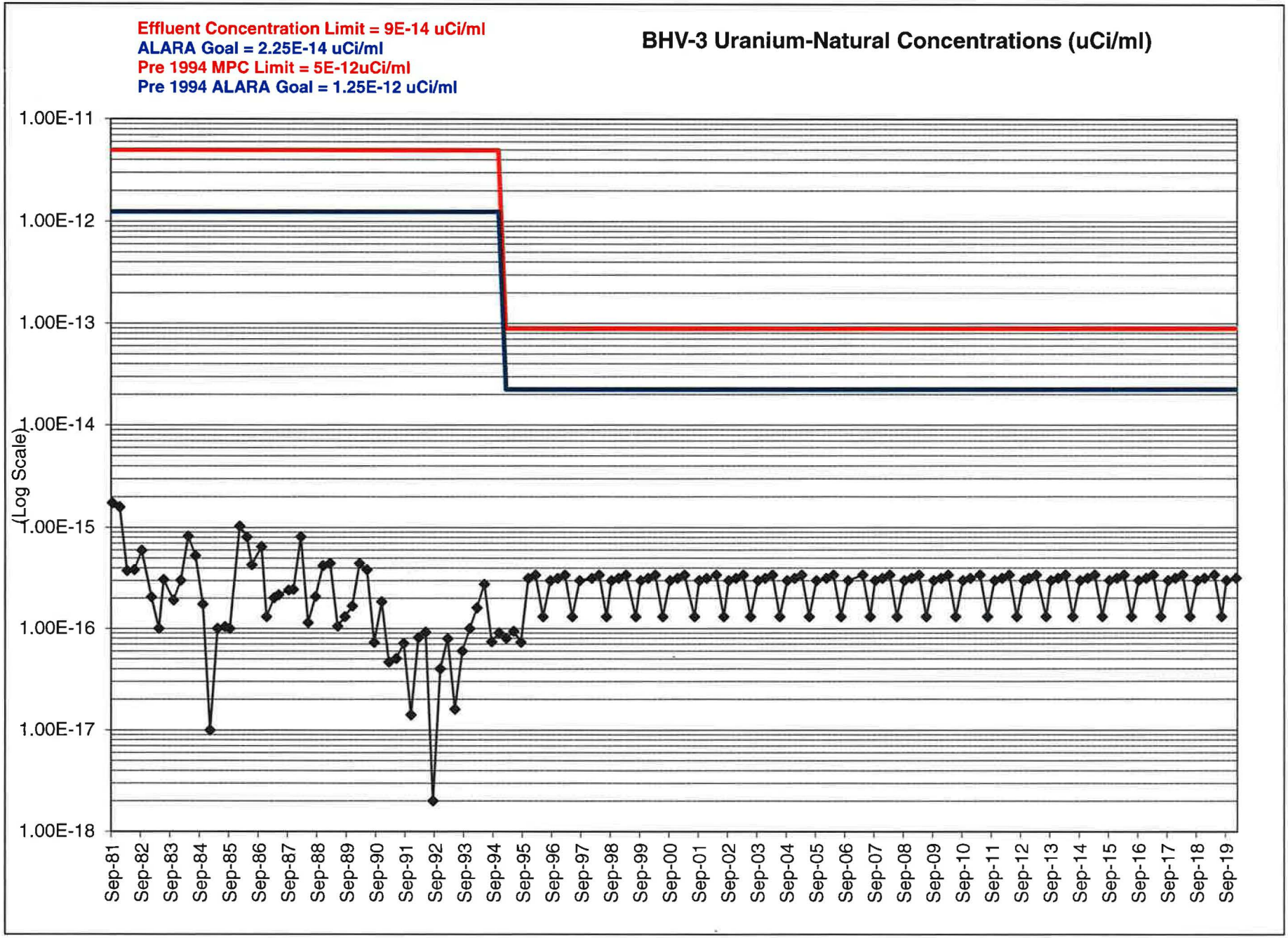
Sep-17
Sep-18
Sep-19
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-3 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
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Sep-95
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Sep-97
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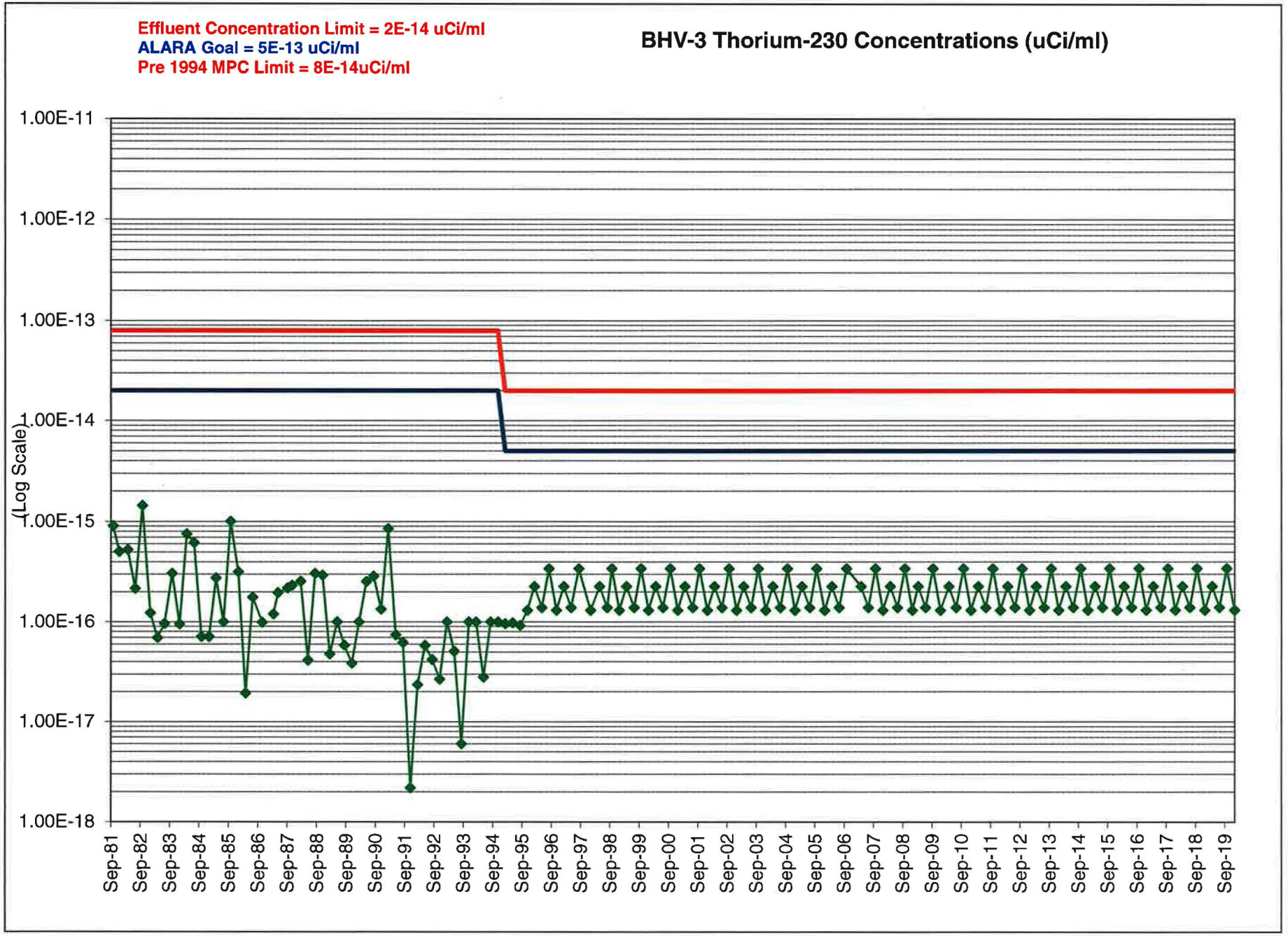
Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-3 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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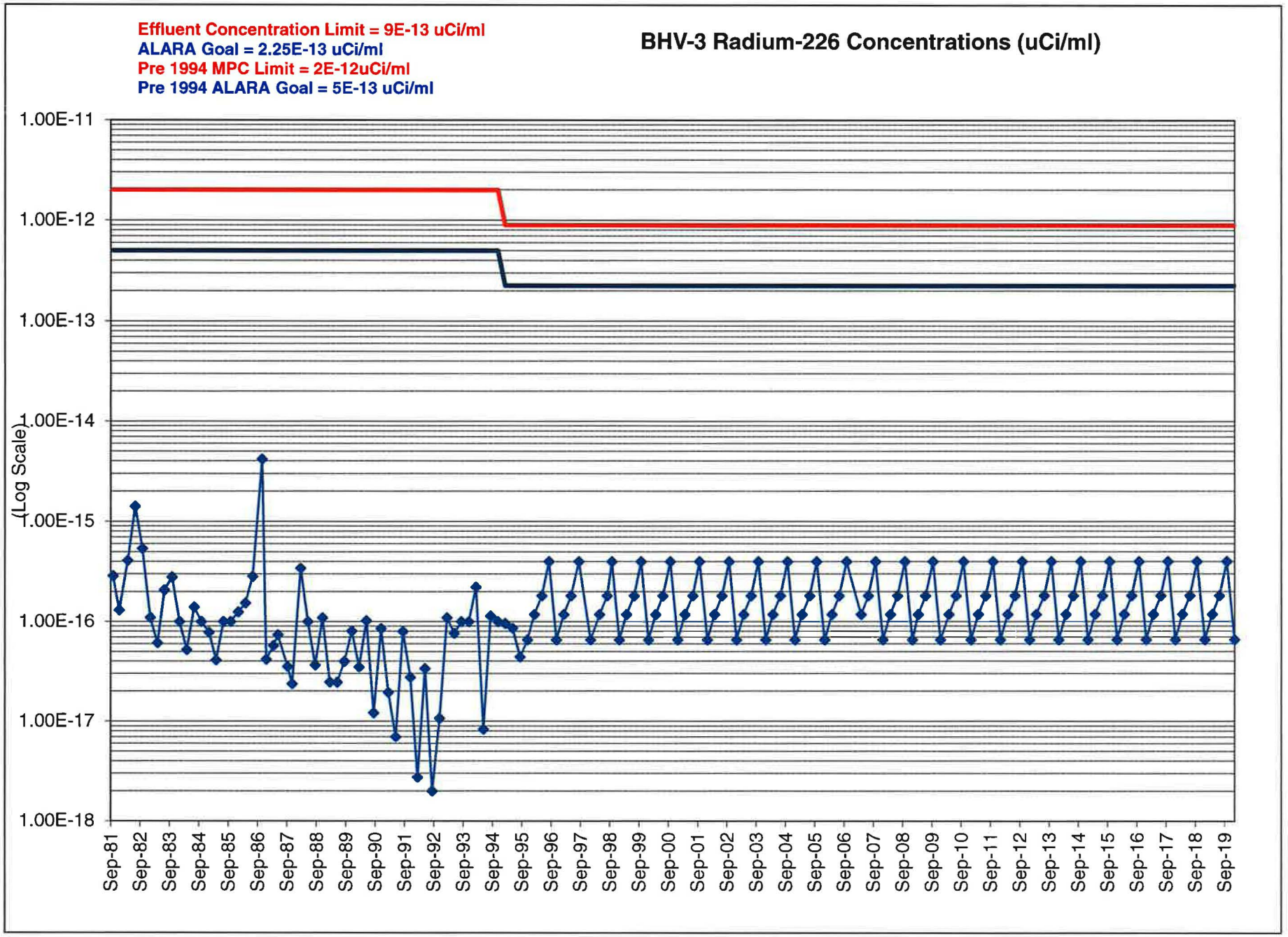
Sep-19


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-3 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
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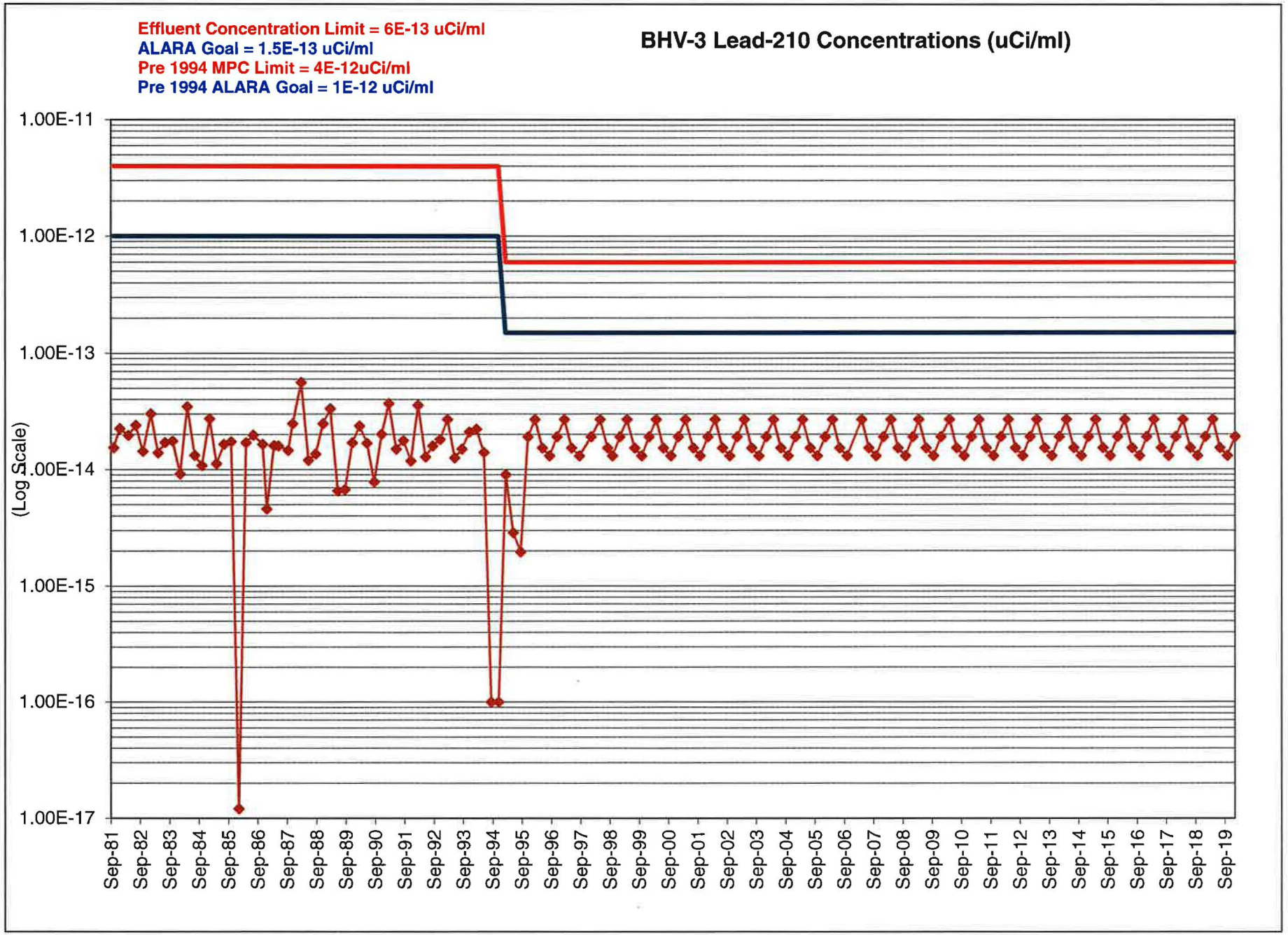
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-3 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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Sep-19

TAB 4

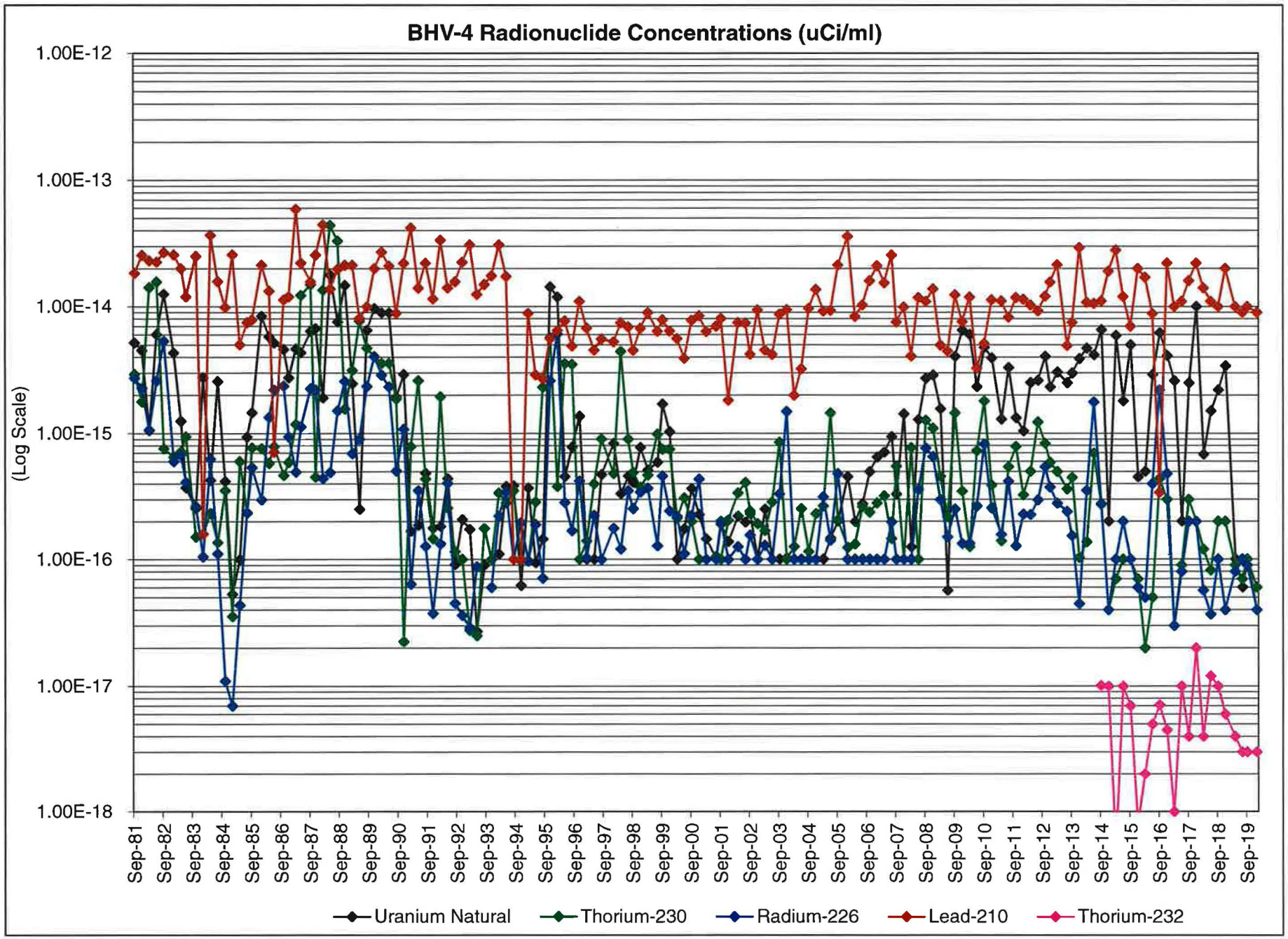
BHV-4 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-4T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	5.20E-15	5.00E-12	1.25E-12	2.93E-15	8.00E-14	2.00E-14	2.74E-15	2.00E-12	5.00E-13	1.84E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/14/1981	4.53E-15	5.00E-12	1.25E-12	1.78E-15	8.00E-14	2.00E-14	2.29E-15	2.00E-12	5.00E-13	2.54E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/29/1982	1.06E-15	5.00E-12	1.25E-12	1.42E-14	8.00E-14	2.00E-14	1.07E-15	2.00E-12	5.00E-13	2.31E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1982	6.03E-15	5.00E-12	1.25E-12	1.57E-14	8.00E-14	2.00E-14	2.62E-15	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/27/1982	1.26E-14	5.00E-12	1.25E-12	7.58E-16	8.00E-14	2.00E-14	5.35E-15	2.00E-12	5.00E-13	2.68E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1983	4.33E-15	5.00E-12	1.25E-12	6.52E-16	8.00E-14	2.00E-14	6.04E-16	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/4/1983	1.25E-15	5.00E-12	1.25E-12	7.17E-16	8.00E-14	2.00E-14	6.76E-16	2.00E-12	5.00E-13	2.00E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1983	3.73E-16	5.00E-12	1.25E-12	9.43E-16	8.00E-14	2.00E-14	4.13E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/3/1983	2.54E-16	5.00E-12	1.25E-12	1.51E-16	8.00E-14	2.00E-14	2.65E-16	2.00E-12	5.00E-13	2.50E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1984	2.76E-15	5.00E-12	1.25E-12	1.60E-16	8.00E-14	2.00E-14	1.05E-16	2.00E-12	5.00E-13	1.59E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/2/1984	4.27E-16	5.00E-12	1.25E-12	2.33E-16	8.00E-14	2.00E-14	6.28E-16	2.00E-12	5.00E-13	3.67E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/2/1984	2.57E-15	5.00E-12	1.25E-12	1.36E-16	8.00E-14	2.00E-14	1.11E-16	2.00E-12	5.00E-13	1.58E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/1/1984	4.18E-16	5.00E-12	1.25E-12	3.54E-16	8.00E-14	2.00E-14	1.10E-17	2.00E-12	5.00E-13	9.83E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1985	5.30E-17	5.00E-12	1.25E-12	3.55E-17	8.00E-14	2.00E-14	7.00E-18	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1985	1.00E-16	5.00E-12	1.25E-12	6.00E-16	8.00E-14	2.00E-14	4.35E-17	2.00E-12	5.00E-13	5.02E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/1/1985	9.36E-16	5.00E-12	1.25E-12	2.33E-16	8.00E-14	2.00E-14	2.36E-16	2.00E-12	5.00E-13	7.48E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/30/1985	1.46E-15	5.00E-12	1.25E-12	7.69E-16	8.00E-14	2.00E-14	5.38E-16	2.00E-12	5.00E-13	7.86E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1986	8.40E-15	5.00E-12	1.25E-12	7.60E-16	8.00E-14	2.00E-14	2.99E-16	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1986	5.79E-15	5.00E-12	1.25E-12	5.80E-16	8.00E-14	2.00E-14	1.34E-15	2.00E-12	5.00E-13	1.33E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1986	5.19E-15	5.00E-12	1.25E-12	7.83E-16	8.00E-14	2.00E-14	2.20E-15	2.00E-12	5.00E-13	7.14E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/27/1986	4.60E-15	5.00E-12	1.25E-12	4.67E-16	8.00E-14	2.00E-14	2.37E-15	2.00E-12	5.00E-13	1.13E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/15/1986	2.75E-15	5.00E-12	1.25E-12	5.90E-16	8.00E-14	2.00E-14	9.39E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/16/1987	4.64E-15	5.00E-12	1.25E-12	1.18E-15	8.00E-14	2.00E-14	4.97E-16	2.00E-12	5.00E-13	5.89E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1987	4.35E-15	5.00E-12	1.25E-12	1.23E-14	8.00E-14	2.00E-14	1.13E-15	2.00E-12	5.00E-13	2.21E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/9/1987	6.39E-15	5.00E-12	1.25E-12	1.50E-14	8.00E-14	2.00E-14	2.26E-15	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/2/1987	6.72E-15	5.00E-12	1.25E-12	4.53E-16	8.00E-14	2.00E-14	2.20E-15	2.00E-12	5.00E-13	2.55E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/16/1988	1.91E-15	5.00E-12	1.25E-12	1.35E-14	8.00E-14	2.00E-14	4.42E-16	2.00E-12	5.00E-13	4.44E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/18/1988	1.78E-14	5.00E-12	1.25E-12	4.39E-14	8.00E-14	2.00E-14	4.92E-16	2.00E-12	5.00E-13	1.38E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/15/1988	7.56E-15	5.00E-12	1.25E-12	3.31E-14	8.00E-14	2.00E-14	1.51E-15	2.00E-12	5.00E-13	1.97E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/14/1988	1.47E-14	5.00E-12	1.25E-12	1.56E-15	8.00E-14	2.00E-14	2.57E-15	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/13/1989	2.47E-15	5.00E-12	1.25E-12	3.14E-15	8.00E-14	2.00E-14	6.94E-16	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/15/1989	2.50E-16	5.00E-12	1.25E-12	7.68E-15	8.00E-14	2.00E-14	9.03E-16	2.00E-12	5.00E-13	8.05E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/14/1989	6.50E-15	5.00E-12	1.25E-12	4.72E-15	8.00E-14	2.00E-14	2.35E-15	2.00E-12	5.00E-13	9.95E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/13/1989	9.63E-15	5.00E-12	1.25E-12	4.05E-15	8.00E-14	2.00E-14	4.03E-15	2.00E-12	5.00E-13	1.99E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/12/1990	8.92E-15	5.00E-12	1.25E-12	3.56E-15	8.00E-14	2.00E-14	2.89E-15	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/14/1990	8.90E-15	5.00E-12	1.25E-12	3.58E-15	8.00E-14	2.00E-14	2.33E-15	2.00E-12	5.00E-13	2.09E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/13/1990	1.92E-15	5.00E-12	1.25E-12	1.87E-15	8.00E-14	2.00E-14	5.06E-16	2.00E-12	5.00E-13	8.86E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/12/1990	2.91E-15	5.00E-12	1.25E-12	2.25E-17	8.00E-14	2.00E-14	1.08E-15	2.00E-12	5.00E-13	2.19E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/11/1991	1.67E-16	5.00E-12	1.25E-12	7.89E-16	8.00E-14	2.00E-14	6.38E-17	2.00E-12	5.00E-13	4.19E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/13/1991	1.87E-16	5.00E-12	1.25E-12	2.61E-15	8.00E-14	2.00E-14	3.54E-16	2.00E-12	5.00E-13	1.40E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/12/1991	4.85E-16	5.00E-12	1.25E-12	4.38E-16	8.00E-14	2.00E-14	1.27E-16	2.00E-12	5.00E-13	2.20E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/11/1991	1.77E-16	5.00E-12	1.25E-12	1.46E-16	8.00E-14	2.00E-14	3.76E-17	2.00E-12	5.00E-13	1.15E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/10/1992	1.83E-16	5.00E-12	1.25E-12	1.95E-15	8.00E-14	2.00E-14	1.33E-16	2.00E-12	5.00E-13	3.35E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1992	4.40E-16	5.00E-12	1.25E-12	2.56E-16	8.00E-14	2.00E-14	4.04E-16	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1992	9.09E-17	5.00E-12	1.25E-12	1.15E-16	8.00E-14	2.00E-14	4.50E-17	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/9/1992	2.07E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	3.62E-17	2.00E-12	5.00E-13	2.24E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/9/1993	1.73E-16	5.00E-12	1.25E-12	2.76E-17	8.00E-14	2.00E-14	2.89E-17	2.00E-12	5.00E-13	3.08E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/10/1993	2.70E-17	5.00E-12	1.25E-12	2.50E-17	8.00E-14	2.00E-14	8.74E-17	2.00E-12	5.00E-13	1.25E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1993	9.00E-17	5.00E-12	1.25E-12	1.76E-16	8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	6.00E-17	2.00E-12	5.00E-13	1.75E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-4T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1994	1.10E-16	5.00E-12	1.25E-12	3.38E-16	8.00E-14	2.00E-14	2.21E-16	2.00E-12	5.00E-13	3.08E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/9/1994	3.80E-16	5.00E-12	1.25E-12	2.82E-16	8.00E-14	2.00E-14	3.46E-16	2.00E-12	5.00E-13	1.73E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/9/1994	3.85E-16	5.00E-12	1.25E-12	3.53E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/7/1994	6.21E-17	5.00E-12	1.25E-12	9.70E-17	8.00E-14	2.00E-14	1.96E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1995	3.70E-16	9.00E-14	2.25E-14	9.80E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	8.84E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/9/1995	9.40E-17	9.00E-14	2.25E-14	2.86E-16	2.00E-14	5.00E-15	1.90E-16	9.00E-13	2.25E-13	2.90E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/9/1995	1.45E-16	9.00E-14	2.25E-14	2.31E-15	2.00E-14	5.00E-15	7.10E-17	9.00E-13	2.25E-13	2.70E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/11/1995	1.43E-14	9.00E-14	2.25E-14	5.70E-15	2.00E-14	5.00E-15	2.61E-15	9.00E-13	2.25E-13	5.60E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/5/1996	1.19E-14	9.00E-14	2.25E-14	3.80E-16	2.00E-14	5.00E-15	6.10E-15	9.00E-13	2.25E-13	6.48E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/6/1996	4.55E-16	9.00E-14	2.25E-14	3.57E-15	2.00E-14	5.00E-15	2.84E-16	9.00E-13	2.25E-13	7.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/5/1996	7.78E-16	9.00E-14	2.25E-14	3.51E-15	2.00E-14	5.00E-15	1.69E-16	9.00E-13	2.25E-13	4.90E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/6/1996	1.36E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.21E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.40E-16	2.00E-14	5.00E-15	1.03E-16	9.00E-13	2.25E-13	6.76E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/5/1997	1.00E-16	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	2.24E-16	9.00E-13	2.25E-13	4.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/11/1997	4.74E-16	9.00E-14	2.25E-14	9.07E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/5/1998	8.31E-16	9.00E-14	2.25E-14	4.82E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	5.28E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/28/1998	3.32E-16	9.00E-14	2.25E-14	4.43E-15	2.00E-14	5.00E-15	1.21E-16	9.00E-13	2.25E-13	7.43E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/31/1998	4.60E-16	9.00E-14	2.25E-14	9.02E-16	2.00E-14	5.00E-15	3.54E-16	9.00E-13	2.25E-13	6.91E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/28/1998	4.08E-16	9.00E-14	2.25E-14	4.93E-16	2.00E-14	5.00E-15	2.53E-16	9.00E-13	2.25E-13	4.52E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1998	7.72E-16	9.00E-14	2.25E-14	3.75E-16	2.00E-14	5.00E-15	3.43E-16	9.00E-13	2.25E-13	6.73E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/1999	5.11E-16	9.00E-14	2.25E-14	4.70E-16	2.00E-14	5.00E-15	3.70E-16	9.00E-13	2.25E-13	8.96E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/1999	5.90E-16	9.00E-14	2.25E-14	9.89E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	6.40E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/1999	1.70E-15	9.00E-14	2.25E-14	7.50E-16	2.00E-14	5.00E-15	4.61E-16	9.00E-13	2.25E-13	7.86E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1999	1.03E-15	9.00E-14	2.25E-14	7.50E-16	2.00E-14	5.00E-15	2.43E-16	9.00E-13	2.25E-13	6.42E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/27/2000	1.00E-16	9.00E-14	2.25E-14	2.13E-16	2.00E-14	5.00E-15	2.20E-16	9.00E-13	2.25E-13	5.61E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/26/2000	1.75E-16	9.00E-14	2.25E-14	3.08E-16	2.00E-14	5.00E-15	1.11E-16	9.00E-13	2.25E-13	3.92E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2000	3.65E-16	9.00E-14	2.25E-14	2.01E-16	2.00E-14	5.00E-15	2.24E-16	9.00E-13	2.25E-13	7.79E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/26/2000	2.27E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.35E-16	9.00E-13	2.25E-13	8.45E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/26/2001	1.45E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.37E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2001	1.00E-16	9.00E-14	2.25E-14	1.05E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.99E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/24/2001	1.91E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.01E-16	9.00E-13	2.25E-13	8.04E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2001	1.38E-16	9.00E-14	2.25E-14	2.05E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.83E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/1/2002	2.20E-16	9.00E-14	2.25E-14	3.38E-16	2.00E-14	5.00E-15	1.26E-16	9.00E-13	2.25E-13	7.48E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/1/2002	1.97E-16	9.00E-14	2.25E-14	4.10E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.40E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2002	2.30E-16	9.00E-14	2.25E-14	2.42E-16	2.00E-14	5.00E-15	1.56E-16	9.00E-13	2.25E-13	4.21E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.92E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.42E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2003	2.50E-16	9.00E-14	2.25E-14	1.69E-16	2.00E-14	5.00E-15	1.29E-16	9.00E-13	2.25E-13	4.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2003	1.00E-16	9.00E-14	2.25E-14	2.87E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/29/2003	1.00E-16	9.00E-14	2.25E-14	8.53E-16	2.00E-14	5.00E-15	3.32E-16	9.00E-13	2.25E-13	8.69E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/29/2003	1.02E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.49E-15	9.00E-13	2.25E-13	9.45E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.26E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.00E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/27/2004	1.00E-16	9.00E-14	2.25E-14	2.53E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.23E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/27/2004	1.00E-16	9.00E-14	2.25E-14	2.30E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.37E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/28/2005	1.00E-16	9.00E-14	2.25E-14	2.66E-16	2.00E-14	5.00E-15	3.15E-16	9.00E-13	2.25E-13	9.22E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/29/2005	1.47E-16	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	1.42E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2005	2.01E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	4.80E-16	9.00E-13	2.25E-13	2.12E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2006	4.54E-16	9.00E-14	2.25E-14	1.24E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.60E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2006	1.99E-16	9.00E-14	2.25E-14	1.32E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.36E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/2006	2.76E-16	9.00E-14	2.25E-14	2.63E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-4T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
10/2/2006	4.97E-16	9.00E-14	2.25E-14	2.37E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/1/2007	6.46E-16	9.00E-14	2.25E-14	2.81E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/2/2007	7.08E-16	9.00E-14	2.25E-14	3.20E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2007	9.41E-16	9.00E-14	2.25E-14	1.46E-16	2.00E-14	5.00E-15	1.99E-16	9.00E-13	2.25E-13	2.56E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2007	3.30E-16	9.00E-14	2.25E-14	5.50E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.57E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2007	1.42E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.93E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2008	1.25E-16	9.00E-14	2.25E-14	7.72E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.09E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2008	1.28E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	3.61E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2008	2.72E-15	9.00E-14	2.25E-14	1.27E-15	2.00E-14	5.00E-15	7.66E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2008	2.88E-15	9.00E-14	2.25E-14	1.10E-15	2.00E-14	5.00E-15	6.56E-16	9.00E-13	2.25E-13	1.38E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/15/2009	1.56E-15	9.00E-14	2.25E-14	4.57E-16	2.00E-14	5.00E-15	2.99E-16	9.00E-13	2.25E-13	4.97E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/15/2009	5.67E-17	9.00E-14	2.25E-14	2.17E-16	2.00E-14	5.00E-15	1.51E-16	9.00E-13	2.25E-13	4.47E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/15/2009	4.05E-15	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	2.52E-16	9.00E-13	2.25E-13	1.24E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/15/2009	6.50E-15	9.00E-14	2.25E-14	3.48E-16	2.00E-14	5.00E-15	1.33E-16	9.00E-13	2.25E-13	7.60E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2010	6.01E-15	9.00E-14	2.25E-14	1.26E-16	2.00E-14	5.00E-15	1.34E-16	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2010	2.33E-15	9.00E-14	2.25E-14	7.29E-16	2.00E-14	5.00E-15	2.66E-16	9.00E-13	2.25E-13	3.27E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2010	4.77E-15	9.00E-14	2.25E-14	1.80E-15	2.00E-14	5.00E-15	8.23E-16	9.00E-13	2.25E-13	5.11E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2010	3.93E-15	9.00E-14	2.25E-14	3.90E-16	2.00E-14	5.00E-15	2.56E-16	9.00E-13	2.25E-13	1.13E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/4/2011	1.29E-15	9.00E-14	2.25E-14	1.40E-16	2.00E-14	5.00E-15	1.58E-16	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/4/2011	3.30E-15	9.00E-14	2.25E-14	5.44E-16	2.00E-14	5.00E-15	4.18E-16	9.00E-13	2.25E-13	8.26E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/3/2011	1.32E-15	9.00E-14	2.25E-14	7.89E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2012	1.04E-15	9.00E-14	2.25E-14	3.25E-16	2.00E-14	5.00E-15	2.28E-16	9.00E-13	2.25E-13	1.14E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2012	2.51E-15	9.00E-14	2.25E-14	5.02E-16	2.00E-14	5.00E-15	2.27E-16	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2012	2.62E-15	9.00E-14	2.25E-14	1.23E-15	2.00E-14	5.00E-15	2.97E-16	9.00E-13	2.25E-13	9.27E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/1/2012	4.05E-15	9.00E-14	2.25E-14	8.33E-16	2.00E-14	5.00E-15	5.43E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2012	2.32E-15	9.00E-14	2.25E-14	5.89E-16	2.00E-14	5.00E-15	3.75E-16	9.00E-13	2.25E-13	1.56E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/25/2013	3.04E-15	9.00E-14	2.25E-14	4.99E-16	2.00E-14	5.00E-15	2.79E-16	9.00E-13	2.25E-13	2.13E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2013	2.50E-15	9.00E-14	2.25E-14	3.62E-16	2.00E-14	5.00E-15	2.40E-16	9.00E-13	2.25E-13	4.93E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2013	2.98E-15	9.00E-14	2.25E-14	4.49E-16	2.00E-14	5.00E-15	1.54E-16	9.00E-13	2.25E-13	7.49E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2013	3.88E-15	9.00E-14	2.25E-14	1.03E-16	2.00E-14	5.00E-15	4.47E-17	9.00E-13	2.25E-13	2.93E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2014	4.69E-15	9.00E-14	2.25E-14	1.37E-16	2.00E-14	5.00E-15	3.53E-16	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2014	4.16E-15	9.00E-14	2.25E-14	6.96E-16	2.00E-14	5.00E-15	1.77E-15	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2014	6.56E-15	9.00E-14	2.25E-14	2.73E-16	2.00E-14	5.00E-15	2.77E-16	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13	1.01E-17	4.00E-15	1.00E-15
12/29/2014	2.00E-16	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	1.90E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
3/30/2015	5.90E-15	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.80E-14	6.00E-13	1.50E-13	5.00E-19	4.00E-15	1.00E-15
6/29/2015	1.80E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/28/2015	5.00E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
12/28/2015	4.50E-16	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	6.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	8.00E-19	4.00E-15	1.00E-15
3/28/2016	5.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
6/27/2016	2.90E-15	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	8.80E-15	6.00E-13	1.50E-13	5.00E-18	4.00E-15	1.00E-15
9/27/2016	6.20E-15	9.00E-14	2.25E-14	4.40E-16	2.00E-14	5.00E-15	2.20E-15	9.00E-13	2.25E-13	3.40E-16	6.00E-13	1.50E-13	7.10E-18	4.00E-15	1.00E-15
12/27/2016	4.10E-15	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	4.80E-16	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	4.50E-18	4.00E-15	1.00E-15
3/27/2017	2.60E-15	9.00E-14	2.25E-14	3.00E-17	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	1.00E-18	4.00E-15	1.00E-15
6/26/2017	2.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	8.00E-17	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/25/2017	2.50E-15	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
12/26/2017	1.00E-14	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15
3/26/2018	6.80E-16	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	5.70E-17	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
6/25/2018	1.50E-15	9.00E-14	2.25E-14	8.20E-17	2.00E-14	5.00E-15	3.70E-17	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	1.20E-17	4.00E-15	1.00E-15

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-4T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/24/2018	2.20E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/31/2018	3.40E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
4/1/2019	1.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	8.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
7/1/2019	6.00E-17	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
9/30/2019	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	9.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
1/6/2020	4.00E-17	9.00E-14	2.25E-14	6.00E-17	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15


BHV-4 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
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Sep-14
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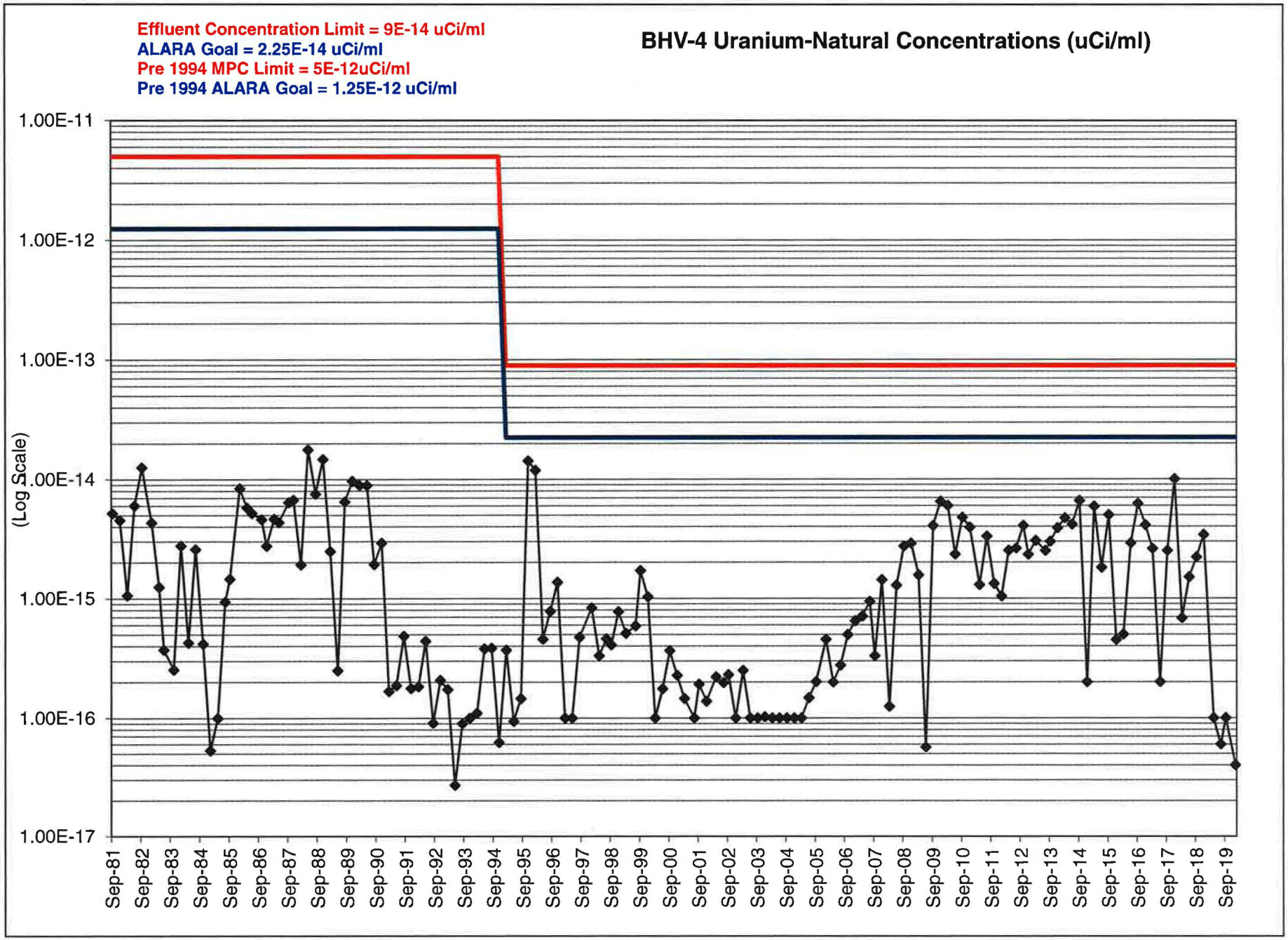
Sep-16
Sep-17
Sep-18
Sep-19
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-4 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
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Sep-83
Sep-84
Sep-85
Sep-86
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Sep-89
Sep-90
Sep-91
Sep-92
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Sep-94
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Sep-99
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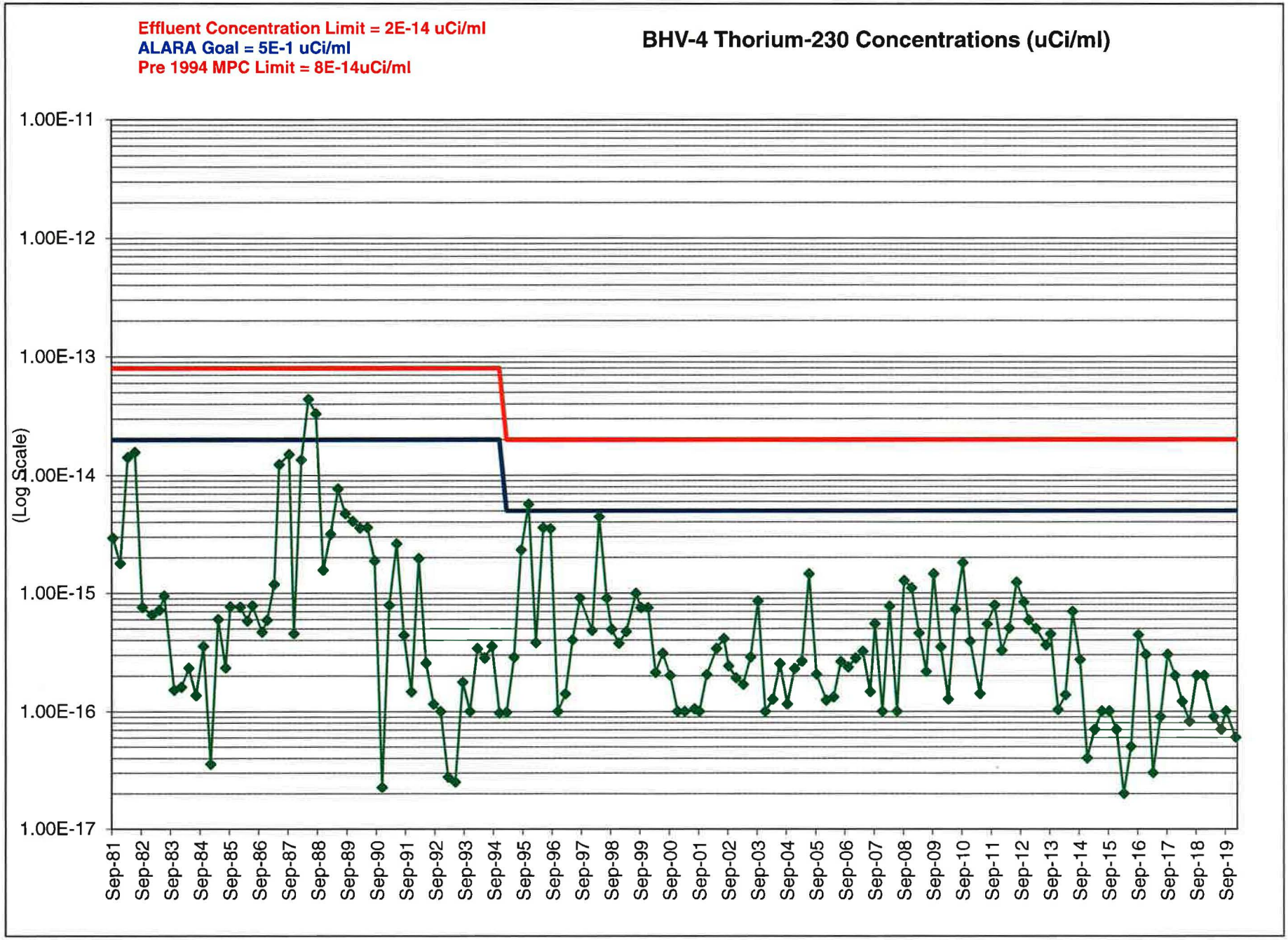
Sep-19


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-1 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-4 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
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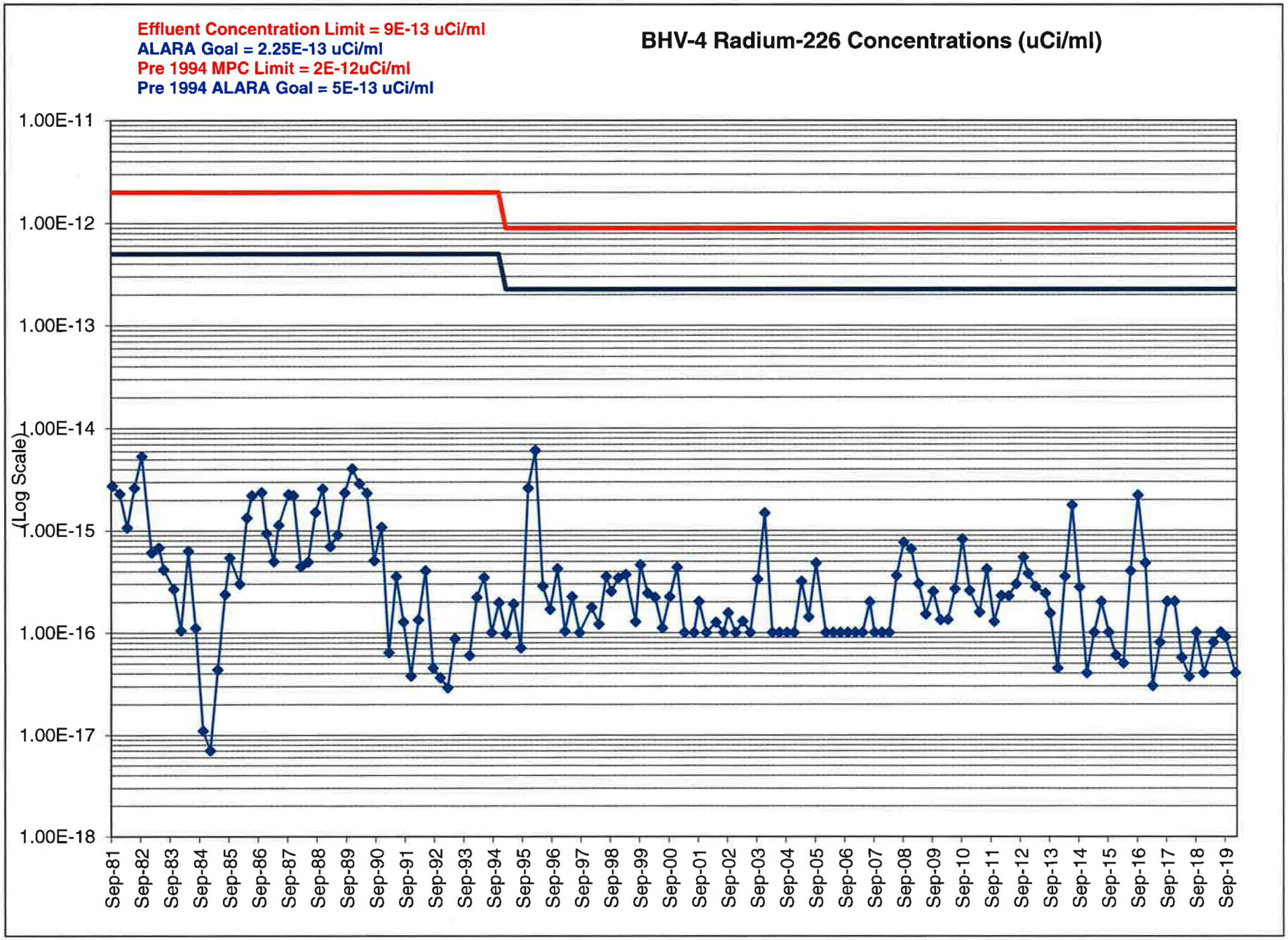
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-4 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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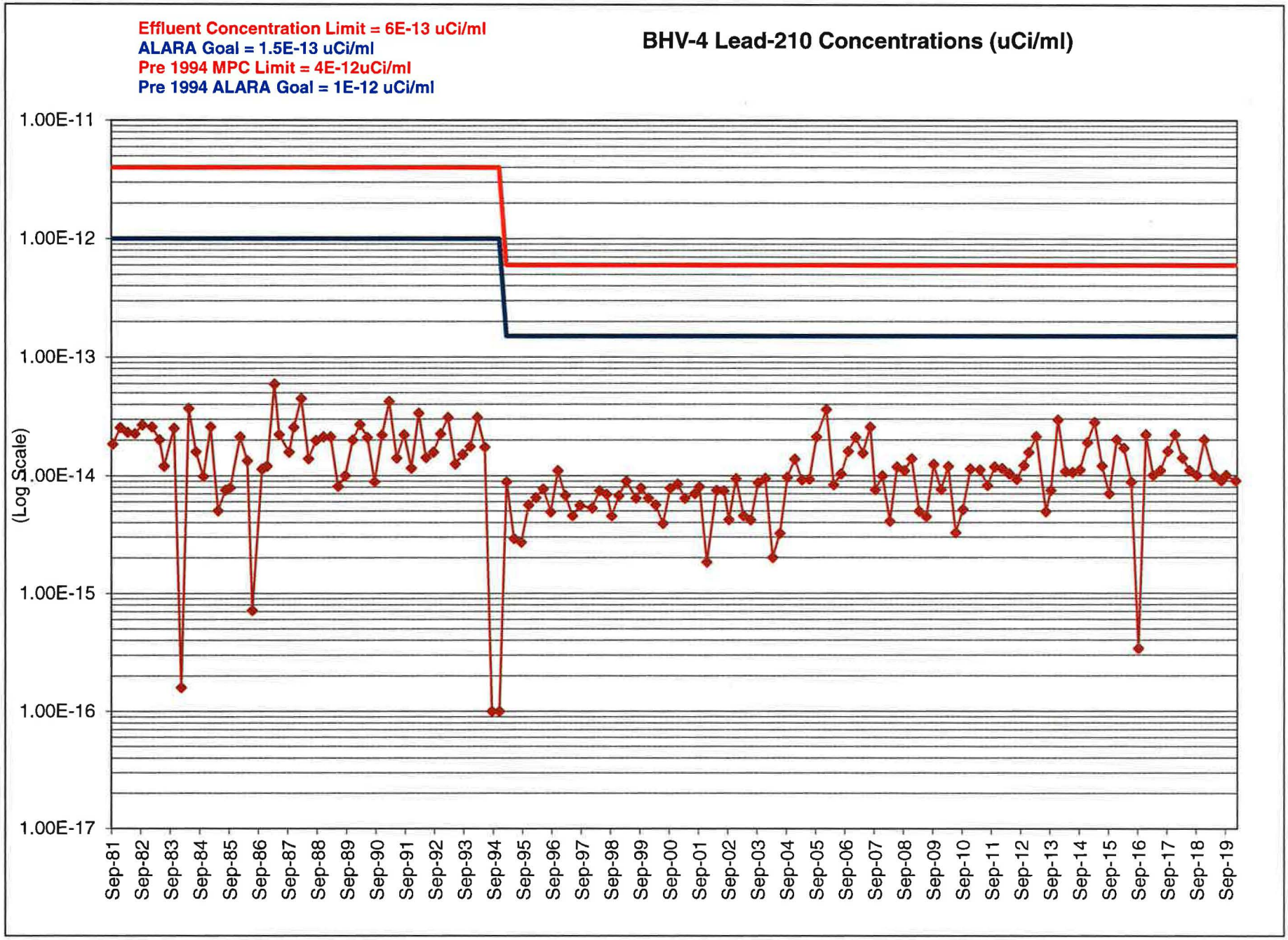
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-4 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
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Sep-97
Sep-98
Sep-99
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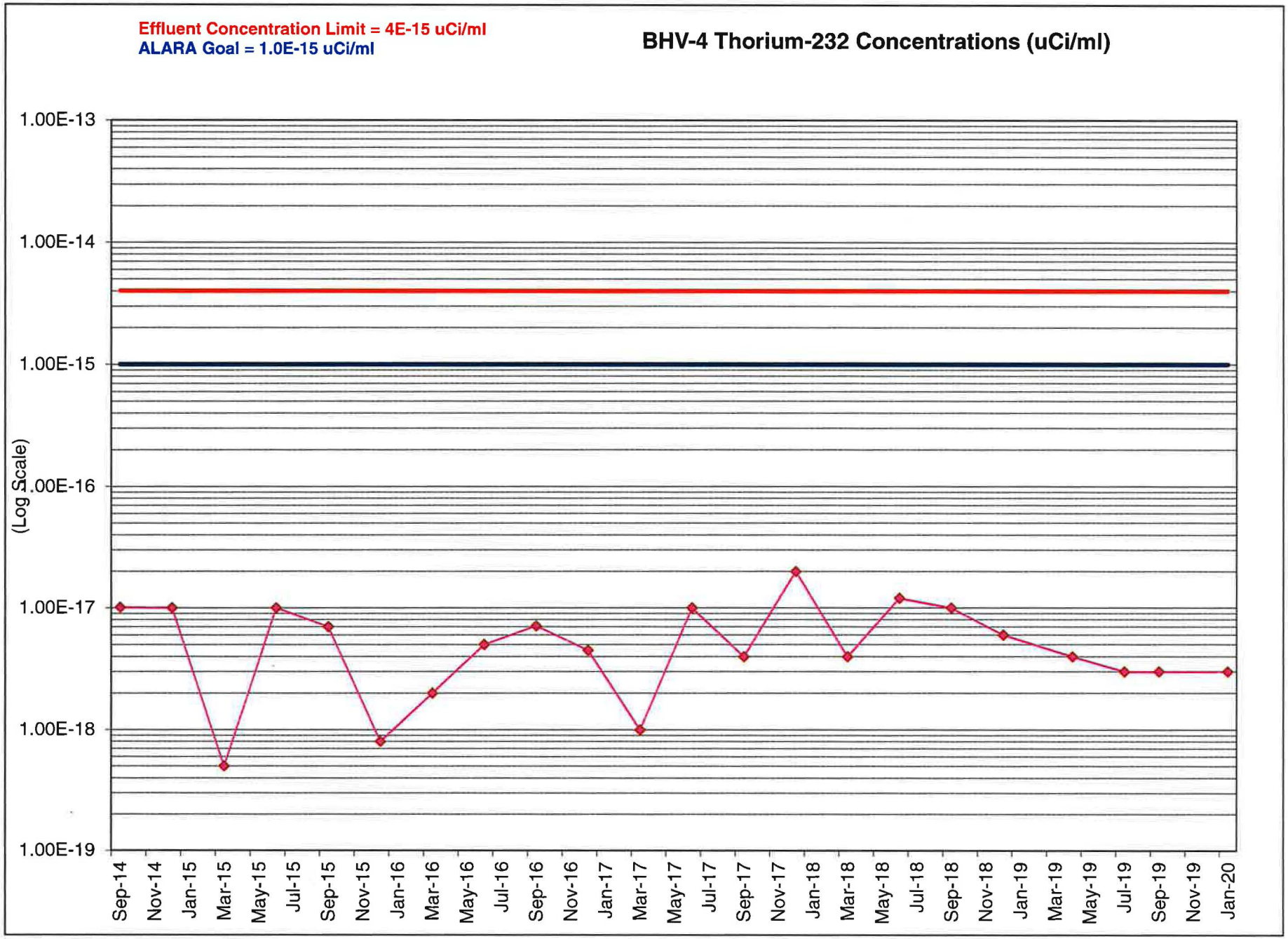
Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-4 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E-13
1.00E-14
1.00E-15
.00E-16
1.00E-17
1.00E-18
1.00E-19
Sep-14
Nov-14
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
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May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20

TAB 5

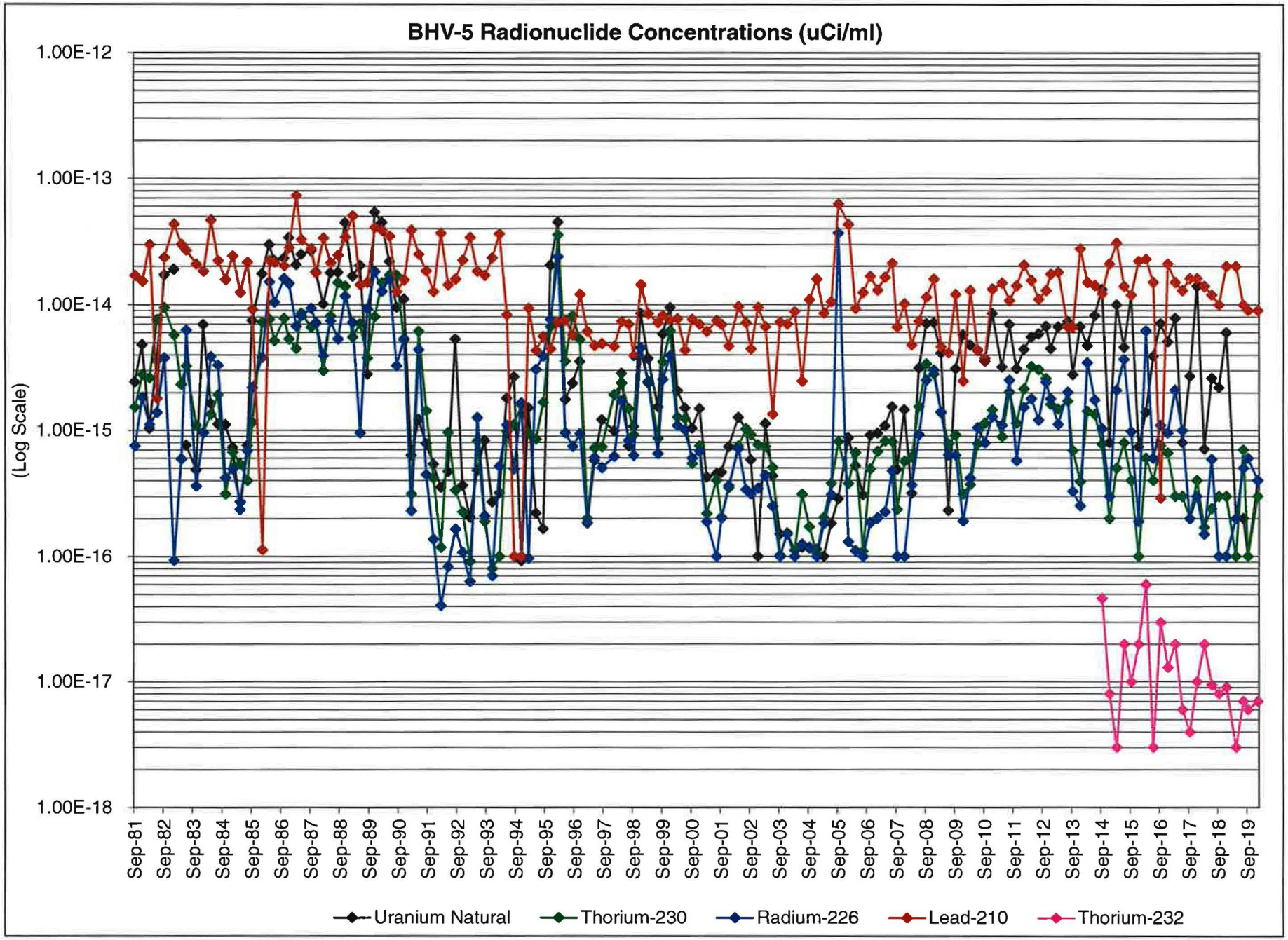
BHV-5 AIR SAMPLING GRAPHS AND DATA TABLE

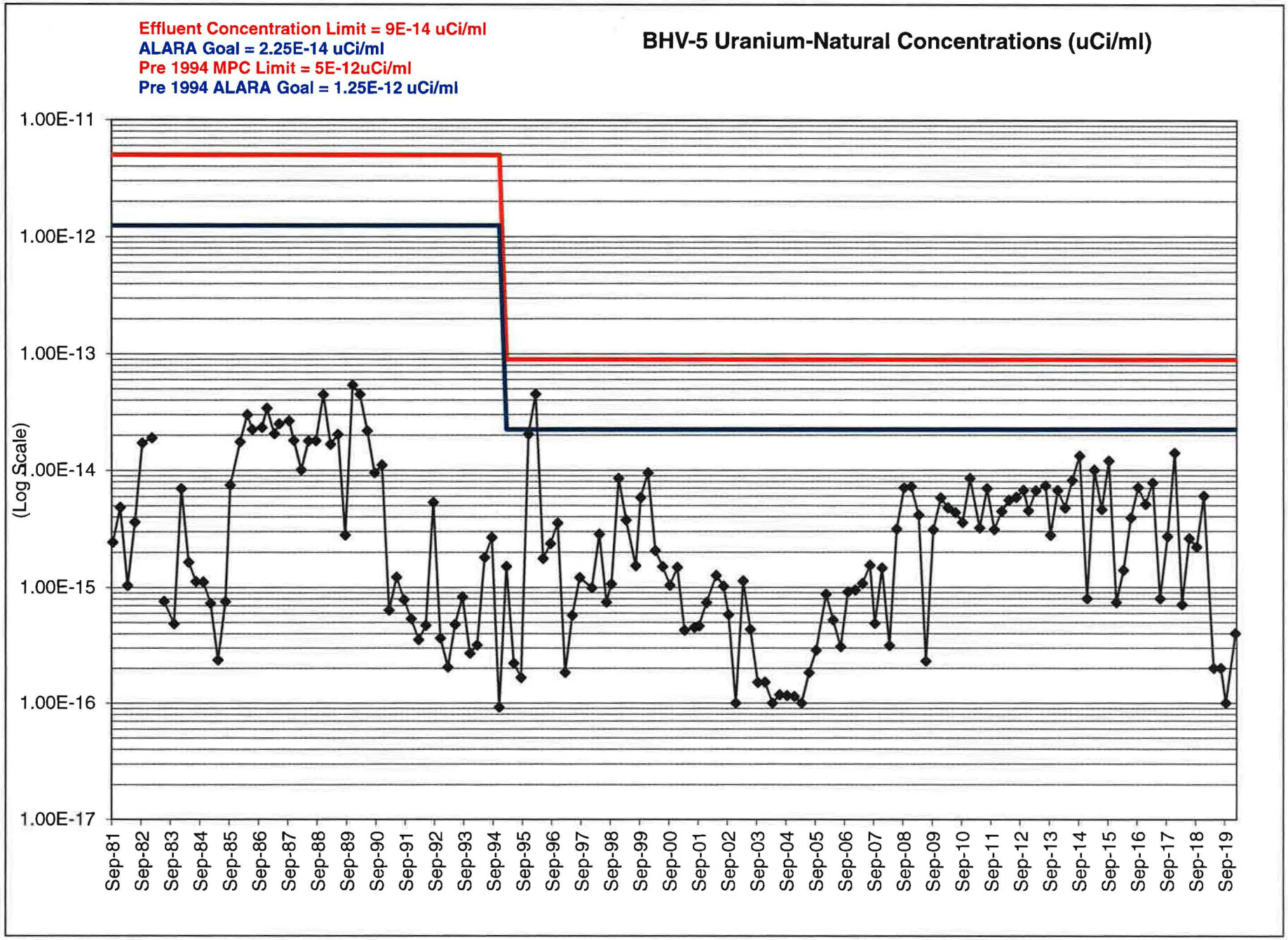
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-5T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	2.44E-15	5.00E-12	1.25E-12	1.53E-15	8.00E-14	2.00E-14	7.54E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/14/1981	4.84E-15	5.00E-12	1.25E-12	2.78E-15	8.00E-14	2.00E-14	1.84E-15	2.00E-12	5.00E-13	1.53E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/29/1982	1.04E-15	5.00E-12	1.25E-12	2.62E-15	8.00E-14	2.00E-14	1.11E-15	2.00E-12	5.00E-13	2.98E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1982	3.61E-15	5.00E-12	1.25E-12	7.61E-15	8.00E-14	2.00E-14	1.39E-15	2.00E-12	5.00E-13	1.80E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/27/1982	1.71E-14	5.00E-12	1.25E-12	9.46E-15	8.00E-14	2.00E-14	3.80E-15	2.00E-12	5.00E-13	2.35E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1983	1.90E-14	5.00E-12	1.25E-12	5.77E-15	8.00E-14	2.00E-14	9.34E-17	2.00E-12	5.00E-13	4.32E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/4/1983		5.00E-12	1.25E-12	2.33E-15	8.00E-14	2.00E-14	5.93E-16	2.00E-12	5.00E-13	3.01E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1983	7.62E-16	5.00E-12	1.25E-12	3.25E-15	8.00E-14	2.00E-14	6.28E-15	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/3/1983	4.86E-16	5.00E-12	1.25E-12	1.10E-15	8.00E-14	2.00E-14	3.63E-16	2.00E-12	5.00E-13	2.08E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1984	6.96E-15	5.00E-12	1.25E-12	9.69E-16	8.00E-14	2.00E-14	9.60E-16	2.00E-12	5.00E-13	1.83E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/2/1984	1.64E-15	5.00E-12	1.25E-12	1.34E-15	8.00E-14	2.00E-14	3.88E-15	2.00E-12	5.00E-13	4.67E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/2/1984	1.12E-15	5.00E-12	1.25E-12	1.92E-15	8.00E-14	2.00E-14	3.31E-15	2.00E-12	5.00E-13	2.21E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/1/1984	1.11E-15	5.00E-12	1.25E-12	3.13E-16	8.00E-14	2.00E-14	4.21E-16	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1985	7.32E-16	5.00E-12	1.25E-12	6.71E-16	8.00E-14	2.00E-14	4.94E-16	2.00E-12	5.00E-13	2.42E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1985	2.36E-16	5.00E-12	1.25E-12	5.43E-16	8.00E-14	2.00E-14	2.71E-16	2.00E-12	5.00E-13	1.25E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/1/1985	7.58E-16	5.00E-12	1.25E-12	4.00E-16	8.00E-14	2.00E-14	6.90E-16	2.00E-12	5.00E-13	2.15E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/30/1985	7.47E-15	5.00E-12	1.25E-12	1.16E-15	8.00E-14	2.00E-14	2.19E-15	2.00E-12	5.00E-13	9.20E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1986	1.75E-14	5.00E-12	1.25E-12	7.24E-15	8.00E-14	2.00E-14	3.83E-15	2.00E-12	5.00E-13	1.13E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1986	2.99E-14	5.00E-12	1.25E-12	7.64E-15	8.00E-14	2.00E-14	1.51E-14	2.00E-12	5.00E-13	2.22E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1986	2.23E-14	5.00E-12	1.25E-12	5.19E-15	8.00E-14	2.00E-14	1.05E-14	2.00E-12	5.00E-13	2.16E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/27/1986	2.33E-14	5.00E-12	1.25E-12	7.78E-15	8.00E-14	2.00E-14	1.60E-14	2.00E-12	5.00E-13	2.02E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/15/1986	3.40E-14	5.00E-12	1.25E-12	5.35E-15	8.00E-14	2.00E-14	1.47E-14	2.00E-12	5.00E-13	2.82E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/16/1987	2.06E-14	5.00E-12	1.25E-12	4.50E-15	8.00E-14	2.00E-14	6.74E-15	2.00E-12	5.00E-13	7.29E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1987	2.50E-14	5.00E-12	1.25E-12	8.54E-15	8.00E-14	2.00E-14	8.15E-15	2.00E-12	5.00E-13	3.28E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/9/1987	2.65E-14	5.00E-12	1.25E-12	6.62E-15	8.00E-14	2.00E-14	9.34E-15	2.00E-12	5.00E-13	2.77E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/2/1987	1.80E-14	5.00E-12	1.25E-12	7.09E-15	8.00E-14	2.00E-14	7.20E-15	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/16/1988	1.01E-14	5.00E-12	1.25E-12	2.98E-15	8.00E-14	2.00E-14	3.93E-15	2.00E-12	5.00E-13	3.36E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/18/1988	1.78E-14	5.00E-12	1.25E-12	8.14E-15	8.00E-14	2.00E-14	7.43E-15	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/15/1988	1.79E-14	5.00E-12	1.25E-12	1.49E-14	8.00E-14	2.00E-14	5.34E-15	2.00E-12	5.00E-13	2.45E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/14/1988	4.46E-14	5.00E-12	1.25E-12	1.39E-14	8.00E-14	2.00E-14	1.17E-14	2.00E-12	5.00E-13	3.43E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/13/1989	1.67E-14	5.00E-12	1.25E-12	5.54E-15	8.00E-14	2.00E-14	7.20E-15	2.00E-12	5.00E-13	5.02E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/15/1989	2.03E-14	5.00E-12	1.25E-12	7.05E-15	8.00E-14	2.00E-14	9.56E-16	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/14/1989	2.81E-15	5.00E-12	1.25E-12	3.78E-15	8.00E-14	2.00E-14	9.26E-15	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/13/1989	5.38E-14	5.00E-12	1.25E-12	8.01E-15	8.00E-14	2.00E-14	1.81E-14	2.00E-12	5.00E-13	4.09E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/12/1990	4.48E-14	5.00E-12	1.25E-12	1.48E-14	8.00E-14	2.00E-14	1.28E-14	2.00E-12	5.00E-13	3.88E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/14/1990	2.18E-14	5.00E-12	1.25E-12	1.70E-14	8.00E-14	2.00E-14	1.59E-14	2.00E-12	5.00E-13	3.49E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/13/1990	9.53E-15	5.00E-12	1.25E-12	1.70E-14	8.00E-14	2.00E-14	3.27E-15	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/12/1990	1.11E-14	5.00E-12	1.25E-12	5.27E-15	8.00E-14	2.00E-14	5.38E-15	2.00E-12	5.00E-13	1.56E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/11/1991	6.35E-16	5.00E-12	1.25E-12	3.13E-16	8.00E-14	2.00E-14	2.31E-16	2.00E-12	5.00E-13	3.89E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/13/1991	1.22E-15	5.00E-12	1.25E-12	6.14E-15	8.00E-14	2.00E-14	4.41E-15	2.00E-12	5.00E-13	2.50E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/12/1991	7.84E-16	5.00E-12	1.25E-12	1.43E-15	8.00E-14	2.00E-14	4.47E-16	2.00E-12	5.00E-13	1.84E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/11/1991	5.37E-16	5.00E-12	1.25E-12	4.20E-16	8.00E-14	2.00E-14	1.37E-16	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/10/1992	3.54E-16	5.00E-12	1.25E-12	1.18E-16	8.00E-14	2.00E-14	4.08E-17	2.00E-12	5.00E-13	3.69E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1992	4.71E-16	5.00E-12	1.25E-12	9.58E-16	8.00E-14	2.00E-14	8.31E-17	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1992	5.32E-15	5.00E-12	1.25E-12	3.36E-16	8.00E-14	2.00E-14	1.65E-16	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/9/1992	3.66E-16	5.00E-12	1.25E-12	2.25E-16	8.00E-14	2.00E-14	1.08E-16	2.00E-12	5.00E-13	2.24E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/9/1993	2.05E-16	5.00E-12	1.25E-12	9.14E-17	8.00E-14	2.00E-14	6.31E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/10/1993	4.80E-16	5.00E-12	1.25E-12	8.25E-16	8.00E-14	2.00E-14	1.26E-15	2.00E-12	5.00E-13	1.83E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1993	8.30E-16	5.00E-12	1.25E-12	1.90E-16	8.00E-14	2.00E-14	2.10E-16	2.00E-12	5.00E-13	1.70E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-5T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
11/8/1993	2.70E-16	5.00E-12	1.25E-12	8.00E-17	8.00E-14	2.00E-14	7.00E-17	2.00E-12	5.00E-13	2.34E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1994	3.18E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	5.18E-16	2.00E-12	5.00E-13	3.64E-14	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/9/1994	1.80E-15	5.00E-12	1.25E-12	9.78E-16	8.00E-14	2.00E-14	1.10E-15	2.00E-12	5.00E-13	8.30E-15	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/9/1994	2.67E-15	5.00E-12	1.25E-12	1.11E-15	8.00E-14	2.00E-14	4.95E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/7/1994	9.21E-17	5.00E-12	1.25E-12	1.59E-15	8.00E-14	2.00E-14	1.66E-15	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1995	1.51E-15	9.00E-14	2.25E-14	9.50E-16	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	9.35E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/9/1995	2.21E-16	9.00E-14	2.25E-14	8.56E-16	2.00E-14	5.00E-15	3.06E-15	9.00E-13	2.25E-13	4.34E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/9/1995	1.66E-16	9.00E-14	2.25E-14	1.67E-15	2.00E-14	5.00E-15	3.90E-15	9.00E-13	2.25E-13	5.60E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/11/1995	2.04E-14	9.00E-14	2.25E-14	6.70E-15	2.00E-14	5.00E-15	7.65E-15	9.00E-13	2.25E-13	4.47E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/5/1996	4.50E-14	9.00E-14	2.25E-14	3.58E-14	2.00E-14	5.00E-15	2.39E-14	9.00E-13	2.25E-13	7.30E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/6/1996	1.76E-15	9.00E-14	2.25E-14	3.57E-15	2.00E-14	5.00E-15	9.55E-16	9.00E-13	2.25E-13	7.54E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/5/1996	2.37E-15	9.00E-14	2.25E-14	8.18E-15	2.00E-14	5.00E-15	7.46E-16	9.00E-13	2.25E-13	5.75E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/6/1996	3.53E-15	9.00E-14	2.25E-14	5.31E-15	2.00E-14	5.00E-15	9.39E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/6/1997	1.84E-16	9.00E-14	2.25E-14	2.01E-16	2.00E-14	5.00E-15	1.87E-16	9.00E-13	2.25E-13	6.14E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/5/1997	5.75E-16	9.00E-14	2.25E-14	7.24E-16	2.00E-14	5.00E-15	6.07E-16	9.00E-13	2.25E-13	4.75E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/11/1997	1.21E-15	9.00E-14	2.25E-14	7.39E-16	2.00E-14	5.00E-15	5.05E-16	9.00E-13	2.25E-13	4.92E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/5/1998	9.89E-16	9.00E-14	2.25E-14	1.92E-15	2.00E-14	5.00E-15	6.21E-16	9.00E-13	2.25E-13	4.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/28/1998	2.84E-15	9.00E-14	2.25E-14	2.38E-15	2.00E-14	5.00E-15	1.72E-15	9.00E-13	2.25E-13	7.35E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/31/1998	7.49E-16	9.00E-14	2.25E-14	1.49E-15	2.00E-14	5.00E-15	8.34E-16	9.00E-13	2.25E-13	7.01E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/28/1998	1.07E-15	9.00E-14	2.25E-14	9.20E-16	2.00E-14	5.00E-15	6.32E-16	9.00E-13	2.25E-13	3.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1998	8.51E-15	9.00E-14	2.25E-14	4.58E-15	2.00E-14	5.00E-15	4.58E-15	9.00E-13	2.25E-13	1.43E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/1999	3.75E-15	9.00E-14	2.25E-14	2.45E-15	2.00E-14	5.00E-15	2.39E-15	9.00E-13	2.25E-13	8.46E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/1999	1.53E-15	9.00E-14	2.25E-14	8.65E-16	2.00E-14	5.00E-15	6.52E-16	9.00E-13	2.25E-13	7.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/1999	5.83E-15	9.00E-14	2.25E-14	3.52E-15	2.00E-14	5.00E-15	2.55E-15	9.00E-13	2.25E-13	8.22E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1999	9.48E-15	9.00E-14	2.25E-14	6.20E-15	2.00E-14	5.00E-15	3.96E-15	9.00E-13	2.25E-13	7.56E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/27/2000	2.06E-15	9.00E-14	2.25E-14	1.27E-15	2.00E-14	5.00E-15	1.09E-15	9.00E-13	2.25E-13	7.72E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/26/2000	1.50E-15	9.00E-14	2.25E-14	1.24E-15	2.00E-14	5.00E-15	1.01E-15	9.00E-13	2.25E-13	4.36E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2000	1.04E-15	9.00E-14	2.25E-14	5.45E-16	2.00E-14	5.00E-15	6.01E-16	9.00E-13	2.25E-13	7.67E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/26/2000	1.48E-15	9.00E-14	2.25E-14	7.56E-16	2.00E-14	5.00E-15	6.84E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/26/2001	4.27E-16	9.00E-14	2.25E-14	2.19E-16	2.00E-14	5.00E-15	1.89E-16	9.00E-13	2.25E-13	6.13E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2001	4.52E-16	9.00E-14	2.25E-14	4.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.48E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/24/2001	4.65E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	2.02E-16	9.00E-13	2.25E-13	6.98E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2001	7.40E-16	9.00E-14	2.25E-14	3.51E-16	2.00E-14	5.00E-15	3.64E-16	9.00E-13	2.25E-13	4.72E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/1/2002	1.26E-15	9.00E-14	2.25E-14	7.53E-16	2.00E-14	5.00E-15	7.19E-16	9.00E-13	2.25E-13	9.65E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/1/2002	1.02E-15	9.00E-14	2.25E-14	1.03E-15	2.00E-14	5.00E-15	3.39E-16	9.00E-13	2.25E-13	7.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2002	5.82E-16	9.00E-14	2.25E-14	9.28E-16	2.00E-14	5.00E-15	3.14E-16	9.00E-13	2.25E-13	4.48E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2002	1.00E-16	9.00E-14	2.25E-14	7.67E-16	2.00E-14	5.00E-15	3.48E-16	9.00E-13	2.25E-13	9.56E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2003	1.13E-15	9.00E-14	2.25E-14	7.41E-16	2.00E-14	5.00E-15	4.41E-16	9.00E-13	2.25E-13	6.68E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2003	4.35E-16	9.00E-14	2.25E-14	5.08E-16	2.00E-14	5.00E-15	2.51E-16	9.00E-13	2.25E-13	1.34E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/29/2003	1.51E-16	9.00E-14	2.25E-14	1.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.28E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/29/2003	1.52E-16	9.00E-14	2.25E-14	1.54E-16	2.00E-14	5.00E-15	1.51E-16	9.00E-13	2.25E-13	7.02E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.12E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.82E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/27/2004	1.18E-16	9.00E-14	2.25E-14	3.11E-16	2.00E-14	5.00E-15	1.25E-16	9.00E-13	2.25E-13	2.47E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/2004	1.16E-16	9.00E-14	2.25E-14	1.72E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/27/2004	1.14E-16	9.00E-14	2.25E-14	1.06E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/28/2005	1.00E-16	9.00E-14	2.25E-14	2.04E-16	2.00E-14	5.00E-15	1.83E-16	9.00E-13	2.25E-13	8.57E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/29/2005	1.83E-16	9.00E-14	2.25E-14	3.81E-16	2.00E-14	5.00E-15	3.09E-16	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2005	2.87E-16	9.00E-14	2.25E-14	8.21E-16	2.00E-14	5.00E-15	3.71E-14	9.00E-13	2.25E-13	6.28E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2006	8.74E-16	9.00E-14	2.25E-14	3.79E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	4.32E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-5T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
4/3/2006	5.22E-16	9.00E-14	2.25E-14	6.66E-16	2.00E-14	5.00E-15	1.11E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/2006	3.08E-16	9.00E-14	2.25E-14	1.10E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.25E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/2/2006	9.14E-16	9.00E-14	2.25E-14	4.95E-16	2.00E-14	5.00E-15	1.86E-16	9.00E-13	2.25E-13	1.67E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/1/2007	9.49E-16	9.00E-14	2.25E-14	6.81E-16	2.00E-14	5.00E-15	2.02E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/2/2007	1.08E-15	9.00E-14	2.25E-14	8.22E-16	2.00E-14	5.00E-15	2.26E-16	9.00E-13	2.25E-13	1.64E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2007	1.54E-15	9.00E-14	2.25E-14	8.16E-16	2.00E-14	5.00E-15	4.76E-16	9.00E-13	2.25E-13	2.12E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2007	4.90E-16	9.00E-14	2.25E-14	2.37E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.65E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2007	1.46E-15	9.00E-14	2.25E-14	5.67E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.02E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2008	3.16E-16	9.00E-14	2.25E-14	6.17E-16	2.00E-14	5.00E-15	3.71E-16	9.00E-13	2.25E-13	4.82E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2008	3.13E-15	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	9.27E-16	9.00E-13	2.25E-13	7.40E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2008	7.08E-15	9.00E-14	2.25E-14	3.41E-15	2.00E-14	5.00E-15	2.52E-15	9.00E-13	2.25E-13	1.15E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2008	7.22E-15	9.00E-14	2.25E-14	2.82E-15	2.00E-14	5.00E-15	3.03E-15	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/15/2009	4.13E-15	9.00E-14	2.25E-14	1.39E-15	2.00E-14	5.00E-15	1.41E-15	9.00E-13	2.25E-13	4.66E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/15/2009	2.31E-16	9.00E-14	2.25E-14	7.79E-16	2.00E-14	5.00E-15	6.37E-16	9.00E-13	2.25E-13	4.18E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/15/2009	3.10E-15	9.00E-14	2.25E-14	9.20E-16	2.00E-14	5.00E-15	6.36E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/15/2009	5.77E-15	9.00E-14	2.25E-14	3.13E-16	2.00E-14	5.00E-15	1.92E-16	9.00E-13	2.25E-13	2.48E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2010	4.78E-15	9.00E-14	2.25E-14	3.73E-16	2.00E-14	5.00E-15	4.19E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2010	4.35E-15	9.00E-14	2.25E-14	7.84E-16	2.00E-14	5.00E-15	1.05E-15	9.00E-13	2.25E-13	4.40E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2010	3.57E-15	9.00E-14	2.25E-14	1.14E-15	2.00E-14	5.00E-15	7.97E-16	9.00E-13	2.25E-13	3.78E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2010	8.52E-15	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	1.29E-15	9.00E-13	2.25E-13	1.33E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/4/2011	3.20E-15	9.00E-14	2.25E-14	8.89E-16	2.00E-14	5.00E-15	1.10E-15	9.00E-13	2.25E-13	1.48E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/4/2011	6.98E-15	9.00E-14	2.25E-14	2.03E-15	2.00E-14	5.00E-15	2.52E-15	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/3/2011	3.11E-15	9.00E-14	2.25E-14	1.14E-15	2.00E-14	5.00E-15	5.75E-16	9.00E-13	2.25E-13	1.41E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2012	4.44E-15	9.00E-14	2.25E-14	2.14E-15	2.00E-14	5.00E-15	1.53E-15	9.00E-13	2.25E-13	2.05E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2012	5.52E-15	9.00E-14	2.25E-14	3.24E-15	2.00E-14	5.00E-15	1.79E-15	9.00E-13	2.25E-13	1.55E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2012	5.87E-15	9.00E-14	2.25E-14	3.06E-15	2.00E-14	5.00E-15	1.21E-15	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/1/2012	6.73E-15	9.00E-14	2.25E-14	2.59E-15	2.00E-14	5.00E-15	2.43E-15	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2012	4.50E-15	9.00E-14	2.25E-14	1.62E-15	2.00E-14	5.00E-15	1.79E-15	9.00E-13	2.25E-13	1.74E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/25/2013	6.66E-15	9.00E-14	2.25E-14	1.48E-15	2.00E-14	5.00E-15	1.12E-15	9.00E-13	2.25E-13	1.80E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2013	7.35E-15	9.00E-14	2.25E-14	1.72E-15	2.00E-14	5.00E-15	2.02E-15	9.00E-13	2.25E-13	6.67E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2013	2.78E-15	9.00E-14	2.25E-14	6.92E-16	2.00E-14	5.00E-15	3.29E-16	9.00E-13	2.25E-13	6.62E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2013	6.70E-15	9.00E-14	2.25E-14	3.93E-16	2.00E-14	5.00E-15	2.53E-16	9.00E-13	2.25E-13	2.78E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2014	4.74E-15	9.00E-14	2.25E-14	1.42E-15	2.00E-14	5.00E-15	3.48E-15	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2014	8.18E-15	9.00E-14	2.25E-14	1.34E-15	2.00E-14	5.00E-15	1.76E-15	9.00E-13	2.25E-13	1.42E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2014	1.32E-14	9.00E-14	2.25E-14	7.76E-16	2.00E-14	5.00E-15	1.04E-15	9.00E-13	2.25E-13	1.23E-14	6.00E-13	1.50E-13	4.66E-17	4.00E-15	1.00E-15
12/29/2014	8.00E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
3/30/2015	1.00E-14	9.00E-14	2.25E-14	5.00E-16	2.00E-14	5.00E-15	2.10E-15	9.00E-13	2.25E-13	3.10E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
6/29/2015	4.60E-15	9.00E-14	2.25E-14	8.00E-16	2.00E-14	5.00E-15	3.70E-15	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15
9/28/2015	1.20E-14	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	9.80E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/28/2015	7.40E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.90E-16	9.00E-13	2.25E-13	2.20E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15
3/28/2016	1.40E-15	9.00E-14	2.25E-14	6.00E-16	2.00E-14	5.00E-15	6.20E-15	9.00E-13	2.25E-13	2.30E-14	6.00E-13	1.50E-13	6.00E-17	4.00E-15	1.00E-15
6/27/2016	3.90E-15	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	6.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
9/27/2016	7.10E-15	9.00E-14	2.25E-14	7.60E-16	2.00E-14	5.00E-15	1.10E-15	9.00E-13	2.25E-13	2.90E-16	6.00E-13	1.50E-13	3.00E-17	4.00E-15	1.00E-15
12/27/2016	5.10E-15	9.00E-14	2.25E-14	6.60E-16	2.00E-14	5.00E-15	9.60E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	1.30E-17	4.00E-15	1.00E-15
3/27/2017	7.80E-15	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	2.10E-15	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15
6/26/2017	8.00E-16	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
9/25/2017	2.70E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
12/26/2017	1.40E-14	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
3/26/2018	7.10E-16	9.00E-14	2.25E-14	1.70E-16	2.00E-14	5.00E-15	1.50E-16	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-5T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-15 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
6/25/2018	2.60E-15	9.00E-14	2.25E-14	2.40E-16	2.00E-14	5.00E-15	5.90E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	9.40E-18	4.00E-15	1.00E-15
9/24/2018	2.20E-15	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
12/31/2018	6.00E-15	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
4/1/2019	2.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
7/1/2019	2.00E-16	9.00E-14	2.25E-14	7.00E-16	2.00E-14	5.00E-15	5.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
9/30/2019	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	6.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
1/6/2020	4.00E-16	9.00E-14	2.25E-14	3.00E-16	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15


BHV-5 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-5 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
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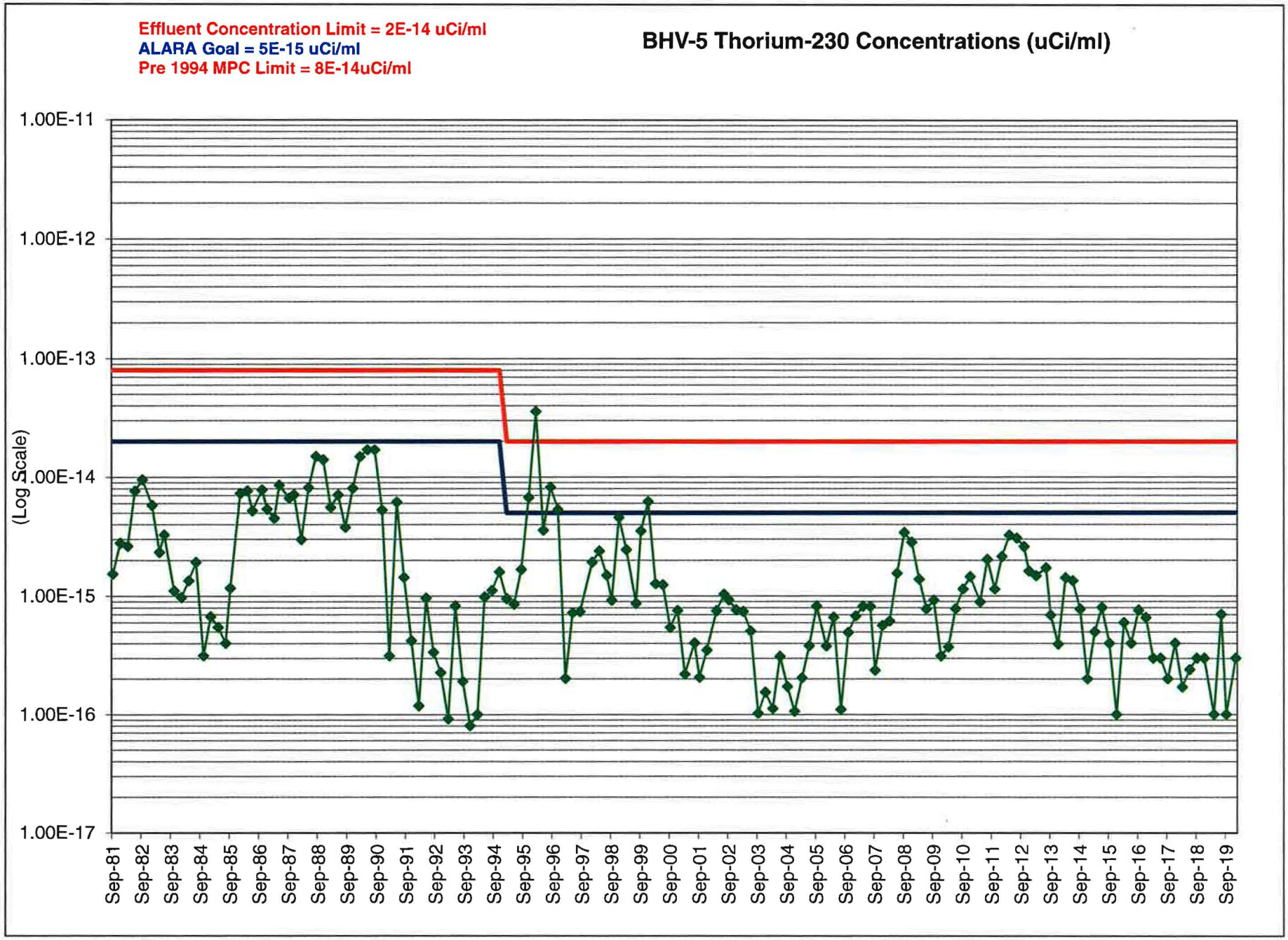
Sep-19


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-5 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
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Sep-89
Sep-90
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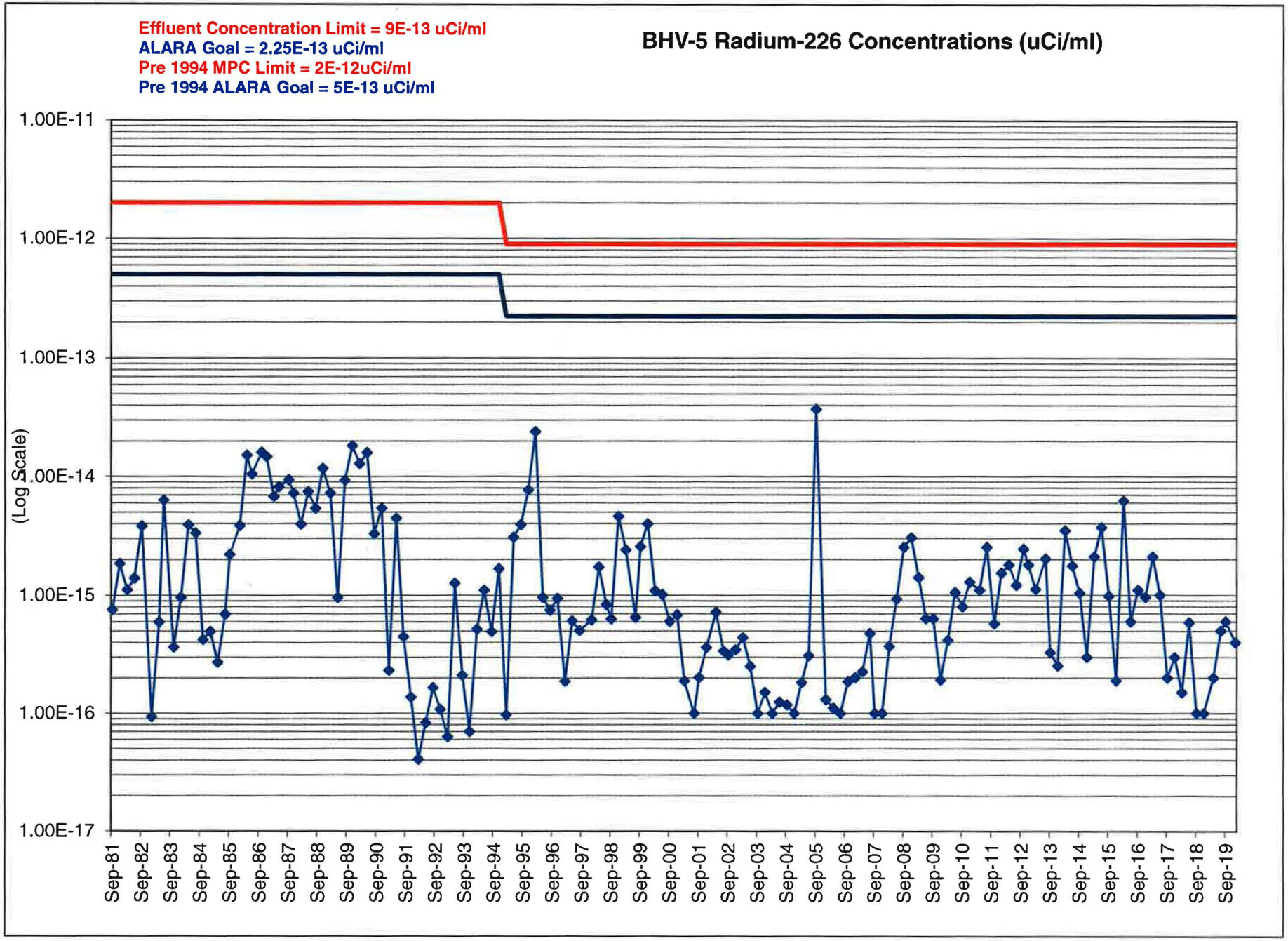
Sep-19


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-5 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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Sep-98
Sep-99
Sep-00
Sep-01
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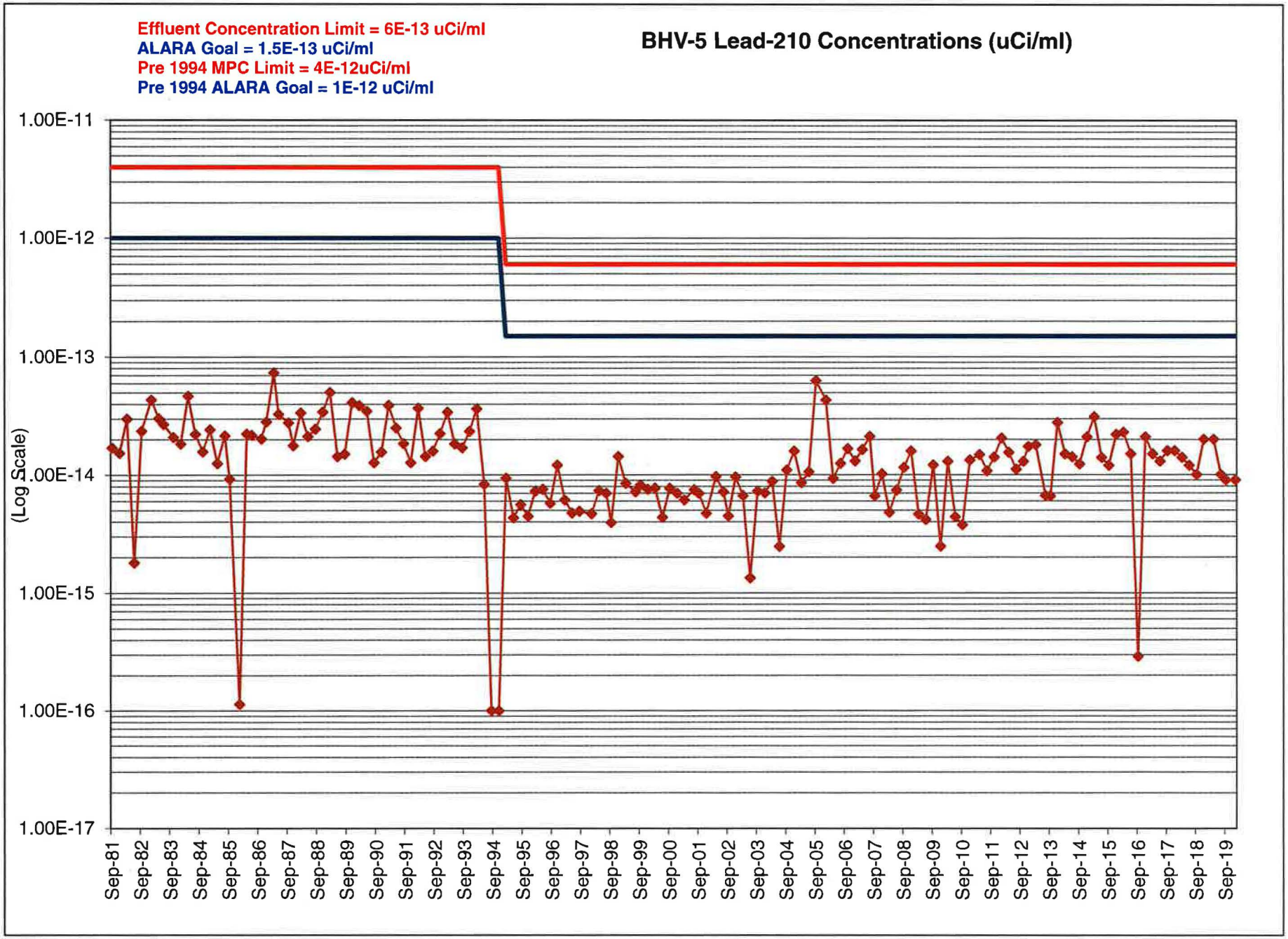
Sep-19


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-5 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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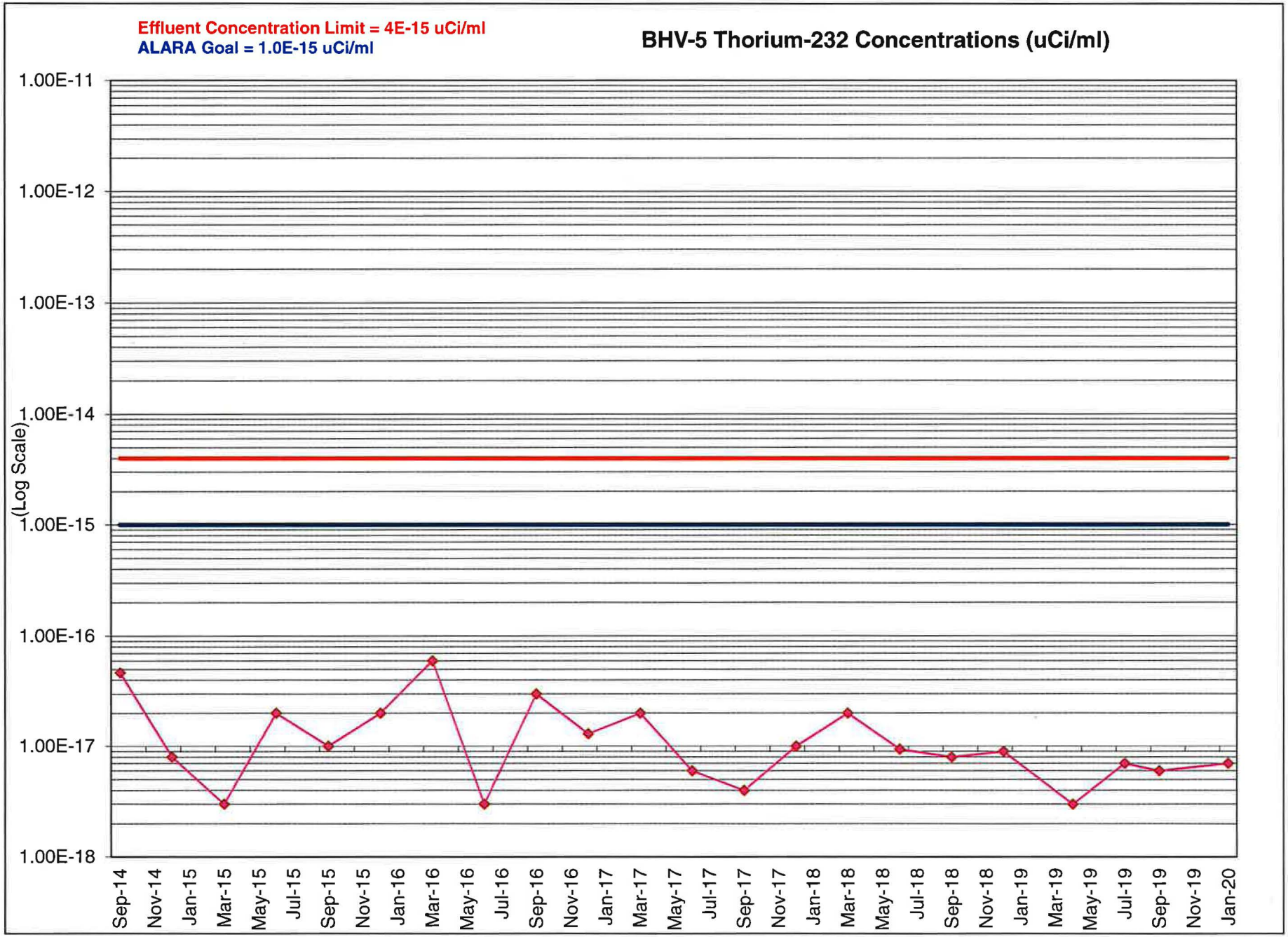
Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-5 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
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May-19
Jul-19
Sep-19
Nov-19
Jan-20

TAB 6

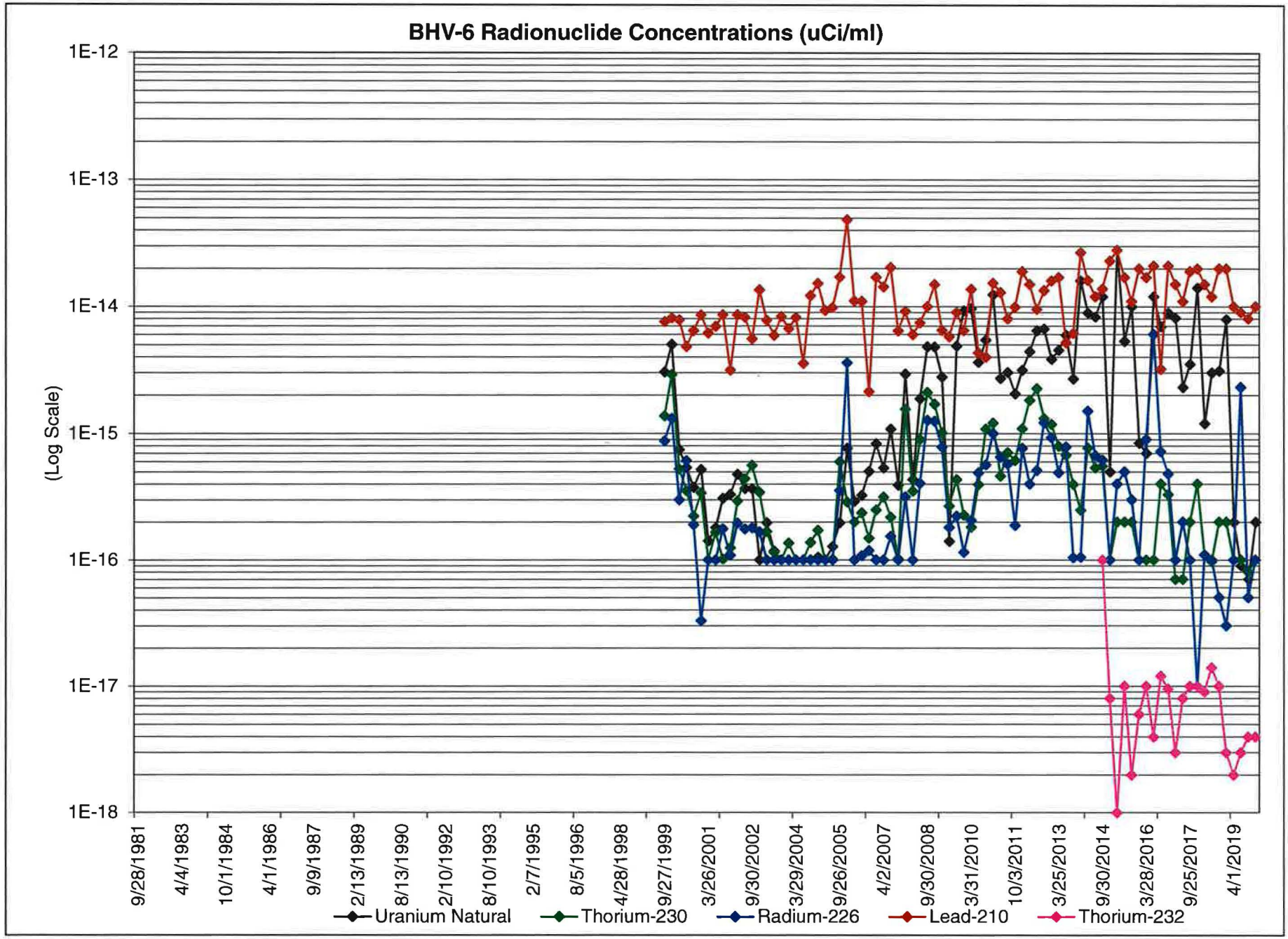
BHV-6 AIR SAMPLING GRAPHS AND DATA TABLE

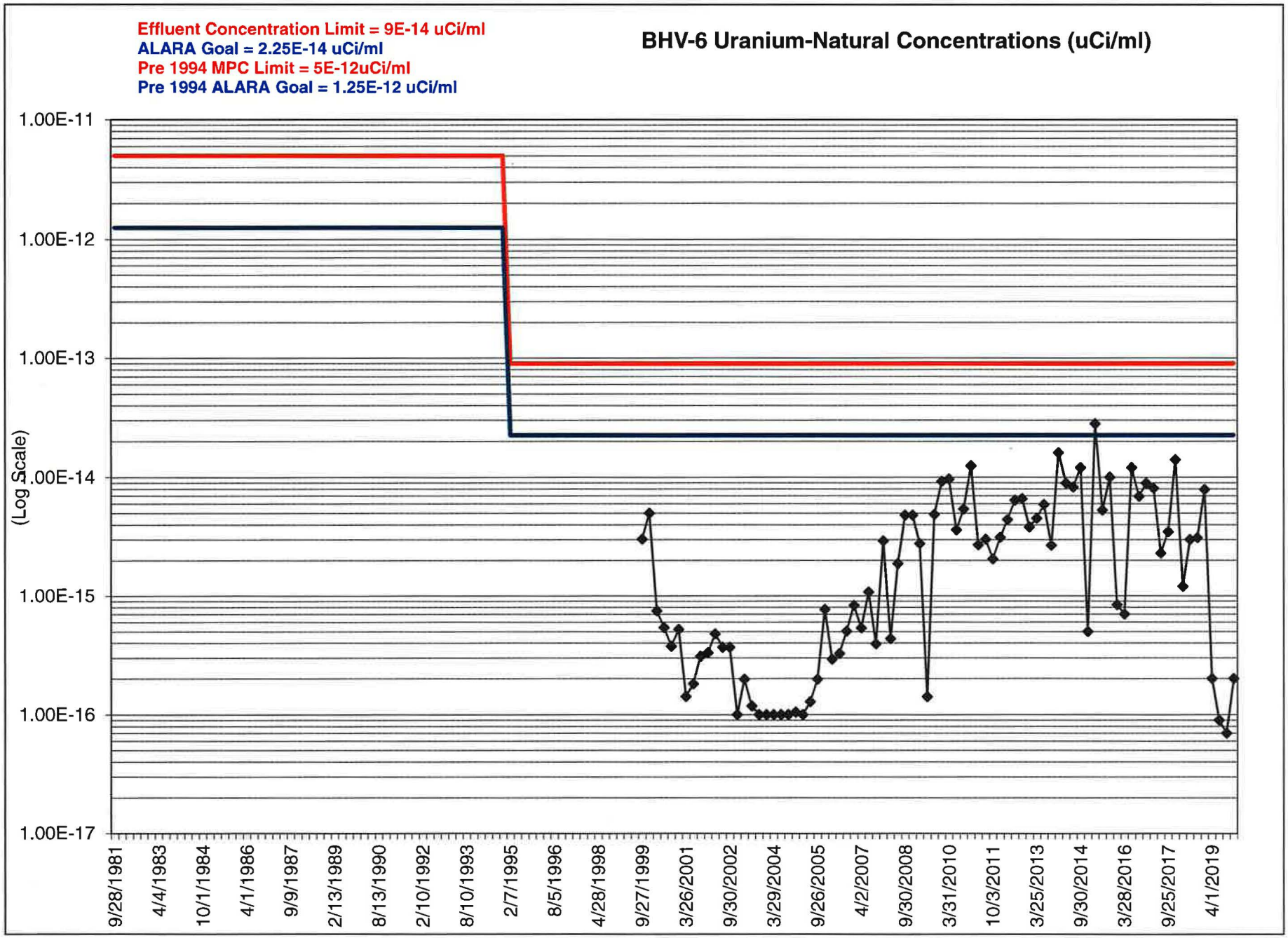
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-6T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/14/1981		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/29/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/27/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/4/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/3/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/2/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/2/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/1/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
7/1/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/30/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
1/2/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
4/1/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
6/30/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
10/27/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
12/15/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
3/16/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
9/9/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/2/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/16/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/18/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/15/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/14/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/13/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/15/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/14/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/13/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/12/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/14/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/13/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/12/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/11/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/13/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/12/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/11/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/10/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/11/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/9/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/9/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/10/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/10/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable

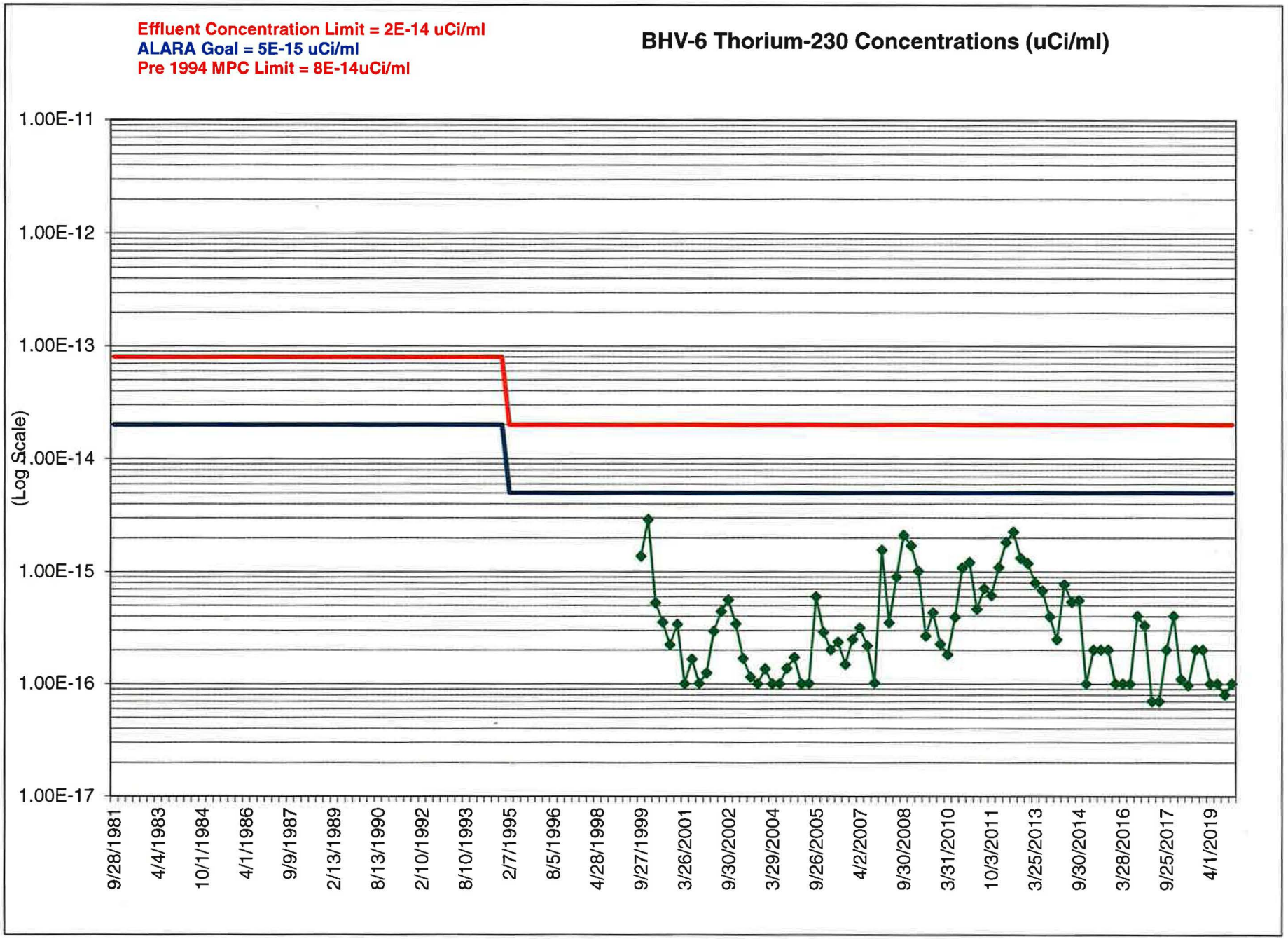
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-6T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
11/8/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
5/9/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
8/9/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
11/7/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12	Not Analyzed	Not Applicable	Not Applicable
2/7/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/9/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/9/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/11/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/5/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/6/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/5/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
11/6/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
2/6/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
5/5/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
8/11/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/5/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/31/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/1999		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/1999		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/1999	3.03E-15	9.00E-14	2.25E-14	1.37E-15	2.00E-14	5.00E-15	8.72E-16	9.00E-13	2.25E-13	7.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/28/1999	5.01E-15	9.00E-14	2.25E-14	2.89E-15	2.00E-14	5.00E-15	1.31E-15	9.00E-13	2.25E-13	8.10E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/30/2000	7.46E-16	9.00E-14	2.25E-14	5.25E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	7.83E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/26/2000	5.40E-16	9.00E-14	2.25E-14	3.53E-16	2.00E-14	5.00E-15	6.11E-16	9.00E-13	2.25E-13	4.83E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/25/2000	3.75E-16	9.00E-14	2.25E-14	2.23E-16	2.00E-14	5.00E-15	1.91E-16	9.00E-13	2.25E-13	6.41E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/26/2000	5.21E-16	9.00E-14	2.25E-14	3.39E-16	2.00E-14	5.00E-15	3.28E-17	9.00E-13	2.25E-13	8.57E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/26/2001	1.42E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.15E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2001	1.81E-16	9.00E-14	2.25E-14	1.66E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/24/2001	3.08E-16	9.00E-14	2.25E-14	1.01E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	8.59E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2001	3.31E-16	9.00E-14	2.25E-14	1.25E-16	2.00E-14	5.00E-15	1.09E-16	9.00E-13	2.25E-13	3.14E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/1/2002	4.77E-16	9.00E-14	2.25E-14	2.94E-16	2.00E-14	5.00E-15	1.96E-16	9.00E-13	2.25E-13	8.61E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/1/2002	3.68E-16	9.00E-14	2.25E-14	4.41E-16	2.00E-14	5.00E-15	1.76E-16	9.00E-13	2.25E-13	8.20E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2002	3.67E-16	9.00E-14	2.25E-14	5.60E-16	2.00E-14	5.00E-15	1.80E-16	9.00E-13	2.25E-13	5.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2002	1.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	1.67E-16	9.00E-13	2.25E-13	1.35E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2003	1.98E-16	9.00E-14	2.25E-14	1.68E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.77E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2003	1.18E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.92E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.30E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/29/2003	1.00E-16	9.00E-14	2.25E-14	1.36E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.66E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.17E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.55E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.38E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/27/2004	1.05E-16	9.00E-14	2.25E-14	1.72E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.52E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/29/2005	1.28E-16	9.00E-14	2.25E-14	1.01E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.85E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/26/2005	1.98E-16	9.00E-14	2.25E-14	5.98E-16	2.00E-14	5.00E-15	3.55E-16	9.00E-13	2.25E-13	1.71E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2006	7.67E-16	9.00E-14	2.25E-14	2.88E-16	2.00E-14	5.00E-15	3.60E-15	9.00E-13	2.25E-13	4.85E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable

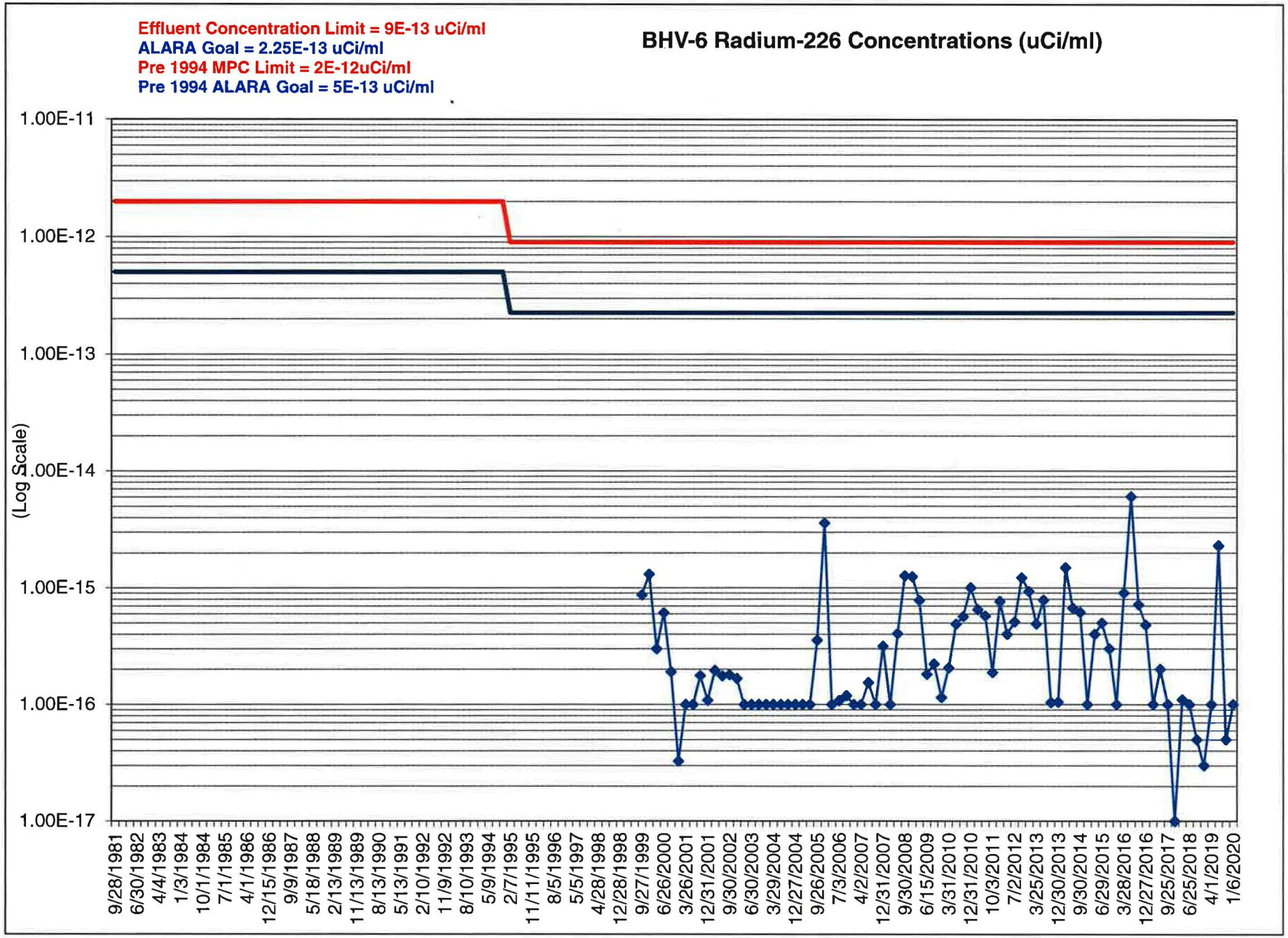
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-6T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
4/3/2006	2.92E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/3/2006	3.25E-16	9.00E-14	2.25E-14	2.36E-16	2.00E-14	5.00E-15	1.08E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/2/2006	5.03E-16	9.00E-14	2.25E-14	1.49E-16	2.00E-14	5.00E-15	1.19E-16	9.00E-13	2.25E-13	2.13E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/1/2007	8.31E-16	9.00E-14	2.25E-14	2.49E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/2/2007	5.36E-16	9.00E-14	2.25E-14	3.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.43E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2007	1.08E-15	9.00E-14	2.25E-14	2.18E-16	2.00E-14	5.00E-15	1.54E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2007	3.92E-16	9.00E-14	2.25E-14	1.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.38E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2007	2.92E-15	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	3.16E-16	9.00E-13	2.25E-13	9.19E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2008	4.34E-16	9.00E-14	2.25E-14	3.51E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.99E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/3102008	1.88E-15	9.00E-14	2.25E-14	9.00E-16	2.00E-14	5.00E-15	4.04E-16	9.00E-13	2.25E-13	7.41E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2008	4.82E-15	9.00E-14	2.25E-14	2.10E-15	2.00E-14	5.00E-15	1.27E-15	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2008	4.80E-15	9.00E-14	2.25E-14	1.70E-15	2.00E-14	5.00E-15	1.25E-15	9.00E-13	2.25E-13	1.49E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/15/2009	2.77E-15	9.00E-14	2.25E-14	1.01E-15	2.00E-14	5.00E-15	7.82E-16	9.00E-13	2.25E-13	6.46E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/15/2009	1.41E-16	9.00E-14	2.25E-14	2.67E-16	2.00E-14	5.00E-15	1.81E-16	9.00E-13	2.25E-13	5.76E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/15/2009	4.87E-15	9.00E-14	2.25E-14	4.32E-16	2.00E-14	5.00E-15	2.23E-16	9.00E-13	2.25E-13	8.98E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/15/2009	9.24E-15	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.15E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2010	9.63E-15	9.00E-14	2.25E-14	1.82E-16	2.00E-14	5.00E-15	2.06E-16	9.00E-13	2.25E-13	1.37E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2010	3.62E-15	9.00E-14	2.25E-14	3.94E-16	2.00E-14	5.00E-15	4.89E-16	9.00E-13	2.25E-13	4.30E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2010	5.42E-15	9.00E-14	2.25E-14	1.08E-15	2.00E-14	5.00E-15	5.68E-16	9.00E-13	2.25E-13	3.98E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2010	1.24E-14	9.00E-14	2.25E-14	1.21E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/4/2011	2.70E-15	9.00E-14	2.25E-14	4.62E-16	2.00E-14	5.00E-15	6.51E-16	9.00E-13	2.25E-13	1.29E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/4/2011	3.01E-15	9.00E-14	2.25E-14	7.07E-16	2.00E-14	5.00E-15	5.75E-16	9.00E-13	2.25E-13	7.97E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/3/2011	2.05E-15	9.00E-14	2.25E-14	6.12E-16	2.00E-14	5.00E-15	1.88E-16	9.00E-13	2.25E-13	9.93E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
1/3/2012	3.14E-15	9.00E-14	2.25E-14	1.09E-15	2.00E-14	5.00E-15	7.65E-16	9.00E-13	2.25E-13	1.89E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
4/3/2012	4.41E-15	9.00E-14	2.25E-14	1.82E-15	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2012	6.42E-15	9.00E-14	2.25E-14	2.25E-15	2.00E-14	5.00E-15	5.11E-16	9.00E-13	2.25E-13	9.54E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
10/1/2012	6.63E-15	9.00E-14	2.25E-14	1.31E-15	2.00E-14	5.00E-15	1.22E-15	9.00E-13	2.25E-13	1.34E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/31/2012	3.83E-15	9.00E-14	2.25E-14	1.18E-15	2.00E-14	5.00E-15	9.30E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/25/2013	4.52E-15	9.00E-14	2.25E-14	7.93E-16	2.00E-14	5.00E-15	4.91E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
7/2/2013	5.91E-15	9.00E-14	2.25E-14	6.74E-16	2.00E-14	5.00E-15	7.85E-16	9.00E-13	2.25E-13	5.18E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2013	2.68E-15	9.00E-14	2.25E-14	3.97E-16	2.00E-14	5.00E-15	1.04E-16	9.00E-13	2.25E-13	6.13E-15	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
12/30/2013	1.60E-14	9.00E-14	2.25E-14	2.48E-16	2.00E-14	5.00E-15	1.05E-16	9.00E-13	2.25E-13	2.67E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
3/31/2014	8.92E-15	9.00E-14	2.25E-14	7.68E-16	2.00E-14	5.00E-15	1.50E-15	9.00E-13	2.25E-13	1.61E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
6/30/2014	8.29E-15	9.00E-14	2.25E-14	5.35E-16	2.00E-14	5.00E-15	6.72E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	Not Analyzed	Not Applicable	Not Applicable
9/30/2014	1.20E-14	9.00E-14	2.25E-14	5.54E-16	2.00E-14	5.00E-15	6.18E-16	9.00E-13	2.25E-13	1.38E-14	6.00E-13	1.50E-13	1.00E-16	4.00E-15	1.00E-15
12/29/2014	5.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.30E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
3/30/2015	2.80E-14	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	2.80E-14	6.00E-13	1.50E-13	1.00E-18	4.00E-15	1.00E-15
6/29/2015	5.30E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	5.00E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/28/2015	1.00E-14	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
12/28/2015	8.40E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
3/28/2016	7.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	9.00E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
6/27/2016	1.20E-14	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	6.00E-15	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
9/27/2016	6.90E-15	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	7.20E-16	9.00E-13	2.25E-13	3.20E-15	6.00E-13	1.50E-13	1.20E-17	4.00E-15	1.00E-15
12/27/2016	8.90E-15	9.00E-14	2.25E-14	3.30E-16	2.00E-14	5.00E-15	4.80E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	9.50E-18	4.00E-15	1.00E-15
3/27/2017	8.10E-15	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
6/26/2017	2.30E-15	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	8.00E-18	4.00E-15	1.00E-15
9/25/2017	3.50E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.90E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/26/2017	1.40E-14	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	1.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
3/26/2018	1.20E-15	9.00E-14	2.25E-14	1.10E-16	2.00E-14	5.00E-15	1.10E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-6T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
6/25/2018	3.00E-15	9.00E-14	2.25E-14	9.70E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	1.40E-17	4.00E-15	1.00E-15
9/24/2018	3.10E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/31/2018	7.90E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
4/1/2019	2.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
7/1/2019	9.00E-17	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.30E-15	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
9/30/2019	7.00E-17	9.00E-14	2.25E-14	8.00E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
1/6/2020	2.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15


BHV-6 Radionuclide Concentrations (uCi/ml)
1E-12
1E-13
1E-14
1E-15
1E-16
1E-17
1E-18
(Log Scale)
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013
9/30/2014
3/28/2016
9/25/2017
4/1/2019
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-6 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013
9/30/2014
3/28/2016
9/25/2017
4/1/2019


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-6 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013
9/30/2014
3/28/2016
9/25/2017
4/1/2019


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-6 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
6/30/1982
4/4/1983
1/3/1984
10/1/1984
7/1/1985
4/1/1986
12/15/1986
9/9/1987
5/18/1988
2/13/1989
11/13/1989
8/13/1990
5/13/1991
2/10/1992
11/9/1992
8/10/1993
5/9/1994
2/7/1995
11/11/1995
8/5/1996
5/5/1997
4/28/1998
12/28/1998
9/27/1999
6/26/2000
3/26/2001
12/31/2001
9/30/2002
6/30/2003
3/29/2004
12/27/2004
9/26/2005
7/3/2006
4/2/2007
12/31/2007
9/30/2008
6/15/2009
3/31/2010
12/31/2010
10/3/2011
7/2/2012
3/25/2013
12/30/2013
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3/28/2016
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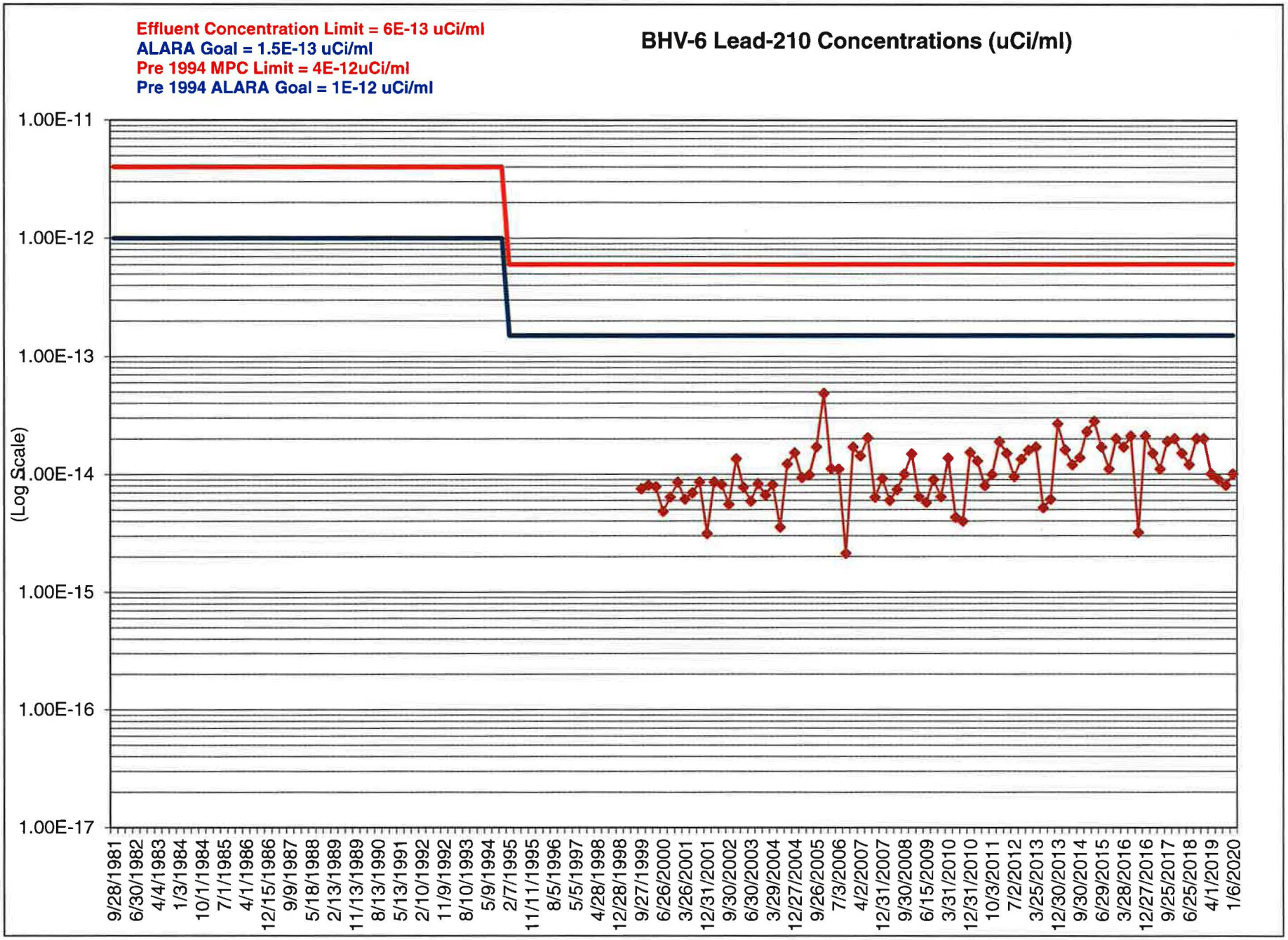
4/1/2019
1/6/2020


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-6 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
6/30/1982
4/4/1983
1/3/1984
10/1/1984
7/1/1985
4/1/1986
12/15/1986
9/9/1987
5/18/1988
2/13/1989
11/13/1989
8/13/1990
5/13/1991
2/10/1992
11/9/1992
8/10/1993
5/9/1994
2/7/1995
11/11/1995
8/5/1996
5/5/1997
4/28/1998
12/28/1998
9/27/1999
6/26/2000
3/26/2001
12/31/2001
9/30/2002
6/30/2003
3/29/2004
12/27/2004
9/26/2005
7/3/2006
4/2/2007
12/31/2007
9/30/2008
6/15/2009
3/31/2010
12/31/2010
10/3/2011
7/2/2012
3/25/2013
12/30/2013
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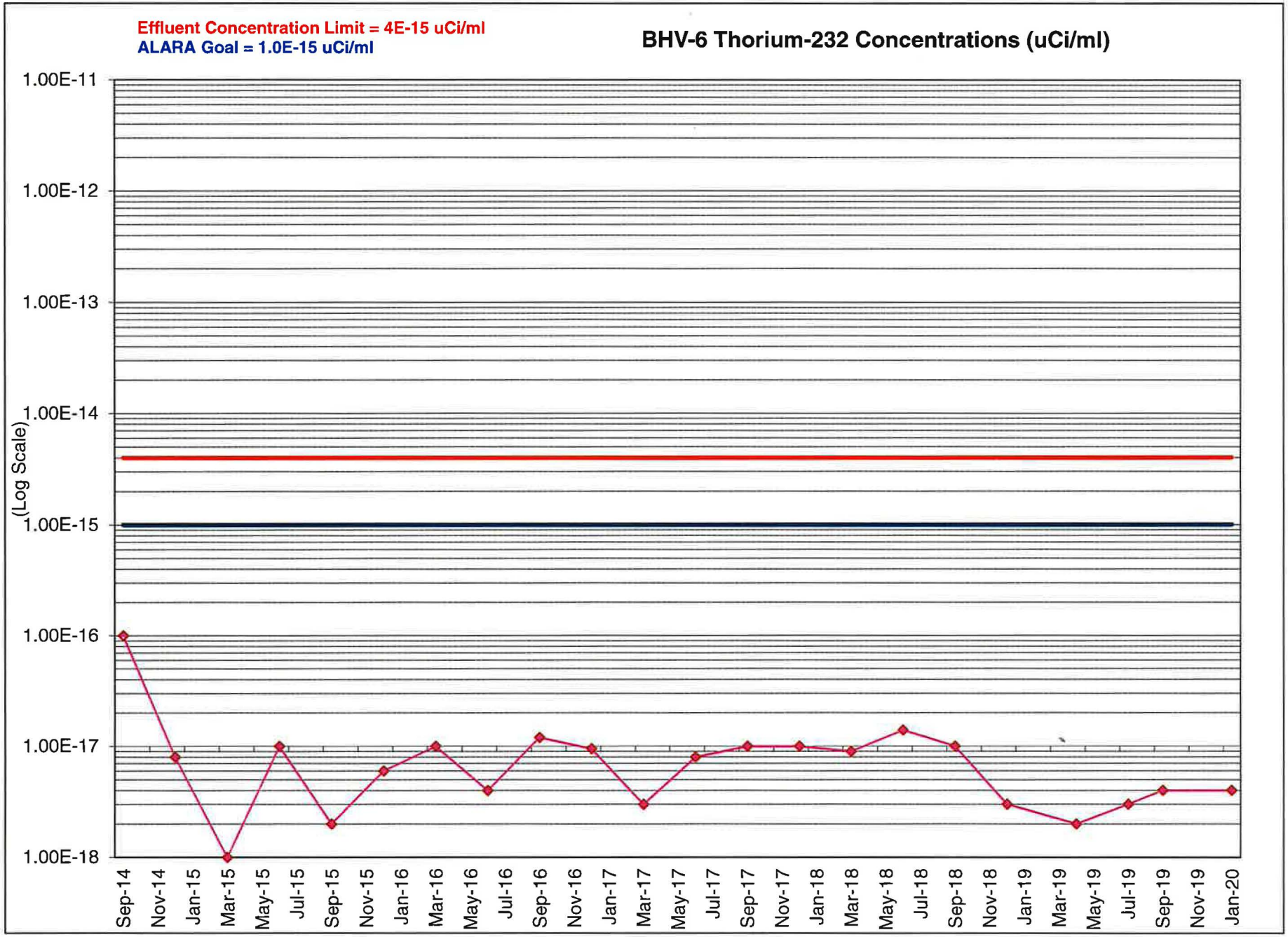
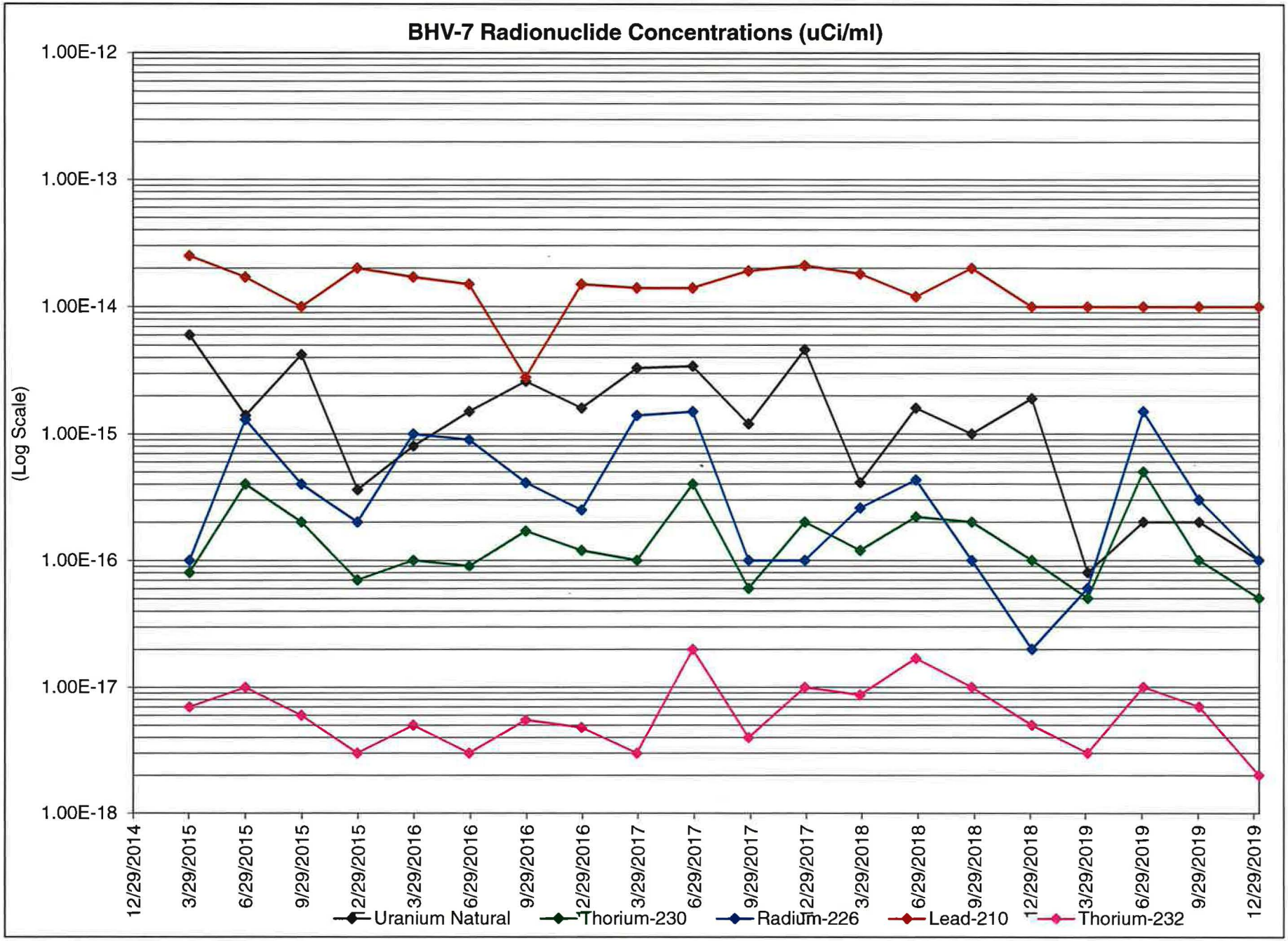
4/1/2019
1/6/2020

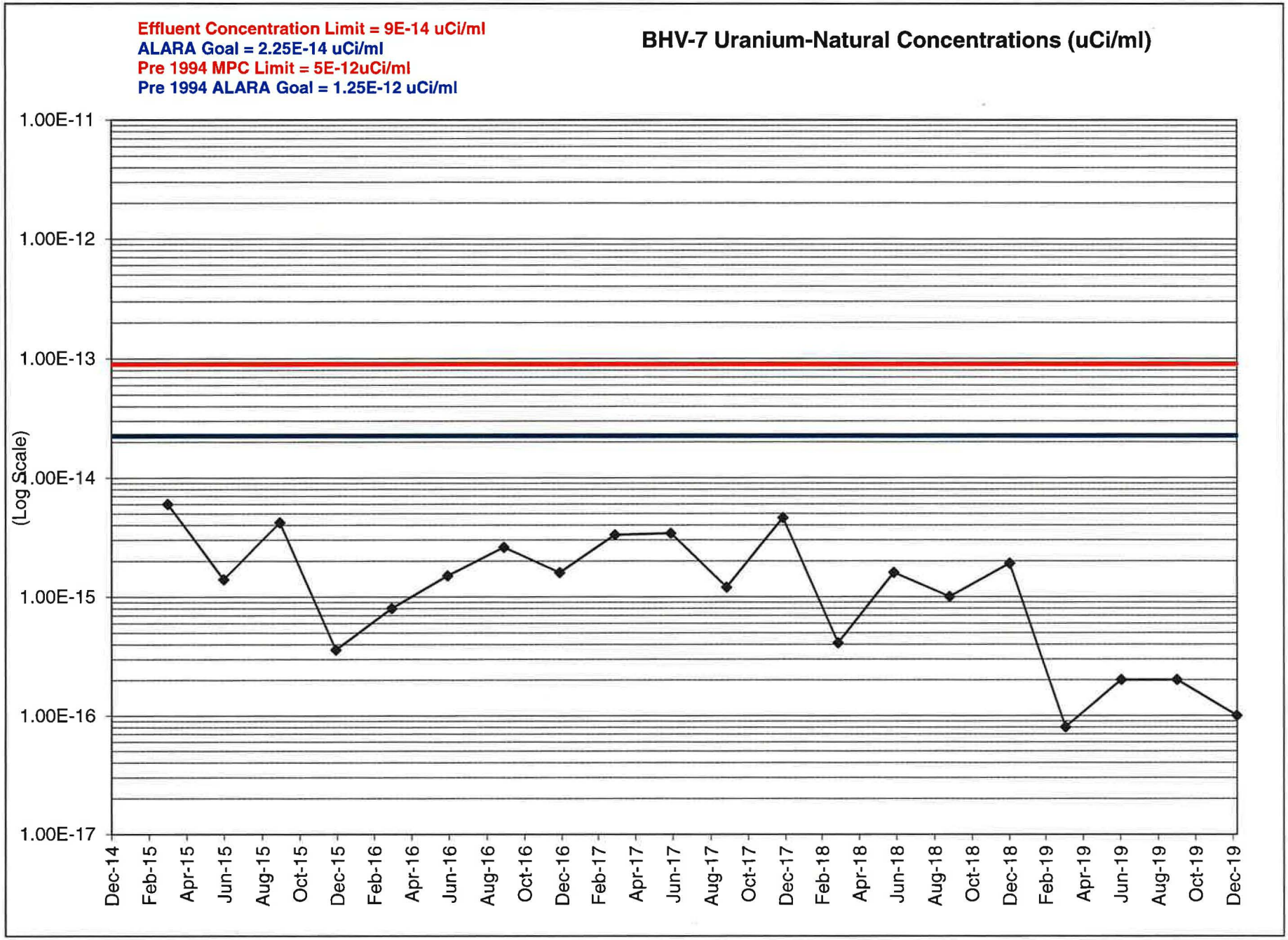

Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-6 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-14
Nov-14
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20

TAB 7

BHV-7 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-7U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-7T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-7R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-7PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-7T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
12/29/2014	NS	9.00E-14	2.25E-14	NS	2.00E-14	5.00E-15	NS	9.00E-13	2.25E-13	NS	6.00E-13	1.50E-13	NS	4.00E-15	1.00E-15
3/30/2015	6.00E-15	9.00E-14	2.25E-14	8.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.50E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
6/29/2015	1.40E-15	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	1.30E-15	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/28/2015	4.20E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
12/28/2015	3.60E-16	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
3/28/2016	8.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	5.00E-18	4.00E-15	1.00E-15
6/27/2016	1.50E-15	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	9.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
9/27/2016	2.60E-15	9.00E-14	2.25E-14	1.70E-16	2.00E-14	5.00E-15	4.10E-16	9.00E-13	2.25E-13	2.80E-15	6.00E-13	1.50E-13	5.50E-18	4.00E-15	1.00E-15
12/27/2016	1.60E-15	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	2.50E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13	4.80E-18	4.00E-15	1.00E-15
3/27/2017	3.30E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.40E-15	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
6/26/2017	3.40E-15	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	1.50E-15	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	2.00E-17	4.00E-15	1.00E-15
9/25/2017	1.20E-15	9.00E-14	2.25E-14	6.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.90E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
12/26/2017	4.60E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
3/26/2018	4.10E-16	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	2.60E-16	9.00E-13	2.25E-13	1.80E-14	6.00E-13	1.50E-13	8.70E-18	4.00E-15	1.00E-15
6/25/2018	1.60E-15	9.00E-14	2.25E-14	2.20E-16	2.00E-14	5.00E-15	4.30E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	1.70E-17	4.00E-15	1.00E-15
9/24/2018	1.00E-15	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
12/31/2018	1.90E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	5.00E-18	4.00E-15	1.00E-15
4/1/2019	8.00E-17	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	6.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
7/1/2019	2.00E-16	9.00E-14	2.25E-14	5.00E-16	2.00E-14	5.00E-15	1.50E-15	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	1.00E-17	4.00E-15	1.00E-15
9/30/2019	2.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
1/6/2020	1.00E-16	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15


BHV-7 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
12/29/2014
3/29/2015
6/29/2015
9/29/2015
12/29/2015
3/29/2016
6/29/2016
9/29/2016
12/29/2016
3/29/2017
6/29/2017
9/29/2017
12/29/2017
3/29/2018
6/29/2018
9/29/2018
12/29/2018
3/29/2019
6/29/2019
9/29/2019
12/29/2019
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-7 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
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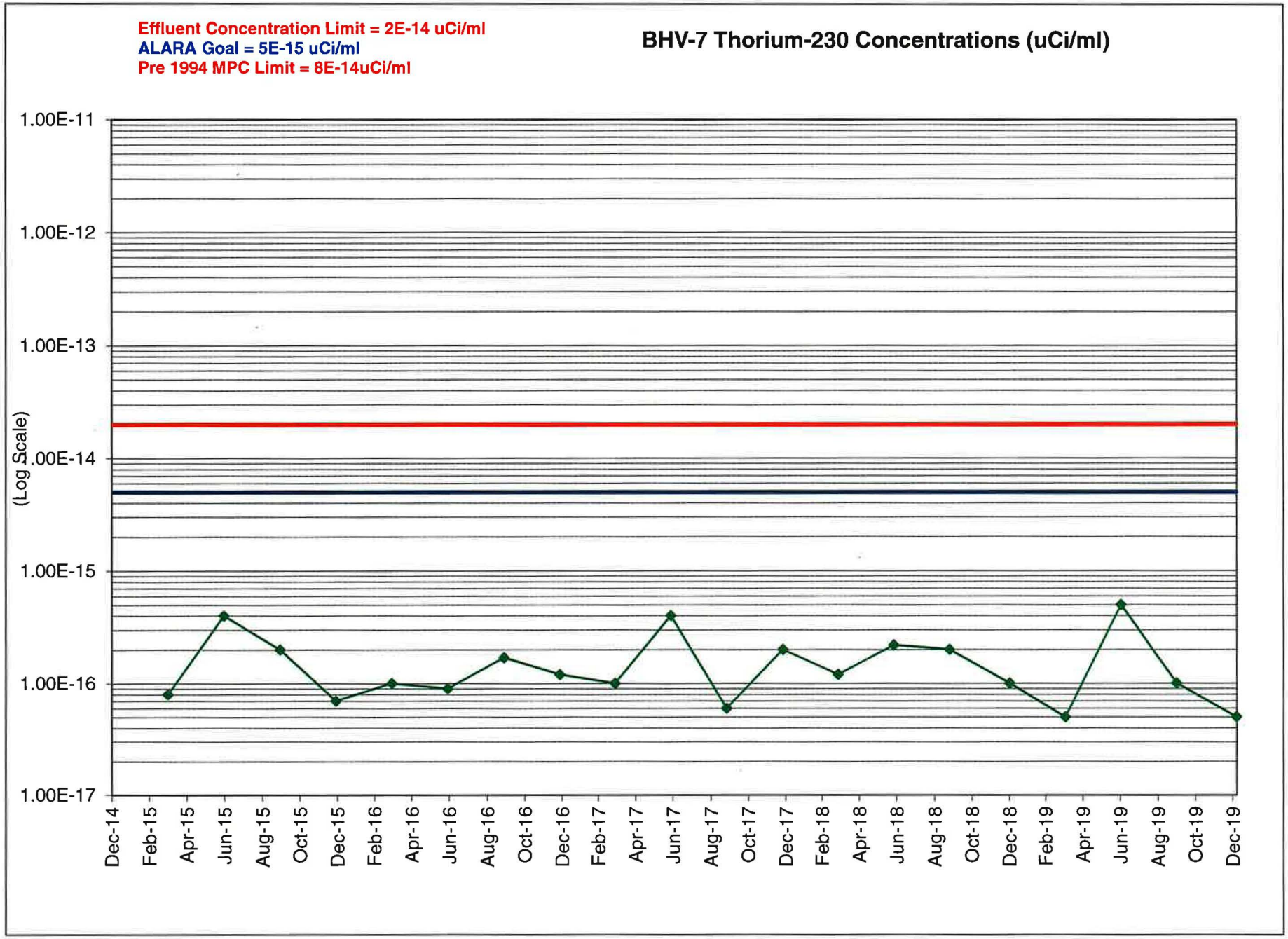
Feb-19
Apr-19
Jun-19
Aug-19
Oct-19
Dec-19


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-7 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
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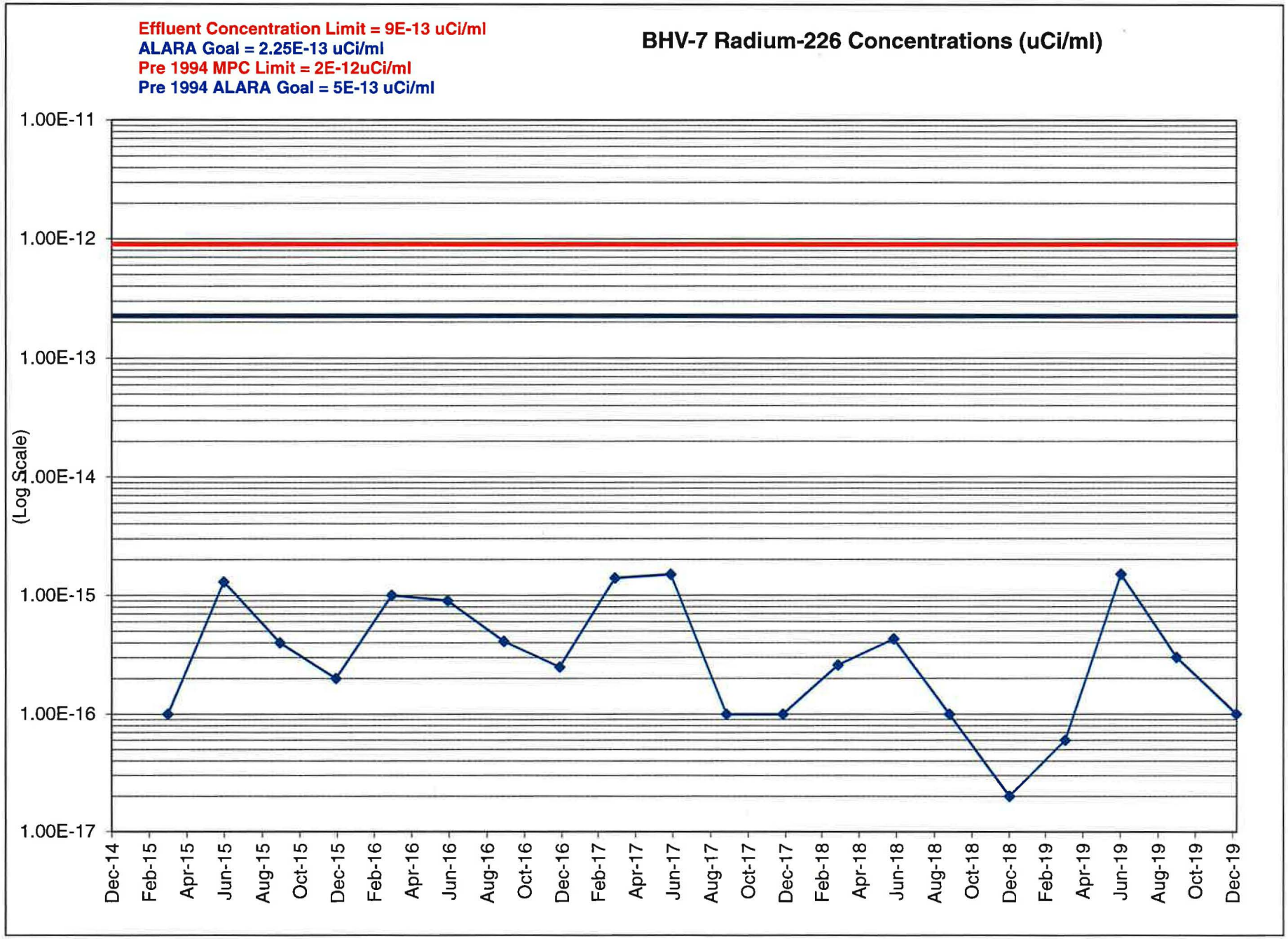
Oct-19
Dec-19


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-7 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
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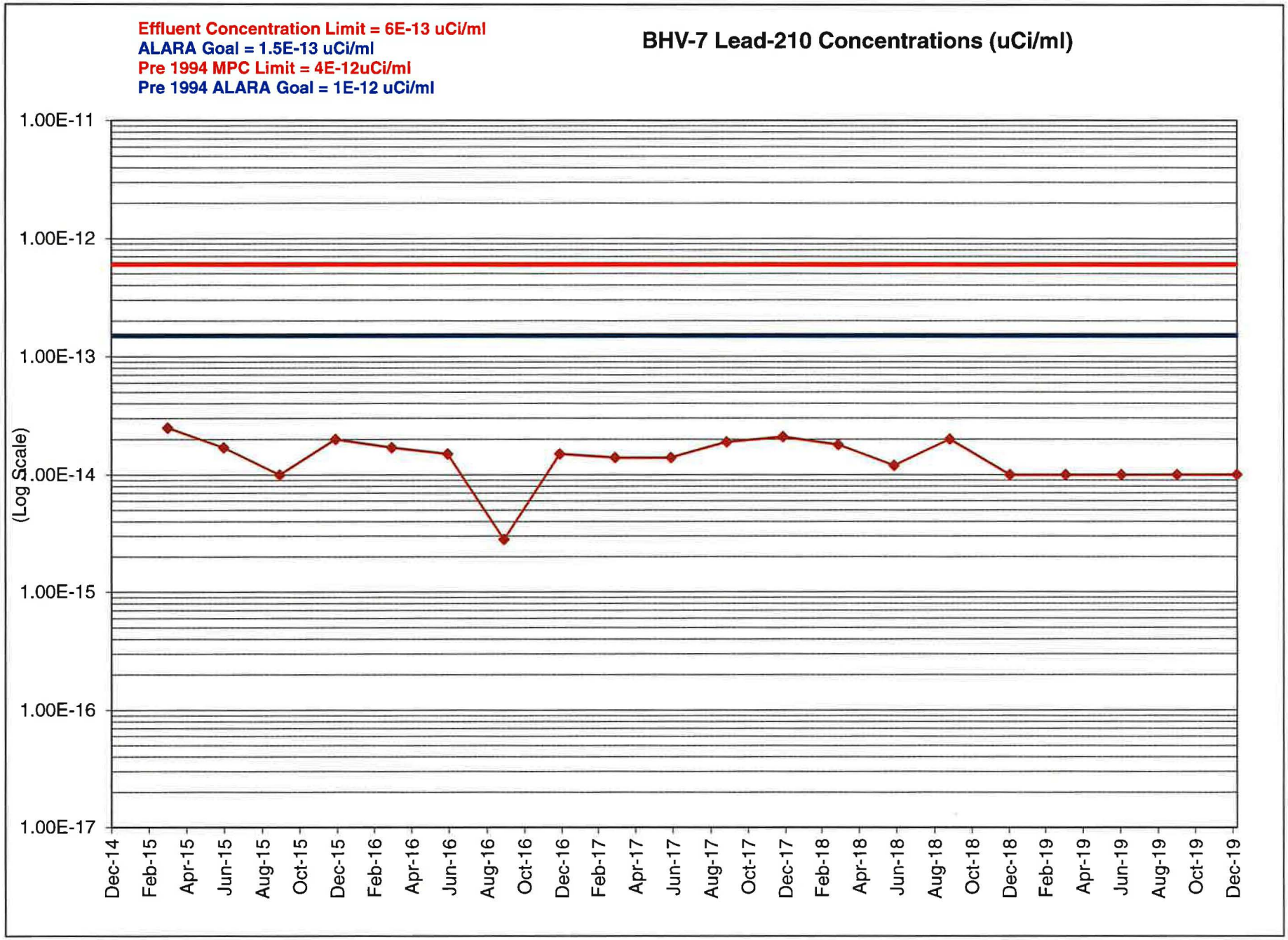
Feb-19
Apr-19
Jun-19
Aug-19
Oct-19
Dec-19


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-7 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
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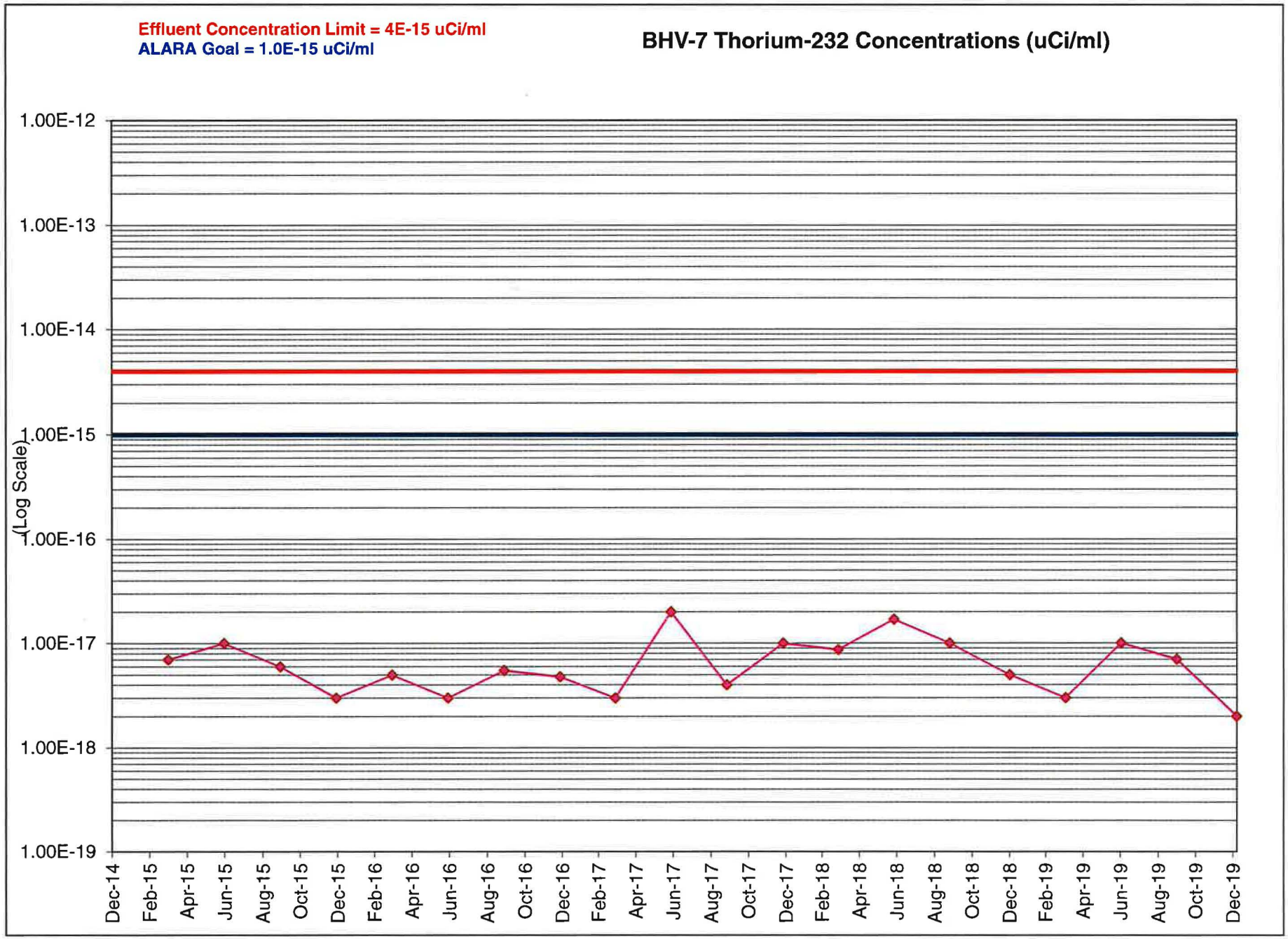
Dec-19


Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-7 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
1.00E-19
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
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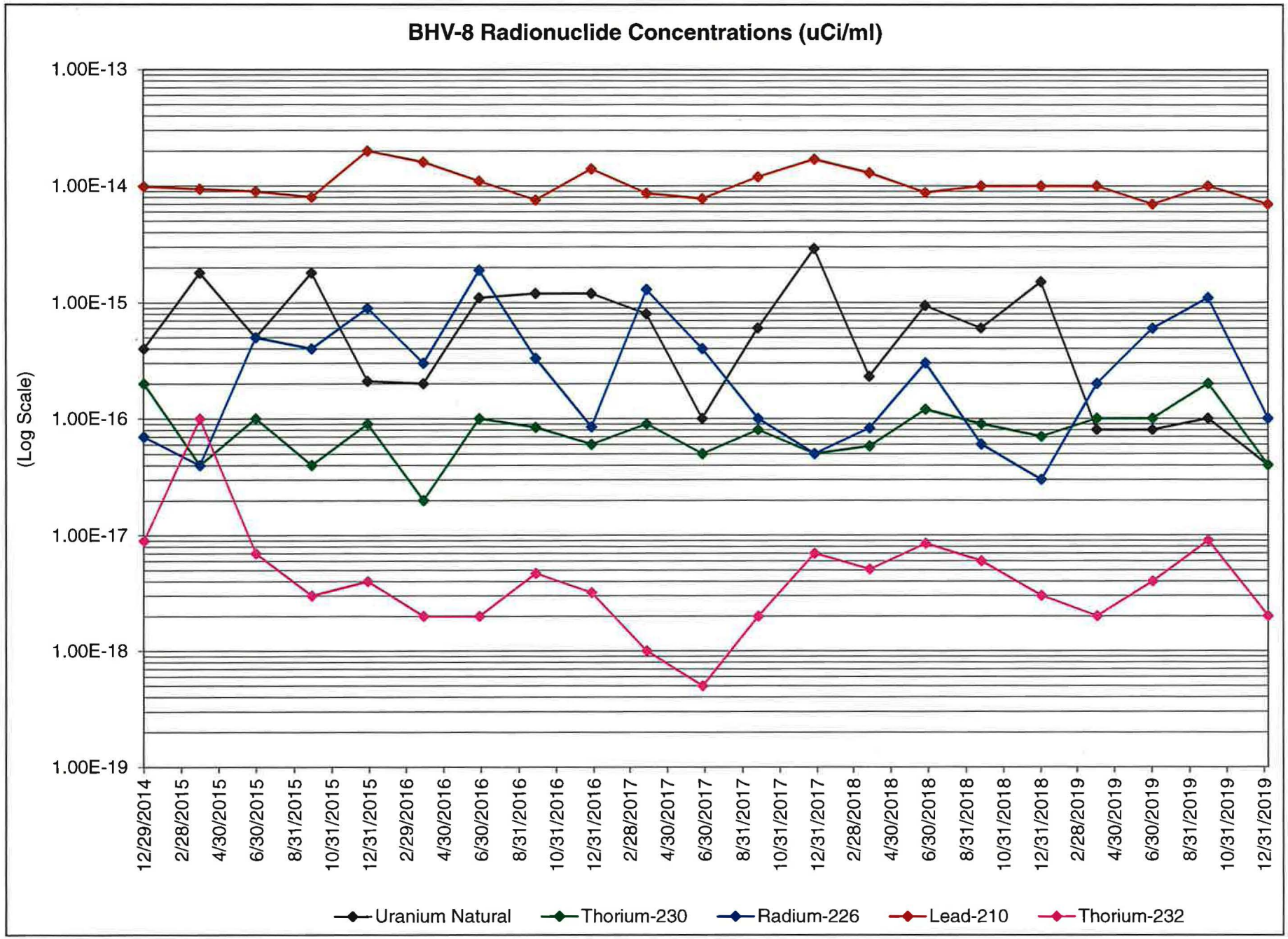
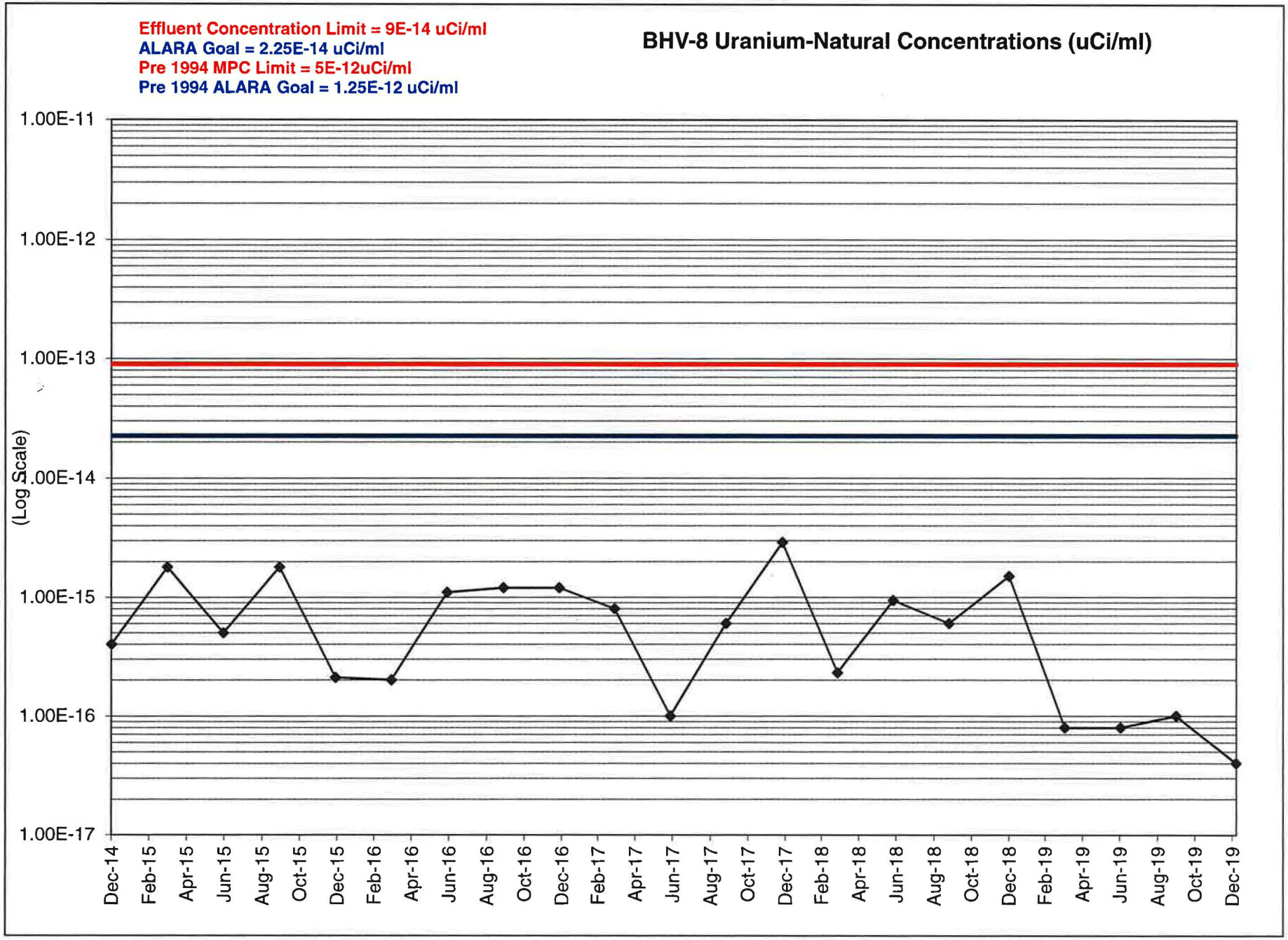
Aug-19
Oct-19
Dec-19

TAB 8

BHV-8 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-8U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-8T230	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-8R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-8PB	Effluent Concentration Limit =	4e-15 uCi/ml	BHV-8T232
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml		ALARA Goal =	1E-15 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml		Pre 1994 MPC Limit =	Not Applicable	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml		Pre 1994 ALARA GOAL =	Not Applicable	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
12/29/2014	4.00E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	7.00E-17	9.00E-13	2.25E-13	9.90E-15	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
3/30/2015	1.80E-15	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	4.00E-17	9.00E-13	2.25E-13	9.40E-15	6.00E-13	1.50E-13	1.00E-16	4.00E-15	1.00E-15
6/29/2015	5.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	5.00E-16	9.00E-13	2.25E-13	9.00E-15	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
9/28/2015	1.80E-15	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
12/28/2015	2.10E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	9.00E-16	9.00E-13	2.25E-13	2.00E-14	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
3/28/2016	2.00E-16	9.00E-14	2.25E-14	2.00E-17	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
6/27/2016	1.10E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.90E-15	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
9/27/2016	1.20E-15	9.00E-14	2.25E-14	8.40E-17	2.00E-14	5.00E-15	3.30E-16	9.00E-13	2.25E-13	7.60E-15	6.00E-13	1.50E-13	4.70E-18	4.00E-15	1.00E-15
12/27/2016	1.20E-15	9.00E-14	2.25E-14	6.00E-17	2.00E-14	5.00E-15	8.50E-17	9.00E-13	2.25E-13	1.40E-14	6.00E-13	1.50E-13	3.20E-18	4.00E-15	1.00E-15
3/27/2017	8.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	1.30E-15	9.00E-13	2.25E-13	8.70E-15	6.00E-13	1.50E-13	1.00E-18	4.00E-15	1.00E-15
6/26/2017	1.00E-16	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	7.80E-15	6.00E-13	1.50E-13	5.00E-19	4.00E-15	1.00E-15
9/25/2017	6.00E-16	9.00E-14	2.25E-14	8.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
12/26/2017	2.90E-15	9.00E-14	2.25E-14	5.00E-17	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13	7.00E-18	4.00E-15	1.00E-15
3/26/2018	2.30E-16	9.00E-14	2.25E-14	5.80E-17	2.00E-14	5.00E-15	8.30E-17	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13	5.10E-18	4.00E-15	1.00E-15
6/25/2018	9.40E-16	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	8.80E-15	6.00E-13	1.50E-13	8.50E-18	4.00E-15	1.00E-15
9/24/2018	6.00E-16	9.00E-14	2.25E-14	9.00E-17	2.00E-14	5.00E-15	6.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	6.00E-18	4.00E-15	1.00E-15
12/31/2018	1.50E-15	9.00E-14	2.25E-14	7.00E-17	2.00E-14	5.00E-15	3.00E-17	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	3.00E-18	4.00E-15	1.00E-15
4/1/2019	8.00E-17	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.00E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15
7/1/2019	8.00E-17	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	6.00E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	4.00E-18	4.00E-15	1.00E-15
9/30/2019	1.00E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.10E-15	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13	9.00E-18	4.00E-15	1.00E-15
1/6/2020	4.00E-17	9.00E-14	2.25E-14	4.00E-17	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13	2.00E-18	4.00E-15	1.00E-15


BHV-8 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
1.00E-19
12/29/2014
2/28/2015
4/30/2015
6/30/2015
8/31/2015
10/31/2015
12/31/2015
2/29/2016
4/30/2016
6/30/2016
8/31/2016
10/31/2016
12/31/2016
2/28/2017
4/30/2017
6/30/2017
8/31/2017
10/31/2017
12/31/2017
2/28/2018
4/30/2018
6/30/2018
8/31/2018
10/31/2018
12/31/2018
2/28/2019
4/30/2019
6/30/2019
8/31/2019
10/31/2019
12/31/2019
Uranium Natural
Thorium-230
Radium-226
Lead-210
Thorium-232


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-8 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
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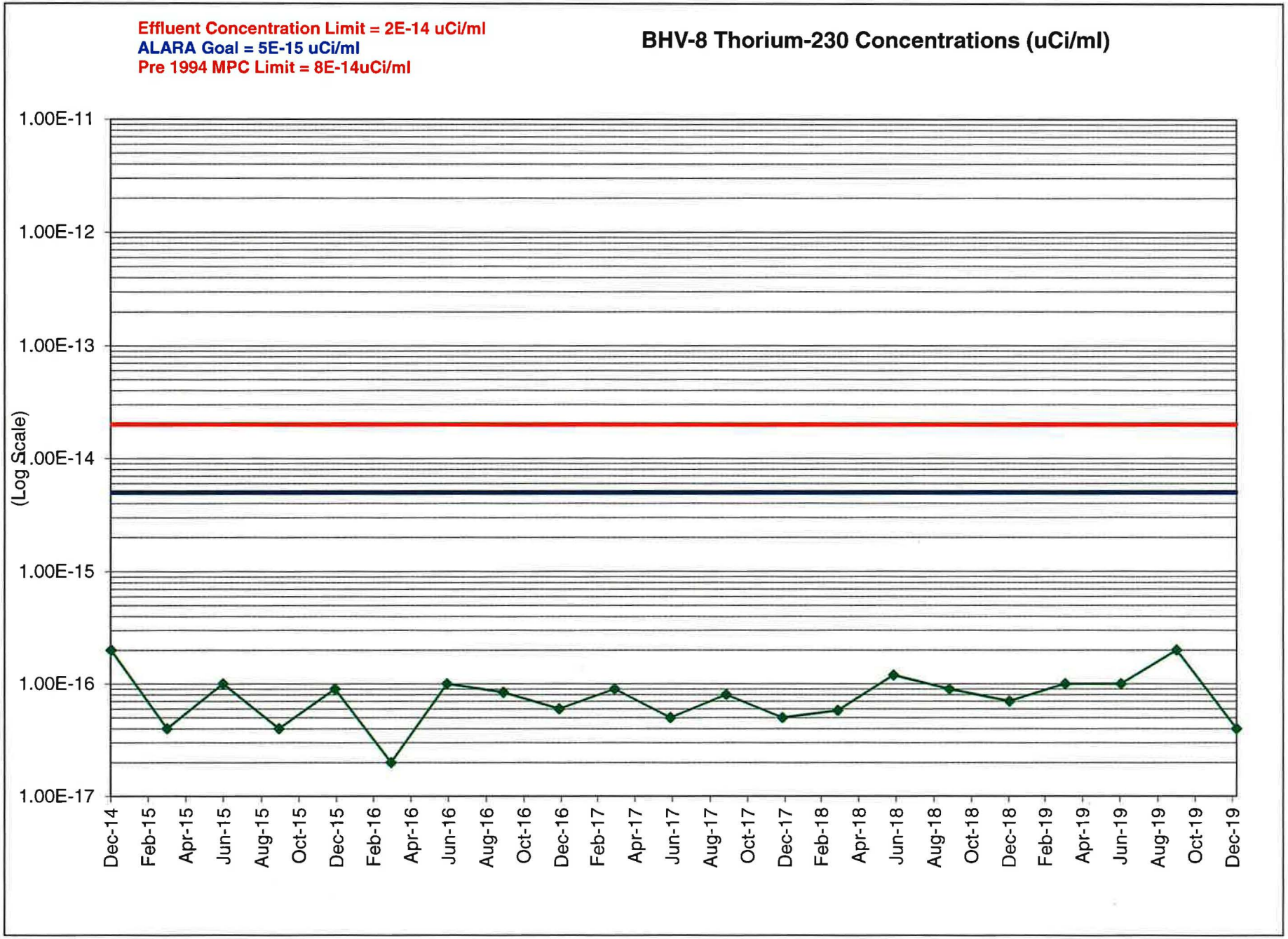
Oct-19
Dec-19


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-15 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-8 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
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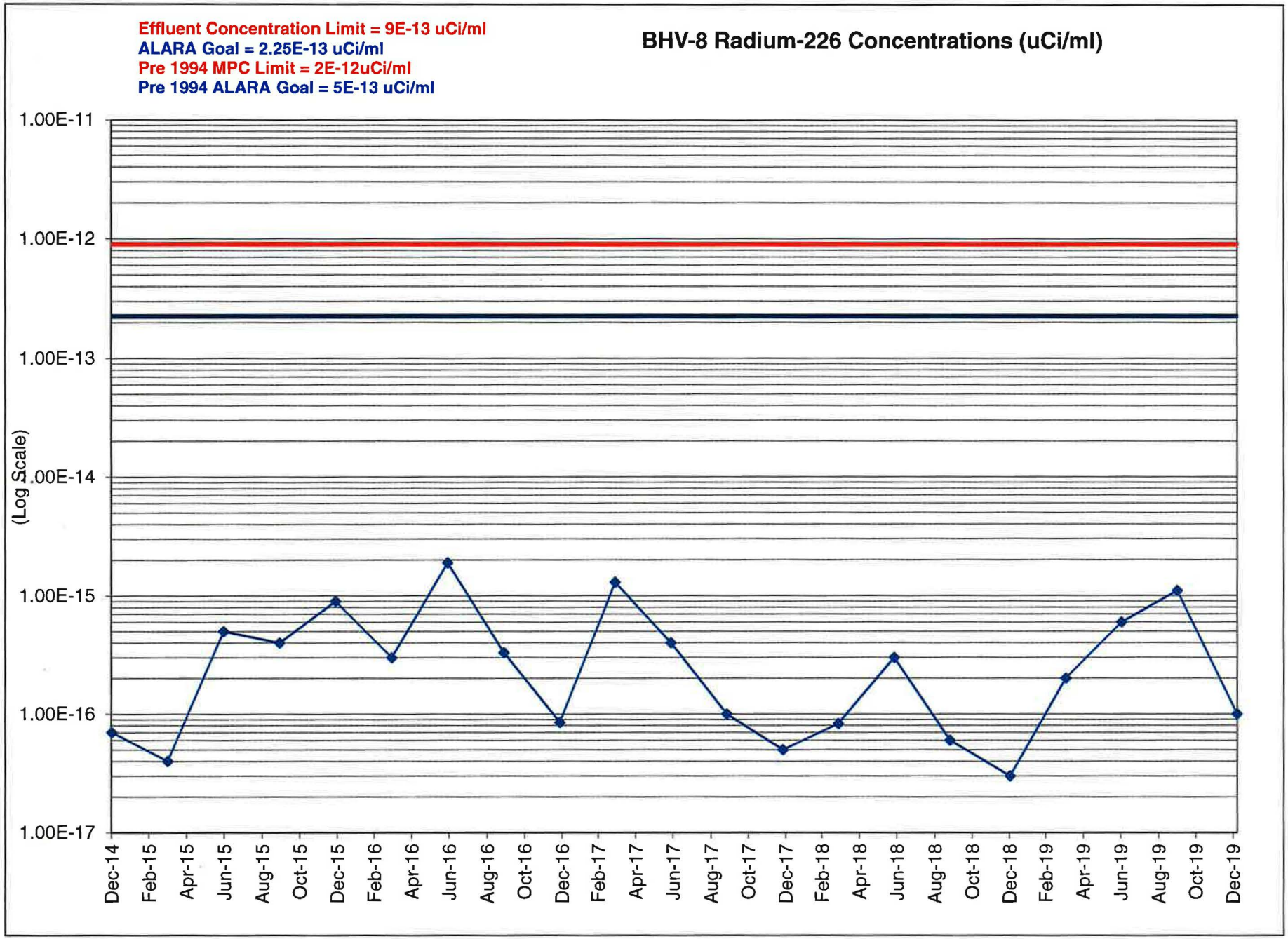
Jun-19
Aug-19
Oct-19
Dec-19


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-8 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
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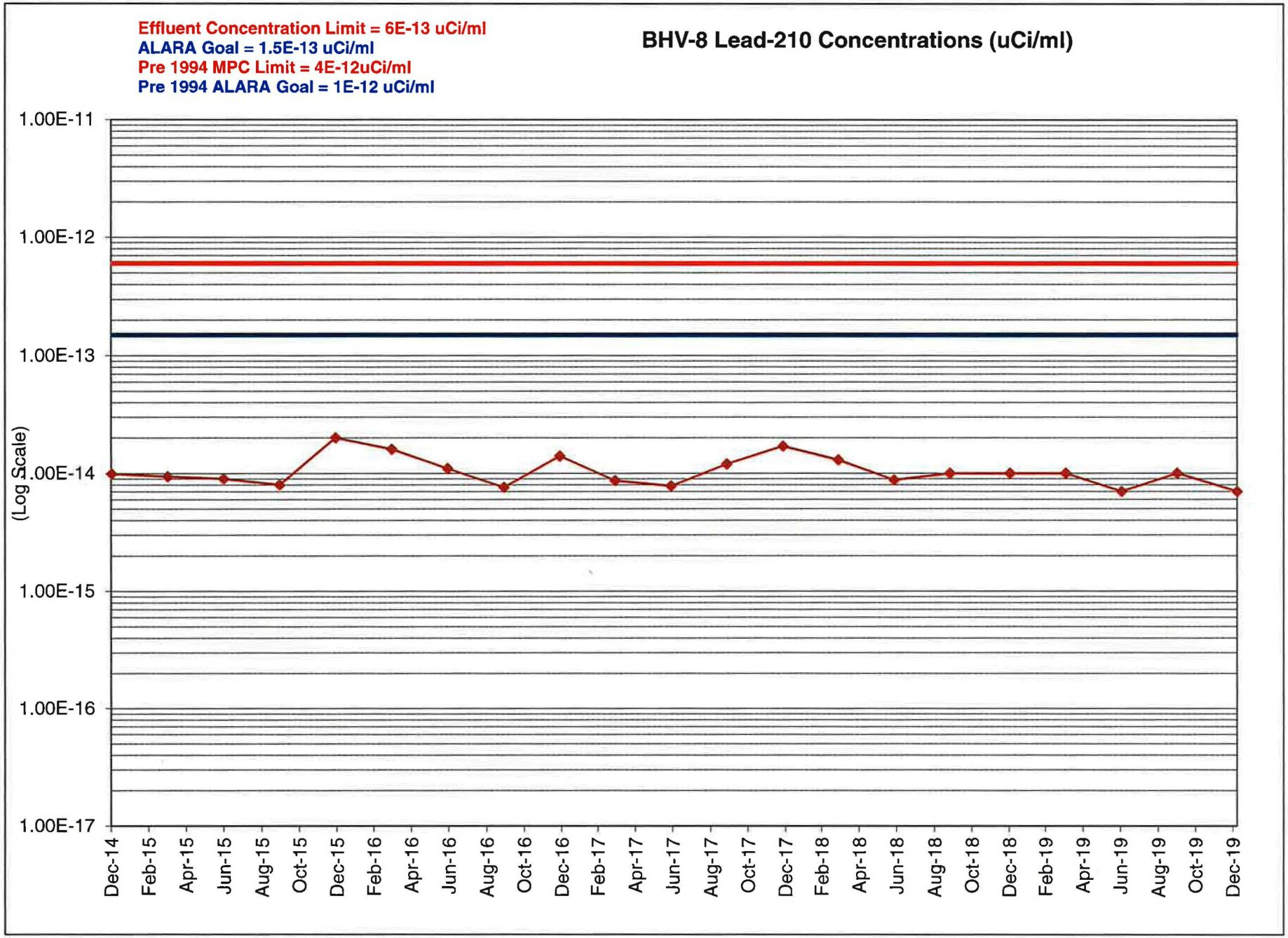
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-8 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
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Apr-15
Jun-15
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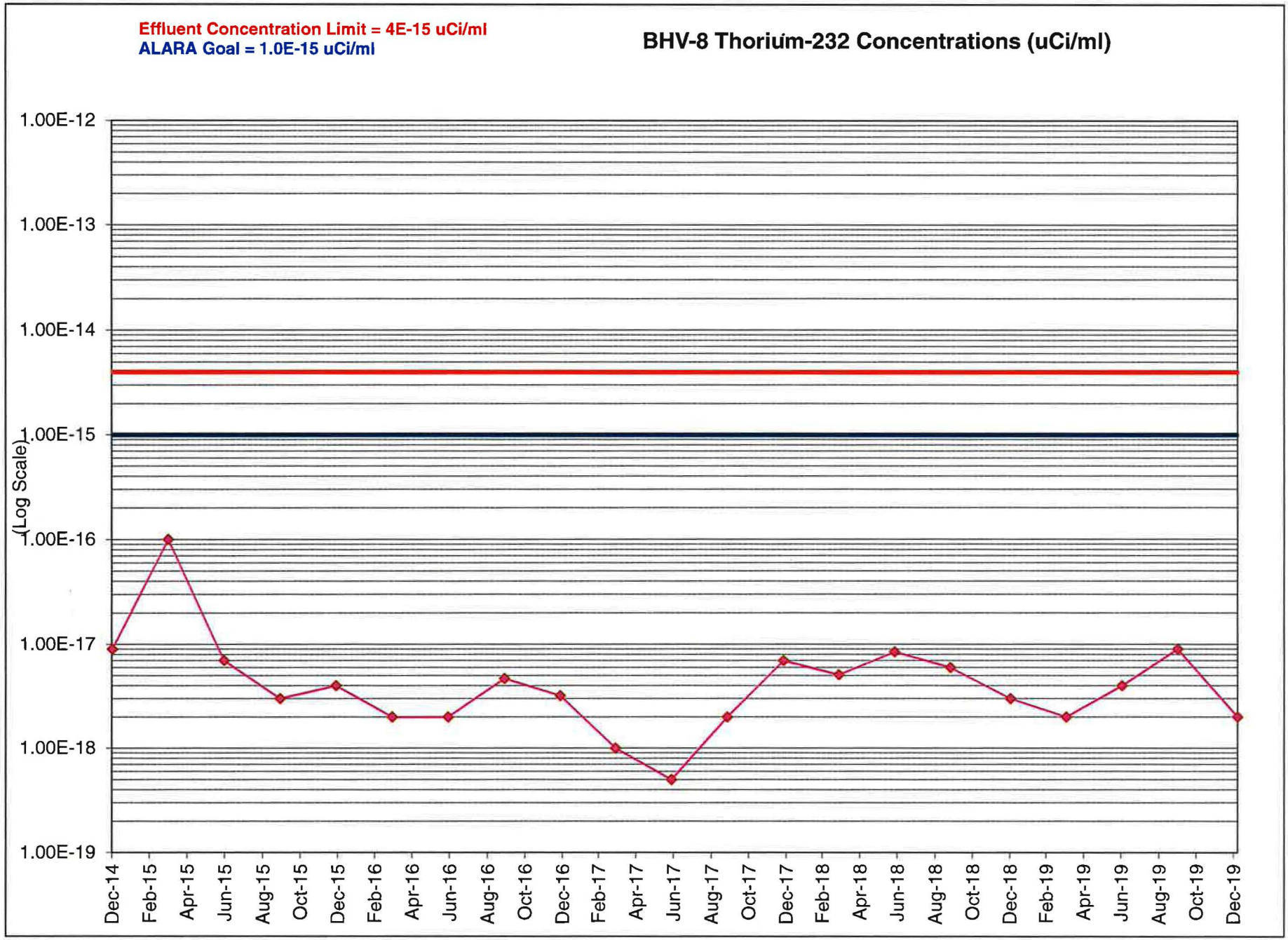
Effluent Concentration Limit = 4E-15 uCi/ml
ALARA Goal = 1.0E-15 uCi/ml
BHV-8 Thorium-232 Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
1.00E-19
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Dec-19

ATTACHMENT C

BHV AIR SAMPLING LABORATORY RESULTS AND QA/QC

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-1

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-001	^{nat}U	1E-16	N/A	N/A	1E-16	9E-14	2E-01
3rd Quarter 2019	^{230}Th	5E-16	1E-16	1E-17	1E-16	3E-14	2E+00
Air Volume in mLs	^{226}Ra	8E-16	2E-16	2E-17	1E-16	9E-13	9E-02
1.20E+11	^{210}Pb	1E-14	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	7E-18	2E-18	2E-18	N/A	6E-15	1E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-001
Client Sample ID: BHV-1

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.1E-10	mg/L		1.5E-10		SW6020	10/30/19 21:01 / meh
Uranium, Activity	1.4E-16	uCi/mL		1.0E-16		SW6020	10/30/19 21:01 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.1E-14	uCi/mL				E909.0	10/23/19 21:24 / ajl
Lead 210 precision (±)	3.2E-15	uCi/mL				E909.0	10/23/19 21:24 / ajl
Lead 210 MDC	3.0E-16	uCi/mL				E909.0	10/23/19 21:24 / ajl
Radium 226	8.0E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	1.6E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.8E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	5.3E-16	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	1.0E-16	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	1.1E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	6.5E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	2.0E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	1.8E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1270	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	379	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	36.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	95.5	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	18.9	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	63.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	12.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	1.3	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0.78	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.25	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.21	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	17.1	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.8E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	9.0E-02	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	1.8E+00	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	1.1E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-001
Client Sample ID: BHV-1

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	1.6E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	119908500	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-1

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-001	^{nat}U	4E-17	N/A	N/A	1E-16	9E-14	5E-02
4th Quarter 2019	^{230}Th	3E-17	6E-18	2E-18	1E-16	3E-14	1E-01
Air Volume in mLs	^{226}Ra	6E-17	2E-17	1E-17	1E-16	9E-13	7E-03
1.33E+11	^{210}Pb	1E-14	4E-15	4E-16	2E-15	6E-13	2E+00
	^{232}Th	3E-18	1E-18	2E-18	N/A	6E-15	5E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-001
Client Sample ID: BHV-1

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	ND	mg/L		1.5E-10		SW6020	01/24/20 14:27 / meh
Uranium, Activity	ND	uCi/mL		1.0E-16		SW6020	01/24/20 14:27 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.2E-14	uCi/mL				E909.0	02/10/20 01:11 / ajl
Lead 210 precision (±)	3.5E-15	uCi/mL				E909.0	02/10/20 01:11 / ajl
Lead 210 MDC	3.5E-16	uCi/mL				E909.0	02/10/20 01:11 / ajl
Radium 226	6.4E-17	uCi/mL				E903.0	02/04/20 11:50 / ajl
Radium 226 precision (±)	1.9E-17	uCi/mL				E903.0	02/04/20 11:50 / ajl
Radium 226 MDC	1.4E-17	uCi/mL				E903.0	02/04/20 11:50 / ajl
Thorium 230	3.3E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	6.2E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.8E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	3.0E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.4E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.7E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1590	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	475	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	48.2	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	8.5	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	2.5	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	4.4	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	0.83	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.24	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.39	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.18	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.22	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	5.6	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	2.0E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	7.0E-03	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	1.1E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	5.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-001
Client Sample ID: BHV-1

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	5.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	133448200	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-2

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-002	^{nat}U	2E-16	N/A	N/A	1E-16	9E-14	2E-01
3rd Quarter 2019	^{230}Th	3E-17	7E-18	3E-18	1E-16	3E-14	1E-01
Air Volume in mLs	^{226}Ra	3E-16	6E-17	2E-17	1E-16	9E-13	3E-02
1.21E+11	^{210}Pb	9E-15	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	9E-18	2E-18	2E-18	N/A	6E-15	1E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-002
Client Sample ID: BHV-2

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.6E-10	mg/L		1.5E-10		SW6020	10/30/19 21:06 / meh
Uranium, Activity	1.8E-16	uCi/mL		1.0E-16		SW6020	10/30/19 21:06 / meh
RADIONUCLIDES - IN AIR							
Lead 210	9.2E-15	uCi/mL				E909.0	10/23/19 21:36 / ajl
Lead 210 precision (±)	2.7E-15	uCi/mL				E909.0	10/23/19 21:36 / ajl
Lead 210 MDC	2.8E-16	uCi/mL				E909.0	10/23/19 21:36 / ajl
Radium 226	2.6E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	5.9E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.7E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	3.5E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	6.6E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	3.2E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	8.6E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	1.6E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	2.4E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1110	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	331	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	33.6	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	32.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	7.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	4.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	0.80	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.39	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	1.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.20	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.29	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	21.6	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.5E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	3.0E-02	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	1.2E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	1.4E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-002
Client Sample ID: BHV-2

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	2.0E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	121009600	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-2

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-002	^{nat}U	2E-17	N/A	N/A	1E-16	9E-14	2E-02
4th Quarter 2019	^{230}Th	1E-17	2E-18	2E-18	1E-16	3E-14	4E-02
Air Volume in mLs	^{226}Ra	4E-17	1E-17	1E-17	1E-16	9E-13	5E-03
1.34E+11	^{210}Pb	8E-15	2E-15	3E-16	2E-15	6E-13	1E+00
	^{232}Th	5E-18	2E-18	1E-18	N/A	6E-15	9E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-002
Client Sample ID: BHV-2

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	ND	mg/L		1.5E-10		SW6020	01/24/20 14:44 / meh
Uranium, Activity	ND	uCi/mL		1.0E-16		SW6020	01/24/20 14:44 / meh
RADIONUCLIDES - IN AIR							
Lead 210	7.3E-15	uCi/mL				E909.0	02/10/20 01:24 / ajl
Lead 210 precision (±)	2.2E-15	uCi/mL				E909.0	02/10/20 01:24 / ajl
Lead 210 MDC	2.8E-16	uCi/mL				E909.0	02/10/20 01:24 / ajl
Radium 226	4.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	1.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.5E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	1.3E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	2.5E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.6E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	5.2E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.5E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.0E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1090	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	328	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	40.4	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	6.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	2.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	1.7	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	0.33	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.22	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.70	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.21	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.14	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	2.2	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.4E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	5.0E-03	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	4.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	9.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-002
Client Sample ID: BHV-2

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	2.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	134042200	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-4

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-003	^{nat}U	1E-16	N/A	N/A	1E-16	9E-14	1E-01
3rd Quarter 2019	^{230}Th	1E-16	2E-17	3E-18	1E-16	3E-14	3E-01
Air Volume in mLs	^{226}Ra	9E-17	2E-17	2E-17	1E-16	9E-13	1E-02
1.20E+11	^{210}Pb	1E-14	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	3E-18	2E-18	2E-18	N/A	6E-15	5E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-003
Client Sample ID: BHV-4

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	1.9E-10	mg/L		1.5E-10		SW6020	10/30/19 21:10 / meh
Uranium, Activity	1.3E-16	uCi/mL		1.0E-16		SW6020	10/30/19 21:10 / meh
RADIONUCLIDES - IN AIR							
Lead 210	9.6E-15	uCi/mL				E909.0	10/23/19 21:50 / ajl
Lead 210 precision (±)	2.9E-15	uCi/mL				E909.0	10/23/19 21:50 / ajl
Lead 210 MDC	2.9E-16	uCi/mL				E909.0	10/23/19 21:50 / ajl
Radium 226	8.9E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	2.5E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.8E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	9.9E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	1.9E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	2.8E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	3.1E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	1.5E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	1.9E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1160	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	346	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	34.5	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	10.7	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	3.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	11.9	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	2.3	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.34	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0.37	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.18	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.23	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	15.1	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.6E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	1.0E-02	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	3.3E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	5.0E-02	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-003
Client Sample ID: BHV-4

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	1.4E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	120305700	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-4

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-003	^{nat}U	4E-17	N/A	N/A	1E-16	9E-14	5E-02
4th Quarter 2019	^{230}Th	6E-17	1E-17	2E-18	1E-16	3E-14	2E-01
Air Volume in mLs	^{226}Ra	4E-17	1E-17	1E-17	1E-16	9E-13	4E-03
1.32E+11	^{210}Pb	9E-15	3E-15	3E-16	2E-15	6E-13	1E+00
	^{232}Th	3E-18	1E-18	2E-18	N/A	6E-15	4E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-003
Client Sample ID: BHV-4

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	ND	mg/L		1.5E-10		SW6020	01/24/20 14:49 / meh
Uranium, Activity	ND	uCi/mL		1.0E-16		SW6020	01/24/20 14:49 / meh
RADIONUCLIDES - IN AIR							
Lead 210	8.5E-15	uCi/mL				E909.0	02/10/20 01:44 / ajl
Lead 210 precision (±)	2.5E-15	uCi/mL				E909.0	02/10/20 01:44 / ajl
Lead 210 MDC	3.0E-16	uCi/mL				E909.0	02/10/20 01:44 / ajl
Radium 226	3.9E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	1.5E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.5E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	5.8E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	1.1E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.7E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	2.6E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.3E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.6E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1160	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	346	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	41.2	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	5.1	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	2.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	2.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	7.7	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	1.5	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.23	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.34	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.17	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.21	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	5.4	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.5E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	4.0E-03	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	1.9E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	4.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-003
Client Sample ID: BHV-4

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	5.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	131899600	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-5

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-004	^{nat}U	1E-16	N/A	N/A	1E-16	9E-14	1E-01
3rd Quarter 2019	^{230}Th	1E-16	3E-17	2E-18	1E-16	3E-14	5E-01
Air Volume in mLs	^{226}Ra	6E-16	1E-16	2E-17	1E-16	9E-13	7E-02
1.19E+11	^{210}Pb	9E-15	3E-15	3E-16	2E-15	6E-13	1E+00
	^{232}Th	6E-18	2E-18	1E-18	N/A	6E-15	1E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-004
Client Sample ID: BHV-5

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.0E-10	mg/L		1.5E-10		SW6020	10/30/19 21:15 / meh
Uranium, Activity	1.3E-16	uCi/mL		1.0E-16		SW6020	10/30/19 21:15 / meh
RADIONUCLIDES - IN AIR							
Lead 210	8.6E-15	uCi/mL				E909.0	10/23/19 22:03 / ajl
Lead 210 precision (±)	2.6E-15	uCi/mL				E909.0	10/23/19 22:03 / ajl
Lead 210 MDC	2.7E-16	uCi/mL				E909.0	10/23/19 22:03 / ajl
Radium 226	6.1E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	1.2E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.9E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	1.5E-16	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 230 precision (±)	2.8E-17	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 230 MDC	1.9E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232	6.5E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232 precision (±)	1.9E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232 MDC	1.3E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1020	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	305	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	32.6	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	72.8	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	14.7	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	17.6	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	3.3	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.23	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0.77	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.23	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.15	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	15.9	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.4E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	7.0E-02	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	4.9E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	1.1E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-004
Client Sample ID: BHV-5

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	1.5E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	119154300	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-5

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-004	^{nat}U	4E-16	N/A	N/A	1E-16	9E-14	4E-01
4th Quarter 2019	^{230}Th	3E-16	5E-17	2E-18	1E-16	3E-14	9E-01
Air Volume in mLs	^{226}Ra	4E-16	9E-17	1E-17	1E-16	9E-13	5E-02
1.33E+11	^{210}Pb	9E-15	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	7E-18	2E-18	1E-18	N/A	6E-15	1E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-004
Client Sample ID: BHV-5

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	5.7E-10	mg/L		1.5E-10		SW6020	01/24/20 14:53 / meh
Uranium, Activity	3.9E-16	uCi/mL		1.0E-16		SW6020	01/24/20 14:53 / meh
RADIONUCLIDES - IN AIR							
Lead 210	8.5E-15	uCi/mL				E909.0	02/10/20 02:52 / ajl
Lead 210 precision (±)	2.6E-15	uCi/mL				E909.0	02/10/20 02:52 / ajl
Lead 210 MDC	3.0E-16	uCi/mL				E909.0	02/10/20 02:52 / ajl
Radium 226	4.5E-16	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	9.1E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	2.8E-16	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	5.3E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.7E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	6.6E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.9E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.3E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1250	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	373	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	42.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	59.2	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	12.1	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	36.7	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	7.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.22	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.87	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.25	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.18	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	51.4	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.6E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	5.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	9.2E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	1.1E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-004
Client Sample ID: BHV-5

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	4.3E-01	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	132780300	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-6

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-005	^{nat}U	7E-17	N/A	N/A	1E-16	9E-14	7E-02
3rd Quarter 2019	^{230}Th	8E-17	2E-17	2E-18	1E-16	3E-14	3E-01
Air Volume in mLs	^{226}Ra	5E-17	2E-17	2E-17	1E-16	9E-13	6E-03
1.18E+11	^{210}Pb	8E-15	2E-15	3E-16	2E-15	6E-13	1E+00
	^{232}Th	4E-18	2E-18	1E-18	N/A	6E-15	7E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-005
Client Sample ID: BHV-6

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	ND	mg/L		1.5E-10		SW6020	10/30/19 21:19 / meh
Uranium, Activity	ND	uCi/mL		1.0E-16		SW6020	10/30/19 21:19 / meh
RADIONUCLIDES - IN AIR							
Lead 210	8.1E-15	uCi/mL				E909.0	10/23/19 22:18 / ajl
Lead 210 precision (±)	2.4E-15	uCi/mL				E909.0	10/23/19 22:18 / ajl
Lead 210 MDC	2.7E-16	uCi/mL				E909.0	10/23/19 22:18 / ajl
Radium 226	5.0E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	1.9E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.8E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	8.0E-17	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 230 precision (±)	1.5E-17	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 230 MDC	1.8E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232	4.0E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232 precision (±)	1.5E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
Thorium 232 MDC	1.3E-18	uCi/mL				E908.0	10/23/19 17:16 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	957	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	286	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	31.5	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	5.9	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	2.3	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	9.4	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	1.8	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.21	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0.47	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.18	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.15	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	8.0	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.3E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	6.0E-03	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	2.7E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	7.0E-02	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-005
Client Sample ID: BHV-6

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	7.0E-02	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	118315000	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-6

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-005	^{nat}U	2E-16	N/A	N/A	1E-16	9E-14	2E-01
4th Quarter 2019	^{230}Th	1E-16	3E-17	2E-18	1E-16	3E-14	5E-01
Air Volume in mLs	^{226}Ra	1E-16	3E-17	2E-17	1E-16	9E-13	2E-02
1.32E+11	^{210}Pb	1E-14	4E-15	4E-16	2E-15	6E-13	2E+00
	^{232}Th	4E-18	1E-18	1E-18	N/A	6E-15	6E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-005
Client Sample ID: BHV-6

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.3E-10	mg/L		1.5E-10		SW6020	01/24/20 14:57 / meh
Uranium, Activity	1.6E-16	uCi/mL		1.0E-16		SW6020	01/24/20 14:57 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.1E-14	uCi/mL				E909.0	02/10/20 03:10 / ajl
Lead 210 precision (±)	3.2E-15	uCi/mL				E909.0	02/10/20 03:10 / ajl
Lead 210 MDC	3.3E-16	uCi/mL				E909.0	02/10/20 03:10 / ajl
Radium 226	1.4E-16	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	3.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.5E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	1.4E-16	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	2.7E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.6E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	3.8E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.4E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.2E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1570	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	468	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	47.8	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	18.7	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	4.5	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	2.0	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	18.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	3.6	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.21	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.50	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.18	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.16	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	20.9	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	2.0E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	2.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	4.8E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	6.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-005
Client Sample ID: BHV-6

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	1.8E-01	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	132204000	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-7

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-006	^{nat}U	2E-16	N/A	N/A	1E-16	9E-14	2E-01
3rd Quarter 2019	^{230}Th	1E-16	2E-17	2E-18	1E-16	3E-14	4E-01
Air Volume in mLs	^{226}Ra	3E-16	7E-17	2E-17	1E-16	9E-13	4E-02
1.20E+11	^{210}Pb	1E-14	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	7E-18	2E-18	1E-18	N/A	6E-15	1E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-006
Client Sample ID: BHV-7

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.9E-10	mg/L		1.5E-10		SW6020	11/02/19 14:20 / meh
Uranium, Activity	1.9E-16	uCi/mL		1.0E-16		SW6020	11/02/19 14:20 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.0E-14	uCi/mL				E909.0	10/23/19 22:34 / ajl
Lead 210 precision (±)	3.0E-15	uCi/mL				E909.0	10/23/19 22:34 / ajl
Lead 210 MDC	2.9E-16	uCi/mL				E909.0	10/23/19 22:34 / ajl
Radium 226	3.4E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	7.3E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.7E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	1.2E-16	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	2.2E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	2.0E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	6.7E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	1.8E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	1.1E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1210	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	363	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	35.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	40.8	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	8.7	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	14.0	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	2.7	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.24	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0.80	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.22	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.13	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	23.2	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.7E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	4.0E-02	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	3.9E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	1.1E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-006
Client Sample ID: BHV-7

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	2.2E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	119824200	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-7

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-006	^{nat}U	1E-16	N/A	N/A	1E-16	9E-14	1E-01
4th Quarter 2019	^{230}Th	5E-17	9E-18	2E-18	1E-16	3E-14	2E-01
Air Volume in mLs	^{226}Ra	1E-16	3E-17	1E-17	1E-16	9E-13	1E-02
1.33E+11	^{210}Pb	1E-14	3E-15	3E-16	2E-15	6E-13	2E+00
	^{232}Th	2E-18	1E-18	2E-18	N/A	6E-15	3E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-006
Client Sample ID: BHV-7

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	1.5E-10	mg/L		1.5E-10		SW6020	01/24/20 15:02 / meh
Uranium, Activity	1.0E-16	uCi/mL		1.0E-16		SW6020	01/24/20 15:02 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.0E-14	uCi/mL				E909.0	02/10/20 03:24 / ajl
Lead 210 precision (±)	3.1E-15	uCi/mL				E909.0	02/10/20 03:24 / ajl
Lead 210 MDC	3.3E-16	uCi/mL				E909.0	02/10/20 03:24 / ajl
Radium 226	1.3E-16	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	3.1E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	4.9E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	9.3E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.9E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	1.6E-18	uCi/mL	U			E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.2E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.7E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1470	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	439	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	46.1	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	17.3	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	4.2	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	6.6	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	1.2	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.26	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.22	pCi/Filter	U			RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.16	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.23	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	13.5	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.8E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	1.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	1.6E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	3.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-006
Client Sample ID: BHV-7

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	1.1E-01	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	133462200	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: BHV-8

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-007	^{nat}U	1E-16	N/A	N/A	1E-16	9E-14	2E-01
3rd Quarter 2019	^{230}Th	2E-16	5E-17	2E-18	1E-16	3E-14	8E-01
Air Volume in mLs	^{226}Ra	1.1E-15	2E-16	2E-17	1E-16	9E-13	1.3E-01
1.19E+11	^{210}Pb	1E-14	4E-15	6E-17	2E-15	6E-13	2E+00
	^{232}Th	9E-18	2E-18	1E-18	N/A	6E-15	2E-01

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-007
Client Sample ID: BHV-8

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	2.0E-10	mg/L		1.5E-10		SW6020	11/02/19 14:36 / meh
Uranium, Activity	1.4E-16	uCi/mL		1.0E-16		SW6020	11/02/19 14:36 / meh
RADIONUCLIDES - IN AIR							
Lead 210	1.4E-14	uCi/mL				E909.0	10/24/19 02:50 / ajl
Lead 210 precision (±)	4.0E-15	uCi/mL				E909.0	10/24/19 02:50 / ajl
Lead 210 MDC	6.2E-17	uCi/mL				E909.0	10/24/19 02:50 / ajl
Radium 226	1.1E-15	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 precision (±)	2.2E-16	uCi/mL				E903.0	10/22/19 12:02 / ajl
Radium 226 MDC	1.8E-17	uCi/mL				E903.0	10/22/19 12:02 / ajl
Thorium 230	2.5E-16	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	4.7E-17	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	1.9E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	9.0E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	1.7E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	1.4E-18	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1640	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	482	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	7.4	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	136	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	26.5	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.2	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	29.5	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	5.6	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.23	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	1.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.20	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.16	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	16.5	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	2.3E+00	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	1.3E-01	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	8.3E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	1.5E-01	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-007
Client Sample ID: BHV-8

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	1.5E-01	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	119027300	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: BHV-8

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-007	^{nat}U	4E-17	N/A	N/A	1E-16	9E-14	4E-02
4th Quarter 2019	^{230}Th	4E-17	7E-18	2E-18	1E-16	3E-14	1E-01
Air Volume in mLs	^{226}Ra	1E-16	3E-17	1E-17	1E-16	9E-13	1E-02
1.33E+11	^{210}Pb	7E-15	2E-15	3E-16	2E-15	6E-13	1E+00
	^{232}Th	2E-18	1E-18	1E-18	N/A	6E-15	4E-02

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-007
Client Sample ID: BHV-8

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	ND	mg/L		1.5E-10		SW6020	01/24/20 15:23 / meh
Uranium, Activity	ND	uCi/mL		1.0E-16		SW6020	01/24/20 15:23 / meh
RADIONUCLIDES - IN AIR							
Lead 210	6.2E-15	uCi/mL				E909.0	02/10/20 03:39 / ajl
Lead 210 precision (±)	1.9E-15	uCi/mL				E909.0	02/10/20 03:39 / ajl
Lead 210 MDC	2.6E-16	uCi/mL				E909.0	02/10/20 03:39 / ajl
Radium 226	9.5E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	2.6E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	1.4E-17	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	3.6E-17	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	6.8E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	1.8E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	2.4E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.1E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.3E-18	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	867	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	260	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	36.4	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	12.7	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	3.4	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	4.8	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	0.91	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.24	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.32	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.15	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.18	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	5.0	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	1.1E+00	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	1.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	1.2E-01	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	4.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-007
Client Sample ID: BHV-8

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	4.0E-02	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	133118400	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL SUMMARY REPORT

November 11, 2019

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C19100256 Quote ID: C5470

Project Name: 3rd Quarter Air 2019

Energy Laboratories, Inc. Casper WY received the following 8 samples for Energy Fuels Resources (USA) Inc on 10/3/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C19100256-001	BHV-1	09/30/19 00:00	10/03/19	Filter	Composite of two or more samples Client Provided Field Parameters Metals, Total Digestion, Total Metals, Radiochemistry Radiochemistry Air Filter Compliance Calculations RAD-AIR, Routine Radiological Reports RAD Alternate Unit Reporting Air Filters Lead 210 Radium 226 Thorium, Isotopic
C19100256-002	BHV-2	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-003	BHV-4	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-004	BHV-5	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-005	BHV-6	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-006	BHV-7	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-007	BHV-8	09/30/19 00:00	10/03/19	Filter	Same As Above
C19100256-008	Blanks	09/30/19 00:00	10/03/19	Filter	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unles otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2019.11.11 15:31:17 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Work Order: C19100256

Report Date: 11/11/19

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

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

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

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

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

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

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

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

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-008
Client Sample ID: Blanks

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	0.00091	mg/L	L	0.00035		SW6020	11/02/19 14:40 / meh
Uranium, Activity	6.2E-10	uCi/mL	L	2.4E-10		SW6020	11/02/19 14:40 / meh
RADIONUCLIDES - IN AIR							
Lead 210	-5.0E-09	uCi/mL	U			E909.0	10/23/19 22:47 / ajl
Lead 210 precision (±)	5.0E-09	uCi/mL				E909.0	10/23/19 22:47 / ajl
Lead 210 MDC	8.5E-09	uCi/mL				E909.0	10/23/19 22:47 / ajl
Radium 226	1.4E-09	uCi/mL	U			E903.0	10/22/19 12:03 / ajl
Radium 226 precision (±)	1.1E-09	uCi/mL				E903.0	10/22/19 12:03 / ajl
Radium 226 MDC	2.3E-09	uCi/mL				E903.0	10/22/19 12:03 / ajl
Thorium 230	5.9E-10	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 precision (±)	2.6E-10	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 230 MDC	3.4E-10	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232	0.0E+00	uCi/mL	U			E908.0	10/23/19 17:17 / nsr
Thorium 232 precision (±)	1.3E-10	uCi/mL				E908.0	10/23/19 17:17 / nsr
Thorium 232 MDC	2.8E-10	uCi/mL				E908.0	10/23/19 17:17 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	-4.7	pCi/Filter	U			RADCALC	11/06/19 10:57 / sec
Lead 210 precision (±)	4.7	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Lead 210 MDC	8.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226	1.3	pCi/Filter	U			RADCALC	11/06/19 10:57 / sec
Radium 226 precision (±)	1.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Radium 226 MDC	2.1	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230	0.56	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 precision (±)	0.24	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 230 MDC	0.32	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232	0	pCi/Filter	U			RADCALC	11/06/19 10:57 / sec
Thorium 232 precision (±)	0.13	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Thorium 232 MDC	0.27	pCi/Filter				RADCALC	11/06/19 10:57 / sec
Uranium, Activity	0.59	pCi/Filter		0.20		RADCALC	11/06/19 10:57 / sec
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	-8.0E+05	%				RADCALC	11/06/19 11:08 / sec
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, % of EFF	1.6E+05	%				RADCALC	11/06/19 11:08 / sec
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	11/06/19 11:08 / sec
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, % of EFF	2.0E+06	%				RADCALC	11/06/19 11:08 / sec
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
Thorium 232, % of EFF	0.0E+00	%				RADCALC	11/06/19 11:08 / sec
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	11/06/19 11:08 / sec

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
L - Lowest available reporting limit for the analytical method used.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2019
Lab ID: C19100256-008
Client Sample ID: Blanks

Report Date: 11/11/19
Collection Date: 09/30/19
DateReceived: 10/03/19
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, % of EFF	6.9E+05	%				RADCALC	11/06/19 11:08 / sec
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	11/06/19 11:08 / sec
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	11/06/19 11:08 / sec
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	1	L				FIELD	09/30/19 00:00 / ***

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 3rd Quarter Air 2019
SAMPLE ID: Blanks

REPORT DATE: November 11, 2019

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C19100256-008	^{nat}U	5E-18	N/A	N/A	1E-16	9E-14	5E-03
3rd Quarter 2019	^{230}Th	5E-18	2E-18	3E-18	1E-16	3E-14	2E-02
Air Volume in mLs	^{226}Ra	1E-17	9E-18	2E-17	1E-16	9E-13	1E-03
1.24E+11	^{210}Pb	-4E-17	4E-17	7E-17	2E-15	6E-13	-6E-03
	^{232}Th	0E+00	1E-18	2E-18	N/A	6E-15	0E+00

NOTE: This report uses 124,000,000 L air for comparison purposes, the routine report uses a 1 L system default.

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19100256 **Report Date:** 11/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 55515
Lab ID: LCS-55515		Laboratory Control Sample				Run: G542M_191016C				10/22/19 10:22
Radium 226		105	pCi/L		105	80	120			
Lab ID: MB-55515	3	Method Blank				Run: G542M_191016C				10/22/19 10:22
Radium 226		0.2	pCi/L							U
Radium 226 precision (±)		0.3	pCi/L							
Radium 226 MDC		0.4	pCi/L							
Lab ID: C19100175-002AMS		Sample Matrix Spike				Run: G542M_191016C				10/22/19 10:22
Radium 226		6.15E-05	pCi/L		110	70	130			
Lab ID: C19100175-002AMSD		Sample Matrix Spike Duplicate				Run: G542M_191016C				10/22/19 10:22
Radium 226		6.79E-05	pCi/L		122	70	130	9.9	20	
Lab ID: C19100408-001ADUP	3	Sample Duplicate				Run: G542M_191016C				10/22/19 12:03
Radium 226		6.10E-08	pCi/L					20	20	
Radium 226 precision (±)		2.72E-08	pCi/L							
Radium 226 MDC		4.09E-08	pCi/L							

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19100256 **Report Date:** 11/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 55515
Lab ID: MB-55515	6	Method Blank				Run: EGG-ORTEC_191022A				10/23/19 17:17
Thorium 230		0.2	pCi/L							U
Thorium 230 precision (±)		0.2	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Thorium 232		0.2	pCi/L							U
Thorium 232 precision (±)		0.1	pCi/L							
Thorium 232 MDC		0.2	pCi/L							
Lab ID: LCS-55515		Laboratory Control Sample				Run: EGG-ORTEC_191022A				10/23/19 17:17
Thorium 230		48.4	pCi/L		101	80	120			
Lab ID: C19100408-001AMS		Sample Matrix Spike				Run: EGG-ORTEC_191022A				10/23/19 17:17
Thorium 230		1.88E-06	pCi/L		98	70	130			
Lab ID: C19100408-001AMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_191022A				10/23/19 17:17
Thorium 230		1.95E-06	pCi/L		101	70	130	3.9	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19100256 **Report Date:** 11/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E909.0**										Batch: 55515
Lab ID: **LCS-55515**		Laboratory Control Sample				Run: TRICARB LSC_191016A				10/23/19 00:35
Lead 210		156	pCi/L		86	80	120			
Lab ID: **MB-55515**	3	Method Blank				Run: TRICARB LSC_191016A				10/23/19 01:44
Lead 210		-0.4	pCi/L							U
Lead 210 precision (±)		1	pCi/L							
Lead 210 MDC		2	pCi/L							
Lab ID: **C19100175-001AMS**		Sample Matrix Spike				Run: TRICARB LSC_191016A				10/23/19 11:00
Lead 210		9.05E-05	pCi/L		99	70	130			
Lab ID: **C19100175-001AMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_191016A				10/23/19 11:58
Lead 210		9.29E-05	pCi/L		102	70	130	2.7	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19100256 **Report Date:** 11/06/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS5-C_191030A	
Lab ID: QCS	Initial Calibration Verification Standard								10/30/19 15:16	
Uranium		0.0187	mg/L	0.00030	94	90	110			
Lab ID: ICSA	Interference Check Sample A								10/30/19 15:51	
Uranium		-3.65E-06	mg/L	0.00030						
Lab ID: ICSAB	Interference Check Sample AB								10/30/19 15:56	
Uranium		-9.05E-06	mg/L	0.00030						
Method: SW6020									Batch: 55515	
Lab ID: MB-55515	Method Blank					Run: ICPMS5-C_191030A			10/30/19 19:51	
Uranium		0.0003	mg/L	0.0001						
Lab ID: LCS2-55515	Laboratory Control Sample					Run: ICPMS5-C_191030A			10/30/19 19:56	
Uranium		0.100	mg/L	0.00014	95	85	115			
Lab ID: C19100175-001ADIL	Serial Dilution					Run: ICPMS5-C_191030A			10/30/19 20:04	
Uranium		9.71E-10	mg/L	1.5E-10		0	0		20	N
Lab ID: C19100175-001APDS	Post Digestion/Distillation Spike					Run: ICPMS5-C_191030A			10/30/19 20:09	
Uranium		1.21E-08	mg/L	1.5E-10	94	75	125			
Method: SW6020									Analytical Run: ICPMS5-C_191101A	
Lab ID: QCS	Initial Calibration Verification Standard								11/01/19 18:58	
Uranium		0.0180	mg/L	0.00030	90	90	110			
Lab ID: ICSA	Interference Check Sample A								11/01/19 19:43	
Uranium		1.17E-05	mg/L	0.00030						
Lab ID: ICSAB	Interference Check Sample AB								11/01/19 19:48	
Uranium		9.14E-07	mg/L	0.00030						
Method: SW6020									Batch: 55515	
Lab ID: MB-55515	Method Blank					Run: ICPMS5-C_191101A			11/02/19 14:16	
Uranium		0.0003	mg/L	0.0001						
Lab ID: C19100256-006ADIL	Serial Dilution					Run: ICPMS5-C_191101A			11/02/19 14:24	
Uranium		3.10E-10	mg/L	1.5E-10		0	0	7.9	20	
Lab ID: C19100256-006APDS	Post Digestion/Distillation Spike					Run: ICPMS5-C_191101A			11/02/19 14:28	
Uranium		6.36E-10	mg/L	1.5E-10	81	75	125			

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

Work Order Receipt Checklist

Energy Fuels Resources (USA) Inc C19100256

Login completed by: Dorian Quis
Date Received: 10/3/2019
Reviewed by: Steve Carlston
Received by:
Reviewed Date: 10/6/2019
Carrier name:

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Applicable ☑
Container/Temp Blank temperature:	°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

Contact and Corrective Action Comments:

None

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 2221
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
3rd Quarter Air 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-2	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-4	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-5	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-6	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-7	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-8	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
Blanks	7/1/2019-9/30/2019	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
			C19100258

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	10/2/2019 1130		10-3-19 11:00
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

BHV-1

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2015
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673045	7/1/2019	7/8/2019	142.84	311.32	10108.8	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9221.2	4.4202	4.5473	127.1	0.0138	100.3
2	9673037	7/8/2019	7/15/2019	311.32	480.19	10132.2	4.0	4.0	4.0	25.0	298.1	621.5	1.11	0.91	32.18	9231.9	4.4342	4.6054	171.2	0.0185	100.5
3	9673029	7/15/2019	7/22/2019	480.19	650.74	10233.0	4.0	4.0	4.0	26.5	299.7	619.4	1.12	0.91	32.04	9283.4	4.4430	4.5839	140.9	0.0152	101.5
4	9673016	7/22/2019	7/29/2019	650.74	815.2	9867.6	4.0	4.0	4.0	25.2	298.3	622.5	1.11	0.91	32.19	8994.4	4.4068	4.4780	71.2	0.0079	97.9
5	9673013	7/29/2019	8/5/2019	815.2	984.14	10136.4	4.0	4.0	4.0	24.0	297.1	622.0	1.11	0.91	32.24	9254.5	4.3765	4.5203	143.8	0.0155	100.6
6	9673005	8/5/2019	8/12/2019	984.14	1151.49	10041.0	4.5	4.0	4.3	24.6	297.7	620.57	1.15	0.94	33.17	9429.9	4.3710	4.5159	144.9	0.0154	99.6
7	9429697	8/12/2019	8/19/2019	1151.49	1318.43	10016.4	4.5	4.0	4.3	24.6	297.7	620.42	1.15	0.94	33.16	9405.6	4.5125	4.6803	167.8	0.0178	99.4
8	9429689	8/19/2019	8/26/2019	1318.43	1486.3	10072.2	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9160.7	4.5012	4.6934	192.2	0.0210	99.9
9	9429681	8/26/2019	9/3/2019	1486.3	1678.56	11535.6	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10506.5	4.5200	4.7210	201.0	0.0191	114.4
10	9429673	9/3/2019	9/9/2019	1678.56	1823.38	8689.2	4.0	4.0	4.0	24.7	297.8	620.57	1.11	0.91	32.17	7914.4	4.5159	4.7128	196.9	0.0249	86.2
11	9429665	9/9/2019	9/16/2019	1823.38	1993.99	10236.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9423.8	4.5000	4.6814	181.4	0.0192	101.6
12	9429652	9/16/2019	9/23/2019	1993.99	2158.79	9888.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9100.8	4.5009	4.5798	78.9	0.0087	98.1
13	9429649	9/23/2019	9/30/2019	2158.79	2326.97	10090.8	3.5	4.0	3.8	17.7	290.9	617.37	1.07	0.89	31.43	8981.4	4.5198	4.7416	221.8	0.0247	100.1
					Totals	131047.8							14.49	11.90	420.09	119908.5	58.022	60.061	2039.1	0.2218	
					Averages	10080.6	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.92	32.31	9223.7	4.463	4.620	156.9	0.0171	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-2

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m³/min)	Qs Std. Flow (m³/min)	Qs Std. Flow (SCFM) (ft³/min)	Total Std. Volume (m³)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m³)	Percent Onstream (%)
1	9673044	7/1/2019	7/8/2019	10858.59	11027.04	10107.0	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9219.5	4.4464	4.7943	347.9	0.0377	100.3
2	9673036	7/8/2019	7/15/2019	11027.04	11195.97	10135.8	4.5	4.0	4.3	25.0	298.1	621.54	1.15	0.94	33.17	9519.9	4.4288	4.7185	289.7	0.0304	100.6
3	9673028	7/15/2019	7/22/2019	11195.97	11367.46	10289.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9334.5	4.4330	4.7038	270.8	0.0290	102.1
4	9673018	7/22/2019	7/29/2019	11367.46	11530.92	9807.6	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8939.7	4.4342	4.6709	236.7	0.0265	97.3
5	9673012	7/29/2019	8/5/2019	11530.92	11699.38	10107.6	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9228.2	4.3740	4.5728	198.8	0.0215	100.3
6	9673004	8/5/2019	8/12/2019	11699.38	11867.24	10071.6	4.5	4.0	4.3	24.6	297.7	620.57	1.15	0.94	33.17	9458.6	4.3756	4.5695	193.9	0.0205	99.9
7	9429696	8/12/2019	8/19/2019	11867.24	12034.17	10015.8	4.5	4.0	4.3	24.6	297.7	620.42	1.15	0.94	33.16	9405.1	4.4938	4.7424	248.6	0.0264	99.4
8	9429688	8/19/2019	8/26/2019	12034.17	12201.88	10062.6	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9152.0	4.5011	4.8540	352.9	0.0386	99.8
9	9429680	8/26/2019	9/3/2019	12201.88	12394.97	11585.4	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10551.9	4.5105	4.8345	324.0	0.0307	114.9
10	9429672	9/3/2019	9/9/2019	12394.97	12539.77	8688.0	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8157.3	4.5308	4.8663	335.5	0.0411	86.2
11	9429664	9/9/2019	9/16/2019	12539.77	12710.36	10235.4	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9422.7	4.5038	4.6146	110.8	0.0118	101.5
12	9429653	9/16/2019	9/23/2019	12710.36	12874.46	9846.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9062.1	4.5131	4.8507	337.6	0.0373	97.7
13	9429648	9/23/2019	9/30/2019	12874.46	13042.56	10086.0	4.5	4.0	4.3	17.7	290.9	617.37	1.14	0.95	33.47	9558.0	4.5163	4.9073	391.0	0.0409	100.1
					Totals	131038.2							14.63	12.01	424.10	121009.6	58.061	61.700	3638.2	0.3924	
					Averages	10079.9	4.2	4.0	4.1	23.2	296.4	620.34946	1.13	0.92	32.62	9308.4	4.466	4.746	279.9	0.0302	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-4

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673043	7/1/2019	7/8/2019	16391.19	16559.61	10105.2	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9217.9	4.4447	4.5797	135.0	0.0146	100.3
2	9673035	7/8/2019	7/15/2019	16559.61	16728.57	10137.6	5.0	4.0	4.5	25.0	298.1	621.54	1.18	0.97	34.13	9798.1	4.4382	4.6046	166.4	0.0170	100.6
3	9673027	7/15/2019	7/22/2019	16728.57	16901.01	10346.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9386.3	4.4420	4.6035	161.5	0.0172	102.6
4	9673017	7/22/2019	7/29/2019	16901.01	17056.44	9325.8	4.5	4.0	4.3	25.2	298.3	622.48	1.15	0.94	33.18	8762.7	4.4218	4.5145	92.7	0.0106	92.5
5	9673011	7/29/2019	8/5/2019	17056.44	17224.96	10111.2	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9231.5	4.3816	4.5855	203.9	0.0221	100.3
6	9673003	8/5/2019	8/12/2019	17224.96	17393.94	10138.8	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.9	4.3755	4.5097	134.2	0.0145	100.6
7	9429695	8/12/2019	8/19/2019	17393.94	17559.73	9947.4	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9061.4	4.5000	4.6453	145.3	0.0160	98.7
8	9429687	8/19/2019	8/26/2019	17559.73	17733.79	10443.6	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9498.5	4.4985	4.6841	185.6	0.0195	103.6
9	9429679	8/26/2019	9/3/2019	17733.79	17919.94	11169.0	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10172.6	4.5267	4.7025	175.8	0.0173	110.8
10	9429671	9/3/2019	9/9/2019	17919.94	18064.81	8692.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8161.3	4.5075	4.6643	156.8	0.0192	86.2
11	9429663	9/9/2019	9/16/2019	18064.81	18236.48	10300.2	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9482.4	4.5073	4.6415	134.2	0.0142	102.2
12	9429654	9/16/2019	9/23/2019	18236.48	18399.9	9805.2	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9024.6	4.5051	4.6481	143.0	0.0158	97.3
13	9429647	9/23/2019	9/30/2019	18399.9	18567.99	10085.4	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9271.5	4.4950	4.6417	146.7	0.0158	100.1
					Totals	130608.0							14.60	11.98	423.07	120305.7	58.044	60.025	1981.1	0.2139	
					Averages	10046.8	4.2	4.0	4.1	23.2	296.4	620.34946	1.12	0.92	32.54	9254.3	4.465	4.617	152.4	0.0165	99.7

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-5

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673042	7/1/2019	7/8/2019	9473.99	9642.38	10103.4	4.5	4.0	4.3	23.3	296.5	619.61	1.15	0.94	33.21	9500.4	4.4365	4.6285	192.0	0.0202	100.2
2	9673034	7/8/2019	7/15/2019	9642.38	9811.37	10139.4	5.0	4.0	4.5	25.0	298.1	621.54	1.18	0.97	34.13	9799.9	4.4427	4.4909	48.2	0.0049	100.6
3	9673026	7/15/2019	7/22/2019	9811.37	9983.67	10338.0	3.0	4.0	3.5	26.5	299.7	619.40	1.05	0.85	29.96	8771.8	4.4462	4.6037	157.5	0.0180	102.6
4	9673019	7/22/2019	7/29/2019	9983.67	10139.41	9344.4	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8517.5	4.4147	4.5084	93.7	0.0110	92.7
5	9673010	7/29/2019	8/5/2019	10139.41	10307.8	10103.4	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9224.4	4.3665	4.4903	123.8	0.0134	100.2
6	9673002	8/5/2019	8/12/2019	10307.8	10476.77	10138.2	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.4	4.3802	4.4900	109.8	0.0119	100.6
7	9429694	8/12/2019	8/19/2019	10476.77	10642.56	9947.4	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9061.4	4.5058	4.6335	127.7	0.0141	98.7
8	9429686	8/19/2019	8/26/2019	10642.56	10816.54	10438.8	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9494.1	4.5371	4.7165	179.4	0.0189	103.6
9	9429678	8/26/2019	9/3/2019	10816.54	11002.77	11173.8	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	9853.3	4.5139	4.7190	205.1	0.0208	110.9
10	9429670	9/3/2019	9/9/2019	11002.77	11147.64	8692.2	4.0	4.0	4.0	24.7	297.8	620.57	1.11	0.91	32.17	7917.1	4.5213	4.6889	167.6	0.0212	86.2
11	9429662	9/9/2019	9/16/2019	11147.64	11319.7	10323.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9503.9	4.5036	4.6542	150.6	0.0158	102.4
12	9429655	9/16/2019	9/23/2019	11319.7	11482.71	9780.6	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9001.9	4.4869	4.6096	122.7	0.0136	97.0
13	9429646	9/23/2019	9/30/2019	11482.71	11650.81	10086.0	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9272.1	4.5086	4.6513	142.7	0.0154	100.1
					Totals	130609.2							14.45	11.86	418.99	119154.3	58.064	59.885	1820.8	0.1992	
					Averages	10046.9	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.91	32.23	9165.7	4.466	4.607	140.1	0.0153	99.7

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-6

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673041	7/1/2019	7/8/2019	25866.62	26035.06	10106.4	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9219.0	4.4408	4.5575	116.7	0.0127	100.3
2	9673033	7/8/2019	7/15/2019	26035.06	26203.95	10133.4	4.5	4.0	4.3	25.0	298.1	621.54	1.15	0.94	33.17	9517.7	4.4443	4.5802	135.9	0.0143	100.5
3	9673025	7/15/2019	7/22/2019	26203.95	26376.04	10325.4	4.5	4.0	4.3	26.5	299.7	619.40	1.15	0.94	33.03	9656.0	4.4370	4.5801	143.1	0.0148	102.4
4	9673020	7/22/2019	7/29/2019	26376.04	26531.67	9337.8	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8511.5	4.4285	4.5157	87.2	0.0102	92.6
5	9673009	7/29/2019	8/5/2019	26531.67	26700.24	10114.2	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9234.3	4.3665	4.4661	99.6	0.0108	100.3
6	9673001	8/5/2019	8/12/2019	26700.24	26869.21	10138.2	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.4	4.3723	4.4667	94.4	0.0102	100.6
7	9429693	8/12/2019	8/19/2019	26869.21	27035.02	9948.6	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9062.5	4.5018	4.6216	119.8	0.0132	98.7
8	9429685	8/19/2019	8/26/2019	27035.02	27202.61	10055.4	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9145.4	4.4992	4.6600	160.8	0.0176	99.8
9	9429677	8/26/2019	9/3/2019	27202.61	27369.92	10038.6	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	8852.2	4.4984	4.6759	177.5	0.0201	99.6
10	9429669	9/3/2019	9/9/2019	0	143.82	8629.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8102.1	4.5330	4.6703	137.3	0.0169	85.6
11	9429661	9/9/2019	9/16/2019	143.82	315.5	10300.8	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9482.9	4.5037	4.6234	119.7	0.0126	102.2
12	9429656	9/16/2019	9/23/2019	315.5	478.88	9802.8	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9022.3	4.5126	4.6320	119.4	0.0132	97.3
13	9429645	9/23/2019	9/30/2019	478.88	646.99	10086.6	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9272.6	4.4983	4.6203	122.0	0.0132	100.1
					Totals	129017.4							14.53	11.92	421.08	118315.0	58.036	59.670	1633.4	0.1798	
					Averages	9924.4	4.1	4.0	4.0	23.2	296.4	620.34946	1.12	0.92	32.39	9101.2	4.464	4.590	125.6	0.0138	98.5

Comments: Replaced Elapsed time indicator on 9/3/2019

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-7

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673040	7/1/2019	7/8/2019	502.36	670.82	10107.6	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9220.1	4.4361	4.5883	152.2	0.0165	100.3
2	9673032	7/8/2019	7/15/2019	670.82	839.7	10132.8	4.0	4.0	4.0	25.0	298.1	621.54	1.11	0.91	32.18	9232.4	4.4217	4.5913	169.6	0.0184	100.5
3	9673024	7/15/2019	7/22/2019	839.7	1010.29	10235.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9285.6	4.4338	4.6223	188.5	0.0203	101.5
4	9673021	7/22/2019	7/29/2019	1010.29	1174.77	9868.8	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8995.5	4.4288	4.5408	112.0	0.0125	97.9
5	9673008	7/29/2019	8/5/2019	1174.77	1343.62	10131.0	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9249.6	4.3703	4.5169	146.6	0.0158	100.5
6	9429700	8/5/2019	8/12/2019	1343.62	1511.07	10047.0	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9153.3	4.5192	4.6657	146.5	0.0160	99.7
7	9429692	8/12/2019	8/19/2019	1511.07	1677.98	10014.6	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9122.7	4.4918	4.6206	128.8	0.0141	99.4
8	9429684	8/19/2019	8/26/2019	1677.98	1845.67	10061.4	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9150.9	4.5080	4.7255	217.5	0.0238	99.8
9	9429676	8/26/2019	9/3/2019	1845.67	2038.06	11543.4	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	10179.2	4.5300	4.7355	205.5	0.0202	114.5
10	9429668	9/3/2019	9/9/2019	2038.06	2182.88	8689.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8158.4	4.4907	4.6676	176.9	0.0217	86.2
11	9429660	9/9/2019	9/16/2019	2182.88	2353.44	10233.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9421.1	4.5303	4.6917	161.4	0.0171	101.5
12	9429657	9/16/2019	9/23/2019	2353.44	2518.14	9882.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9095.2	4.4938	4.6648	171.0	0.0188	98.0
13	9429644	9/23/2019	9/30/2019	2518.14	2686.28	10088.4	4.5	4.0	4.3	17.7	290.9	617.37	1.14	0.95	33.47	9560.2	4.5091	4.6353	126.2	0.0132	100.1
					Totals	131035.2							14.49	11.90	420.10	119824.2	58.164	60.266	2102.7	0.2284	
					Averages	10079.6	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.92	32.32	9217.2	4.474	4.636	161.7	0.0176	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-8

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673039	7/1/2019	7/8/2019	7330.45	7498.94	10109.4	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9221.7	4.4299	4.5427	112.8	0.0122	100.3
2	9673031	7/8/2019	7/15/2019	7498.94	7667.82	10132.8	4.0	4.0	4.0	25.0	298.1	621.54	1.11	0.91	32.18	9232.4	4.4430	4.5605	117.5	0.0127	100.5
3	9673023	7/15/2019	7/22/2019	7667.82	7838.37	10233.0	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9283.4	4.4375	4.5058	68.3	0.0074	101.5
4	9673022	7/22/2019	7/29/2019	7838.37	8002.86	9869.4	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8996.1	4.4438	4.4770	33.2	0.0037	97.9
5	9673007	7/29/2019	8/5/2019	8002.86	8171.72	10131.6	3.5	4.0	3.8	24.0	297.1	622.05	1.08	0.88	31.22	8955.9	4.3620	4.4143	52.3	0.0058	100.5
6	9429699	8/5/2019	8/12/2019	8171.72	8339.16	10046.4	3.0	4.0	3.5	24.6	297.7	620.57	1.04	0.85	30.09	8560.5	4.4988	4.5784	79.6	0.0093	99.7
7	9429691	8/12/2019	8/19/2019	8339.16	8506.08	10015.2	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9123.2	4.5165	4.5869	70.4	0.0077	99.4
8	9429683	8/19/2019	8/26/2019	8506.08	8673.85	10066.2	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9155.2	4.5102	4.6383	128.1	0.0140	99.9
9	9429675	8/26/2019	9/3/2019	8673.85	8866.21	11541.6	4.5	4.0	4.3	24.9	298.1	620.95	1.15	0.94	33.16	10836.1	4.5356	4.6539	118.3	0.0109	114.5
10	9429667	9/3/2019	9/9/2019	8866.21	9011.01	8688.0	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8157.3	4.4895	4.6112	121.7	0.0149	86.2
11	9429659	9/9/2019	9/16/2019	9011.01	9181.67	10239.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9426.6	4.4863	4.6289	142.6	0.0151	101.6
12	9429658	9/16/2019	9/23/2019	9181.67	9346.42	9885.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9098.0	4.4901	4.5539	63.8	0.0070	98.1
13	9429643	9/23/2019	9/30/2019	9346.42	9514.59	10090.2	3.5	4.0	3.8	17.7	290.9	617.37	1.07	0.89	31.43	8980.9	4.5138	4.6691	155.3	0.0173	100.1
					Totals	131048.4							14.39	11.81	416.98	119027.3	58.157	59.421	1263.9	0.1381	
					Averages	10080.6	3.9	4.0	4.0	23.2	296.4	620.34946	1.11	0.91	32.08	9155.9	4.474	4.571	97.2	0.0106	100.0

Comments:

Insert weekly flow check values in yellow columns.

Blue column values are calculated.

Green columns are calculated averages from the met station.

Insert filter weight values into orange columns.

Blanks		Period: July 1 2019 - September 30 2019		
Week #	Filter Number	Start Date	Stop Date	Net
1	9673038	01-Jul-19	08-Jul-19	4.4266
2	9673030	08-Jul-19	15-Jul-19	4.4528
3	9673015	15-Jul-19	22-Jul-19	4.3885
4	9673014	22-Jul-19	29-Jul-19	4.3974
5	9673006	29-Jul-19	05-Aug-19	4.3783
6	9429698	05-Aug-19	12-Aug-19	4.4921
7	9429690	12-Aug-19	18-Aug-19	4.5111
8	9429682	18-Aug-19	26-Aug-19	4.5118
9	9429674	26-Aug-19	03-Sep-19	4.5313
10	9429666	03-Sep-19	09-Sep-19	4.4910
11	9429651	09-Sep-19	16-Sep-19	4.5089
12	9429650	16-Sep-19	23-Sep-19	4.5265
13	9429635	23-Sep-19	30-Sep-19	4.5051
	Totals			

ANALYTICAL SUMMARY REPORT

February 13, 2020

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C20010402 Quote ID: C5470

Project Name: 4th Quarter Air 2019

Energy Laboratories, Inc. Casper WY received the following 8 samples for Energy Fuels Resources (USA) Inc on 1/13/2020 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C20010402-001	BHV-1	01/06/20 00:00	01/13/20	Filter	Composite of two or more samples Client Provided Field Parameters Metals, Total Digestion, Total Metals, Radiochemistry Radiochemistry Air Filter Compliance Calculations RAD-AIR, Routine Radiological Reports RAD Alternate Unit Reporting Air Filters Lead 210 Radium 226 Thorium, Isotopic
C20010402-002	BHV-2	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-003	BHV-4	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-004	BHV-5	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-005	BHV-6	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-006	BHV-7	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-007	BHV-8	01/06/20 00:00	01/13/20	Filter	Same As Above
C20010402-008	Blanks	01/06/20 00:00	01/13/20	Filter	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unles otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2020.02.13 13:07:38 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Work Order: C20010402

Report Date: 02/13/20

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

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

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

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

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

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

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

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

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-008
Client Sample ID: Blanks

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, IN AIR							
Uranium	0.00094	mg/L	L	0.00014		SW6020	01/24/20 15:28 / meh
Uranium, Activity	6.4E-10	uCi/mL	L	9.3E-11		SW6020	01/24/20 15:28 / meh
RADIONUCLIDES - IN AIR							
Lead 210	2.3E-10	uCi/mL	U			E909.0	02/10/20 04:02 / ajl
Lead 210 precision (±)	6.9E-09	uCi/mL				E909.0	02/10/20 04:02 / ajl
Lead 210 MDC	1.2E-08	uCi/mL				E909.0	02/10/20 04:02 / ajl
Radium 226	1.9E-09	uCi/mL	U			E903.0	02/04/20 11:51 / ajl
Radium 226 precision (±)	1.4E-09	uCi/mL				E903.0	02/04/20 11:51 / ajl
Radium 226 MDC	2.0E-09	uCi/mL				E903.0	02/04/20 11:51 / ajl
Thorium 230	4.0E-10	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 precision (±)	1.7E-10	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 230 MDC	2.0E-10	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232	1.5E-10	uCi/mL	U			E908.0	02/05/20 13:09 / nsr
Thorium 232 precision (±)	1.1E-10	uCi/mL				E908.0	02/05/20 13:09 / nsr
Thorium 232 MDC	1.6E-10	uCi/mL				E908.0	02/05/20 13:09 / nsr
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	-2.1	pCi/Filter	U			RADCALC	02/07/20 09:45 / dmf
Lead 210 precision (±)	6.8	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Lead 210 MDC	11.5	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226	1.8	pCi/Filter	U			RADCALC	02/07/20 09:45 / dmf
Radium 226 precision (±)	1.3	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Radium 226 MDC	1.9	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230	0.38	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 precision (±)	0.17	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 230 MDC	0.19	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232	0.14	pCi/Filter	U			RADCALC	02/07/20 09:45 / dmf
Thorium 232 precision (±)	0.10	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Thorium 232 MDC	0.15	pCi/Filter				RADCALC	02/07/20 09:45 / dmf
Uranium, Activity	0.61	pCi/Filter		0.20		RADCALC	01/31/20 15:07 / dmf
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Lead 210, % of EFF	-4.0E+05	%				RADCALC	02/07/20 09:47 / dmf
Lead 210, EFF Day	6.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Lead 210, LLD	2.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, % of EFF	2.2E+05	%				RADCALC	02/07/20 09:47 / dmf
Radium 226, EFF Week	9.0E-13	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Radium 226, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, % of EFF	1.3E+06	%				RADCALC	02/07/20 09:47 / dmf
Thorium 230, EFF Year	3.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 230, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Thorium 232, % of EFF	2.5E+06	%				RADCALC	02/07/20 09:47 / dmf
Thorium 232, EFF Year	6.0E-15	uCi/mL				RADCALC	02/07/20 09:47 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
L - Lowest available reporting limit for the analytical method used
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2019
Lab ID: C20010402-008
Client Sample ID: Blanks

Report Date: 02/13/20
Collection Date: 01/06/20
DateReceived: 01/13/20
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIOCHEMISTRY AIR FILTER COMPLIANCE							
Thorium 232, LLD	N/A	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, % of EFF	7.1E+05	%				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, EFF Year	9.0E-14	uCi/mL				RADCALC	02/07/20 09:47 / dmf
Uranium Natural, LLD	1.0E-16	uCi/mL				RADCALC	02/07/20 09:47 / dmf
CLIENT PROVIDED FIELD PARAMETERS							
Air Filtering Volume	1	L				FIELD	01/06/20 00:00 / sec

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
PROJECT: 4th Quarter Air 2019
SAMPLE ID: Blanks

REPORT DATE: February 13, 2020

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C20010402-008	^{nat}U	5E-18	N/A	N/A	1E-16	9E-14	5E-03
4th Quarter 2019	^{230}Th	3E-18	1E-18	2E-18	1E-16	3E-14	1E-02
Air Volume in mLs	^{226}Ra	1E-17	1E-17	2E-17	1E-16	9E-13	2E-03
1.24E+11	^{210}Pb	-2E-17	6E-17	9E-17	2E-15	6E-13	-3E-03
	^{232}Th	1E-18	8E-19	1E-18	N/A	6E-15	2E-02

NOTE: This report uses 124,000,000 L air for comparison purposes, the routine report uses a 1 L system default.

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230, Thorium-232
Week for Radium-226
Day for Lead-210

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C20010402 **Report Date:** 01/30/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **SW6020**									Analytical Run: ICPMS5-C_200124A	
Lab ID: **QCS**	Initial Calibration Verification Standard								01/24/20 13:05	
Uranium		0.0191	mg/L	0.00030	95	90	110			
Lab ID: **ICSA**	Interference Check Sample A								01/24/20 13:36	
Uranium		1.32E-05	mg/L	0.00030						
Lab ID: **ICSAB**	Interference Check Sample AB								01/24/20 13:40	
Uranium		1.36E-05	mg/L	0.00030						
Method: **SW6020**									Batch: 56565	
Lab ID: **MB-56565**	Method Blank					Run: ICPMS5-C_200124A			01/24/20 14:14	
Uranium		ND	mg/L	0.0001						
Lab ID: **LCS2-56565**	Laboratory Control Sample					Run: ICPMS5-C_200124A			01/24/20 14:19	
Uranium		0.0495	mg/L	0.00013	99	70	130			
Lab ID: **C20010402-001ADIL**	Serial Dilution					Run: ICPMS5-C_200124A			01/24/20 14:32	
Uranium		6.31E-11	mg/L	1.5E-10		0	0		20	
Lab ID: **C20010402-001APDS**	Post Digestion/Distillation Spike					Run: ICPMS5-C_200124A			01/24/20 14:36	
Uranium		4.10E-10	mg/L	1.5E-10	90	75	125			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C20010402 **Report Date:** 02/12/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 56565
Lab ID: LCS-56565	3	Laboratory Control Sample				Run: G542M-2_200128B				02/04/20 11:50
Radium 226		105	pCi/L		105	80	120			
Radium 226 precision (±)		20.6	pCi/L							
Radium 226 MDC		2.14	pCi/L							
Lab ID: MB-56565	3	Method Blank				Run: G542M-2_200128B				02/04/20 11:50
Radium 226		0.2	pCi/L							U
Radium 226 precision (±)		0.3	pCi/L							
Radium 226 MDC		0.4	pCi/L							
Lab ID: C20010402-001ADUP	3	Sample Duplicate				Run: G542M-2_200128B				02/04/20 11:51
Radium 226		7.39E-08	pCi/L					15	20	
Radium 226 precision (±)		2.09E-08	pCi/L							
Radium 226 MDC		1.44E-08	pCi/L							

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C20010402 **Report Date:** 02/12/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 56565
Lab ID: MB-56565	6	Method Blank			Run: EGG-ORTEC_2_200131A				02/05/20 13:09	
Thorium 230		0.5	pCi/L							
Thorium 230 precision (±)		0.2	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Thorium 232		0.08	pCi/L							U
Thorium 232 precision (±)		0.2	pCi/L							
Thorium 232 MDC		0.3	pCi/L							
Lab ID: LCS-56565	3	Laboratory Control Sample			Run: EGG-ORTEC_2_200131A				02/05/20 13:09	
Thorium 230		51.4	pCi/L		108	80	120			
Thorium 230 precision (±)		9.77	pCi/L							
Thorium 230 MDC		0.232	pCi/L							
Lab ID: C20010563-004ADUP	6	Sample Duplicate			Run: EGG-ORTEC_2_200131A				02/05/20 13:09	
Thorium 230		9.20E-08	pCi/L					41	20	UR
Thorium 230 precision (±)		7.81E-08	pCi/L							
Thorium 230 MDC		1.24E-07	pCi/L							
Thorium 232		3.07E-08	pCi/L					190	20	UR
Thorium 232 precision (±)		5.31E-08	pCi/L							
Thorium 232 MDC		1.10E-07	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 2.0.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C20010402 **Report Date:** 02/12/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: 56565
Lab ID: LCS-56565	3	Laboratory Control Sample				Run: TRICARB LSC_200128D			02/09/20 16:49	
Lead 210		204	pCi/L		112	80	120			
Lead 210 precision (±)		62.5	pCi/L							
Lead 210 MDC		20.2	pCi/L							
Lab ID: MB-56565	3	Method Blank				Run: TRICARB LSC_200128D			02/09/20 18:00	
Lead 210		-0.7	pCi/L							U
Lead 210 precision (±)		1	pCi/L							
Lead 210 MDC		2	pCi/L							
Lab ID: C20010402-003AMS	3	Sample Duplicate				Run: TRICARB LSC_200128D			02/10/20 02:02	
Lead 210		9.45E-06	pCi/L					11	20	
Lead 210 precision (±)		2.84E-06	pCi/L							
Lead 210 MDC		4.60E-07	pCi/L							
- The sample used for the MS/MSD pair had much higher response than the spike added. The MS/MSD pair is reported as a Duplicate pair instead.										
Lab ID: C20010402-003AMSD	3	Sample Duplicate				Run: TRICARB LSC_200128D			02/10/20 02:31	
Lead 210		1.34E-05	pCi/L					45	20	R
Lead 210 precision (±)		4.02E-06	pCi/L							
Lead 210 MDC		5.29E-07	pCi/L							
- The sample used for the MS/MSD pair had much higher response than the spike added. The MS/MSD pair is reported as a Duplicate pair instead.										
- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 2.0.										

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

Work Order Receipt Checklist

Energy Fuels Resources (USA) Inc C20010402

Login completed by: Casie C. Peppersack
Date Received: 1/13/2020
Reviewed by: Steve Carlston
Received by: CCP
Reviewed Date: 1/14/2020
Carrier name: 2nd Day Air

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	N/A°C N/A		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

Contact and Corrective Action Comments:

None

C20010402

Sheet 1 of 1

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 2221
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
4th Quarter Air 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-2	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-4	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-5	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-6	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-7	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
BHV-8	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232
Blanks	9/30/2019-1/6/2020	NA	U-NAT, TH-230, Ra-226, Pb-210, TH-232

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	1/9/2020 1130		
Relinquished By:(Signature)	**Date/Time**	**Received By:(Signature)**	**Date/Time**
			1/13/2020 1050

BHV-1

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2015
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429636	9/30/2019	10/7/2019	2326.97	2495.82	10131.0	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9686.0	4.5110	4.6430	132.0	0.0136	100.5
2	9429627	10/7/2019	10/14/2019	2495.82	2663.77	10077.0	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9432.2	4.5055	4.6796	174.1	0.0185	100.0
3	9429619	10/14/2019	10/21/2019	2663.77	2830.92	10029.0	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9638.7	4.5071	4.6710	163.9	0.0170	99.5
4	9429611	10/21/2019	10/28/2019	2830.92	2998.77	10071.0	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9463.2	4.5262	4.6499	123.7	0.0131	99.9
5	9429609	10/28/2019	11/4/2019	2998.77	3170.47	10302.0	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9822.9	4.5183	4.5986	80.3	0.0082	102.2
6	9650995	11/4/2019	11/11/2019	3170.47	3359.1	11317.8	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10655.8	4.3640	4.4814	117.4	0.0110	112.3
7	9650994	11/11/2019	11/18/2019	3359.1	3504.02	8695.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8202.2	4.3564	4.4701	113.7	0.0139	86.3
8	9650985	11/18/2019	11/25/2019	3504.02	3675.3	10276.8	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9693.2	4.3843	4.4333	49.0	0.0051	102.0
9	9650977	11/25/2019	12/2/2019	3675.3	3843.37	10084.2	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9272.5	4.3867	4.4302	43.5	0.0047	100.0
10	9650969	12/2/2019	12/9/2019	3843.37	4011.71	10100.4	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9579.9	4.3454	4.3807	35.3	0.0037	100.2
11	9650961	12/9/2019	12/16/2019	4011.71	4179.04	10039.8	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9547.4	4.3795	4.4056	26.1	0.0027	99.6
12	9650953	12/16/2019	12/23/2019	4179.04	4342.3	9795.6	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9400.1	4.3438	4.3808	37.0	0.0039	97.2
13	9650945	12/23/2019	12/30/2019	4342.3	4515.82	10411.2	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9606.7	4.3359	4.3611	25.2	0.0026	103.3
14	9650932	12/30/2019	1/6/2020	4515.82	4679.46	9818.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9447.2	4.3010	4.3276	26.6	0.0028	97.4
					Totals	141149.4							15.10	13.24	467.49	133448.2	61.765	62.913	1147.8	0.1208	
					Averages	10082.1	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.39	9532.0	4.412	4.494	82.0	0.0086	100.0

Comments:

Insert weekly flow check values in yellow columns.

Blue column values are calculated.

Green columns are calculated averages from the met station.

Insert filter weight values into orange columns.

BHV-2

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m³/min)	Qs Std. Flow (m³/min)	Qs Std. Flow (SCFM) (ft³/min)	Total Std. Volume (m³)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m³)	Percent Onstream (%)
1	9429637	9/30/2019	10/7/2019	13042.56	13210.91	10101.0	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9374.3	4.5125	4.7621	249.6	0.0266	100.2
2	9429628	10/7/2019	10/14/2019	13210.91	13379.46	10113.0	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9465.9	4.5085	4.7949	286.4	0.0303	100.3
3	9429620	10/14/2019	10/21/2019	13379.46	13546.17	10002.6	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9613.4	4.5251	4.7681	243.0	0.0253	99.2
4	9429612	10/21/2019	10/28/2019	13546.17	13715.12	10137.0	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9525.2	4.5253	4.7286	203.3	0.0213	100.6
5	9429604	10/28/2019	11/4/2019	13715.12	13887.11	10319.4	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9839.5	4.5265	4.7121	185.6	0.0189	102.4
6	9650996	11/4/2019	11/11/2019	13887.11	14075.73	11317.2	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10655.3	4.3556	4.6089	253.3	0.0238	112.3
7	9650993	11/11/2019	11/18/2019	14075.73	14219.63	8634.0	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8144.5	4.3455	4.5888	243.3	0.0299	85.7
8	9650984	11/18/2019	11/25/2019	14219.63	14391.63	10320.0	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	10027.7	4.3843	4.5157	131.4	0.0131	102.4
9	9650976	11/25/2019	12/2/2019	14391.63	14559.87	10094.4	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9580.2	4.4117	4.4827	71.0	0.0074	100.1
10	9650968	12/2/2019	12/9/2019	14559.87	14727.37	10050.0	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9532.1	4.3480	4.4150	67.0	0.0070	99.7
11	9650960	12/9/2019	12/16/2019	14727.37	14895.38	10080.6	4.5	4.0	4.3	0.6	273.8	618.87	1.11	0.98	34.60	9875.5	4.3864	4.4258	39.4	0.0040	100.0
12	9650952	12/16/2019	12/23/2019	14895.38	15057.99	9756.6	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9362.7	4.3323	4.4118	79.5	0.0085	96.8
13	9650944	12/23/2019	12/30/2019	15057.99	15231	10380.6	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9578.4	4.3486	4.4444	95.8	0.0100	103.0
14	9650933	12/30/2019	1/6/2020	15231	15394.99	9839.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9467.4	4.3320	4.3773	45.3	0.0048	97.6
					Totals	141145.8							15.17	13.30	469.57	134042.2	61.842	64.036	2193.9	0.2308	
					Averages	10081.8	4.1	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.54	9574.4	4.417	4.574	156.7	0.0165	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-4

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429638	9/30/2019	10/7/2019	18567.99	18736.36	10102.2	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9658.5	4.5298	4.6436	113.8	0.0118	100.2
2	9429629	10/7/2019	10/14/2019	18736.36	18902.69	9979.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9341.2	4.5055	4.6207	115.2	0.0123	99.0
3	9429621	10/14/2019	10/21/2019	18902.69	19066.39	9822.0	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9163.2	4.5030	4.6527	149.7	0.0163	97.4
4	9429613	10/21/2019	10/28/2019	19066.39	19234.71	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5263	4.6462	119.9	0.0126	100.2
5	9429605	10/28/2019	11/4/2019	19234.71	19392.54	9469.8	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8748.3	4.5230	4.5596	36.6	0.0042	93.9
6	9650997	11/4/2019	11/11/2019	19392.54	19584.11	11494.2	3.5	4.0	3.8	7.7	280.8	622.45	1.05	0.91	32.21	10484.9	4.3365	4.4640	127.5	0.0122	114.0
7	9650992	11/11/2019	11/18/2019	19584.11	19728.34	8653.8	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8163.2	4.3574	4.4410	83.6	0.0102	85.9
8	9650983	11/18/2019	11/25/2018	19728.34	19899.78	10286.4	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9702.2	4.3669	4.4223	55.4	0.0057	102.0
9	9650975	11/25/2019	12/2/2019	19899.78	20067.83	10083.0	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9569.4	4.3418	4.4120	70.2	0.0073	100.0
10	9650967	12/2/2019	12/9/2019	20067.83	20236.16	10099.8	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9579.3	4.3395	4.3808	41.3	0.0043	100.2
11	9650959	12/9/2019	12/16/2019	20236.16	20403.78	10057.2	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9563.9	4.3698	4.3977	27.9	0.0029	99.8
12	9650951	12/16/2019	12/23/2019	20403.78	20566.88	9786.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9390.9	4.3421	4.3832	41.1	0.0044	97.1
13	9650943	12/23/2019	12/30/2019	20566.88	20739.6	10363.2	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9562.4	4.3530	4.3825	29.5	0.0031	102.8
14	9650934	12/30/2019	1/6/2020	20739.6	20903.85	9855.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9482.4	4.3088	4.3411	32.3	0.0034	97.8
					Totals	140151.6							15.03	13.18	465.46	131899.6	61.703	62.747	1044.0	0.1108	
					Averages	10010.8	3.9	4.0	4.0	4.1	277.2	619.7765	1.07	0.94	33.25	9421.4	4.407	4.482	74.6	0.0079	99.3

Comments:
Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-5

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (ug/m^3)	Percent Onstream (%)
1	9429639	9/30/2019	10/7/2019	11650.81	11819.1	10097.4	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9653.9	4.5223	4.6602	137.9	0.0143	100.2
2	9429630	10/7/2019	10/14/2019	11819.1	11990.03	10255.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9599.6	4.4950	4.6560	161.0	0.0168	101.7
3	9429622	10/14/2019	10/21/2019	11990.03	12153.77	9824.4	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9165.4	4.5107	4.6469	136.2	0.0149	97.5
4	9429614	10/21/2019	10/28/2019	12153.77	12322.09	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5263	4.6623	136.0	0.0143	100.2
5	9429606	10/28/2019	11/4/2019	12322.09	12479.92	9469.8	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8748.3	4.5281	4.5997	71.6	0.0082	93.9
6	9650998	11/4/2019	11/11/2019	12479.92	12671.45	11491.8	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10819.6	4.3517	4.4842	132.5	0.0122	114.0
7	9650991	11/11/2019	11/18/2019	12671.45	12815.73	8656.8	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8166.0	4.3539	4.4701	116.2	0.0142	85.9
8	9650982	11/18/2019	11/25/2019	12815.73	12987.17	10286.4	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9702.2	4.3598	4.4218	62.0	0.0064	102.0
9	9650974	11/25/2019	12/2/2019	12987.17	13155.24	10084.2	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9570.5	4.3383	4.4119	73.6	0.0077	100.0
10	9650966	12/2/2019	12/9/2019	13155.24	13323.55	10098.6	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9578.2	4.3584	4.4096	51.2	0.0053	100.2
11	9650958	12/9/2019	12/16/2019	13323.55	13491.18	10057.8	4.5	4.0	4.3	0.6	273.8	618.87	1.11	0.98	34.60	9853.2	4.3703	4.4126	42.3	0.0043	99.8
12	9650950	12/16/2019	12/23/2019	13491.18	13654.28	9786.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9390.9	4.3338	4.3884	54.6	0.0058	97.1
13	9650942	12/23/2019	12/30/2019	13654.28	13826.82	10352.4	4.0	4.0	4.0	-1.6	271.5	615.65	1.07	0.95	33.63	9859.4	4.3453	4.3833	38.0	0.0039	102.7
14	9650935	12/30/2019	1/6/2020	13826.82	13991	9850.8	3.5	4.0	3.8	-4.5	268.6	621.39	1.03	0.93	32.92	9183.3	4.3450	4.3904	45.4	0.0049	97.7
					Totals	140411.4							15.10	13.24	467.50	132780.3	61.739	62.997	1258.5	0.1332	
					Averages	10029.4	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.39	9484.3	4.410	4.500	89.9	0.0095	99.5

Comments:
Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-6

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (ug/m^3)	Percent Onstream (%)
1	9429640	9/30/2019	10/7/2019	646.99	815.37	10102.8	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9376.0	4.5130	4.6232	110.2	0.0118	100.2
2	9429631	10/7/2019	10/14/2019	815.37	986.21	10250.4	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9594.5	4.5190	4.6649	145.9	0.0152	101.7
3	9429623	10/14/2019	10/21/2019	986.21	1149.91	9822.0	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9163.2	4.5040	4.6338	129.8	0.0142	97.4
4	9429615	10/21/2019	10/28/2019	1149.91	1318.23	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5235	4.6402	116.7	0.0123	100.2
5	9429607	10/28/2019	11/4/2019	1318.23	1476.54	9498.6	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8774.9	4.5475	4.6296	82.1	0.0094	94.2
6	9650999	11/4/2019	11/11/2019	1476.54	1667.68	11468.4	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10797.6	4.3502	4.4939	143.7	0.0133	113.8
7	9650990	11/11/2019	11/18/2019	1667.68	1811.9	8653.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8162.6	4.3855	4.4990	113.5	0.0139	85.8
8	9650981	11/18/2019	11/25/2019	1811.9	1983.47	10294.2	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	10002.7	4.3545	4.3955	41.0	0.0041	102.1
9	9650973	11/25/2019	12/2/2019	1983.47	2151.42	10077.0	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9265.9	4.3480	4.4105	62.5	0.0067	100.0
10	9650965	12/2/2019	12/9/2019	2151.42	2319.79	10102.2	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9581.6	4.3697	4.4179	48.2	0.0050	100.2
11	9650957	12/9/2019	12/16/2019	2319.79	2487.35	10053.6	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9560.5	4.3490	4.3850	36.0	0.0038	99.7
12	9650949	12/16/2019	12/23/2019	2487.35	2650.42	9784.2	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9389.2	4.3643	4.4152	50.9	0.0054	97.1
13	9650941	12/23/2019	12/30/2019	2650.42	2823.26	10370.4	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9569.0	4.3419	4.3838	41.9	0.0044	102.9
14	9650936	12/30/2019	1/6/2020	2823.26	2987.41	9849.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9476.7	4.3396	4.3857	46.1	0.0049	97.7
					Totals	140425.2							15.03	13.18	465.47	132204.0	61.810	62.978	1168.5	0.1243	
					Averages	10030.4	3.9	4.0	4.0	4.1	277.2	619.7765	1.07	0.94	33.25	9443.1	4.415	4.498	83.5	0.0089	99.5

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-7

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qa Std. Flow (m^3/min)	Qa Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429641	9/30/2019	10/7/2019	2686.28	2855.17	10133.4	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9404.4	4.5043	4.6672	162.9	0.0173	100.5
2	9429632	10/7/2019	10/14/2019	2855.17	3023.1	10075.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9431.1	4.5016	4.7143	212.7	0.0226	100.0
3	9429624	10/14/2019	10/21/2019	3023.1	3190.29	10031.4	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9641.0	4.5155	4.6899	174.4	0.0181	99.5
4	9429616	10/21/2019	10/28/2019	3190.29	3357.97	10060.8	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9453.6	4.5127	4.6869	174.2	0.0184	99.8
5	9429608	10/28/2019	11/4/2019	3357.97	3530.39	10345.2	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9864.1	4.5355	4.6677	132.2	0.0134	102.6
6	9651000	11/4/2019	11/11/2019	3530.39	3719.06	11320.2	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10658.1	4.3575	4.4570	99.5	0.0093	112.3
7	9650989	11/11/2019	11/18/2019	3719.06	3863.33	8656.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8165.5	4.3763	4.5249	148.6	0.0182	85.9
8	9650980	11/18/2019	11/25/2019	3863.33	4034.68	10281.0	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9697.1	4.3581	4.4334	75.3	0.0078	102.0
9	9650972	11/25/2019	12/2/2019	4034.68	4202.8	10087.2	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9573.4	4.3275	4.3920	64.5	0.0067	100.1
10	9650964	12/2/2019	12/9/2019	4202.8	4371.1	10098.0	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9577.6	4.3491	4.3877	38.6	0.0040	100.2
11	9650956	12/9/2019	12/16/2019	4371.1	4538.51	10044.6	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9552.0	4.3702	4.4116	41.4	0.0043	99.6
12	9650948	12/16/2019	12/23/2019	4538.51	4701.73	9793.2	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9397.8	4.3608	4.4109	50.1	0.0053	97.2
13	9650940	12/23/2019	12/30/2019	4701.73	4874.96	10393.8	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9590.6	4.3610	4.3979	36.9	0.0038	103.1
14	9650937	12/30/2019	1/6/2020	4874.96	5038.75	9827.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9455.9	4.3322	4.3745	42.3	0.0045	97.5
					Totals	141148.2							15.10	13.24	467.55	133462.2	61.762	63.216	1453.6	0.1538	
					Averages	10082.0	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.40	9533.0	4.412	4.515	103.8	0.0110	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-8

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429642	9/30/2019	10/7/2019	9514.59	9683.47	10132.8	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9403.8	4.5271	4.6648	137.7	0.0146	100.5
2	9429633	10/7/2019	10/14/2019	9683.47	9851.4	10075.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9431.1	4.5041	4.6663	162.2	0.0172	100.0
3	9429625	10/14/2019	10/21/2019	9851.4	10018.55	10029.0	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9638.7	4.5325	4.6860	153.5	0.0159	99.5
4	9429617	10/21/2019	10/28/2019	10018.55	10186.26	10062.6	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9455.3	4.5163	4.6310	114.7	0.0121	99.8
5	9429609	10/28/2019	11/4/2019	10186.26	10357.74	10288.8	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9810.4	4.5262	4.5327	6.5	0.0007	102.1
4	9429601	11/4/2019	11/11/2019	10357.74	10546.63	11333.4	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10670.5	4.5222	4.6450	122.8	0.0115	112.4
7	9650988	11/11/2019	11/18/2019	10546.63	10691.27	8678.4	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8186.4	4.3821	4.4850	102.9	0.0126	86.1
8	9650979	11/18/2019	11/25/2019	10691.27	10862.55	10276.8	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	9985.7	4.3643	4.4120	47.7	0.0048	102.0
9	9650971	11/25/2019	12/2/2019	10862.55	11030.68	10087.8	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9275.8	4.3581	4.4183	60.2	0.0065	100.1
10	9650963	12/2/2019	12/9/2019	11030.68	11198.99	10098.6	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9578.2	4.3715	4.4040	32.5	0.0034	100.2
11	9650955	12/9/2019	12/16/2019	11198.99	11366.37	10042.8	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9550.3	4.3713	4.3942	22.9	0.0024	99.6
12	9650947	12/16/2019	12/23/2019	11366.37	11529.57	9792.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9396.7	4.3491	4.3690	19.9	0.0021	97.1
13	9650939	12/23/2019	12/30/2019	11529.57	11703.04	10408.2	3.0	4.0	3.5	-1.6	271.5	615.65	1.00	0.89	31.50	9284.8	4.3600	4.3755	15.5	0.0017	103.3
14	9650938	12/30/2019	1/6/2020	11703.04	11866.74	9822.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9450.7	4.3558	4.3702	14.4	0.0015	97.4
					Totals	141129.0							15.06	13.21	466.43	133118.4	62.041	63.054	1013.4	0.1070	
					Averages	10080.6	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.94	33.32	9508.5	4.431	4.504	72.4	0.0076	100.0

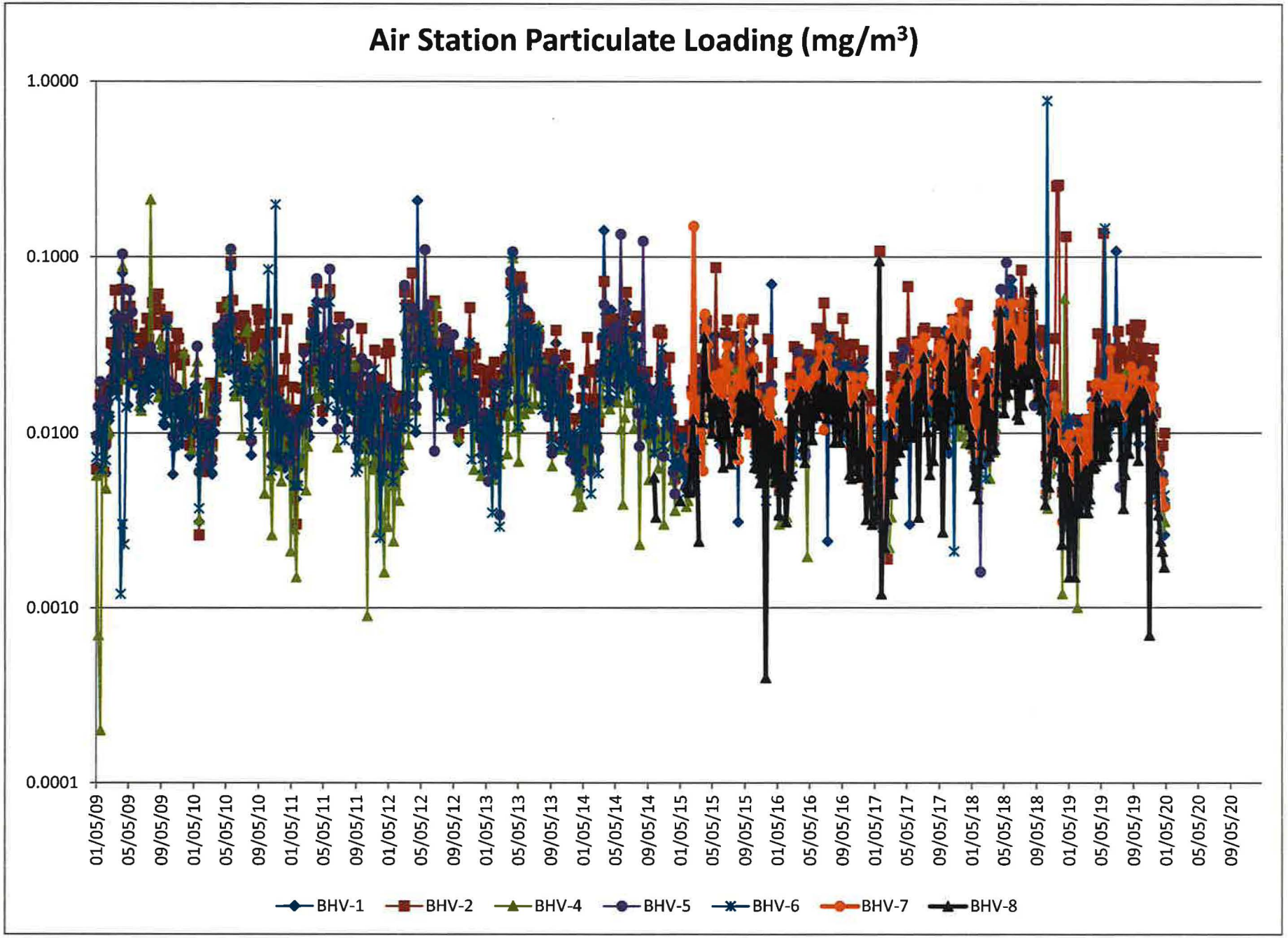
Comments: Lost the motor between 10/28/2019 and 11/4/2019. Motor was replaced on 11/4/2019.

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

Blanks		Period: September 30, 2019 - January 6, 2020		
Week #	Filter Number	Start Date	Stop Date	Net
1	9429634	30-Sep-19	07-Oct-19	4.5102
2	9429626	07-Oct-19	14-Oct-19	4.5234
3	9429618	14-Oct-19	21-Oct-19	4.5273
4	9429610	21-Oct-19	28-Oct-19	4.5261
5	9429602	28-Oct-19	04-Nov-19	4.5150
6	9650987	04-Nov-19	11-Nov-19	4.3692
7	9650986	11-Nov-19	18-Nov-19	4.3853
8	9650978	18-Nov-19	25-Nov-19	4.3688
9	9650970	25-Nov-19	02-Dec-19	4.3573
10	9650962	02-Dec-19	09-Dec-19	4.3823
11	9650954	09-Dec-19	16-Dec-19	4.3840
12	9650946	16-Dec-19	23-Dec-19	4.3507
13	9650931	23-Dec-19	30-Dec-19	4.3944
14	9650930	30-Dec-19	06-Jan-20	4.3857
	Totals			

ATTACHMENT D

AIR PARTICULATE LOADING GRAPHS AND SUPPORTING DATA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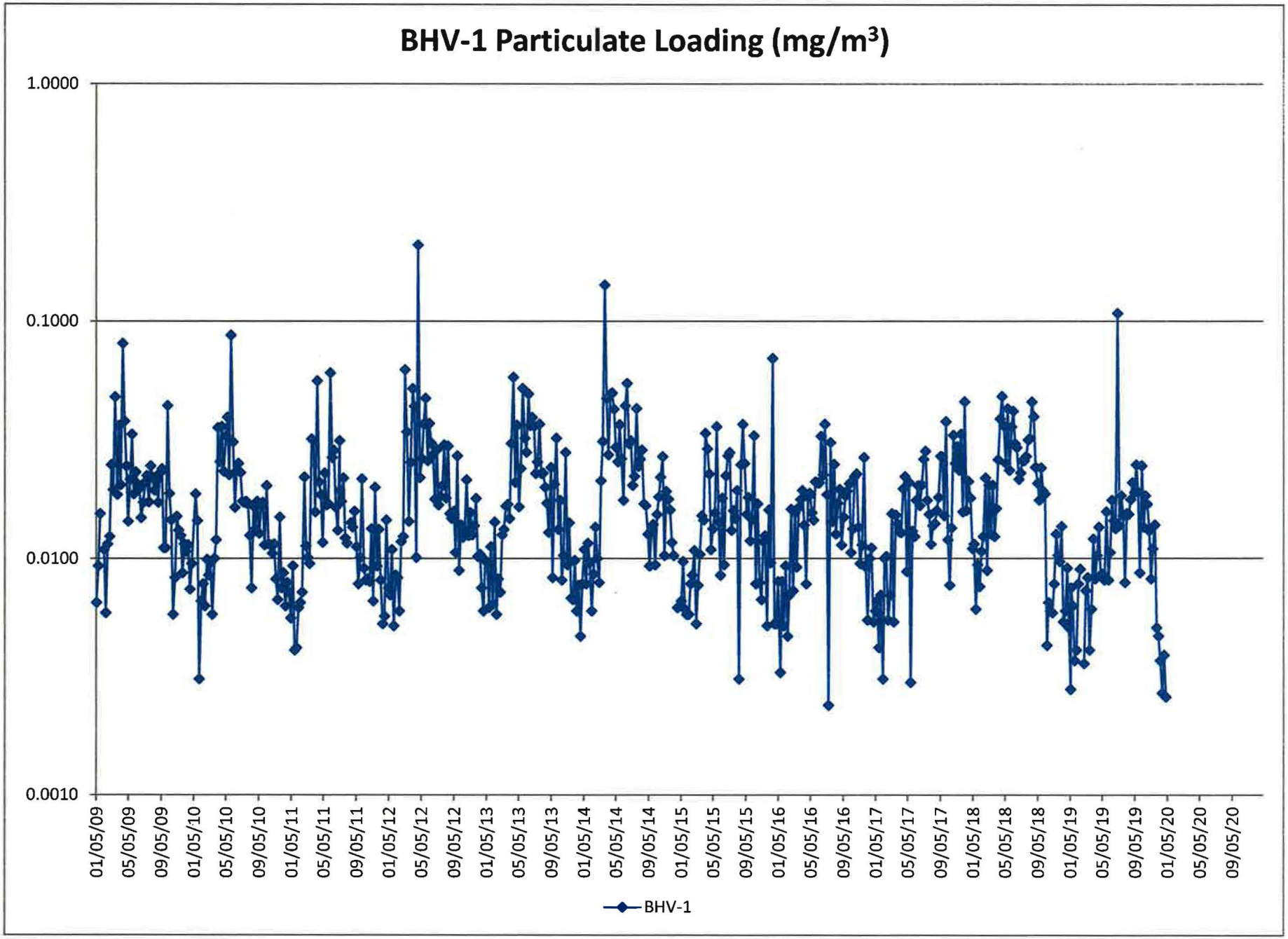
BHV-2
BHV-4
BHV-5
BHV-6
BHV-7
BHV-8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05/05/10
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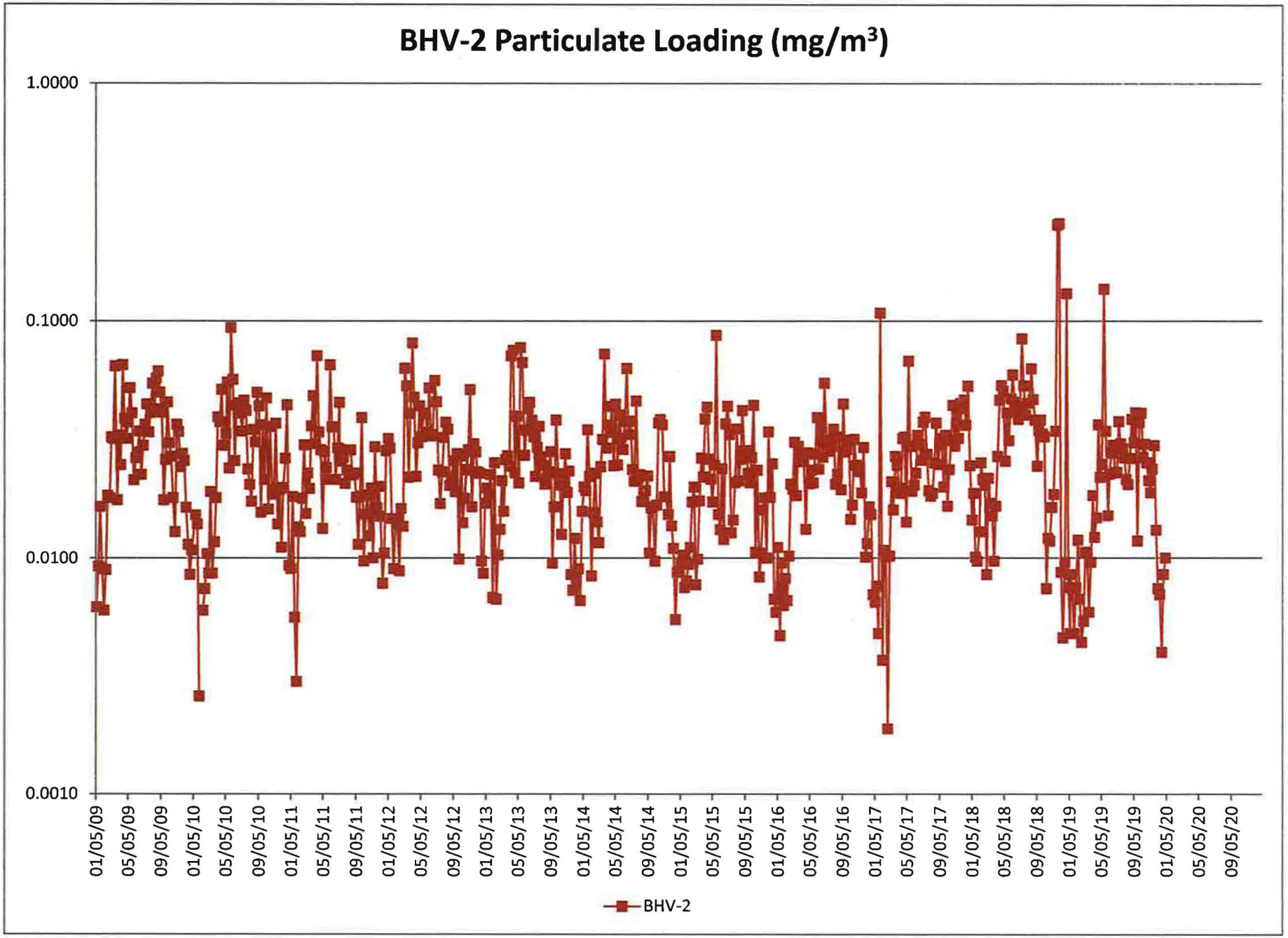
09/05/20
BHV-1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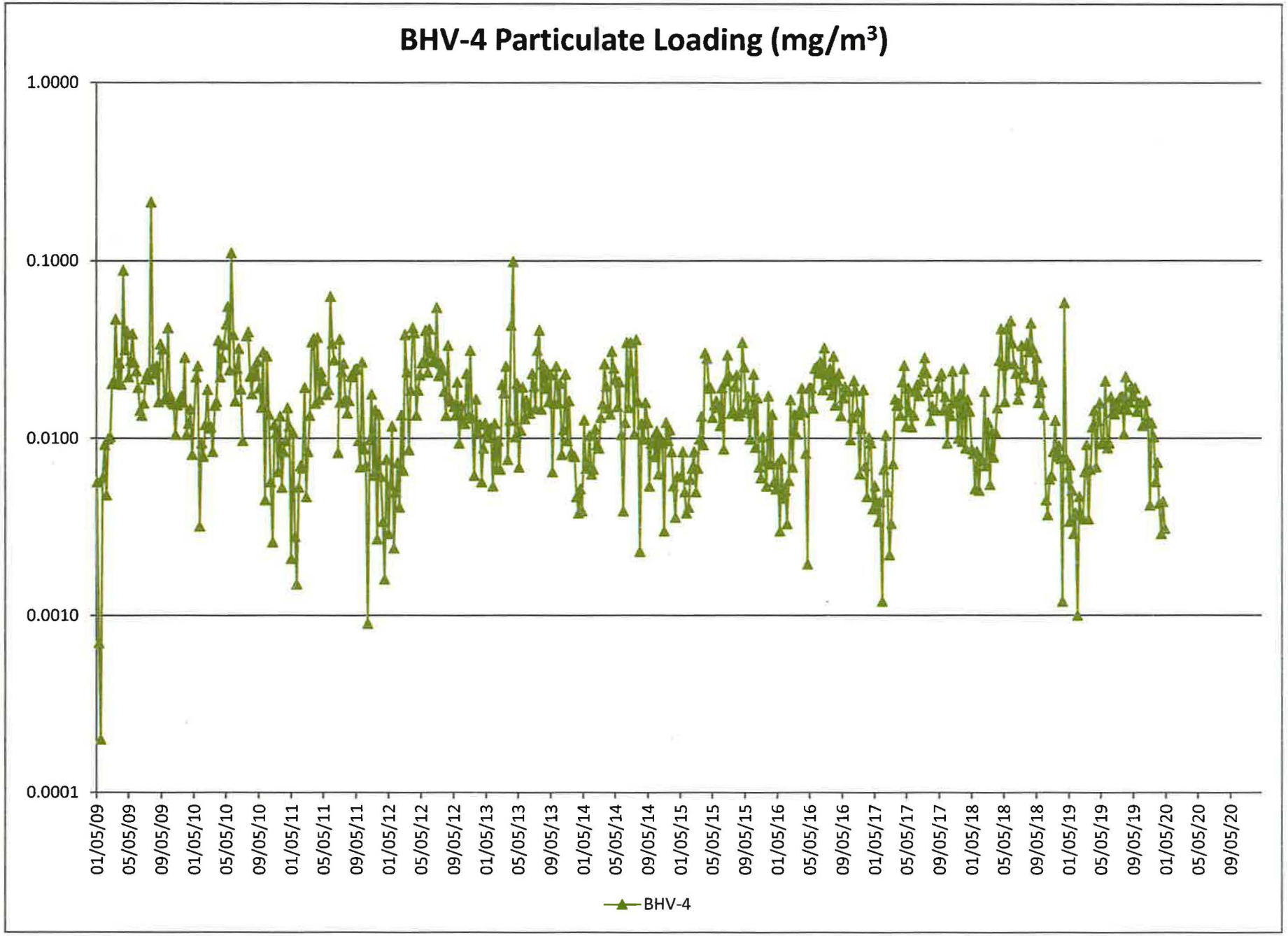
BHV-2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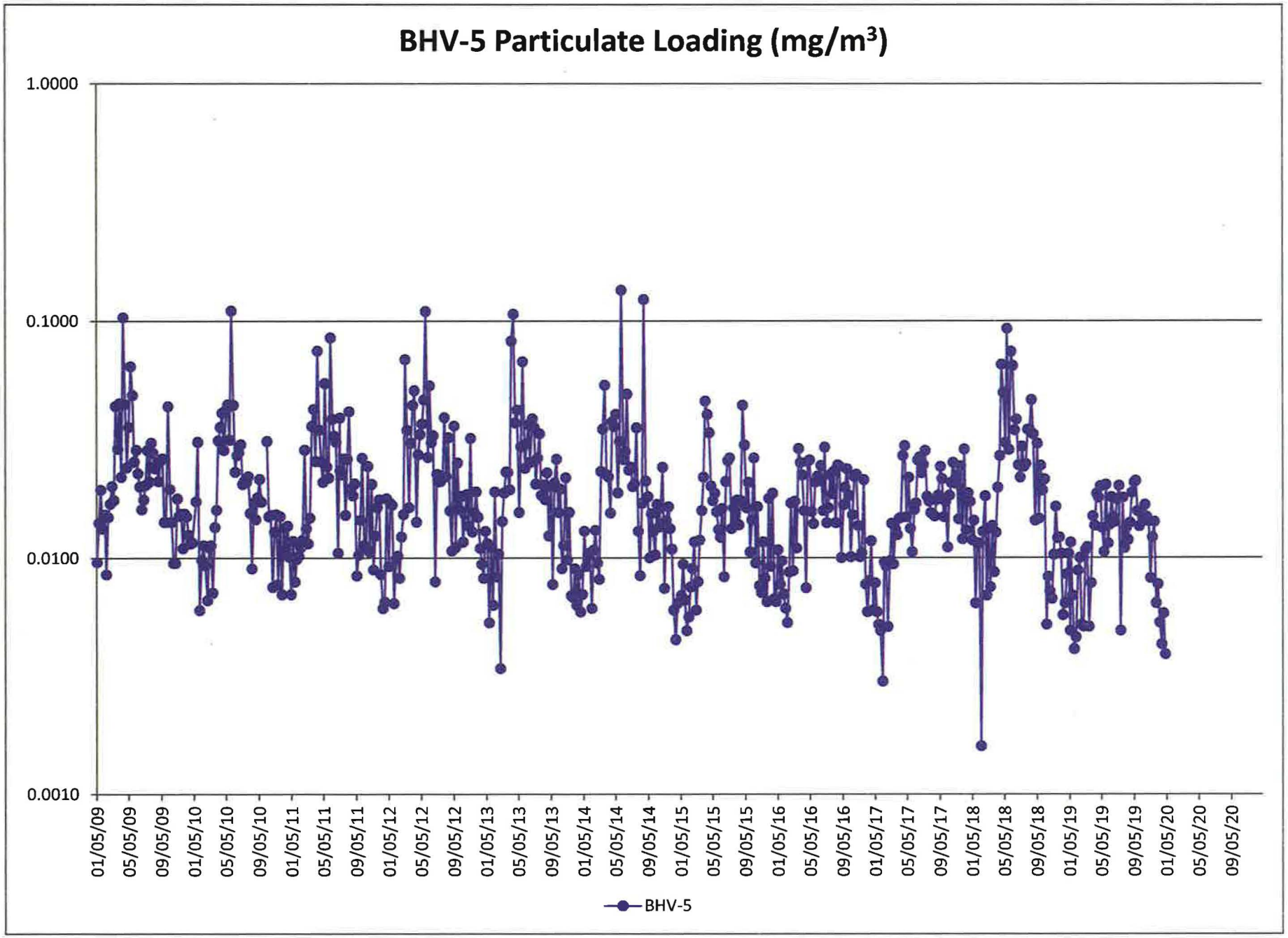
BHV-4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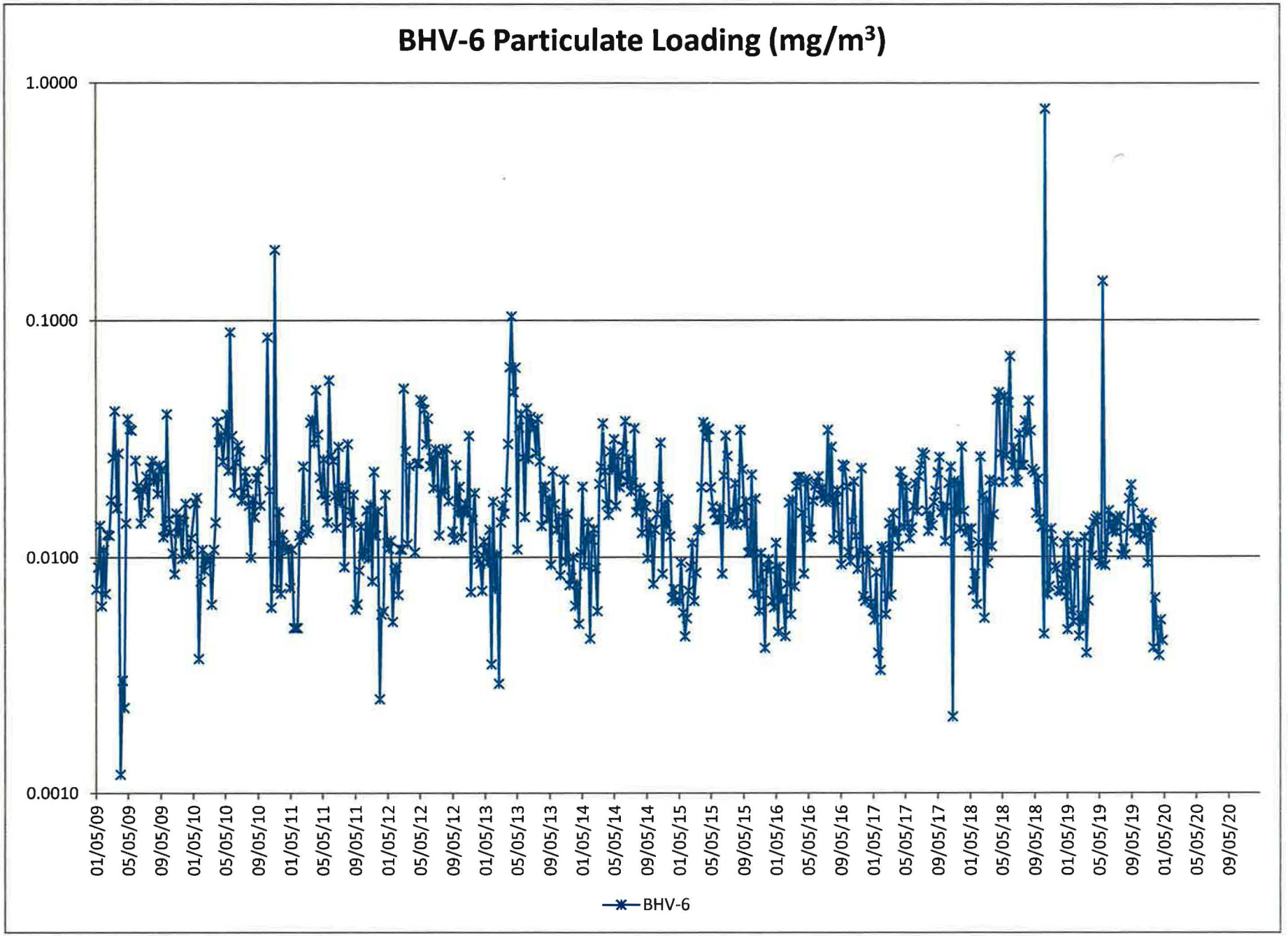
BHV-5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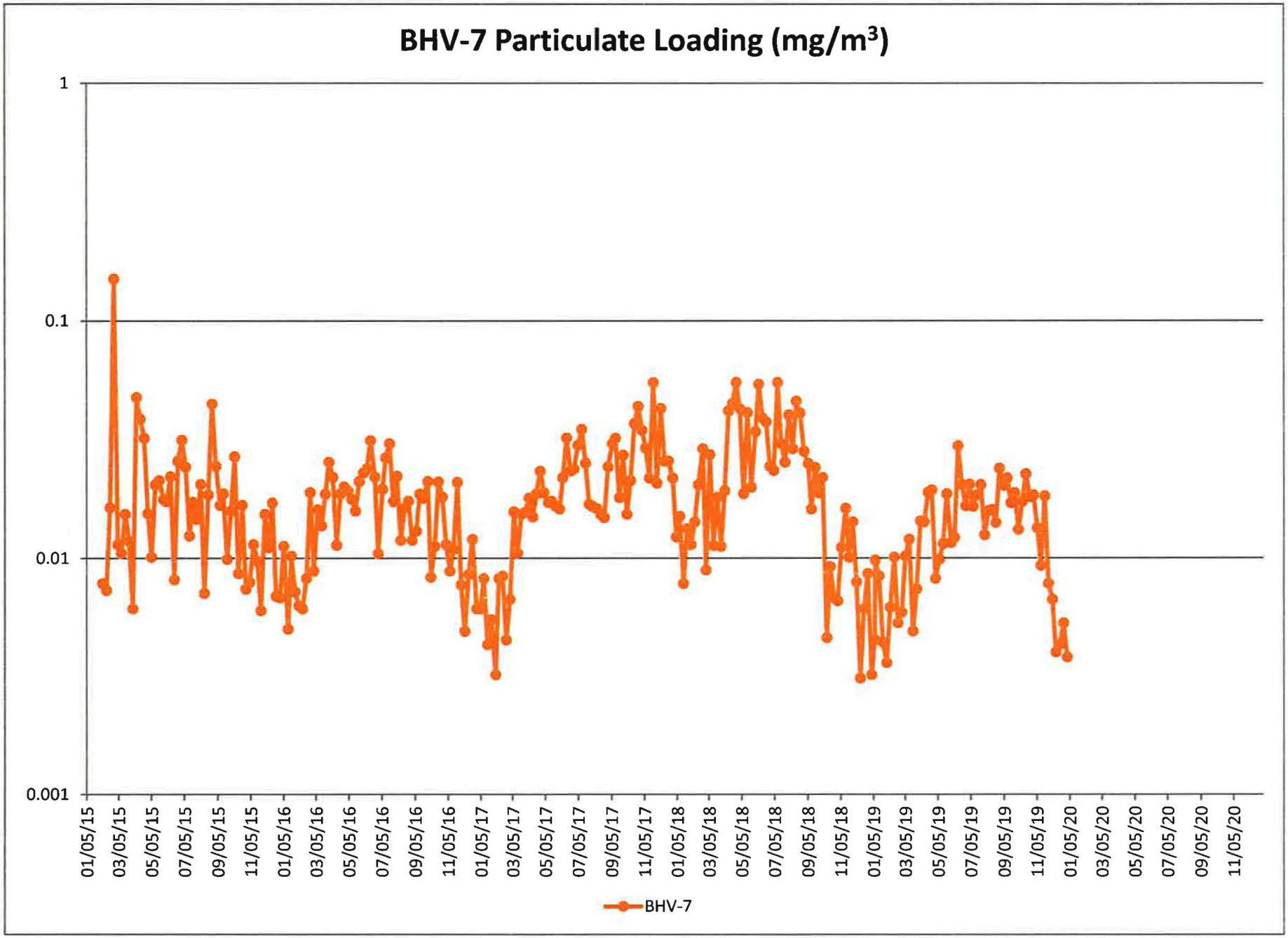
BHV-6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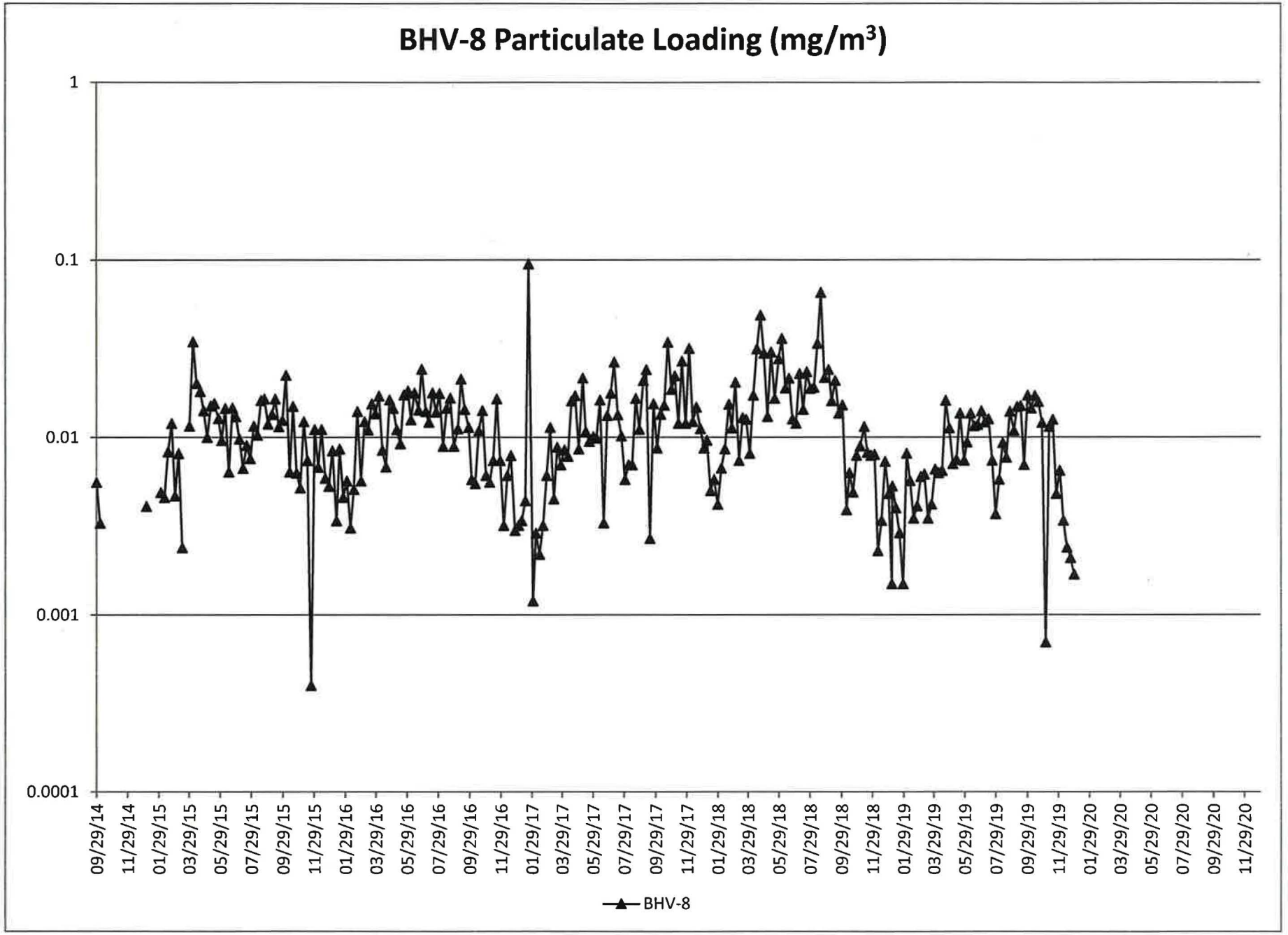
BHV-7


BHV-8 Particulate Loading (mg/m3)
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BHV-8

BHV-1

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2015
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673045	7/1/2019	7/8/2019	142.84	311.32	10108.8	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9221.2	4.4202	4.5473	127.1	0.0138	100.3
2	9673037	7/8/2019	7/15/2019	311.32	480.19	10132.2	4.0	4.0	4.0	25.0	298.1	621.5	1.11	0.91	32.18	9231.9	4.4342	4.6054	171.2	0.0185	100.5
3	9673029	7/15/2019	7/22/2019	480.19	650.74	10233.0	4.0	4.0	4.0	26.5	299.7	619.4	1.12	0.91	32.04	9283.4	4.4430	4.5839	140.9	0.0152	101.5
4	9673016	7/22/2019	7/29/2019	650.74	815.2	9867.6	4.0	4.0	4.0	25.2	298.3	622.5	1.11	0.91	32.19	8994.4	4.4068	4.4780	71.2	0.0079	97.9
5	9673013	7/29/2019	8/5/2019	815.2	984.14	10136.4	4.0	4.0	4.0	24.0	297.1	622.0	1.11	0.91	32.24	9254.5	4.3765	4.5203	143.8	0.0155	100.6
6	9673005	8/5/2019	8/12/2019	984.14	1151.49	10041.0	4.5	4.0	4.3	24.6	297.7	620.57	1.15	0.94	33.17	9429.9	4.3710	4.5159	144.9	0.0154	99.6
7	9429697	8/12/2019	8/19/2019	1151.49	1318.43	10016.4	4.5	4.0	4.3	24.6	297.7	620.42	1.15	0.94	33.16	9405.6	4.5125	4.6803	167.8	0.0178	99.4
8	9429689	8/19/2019	8/26/2019	1318.43	1486.3	10072.2	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9160.7	4.5012	4.6934	192.2	0.0210	99.9
9	9429681	8/26/2019	9/3/2019	1486.3	1678.56	11535.6	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10506.5	4.5200	4.7210	201.0	0.0191	114.4
10	9429673	9/3/2019	9/9/2019	1678.56	1823.38	8689.2	4.0	4.0	4.0	24.7	297.8	620.57	1.11	0.91	32.17	7914.4	4.5159	4.7128	196.9	0.0249	86.2
11	9429665	9/9/2019	9/16/2019	1823.38	1993.99	10236.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9423.8	4.5000	4.6814	181.4	0.0192	101.6
12	9429652	9/16/2019	9/23/2019	1993.99	2158.79	9888.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9100.8	4.5009	4.5798	78.9	0.0087	98.1
13	9429649	9/23/2019	9/30/2019	2158.79	2326.97	10090.8	3.5	4.0	3.8	17.7	290.9	617.37	1.07	0.89	31.43	8981.4	4.5198	4.7416	221.8	0.0247	100.1
					Totals	131047.8							14.49	11.90	420.09	119908.5	58.022	60.061	2039.1	0.2218	
					Averages	10080.6	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.92	32.31	9223.7	4.463	4.620	156.9	0.0171	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-2

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673044	7/1/2019	7/8/2019	10858.59	11027.04	10107.0	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9219.5	4.4464	4.7943	347.9	0.0377	100.3
2	9673036	7/8/2019	7/15/2019	11027.04	11195.97	10135.8	4.5	4.0	4.3	25.0	298.1	621.54	1.15	0.94	33.17	9519.9	4.4288	4.7185	289.7	0.0304	100.6
3	9673028	7/15/2019	7/22/2019	11195.97	11367.46	10289.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9334.5	4.4330	4.7038	270.8	0.0290	102.1
4	9673018	7/22/2019	7/29/2019	11367.46	11530.92	9807.6	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8939.7	4.4342	4.6709	236.7	0.0265	97.3
5	9673012	7/29/2019	8/5/2019	11530.92	11699.38	10107.6	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9228.2	4.3740	4.5728	198.8	0.0215	100.3
6	9673004	8/5/2019	8/12/2019	11699.38	11867.24	10071.6	4.5	4.0	4.3	24.6	297.7	620.57	1.15	0.94	33.17	9458.6	4.3756	4.5695	193.9	0.0205	99.9
7	9429696	8/12/2019	8/19/2019	11867.24	12034.17	10015.8	4.5	4.0	4.3	24.6	297.7	620.42	1.15	0.94	33.16	9405.1	4.4938	4.7424	248.6	0.0264	99.4
8	9429688	8/19/2019	8/26/2019	12034.17	12201.88	10062.6	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9152.0	4.5011	4.8540	352.9	0.0386	99.8
9	9429680	8/26/2019	9/3/2019	12201.88	12394.97	11585.4	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10551.9	4.5105	4.8345	324.0	0.0307	114.9
10	9429672	9/3/2019	9/9/2019	12394.97	12539.77	8688.0	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8157.3	4.5308	4.8663	335.5	0.0411	86.2
11	9429664	9/9/2019	9/16/2019	12539.77	12710.36	10235.4	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9422.7	4.5038	4.6146	110.8	0.0118	101.5
12	9429653	9/16/2019	9/23/2019	12710.36	12874.46	9846.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9062.1	4.5131	4.8507	337.6	0.0373	97.7
13	9429648	9/23/2019	9/30/2019	12874.46	13042.56	10086.0	4.5	4.0	4.3	17.7	290.9	617.37	1.14	0.95	33.47	9558.0	4.5163	4.9073	391.0	0.0409	100.1
					Totals	131038.2							14.63	12.01	424.10	121009.6	58.061	61.700	3638.2	0.3924	
					Averages	10079.9	4.2	4.0	4.1	23.2	296.4	620.34946	1.13	0.92	32.62	9308.4	4.466	4.746	279.9	0.0302	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-4

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673043	7/1/2019	7/8/2019	16391.19	16559.61	10105.2	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9217.9	4.4447	4.5797	135.0	0.0146	100.3
2	9673035	7/8/2019	7/15/2019	16559.61	16728.57	10137.6	5.0	4.0	4.5	25.0	298.1	621.54	1.18	0.97	34.13	9798.1	4.4382	4.6046	166.4	0.0170	100.6
3	9673027	7/15/2019	7/22/2019	16728.57	16901.01	10346.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9386.3	4.4420	4.6035	161.5	0.0172	102.6
4	9673017	7/22/2019	7/29/2019	16901.01	17056.44	9325.8	4.5	4.0	4.3	25.2	298.3	622.48	1.15	0.94	33.18	8762.7	4.4218	4.5145	92.7	0.0106	92.5
5	9673011	7/29/2019	8/5/2019	17056.44	17224.96	10111.2	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9231.5	4.3816	4.5855	203.9	0.0221	100.3
6	9673003	8/5/2019	8/12/2019	17224.96	17393.94	10138.8	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.9	4.3755	4.5097	134.2	0.0145	100.6
7	9429695	8/12/2019	8/19/2019	17393.94	17559.73	9947.4	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9061.4	4.5000	4.6453	145.3	0.0160	98.7
8	9429687	8/19/2019	8/26/2019	17559.73	17733.79	10443.6	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9498.5	4.4985	4.6841	185.6	0.0195	103.6
9	9429679	8/26/2019	9/3/2019	17733.79	17919.94	11169.0	4.0	4.0	4.0	24.9	298.1	620.95	1.11	0.91	32.16	10172.6	4.5267	4.7025	175.8	0.0173	110.8
10	9429671	9/3/2019	9/9/2019	17919.94	18064.81	8692.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8161.3	4.5075	4.6643	156.8	0.0192	86.2
11	9429663	9/9/2019	9/16/2019	18064.81	18236.48	10300.2	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9482.4	4.5073	4.6415	134.2	0.0142	102.2
12	9429654	9/16/2019	9/23/2019	18236.48	18399.9	9805.2	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9024.6	4.5051	4.6481	143.0	0.0158	97.3
13	9429647	9/23/2019	9/30/2019	18399.9	18567.99	10085.4	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9271.5	4.4950	4.6417	146.7	0.0158	100.1
					Totals	130608.0							14.60	11.98	423.07	120305.7	58.044	60.025	1981.1	0.2139	
					Averages	10046.8	4.2	4.0	4.1	23.2	296.4	620.34946	1.12	0.92	32.54	9254.3	4.465	4.617	152.4	0.0165	99.7

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-5

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673042	7/1/2019	7/8/2019	9473.99	9642.38	10103.4	4.5	4.0	4.3	23.3	296.5	619.61	1.15	0.94	33.21	9500.4	4.4365	4.6285	192.0	0.0202	100.2
2	9673034	7/8/2019	7/15/2019	9642.38	9811.37	10139.4	5.0	4.0	4.5	25.0	298.1	621.54	1.18	0.97	34.13	9799.9	4.4427	4.4909	48.2	0.0049	100.6
3	9673026	7/15/2019	7/22/2019	9811.37	9983.67	10338.0	3.0	4.0	3.5	26.5	299.7	619.40	1.05	0.85	29.96	8771.8	4.4462	4.6037	157.5	0.0180	102.6
4	9673019	7/22/2019	7/29/2019	9983.67	10139.41	9344.4	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8517.5	4.4147	4.5084	93.7	0.0110	92.7
5	9673010	7/29/2019	8/5/2019	10139.41	10307.8	10103.4	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9224.4	4.3665	4.4903	123.8	0.0134	100.2
6	9673002	8/5/2019	8/12/2019	10307.8	10476.77	10138.2	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.4	4.3802	4.4900	109.8	0.0119	100.6
7	9429694	8/12/2019	8/19/2019	10476.77	10642.56	9947.4	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9061.4	4.5058	4.6335	127.7	0.0141	98.7
8	9429686	8/19/2019	8/26/2019	10642.56	10816.54	10438.8	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9494.1	4.5371	4.7165	179.4	0.0189	103.6
9	9429678	8/26/2019	9/3/2019	10816.54	11002.77	11173.8	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	9853.3	4.5139	4.7190	205.1	0.0208	110.9
10	9429670	9/3/2019	9/9/2019	11002.77	11147.64	8692.2	4.0	4.0	4.0	24.7	297.8	620.57	1.11	0.91	32.17	7917.1	4.5213	4.6889	167.6	0.0212	86.2
11	9429662	9/9/2019	9/16/2019	11147.64	11319.7	10323.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9503.9	4.5036	4.6542	150.6	0.0158	102.4
12	9429655	9/16/2019	9/23/2019	11319.7	11482.71	9780.6	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9001.9	4.4869	4.6096	122.7	0.0136	97.0
13	9429646	9/23/2019	9/30/2019	11482.71	11650.81	10086.0	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9272.1	4.5086	4.6513	142.7	0.0154	100.1
					Totals	130609.2							14.45	11.86	418.99	119154.3	58.064	59.885	1820.8	0.1992	
					Averages	10046.9	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.91	32.23	9165.7	4.466	4.607	140.1	0.0153	99.7

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-6

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673041	7/1/2019	7/8/2019	25866.62	26035.06	10106.4	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9219.0	4.4408	4.5575	116.7	0.0127	100.3
2	9673033	7/8/2019	7/15/2019	26035.06	26203.95	10133.4	4.5	4.0	4.3	25.0	298.1	621.54	1.15	0.94	33.17	9517.7	4.4443	4.5802	135.9	0.0143	100.5
3	9673025	7/15/2019	7/22/2019	26203.95	26376.04	10325.4	4.5	4.0	4.3	26.5	299.7	619.40	1.15	0.94	33.03	9656.0	4.4370	4.5801	143.1	0.0148	102.4
4	9673020	7/22/2019	7/29/2019	26376.04	26531.67	9337.8	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8511.5	4.4285	4.5157	87.2	0.0102	92.6
5	9673009	7/29/2019	8/5/2019	26531.67	26700.24	10114.2	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9234.3	4.3665	4.4661	99.6	0.0108	100.3
6	9673001	8/5/2019	8/12/2019	26700.24	26869.21	10138.2	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9236.4	4.3723	4.4667	94.4	0.0102	100.6
7	9429693	8/12/2019	8/19/2019	26869.21	27035.02	9948.6	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9062.5	4.5018	4.6216	119.8	0.0132	98.7
8	9429685	8/19/2019	8/26/2019	27035.02	27202.61	10055.4	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9145.4	4.4992	4.6600	160.8	0.0176	99.8
9	9429677	8/26/2019	9/3/2019	27202.61	27369.92	10038.6	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	8852.2	4.4984	4.6759	177.5	0.0201	99.6
10	9429669	9/3/2019	9/9/2019	0	143.82	8629.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8102.1	4.5330	4.6703	137.3	0.0169	85.6
11	9429661	9/9/2019	9/16/2019	143.82	315.5	10300.8	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9482.9	4.5037	4.6234	119.7	0.0126	102.2
12	9429656	9/16/2019	9/23/2019	315.5	478.88	9802.8	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9022.3	4.5126	4.6320	119.4	0.0132	97.3
13	9429645	9/23/2019	9/30/2019	478.88	646.99	10086.6	4.0	4.0	4.0	17.7	290.9	617.37	1.10	0.92	32.47	9272.6	4.4983	4.6203	122.0	0.0132	100.1
					Totals	129017.4							14.53	11.92	421.08	118315.0	58.036	59.670	1633.4	0.1798	
					Averages	9924.4	4.1	4.0	4.0	23.2	296.4	620.34946	1.12	0.92	32.39	9101.2	4.464	4.590	125.6	0.0138	98.5

Comments: Replaced Elapsed time indicator on 9/3/2019

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-7

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673040	7/1/2019	7/8/2019	502.36	670.82	10107.6	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9220.1	4.4361	4.5883	152.2	0.0165	100.3
2	9673032	7/8/2019	7/15/2019	670.82	839.7	10132.8	4.0	4.0	4.0	25.0	298.1	621.54	1.11	0.91	32.18	9232.4	4.4217	4.5913	169.6	0.0184	100.5
3	9673024	7/15/2019	7/22/2019	839.7	1010.29	10235.4	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9285.6	4.4338	4.6223	188.5	0.0203	101.5
4	9673021	7/22/2019	7/29/2019	1010.29	1174.77	9868.8	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8995.5	4.4288	4.5408	112.0	0.0125	97.9
5	9673008	7/29/2019	8/5/2019	1174.77	1343.62	10131.0	4.0	4.0	4.0	24.0	297.1	622.05	1.11	0.91	32.24	9249.6	4.3703	4.5169	146.6	0.0158	100.5
6	9429700	8/5/2019	8/12/2019	1343.62	1511.07	10047.0	4.0	4.0	4.0	24.6	297.7	620.57	1.11	0.91	32.17	9153.3	4.5192	4.6657	146.5	0.0160	99.7
7	9429692	8/12/2019	8/19/2019	1511.07	1677.98	10014.6	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9122.7	4.4918	4.6206	128.8	0.0141	99.4
8	9429684	8/19/2019	8/26/2019	1677.98	1845.67	10061.4	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9150.9	4.5080	4.7255	217.5	0.0238	99.8
9	9429676	8/26/2019	9/3/2019	1845.67	2038.06	11543.4	3.5	4.0	3.8	24.9	298.1	620.95	1.08	0.88	31.14	10179.2	4.5300	4.7355	205.5	0.0202	114.5
10	9429668	9/3/2019	9/9/2019	2038.06	2182.88	8689.2	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8158.4	4.4907	4.6676	176.9	0.0217	86.2
11	9429660	9/9/2019	9/16/2019	2182.88	2353.44	10233.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9421.1	4.5303	4.6917	161.4	0.0171	101.5
12	9429657	9/16/2019	9/23/2019	2353.44	2518.14	9882.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9095.2	4.4938	4.6648	171.0	0.0188	98.0
13	9429644	9/23/2019	9/30/2019	2518.14	2686.28	10088.4	4.5	4.0	4.3	17.7	290.9	617.37	1.14	0.95	33.47	9560.2	4.5091	4.6353	126.2	0.0132	100.1
					Totals	131035.2							14.49	11.90	420.10	119824.2	58.164	60.266	2102.7	0.2284	
					Averages	10079.6	4.0	4.0	4.0	23.2	296.4	620.34946	1.11	0.92	32.32	9217.2	4.474	4.636	161.7	0.0176	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-8

Energy Fuels Resources - White Mesa Mill
Period: July 1 2019 - September 30 2019

Calibration Date: 10/1/2018
Calibration Slope & Intercept: m= 1.24054 b= 0.00251
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9673039	7/1/2019	7/8/2019	7330.45	7498.94	10109.4	4.0	4.0	4.0	23.3	296.5	619.61	1.11	0.91	32.21	9221.7	4.4299	4.5427	112.8	0.0122	100.3
2	9673031	7/8/2019	7/15/2019	7498.94	7667.82	10132.8	4.0	4.0	4.0	25.0	298.1	621.54	1.11	0.91	32.18	9232.4	4.4430	4.5605	117.5	0.0127	100.5
3	9673023	7/15/2019	7/22/2019	7667.82	7838.37	10233.0	4.0	4.0	4.0	26.5	299.7	619.40	1.12	0.91	32.04	9283.4	4.4375	4.5058	68.3	0.0074	101.5
4	9673022	7/22/2019	7/29/2019	7838.37	8002.86	9869.4	4.0	4.0	4.0	25.2	298.3	622.48	1.11	0.91	32.19	8996.1	4.4438	4.4770	33.2	0.0037	97.9
5	9673007	7/29/2019	8/5/2019	8002.86	8171.72	10131.6	3.5	4.0	3.8	24.0	297.1	622.05	1.08	0.88	31.22	8955.9	4.3620	4.4143	52.3	0.0058	100.5
6	9429699	8/5/2019	8/12/2019	8171.72	8339.16	10046.4	3.0	4.0	3.5	24.6	297.7	620.57	1.04	0.85	30.09	8560.5	4.4988	4.5784	79.6	0.0093	99.7
7	9429691	8/12/2019	8/19/2019	8339.16	8506.08	10015.2	4.0	4.0	4.0	24.6	297.7	620.42	1.11	0.91	32.17	9123.2	4.5165	4.5869	70.4	0.0077	99.4
8	9429683	8/19/2019	8/26/2019	8506.08	8673.85	10066.2	4.0	4.0	4.0	25.1	298.2	619.51	1.12	0.91	32.12	9155.2	4.5102	4.6383	128.1	0.0140	99.9
9	9429675	8/26/2019	9/3/2019	8673.85	8866.21	11541.6	4.5	4.0	4.3	24.9	298.1	620.95	1.15	0.94	33.16	10836.1	4.5356	4.6539	118.3	0.0109	114.5
10	9429667	9/3/2019	9/9/2019	8866.21	9011.01	8688.0	4.5	4.0	4.3	24.7	297.8	620.57	1.15	0.94	33.16	8157.3	4.4895	4.6112	121.7	0.0149	86.2
11	9429659	9/9/2019	9/16/2019	9011.01	9181.67	10239.6	4.0	4.0	4.0	18.7	291.8	621.21	1.10	0.92	32.51	9426.6	4.4863	4.6289	142.6	0.0151	101.6
12	9429658	9/16/2019	9/23/2019	9181.67	9346.42	9885.0	4.0	4.0	4.0	17.7	290.9	618.87	1.10	0.92	32.50	9098.0	4.4901	4.5539	63.8	0.0070	98.1
13	9429643	9/23/2019	9/30/2019	9346.42	9514.59	10090.2	3.5	4.0	3.8	17.7	290.9	617.37	1.07	0.89	31.43	8980.9	4.5138	4.6691	155.3	0.0173	100.1
					Totals	131048.4							14.39	11.81	416.98	119027.3	58.157	59.421	1263.9	0.1381	
					Averages	10080.6	3.9	4.0	4.0	23.2	296.4	620.34946	1.11	0.91	32.08	9155.9	4.474	4.571	97.2	0.0106	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

Blanks		Period: July 1 2019 - September 30 2019		
Week #	Filter Number	Start Date	Stop Date	Net
1	9673038	01-Jul-19	08-Jul-19	4.4266
2	9673030	08-Jul-19	15-Jul-19	4.4528
3	9673015	15-Jul-19	22-Jul-19	4.3885
4	9673014	22-Jul-19	29-Jul-19	4.3974
5	9673006	29-Jul-19	05-Aug-19	4.3783
6	9429698	05-Aug-19	12-Aug-19	4.4921
7	9429690	12-Aug-19	18-Aug-19	4.5111
8	9429682	18-Aug-19	26-Aug-19	4.5118
9	9429674	26-Aug-19	03-Sep-19	4.5313
10	9429666	03-Sep-19	09-Sep-19	4.4910
11	9429651	09-Sep-19	16-Sep-19	4.5089
12	9429650	16-Sep-19	23-Sep-19	4.5265
13	9429635	23-Sep-19	30-Sep-19	4.5051
	Totals			

BHV-1

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2015
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft /min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429636	9/30/2019	10/7/2019	2326.97	2495.82	10131.0	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9686.0	4.5110	4.6430	132.0	0.0136	100.5
2	9429627	10/7/2019	10/14/2019	2495.82	2663.77	10077.0	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9432.2	4.5055	4.6796	174.1	0.0185	100.0
3	9429619	10/14/2019	10/21/2019	2663.77	2830.92	10029.0	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9638.7	4.5071	4.6710	163.9	0.0170	99.5
4	9429611	10/21/2019	10/28/2019	2830.92	2998.77	10071.0	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9463.2	4.5262	4.6499	123.7	0.0131	99.9
5	9429609	10/28/2019	11/4/2019	2998.77	3170.47	10302.0	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9822.9	4.5183	4.5986	80.3	0.0082	102.2
6	9650995	11/4/2019	11/11/2019	3170.47	3359.1	11317.8	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10655.8	4.3640	4.4814	117.4	0.0110	112.3
7	9650994	11/11/2019	11/18/2019	3359.1	3504.02	8695.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8202.2	4.3564	4.4701	113.7	0.0139	86.3
8	9650985	11/18/2019	11/25/2019	3504.02	3675.3	10276.8	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9693.2	4.3843	4.4333	49.0	0.0051	102.0
9	9650977	11/25/2019	12/2/2019	3675.3	3843.37	10084.2	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9272.5	4.3867	4.4302	43.5	0.0047	100.0
10	9650969	12/2/2019	12/9/2019	3843.37	4011.71	10100.4	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9579.9	4.3454	4.3807	35.3	0.0037	100.2
11	9650961	12/9/2019	12/16/2019	4011.71	4179.04	10039.8	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9547.4	4.3795	4.4056	26.1	0.0027	99.6
12	9650953	12/16/2019	12/23/2019	4179.04	4342.3	9795.6	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9400.1	4.3438	4.3808	37.0	0.0039	97.2
13	9650945	12/23/2019	12/30/2019	4342.3	4515.82	10411.2	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9606.7	4.3359	4.3611	25.2	0.0026	103.3
14	9650932	12/30/2019	1/6/2020	4515.82	4679.46	9818.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9447.2	4.3010	4.3276	26.6	0.0028	97.4
					Totals	141149.4							15.10	13.24	467.49	133448.2	61.765	62.913	1147.8	0.1208	
					Averages	10082.1	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.39	9532.0	4.412	4.494	82.0	0.0086	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-2

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429637	9/30/2019	10/7/2019	13042.56	13210.91	10101.0	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9374.3	4.5125	4.7621	249.6	0.0266	100.2
2	9429628	10/7/2019	10/14/2019	13210.91	13379.46	10113.0	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9465.9	4.5085	4.7949	286.4	0.0303	100.3
3	9429620	10/14/2019	10/21/2019	13379.46	13546.17	10002.6	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9613.4	4.5251	4.7681	243.0	0.0253	99.2
4	9429612	10/21/2019	10/28/2019	13546.17	13715.12	10137.0	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9525.2	4.5253	4.7286	203.3	0.0213	100.6
5	9429604	10/28/2019	11/4/2019	13715.12	13887.11	10319.4	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9839.5	4.5265	4.7121	185.6	0.0189	102.4
6	9650996	11/4/2019	11/11/2019	13887.11	14075.73	11317.2	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10655.3	4.3556	4.6089	253.3	0.0238	112.3
7	9650993	11/11/2019	11/18/2019	14075.73	14219.63	8634.0	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8144.5	4.3455	4.5888	243.3	0.0299	85.7
8	9650984	11/18/2019	11/25/2019	14219.63	14391.63	10320.0	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	10027.7	4.3843	4.5157	131.4	0.0131	102.4
9	9650976	11/25/2019	12/2/2019	14391.63	14559.87	10094.4	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9580.2	4.4117	4.4827	71.0	0.0074	100.1
10	9650968	12/2/2019	12/9/2019	14559.87	14727.37	10050.0	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9532.1	4.3480	4.4150	67.0	0.0070	99.7
11	9650960	12/9/2019	12/16/2019	14727.37	14895.38	10080.6	4.5	4.0	4.3	0.6	273.8	618.87	1.11	0.98	34.60	9875.5	4.3864	4.4258	39.4	0.0040	100.0
12	9650952	12/16/2019	12/23/2019	14895.38	15057.99	9756.6	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9362.7	4.3323	4.4118	79.5	0.0085	96.8
13	9650944	12/23/2019	12/30/2019	15057.99	15231	10380.6	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9578.4	4.3486	4.4444	95.8	0.0100	103.0
14	9650933	12/30/2019	1/6/2020	15231	15394.99	9839.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9467.4	4.3320	4.3773	45.3	0.0048	97.6
					Totals	141145.8							15.17	13.30	469.57	134042.2	61.842	64.036	2193.9	0.2308	
					Averages	10081.8	4.1	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.54	9574.4	4.417	4.574	156.7	0.0165	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-4

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429638	9/30/2019	10/7/2019	18567.99	18736.36	10102.2	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9658.5	4.5298	4.6436	113.8	0.0118	100.2
2	9429629	10/7/2019	10/14/2019	18736.36	18902.69	9979.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9341.2	4.5055	4.6207	115.2	0.0123	99.0
3	9429621	10/14/2019	10/21/2019	18902.69	19066.39	9822.0	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9163.2	4.5030	4.6527	149.7	0.0163	97.4
4	9429613	10/21/2019	10/28/2019	19066.39	19234.71	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5263	4.6462	119.9	0.0126	100.2
5	9429605	10/28/2019	11/4/2019	19234.71	19392.54	9469.8	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8748.3	4.5230	4.5596	36.6	0.0042	93.9
6	9650997	11/4/2019	11/11/2019	19392.54	19584.11	11494.2	3.5	4.0	3.8	7.7	280.8	622.45	1.05	0.91	32.21	10484.9	4.3365	4.4640	127.5	0.0122	114.0
7	9650992	11/11/2019	11/18/2019	19584.11	19728.34	8653.8	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8163.2	4.3574	4.4410	83.6	0.0102	85.9
8	9650983	11/18/2019	11/25/2018	19728.34	19899.78	10286.4	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9702.2	4.3669	4.4223	55.4	0.0057	102.0
9	9650975	11/25/2019	12/2/2019	19899.78	20067.83	10083.0	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9569.4	4.3418	4.4120	70.2	0.0073	100.0
10	9650967	12/2/2019	12/9/2019	20067.83	20236.16	10099.8	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9579.3	4.3395	4.3808	41.3	0.0043	100.2
11	9650959	12/9/2019	12/16/2019	20236.16	20403.78	10057.2	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9563.9	4.3698	4.3977	27.9	0.0029	99.8
12	9650951	12/16/2019	12/23/2019	20403.78	20566.88	9786.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9390.9	4.3421	4.3832	41.1	0.0044	97.1
13	9650943	12/23/2019	12/30/2019	20566.88	20739.6	10363.2	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9562.4	4.3530	4.3825	29.5	0.0031	102.8
14	9650934	12/30/2019	1/6/2020	20739.6	20903.85	9855.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9482.4	4.3088	4.3411	32.3	0.0034	97.8
					Totals	140151.6							15.03	13.18	465.46	131899.6	61.703	62.747	1044.0	0.1108	
					Averages	10010.8	3.9	4.0	4.0	4.1	277.2	619.7765	1.07	0.94	33.25	9421.4	4.407	4.482	74.6	0.0079	99.3

Comments:

Insert weekly flow check values in yellow columns.

Blue column values are calculated.

Green columns are calculated averages from the met station.

Insert filter weight values into orange columns.

BHV-5

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429639	9/30/2019	10/7/2019	11650.81	11819.1	10097.4	4.5	4.0	4.3	14.4	287.6	619.68	1.13	0.96	33.76	9653.9	4.5223	4.6602	137.9	0.0143	100.2
2	9429630	10/7/2019	10/14/2019	11819.1	11990.03	10255.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9599.6	4.4950	4.6560	161.0	0.0168	101.7
3	9429622	10/14/2019	10/21/2019	11990.03	12153.77	9824.4	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9165.4	4.5107	4.6469	136.2	0.0149	97.5
4	9429614	10/21/2019	10/28/2019	12153.77	12322.09	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5263	4.6623	136.0	0.0143	100.2
5	9429606	10/28/2019	11/4/2019	12322.09	12479.92	9469.8	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8748.3	4.5281	4.5997	71.6	0.0082	93.9
6	9650998	11/4/2019	11/11/2019	12479.92	12671.45	11491.8	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10819.6	4.3517	4.4842	132.5	0.0122	114.0
7	9650991	11/11/2019	11/18/2019	12671.45	12815.73	8656.8	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8166.0	4.3539	4.4701	116.2	0.0142	85.9
8	9650982	11/18/2019	11/25/2019	12815.73	12987.17	10286.4	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9702.2	4.3598	4.4218	62.0	0.0064	102.0
9	9650974	11/25/2019	12/2/2019	12987.17	13155.24	10084.2	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9570.5	4.3383	4.4119	73.6	0.0077	100.0
10	9650966	12/2/2019	12/9/2019	13155.24	13323.55	10098.6	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9578.2	4.3584	4.4096	51.2	0.0053	100.2
11	9650958	12/9/2019	12/16/2019	13323.55	13491.18	10057.8	4.5	4.0	4.3	0.6	273.8	618.87	1.11	0.98	34.60	9853.2	4.3703	4.4126	42.3	0.0043	99.8
12	9650950	12/16/2019	12/23/2019	13491.18	13654.28	9786.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9390.9	4.3338	4.3884	54.6	0.0058	97.1
13	9650942	12/23/2019	12/30/2019	13654.28	13826.82	10352.4	4.0	4.0	4.0	-1.6	271.5	615.65	1.07	0.95	33.63	9859.4	4.3453	4.3833	38.0	0.0039	102.7
14	9650935	12/30/2019	1/6/2020	13826.82	13991	9850.8	3.5	4.0	3.8	-4.5	268.6	621.39	1.03	0.93	32.92	9183.3	4.3450	4.3904	45.4	0.0049	97.7
					Totals	140411.4							15.10	13.24	467.50	132780.3	61.739	62.997	1258.5	0.1332	
					Averages	10029.4	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.39	9484.3	4.410	4.500	89.9	0.0095	99.5

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-6

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429640	9/30/2019	10/7/2019	646.99	815.37	10102.8	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9376.0	4.5130	4.6232	110.2	0.0118	100.2
2	9429631	10/7/2019	10/14/2019	815.37	986.21	10250.4	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9594.5	4.5190	4.6649	145.9	0.0152	101.7
3	9429623	10/14/2019	10/21/2019	986.21	1149.91	9822.0	4.0	4.0	4.0	10.8	284.0	618.26	1.09	0.93	32.95	9163.2	4.5040	4.6338	129.8	0.0142	97.4
4	9429615	10/21/2019	10/28/2019	1149.91	1318.23	10099.2	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9489.7	4.5235	4.6402	116.7	0.0123	100.2
5	9429607	10/28/2019	11/4/2019	1318.23	1476.54	9498.6	3.5	4.0	3.8	0.4	273.6	621.69	1.04	0.92	32.62	8774.9	4.5475	4.6296	82.1	0.0094	94.2
6	9650999	11/4/2019	11/11/2019	1476.54	1667.68	11468.4	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10797.6	4.3502	4.4939	143.7	0.0133	113.8
7	9650990	11/11/2019	11/18/2019	1667.68	1811.9	8653.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8162.6	4.3855	4.4990	113.5	0.0139	85.8
8	9650981	11/18/2019	11/25/2019	1811.9	1983.47	10294.2	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	10002.7	4.3545	4.3955	41.0	0.0041	102.1
9	9650973	11/25/2019	12/2/2019	1983.47	2151.42	10077.0	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9265.9	4.3480	4.4105	62.5	0.0067	100.0
10	9650965	12/2/2019	12/9/2019	2151.42	2319.79	10102.2	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9581.6	4.3697	4.4179	48.2	0.0050	100.2
11	9650957	12/9/2019	12/16/2019	2319.79	2487.35	10053.6	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9560.5	4.3490	4.3850	36.0	0.0038	99.7
12	9650949	12/16/2019	12/23/2019	2487.35	2650.42	9784.2	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9389.2	4.3643	4.4152	50.9	0.0054	97.1
13	9650941	12/23/2019	12/30/2019	2650.42	2823.26	10370.4	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9569.0	4.3419	4.3838	41.9	0.0044	102.9
14	9650936	12/30/2019	1/6/2020	2823.26	2987.41	9849.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9476.7	4.3396	4.3857	46.1	0.0049	97.7
					Totals	140425.2							15.03	13.18	465.47	132204.0	61.810	62.978	1168.5	0.1243	
					Averages	10030.4	3.9	4.0	4.0	4.1	277.2	619.7765	1.07	0.94	33.25	9443.1	4.415	4.498	83.5	0.0089	99.5

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-7

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429641	9/30/2019	10/7/2019	2686.28	2855.17	10133.4	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9404.4	4.5043	4.6672	162.9	0.0173	100.5
2	9429632	10/7/2019	10/14/2019	2855.17	3023.1	10075.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9431.1	4.5016	4.7143	212.7	0.0226	100.0
3	9429624	10/14/2019	10/21/2019	3023.1	3190.29	10031.4	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9641.0	4.5155	4.6899	174.4	0.0181	99.5
4	9429616	10/21/2019	10/28/2019	3190.29	3357.97	10060.8	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9453.6	4.5127	4.6869	174.2	0.0184	99.8
5	9429608	10/28/2019	11/4/2019	3357.97	3530.39	10345.2	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9864.1	4.5355	4.6677	132.2	0.0134	102.6
6	9651000	11/4/2019	11/11/2019	3530.39	3719.06	11320.2	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10658.1	4.3575	4.4570	99.5	0.0093	112.3
7	9650989	11/11/2019	11/18/2019	3719.06	3863.33	8656.2	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8165.5	4.3763	4.5249	148.6	0.0182	85.9
8	9650980	11/18/2019	11/25/2019	3863.33	4034.68	10281.0	4.0	4.0	4.0	4.7	277.8	618.01	1.08	0.94	33.31	9697.1	4.3581	4.4334	75.3	0.0078	102.0
9	9650972	11/25/2019	12/2/2019	4034.68	4202.8	10087.2	4.0	4.0	4.0	-0.1	273.0	614.76	1.07	0.95	33.52	9573.4	4.3275	4.3920	64.5	0.0067	100.1
10	9650964	12/2/2019	12/9/2019	4202.8	4371.1	10098.0	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9577.6	4.3491	4.3877	38.6	0.0040	100.2
11	9650956	12/9/2019	12/16/2019	4371.1	4538.51	10044.6	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9552.0	4.3702	4.4116	41.4	0.0043	99.6
12	9650948	12/16/2019	12/23/2019	4538.51	4701.73	9793.2	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9397.8	4.3608	4.4109	50.1	0.0053	97.2
13	9650940	12/23/2019	12/30/2019	4701.73	4874.96	10393.8	3.5	4.0	3.8	-1.6	271.5	615.65	1.04	0.92	32.59	9590.6	4.3610	4.3979	36.9	0.0038	103.1
14	9650937	12/30/2019	1/6/2020	4874.96	5038.75	9827.4	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9455.9	4.3322	4.3745	42.3	0.0045	97.5
					Totals	141148.2							15.10	13.24	467.55	133462.2	61.762	63.216	1453.6	0.1538	
					Averages	10082.0	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.95	33.40	9533.0	4.412	4.515	103.8	0.0110	100.0

Comments:

Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

BHV-8

Energy Fuels Resources - White Mesa Mill
Period: September 30, 2019 - January 6, 2020

Calibration Date: 9/3/2019
Calibration Slope & Intercept: m= 1.26445 b= -0.02636
Orifice S/N: 8091779

First Monitoring Quarter 2014
Updated: 7/30/14

Week #	Filter Number	Start Date	Stop Date	Start Time	Stop Time	Total Time (min)	ΔH Starting Manometer (in. H_2O)	ΔH Stopping Manometer (in. H_2O)	ΔH Average Manometer (in. H_2O)	Ta Wkly. Avg. Temp. (°C)	Ta Wkly. Avg. Temp. (K)	Pa Wkly. Avg. Pressure (mmHg)	Qa Act. Flow (m^3/min)	Qs Std. Flow (m^3/min)	Qs Std. Flow (SCFM) (ft^3/min)	Total Std. Volume (m^3)	Tare Weight (g)	Gross Weight (g)	Net Weight (mg)	Loading (mg/m^3)	Percent Onstream (%)
1	9429642	9/30/2019	10/7/2019	9514.59	9683.47	10132.8	4.0	4.0	4.0	14.4	287.6	619.68	1.10	0.93	32.77	9403.8	4.5271	4.6648	137.7	0.0146	100.5
2	9429633	10/7/2019	10/14/2019	9683.47	9851.4	10075.8	4.0	4.0	4.0	9.4	282.6	619.18	1.09	0.94	33.06	9431.1	4.5041	4.6663	162.2	0.0172	100.0
3	9429625	10/14/2019	10/21/2019	9851.4	10018.55	10029.0	4.5	4.0	4.3	10.8	284.0	618.26	1.13	0.96	33.94	9638.7	4.5325	4.6860	153.5	0.0159	99.5
4	9429617	10/21/2019	10/28/2019	10018.55	10186.26	10062.6	4.0	4.0	4.0	7.6	280.7	619.86	1.09	0.94	33.18	9455.3	4.5163	4.6310	114.7	0.0121	99.8
5	9429609	10/28/2019	11/4/2019	10186.26	10357.74	10288.8	4.0	4.0	4.0	0.4	273.6	621.69	1.07	0.95	33.67	9810.4	4.5262	4.5327	6.5	0.0007	102.1
4	9429601	11/4/2019	11/11/2019	10357.74	10546.63	11333.4	4.0	4.0	4.0	7.7	280.8	622.45	1.08	0.94	33.25	10670.5	4.5222	4.6450	122.8	0.0115	112.4
7	9650988	11/11/2019	11/18/2019	10546.63	10691.27	8678.4	4.0	4.0	4.0	6.5	279.7	622.25	1.08	0.94	33.31	8186.4	4.3821	4.4850	102.9	0.0126	86.1
8	9650979	11/18/2019	11/25/2019	10691.27	10862.55	10276.8	4.5	4.0	4.3	4.7	277.8	618.01	1.11	0.97	34.31	9985.7	4.3643	4.4120	47.7	0.0048	102.0
9	9650971	11/25/2019	12/2/2019	10862.55	11030.68	10087.8	3.5	4.0	3.8	-0.1	273.0	614.76	1.04	0.92	32.47	9275.8	4.3581	4.4183	60.2	0.0065	100.1
10	9650963	12/2/2019	12/9/2019	11030.68	11198.99	10098.6	4.0	4.0	4.0	3.0	276.1	621.01	1.08	0.95	33.50	9578.2	4.3715	4.4040	32.5	0.0034	100.2
11	9650955	12/9/2019	12/16/2019	11198.99	11366.37	10042.8	4.0	4.0	4.0	0.6	273.8	618.87	1.07	0.95	33.58	9550.3	4.3713	4.3942	22.9	0.0024	99.6
12	9650947	12/16/2019	12/23/2019	11366.37	11529.57	9792.0	4.0	4.0	4.0	-2.1	271.1	623.82	1.06	0.96	33.89	9396.7	4.3491	4.3690	19.9	0.0021	97.1
13	9650939	12/23/2019	12/30/2019	11529.57	11703.04	10408.2	3.0	4.0	3.5	-1.6	271.5	615.65	1.00	0.89	31.50	9284.8	4.3600	4.3755	15.5	0.0017	103.3
14	9650938	12/30/2019	1/6/2020	11703.04	11866.74	9822.0	4.0	4.0	4.0	-4.5	268.6	621.39	1.06	0.96	33.98	9450.7	4.3558	4.3702	14.4	0.0015	97.4
					Totals	141129.0							15.06	13.21	466.43	133118.4	62.041	63.054	1013.4	0.1070	
					Averages	10080.6	4.0	4.0	4.0	4.1	277.2	619.7765	1.08	0.94	33.32	9508.5	4.431	4.504	72.4	0.0076	100.0

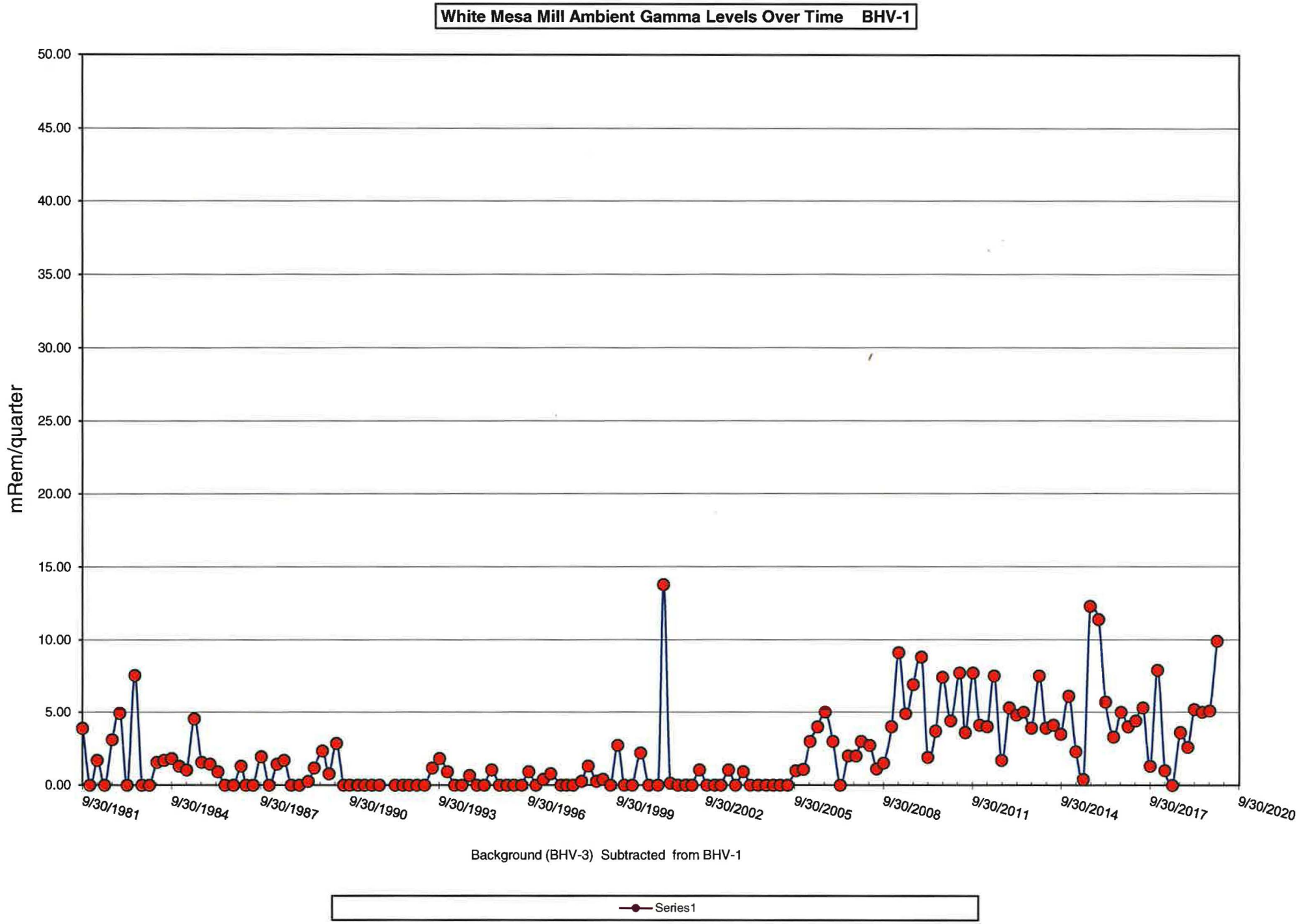
Comments: Lost the motor between 10/28/2019 and 11/4/2019. Motor was replaced on 11/4/2019.

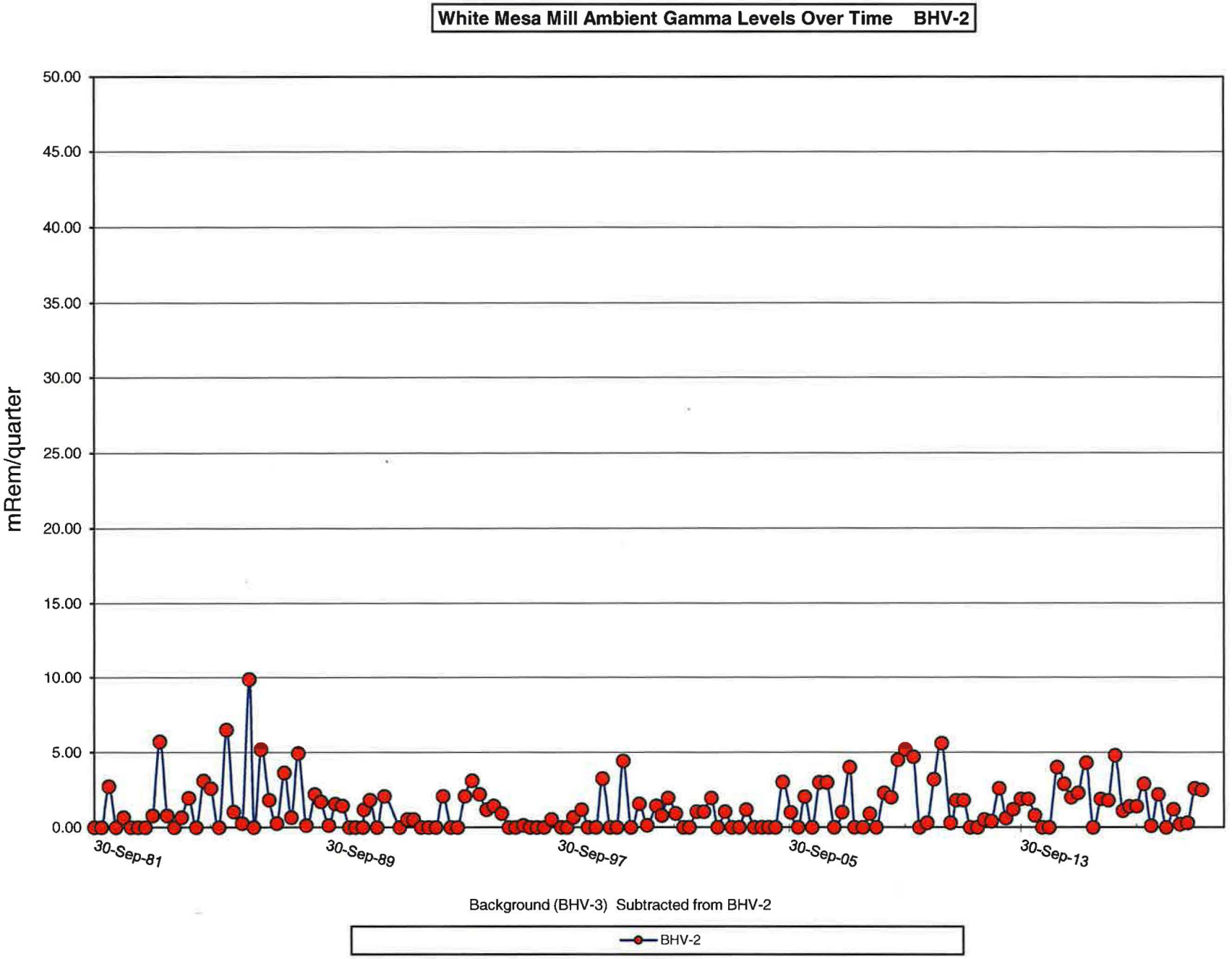
Insert weekly flow check values in yellow columns.
Blue column values are calculated.
Green columns are calculated averages from the met station.
Insert filter weight values into orange columns.

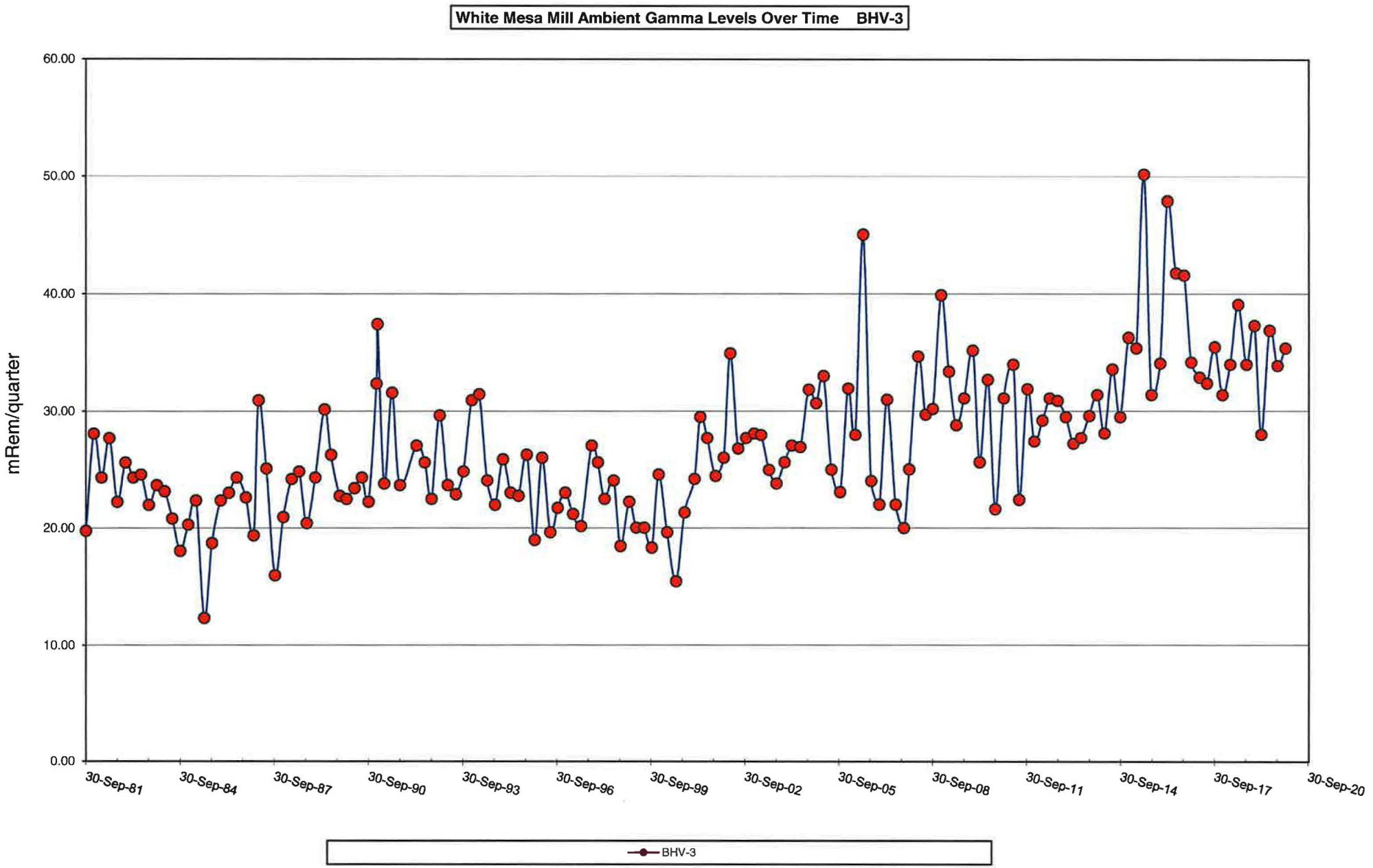
Blanks		Period: September 30, 2019 - January 6, 2020		
Week #	Filter Number	Start Date	Stop Date	Net
1	9429634	30-Sep-19	07-Oct-19	4.5102
2	9429626	07-Oct-19	14-Oct-19	4.5234
3	9429618	14-Oct-19	21-Oct-19	4.5273
4	9429610	21-Oct-19	28-Oct-19	4.5261
5	9429602	28-Oct-19	04-Nov-19	4.5150
6	9650987	04-Nov-19	11-Nov-19	4.3692
7	9650986	11-Nov-19	18-Nov-19	4.3853
8	9650978	18-Nov-19	25-Nov-19	4.3688
9	9650970	25-Nov-19	02-Dec-19	4.3573
10	9650962	02-Dec-19	09-Dec-19	4.3823
11	9650954	09-Dec-19	16-Dec-19	4.3840
12	9650946	16-Dec-19	23-Dec-19	4.3507
13	9650931	23-Dec-19	30-Dec-19	4.3944
14	9650930	30-Dec-19	06-Jan-20	4.3857
	Totals			

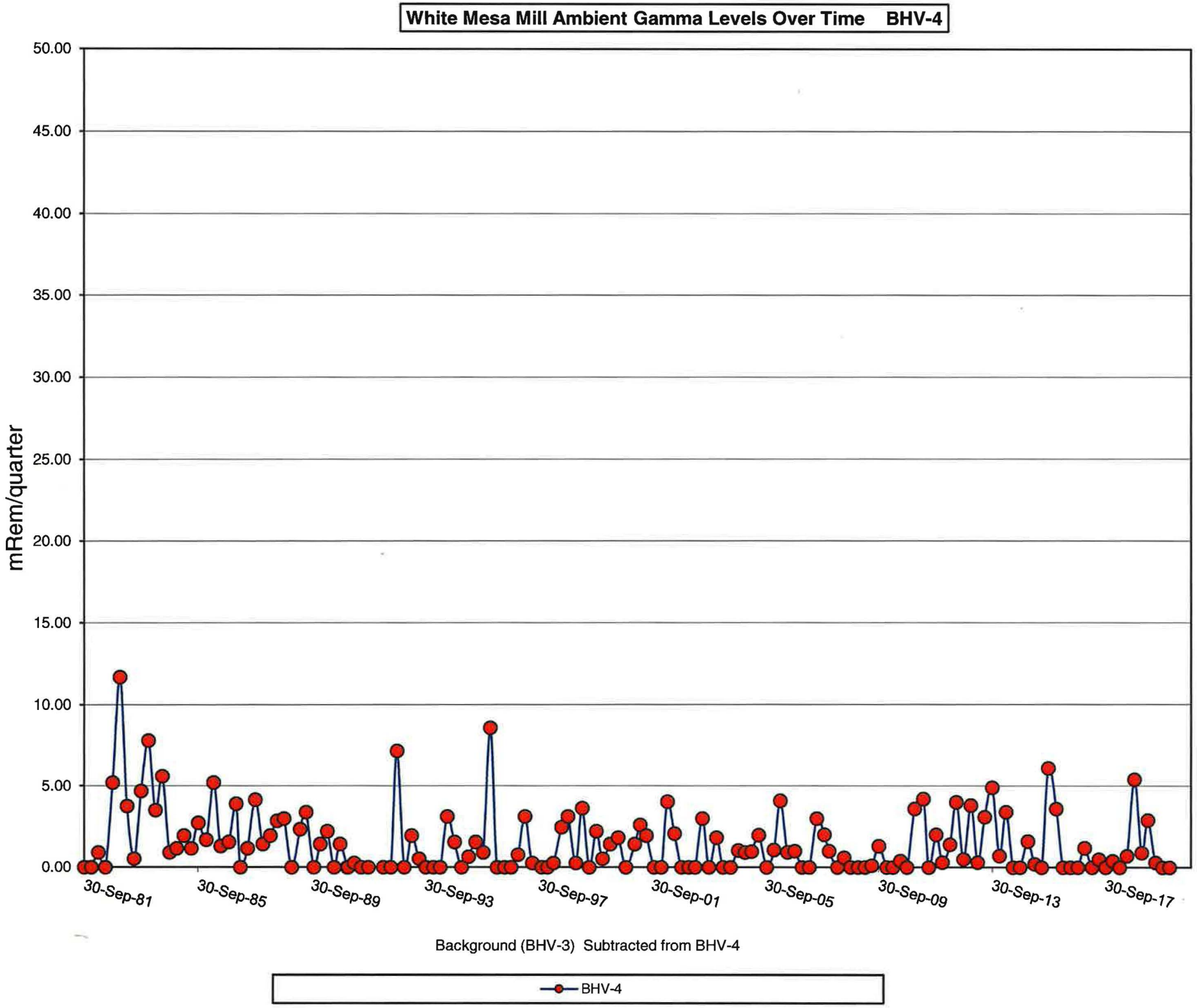
ATTACHMENT E

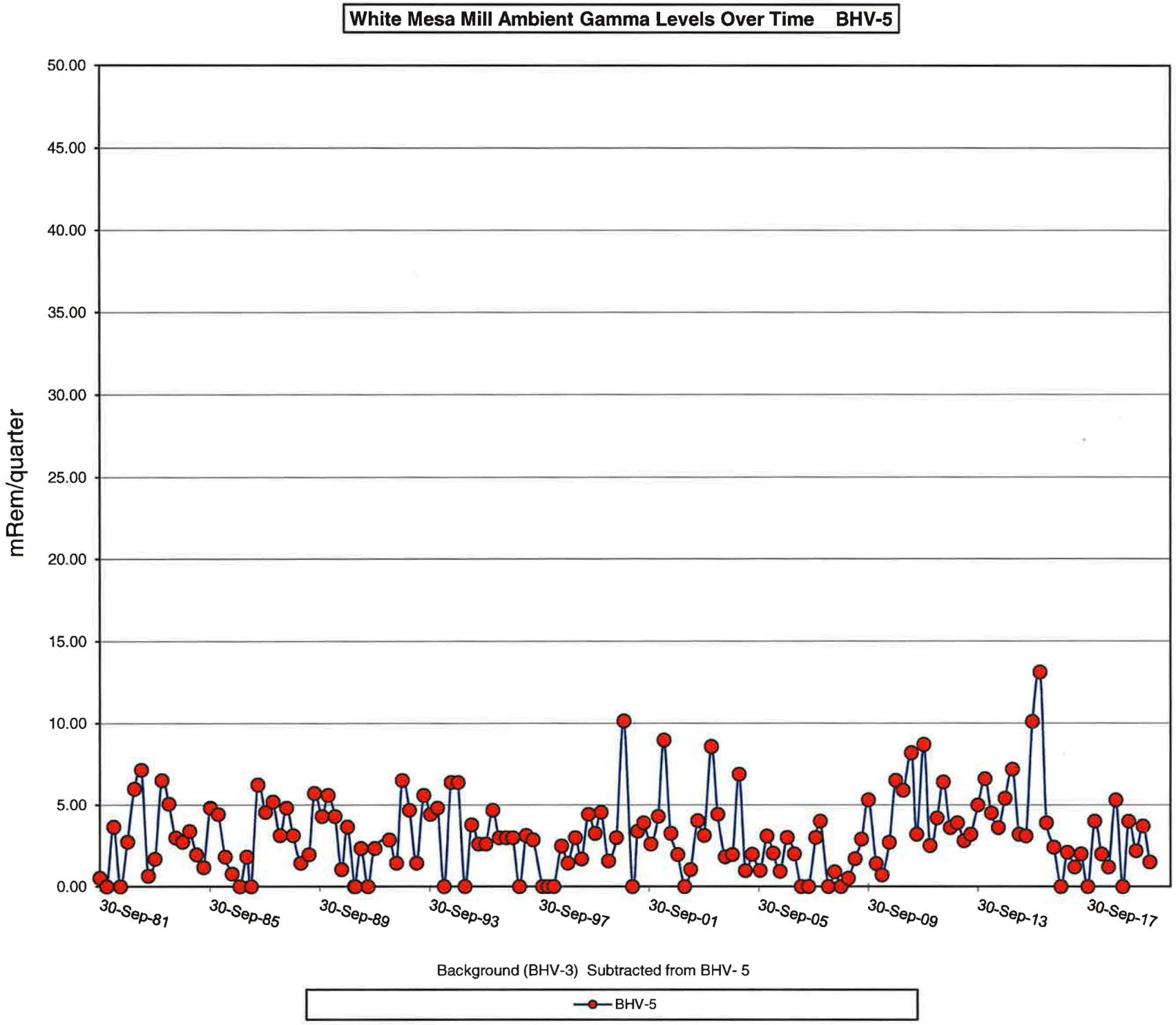
ENVIRONMENTAL GAMMA GRAPHS AND SUPPORTING DATA

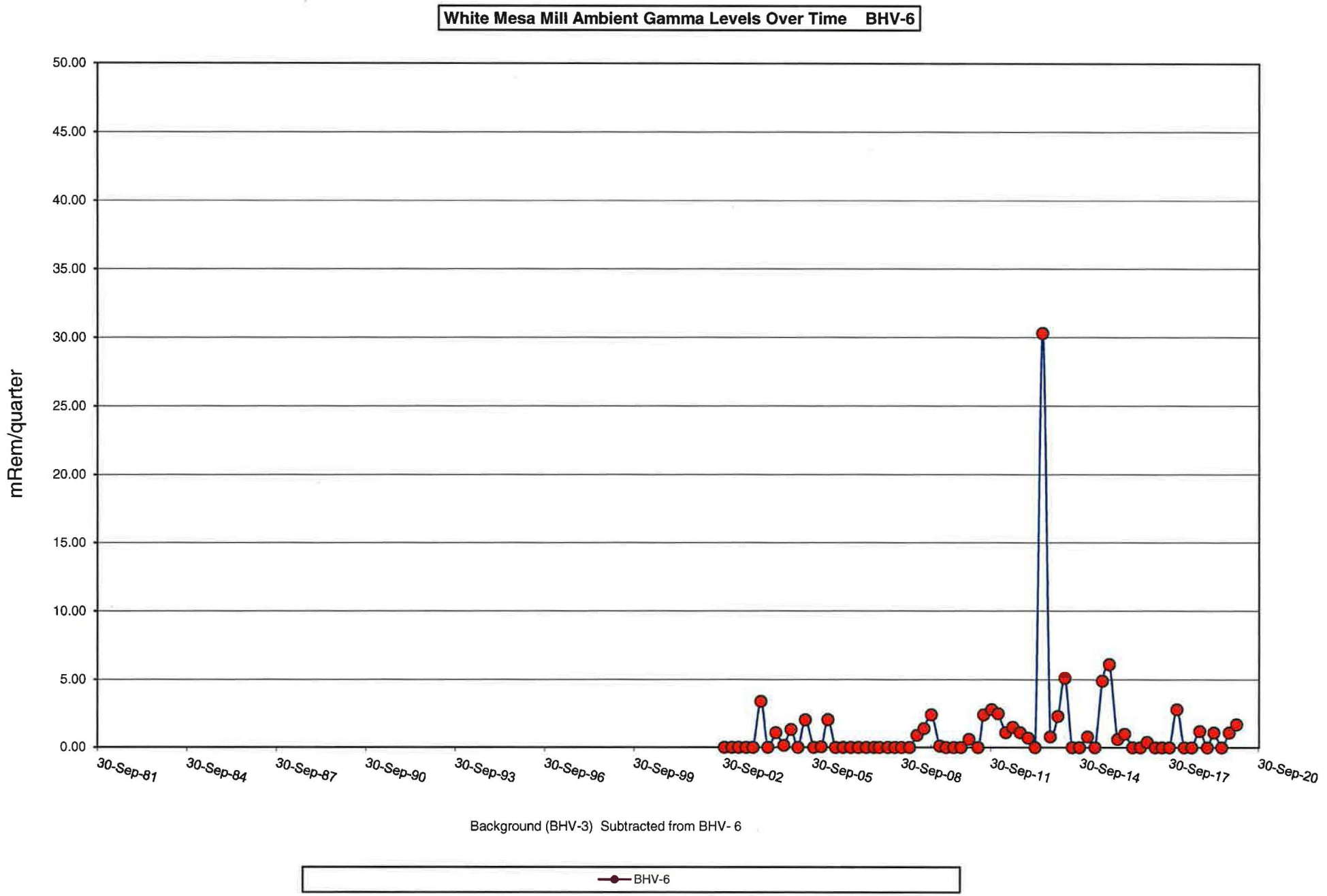

White Mesa Mill Ambient Gamma Levels Over Time BHV-1
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mRem/quarter
9/30/1981
9/30/1984
9/30/1987
9/30/1990
9/30/1993
9/30/1996
9/30/1999
9/30/2002
9/30/2005
9/30/2008
9/30/2011
9/30/2014
9/30/2017
9/30/2020
Background (BHV-3) Subtracted from BHV-1
Series1

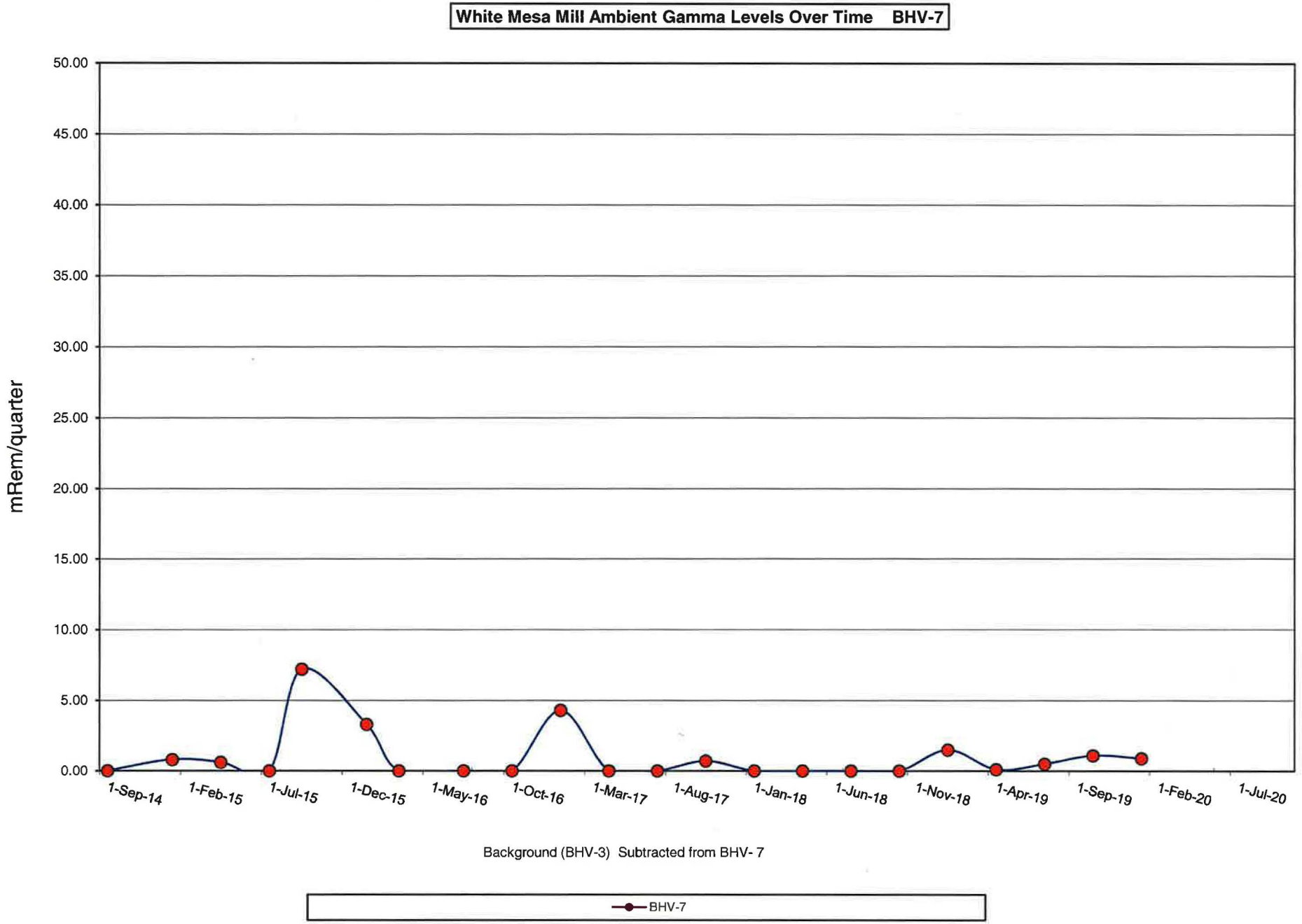

White Mesa Mill Ambient Gamma Levels Over Time BHV-2
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mRem/quarter
30-Sep-81
30-Sep-89
30-Sep-97
30-Sep-05
30-Sep-13
Background (BHV-3) Subtracted from BHV-2
BHV-2

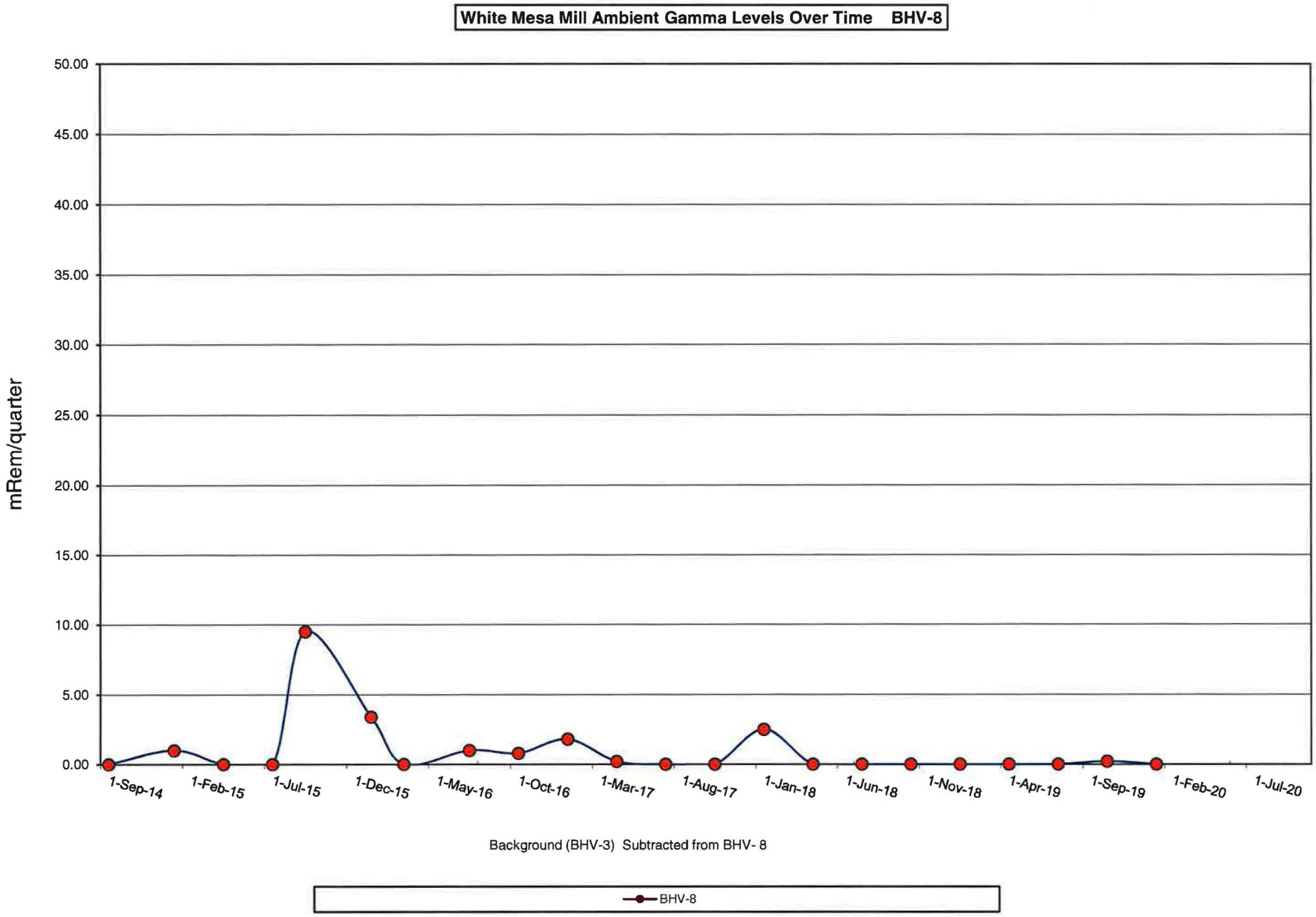

White Mesa Mill Ambient Gamma Levels Over Time BHV-3
mRem/quarter
60.00
50.00
40.00
30.00
20.00
10.00
0.00
30-Sep-81
30-Sep-84
30-Sep-87
30-Sep-90
30-Sep-93
30-Sep-96
30-Sep-99
30-Sep-02
30-Sep-05
30-Sep-08
30-Sep-11
30-Sep-14
30-Sep-17
30-Sep-20
BHV-3


White Mesa Mill Ambient Gamma Levels Over Time BHV-4
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mRem/quarter
30-Sep-81
30-Sep-85
30-Sep-89
30-Sep-93
30-Sep-97
30-Sep-01
30-Sep-05
30-Sep-09
30-Sep-13
30-Sep-17
Background (BHV-3) Subtracted from BHV-4
BHV-4


White Mesa Mill Ambient Gamma Levels Over Time BHV-5
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mRem/quarter
30-Sep-81
30-Sep-85
30-Sep-89
30-Sep-93
30-Sep-97
30-Sep-01
30-Sep-05
30-Sep-09
30-Sep-13
30-Sep-17
Background (BHV-3) Subtracted from BHV- 5
BHV-5


White Mesa Mill Ambient Gamma Levels Over Time BHV-6
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-84
30-Sep-87
30-Sep-90
30-Sep-93
30-Sep-96
30-Sep-99
30-Sep-02
30-Sep-05
30-Sep-08
30-Sep-11
30-Sep-14
30-Sep-17
30-Sep-20
Background (BHV-3) Subtracted from BHV- 6
BHV-6


White Mesa Mill Ambient Gamma Levels Over Time BHV-7
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
1-Sep-14
1-Feb-15
1-Jul-15
1-Dec-15
1-May-16
1-Oct-16
1-Mar-17
1-Aug-17
1-Jan-18
1-Jun-18
1-Nov-18
1-Apr-19
1-Sep-19
1-Feb-20
1-Jul-20
Background (BHV-3) Subtracted from BHV- 7
BHV-7


White Mesa Mill Ambient Gamma Levels Over Time BHV-8
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
1-Sep-14
1-Feb-15
1-Jul-15
1-Dec-15
1-May-16
1-Oct-16
1-Mar-17
1-Aug-17
1-Jan-18
1-Jun-18
1-Nov-18
1-Apr-19
1-Sep-19
1-Feb-20
1-Jul-20
Background (BHV-3) Subtracted from BHV- 8
BHV-8

White Mesa Mill Third Quarter 2019 Environmental Spherical Gamma Monitor Results

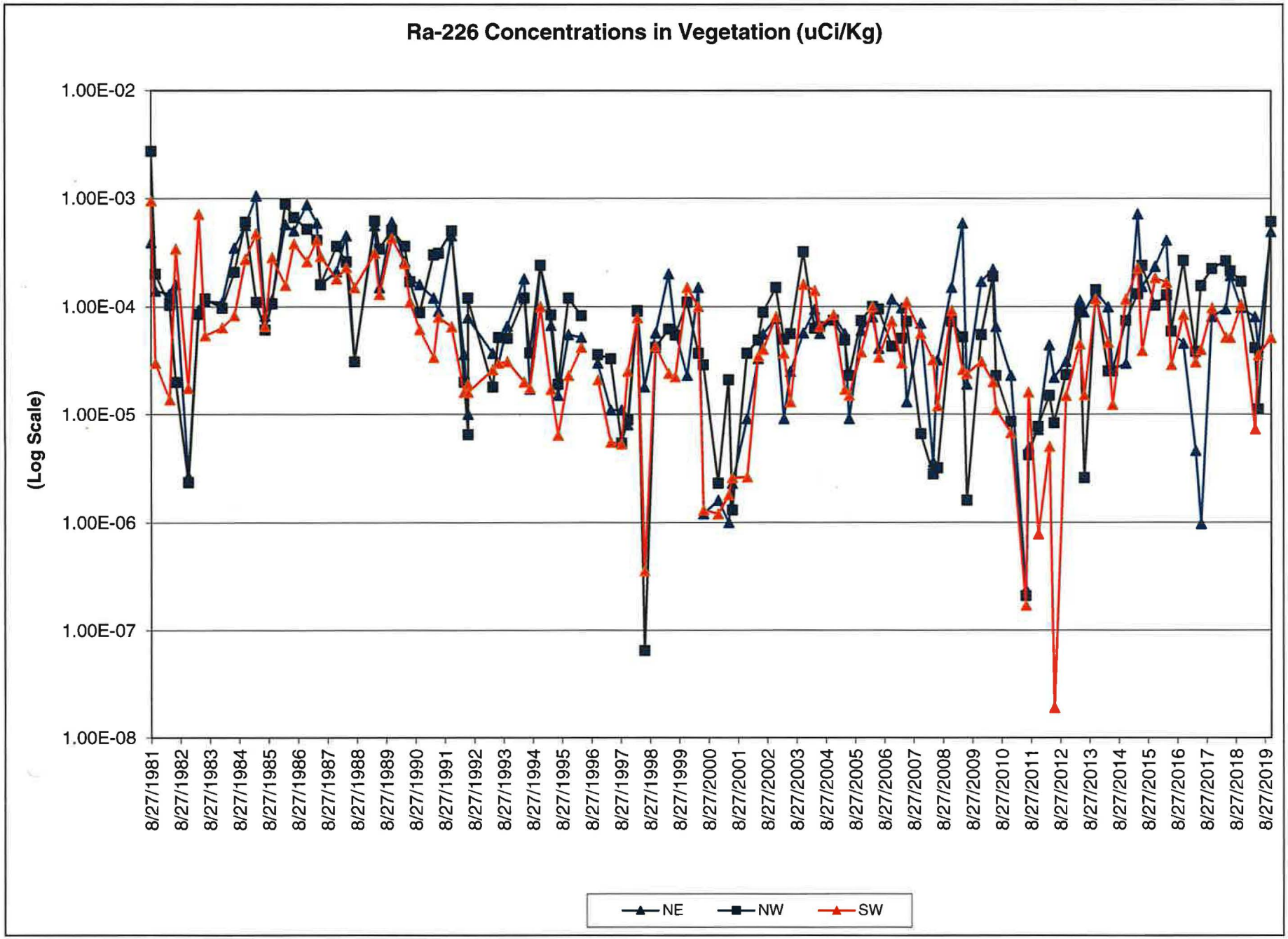
Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Mean Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	7/8/2019	10/9/2019	93	7.9	0.00	0.085	0.59
1	V2O5 Control Room	7/8/2019	10/9/2019	93	8.4	0.00	0.090	0.63
2	BHV-6	7/8/2019	10/9/2019	93	35	0.02	0.376	2.63
3	Ore Stor. - Barrel Area	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
4	Vanadium Precip.Area	7/8/2019	10/9/2019	93	8.1	0.00	0.087	0.61
5	Yellowcake Drying Area	7/8/2019	10/9/2019	93	7.6	0.00	0.082	0.57
6	Leach	7/8/2019	10/9/2019	93	7.5	0.00	0.081	0.56
7	SAG Mill Control Room	7/8/2019	10/9/2019	93	7.8	0.00	0.084	0.59
8	Yellowcake Precip.	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
9	Central Control Room	7/8/2019	10/9/2019	93	7.5	0.00	0.081	0.56
10	re pad - decontamination p:	7/8/2019	10/9/2019	93	8.1	0.00	0.087	0.61
11	North East Corner Ore Pad	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
12	Met. Lab	7/8/2019	10/9/2019	93	7.5	0.00	0.081	0.56
13	Filter Press Room	7/8/2019	10/9/2019	93	7.6	0.00	0.082	0.57
14	BHV-1	7/8/2019	10/9/2019	93	39	0.02	0.419	2.94
15	BHV-2	7/8/2019	10/9/2019	93	36.5	0.02	0.392	2.75
16	BHV-3	7/8/2019	10/9/2019	93	33.9	0.02	0.365	2.55
17	BHV-4	7/8/2019	10/9/2019	93	32.5	0.01	0.349	2.45
18	BHV-5	7/8/2019	10/9/2019	93	37.6	0.02	0.404	2.83
19	SAG Mill	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
20	Tails	7/8/2019	10/9/2019	93	50.6	0.02	0.544	3.81
21	CCD	7/8/2019	10/9/2019	93	8.2	0.00	0.088	0.62
22	North SX	7/8/2019	10/9/2019	93	8.2	0.00	0.088	0.62
23	Administration Building	7/8/2019	10/9/2019	93	7.7	0.00	0.083	0.58
24	Admin Parking Lot	7/8/2019	10/9/2019	93	8.2	0.00	0.088	0.62
25	Yellowcake Packaging	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
26	Yellowcake Storage	7/8/2019	10/9/2019	93	7.7	0.00	0.083	0.58
27	Bucking Room	7/8/2019	10/9/2019	93	8.2	0.00	0.088	0.62
28	Mill Lunch Room	7/8/2019	10/9/2019	93	8.5	0.00	0.091	0.64
29	South SX	7/8/2019	10/9/2019	93	7.8	0.00	0.084	0.59
30	Mtce. Super.'s Office	7/8/2019	10/9/2019	93	7.6	0.00	0.082	0.57
31	Ore Feed Grizzly	7/8/2019	10/9/2019	93	7.9	0.00	0.085	0.59
32	Scalehouse	7/8/2019	10/9/2019	93	7.6	0.00	0.082	0.57
33	Sample Plant (OBS)	7/8/2019	10/9/2019	93	7.7	0.00	0.083	0.58
34	Front Gate	7/8/2019	10/9/2019	93	7.8	0.00	0.084	0.59
45	AF - Barrel Dump Station	7/8/2019	10/9/2019	93	8.1	0.00	0.087	0.61
46	AF Circuit - South	7/8/2019	10/9/2019	93	7.8	0.00	0.084	0.59
47	AF Circuit - North	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
51	North Control # 1	7/8/2019	10/9/2019	93	43.5	0.02	0.468	3.27
52	North Control # 2	7/8/2019	10/9/2019	93	36.5	0.02	0.392	2.75
53	CaF2 Barrel Dump Station - Operator Station	7/8/2019	10/9/2019	93	8.1	0.00	0.087	0.61
64	KF Barrel Dump Station	7/8/2019	10/9/2019	93	8	0.00	0.086	0.60
70	BHV-7	7/8/2019	10/9/2019	93	35	0.02	0.376	2.63
71	BHV-8	7/8/2019	10/9/2019	93	34.1	0.02	0.367	2.57

White Mesa Mill Fourth Quarter 2019 Environmental Spherical Gamma Monitor Results

Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Mean Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	7/8/2019	1/8/2020	184	66.5	0.02	0.361	2.53
1	V2O5 Control Room	7/8/2019	1/8/2020	184		0.00	0.000	0.00
2	BHV-6	10/9/2019	1/8/2020	91	37.1	0.02	0.408	2.85
3	Ore Stor. - Barrel Area	7/8/2019	1/8/2020	184	1398	0.32	7.598	53.18
4	Vanadium Precip.Area	7/8/2019	1/8/2020	184	121.7	0.03	0.661	4.63
5	Yellowcake Drying Area	7/8/2019	1/8/2020	184	734.3	0.17	3.991	27.94
6	Leach	7/8/2019	1/8/2020	184	201.7	0.05	1.096	7.67
7	SAG Mill Control Room	7/8/2019	1/8/2020	184	443	0.10	2.408	16.85
8	Yellowcake Precip.	7/8/2019	1/8/2020	184	1236.7	0.28	6.721	47.05
9	Central Control Room	7/8/2019	1/8/2020	184	210.1	0.05	1.142	7.99
10	Ore pad - decontamination pac	7/8/2019	1/8/2020	184	204.4	0.05	1.111	7.78
11	North East Corner Ore Pad	7/8/2019	1/8/2020	184	515.5	0.12	2.802	19.61
12	Met. Lab	7/8/2019	1/8/2020	184	268.1	0.06	1.457	10.20
13	Filter Press Room	7/8/2019	1/8/2020	184	275.4	0.06	1.497	10.48
14	BHV-1	10/9/2019	1/8/2020	91	45.3	0.02	0.498	3.48
15	BHV-2	10/9/2019	1/8/2020	91	37.9	0.02	0.416	2.92
16	BHV-3	10/9/2019	1/8/2020	91	35.4	0.02	0.389	2.72
17	BHV-4	10/9/2019	1/8/2020	91	34.2	0.02	0.376	2.63
18	BHV-5	10/9/2019	1/8/2020	91	36.9	0.02	0.405	2.84
19	SAG Mill	7/8/2019	1/8/2020	184	463.6	0.10	2.520	17.64
20	Tails	10/9/2019	1/8/2020	91	54.4	0.02	0.598	4.18
21	CCD	7/8/2019	1/8/2020	184	204.4	0.05	1.111	7.78
22	North SX	7/8/2019	1/8/2020	184	261.6	0.06	1.422	9.95
23	Administration Building	7/8/2019	1/8/2020	184	75.1	0.02	0.408	2.86
24	Admin Parking Lot	7/8/2019	1/8/2020	184	138.3	0.03	0.752	5.26
25	Yellowcake Packaging	7/8/2019	1/8/2020	184	486.9	0.11	2.646	18.52
26	Yellowcake Storage	7/8/2019	1/8/2020	184	1844.8	0.42	10.026	70.18
27	Bucking Room	7/8/2019	1/8/2020	184	357.7	0.08	1.944	13.61
28	Mill Lunch Room	7/8/2019	1/8/2020	184	104.3	0.02	0.567	3.97
29	South SX	7/8/2019	1/8/2020	184	170	0.04	0.924	6.47
30	Mtce. Super.'s Office	7/8/2019	1/8/2020	184	94.5	0.02	0.514	3.60
31	Ore Feed Grizzly	7/8/2019	1/8/2020	184	443.1	0.10	2.408	16.86
32	Scalehouse	7/8/2019	1/8/2020	184	427.1	0.10	2.321	16.25
33	Sample Plant (OBS)	7/8/2019	1/8/2020	184	403.6	0.09	2.193	15.35
34	Front Gate	7/8/2019	1/8/2020	184	330.4	0.07	1.796	12.57
45	AF - Barrel Dump Station	7/8/2019	1/8/2020	184	257.7	0.06	1.401	9.80
46	AF Circuit - South	7/9/2019	1/8/2020	183	195.1	0.04	1.066	7.46
47	AF Circuit - North	7/10/2019	1/8/2020	182	165.7	0.04	0.910	6.37
51	North Control # 1	10/9/2019	1/8/2020	91	45.3	0.02	0.498	3.48
52	North Control # 2	10/9/2019	1/8/2020	91	36.1	0.02	0.397	2.78
53	CaF2 Barrel Dump Station - Operator Station	7/8/2019	1/8/2020	184	209.9	0.05	1.141	7.99
64	KF Barrel Dump Station	7/8/2019	1/8/2020	184		0.00	0.000	0.00
70	BHV-7	10/9/2019	1/8/2020	91	36.3	0.02	0.399	2.79
71	BHV-8	10/9/2019	1/8/2020	91	34.1	0.02	0.375	2.62

ATTACHMENT F

VEGETATION GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC


Ra-226 Concentrations in Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
8/27/1981
8/27/1982
8/27/1983
8/27/1984
8/27/1985
8/27/1986
8/27/1987
8/27/1988
8/27/1989
8/27/1990
8/27/1991
8/27/1992
8/27/1993
8/27/1994
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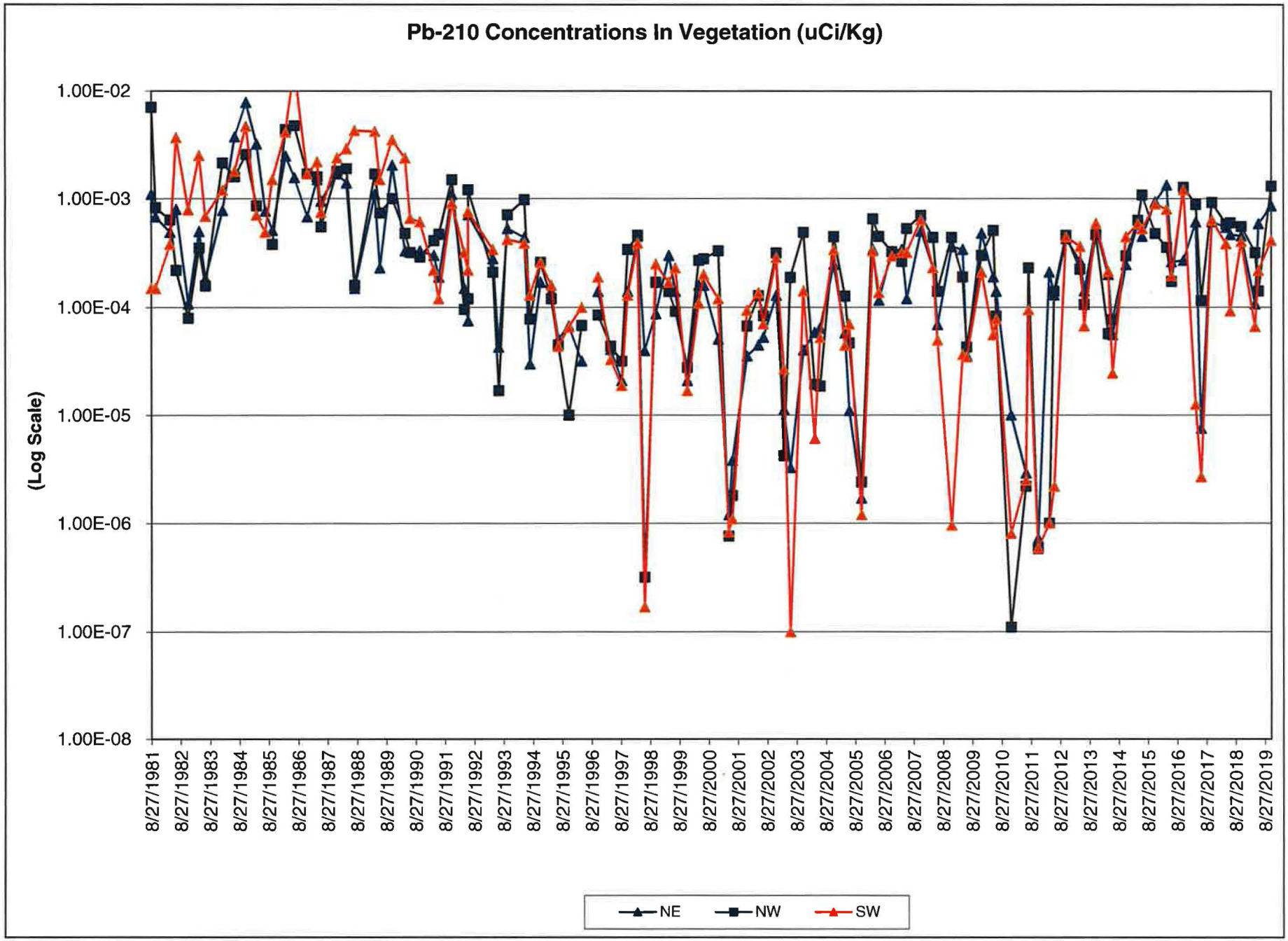
8/27/2003
8/27/2004
8/27/2005
8/27/2006
8/27/2007
8/27/2008
8/27/2009
8/27/2010
8/27/2011
8/27/2012
8/27/2013
8/27/2014
8/27/2015
8/27/2016
8/27/2017
8/27/2018
8/27/2019
NE
NW
SW


Pb-210 Concentrations In Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
8/27/1981
8/27/1982
8/27/1983
8/27/1984
8/27/1985
8/27/1986
8/27/1987
8/27/1988
8/27/1989
8/27/1990
8/27/1991
8/27/1992
8/27/1993
8/27/1994
8/27/1995
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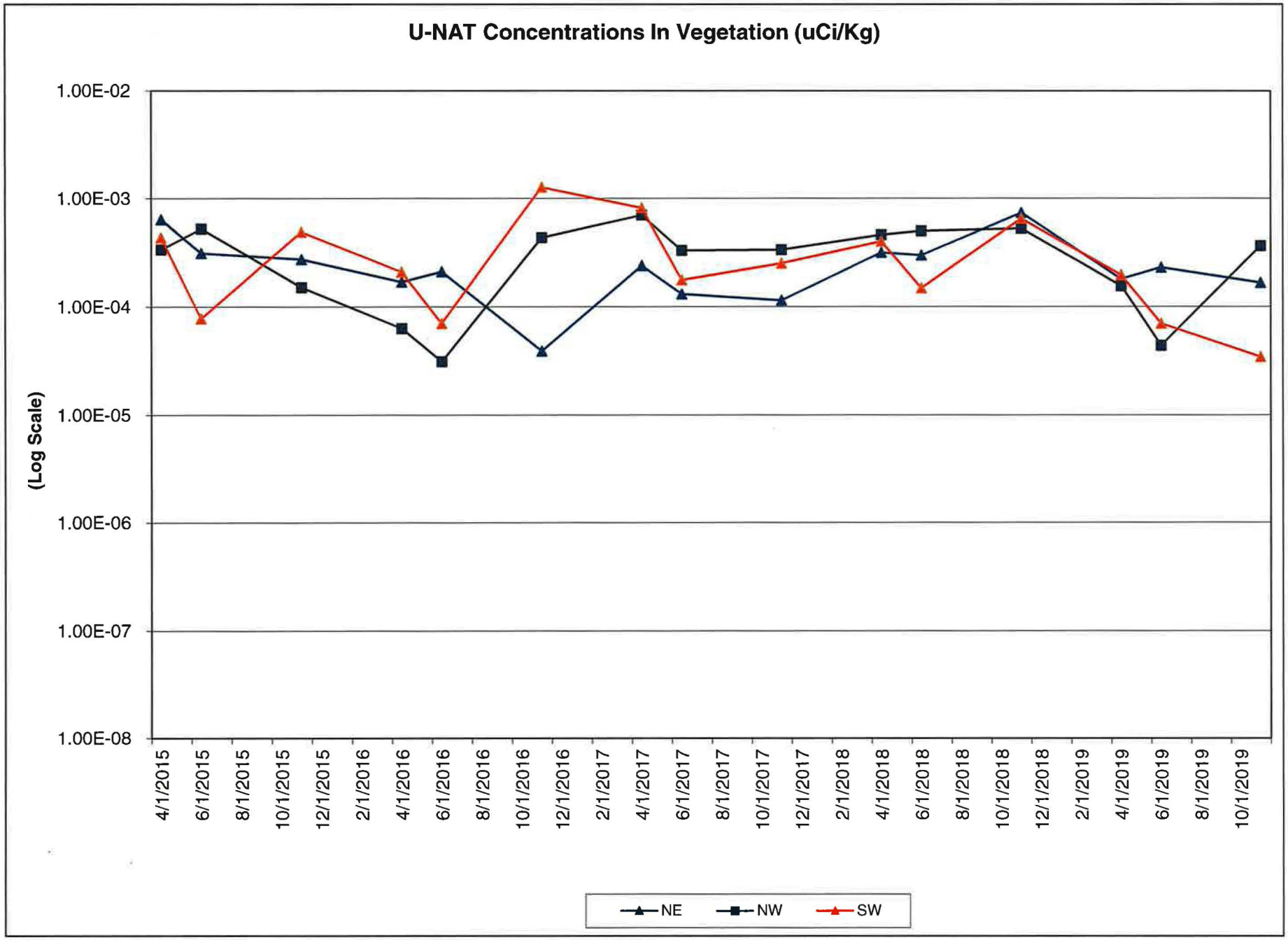
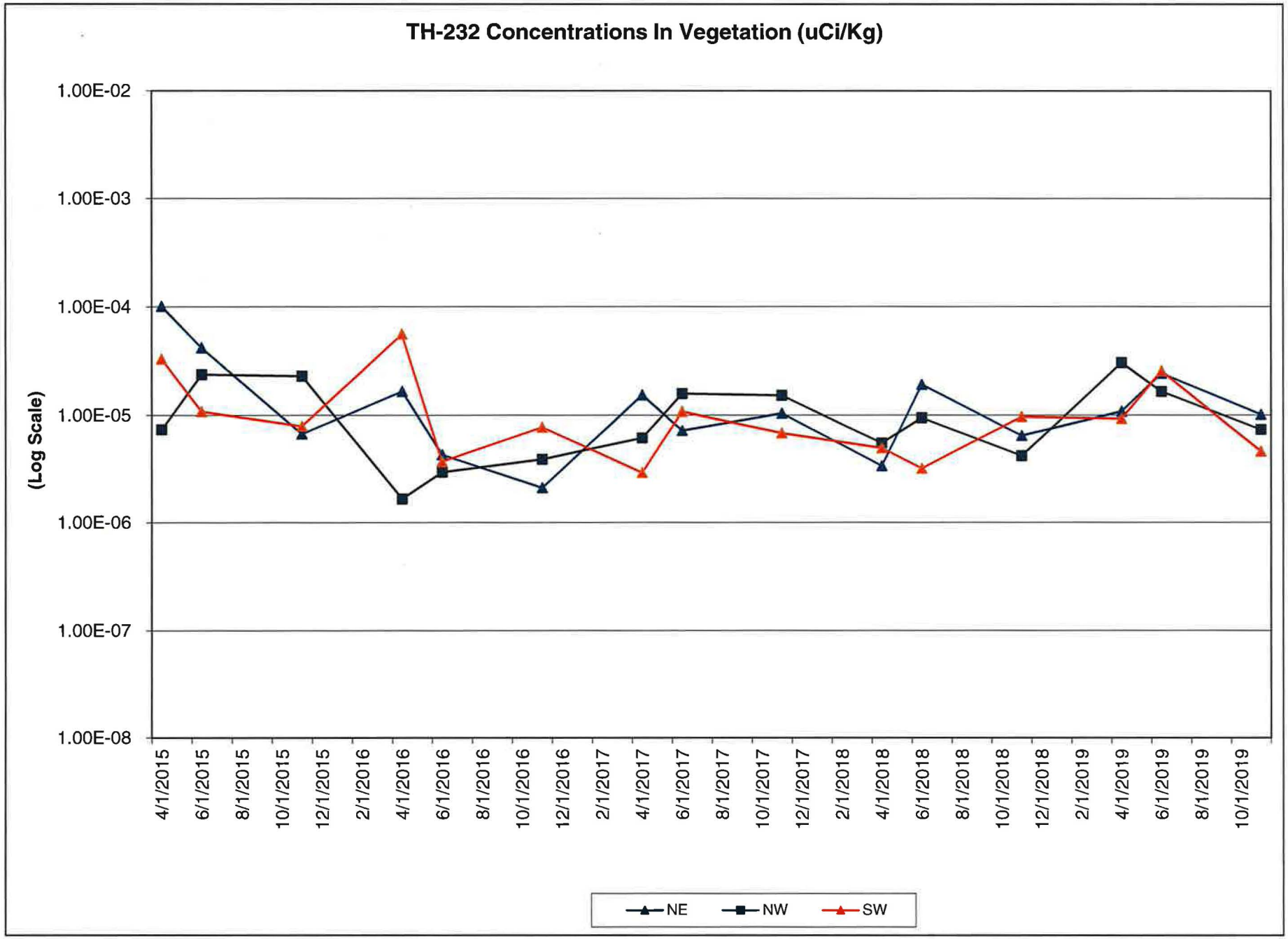
8/27/2003
8/27/2004
8/27/2005
8/27/2006
8/27/2007
8/27/2008
8/27/2009
8/27/2010
8/27/2011
8/27/2012
8/27/2013
8/27/2014
8/27/2015
8/27/2016
8/27/2017
8/27/2018
8/27/2019
NE
NW
SW


U-NAT Concentrations In Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
4/1/2015
6/1/2015
8/1/2015
10/1/2015
12/1/2015
2/1/2016
4/1/2016
6/1/2016
8/1/2016
10/1/2016
12/1/2016
2/1/2017
4/1/2017
6/1/2017
8/1/2017
10/1/2017
12/1/2017
2/1/2018
4/1/2018
6/1/2018
8/1/2018
10/1/2018
12/1/2018
2/1/2019
4/1/2019
6/1/2019
8/1/2019
10/1/2019
NE
NW
SW


TH-232 Concentrations In Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
4/1/2015
6/1/2015
8/1/2015
10/1/2015
12/1/2015
2/1/2016
4/1/2016
6/1/2016
8/1/2016
10/1/2016
12/1/2016
2/1/2017
4/1/2017
6/1/2017
8/1/2017
10/1/2017
12/1/2017
2/1/2018
4/1/2018
6/1/2018
8/1/2018
10/1/2018
12/1/2018
2/1/2019
4/1/2019
6/1/2019
8/1/2019
10/1/2019
NE
NW
SW

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHEAST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
3rd '81	27-Aug-81	3.90E-04	1.00E-05	5.00E-08	1.10E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
4th '81	20-Oct-81	1.40E-04	1.00E-05	5.00E-08	6.80E-04	8.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '82	15-Apr-82	1.31E-04	1.30E-05	1.00E-06	4.90E-04	7.00E-05	8.00E-05	NS	NA	NA	NS	NA	NA
3rd '82	01-Jul-82	1.60E-04	1.00E-05	5.00E-08	8.00E-04	1.70E-04	1.00E-07	NS	NA	NA	NS	NA	NA
4th '82	30-Nov-82	2.67E-06	1.07E-06	1.00E-06	1.08E-04	9.00E-06	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '83	13-Apr-83	9.36E-05	6.20E-06	8.00E-09	4.97E-04	9.30E-05	1.00E-04	NS	NA	NA	NS	NA	NA
3rd '83	01-Jul-83	1.12E-04	1.20E-05	6.00E-06	1.84E-04	1.20E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '83	30-Jan-84	1.09E-04	8.00E-06	4.00E-06	7.80E-04	6.20E-05	6.00E-05	NS	NA	NA	NS	NA	NA
2nd '84	28-Jun-84	3.47E-04	1.20E-05	2.00E-09	3.75E-03	1.60E-04	4.00E-08	NS	NA	NA	NS	NA	NA
4th '84	14-Nov-84	5.61E-04	1.99E-04	2.00E-07	7.82E-03	3.30E-04	7.00E-08	NS	NA	NA	NS	NA	NA
2nd '85	27-Mar-85	1.05E-03	3.00E-05	2.00E-06	3.22E-03	1.40E-04	2.00E-05	NS	NA	NA	NS	NA	NA
3rd '85	15-Jul-85	8.20E-05	7.00E-06	3.00E-06	7.70E-04	1.30E-04	2.00E-04	NS	NA	NA	NS	NA	NA
4th '85	09-Oct-85	1.15E-04	1.00E-05	3.00E-06	5.10E-04	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '86	24-Mar-86	5.72E-04	2.10E-05	4.00E-06	2.49E-03	1.00E-04	1.00E-05	NS	NA	NA	NS	NA	NA
3rd '86	10-Jul-86	5.01E-04	1.30E-05	3.00E-06	1.57E-03	1.70E-03	2.00E-04	NS	NA	NA	NS	NA	NA
4th '86	18-Dec-86	8.70E-04	5.00E-05	3.00E-06	6.80E-04	3.00E-05	3.00E-06	NS	NA	NA	NS	NA	NA
2nd '87	20-Apr-87	5.90E-04	7.00E-05	5.00E-08	1.50E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '87	05-Jun-87	1.60E-04	3.00E-05	5.00E-08	9.50E-04	4.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '87	22-Dec-87	2.10E-04	4.00E-05	5.00E-08	1.70E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '88	19-Apr-88	4.50E-04	7.00E-05	5.00E-08	1.40E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '88	28-Jul-88	3.20E-05	2.20E-05	5.00E-08	1.50E-04	4.40E-04	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '89	07-Apr-89	5.60E-04	4.00E-05	***	1.10E-03	1.00E-01	***	NS	NA	NA	NS	NA	NA
3rd '89	06-Jun-89	1.50E-04	2.00E-05	***	2.30E-04	2.00E-05	***	NS	NA	NA	NS	NA	NA
4th '89	07-Nov-89	6.00E-04	5.00E-05	7.00E-06	2.04E-03	7.00E-05	1.40E-05	NS	NA	NA	NS	NA	NA
1st '90	17-Apr-90	2.60E-04	3.00E-05	4.00E-06	3.30E-04	2.00E-05	2.20E-05	NS	NA	NA	NS	NA	NA
2nd '90	20-Jun-90	1.80E-04	2.00E-05	5.00E-08	3.20E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '90	17-Oct-90	1.60E-04	2.00E-05	5.00E-08	3.30E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '91	10-Apr-91	1.20E-04	2.00E-05	5.00E-06	3.00E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '91	11-Jun-91	9.10E-05	1.60E-05	2.00E-07	1.90E-04	2.00E-05	2.00E-07	NS	NA	NA	NS	NA	NA
3rd '91	20-Nov-91	4.50E-04	4.00E-05	5.00E-08	1.09E-03	5.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '92	22-Apr-92	3.60E-05	1.00E-05	2.00E-06	1.50E-04	2.00E-05	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '92	10-Jun-92	1.00E-05	7.00E-06	2.00E-07	7.50E-05	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '92	10-Jun-92	7.90E-05	3.50E-05	3.00E-06	7.10E-04	7.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '93	13-Apr-93	3.70E-05	2.20E-05	3.00E-06	2.80E-04	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '93	26-Jun-93	3.00E-05	1.50E-05	3.00E-06	4.30E-05	3.50E-05	2.00E-05	NS	NA	NA	NS	NA	NA
3rd '93	12-Oct-93	6.60E-05	2.70E-05	3.00E-06	5.30E-04	6.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '94	11-May-94	1.80E-04	4.00E-05	3.00E-05	4.40E-04	6.00E-05	2.00E-04	NS	NA	NA	NS	NA	NA
2nd '94	19-Jul-94	1.71E-05	1.20E-06	9.00E-08	3.00E-05	6.10E-06	4.45E-06	NS	NA	NA	NS	NA	NA
3rd '94	28-Nov-94	2.40E-04	1.50E-05	1.70E-07	1.70E-04	1.10E-05	8.30E-07	NS	NA	NA	NS	NA	NA
1st '95	11-Apr-95	6.70E-05	5.40E-06	1.60E-07	1.40E-04	1.30E-05	7.90E-07	NS	NA	NA	NS	NA	NA
2nd '95	06-Jul-95	1.50E-05	1.50E-06	1.50E-07	5.10E-05	4.50E-06	7.60E-07	NS	NA	NA	NS	NA	NA
3rd '95	15-Nov-95	5.50E-05	5.00E-06	1.80E-07	6.70E-05	1.00E-05	8.80E-07	NS	NA	NA	NS	NA	NA
1st '96	23-Apr-96	5.20E-05	2.50E-06	1.50E-07	3.20E-05	4.50E-06	1.80E-07	NS	NA	NA	NS	NA	NA
2nd '96 *	31-Jul-96							NS	NA	NA	NS	NA	NA
3rd '96	14-Nov-96	3.00E-05	2.50E-06	1.80E-07	1.40E-04	7.10E-06	9.30E-07	NS	NA	NA	NS	NA	NA
1st '97	21-Apr-97	1.10E-05	4.70E-07	1.21E-07	4.10E-05	3.60E-06	6.10E-07	NS	NA	NA	NS	NA	NA
3rd '97	05-Sep-97	1.10E-05	4.30E-07	1.33E-07	2.10E-05	7.30E-07	6.66E-07	NS	NA	NA	NS	NA	NA
4th '97	20-Nov-97	8.00E-06	1.20E-06	5.60E-07	1.40E-04	4.60E-06	1.10E-07	NS	NA	NA	NS	NA	NA
1st '98	23-Mar-98	<9.10E-05	9.10E-05	9.10E-05	<4.50E-04	4.50E-04	4.50E-04	NS	NA	NA	NS	NA	NA
2nd '98	16-Jun-98	1.80E-05	1.20E-06	6.30E-08	4.00E-05	1.80E-06	3.20E-07	NS	NA	NA	NS	NA	NA
4th '98	05-Nov-98	5.70E-05	1.00E-06	8.20E-08	8.70E-05	5.00E-06	4.10E-07	NS	NA	NA	NS	NA	NA
2nd '99	15-Apr-99	2.00E-04	3.00E-06	1.20E-07	3.00E-04	1.00E-05	6.00E-05	NS	NA	NA	NS	NA	NA
3rd '99	07-Jul-99	6.03E-05	1.40E-06	8.30E-08	1.40E-04	4.70E-06	4.20E-07	NS	NA	NA	NS	NA	NA
4th '99	02-Dec-99	2.30E-05	1.00E-06	2.30E-07	2.10E-05	1.00E-06	1.10E-06	NS	NA	NA	NS	NA	NA
2nd '00	21-Apr-00	1.50E-04	3.00E-06	1.20E-07	1.60E-04	8.00E-06	5.90E-07	NS	NA	NA	NS	NA	NA
2nd '00	22-Jun-00	1.20E-06	1.00E-07	2.80E-07	1.60E-04	1.00E-05	1.40E-06	NS	NA	NA	NS	NA	NA
4th '00	21-Dec-00	1.60E-06	1.10E-06	3.70E-07	5.10E-05	5.00E-06	1.90E-06	NS	NA	NA	NS	NA	NA
1st '01	30-Apr-01	1.00E-06	1.00E-07	2.40E-07	<1.2E-06	1.00E-07	2.40E-07	NS	NA	NA	NS	NA	NA
2nd '01	14-Jun-01	2.30E-06	2.00E-07	9.90E-08	3.80E-06	2.00E-07	5.00E-07	NS	NA	NA	NS	NA	NA
4th '01	17-Dec-01	9.10E-06	2.40E-06	1.20E-07	3.57E-05	2.97E-06	6.00E-07	NS	NA	NA	NS	NA	NA
1st '02	07-May-02	3.30E-05	1.80E-06	7.60E-07	4.50E-05	2.61E-06	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '02	07-Jul-02	5.55E-05	2.81E-06	7.60E-07	5.31E-05	3.90E-06	1.00E-05	NS	NA	NA	NS	NA	NA
4th '02	15-Dec-02	7.75E-05	3.60E-06	7.60E-07	1.29E-04	6.15E-06	1.00E-05	NS	NA	NA	NS	NA	NA

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHEAST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
1st '03	21-Mar-03	9.10E-06	1.30E-06	3.60E-07	1.13E-05	1.61E-06	3.36E-06	NS	NA	NA	NS	NA	NA
2nd '03	10-Jun-03	2.50E-05	1.30E-06	3.60E-07	3.26E-06	2.00E-06	7.38E-08	NS	NA	NA	NS	NA	NA
4th '03	20-Nov-03	5.70E-05	3.50E-06	1.50E-07	4.05E-05	5.82E-06	8.30E-07	NS	NA	NA	NS	NA	NA
1st '04	08-Apr-04	9.38E-05	3.70E-06	1.10E-07	5.88E-05	3.00E-06	5.50E-07	NS	NA	NA	NS	NA	NA
2nd '04	12-Jun-04	5.63E-05	3.40E-06	1.80E-07	6.42E-05	5.90E-06	9.00E-07	NS	NA	NA	NS	NA	NA
4th '04	30-Nov-04	8.41E-05	5.50E-06	2.00E-08	2.48E-04	1.40E-05	3.00E-07	NS	NA	NA	NS	NA	NA
1st '05	21-Apr-05	5.60E-05	3.00E-06	1.40E-07	5.80E-05	4.00E-06	6.90E-07	NS	NA	NA	NS	NA	NA
2nd '05	13-Jun-05	9.10E-06	1.50E-06	1.80E-07	1.10E-05	1.20E-05	9.00E-07	NS	NA	NA	NS	NA	NA
4th '05	10-Nov-05	6.00E-05	3.00E-06	1.10E-10	1.70E-06	6.40E-07	5.50E-10	NS	NA	NA	NS	NA	NA
1st '06	03-Apr-06	8.00E-05	5.00E-06	5.00E-08	3.40E-04	1.20E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '06	16-Jun-06	4.10E-05	3.10E-06	5.00E-08	1.16E-04	6.10E-06	1.00E-06	NS	NA	NA	NS	NA	NA
4th '06	28-Nov-06	1.17E-04	4.60E-06	1.90E-07	3.28E-04	9.50E-06	9.50E-07	NS	NA	NA	NS	NA	NA
1st '07	30-Mar-07	9.70E-05	4.40E-06	1.90E-07	3.40E-04	8.70E-06	8.4-07	NS	NA	NA	NS	NA	NA
2nd '07	1-Jun-07	1.30E-05	1.60E-06	1.90E-07	1.20E-04	6.60E-06	9.70E-07	NS	NA	NA	NS	NA	NA
4th '07	23-Nov-07	7.00E-05	8.20E-06	2.00E-07	5.00E-04	2.00E-05	1.20E-06	NS	NA	NA	NS	NA	NA
1st '08	22-Apr-08	3.60E-06	3.00E-06	5.20E-07	2.30E-04	1.40E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '08	18-Jun-08	3.20E-05	3.20E-06	1.80E-06	6.90E-05	3.50E-05	5.50E-05	NS	NA	NA	NS	NA	NA
4th '08	12-Dec-08	1.50E-04	5.20E-06	9.90E-07	3.60E-04	2.90E-05	3.90E-05	NS	NA	NA	NS	NA	NA
1st '09	28-Apr-09	5.90E-04	1.35E-05	1.50E-06	3.40E-04	1.30E-05	1.50E-06	NS	NA	NA	NS	NA	NA
2nd '09	17-Jun-09	1.90E-05	1.45E-06	4.90E-07	3.60E-05	1.10E-05	1.80E-05	NS	NA	NA	NS	NA	NA
4th '09	18-Dec-09	1.70E-04	5.90E-06		4.80E-04	1.20E-05		NS	NA	NA	NS	NA	NA
1st '10	13-May-10	2.20E-04	7.20E-06	1.10E-06	1.90E-04	1.90E-05	2.90E-05	NS	NA	NA	NS	NA	NA
2nd '10	18-Jun-10	6.50E-05	3.40E-06	7.60E-07	1.40E-04	1.90E-05	2.90E-05	NS	NA	NA	NS	NA	NA
4th '10	20-Dec-10	2.30E-05	1.70E-06	5.20E-07	1.00E-05	1.50E-06	2.30E-06	NS	NA	NA	NS	NA	NA
2nd '11	23-Jun-11	2.40E-07	1.40E-07	1.80E-07	<2.9E-06	1.70E-06	2.90E-06	NS	NA	NA	NS	NA	NA
3rd '11	27-Jul-11	4.90E-06	6.30E-07	3.20E-07	9.50E-05	2.10E-06	2.50E-06	NS	NA	NA	NS	NA	NA
4th '11	23-Nov-11	7.20E-06	7.50E-07	2.90E-07	8.80E-08	4.30E-07	7.20E-07	NS	NA	NA	NS	NA	NA
2nd '12	11-Apr-12	4.40E-05	1.90E-06	3.60E-07	2.10E-04	2.00E-06	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '12	11-Jun-12	2.20E-05	8.40E-07	1.10E-07	1.30E-04	7.60E-06	5.90E-06	NS	NA	NA	NS	NA	NA
4th '12	06-Nov-12	3.10E-05	4.82E-07	4.63E-08	4.26E-04	3.72E-06	6.52E-07	NS	NA	NA	NS	NA	NA
2nd '13	30-Apr-13	1.14E-04	1.74E-06	5.34E-07	2.65E-04	4.41E-06	5.37E-06	NS	NA	NA	NS	NA	NA
3rd '13	20-Jun-13	8.91E-05	2.16E-06	1.42E-06	1.42E-04	3.68E-06	6.17E-06	NS	NA	NA	NS	NA	NA
4th '13	14-Nov-13	1.37E-04	3.87E-06	4.71E-06	5.33E-04	1.45E-05	2.27E-05	NS	NA	NA	NS	NA	NA
2nd '14	16-Apr-14	9.90E-05	1.01E-06	3.91E-07	1.99E-04	3.14E-06	3.38E-06	NS	NA	NA	NS	NA	NA
3rd '14	10-Jun-14	2.60E-05	8.46E-07	9.19E-07	5.60E-05	3.08E-06	7.12E-06	NS	NA	NA	NS	NA	NA
4th '14	25-Nov-14	2.98E-05	1.23E-06	1.30E-06	2.46E-04	5.38E-06	7.41E-06	NS	NA	NA	NS	NA	NA
1st '15	21-Apr-15	7.15E-04	8.01E-06	3.50E-06	5.85E-04	1.27E-05	2.51E-05	6.36E-04	2.70E-05	8.62E-06	1.01E-04	3.06E-06	4.04E-07
2nd '15	15-Jun-15	1.52E-04	3.48E-06	2.60E-06	4.49E-04	1.50E-05	3.33E-05	3.11E-04	1.58E-05	6.45E-06	4.19E-05	2.67E-06	6.78E-07
4th '15	23-Nov-15	2.34E-04	5.79E-06	3.89E-06	9.34E-04	1.36E-05	1.37E-05	2.73E-04	1.91E-05	6.31E-06	6.67E-06	7.98E-07	7.06E-07
2nd '16	14-Apr-16	4.08E-04	7.26E-06	5.42E-06	1.34E-03	2.16E-05	2.93E-05	1.69E-04	1.29E-05	5.76E-06	1.66E-05	1.28E-06	7.67E-07
2nd '16	14-Jun-16	5.92E-05	2.70E-06	4.00E-06	2.61E-04	2.09E-05	4.92E-05	2.10E-04	5.52E-06	1.70E-06	4.27E-06	8.10E-07	9.31E-07
4th '16	11-Nov-16	4.56E-05	2.10E-06	3.47E-06 (5.00E-08)	2.70E-04	1.43E-05	3.81E-05 (1.00E-06)	3.94E-05	5.94E-06	5.02E-06 (2.00E-07)	2.10E-06	5.45E-07	5.66E-07 (2.00E-07)
2nd '17	13-Apr-17	1.71E-04	4.59E-06	4.06E-06 (5.00E-08)	6.11E-04	1.34E-05	2.17E-05 (1.00E-06)	2.38E-04	5.71E-06	2.31E-06 (2.00E-07)	1.54E-05	1.59E-06	2.09E-06 (2.00E-07)
2nd '17	19-Jun-17	2.40E-05	9.69E-07	1.15E-06 (5.00E-08)	7.52E-06	1.72E-06	5.42E-06 (1.00E-06)	1.31E-04	4.21E-06	1.15E-06 (2.00E-07)	7.18E-06	1.09E-06	6.48E-07 (2.00E-07)
4th '17	02-Nov-17	8.03E-05	2.18E-06	2.31E-06 (5.00E-08)	6.13E-04	1.10E-05	1.58E-05 (1.00E-06)	1.15E-04	3.99E-06	1.74E-06 (2.00E-07)	1.04E-05	1.02E-06	1.05E-06 (2.00E-07)
2nd '18	26-Apr-18	9.48E-05	1.83E-06	1.16E-06 (5.00E-08)	4.53E-04	9.39E-06	1.57E-05 (1.00E-06)	3.15E-04	6.25E-06	1.87E-06 (2.00E-07)	3.36E-06	1.41E-06	2.88E-06 (2.00E-07)
2nd '18	20-Jun-18	1.92E-04	4.37E-06	3.52E-06 (5.00E-08)	4.65E-04	1.19E-05	2.37E-05 (1.00E-06)	2.97E-04	6.57E-06	1.85E-06 (2.00E-07)	1.92E-05	1.58E-06	1.22E-06 (2.00E-07)
4th '18	02-Nov-18	9.76E-05	2.96E-06	3.23E-06 (5.00E-08)	4.52E-04	1.04E-05	1.78E-05 (1.00E-06)	7.34E-04	1.64E-05	3.49E-06 (2.00E-07)	6.44E-06	8.01E-07	1.90E-06 (2.00E-07)
2nd '19	25-Apr-19	8.01E-05	5.67E-06	3.69E-06 (5.00E-08)	1.07E-04	1.74E-05	4.50E-05 (1.00E-06)	1.79E-04	7.85E-06	5.53E-06 (2.00E-07)	1.08E-05	1.28E-06	1.68E-06 (2.00E-07)
2nd '19	06-Jun-19	4.20E-05	1.64E-06	1.36E-06 (5.00E-08)	5.87E-04	3.12E-05	4.47E-05 (1.00E-06)	2.29E-04	1.64E-05	2.48E-06 (2.00E-07)	2.43E-05	1.89E-06	1.96E-06 (2.00E-07)

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHEAST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
4th 2019	13-Nov-19	4.91E-04	4.77E-06	1.73E-06 (5.00E-08)	8.60E-04	1.51E-05	2.41E-05 (1.00E-06)	1.66E-04	4.10E-06	1.19E-06 (2.00E-07)	1.01E-05	1.24E-06	1.68E-06 (2.00E-07)

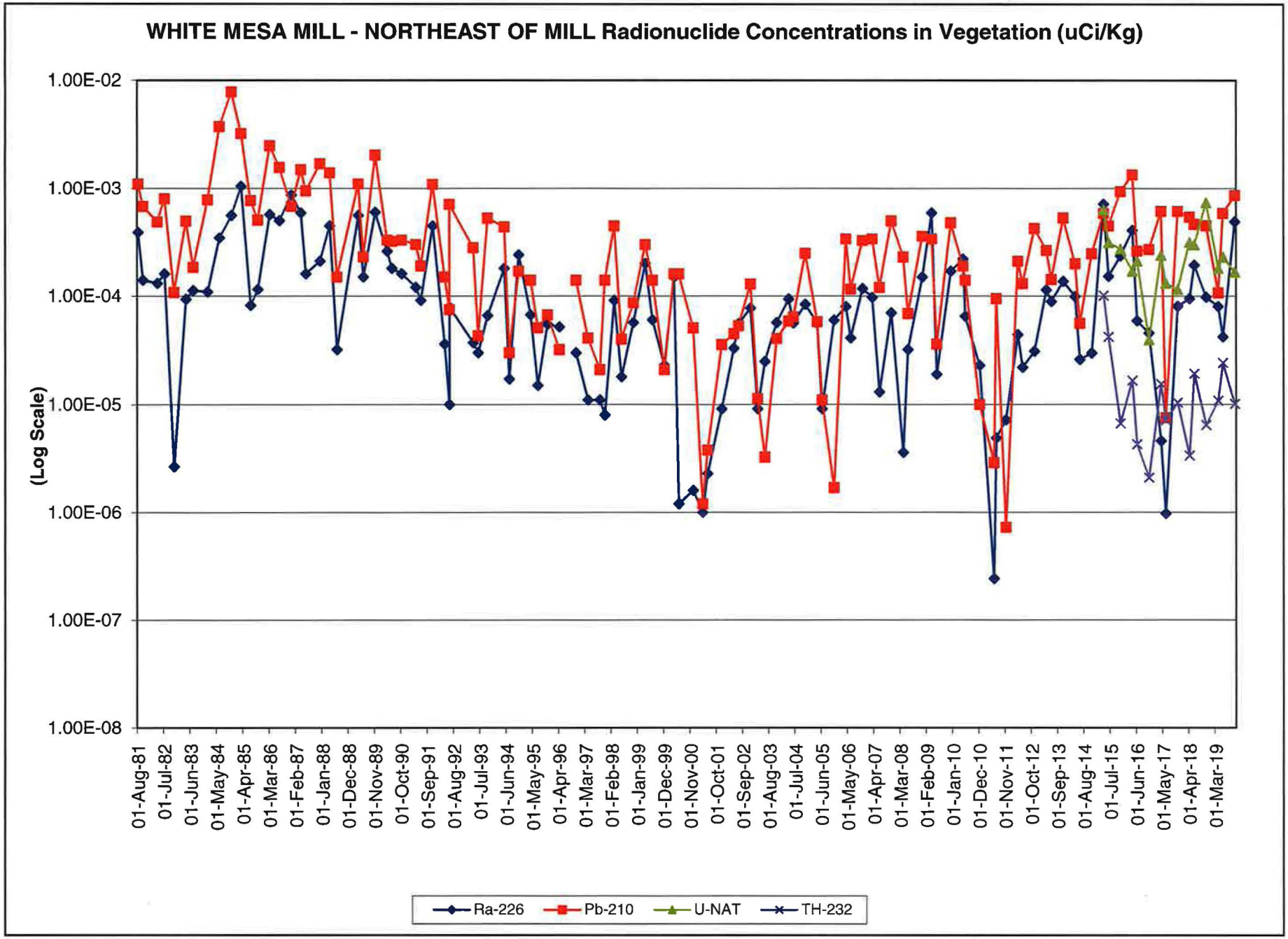
*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period

† NRC Regulatory Guide does not specify a Lower Limit of Detection (LLD) for Thorium 232 in vegetation (or any matrix). The LLD for Thorium 230 was used.

NS = Not Sampled

NA = Not Applicable

¥ The value in the MDC column is the sample-specific minimum detectable concentration. The MDC is based on the sample moisture, composition and other sample-specific variables. The value in parantheses is the method-specific lower limit of detection (LLD), which is a limit representing the detection capability of the measurement system. The LLDs in the data package are referred to as the Reporting limit (RL).


WHITE MESA MILL - NORTHEAST OF MILL Radionuclide Concentrations in Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Aug-81
01-Jul-82
01-Jun-83
01-May-84
01-Apr-85
01-Mar-86
01-Feb-87
01-Jan-88
01-Dec-88
01-Nov-89
01-Oct-90
01-Sep-91
01-Aug-92
01-Jul-93
01-Jun-94
01-May-95
01-Apr-96
01-Mar-97
01-Feb-98
01-Jan-99
01-Dec-99
01-Nov-00
01-Oct-01
01-Sep-02
01-Aug-03
01-Jul-04
01-Jun-05
01-May-06
01-Apr-07
01-Mar-08
01-Feb-09
01-Jan-10
01-Dec-10
01-Nov-11
01-Oct-12
01-Sep-13
01-Aug-14
01-Jul-15
01-Jun-16
01-May-17
01-Apr-18
01-Mar-19
Ra-226
Pb-210
U-NAT
TH-232

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
3rd '81	27-Aug-81	2.73E-03	5.00E-05	5.00E-08	7.10E-03	3.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
4th '81	20-Oct-81	2.00E-04	1.00E-05	5.00E-08	8.30E-04	5.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '82	15-Apr-82	1.04E-04	9.00E-06	7.00E-06	6.40E-04	5.00E-05	4.00E-05	NS	NA	NA	NS	NA	NA
3rd '82	01-Jul-82	2.00E-05	1.00E-05	5.00E-08	2.20E-04	9.00E-05	1.00E-07	NS	NA	NA	NS	NA	NA
4th '82	30-Nov-82	2.36E-06	9.50E-07	1.00E-06	8.00E-05	1.00E-05	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '83	13-Apr-83	8.58E-05	1.36E-05	2.00E-08	3.53E-04	1.90E-05	1.00E-05	NS	NA	NA	NS	NA	NA
3rd '83	01-Jul-83	1.19E-04	1.10E-05	5.00E-06	1.58E-04	1.30E-05	1.00E-05	NS	NA	NA	NS	NA	NA
4th '83	30-Jan-84	9.78E-05	7.00E-06	2.00E-06	2.16E-03	3.40E-04	3.00E-04	NS	NA	NA	NS	NA	NA
2nd '84	28-Jun-84	2.08E-04	1.00E-05	3.00E-09	1.60E-03	7.00E-05	3.00E-08	NS	NA	NA	NS	NA	NA
4th '84	14-Nov-84	6.05E-04	1.64E-04	2.00E-07	2.58E-03	1.10E-04	3.00E-08	NS	NA	NA	NS	NA	NA
2nd '85	27-Mar-85	1.10E-04	8.00E-06	3.00E-06	8.63E-04	4.20E-05	3.00E-05	NS	NA	NA	NS	NA	NA
3rd '85	15-Jul-85	6.10E-05	6.00E-06	2.00E-06	5.40E-04	5.00E-05	5.00E-05	NS	NA	NA	NS	NA	NA
4th '85	09-Oct-85	1.07E-04	6.00E-06	2.00E-06	3.80E-04	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '86	24-Mar-86	8.86E-04	1.80E-05	2.00E-06	4.40E-03	1.90E-04	3.00E-05	NS	NA	NA	NS	NA	NA
3rd '86	10-Jul-86	6.66E-04	1.80E-05	3.00E-06	4.78E-03	2.10E-04	6.00E-05	NS	NA	NA	NS	NA	NA
4th '86	18-Dec-86	5.20E-04	1.00E-04	3.00E-06	1.70E-03	1.00E-04	6.00E-05	NS	NA	NA	NS	NA	NA
2nd '87	20-Apr-87	4.10E-04	1.00E-04	5.00E-08	1.60E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '87	05-Jun-87	1.60E-04	3.00E-05	5.00E-08	5.50E-04	4.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '87	22-Dec-87	3.60E-04	5.00E-05	5.00E-08	1.80E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '88	19-Apr-88	2.60E-04	5.00E-05	5.00E-08	1.90E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '88	28-Jul-88	3.10E-05	1.90E-05	5.00E-08	1.60E-04	4.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '89	07-Apr-89	6.20E-04	5.00E-05	***	1.70E-03	1.00E-04	***	NS	NA	NA	NS	NA	NA
3rd '89	06-Jun-89	3.40E-04	3.00E-05	***	7.40E-04	3.00E-05	***	NS	NA	NA	NS	NA	NA
4th '89	07-Nov-89	5.10E-04	6.00E-05	7.00E-06	1.00E-03	7.00E-05	1.40E-05	NS	NA	NA	NS	NA	NA
1st '90	17-Apr-90	3.60E-04	3.00E-05	4.00E-06	4.80E-04	2.00E-05	2.20E-05	NS	NA	NA	NS	NA	NA
2nd '90	20-Jun-90	1.70E-04	2.00E-05	5.00E-08	3.20E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '90	17-Oct-90	8.80E-05	1.60E-05	5.00E-08	2.90E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '91	10-Apr-91	3.00E-04	3.00E-05	5.00E-06	4.10E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '91	11-Jun-91	3.10E-04	3.00E-05	2.00E-07	4.70E-04	2.00E-05	2.00E-07	NS	NA	NA	NS	NA	NA
3rd '91	20-Nov-91	5.00E-04	4.00E-05	5.00E-08	1.50E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
1st '92	22-Apr-92	2.00E-05	8.00E-06	2.00E-06	9.60E-05	1.40E-05	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '92	10-Jun-92	6.50E-06	6.00E-06	2.00E-06	1.20E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '92	10-Jun-92	1.20E-04	4.00E-05	3.00E-06	1.21E-03	8.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '93	13-Apr-93	1.80E-05	1.70E-05	3.00E-06	2.10E-04	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '93	26-Jun-93	5.20E-05	1.90E-05	3.00E-06	1.70E-05	3.60E-05	2.00E-05	NS	NA	NA	NS	NA	NA
3rd '93	12-Oct-93	5.10E-05	2.30E-05	3.00E-06	7.10E-04	6.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '94	11-May-94	1.20E-04	1.00E-05	3.00E-05	9.80E-04	1.60E-04	2.00E-04	NS	NA	NA	NS	NA	NA
2nd '94	19-Jul-94	3.73E-05	1.60E-06	8.40E-08	7.80E-05	7.10E-06	4.20E-07	NS	NA	NA	NS	NA	NA
3rd '94	28-Nov-94	2.40E-04	1.50E-05	1.70E-07	2.60E-04	1.30E-05	8.30E-07	NS	NA	NA	NS	NA	NA
1st '95	11-Apr-95	8.40E-05	6.10E-06	1.50E-07	1.20E-04	1.10E-05	7.50E-05	NS	NA	NA	NS	NA	NA
2nd '95	06-Jul-95	1.90E-05	1.50E-06	1.40E-07	4.50E-05	4.30E-06	7.20E-07	NS	NA	NA	NS	NA	NA
3rd '95	15-Nov-95	1.20E-04	6.80E-06	1.40E-07	1.00E-05	5.80E-06	7.10E-07	NS	NA	NA	NS	NA	NA
1st '96	23-Apr-96	8.30E-05	3.30E-06	1.90E-07	6.80E-05	6.30E-06	1.80E-07	NS	NA	NA	NS	NA	NA
2nd '96 *	31-Jul-96							NS	NA	NA	NS	NA	NA
3rd '96	14-Nov-96	3.60E-05	2.50E-06	1.60E-07	8.50E-05	5.60E-06	8.40E-07	NS	NA	NA	NS	NA	NA
1st '97	21-Apr-97	3.30E-05	2.30E-06	1.70E-07	4.40E-05	4.80E-06	8.40E-07	NS	NA	NA	NS	NA	NA
3rd '97	05-Sep-97	5.40E-06	3.50E-07	1.56E-07	3.20E-05	9.00E-07	7.83E-07	NS	NA	NA	NS	NA	NA
4th '97	20-Nov-97	8.90E-06	7.20E-07	5.40E-07	3.40E-04	6.70E-06	1.10E-07	NS	NA	NA	NS	NA	NA
1st '98	23-Mar-98	<9.20E-05	9.20E-05	9.20E-05	<4.60E-04	4.60E-04	4.60E-04	NS	NA	NA	NS	NA	NA
2nd '98	16-Jun-98	< 6.50E-08	6.50E-08	6.50E-08	<3.20E-07	3.20E-07	3.20E-07	NS	NA	NA	NS	NA	NA
4th '98	05-Nov-98	4.20E-05	1.00E-06	1.10E-07	1.70E-04	1.00E-05	5.50E-07	NS	NA	NA	NS	NA	NA
2nd '99	15-Apr-99	6.20E-05	1.00E-06	1.00E-07	1.40E-04	7.00E-06	1.00E-07	NS	NA	NA	NS	NA	NA
3rd '99	07-Jul-99	5.45E-05	1.40E-06	8.30E-08	9.20E-05	4.00E-06	4.20E-07	NS	NA	NA	NS	NA	NA
4th '99	02-Dec-99	1.10E-04	3.00E-06	2.20E-07	2.80E-05	1.00E-06	1.10E-06	NS	NA	NA	NS	NA	NA
2nd '00	21-Apr-00	3.70E-05	1.00E-06	2.40E-07	2.70E-04	1.00E-05	1.20E-06	NS	NA	NA	NS	NA	NA
2nd '00	22-Jun-00	2.90E-05	1.00E-06	3.30E-07	2.80E-04	2.00E-05	1.70E-06	NS	NA	NA	NS	NA	NA
4th '00	21-Dec-00	2.30E-06	1.40E-06	3.70E-07	3.30E-04	5.00E-05	1.90E-06	NS	NA	NA	NS	NA	NA
1st '01	30-Apr-01	2.10E-05	1.00E-06	1.50E-07	<7.6E-07	N/A	7.60E-07	NS	NA	NA	NS	NA	NA
2nd '01	14-Jun-01	1.30E-06	4.00E-08	1.20E-07	1.80E-06	3.00E-08	5.90E-07	NS	NA	NA	NS	NA	NA
4th '01	17-Dec-01	3.70E-05	7.67E-07	8.30E-08	6.72E-05	2.62E-06	6.00E-07	NS	NA	NA	NS	NA	NA
1st '02	07-May-02	4.90E-05	2.40E-06	7.60E-07	1.28E-04	5.61E-06	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '02	07-Jul-02	8.88E-05	4.32E-06	7.60E-07	8.33E-05	4.32E-06	1.00E-05	NS	NA	NA	NS	NA	NA

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
4th '02	15-Dec-02	1.50E-04	6.20E-06	7.60E-07	3.16E-04	1.07E-05	1.00E-05	NS	NA	NA	NS	NA	NA
1st '03	21-Mar-03	5.00E-05	3.40E-06	2.71E-06	<4.2e-6		4.20E-06	NS	NA	NA	NS	NA	NA
2nd '03	10-Jun-03	5.60E-05	2.00E-06	4.10E-07	1.88E-04	5.14E-06	8.20E-08	NS	NA	NA	NS	NA	NA
4th '03	20-Nov-03	3.20E-04	8.20E-06	1.70E-07	4.89E-04	1.25E-05	8.30E-07	NS	NA	NA	NS	NA	NA
1st '04	08-Apr-04	6.29E-05	4.10E-06	2.00E-07	1.94E-05	4.00E-06	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '04	12-Jun-04	6.51E-05	3.40E-06	1.30E-07	1.87E-05	3.90E-06	6.50E-07	NS	NA	NA	NS	NA	NA
4th '04	30-Nov-04	7.50E-05	4.60E-06	2.00E-08	4.45E-04	1.40E-05	3.00E-07	NS	NA	NA	NS	NA	NA
1st '05	21-Apr-05	4.90E-05	2.70E-06	1.30E-07	1.27E-04	4.80E-06	6.50E-07	NS	NA	NA	NS	NA	NA
2nd '05	13-Jun-05	2.30E-05	2.10E-06	1.50E-07	4.70E-05	5.10E-06	7.60E-07	NS	NA	NA	NS	NA	NA
4th '05	10-Nov-05	7.40E-05	3.50E-06	1.20E-10	2.40E-06	8.10E-08	5.80E-10	NS	NA	NA	NS	NA	NA
1st '06	03-Apr-06	1.00E-04	6.00E-06	5.00E-08	6.54E-04	1.50E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '06	16-Jun-06	9.50E-05	5.90E-06	5.00E-08	4.48E-04	1.40E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '06	28-Nov-06	8.13E-05	4.10E-06	2.20E-07	3.25E-04	1.12E-06	1.00E-05	NS	NA	NA	NS	NA	NA
1st '07	30-Mar-07	4.30E-05	2.60E-06	1.70E-07	2.64E-04	7.20E-06	8.60E-07	NS	NA	NA	NS	NA	NA
2nd '07	1-Jun-07	5.10E-05	3.20E-06	2.30E-07	5.30E-04	1.40E-06	1.20E-06	NS	NA	NA	NS	NA	NA
4th '07	23-Nov-07	7.30E-05	6.60E-06	5.00E-08	7.00E-04	2.20E-05	1.10E-06	NS	NA	NA	NS	NA	NA
1st '08	22-Apr-08	2.80E-06	2.80E-06	7.20E-07	4.40E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '08	18-Jun-08	3.20E-06	3.30E-06	1.80E-06	1.40E-04	3.30E-05	5.50E-05	NS	NA	NA	NS	NA	NA
4th '08	12-Dec-08	7.30E-05	3.20E-06	7.40E-07	4.40E-04	2.50E-05	3.20E-05	NS	NA	NA	NS	NA	NA
1st '09	28-Apr-09	5.25E-05	3.60E-06	1.10E-06	1.90E-04	1.50E-05	2.20E-05	NS	NA	NA	NS	NA	NA
2nd '09	17-Jun-09	2.30E-05	1.60E-05	5.20E-07	4.30E-05	1.00E-05	1.70E-05	NS	NA	NA	NS	NA	NA
4th '09	18-Dec-09	5.50E-05	3.50E-06		3.00E-04	1.10E-05		NS	NA	NA	NS	NA	NA
1st '10	13-May-10	1.90E-04	6.10E-06	9.40E-07	5.10E-04	2.40E-05	3.10E-05	NS	NA	NA	NS	NA	NA
2nd '10	18-Jun-10	2.30E-05	2.00E-06	7.70E-07	8.30E-05	1.80E-05	2.90E-05	NS	NA	NA	NS	NA	NA
4th '10	20-Dec-10	8.60E-06	9.10E-07	3.90E-07	1.10E-07	6.80E-07	1.10E-06	NS	NA	NA	NS	NA	NA
2nd '11	23-Jun-11	2.10E-07	1.20E-07	1.40E-07	<2.2E-06	1.30E-06	2.20E-06	NS	NA	NA	NS	NA	NA
3rd '11	28-Jul-11	4.20E-06	5.40E-07	2.70E-07	2.30E-04	2.50E-06	2.30E-06	NS	NA	NA	NS	NA	NA
4th '11	23-Nov-11	7.70E-06	6.80E-07	2.30E-07	<5.8E-08	3.40E-07	5.80E-07	NS	NA	NA	NS	NA	NA
2nd '12	11-Apr-12	1.50E-05	9.50E-07	2.60E-07	<7.0E-07	6.00E-07	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '12	11-Jun-12	8.30E-06	5.40E-07	1.20E-07	1.40E-04	8.30E-06	6.50E-06	NS	NA	NA	NS	NA	NA
4th '12	06-Nov-12	2.34E-05	4.10E-07	7.71E-08	4.59E-04	3.83E-06	6.18E-07	NS	NA	NA	NS	NA	NA
2nd'13	30-Apr-13	9.04E-05	1.68E-06	8.58E-07	2.24E-04	4.46E-06	4.68E-06	NS	NA	NA	NS	NA	NA
3rd '13	20-Jun-13	2.58E-06	9.59E-07	8.06E-07	1.06E-04	2.30E-06	3.28E-06	NS	NA	NA	NS	NA	NA
4th '13	14-Nov-13	1.43E-04	3.70E-06	2.17E-06	4.65E-04	1.17E-05	1.80E-05	NS	NA	NA	NS	NA	NA
2nd '14	16-Apr-14	2.53E-05	6.29E-07	5.51E-07	5.70E-05	2.21E-06	4.52E-06	NS	NA	NA	NS	NA	NA
3rd '14	10-Jun-14	2.53E-05	5.55E-07	5.77E-07	7.68E-05	2.08E-06	3.66E-06	NS	NA	NA	NS	NA	NA
4th '14	25-Nov-14	7.41E-05	1.90E-06	1.53E-06	2.98E-04	6.48E-06	1.06E-05	NS	NA	NA	NS	NA	NA
1st '15	21-Apr-15	1.31E-04	4.21E-06	5.92E-06	6.33E-04	1.17E-05	1.45E-05	3.35E-04	2.41E-05	1.17E-05	7.35E-06	8.57E-07	7.82E-07
2nd '15	15-Jun-15	2.39E-04	4.43E-06	3.45E-06	1.08E-03	2.02E-05	3.25E-05	5.24E-04	2.41E-05	9.70E-06	2.38E-05	2.12E-06	7.36E-07
4th '15	23-Nov-15	1.03E-04	3.95E-06	4.25E-06	4.78E-04	1.06E-05	1.75E-05	1.51E-04	1.53E-05	7.71E-06	2.30E-05	1.53E-06	4.23E-07
2nd '16	14-Apr-16	1.28E-04	4.20E-06	5.79E-06	3.56E-04	1.14E-05	1.86E-05	6.33E-05	8.20E-06	5.95E-06	1.66E-06	4.81E-07	5.40E-07
2nd '16	14-Jun-16	5.91E-05	3.97E-06	6.94E-06	1.73E-04	2.02E-05	5.42E-05	3.15E-05	1.90E-06	1.54E-06	2.95E-06	8.26E-07	1.47E-06
4th '16	11-Nov-16	2.66E-04	4.22E-06	2.03E-06 (5.00E-08)	1.28E-03	2.57E-05	4.95E-05 (1.00E-06)	4.33E-04	2.58E-05	8.24E-06 (2.00E-07)	3.87E-06	7.58E-07	1.03E-06 (2.00E-07)
2nd '17	13-Apr-17	3.84E-05	2.55E-06	4.35E-06 (5.00E-08)	8.85E-04	1.51E-05	2.23E-05 (1.00E-06)	6.97E-04	1.21E-05	3.52E-06 (2.00E-07)	6.11E-06	9.91E-07	1.15E-06 (2.00E-07)
2nd '17	19-Jun-17	1.56E-04	1.77E-06	8.68E-07 (5.00E-08)	1.15E-04	3.18E-06	6.07E-06 (1.00E-06)	3.29E-04	6.61E-06	1.44E-06 (2.00E-07)	1.58E-05	1.37E-06	5.35E-07 (2.00E-07)
4th '17	02-Nov-17	2.24E-04	4.17E-06	2.01E-06 (5.00E-08)	9.23E-04	1.34E-05	1.94E-05 (1.00E-06)	3.34E-04	9.09E-06	3.50E-06 (2.00E-07)	1.52E-05	1.35E-06	1.80E-07 (2.00E-07)
2nd '18	26-Apr-18	2.63E-04	2.93E-06	7.38E-7 (5.00E-08)	5.85E-04	9.12E-06	8.17E-6 (1.00E-06)	4.60E-04	7.74E-06	1.56E-06 (2.00E-07)	5.49E-06	2.15E-06	3.47E-6 (2.00E-07)
2nd '18	20-Jun-18	2.13E-04	4.85E-06	3.93E-06 (5.00E-08)	6.02E-04	1.28E-05	2.33E-05 (1.00E-06)	4.98E-04	9.07E-06	2.43E-06 (2.00E-07)	9.46E-06	1.05E-06	1.07E-6 (2.00E-07)
4th '18	02-Nov-18	1.71E-04	3.84E-06	3.48E-06 (5.00E-08)	5.54E-04	1.06E-05	1.55E-05 (1.00E-06)	5.25E-04	1.63E-05	4.23E-06 (2.00E-07)	4.17E-07	7.48E-07	1.45E-6 (2.00E-07)
2nd '19	25-Apr-19	4.15E-05	4.50E-06	6.02E-06 (5.00E-08)	3.18E-04	2.29E-05	3.18E-05 (1.00E-06)	1.55E-04	5.17E-06	2.42E-06 (2.00E-07)	3.05E-05	2.51E-06	3.89E-06 (2.00E-07)
2nd '19	06-Jun-19	1.12E-05	1.08E-06	1.79E-06 (5.00E-08)	1.41E-04	1.72E-05	3.49E-05 (1.00E-06)	4.41E-05	3.41E-06	2.39E-06 (2.00E-07)	1.65E-05	6.68E-06	1.24E-06 (2.00E-07)

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
4th '19	13-Nov-19	6.09E-04	6.16E-06	2.42E-06 (5.00E-08)	1.31E-03	1.82E-05	2.46E-05 (1.00E-06)	3.63E-04	6.29E-06	1.43E-06 (2.00E-07)	7.34E-06	1.18E-06	2.05E-06 (2.00E-07)

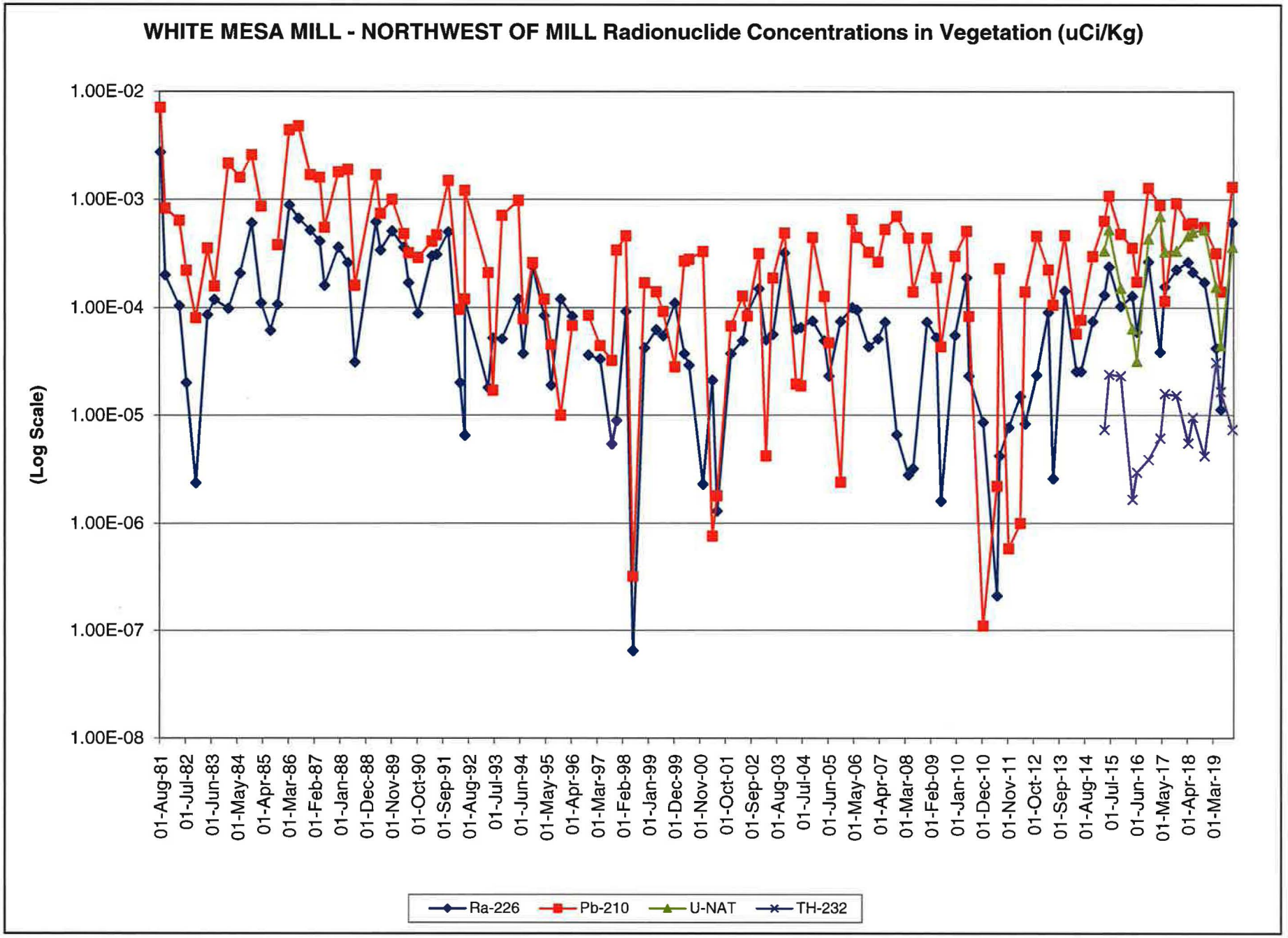
*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period

† NRC Regulatory Guide does not specify a Lower Limit of Detection (LLD) for Thorium 232 in vegetation (or any matrix). The LLD for Thorium 230 was used.

NS = Not Sampled

NA = Not Applicable

¥ The value in the MDC column is the sample-specific minimum detectable concentration. The MDC is based on the sample moisture, composition and other sample-specific variables. The value in parantheses is the method-specific lower limit of detection (LLD), which is a limit representing the detection capability of the measurement system. The LLDs in the data package are referred to as the Reporting limit (RL).


WHITE MESA MILL - NORTHWEST OF MILL Radionuclide Concentrations in Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Aug-81
01-Jul-82
01-Jun-83
01-May-84
01-Apr-85
01-Mar-86
01-Feb-87
01-Jan-88
01-Dec-88
01-Nov-89
01-Oct-90
01-Sep-91
01-Aug-92
01-Jul-93
01-Jun-94
01-May-95
01-Apr-96
01-Mar-97
01-Feb-98
01-Jan-99
01-Dec-99
01-Nov-00
01-Oct-01
01-Sep-02
01-Aug-03
01-Jul-04
01-Jun-05
01-May-06
01-Apr-07
01-Mar-08
01-Feb-09
01-Jan-10
01-Dec-10
01-Nov-11
01-Oct-12
01-Sep-13
01-Aug-14
01-Jul-15
01-Jun-16
01-May-17
01-Apr-18
01-Mar-19
Ra-226
Pb-210
U-NAT
TH-232

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
SOUTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
3rd '81	27-Aug-81	9.50E-04	2.00E-05	5.00E-08	1.50E-04	1.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '81	20-Oct-81	3.00E-05	3.00E-06	5.00E-08	1.50E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '82	15-Apr-82	1.37E-05	3.00E-06	3.00E-06	3.80E-04	4.00E-05	4.00E-05	NS	NA	NA	NS	NA	NA
3rd '82	01-Jul-82	3.40E-04	2.00E-05	5.00E-08	3.68E-03	2.70E-04	1.00E-07	NS	NA	NA	NS	NA	NA
4th '82	30-Nov-82	1.75E-05	3.00E-06	2.00E-06	7.92E-04	4.00E-06	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '83	13-Apr-83	7.13E-04	7.30E-05	9.00E-08	2.51E-03	3.00E-04	3.00E-04	NS	NA	NA	NS	NA	NA
3rd '83	01-Jul-83	5.39E-05	4.50E-06	2.00E-06	6.88E-04	4.30E-05	4.00E-05	NS	NA	NA	NS	NA	NA
4th '83	30-Jan-84	6.40E-05	7.00E-06	4.00E-06	1.20E-03	1.00E-04	4.00E-05	NS	NA	NA	NS	NA	NA
2nd '84	28-Jun-84	8.27E-05	6.30E-06	3.00E-09	1.80E-03	1.00E-04	9.00E-08	NS	NA	NA	NS	NA	NA
4th '84	14-Nov-84	2.72E-04	1.48E-04	2.00E-07	4.70E-03	7.20E-04	3.00E-07	NS	NA	NA	NS	NA	NA
2nd '85	27-Mar-85	4.73E-04	1.60E-07	3.00E-06	7.07E-04	3.60E-05	3.00E-05	NS	NA	NA	NS	NA	NA
3rd '85	15-Jul-85	6.60E-05	7.00E-06	4.00E-06	4.90E-04	3.00E-05	3.00E-05	NS	NA	NA	NS	NA	NA
4th '85	09-Oct-85	2.83E-04	2.00E-05	7.00E-06	1.50E-03	1.00E-04	7.00E-05	NS	NA	NA	NS	NA	NA
2nd '86	24-Mar-86	1.57E-04	1.00E-05	4.00E-06	4.14E-03	1.80E-04	3.00E-05	NS	NA	NA	NS	NA	NA
3rd '86	10-Jul-86	3.78E-04	1.00E-05	2.00E-06	1.65E-02	7.00E-04	1.00E-04	NS	NA	NA	NS	NA	NA
4th '86	18-Dec-86	2.60E-04	2.00E-05	2.00E-06	1.70E-03	1.00E-04	1.00E-04	NS	NA	NA	NS	NA	NA
2nd '87	20-Apr-87	4.10E-04	7.00E-05	5.00E-08	2.20E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '87	05-Jun-87	2.90E-04	4.00E-05	5.00E-08	7.50E-04	5.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
4th '87	22-Dec-87	1.80E-04	3.00E-05	5.00E-08	2.40E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '88	19-Apr-88	2.30E-04	5.00E-05	5.00E-08	2.90E-03	1.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '88	28-Jul-88	1.50E-04	3.00E-05	5.00E-08	4.30E-03	2.00E-04	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '89	07-Apr-89	3.10E-04	4.00E-05	***	4.20E-03	1.00E-04	***	NS	NA	NA	NS	NA	NA
3rd '89	06-Jun-89	1.30E-04	2.00E-05	***	1.50E-03	1.00E-04	***	NS	NA	NA	NS	NA	NA
4th '89	07-Nov-89	4.30E-04	5.00E-05	1.40E-05	3.50E-03	1.40E-04	2.70E-05	NS	NA	NA	NS	NA	NA
1st '90	17-Apr-90	2.50E-04	3.00E-05	5.00E-06	2.39E-03	5.00E-05	2.50E-05	NS	NA	NA	NS	NA	NA
2nd '90	20-Jun-90	1.10E-04	2.00E-05	5.00E-08	6.60E-04	3.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '90	17-Oct-90	6.10E-05	1.40E-05	5.00E-08	6.10E-04	3.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '91	10-Apr-91	3.40E-05	1.10E-05	5.00E-06	2.20E-04	1.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '91	11-Jun-91	8.00E-05	6.00E-06	2.00E-07	1.20E-04	1.00E-05	2.00E-07	NS	NA	NA	NS	NA	NA
3rd '91	20-Nov-91	6.50E-05	1.40E-05	5.00E-08	9.10E-04	5.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '92	22-Apr-92	1.60E-05	7.00E-06	2.00E-06	3.20E-04	2.00E-05	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '92	10-Jun-92	1.90E-05	1.00E-05	2.00E-07	2.20E-04	2.00E-05	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '92	10-Jun-92	1.60E-05	1.80E-05	3.00E-06	7.60E-04	6.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '93	13-Apr-93	2.60E-05	2.00E-05	3.00E-06	3.40E-04	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
2nd '93	26-Jun-93	3.00E-05	1.40E-05	3.00E-06	0.00E+00	3.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
3rd '93	12-Oct-93	3.10E-05	1.60E-05	3.00E-06	4.20E-04	6.00E-05	2.00E-05	NS	NA	NA	NS	NA	NA
1st '94	11-May-94	2.00E-05	5.00E-06	3.00E-05	3.90E-04	8.00E-05	2.00E-04	NS	NA	NA	NS	NA	NA
2nd '94	19-Jul-94	1.75E-05	1.70E-06	7.60E-08	1.30E-04	7.80E-06	3.80E-07	NS	NA	NA	NS	NA	NA
3rd '94	28-Nov-94	1.00E-04	9.00E-06	1.50E-07	2.60E-04	1.20E-05	7.40E-07	NS	NA	NA	NS	NA	NA
1st '95	11-Apr-95	1.70E-05	1.50E-06	1.60E-07	1.60E-04	1.50E-05	8.10E-07	NS	NA	NA	NS	NA	NA
2nd '95	06-Jul-95	6.40E-06	6.00E-07	1.40E-07	4.40E-05	4.20E-06	7.00E-07	NS	NA	NA	NS	NA	NA
3rd '95	15-Nov-95	2.30E-05	2.20E-06	1.70E-07	6.60E-05	9.60E-06	8.30E-07	NS	NA	NA	NS	NA	NA
1st '96	23-Apr-96	4.20E-05	2.20E-06	1.70E-07	1.00E-04	6.70E-06	1.80E-07	NS	NA	NA	NS	NA	NA
2nd '96 *	31-Jul-96							NS	NA	NA	NS	NA	NA
3rd '96	14-Nov-96	2.10E-05	2.00E-06	1.60E-07	1.90E-04	7.30E-06	8.20E-07	NS	NA	NA	NS	NA	NA
1st '97	21-Apr-97	5.50E-06	4.20E-07	1.40E-07	3.30E-05	3.90E-06	7.00E-07	NS	NA	NA	NS	NA	NA
3rd '97	05-Sep-97	5.30E-06	3.20E-07	1.26E-07	1.90E-05	6.90E-07	6.34E-07	NS	NA	NA	NS	NA	NA
4th '97	20-Nov-97	2.50E-05	9.50E-07	5.90E-07	1.30E-04	4.70E-06	1.20E-07	NS	NA	NA	NS	NA	NA
1st '98	23-Mar-98	<7.90E-05	7.90E-05	7.90E-05	<3.90E-04	3.90E-04	3.90E-04	NS	NA	NA	NS	NA	NA
2nd '98	16-Jun-98	3.60E-07	1.40E-07	3.30E-08	<1.7E-07	1.70E-07	1.70E-07	NS	NA	NA	NS	NA	NA
4th '98	05-Nov-98	4.30E-05	1.00E-06	7.60E-08	2.50E-04	1.00E-05	3.80E-07	NS	NA	NA	NS	NA	NA
2nd '99	15-Apr-99	2.40E-05	1.00E-06	1.20E-07	1.70E-04	8.00E-06	6.20E-07	NS	NA	NA	NS	NA	NA
3rd '99	07-Jul-99	2.23E-05	8.60E-07	1.20E-07	2.30E-04	7.00E-06	5.90E-07	NS	NA	NA	NS	NA	NA
4th '99	02-Dec-99	1.50E-04	3.00E-06	2.00E-07	1.70E-05	1.00E-06	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '00	21-Apr-00	1.00E-04	2.00E-06	1.20E-07	1.10E-04	7.00E-06	6.10E-07	NS	NA	NA	NS	NA	NA
2nd '00	22-Jun-00	1.30E-06	1.00E-07	2.40E-07	2.00E-04	1.00E-05	1.20E-06	NS	NA	NA	NS	NA	NA
4th '00	21-Dec-00	1.20E-06	9.00E-07	2.40E-07	1.20E-04	3.00E-05	1.20E-06	NS	NA	NA	NS	NA	NA
1st '01	30-Apr-01	1.80E-06	1.00E-07	1.70E-07	<8.3E-07	N/A	8.30E-07	NS	NA	NA	NS	NA	NA
2nd '01	14-Jun-01	2.60E-06	2.00E-07	9.90E-08	1.10E-06	2.00E-08	5.00E-07	NS	NA	NA	NS	NA	NA
4th '01	17-Dec-01	2.63E-06	4.60E-05	1.20E-07	9.40E-05	3.72E-06	6.00E-07	NS	NA	NA	NS	NA	NA
1st '02	07-May-02	3.50E-05	2.20E-06	7.60E-07	1.36E-04	5.61E-06	1.00E-05	NS	NA	NA	NS	NA	NA
2nd '02	07-Jul-02	4.02E-05	2.34E-06	7.60E-07	7.04E-05	4.11E-06	1.00E-05	NS	NA	NA	NS	NA	NA
4th '02	15-Dec-02	8.10E-05	3.90E-06	7.60E-07	2.87E-04	8.54E-06	1.00E-05	NS	NA	NA	NS	NA	NA

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
SOUTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
1st '03	21-Mar-03	3.70E-05	2.60E-06	2.41E-06	2.69E-05	2.01E-06	3.73E-06	NS	NA	NA	NS	NA	NA
2nd '03	10-Jun-03	1.30E-05	1.00E-06	5.20E-07	<1.00E-07		1.00E-07	NS	NA	NA	NS	NA	NA
4th '03	20-Nov-03	1.60E-04	1.30E-05	1.20E-07	1.42E-04	6.42E-06	5.90E-07	NS	NA	NA	NS	NA	NA
1st '04	08-Apr-04	1.40E-04	7.70E-06	1.10E-07	6.10E-06	2.70E-06	5.50E-07	NS	NA	NA	NS	NA	NA
2nd '04	12-Jun-04	6.51E-05	3.20E-06	1.50E-07	5.27E-05	4.90E-06	7.60E-07	NS	NA	NA	NS	NA	NA
4th '04	30-Nov-04	8.40E-05	5.70E-06	3.00E-08	3.39E-04	1.60E-05	3.00E-07	NS	NA	NA	NS	NA	NA
1st '05	21-Apr-05	1.70E-05	1.60E-06	1.30E-07	4.50E-05	3.50E-06	6.50E-07	NS	NA	NA	NS	NA	NA
2nd '05	13-Jun-05	1.50E-05	1.60E-06	1.40E-07	7.00E-05	5.10E-06	6.90E-07	NS	NA	NA	NS	NA	NA
4th '05	10-Nov-05	3.80E-05	2.10E-06	8.60E-10	1.20E-06	4.80E-08	4.30E-10	NS	NA	NA	NS	NA	NA
1st '06	03-Apr-06	1.00E-04	6.00E-06	5.00E-08	3.30E-04	1.10E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '06	16-Jun-06	3.40E-05	2.50E-06	5.00E-08	1.37E-04	6.00E-06	1.00E-06	NS	NA	NA	NS	NA	NA
4th '06	28-Nov-06	7.31E-05	3.20E-06	1.60E-07	2.98E-04	8.50E-06	8.20E-07	NS	NA	NA	NS	NA	NA
1st '07	30-Mar-07	3.00E-05	2.20E-06	1.70E-07	3.20E-04	7.90E-06	8.40E-07	NS	NA	NA	NS	NA	NA
2nd '07	1-Jun-07	1.10E-04	4.60E-06	2.3-07	3.20E-04	1.10E-05	1.10E-06	NS	NA	NA	NS	NA	NA
4th '07	23-Nov-07	5.60E-05	5.20E-06	5.00E-08	6.40E-04	1.90E-05	1.00E-06	NS	NA	NA	NS	NA	NA
1st '08	22-Apr-08	3.20E-05	2.30E-06	7.20E-07	2.30E-04	1.50E-05	1.00E-06	NS	NA	NA	NS	NA	NA
2nd '08	18-Jun-08	1.25E-05	2.20E-06	1.80E-06	5.00E-05	3.00E-05	4.80E-03	NS	NA	NA	NS	NA	NA
4th '08	12-Dec-08	9.20E-05	4.10E-06	9.60E-07	4.10E-04	3.00E-05	4.00E-05	NS	NA	NA	NS	NA	NA
1st '09	28-Apr-09	2.60E-05	2.90E-06	1.40E-06	3.70E-05	1.50E-06	2.50E-05	NS	NA	NA	NS	NA	NA
2nd '09	17-Jun-09	2.40E-05	1.40E-06	3.90E-07	3.50E-05	7.90E-06	1.30E-05	NS	NA	NA	NS	NA	NA
4th '09	18-Dec-09	3.10E-05	2.30E-06		2.10E-04	8.40E-06		NS	NA	NA	NS	NA	NA
1st '10	13-May-10	2.00E-05	2.10E-06	9.40E-07	5.60E-05	1.50E-05	2.40E-05	NS	NA	NA	NS	NA	NA
2nd '10	18-Jun-10	1.10E-05	1.30E-06	6.60E-07	7.80E-05	1.60E-05	2.50E-05	NS	NA	NA	NS	NA	NA
4th '10	20-Dec-10	6.70E-06	9.10E-07	4.80E-07	8.00E-07	7.90E-07	1.30E-06	NS	NA	NA	NS	NA	NA
2nd '11	23-Jun-11	<1.7E-07	6.90E-08	1.70E-07	<2.5E-06	1.50E-06	2.50E-06	NS	NA	NA	NS	NA	NA
3rd '11	27-Jul-11	1.60E-05	1.00E-06	2.60E-07	9.50E-05	1.60E-06	1.70E-06	NS	NA	NA	NS	NA	NA
4th '11	23-Nov-11	7.80E-07	2.50E-07	2.30E-07	<5.9E-07	3.50E-07	5.90E-07	NS	NA	NA	NS	NA	NA
2nd '12	11-Apr-12	5.00E-06	6.00E-07	3.00E-07	<7.0E-07	7.00E-07	1.00E-06	NS	NA	NA	NS	NA	NA
3rd '12	11-Jun-12	1.90E-08	6.20E-08	1.10E-07	<2.5E-07	1.30E-06	2.20E-06	NS	NA	NA	NS	NA	NA
4th '12	06-Nov-12	1.49E-05	3.41E-07	4.25E-08	4.45E-04	4.01E-06	8.57E-07	NS	NA	NA	NS	NA	NA
2nd '13	30-Apr-13	4.50E-05	1.19E-06	5.39E-07	3.62E-04	6.30E-06	9.90E-06	NS	NA	NA	NS	NA	NA
3rd '13	20-Jun-13	1.51E-05	1.06E-06	1.96E-06	6.71E-05	2.93E-06	6.24E-06	NS	NA	NA	NS	NA	NA
4th '13	14-Nov-13	1.18E-04	3.39E-06	2.97E-06	5.92E-04	1.27E-05	1.62E-05	NS	NA	NA	NS	NA	NA
2nd '14	16-Apr-14	4.65E-05	1.08E-06	7.35E-07	2.13E-04	5.93E-06	1.31E-05	NS	NA	NA	NS	NA	NA
3rd '14	10-Jun-14	1.23E-05	4.97E-07	6.97E-07	2.46E-05	1.84E-06	4.63E-06	NS	NA	NA	NS	NA	NA
4th '14	25-Nov-14	1.16E-04	2.25E-06	1.53E-06	4.43E-04	1.04E-05	1.94E-05	NS	NA	NA	NS	NA	NA
1st '15	21-Apr-15	2.27E-04	5.01E-06	4.08E-06	5.90E-04	1.16E-05	1.67E-05	4.33E-04	1.86E-05	5.14E-06	3.31E-05	2.15E-06	1.14E-06
2nd '15	15-Jun-15	3.90E-05	1.88E-06	2.71E-06	5.29E-04	1.61E-05	3.36E-05	7.78E-05	8.47E-06	6.43E-06	1.08E-05	1.28E-06	1.21E-06
4th '15	23-Nov-15	1.83E-04	6.96E-06	9.64E-06	8.94E-04	1.43E-05	2.03E-05	4.88E-04	2.91E-05	9.00E-06	7.92E-06	7.67E-07	3.20E-07
2nd '16	14-Apr-16	1.67E-04	4.10E-06	3.65E-06	7.99E-04	2.08E-05	4.12E-05	2.10E-04	2.24E-05	1.39E-05	5.58E-05	5.42E-06	2.10E-06
2nd '16	14-Jun-16	2.90E-05	1.88E-06	3.85E-06	1.95E-04	2.18E-05	5.93E-05	7.04E-05	3.17E-06	1.92E-06	3.70E-06	8.08E-07	1.04E-06
4th '16	11-Nov-16	8.39E-05	2.71E-06	3.21E-06 (5.00E-08)	1.21E-03	2.15E-05	3.78E-05 (1.00E-06)	1.27E-03	4.84E-05	1.10E-05 (2.00E-07)	7.71E-06	1.08E-06	1.32E-06 (2.00E-07)
2nd '17	13-Apr-17	3.05E-05	2.30E-06	4.61E-06 (5.00E-08)	6.14E-04	1.26E-05	1.71E-05 (1.00E-06)	8.20E-04	1.28E-05	2.31E-06 (2.00E-07)	2.91E-06	7.40E-07	1.21E-06 (2.00E-07)
2nd '17	19-Jun-17	3.98E-05	1.17E-06	1.04E-06 (5.00E-08)	5.25E-05	2.68E-06	5.93E-06 (1.00E-06)	1.77E-04	4.52E-06	1.32E-06 (2.00E-07)	1.08E-05	1.12E-06	1.07E-06 (2.00E-07)
4th '17	02-Nov-17	9.70E-05	3.12E-06	3.05E-06 (5.00E-08)	6.36E-04	1.14E-05	1.72E-05 (1.00E-06)	2.52E-04	7.28E-06	3.25E-06 (2.00E-07)	6.82E-06	1.05E-06	2.11E-06 (2.00E-07)
2nd '18	26-Apr-18	5.16E-05	1.21E-06	8.10E-07 (5.00E-08)	3.83E-04	8.29E-06	1.51E-05 (1.00E-06)	4.02E-04	6.92E-06	1.50E-06 (2.00E-07)	4.93E-06	1.99E-06	3.69E-06 (2.00E-07)
2nd '18	20-Jun-18	5.14E-05	2.70E-06	4.37E-06 (5.00E-08)	9.22E-05	7.25E-06	2.08E-05 (1.00E-06)	1.49E-04	4.71E-06	2.17E-06 (2.00E-07)	3.18E-06	5.81E-07	7.45E-07 (2.00E-07)
4th '18	02-Nov-18	1.04E-04	3.19E-06	3.73E-06 (5.00E-08)	4.03E-04	8.74E-06	1.33E-05 (1.00E-06)	6.50E-04	1.85E-05	3.65E-06 (2.00E-07)	9.67E-06	1.19E-06	1.61E-06 (2.00E-07)
2nd '19	25-Apr-19	7.27E-06	1.23E-06	2.84E-06 (5.00E-08)	6.61E-05	1.22E-05	2.95E-05 (1.00E-06)	1.96E-04	5.58E-06	1.78E-06 (2.00E-07)	9.27E-06	1.29E-06	1.30E-06 (2.00E-07)
2nd '19	06-Jun-19	3.54E-05	1.58E-06	2.25E-06 (5.00E-08)	2.18E-04	1.90E-05	2.89E-05 (1.00E-06)	7.00E-05	4.74E-06	3.31E-06 (2.00E-07)	2.56E-05	9.31E-06	1.43E-05 (2.00E-07)

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
SOUTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	MDC¥	Pb-210	Pb-210	MDC¥	U-NAT	U-NAT	MDC¥	Th-232	Th-232	MDC¥
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (1.0E-06)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	LLD uCi/Kg (2.0E-07)†
4th '19	13-Nov-19	5.12E-05	1.70E-06	1.69E-06 (5.00E-08)	4.10E-04	1.12E-05	2.17E-05 (1.00E-06)	3.48E-05	1.99E-06	1.24E-06 (2.00E-07)	4.56E-06	8.00E-07	2.00E-05 (2.00E-07)

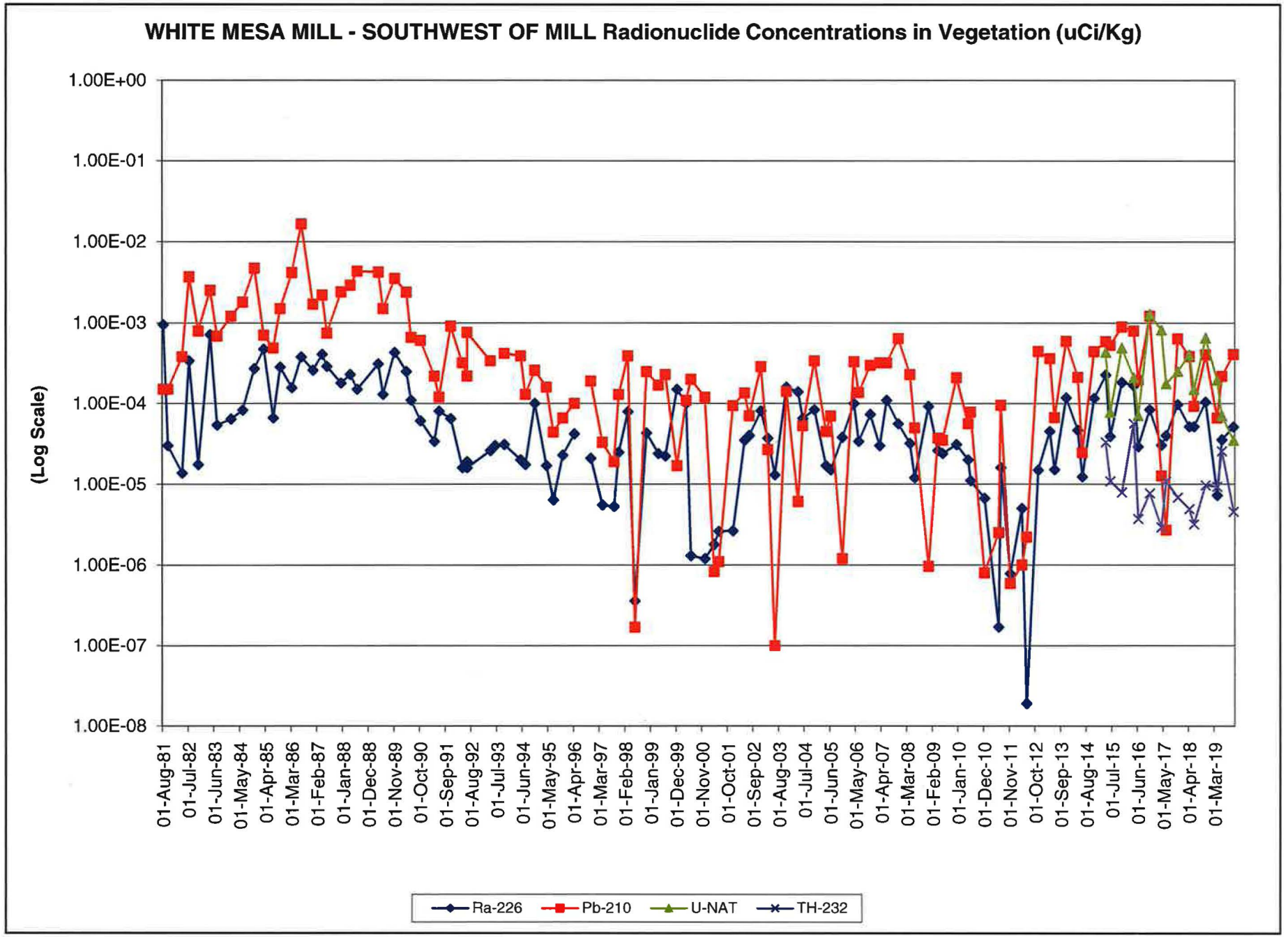
*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period

† NRC Regulatory Guide does not specify a Lower Limit of Detection (LLD) for Thorium 232 in vegetation (or any matrix). The LLD for Thorium 230 was used.

NS = Not Sampled

NA = Not Applicable

¥ The value in the MDC column is the sample-specific minimum detectable concentration. The MDC is based on the sample moisture, composition and other sample-specific variables. The value in parantheses is the method-specific lower limit of detection (LLD), which is a limit representing the detection capability of the measurement system. The LLDs in the data package are referred to as the Reporting limit (RL).


WHITE MESA MILL - SOUTHWEST OF MILL Radionuclide Concentrations in Vegetation (uCi/Kg)
(Log Scale)
1.00E+00
1.00E-01
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Aug-81
01-Jul-82
01-Jun-83
01-May-84
01-Apr-85
01-Mar-86
01-Feb-87
01-Jan-88
01-Dec-88
01-Nov-89
01-Oct-90
01-Sep-91
01-Aug-92
01-Jul-93
01-Jun-94
01-May-95
01-Apr-96
01-Mar-97
01-Feb-98
01-Jan-99
01-Dec-99
01-Nov-00
01-Oct-01
01-Sep-02
01-Aug-03
01-Jul-04
01-Jun-05
01-May-06
01-Apr-07
01-Mar-08
01-Feb-09
01-Jan-10
01-Dec-10
01-Nov-11
01-Oct-12
01-Sep-13
01-Aug-14
01-Jul-15
01-Jun-16
01-May-17
01-Apr-18
01-Mar-19
Ra-226
Pb-210
U-NAT
TH-232

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

Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	North East	Project:	DNMI00101
Sample ID:	496617001	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	13-NOV-19 09:00		
Receive Date:	15-NOV-19		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis													
Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"													
Thorium-232		1.01E-05	+/-1.24E-06	1.68E-06	2.00E-07	uCi/kg			HAKB	12/04/19	1404	1940453	1
Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"													
Uranium-233/234		7.96E-05	+/-1.80E-06	5.87E-07	2.00E-07	uCi/kg			HAKB	12/05/19	1728	1940454	2
Uranium-235/236		4.31E-06	+/-4.70E-07	1.50E-07	2.00E-07	uCi/kg							
Uranium-238		8.20E-05	+/-1.83E-06	4.48E-07	2.00E-07	uCi/kg							
Rad Gas Flow Proportional Counting													
GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"													
Lead-210		0.00086	+/-1.51E-05	2.41E-05	1.00E-06	uCi/kg			LXB3	12/12/19	1140	1941985	3
GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"													
Total Radium		0.000491	+/-4.77E-06	1.73E-06	5.00E-08	uCi/kg			LXB3	12/09/19	1938	1941984	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	11/19/19	1059	1940341

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, Th-01-RC Modified	
2	DOE EML HASL-300, U-02-RC Modified	
3	DOE RP280 Modified	
4	EPA 903.0	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"			62.7	(15%-125%)
Uranium-232 Tracer	Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"			85.2	(15%-125%)
Lead Carrier	GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"			107	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"			101	(25%-125%)

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

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Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	North East	Project:	DNMI00101
Sample ID:	496617001	Client ID:	DNMI001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method

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

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Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	North West	Project:	DNMI00101
Sample ID:	496617002	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	13-NOV-19 08:30		
Receive Date:	15-NOV-19		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis													
Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"													
Thorium-232		7.34E-06	+/-1.18E-06	2.05E-06	2.00E-07	uCi/kg			HAKB	12/07/19	1400	1940453	1
Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"													
Uranium-233/234		0.000174	+/-2.76E-06	4.80E-07	2.00E-07	uCi/kg			HAKB	12/05/19	1728	1940454	2
Uranium-235/236		9.52E-06	+/-7.25E-07	4.14E-07	2.00E-07	uCi/kg							
Uranium-238		0.000179	+/-2.80E-06	5.38E-07	2.00E-07	uCi/kg							
Rad Gas Flow Proportional Counting													
GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"													
Lead-210		0.00131	+/-1.82E-05	2.46E-05	1.00E-06	uCi/kg			LXB3	12/12/19	1140	1941985	3
GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"													
Total Radium		0.000609	+/-6.16E-06	2.42E-06	5.00E-08	uCi/kg			LXB3	12/09/19	1938	1941984	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	11/19/19	1059	1940341

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	DOE EML HASL-300, U-02-RC Modified	
3	DOE RP280 Modified	
4	EPA 903.0	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"			62.9	(15%-125%)
Uranium-232 Tracer	Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"			94.6	(15%-125%)
Lead Carrier	GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"			106	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"			105	(25%-125%)

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

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Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	North West	Project:	DNMI00101
Sample ID:	496617002	Client ID:	DNMI001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method

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

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Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	South West	Project:	DNMI00101
Sample ID:	496617003	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	13-NOV-19 08:00		
Receive Date:	15-NOV-19		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis													
Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"													
Thorium-232		4.56E-06	+/-8.00E-07	1.02E-06	2.00E-07	uCi/kg			HAKB	12/04/19	1404	1940453	1
Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"													
Uranium-233/234		1.71E-05	+/-8.49E-07	4.59E-07	2.00E-07	uCi/kg			HAKB	12/07/19	1340	1940454	2
Uranium-235/236		1.94E-06	+/-3.31E-07	3.90E-07	2.00E-07	uCi/kg							
Uranium-238		1.58E-05	+/-8.14E-07	3.95E-07	2.00E-07	uCi/kg							
Rad Gas Flow Proportional Counting													
GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"													
Lead-210		0.00041	+/-1.12E-05	2.17E-05	1.00E-06	uCi/kg			LXB3	12/12/19	1140	1941985	3
GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"													
Total Radium		5.12E-05	+/-1.70E-06	1.69E-06	5.00E-08	uCi/kg			LXB3	12/09/19	1938	1941984	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	11/19/19	1059	1940341

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	DOE EML HASL-300, U-02-RC Modified	
3	DOE RP280 Modified	
4	EPA 903.0	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th-232, Solid (Limited Volume) "Dry Weight Corrected"			72.1	(15%-125%)
Uranium-232 Tracer	Alphaspec U, Solid (Limited Volume) "Dry Weight Corrected"			82.2	(15%-125%)
Lead Carrier	GFPC, Pb210, Solid (Limited Volume) "Dry Weight Corrected"			107	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid (Limited Volume) "Dry Weight Corrected"			86.9	(25%-125%)

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

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Certificate of Analysis

Report Date: December 13, 2019

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

Client Sample ID:	South West	Project:	DNMI00101
Sample ID:	496617003	Client ID:	DNMI001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method

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
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

December 13, 2019

Ms. Kathy Weinel
Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado 80228

Re: Vegetation Analysis
Work Order: 496617

Dear Ms. Weinel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 15, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

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.
Vegetation Analysis
SDG: 496617

Case Narrative

Receipt Narrative
for
Energy Fuels Resources (USA), Inc.
SDG: 496617

December 13, 2019

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 November 15, 2019 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
496617001	North East
496617002	North West
496617003	South West

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: Radiochemistry.

Julie Robinson

Julie Robinson
Project Manager

Chain of Custody and Supporting Documentation

496 617

Sheet 1 of 1

CHAIN OF CUSTODY

Samples Shipped to: Gel Laboratories
2040 Savage Road
Charleston, SC 29407

Contact: Tanner Holliday
Ph: 435 678 2221
tholliday@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Late Fall Vegetation 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
North East	11/13/2019	900	Ra 226, U-Nat, Th-232, PB 210
North West	11/13/2019	830	Ra 226, U-Nat, Th-232, PB 210
South West	11/13/2019	800	Ra 226, U-Nat, Th-232, PB 210
			Weights:
			North East: 2400 Grams
			North West: 1730 Grams
			South West: 1700 Grams
			* Please use caution when handling samples. Some plants have thorns.

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	11/13/2019 1130		9:40 11/15/19
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

GEL Laboratories LLC

496617

SAMPLE RECEIPT & REVIEW FORM

Client: DNMI	**SDG/AR/COC/Work Order:**
Received By: ZKW	**Date Received:** 11/15/19
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground (UPS) Field Services Courier Other 1Z 187 Y44 02 9186 8425 1Z 187 Y44 02 9407 8818

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): ___ CPM / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. 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?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
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: 23°C
4	Daily check performed and passed on IR temperature gun?	✓			**Temperature Device Serial #:** IR3-18 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 for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ 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?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials SH Date 11/18/19 Page 1 of 1

GL-CHL-SR-001 Rev 6

GEL Laboratories LLC – Login Review Report

GEL Work Order/SDG: 496617 Late Fall Vegetation 2019
Client SDG: 496617
Project Manager: Julie Robinson
Project Name: DNMI00101 Vegetation Analysis
Purchase Order: DW16138
Package Level: LEVEL3
EDD Format: EIM_DNMI

Work Order Due Date: 15-DEC-19
Package Due Date: 13-DEC-19
EDD Due Date: 14-DEC-19
Due Date: 15-DEC-19
JAR1

Collector: C
Prelogin #: 20180673982
Project Workdef ID: 1310529
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
496617001	North East		13-NOV-19 09:00	15-NOV-19 09:40	-2	1	VEGETATION		30		1		
496617002	North West		13-NOV-19 08:30	15-NOV-19 09:40	-2	1	VEGETATION		30		1		
496617003	South West		13-NOV-19 08:00	15-NOV-19 09:40	-2	1	VEGETATION		30		1		

Client Sample ID	Status	Tests/Methods	Product Reference	Fax Date	PM Comments	Aux Data		Receive Codes
-001 North East	REVW	GFPC, Pb210, Solid (Limited Volume)			Limited Volume. Please run LCS/LCSD.Use caution when handling samples. Some plants have thorns.	Client Matrix	SOLID	LS
	REVW	Laboratory Composite – Dry prep instructions						
	REVW	GFPC, Total Alpha Radium, solid (Limited Volume)	Ra226					
	REVW	Alphaspec U, Solid (Limited Volume)	U-Natural					
	REVW	Alphaspec Th-232, Solid (Limited Volume)						
-002 North West	REVW	GFPC, Pb210, Solid (Limited Volume)			Limited Volume. Please run LCS/LCSD.Use caution when handling samples. Some plants have thorns.	Client Matrix	SOLID	LS
	REVW	Laboratory Composite – Dry prep instructions						
	REVW	GFPC, Total Alpha Radium, solid (Limited Volume)	Ra226					
	REVW	Alphaspec U, Solid (Limited Volume)	U-Natural					
	REVW	Alphaspec Th-232, Solid (Limited Volume)						
-003 South West	REVW	GFPC, Pb210, Solid (Limited Volume)			Limited Volume. Please run LCS/LCSD.Use caution when handling samples. Some plants have thorns.	Client Matrix	SOLID	LS
	REVW	Laboratory Composite – Dry prep instructions						
	REVW	GFPC, Total Alpha Radium, solid (Limited Volume)	Ra226					
	REVW	Alphaspec U, Solid (Limited Volume)	U-Natural					
	REVW	Alphaspec Th-232, Solid (Limited Volume)						

Product: LABCOMP_S **Workdef ID:** 1481531 **In Product Group?** No **Group Name:** **Group Reference:**
Method: **Path:** Rad Soil Prep SPRP
Product Description: Laboratory Composite – Dry prep instructions **Product Reference:**
Samples: 001, 002, 003 **Moisture Correction:** "As Received"
Parmname Check: All parmnames scheduled properly

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
							No

Product: GFC__PBS **Workdef ID:** 1481511 **In Product Group?** No **Group Name:** **Group Reference:**
Method: DOE RP280 Modified **Path:** Standard (Dry)
Product Description: GFPC, Pb210, Solid (Limited Volume) **Product Reference:**
Samples: 001, 002, 003 **Moisture Correction:** "Dry Weight Corrected"
Parmname Check: All parmnames scheduled properly

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
14255-04-0	Lead-210	.000001	uCi/kg	REG	Y	Y	No

Product: GFCTORAS **Workdef ID:** 1481534 **In Product Group?** No **Group Name:** **Group Reference:**
Method: EPA 903.0 **Path:** Standard (Dry)
Product Description: GFPC, Total Alpha Radium, solid (Limited Volume) **Product Reference:** Ra226
Samples: 001, 002, 003 **Moisture Correction:** "Dry Weight Corrected"
Parmname Check: All parmnames scheduled properly

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
	Total Radium	.00000005	uCi/kg	REG	Y	Y	No

Product: ASP__UUS **Workdef ID:** 1481535 **In Product Group?** No **Group Name:** **Group Reference:**
Method: DOE EML HASL-300, U-02-RC Modified **Path:** Standard (Dry)
Product Description: Alphaspec U, Solid (Limited Volume) **Product Reference:** U-Natural
Samples: 001, 002, 003 **Moisture Correction:** "Dry Weight Corrected"
Parmname Check: All parmnames scheduled properly

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	.0000002	uCi/kg	REG	Y	Y	No
15117-96-1/13982-	Uranium-235/236	.0000002	uCi/kg	REG	Y	Y	
7440-61-1	Uranium-238	.0000002	uCi/kg	REG	Y	Y	

GEL Laboratories LLC – Login Review Report

Product: ASP__THS **Workdef ID:** 1481536 **In Product Group?** No **Group Name:** **Group Reference:**

Method: DOE EML HASL-300, Th-01-RC Modified
Path: Standard (Dry)
Product Description: Alphaspec Th-232, Solid (Limited Volume)
Product Reference:
Samples: 001, 002, 003
Moisture Correction: "Dry Weight Corrected"
Parmname Check: All parmnames scheduled properly

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
7440-29-1	Thorium-232	.0000002	uCi/kg	REG	Y	Y	No

	Action	Product Name	Description	Samples
Contingent Tests				

Login Requirements:

Requirement	Include?	Comments
LOGIN: Are these vegetation sample?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry.
Login Reminder?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry. Log with lab comp.

Peer Review by:_____ Work Order (SDG#), PO# Checked?_____ C of C signed in receiver location? _____

Laboratory Certifications

List of current GEL Certifications as of 13 December 2019

State	Certification
Alaska	17-018
Alaska Drinking Water	SC00012
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	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122020-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-19-15
Utah NELAP	SC000122019-29
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Product: **Alphaspec Th-232, Solid (Limited Volume)**
Analytical Method: DOE EML HASL-300, Th-01-RC Modified
Analytical Procedure: GL-RAD-A-038 REV# 18
Analytical Batch: 1940453

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 23
Preparation Batch: 1940341

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
496617001	North East
496617002	North West
496617003	South West
1204435943	Method Blank (MB)
1204435944	Laboratory Control Sample (LCS)
1204435945	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" 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

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
1204435943 (MB)	Thorium-232	Result 0.000000338 < MDA 0.000000813 > RDL 0.0000002 uCi/kg

Technical Information

Recounts
Sample 496617002 (North West) was given additional clean-up steps and recounted in order to improve the resolution. The recount is reported.

Product: **Alphaspec U, Solid (Limited Volume)**
Analytical Method: DOE EML HASL-300, U-02-RC Modified
Analytical Procedure: GL-RAD-A-011 REV# 27
Analytical Batch: 1940454

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 23
Preparation Batch: 1940341

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
496617001	North East
496617002	North West
496617003	South West
1204435946	Method Blank (MB)
1204435947	Laboratory Control Sample (LCS)
1204435948	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" 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

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
1204435946 (MB)	Uranium-233/234	Result -0.000000129 < MDA 0.000000489 > RDL 0.0000002 uCi/kg
	Uranium-235/236	Result -0.0000000000000323 < MDA 0.000000596 > RDL 0.0000002 uCi/kg
	Uranium-238	Result -0.000000235 < MDA 0.000000722 > RDL 0.0000002 uCi/kg

Technical Information

Recounts
Samples 1204435947 (LCS) and 1204435948 (LCSD) were recounted due to high recovery. The recounts are reported. Sample 496617003 (South West) was recounted due to high MDC. The recount is reported.

Product: **Dry Weight**

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 23
Preparation Batch: 1940341

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
496617001	North East
496617002	North West
496617003	South West

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.

Product: **GFPC, Total Alpha Radium, solid (Limited Volume)**
Analytical Method: EPA 903.0
Analytical Procedure: GL-RAD-A-010 REV# 18
Analytical Batch: 1941984

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 23
Preparation Batch: 1940341

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
496617001	North East
496617002	North West
496617003	South West
1204439542	Method Blank (MB)
1204439545	Laboratory Control Sample (LCS)
1204439546	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" 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

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
1204439542 (MB)	Total Radium	Result 0.00000153 < MDA 0.00000155 > RDL 0.00000005 uCi/kg

Product: GFPC, Pb210, Solid (Limited Volume)
Analytical Method: DOE RP280 Modified
Analytical Procedure: GL-RAD-A-018 REV# 15
Analytical Batch: 1941985

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 23
Preparation Batch: 1940341

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
496617001	North East
496617002	North West
496617003	South West
1204439547	Method Blank (MB)
1204439548	Laboratory Control Sample (LCS)
1204439549	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" 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

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
1204439547 (MB)	Lead-210	Result 0.0000021 < MDA 0.0000239 > RDL 0.000001 uCi/kg

Technical Information

Recounts
Samples 496617001 (North East), 496617002 (North West) and 496617003 (South West) were recounted to verify sample results. Recounts are reported. Sample 1204439547 (MB) was recounted due to a suspected blank false positive. The recount is reported.

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: 496617 GEL Work Order: 496617

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: **Name: Theresa Austin**

Date: 13 DEC 2019 **Title: Group Leader**

QC Summary

Report Date: December 13, 2019

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

Contact: Ms. Kathy Weinel

Workorder: 496617

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1940453										
QC1204435944 LCS										
Thorium-232	0.000132			0.000129	uCi/kg		98.2	(75%-125%)	HAKB	12/04/19 14:0
	Uncertainty			+/-3.70E-06						
QC1204435945 LCSD										
Thorium-232	0.000132			0.000135	uCi/kg	4.63	103	(0%-20%)		12/04/19 14:0
	Uncertainty			+/-4.54E-06						
QC1204435943 MB										
Thorium-232			U	3.38E-07	uCi/kg					12/04/19 14:0
	Uncertainty			+/-2.78E-07						
Batch 1940454										
QC1204435947 LCS										
Uranium-233/234				8.42E-05	uCi/kg				HAKB	12/07/19 13:4
	Uncertainty			+/-1.82E-06						
Uranium-235/236				3.46E-06	uCi/kg					
	Uncertainty			+/-4.16E-07						
Uranium-238	6.78E-05			8.36E-05	uCi/kg		123	(75%-125%)		
	Uncertainty			+/-1.82E-06						
QC1204435948 LCSD										
Uranium-233/234				8.32E-05	uCi/kg	1.17				12/07/19 13:4
	Uncertainty			+/-1.91E-06						
Uranium-235/236				4.60E-06	uCi/kg	28.3				
	Uncertainty			+/-5.10E-07						
Uranium-238	6.78E-05			8.06E-05	uCi/kg	3.64	119	(0%-20%)		
	Uncertainty			+/-1.88E-06						
QC1204435946 MB										
Uranium-233/234			U	-1.29E-07	uCi/kg					12/05/19 17:2
	Uncertainty			+/-1.04E-07						
Uranium-235/236			U	-3.23E-14	uCi/kg					
	Uncertainty			+/-1.53E-07						

QC Summary

Workorder: 496617

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1940454										
Uranium-238			U	-2.35E-07	uCi/kg				HAKB	12/05/19 17:2
	Uncertainty			+/-1.66E-07						
Rad Gas Flow										
Batch 1941984										
QC1204439545 LCS										
Total Radium	0.00448			0.00378	uCi/kg		84.4	(75%-125%)	LXB3	12/09/19 13:4
	Uncertainty			+/-4.11E-05						
QC1204439546 LCSD										
Total Radium	0.00448			0.00376	uCi/kg	0.394	84	(0%-20%)		12/09/19 13:4
	Uncertainty			+/-4.15E-05						
QC1204439542 MB										
Total Radium			U	1.53E-06	uCi/kg					12/09/19 19:3
	Uncertainty			+/-5.08E-07						
Batch 1941985										
QC1204439548 LCS										
Lead-210	0.00861			0.00857	uCi/kg		99.6	(75%-125%)	LXB3	12/11/19 10:5
	Uncertainty			+/-0.000123						
QC1204439549 LCSD										
Lead-210	0.00861			0.00839	uCi/kg	2.07	97.5	(0%-20%)		12/11/19 10:5
	Uncertainty			+/-0.000121						
QC1204439547 MB										
Lead-210			U	2.10E-06	uCi/kg					12/12/19 11:2
	Uncertainty			+/-7.12E-06						

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

QC Summary

Workorder: 496617

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

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
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.

ATTACHMENT G

STACK SAMPLE LABORATORY RESULTS

THIRD QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
ENERGY FUELS RESOURCES
VANADIUM DRYER STACK
VANADIUM PACKAGING STACK

BLANDING, UTAH

August 20-21, 2019

By:

TETCO
391 East 620 South
American Fork, UT 84003
Phone (801) 492-9106
Fax (801) 492-9107 fax

Prepared for:

Energy Fuels Resources
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

October 17, 2019

CERTIFICATION OF REPORT INTEGRITY

Technical Emissions Testing Company (TETCO) certifies that this report represents the truth as well as can be derived by the methods employed. Every effort was made to obtain accurate and representative data and to comply with procedures set forth in the Federal Register.

Mike McNamara

Reviewer: _____

Date: 10/21/19

Dean Kitchen

Reviewer: _____

Date: 10-21-19

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- Test Location and Type of Process 1
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- Description of Collected Samples 3
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- Percent Isokinetic Sampling 3

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3	Schematic of Method 5/114 Sampling Train	Appendix E

INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the Vanadium Dryer and the Vanadium Packaging exhaust stacks. Emissions are calculated in terms of pico curies per dry standard cubic foot (pCi/dscf) and pico curies per hour (pCi/hr).

Test Location and Type of Process

Energy Fuels Resources is located about 5 miles south of Blanding, Utah. Vanadium containing material is processed and packed into barrels which are shipped to other facilities for additional processing. A scrubber serves as the main emission control device for the vanadium dryer. A baghouse serves as the control device for the vanadium packaging area.

Stack schematics are shown as Figures 1 and 2 in Appendix D.

Test Dates

Run 1 on the Vanadium Dryer and run 1 on the Vanadium Packaging exhausts were completed August 20, 2019. The second test runs were completed August 21, 2019.

Pollutants Tested and Methods Applied

These tests were a determination of radionuclide emissions in accordance with EPA Method 5/114.

Test run filters and front wash residues were sent to Inter-Mountain Labs in Sheridan, Wyoming.

Test Participants

Energy Fuels	Logan Shumway	Steve Snyder
TETCO	Mike McNamara Reed Kitchen	Doug Olsen

Deviations from EPA Methods

None.

Quality Assurance

Testing procedures and sample recovery techniques were according to those outlined in the Federal Register and the *Quality Assurance Handbook for Air Pollution Measurement Systems*.

SUMMARY OF RESULTS

Emission Results

Table I presents the findings of the test in Curies per dry standard cubic foot. Tables IV and V in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	Vanadium Dryer		Vanadium Packaging	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	0.998	4.417E+5	0.317	4.802E+4
2	0.165	7.358E+04	0.324	5.229E+04
AVE	0.576	2.5765E+5	0.320	5.015E+04

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Production data was retained by Energy Fuels Resources.

Description of Collected Samples

The test filters for the Vanadium Dryer were heavily covered with a dull, lime green colored particulate. The front washes were clear in appearance.

The test filters for the Vanadium Packaging exhaust were moderately covered with Dark Brown colored particulate matter. The front washes were brown in appearance.

Discussion of Errors or Irregularities

None

Percent Isokinetic Sampling

Each test run was isokinetic within the ±10% of 100% criterion specified in the Federal Register. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	Vanadium Dryer	Vanadium Packaging
1	101	101
2	101	101

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber pressure drop and water flow rate readings are found in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Energy Fuels Resources.

SAMPLING AND ANALYTICAL PROCEDURES

Sampling Port Location

The inside diameter of the Vanadium Dryer exhaust stack was 36 inches. Two, four-inch diameter sample port were located 9.67 diameters (29 feet) downstream from the last disturbance and 3.33 diameters (10 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Vanadium Packaging exhaust stack was 29.5 inches. Two, four-inch diameter sample ports were located 3.29 diameters (9 inches) downstream from the last disturbance and more than 6.78 diameters (200 inches) upstream from the last disturbance. The sample port locations are depicted in Figure 2 in Appendix D.

Sampling Point Location

Table III shows the distance of each sampling point from the inside wall according to EPA Method 1. Each point was marked and identified with a wrapping of glass tape and numbered. These points were determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance From the Inside Wall (inches)	
	Vanadium Dryer	Vanadium Packaging
1	1.58	1.00
2	5.26	1.98
3	10.66	3.48
4	25.34	5.22
5	30.74	7.38
6	34.42	10.50
7		19.00
8		22.13
9		24.28
10		26.02
11		27.52
12		28.50

Sampling Train Description

To determine the emission rates for these stacks, 40 CFR 60, Appendix A, Methods 1-5/114 were followed.

All sampling trains were made of inert materials, (Teflon, stainless steel, and glass) to prevent interference of the sampled gas. The sample consoles used to conduct Methods 1-5/114 were constructed to meet the specifications outlined in the CFR. The temperature sensors were K-type thermocouples. Heater, vacuum, and pitot line connections were designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 3 in Appendix E is a sketch of the Methods 5/114 sampling train.

Sample boxes were prepared for testing by following the prescribed procedures outlined in Methods 5/114.

Sampling and Analytical Procedures

All sampling and analytical test procedures were as specified in 40 CFR 60, Appendix A, Methods 5/114.

Quality Assurance

All equipment setup, sampling procedures, sample recovery, and equipment calibrations were carried out according to the procedures specified in 40 CFR 60 and the *Quality Assurance Handbook for Air Pollution Measurement Systems*.

APPENDICES

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
D: Raw Production Data
E: Calibration Procedures and Results
F: Related Correspondence

APPENDIX A

Table IV Complete Results, Vanadium Dyer
Table V Complete Results, Vanadium Packaging
Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
ENERGY FUELS CORPORATION, BLANDING, UTAH
VANADIUM DRYER

dryer

Symbol	Description	Dimensions	Run #1	Run #2	
Date			8/20/19	8/21/19	
Filter #			7204	7206	
Begin	Time Test Began		7:42	7:46	
End	Time Test Ended		15:45	15:47	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	25.50	25.50	
ΔH	Orifice Pressure Drop	In. H_2O	1.119	1.103	
Y	Meter Calibration Y Factor	dimensionless	1.007	1.007	
Vm	Volume Gas Sampled--Meter Conditions	cf	322.904	319.689	
T_m	Avg Meter Temperature	°F	94.6	92.4	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.3677	0.3654	
Wt_{wc}	Weight Water Collected	Grams	359.2	328.5	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3080	0.3080	
CO_2	Volume % Carbon Dioxide	Percent	0.00	0.00	
O_2	Volume % Oxygen	Percent	20.00	20.00	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	80.00	80.00	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	264.689	263.085	
Vw	Volume Water Vapor	scf	16.936	15.489	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.0601	0.0556	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.0779	0.0767	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.0601	0.0556	
X_d	Fraction of Dry Gas	Fraction	0.940	0.944	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.80	28.80	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.15	28.20	
%I	Percent Isokinetic	Percent	101.1	100.7	**AVG**
T_s	Avg Stack Temperature	°F	100.8	100.3	**100.6**
A_s	Stack Cross Sectional Area	Sq. Ft.	7.069	7.069	
P_G	Stack Static Pressure	In. H_2O	-0.120	-0.120	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	25.43	25.43	
P_s	Stack Pressure	In. Hg. Abs	25.421	25.421	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	7.45E+03	7.44E+03	**7.45E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	9.91E+03	9.84E+03	**9.88E+03**
V_s	Velocity of Stack Gas	fpm	1.40E+03	1.39E+03	**1.40E+03**
Curies	Radionuclides per sample	pCi	261.44	43.37	
	Radionuclides per blank	pCi	0.00	0.00	
Net Curies	Net Radionuclides per sample	pCi	261.44	43.37	
Crad	Concentration of Radionuclides	pCi/dscf	0.988	0.165	**0.576**
ERrad	Emission Rate of Radionuclides	pCi/hr	4.417E+05	7.358E+04	**2.5765E+05**

TABLE V
COMPLETE RESULTS
ENERGY FUELS CORPORATION, BLANDING, UTAH
VANDIUM PACKAGING

Symbol	Description	Dimensions	Run #1	Run #2	
Date			8/20/19	8/21/19	
Filter #			7205	7207	
Begin	Time Test Began		7:33	7:32	
End	Time Test Ended		15:42	15:34	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.50	24.50	
ΔH	Orifice Pressure Drop	In. H_2O	0.669	0.767	
Y	Meter Calibration Y Factor	dimensionless	0.996	0.996	
Vm	Volume Gas Sampled--Meter Conditions	cf	272.483	289.061	
T_m	Avg Meter Temperature	°F	88.6	87.5	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.1801	0.1921	
Wt_{wc}	Weight Water Collected	Grams	22.8	34.4	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3900	0.3900	
CO_2	Volume % Carbon Dioxide	Percent	0.00	0.00	
O_2	Volume % Oxygen	Percent	20.90	20.90	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10	79.10	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	214.315	227.878	
Vw	Volume Water Vapor	scf	1.075	1.622	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.005	0.007	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.072	0.076	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.005	0.007	
X_d	Fraction of Dry Gas	Fraction	0.995	0.993	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84	28.84	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.78	28.76	
%I	Percent Isokinetic	Percent	101.1	101.1	**AVG**
T_s	Avg Stack Temperature	°F	97.0	98.6	**97.8**
A_s	Stack Cross Sectional Area	Sq. Ft.	4.746	4.746	
P_G	Stack Static Pressure	In. H_2O	-0.020	-0.020	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.48	24.48	
P_s	Stack Pressure	In Hg. Abs	24.479	24.479	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	2.53E+03	2.69E+03	**2.61E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	3.27E+03	3.50E+03	**3.39E+03**
V_s	Velocity of Stack Gas	fpm	6.90E+02	7.37E+02	**7.14E+02**
Curies	Radionuclides per sample	pCi	67.87	73.90	
	Radionuclides per blank	pCi	0.00	0.00	
Net Curies	Net Radionuclides per sample	pCi	67.87	73.90	
Crad	Concentration of Radionuclides	pCi/dscf	0.317	0.324	**0.320**
ERrad	Emission Rate of Radionuclides	pCi/hr	4.802E+04	5.229E+04	**5.015E+04**

Method 5 Nomenclature

$\%I$ = percent isokinetic, percent

A_s = stack cross-sectional area (ft^3)

$AS\Delta P$ = see $\sqrt{\Delta P}$

Btu = unit heat value (British thermal unit)

B_{ws} = fraction of water in stack gas

C_f = concentration of particulate matter, front half (gr/dscf,lb/dscf, etc.)

C_{metal} = concentration of metals (ppm, $\mu g/ft^3$, etc.) atomic symbol replaces "metal"

CO_2 = percent carbon dioxide in the stack gas

C_p = pitot tube coefficient (0.84)

$C_{X\ (avg)}$ = species symbol replaces *x*.

$C_{X\ (corr)}$ = actual gas concentration corrected to required percent O_2

ΔH = orifice pressure drop (inches H_2O)

$\Delta H_@$ = orifice pressure (inches H_2O)

D_n = nozzle diameter (inches)

$D_{n\ des}$ = calculated desired nozzle size (inches)

ΔP = stack flow pressure differential (inches H_2O)

D_s = diameter of the stack (feet)

EA = percent excess air

ER_F = emission rate of front half particulate (lb/hr)

ER_{mmBtu} = emission rate per mmBtu or ton of fuel etc.

ER_X = emission rate of compound which replaces x

k-fact = multiplier of test point ΔP to determine test point ΔH

L = length of rectangular stack (inches)

mBtu = thousand Btu

M_d = molecular weight of stack gas, dry basis (lb/lb-mol)

M_F = mass of particulate on filter (mg)

M_{FP} = mass of particulate matter on filter and probe (mg)

mmBtu = million Btu

M_P = mass of particulate matter in probe (mg)

M_s = molecular weight of stack gas, wet basis (g/gmol)

N_2 = percent nitrogen in the stack gas

O_2 = percent oxygen in the stack gas

$\sqrt{\Delta P}$ = average of the square roots of ΔP (may also be referred to as $AS\Delta P$)

Pb_m = absolute barometric pressure at the dry gas meter (inches Hg)

Pb_p = absolute barometric pressure at the sample location (inches Hg)

P_G = stack static pressure (inches H_2O)

P_s = absolute stack pressure (inches Hg)

P_{std} = absolute pressure at standard conditions (29.92 inches Hg.)

θ = time of test (minutes)

Q_a = stack gas volumetric flow rate (acfm)

Q_s = stack gas volumetric flow rate (dscfm)

Q_W = wet stack gas std. volumetric flow (ft^3/min, wscfm)

T_m = meter temperature ($^\circ F$)

T_s = stack temperature ($^\circ F$)

Method 5 Nomenclature

T_{std} = absolute temperature at standard conditions (528°R)

Tt = see θ

Vm = sample volume (ft^3) at meter conditions

Vm_{std} = volume standard (dscf), sample volume adjusted to 68°F and 29.92 inches Hg.

V_s = velocity of stack gas (fpm)

V_w = volume water vapor (scf) at 68°F and 29.92 inches Hg.

W = Width of rectangular stack (inches)

Wt_{wc} = weight of the condensed water collected (grams)

X_d = fraction of dry gas

Y = meter calibration Y-factor (dimensionless)

Method 5 Sample Equations

$$\%I = Vm_{std} \cdot (T_s + 460) \cdot 1039 / (\theta \cdot V_s \cdot P_s \cdot X_d \cdot D_n^2)$$

$$A_s = (Ds^2 / 4) \cdot \pi$$

$$B_{ws} = V_w / (Vm_{std} + V_w)$$

$$C_f = M_{fp} \cdot 0.01543 / Vm_{std}$$

$$C_{X\ (corr)} = C_{X\ (avg)} \cdot (20.9 - \text{desired } \%O_2) / (20.9 - \text{actual } \%O_2)$$

$$D_{eq} = 2 \cdot L \cdot W / (L + W)$$

$$D_{n\ des} = \sqrt{\{0.0269 \cdot (Pb_m + 0.0735) / [(T_m + 460) \cdot C_p \cdot X_d \cdot \sqrt{[(T_s + 460) \cdot M_s) / (P_s \cdot \Delta P)]}\}}$$

$$EA = (\%O_2 - 0.5\ \%CO) / [0.264\ \%N_2 - (\%O_2 - 0.5\ \%CO)]$$

$$ER_F = C_f \cdot Q_s \cdot 0.00857$$

$$ER_{mmBtu} = ER_X / (\text{mmBtu / hr})$$

$$\text{K-fact} = 846.72 \cdot Dn^4 \cdot \Delta H_@ \cdot C_p^2 \cdot X_d^2 \cdot M_d \cdot P_s \cdot (T_m + 460) / [M_s \cdot (T_s + 460) \cdot (Pb_m + \Delta H / 13.6)]$$

$$M_d = CO_2 \cdot 0.44 + O_2 \cdot 0.32 + N_2 \cdot 0.28$$

$$M_s = (M_d \cdot X_d) + (18 \cdot B_{ws})$$

$$P_s = Pb_p + (P_G / 13.6)$$

$$Q_a = V_s \cdot A_s$$

$$Q_s = Qa \cdot Xd \cdot Ps \cdot T_{std} / [(Ts + 460) \cdot P_{std}]$$

$$Q_W = Q_s / X_d$$

$$Vm_{std} = Vm \cdot Y \cdot T_{std} \cdot (Pb_m + \Delta H / 13.6) / [P_{std} \cdot (T_m + 460)]$$

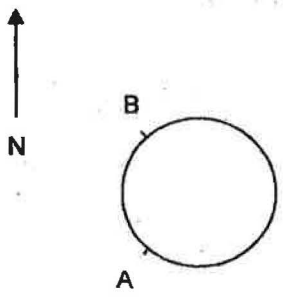
$$V_s = 85.49 \cdot 60 \cdot Cp \cdot \sqrt{\Delta P} \cdot \sqrt{[(T_s + 460) / (P_s \cdot M_s)]}$$

$$V_w = Wt_{wc} \cdot 0.04715$$

$$X_d = 1 - B_{ws}$$

Vanadium Dryer Main Stack

Prelim 6 pts blank



Stack Dia. 36 Reference: 0

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Facility Energy Fuels

Stack Identification Vanadium Dryer

Date 8/20/19

Barometric Pressure

Pb_m 25.50 in Hg Pb_p 25.43 in Hg

Static Pressure (P_G) ~ 0.12 in H_2O

Estimated Moisture (Bw_s) 5-9 %

Sample Height from Ground 70' feet

Comments:

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	4.4	1.58	1.58	13	11				
2	14.6	5.26	5.26	10	9				
3	29.6	10.66	10.66	8	7				
4	70.4	25.34	25.34	5	5				
5	85.4	30.74	30.74	8	9				
6	95.6	34.42	34.42	11	12				

Averages:

T_s _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_s ∠ Flow ΔP

5/14 Field Data Sheet

Filter 7204 TETCO Sample Box A

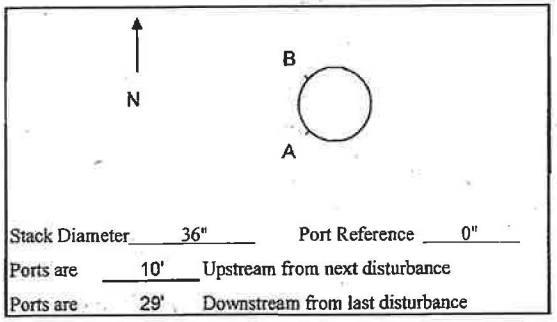
Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 8/20/19

Location: Vanadium

Operator:



Stack Diameter 36" Port Reference 0"

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Assumed Moisture 5-9 %

Probe 386 Cp 0.84

Nozzle Calibration .308 .308 .308 .308

Avg D_n .308 inches

Gas Bag ~~Ambient Air~~ E-05

Console 7

Y-Factor 1.70

$\Delta H_@$ 1.00 in H_2O

Barometric Pressures 25.50

Pb_m ~~25.58~~ ~~25.48~~ 25.43 in Hg

Pb_b ~~25.58~~ in Hg

P_G -.12 in H_2O

Leak Check:	Pre	Post
ft^3/min	0.002	0.005
vac in Hg	200	12
Pitot Rate	0.0	0.0
In H_2O	84	9.5

Water Collected 309.2 g

Time Sampled 480 min

Review

K = @T_m

K = @T_m

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
A 1	7:42	0	651.527	-12	.97	.97	3	97	243	235	236	51	73	73
1		20	664.178	-12	.97	.97	3	98	240	260	260	46	77	83
2		40	676.678	-12	.98	.98	3	98	240	261	262	51	80	88
1 2		60	689.265	-15	1.24	1.22	3	99	235	265	264	55	82	91
3		80	702.902	-14	1.14	1.14	3	99	240	264	255	55	83	93
3		100	716.480	-13	1.06	1.06	3	99	238	254	254	55	85	96
2 4		120	729.884	-15	1.22	1.22	3	99	235	245	240	57	87	97
4		140	743.504	-15	1.24	1.24	3	99	238	250	251	51	88	98
5		160	757.034	-13	1.07	1.07	3	101	240	251	252	52	88	98
3 5		180	770.448	-14	1.15	1.15	3	101	241	254	254	54	89	99
6		200	784.100	-14	1.15	1.15	3	101	235	252	252	56	90	101
6		220	797.751	-14	1.15	1.15	3	101	246	25	251	58	91	102
4		2	811.332											
B 1	11:45	240	811.332	-12	.99	.99	3	102	250	249	250	62	92	101
1		260	824.259	-12	.99	.99	3	101	254	254	25	52	93	102
2		280	837.071	-13	1.09	1.09	4	101	257	261	260	53	94	103
5 2		300	850.295	-13	1.09	1.09	4	102	252	265	264	58	95	104
3		320	863.444	-14	1.17	1.17	4	102	248	260	259	60	96	106
3		340	877.235	-14	1.17	1.17	4	102	249	260	254	50	96	106
6 4		360	890.936	-15	1.26	1.26	4	103	239	254	254	55	97	108
4		380	905.583	-15	1.26	1.26	4	103	243	258	259	58	98	109
5		400	920.100	-14	1.17	1.17	4	98	235	248	262	62	98	108
7 5		420	934.045	-14	1.17	1.17	4	104	234	256	255	63	97	107
6		440	947.819	-13	1.09	1.09	4	104	238	259	260	64	96	105
6		460	961.180	-13	1.09	1.09	4	104	240	255	256	65	95	105
	15:45	480	974.431											
Total			322.904	√ 8.8252		26.86		2418					4543	
Average				√ .3677		1.119		100.8					94.6	

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)

5/16/14 Field Data Sheet

Filter 7260 TETCO Sample Box A

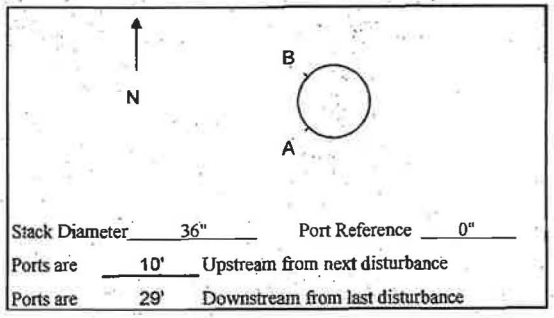
Page 1 of 1 Run # 2

Plant: Energy Fuels

Date: 8/21/15

Location: Vanadium Dryer

Operator:



Stack Diameter 36" Port Reference 0"

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Assumed Moisture 5-9 %

Probe 38 G Cp 0.84

Nozzle Calibration .308 .308 .308 .308

Avg D_n .308 inches

Gas Bag F-705

Console

Y-Factor 1.707

$\Delta H_@$ 1.00 in H_2O

Barometric Pressures

Pb_m 25.50 in Hg

Pb_p 25.43 in Hg

P_G -0.12 in H_2O

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Oven	CPM Filter	Eff.	DGM Temp (T_m) Out	In
1	7:46	0	975.360	-12	.98	.98	3	97	247	235	235	64	71	70
1		20	987.813	-12	.98	.98	3	97	262	262	263	61	72	77
2		40	1000.325	-12	.98	.98	3	97	264	264	264	51	75	83
2		60	12.838	-15	1.22	1.22	3	97	262	262	263	54	78	86
3		80	26.516	-15	1.22	1.22	3	99	241	261	260	57	81	90
3		100	40.058	-14	1.14	1.14	3	98	235	261	261	59	83	92
4		120	53.438	-14	1.14	1.14	3	99	260	254	255	61	85	94
4		140	66.658	-13	1.06	1.06	4	100	251	241	240	49	86	95
5		160	79.810	-13	1.06	1.06	4	100	242	240	239	54	87	95
5		180	92.978	-14	1.14	1.14	4	100	234	240	240	54	87	96
6		200	106.201	-15	1.22	1.22	4	101	236	241	241	56	88	97
6		220	120.020	-12	.98	.98	4	96	244	251	250	59	89	99
									~~258~~	~~262~~	~~262~~	~~65~~	~~90~~	
4 1	11:47	240	133.188	-12	.98	.98	4	102	258	264	262	65	90	98
1		260	146.154	-12	.98	.98	4	101	263	264	264	48	91	99
2		280	159.025	-14	1.14	1.14	5	98	262	265	265	51	91	100
5 2		300	171.822	-14	1.17	1.17	5	100	245	263	265	52	92	102
3		320	186.500	-15	1.26	1.26	5	102	237	265	266	55	93	103
3		340	200.535	-15	1.26	1.26	5	103	248	264	265	59	94	105
6 4		360	214.475	-14	1.17	1.17	5	103	246	260	261	62	95	106
4		380	228.115	-14	1.17	1.17	5	103	239	265	263	58	96	107
5		400	241.755	-13	1.09	1.09	6	103	244	264	264	56	97	107
X 5		420	254.998	-13	1.09	1.09	6	103	237	263	262	59	97	107
6		440	268.314	-12	1.01	1.01	6	104	235	263	263	59	97	107
6		460	281.602	-12	1.01	1.01	6	103	236	260	260	61	97	108
	15:47	480	294.959											
Total			~~319.689~~ 319.689		~~8.7692~~ .3654		~~26.48~~ 1.103	~~2406~~ 100.3					~~4435~~ 92.4	
Average														

Water Collected 328.5 g

Time Sampled 480 min

Review

Leak Check	Pre	Post
ft^3/min	0.005	0.003
vac in Hg	21	12
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

K= @T_m

K= @T_m

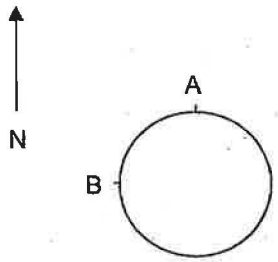
Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)

21

Vanadium Packaging Baghouse

Prelim 6 pts blank



Stack Dia. 29.5 Reference: 0

Ports are > 250" Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Facility Energy Fuels

Stack Identification Vanadium Packaging Baghouse

Date 8/20/19

Barometric Pressure

Pb_m 24.50 in Hg Pb_p 24.48 in Hg

Static Pressure (P_G) -.020 in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground 25' feet

Comments:

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	2.1	1.00	1.00						
2	6.7	1.98	1.98						
3	11.8	3.48	3.48						
4	17.7	5.22	5.22						
5	25.0	7.38	7.38						
6	35.6	10.50	10.50						
7	64.4	19.00	19.00						
8	75.0	22.13	22.13						
9	82.3	24.28	24.28						
10	88.2	26.02	26.02						
11	93.3	27.52	27.52						
12	97.9	28.50	28.50						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

5/11/4 Field Data Sheet

Filter 7205 TETCO Sample Box B

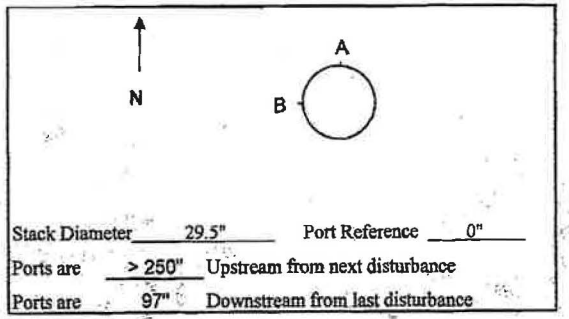
Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 8/20/19

Location: Vanadium Packaging Baghouse

Operator: M. McNamara



Stack Diameter 29.5" Port Reference 0"

Ports are > 250" Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Assumed Moisture 1% %

Probe 386-2 Cp 0.84

Nozzle Calibration

.390 .390 .390 .390

Avg D_n .390 inches

Gas Bag Ambient Air

Console 6

Y-Factor .996

$\Delta H_@$ 1.546 in H_2O

Barometric Pressures

Pb_m 24.50 in Hg

Pb_p 24.48 in Hg

P_G -.020 in H_2O

Leak Check:	Pre	Post
ft^3/min	0.002	0.001
vac in Hg	20.0	10.0

Pitot Rate	0.0	0.0
In H_2O	~~.250~~ .250	.250

Water Collected 22.0 g

Time Sampled 480 min

Review

K= @T_m

K= @T_s

Traverse Point	Time Clock	Time Min (θ)	DGM (ft^3)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
A 1	7:33	0	372.154	.025	.52	.52	2	83	244	240	240	51	73	73
2		20	382.320	.025	.52	.52	2	84	242	243	243	44	78	80
3		40	392.155	.030	.61	.61	2	86	243	245	245	46	80	90
4		60	403.000	.030	.61	.61	2	88	240	238	238	51	80	91
5		80	413.845	.035	.72	.72	2	89	246	238	238	57	79	90
6		100	425.155	.030	.62	.62	2	89	251	245	245	54	79	92
7		120	436.080	.030	.62	.62	2	91	240	238	238	54	80	91
8		140	447.150	.035	.72	.72	2	92	250	240	240	55	80	90
9		160	458.840	.035	.72	.72	2	95	251	242	242	58	81	91
10		180	470.545	.035	.72	.72	2	96	247	251	251	58	82	93
11		200	482.240	.035	.72	.72	2	98	240	247	247	59	83	93
12		220	493.950	.035	.72	.72	2	99	245	242	242	60	84	95
		240	505.672							~~254~~	~~254~~			
B 1	11:42	240	505.672	.025	.51	.51	2	101	244	254	254	60	84	85
2		260	515.780	.025	.51	.51	2	98	247	237	237	50	83	92
3		280	525.790	.030	.61	.61	2	101	246	255	255	52	86	95
4		300	536.690	.025	.51	.51	2	102	244	241	241	54	88	96
5		320	547.625	.030	.61	.61	2	103	251	252	252	48	88	97
6		340	558.570	.030	.61	.61	2	103	244	238	238	51	89	98
7		360	569.520	.030	.61	.61	2	104	242	242	242	54	89	98
8		380	580.640	.040	.81	.81	2	104	249	239	239	44	89	99
9		400	593.135	.040	.81	.81	2	106	242	250	250	43	90	101
10		420	605.730	.045	.92	.92	2	105	251	247	247	44	91	103
11		440	618.920	.045	.92	.92	2	106	241	246	246	46	91	102
12		460	632.067	.040	.81	.81	2	106	244	239	239	45	91	102
	15:42	480	644.637											
Total			272.483	4.3230	16.060		2329						4255	
Average				.1801	.6692		97.0						88.6	

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)

Each Barrel @ 551 lbs

1111

5/114 Field Data Sheet

Filter 7207 TETCO Sample Box B

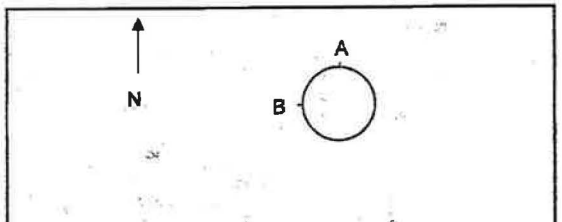
Page 1 of 1 Run # 2

Plant: Energy Fuels

Date: 8/21/19

Location: Vanadium Packaging Baghouse

Operator: M. McNamara



Stack Diameter 29.5" Port Reference 0"

Ports are > 250° Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Traverse	Time		DGM	ΔP	ΔH (in H_2O)		Vacuum	Temperatures (°F)					DGM Temp (T_m)	
Point	Clock	Min (θ)	(ft³)	(in H_2O)	Desired	Actual	(in Hg)	Stack (T_s)	Probe	Probe Out	Filter	Effluent	Out	In
A 1	7:32	0	645.220	.030	.62	.62	2	87	248	230	230	63	72	70
2		20	655.965	.030	.62	.62	2	88	251	237	237	50	72	79
3		40	666.735	.030	.62	.62	2	90	248	248	248	49	73	81
4		60	677.570	.035	.72	.72	2	91	241	243	243	53	74	82
5		80	689.225	.030	.62	.62	2	93	249	240	240	53	76	84
6		100	700.190	.035	.72	.72	2	94	245	252	252	54	77	84
7		120	712.070	.040	.83	.83	2	95	248	243	243	54	78	87
8		140	724.445	.040	.83	.83	2	97	250	241	241	53	80	89
9		160	736.900	.040	.83	.83	2	97	247	239	239	57	81	91
10		180	749.390	.045	.93	.93	2	98	240	248	248	58	82	92
11		200	762.620	.045	.93	.93	2	99	241	252	252	60	83	91
12		220	775.590	.040	.83	.83	2	99	246	238	238	60	84	91
	11:32	240	788.118											
B 1	11:34	240	788.118	.035	.72	.72	2	100	251	254	254	60	86	92
2		260	799.785	.030	.62	.62	2	100	251	242	242	51	86	95
3		280	810.830	.030	.62	.62	2	101	249	251	251	51	86	94
4		300	822.150	.035	.72	.72	2	102	249	250	250	53	87	93
5		320	833.710	.035	.72	.72	2	102	248	240	240	54	86	98
6		340	845.505	.035	.72	.72	2	104	249	241	241	56	88	99
7		360	857.400	.040	.83	.83	2	104	245	238	238	51	89	99
8		380	870.440	.040	.83	.83	2	106	250	242	242	46	90	101
9		400	882.505	.040	.83	.83	2	105	251	239	239	44	91	103
10		420	895.155	.045	.93	.93	2	105	245	248	248	46	92	103
11		440	908.395	.045	.93	.93	2	105	243	245	245	46	91	103
12		460	921.630	.040	.83	.83	2	105	250	238	238	46	91	103
	15:34	480	934.281											
Total			289.061 ✓	4.6103 ✓	18.400	✓	2367 ✓						4199	✓
Average			.1921		.767		98.6						87.5	

Assumed Moisture 1 %

Probe 386-2 Cp 0.84

Nozzle Calibration .390 .390 .390 .390

Avg D_n .390 inches

Gas Bag Ambient Air

Console 6

Y-Factor .996

$\Delta H_@$ 1.546 in H_2O

Barometric Pressures

Pb_m 24.50 in Hg

Pb_p 24.48 in Hg

P_G -.020 in H_2O

Leak Check:	Pre	Post
ft³/min	0.002	0.001
vac in Hg	20.0	10.00
Pitot Rate	0.0	0.0
In H_2O	.23	.24

Water Collected 34.4 g

Time Sampled 480 min

Review

K = 20.6715 @T_m 88

K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

Number of Bassel @ 551 LBS

LH 1

Vanadium Dryer Main Stack

Plant Energy Fuel Stoves Location Hamilton

Analytical Method

Date 8/20
Test No. 1
Gas Bag No. E-05
Ambient Temp 90
Operator [illegible]

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.0	20.0	20.0	20	20.0	20.2	20.0
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 8/21
Test No. 2
Gas Bag No. E-05
Ambient Temp 90
Operator [illegible]

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20	20.0	20.0	20.0	20.0	20.0	20.0
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date
Test No.
Gas Bag No.
Ambient Temp
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2							
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).							
N_2 (Net is 100 Minus Actual O_2 Reading).							

†O_2 was determined using a gas analyzer
CO is not measured, as it has the same molecular weight as N_2

Vanadium Packaging Baghouse

Method 5

Facility: Energy Fuels — Date: 8/20/19

Stack Identification: Vanadium Baghouse — Method: 5/114

IMPINGERS

Run: 1 — Sample Box: B

Filter Number: 7205

Heavy Brown coloring

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	SG		
Final (g)	682.9	689.9	614.7	904.3		
Initial (g)	706.1	681.4	612.1	869.4		
Net (g)	-23.2	8.5	2.6	34.9		

Total (g): 22.8

Initials: MAM

8/21/19

IMPINGERS

Run: 2 — Sample Box: B

Filter Number: 7207

Same as First Run

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	SG		
Final (g)	658.2	714.0	619.9	934.1		
Initial (g)	682.9	689.9	614.7	904.3		
Net (g)	-24.7	24.1	5.2	29.8		

Total (g): 34.4

Initials: MAM

IMPINGERS

Run: — Sample Box:

Filter Number:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	SG		
Final (g)						
Initial (g)						
Net (g)						

Total (g):

Initials:

Inter-Mountain Labs

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

#WEB

All shaded fields must be completed.

This is a legal document; any misrepresentation may be construed as fraud.

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
Energy Fuels	South Yellow Cake Scrubber, Dryer		435-678-4113

Report Address	Contact Name
391 East 620 South American Fork, Utah 84003	Dean or Paul Kitchen Email tetco@tetco-ut.com Phone 801-492-9609

Invoice Address	Purchase Order #	Quote #
EFRI C/Oaccounts Payable 225 Union Blvd Suite 600 Lakewood CO 80228		

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	U-Nat	Ra-226	Ra-228	Th-228	TH-230	Th-232	Lead-210	REMARKS
							ANALYSES / PARAMETERS							
1	SR108376001	08/20/19	7:00	7204 Vanadium Scrubber RUN 1	FT	1	X	X	X	X	X	X	X	Conduct /Blanks
2	002	08/20/19	7:00	7205 Vanadium Baghouse RUN 1	FT	1	X	X	X	X	X	X	X	
3	003	08/21/19	7:00	7206 Vanadium Scrubber RUN 2	FT	1	X	X	X	X	X	X	X	
4	004	08/21/19	7:00	7207 Vanadium Baghouse RUN 2	FT	1	X	X	X	X	X	X	X	
5	001	08/20/19	7:00	7204 Vanadium Scrubber RUN 1	OT	1	X	X	X	X	X	X	X	
6	002	08/20/19	7:00	7205 Vanadium Baghouse RUN 1	OT	1	X	X	X	X	X	X	X	
7	003	08/21/19	7:00	7206 Vanadium Scrubber RUN 2	OT	1	X	X	X	X	X	X	X	
8	004	08/21/19	7:00	7207 Vanadium Baghouse RUN 2	OT	1	X	X	X	X	X	X	X	
9														
10														
11														
12														
13														
14														

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
20.0	Michael McNamara	8/21/19	12:00	Kathy Boyd	8-26-19	9:21
	8/22/19					

SHIPPING INFO	MATRIX CODES		TURN AROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☒ UPS	Water	WT	Check desired service	Compliance Monitoring ? (Y) / N	
☒ FedEx	Soil	SL	☒ Standard turnaround	Program (SDWA, NPDES,...)	
☐ USPS	Solid	SD	☐ RUSH - 5 Working Days	PWSID / Permit #	Contact at Energy Fuels Blanding: Logan Shumway
☐ Hand Carried	Filter	FT	☐ URGENT - < 2 Working Days	Chlorinated? Y / (N)	
☐ Other	Other	OT	*Rush & Urgent Surcharges will be applied*	Sample Disposal: Lab Client	

Pace Analytical® DELIVERING SCIENCE BETTER
Formerly Inter-Mountain Laboratories
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 10/15/2019

CLIENT: Energy Fuels (White Mesa)
Project: South Yellow Cake Scrubber, Dryer
Lab Order: S1908376

CASE NARRATIVE

Report ID: S1908376001

Samples 7204 Vanadium Scrubber RUN 1 Filter & Beaker, 7205 Vanadium Baghouse RUN 1 Filter & Beaker, 7206 Vanadium Scrubber RUN 2 Filter & Beaker and 7207 Vanadium Baghouse RUN 2 Filter & Beaker were received on August 26, 2019.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition
40 CFR Parts 136 and 141
40 CFR Part 50, Appendices B, J, L, and O
Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012
ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 10/15/2019
Report ID S1908376001

ProjectName: South Yellow Cake Scrubber, Dryer
Lab ID: S1908376-001
ClientSample ID: 7204 Vanadium Scrubber RUN 1 Filter & Beaker
COC: WEB

WorkOrder: S1908376
CollectionDate: 8/20/2019 7:00:00 AM
DateReceived: 8/26/2019 9:21:00 AM
FieldSampler:
Matrix: Filter

Comments

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	2.6E-4	µCi/Sample		2	6E-14	OTW01	09/11/2019 1708	TWP
Lead 210 Precision (±)	1.3E-5	µCi/Sample				OTW01	09/11/2019 1708	TWP
Radium 226	4E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	09/25/2019 1134	WN
Radium 226 Precision (±)	E-7	µCi/Sample				SM 7500RAB	09/25/2019 1134	WN
Radium 228	-6.4E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	10/01/2019 2147	WN
Radium 228 Precision (±)	8.6E-6	µCi/Sample				Ga-Tech	10/01/2019 2147	WN
Thorium 230	4E-7	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-230 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Thorium 228	0E-6	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-228 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Thorium 232	0E-6	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-232 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Uranium 234	3E-7	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 234 Precision (±)	2E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 235	4E-8	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 235 Precision (±)	8E-8	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 238	3E-7	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 238 Precision (±)	2E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	09/20/2019 1402	MS
Uranium	ND	µg/Sample		1	9E-15	EPA 200.8	08/28/2019 1732	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect
C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 10/15/2019
Report ID S1908376001

ProjectName: South Yellow Cake Scrubber, Dryer
Lab ID: S1908376-003
ClientSample ID: 7206 Vanadium Scrubber RUN 2 Filter & Beaker
COC: WEB

WorkOrder: S1908376
CollectionDate: 8/21/2019 7:00:00 AM
DateReceived: 8/26/2019 9:21:00 AM
FieldSampler:
Matrix: Filter

Comments

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	4.1E-5	µCi/Sample		2	6E-14	OTW01	09/11/2019 1708	TWP
Lead 210 Precision (±)	6.3E-6	µCi/Sample				OTW01	09/11/2019 1708	TWP
Radium 226	4E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	09/25/2019 1134	WN
Radium 226 Precision (±)	1E-7	µCi/Sample				SM 7500RAB	09/25/2019 1134	WN
Radium 228	-2.8E-5	µCi/Sample		1E-06	2E-13	Ga-Tech	10/02/2019 353	WN
Radium 228 Precision (±)	1E-5	µCi/Sample				Ga-Tech	10/02/2019 353	WN
Thorium 230	5E-7	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-230 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Thorium 228	0E-6	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-228 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Thorium 232	0E-6	µCi/Sample		3E-15	3E-15	ACW10	09/05/2019 1508	WN
Thorium-232 Precision (±)	2E-7	µCi/Sample				ACW10	09/05/2019 1508	WN
Uranium 234	8E-7	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 234 Precision (±)	3E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 235	7E-8	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 235 Precision (±)	1E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 238	6E-7	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 238 Precision (±)	3E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	09/20/2019 1410	MS
Uranium	2	µg/Sample		1	9E-15	EPA 200.8	08/28/2019 1802	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank	C	Calculated Value
E	Value above quantitation range	G	Analyzed at IML Gillette laboratory
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
L	Analyzed by another laboratory	M	Value exceeds Monthly Ave or MCL or is less than LCL
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
S	Spike Recovery outside accepted recovery limits	U	Analysis reported under the reporting limit
X	Matrix Effect		

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 10/15/2019
Report ID S1908376001

ProjectName: South Yellow Cake Scrubber, Dryer
Lab ID: S1908376-002
ClientSample ID: 7205 Vanadium Baghouse RUN 1 Filter & Beaker
COC: WEB

WorkOrder: S1908376
CollectionDate: 8/20/2019
DateReceived: 8/26/2019 9:21:00 AM
FieldSampler:
Matrix: Filter

Comments

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	2.0E-5	µCi/Sample		2	6E-14	OTW01	09/11/2019 1708	TWP
Lead 210 Precision (±)	4E-6	µCi/Sample				OTW01	09/11/2019 1708	TWP
Radium 226	3E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	09/25/2019 1134	WN
Radium 226 Precision (±)	1E-7	µCi/Sample				SM 7500RAB	09/25/2019 1134	WN
Radium 228	-8.3E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	10/02/2019 050	WN
Radium 228 Precision (±)	7.1E-6	µCi/Sample				Ga-Tech	10/02/2019 050	WN
Thorium 230	4.1E-5	µCi/Sample		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-230 Precision (±)	5.3E-6	µCi/Sample				ACW10	10/08/2019 856	WN
Thorium 228	3E-7	pCi/Filter		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-228 Precision (±)	3E-7	pCi/Filter				ACW10	10/08/2019 856	WN
Thorium 232	2E-7	pCi/Filter		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-232 Precision (±)	3E-7	pCi/Filter				ACW10	10/08/2019 856	WN
Uranium 234	3E-6	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 234 Precision (±)	6E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 235	7E-8	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 235 Precision (±)	1E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 238	3E-6	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 238 Precision (±)	6E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	09/20/2019 1438	MS
Uranium	7	µg/Sample		1	9E-15	EPA 200.8	08/28/2019 1756	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect
C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 10/15/2019
Report ID S1908376001

ProjectName: South Yellow Cake Scrubber, Dryer
Lab ID: S1908376-004
ClientSample ID: 7207 Vanadium Baghouse RUN 2 Filter & Beaker
COC: WEB

WorkOrder: S1908376
CollectionDate: 8/21/2019 7:00:00 AM
DateReceived: 8/26/2019 9:21:00 AM
FieldSampler:
Matrix: Filter

Comments

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	9.4E-6	µCi/Sample		2	6E-14	OTW01	09/11/2019 1708	TWP
Lead 210 Precision (±)	4.1E-6	µCi/Sample				OTW01	09/11/2019 1708	TWP
Radium 226	7E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	09/26/2019 1059	WN
Radium 226 Precision (±)	2E-7	µCi/Sample				SM 7500RAB	09/26/2019 1059	WN
Radium 228	-4.1E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	10/02/2019 656	WN
Radium 228 Precision (±)	9.4E-6	µCi/Sample				Ga-Tech	10/02/2019 656	WN
Thorium 230	5.5E-5	µCi/Sample		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-230 Precision (±)	7.3E-6	µCi/Sample				ACW10	10/08/2019 856	WN
Thorium 228	5E-7	pCi/Filter		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-228 Precision (±)	5E-7	pCi/Filter				ACW10	10/08/2019 856	WN
Thorium 232	2E-7	pCi/Filter		3E-15	3E-15	ACW10	10/08/2019 856	WN
Thorium-232 Precision (±)	3E-7	pCi/Filter				ACW10	10/08/2019 856	WN
Uranium 234	4E-6	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 234 Precision (±)	7E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 235	1E-7	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 235 Precision (±)	1E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Uranium 238	4E-6	µCi/Sample		4E-07	9E-15	ACW01	10/02/2019 1652	WN
Uranium 238 Precision (±)	8E-7	µCi/Sample				ACW01	10/02/2019 1652	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	09/20/2019 1413	MS
Uranium	12	mg/Kg		1	9E-15	EPA 200.8	08/28/2019 1821	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect
C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 10/15/2019
Work Order: S1908376 **Report ID:** S1908376001
Project: South Yellow Cake Scrubber, Dryer

Lead 210 in Filters Sample Type **MBLK** Units: µCi/Sample

MB-754 (09/11/19 13:04)	RunNo: 171551						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	ND	2E-06					

Lead 210 in Filters Sample Type **LCS** Units: µCi/Sample

LCS-PB (09/11/19 13:04)	RunNo: 171551						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	1E-05	2E-06	1E-05		114	66 - 130	

Lead 210 in Filters Sample Type **MS** Units: µCi/Sample

MS (09/11/19 14:37)	RunNo: 171551						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	1E-05	2E-06	1E-05	0.000003	91.6	66 - 130	

Lead 210 in Filters Sample Type **MSD** Units: µCi/Sample

MSD (09/11/19 14:37)	RunNo: 171551						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Lead 210	2E-05	2E-06	1E-05	13.4	108	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 10/15/2019
Work Order: S1908376 **Report ID:** S1908376001
Project: South Yellow Cake Scrubber, Dryer

Radium 226 Air Filter Analysis Sample Type **MBLK** Units: µCi/Sample

MB-2052 (09/24/19 15:09)	RunNo: 171949	PrepDate: 09/16/19 0:00			BatchID 16551		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	ND	2E-07					

MB-2053 (09/26/19 10:59)	RunNo: 172003	PrepDate: 09/19/19 0:00			BatchID 16567		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	ND	2E-07					

Radium 226 Air Filter Analysis Sample Type **LCS** Units: µCi/Sample

LCS-2052 (09/24/19 15:09)	RunNo: 171949	PrepDate: 09/16/19 0:00			BatchID 16551		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6E-06	2E-07	7E-06		92.2	67.1 - 122	

LCS-2053 (09/26/19 10:59)	RunNo: 172003	PrepDate: 09/19/19 0:00			BatchID 16567		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	5E-06	2E-07	7E-06		77.9	67.1 - 122	

Radium 226 Air Filter Analysis Sample Type **MS** Units: µCi/Sample

MS-2052 (09/24/19 15:09)	RunNo: 171949	PrepDate: 09/16/19 0:00			BatchID 16551		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6E-06	2E-07	7E-06	ND	93.1	65 - 131	

MS-2053 (09/26/19 10:59)	RunNo: 172003	PrepDate: 09/19/19 0:00			BatchID 16567		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6E-06	2E-07	7E-06	ND	86.7	65 - 131	

Radium 226 Air Filter Analysis Sample Type **MSD** Units: µCi/Sample

MSD-2052 (09/24/19 15:09)	RunNo: 171949	PrepDate: 09/16/19 0:00				BatchID 16551		
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	6E-06	2E-07	6E-06	4.18	89.3	20	

MSD-2053 (09/26/19 10:59)	RunNo: 172003	PrepDate: 09/19/19 0:00				BatchID 16567		
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	6E-06	2E-07	6E-06	3.42	89.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 10/15/2019
Work Order: S1908376 **Report ID:** S1908376001
Project: South Yellow Cake Scrubber, Dryer

Thorium Air Filter Analysis Sample Type **MBLK** Units: µCi/Sample

MB-695 (09/05/19 09:43)	RunNo: 171951						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-228	ND	2E-07					
Thorium-230	ND	2E-07					
Thorium-232	ND	2E-07					

MB-699 (10/08/19 08:56)	RunNo: 172403						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-228	ND	2E-07					
Thorium-230	ND	2E-07					
Thorium-232	ND	2E-07					

Thorium Air Filter Analysis Sample Type **LCS** Units: µCi/Sample

LCS-695 (09/05/19 09:43)	RunNo: 171951						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-230	1E-05	2E-07	1E-05		105	68 - 146	
Thorium-232	1E-05	2E-07	1E-05		103	68 - 146	

LCS-699 (10/08/19 08:56)	RunNo: 172403						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-230	1E-05	2E-07	1E-05		107	68 - 146	

Thorium Air Filter Analysis Sample Type **LCSD** Units: µCi/Sample

LCSD-695 (09/05/19 09:43)	RunNo: 171951						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium-230	1E-05	2E-07	1E-05	0.229	104	20	

LCSD-699 (10/08/19 08:56)	RunNo: 172403						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium-230	1E-05	2E-07	1E-05	1.23	106	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 10/15/2019
Work Order: S1908376 **Report ID:** S1908376001
Project: South Yellow Cake Scrubber, Dryer

Uranium Isotopic Filters Sample Type **MBLK** Units: µCi/Sample

MB-R172619 (10/02/19 16:52) Analyte	RunNo: 172619 Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium 234	ND	4E-07					
Uranium 235	ND	4E-07					
Uranium 238	ND	4E-07					

Uranium Isotopic Filters Sample Type **LCS** Units: µCi/Sample

LCS (10/02/19 16:52) Analyte	RunNo: 172619 Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium 234	9E-06	4E-07	7E-06		134	50 - 150	
Uranium 235	4E-07	3E-08	3E-07		123	50 - 150	
Uranium 238	9E-06	4E-07	7E-06		130	50 - 150	

Uranium Isotopic Filters Sample Type **LCSD** Units: µCi/Sample

LCSD (10/02/19 16:52) Analyte	RunNo: 172619 Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Uranium 234	8E-06	4E-07	9E-06	14.7	116	20	
Uranium 235	4E-07	4E-08	4E-07	6.60	132	20	
Uranium 238	8E-06	4E-07	9E-06	13.3	114	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 10/15/2019
Work Order: S1908376 **Report ID:** S1908376001
Project: South Yellow Cake Scrubber, Dryer

Total (3050) Metals by EPA 200.8-Soil Sample Type **MBLK** Units: µg/Sample

MBLK (08/28/19 17:19)	RunNo: 171194						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	ND	1					

MBLK (09/20/19 13:55)	RunNo: 171805						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	ND	45					

Total (3050) Metals by EPA 200.8-Soil Sample Type **LCS** Units: µg/Sample

LCS (08/28/19 17:13)	RunNo: 171194						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	104	1	1E02		104	85 - 115	

LCS (09/20/19 13:52)	RunNo: 171805						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	102	45	1E02		102	85 - 115	

Total (3050) Metals by EPA 200.8-Soil Sample Type **MS** Units: µg/Sample

S1908376-001AS (08/28/19 17:44)	RunNo: 171194						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	10500	1	1E04	ND	104	70 - 130	

S1908376-004AS (09/20/19 14:27)	RunNo: 171805						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	1100	45	1E03	ND	108	70 - 130	

Total (3050) Metals by EPA 200.8-Soil Sample Type **MSD** Units: µg/Sample

S1908376-001AMSD (08/28/19 17:50)	RunNo: 171194						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Uranium	10000	1	10500	4.58	99.1	20	

S1908376-004AMSD (09/20/19 14:31)	RunNo: 171805						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium	1140	45	1100	3.55	112	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

Inter-Mountain Labs

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

All shaded fields must be completed.

This is a legal document; any misrepresentation may be construed as fraud.

#WEB

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
Energy Fuels	South Yellow Cake Scrubber, Dryer		435-678-4113

Report Address	Contact Name	
391 East 620 South American Fork, Utah 84003	Dean or Paul Kitchen	
	Email	tetco@tetco-ut.com
Invoice Address	Phone	801-492-9609
EFRI C/Oaccounts Payable 225 Union Bvld.Suite 600 Lakewood CO.80228	Purchase Order #	Quote #

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	U-Nat	Ra-226	Ra-228	Th-228	TH-230	Th-232	Lead-210		REMARKS
							ANALYSES / PARAMETERS								
1		08/20/19	7:00	**7204 Vanadium Scrubber RUN 1**	FT	1	X	X	X	X	X	X	X		Conduct /Blanks
2		08/20/19	7:00	**7205 Vanadium Baghouse RUN 1**	FT	1	X	X	X	X	X	X	X		
3		08/21/19	7:00	**7206 Vanadium Scrubber RUN 2**	FT	1	X	X	X	X	X	X	X		
4		08/21/19	7:00	**7207 Vanadium Baghouse RUN 2**	FT	1	X	X	X	X	X	X	X		
5		08/20/19	7:00	**7204 Vanadium Scrubber RUN 1**	OT	1	X	X	X	X	X	X	X		
6		08/20/19	7:00	**7205 Vanadium Baghouse RUN 1**	OT	1	X	X	X	X	X	X	X		
7		08/21/19	7:00	**7206 Vanadium Scrubber RUN 2**	OT	1	X	X	X	X	X	X	X		
8		08/21/19	7:00	**7207 Vanadium Baghouse RUN 2**	OT	1	X	X	X	X	X	X	X		
9															
10															
11															
12															
13															
14															

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME

SHIPPING INFO	MATRIX CODES		TURN AROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☒ UPS	Water	WT	Check desired service	Compliance Monitoring ? (Y) / N	
☒ FedEx	Soil	SL	☒ Standard turnaround	Program (SDWA, NPDES,...)	
☐ USPS	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit #	Contact at Energy Fuels Blanding: Logan Shumway
☐ Hand Carried	Filter	FT	☐ **URGENT - < 2 Working Days**	Chlorinated? Y / (N)	
☐ Other	Other	OT	***Rush & Urgent Surcharges will be applied***	Sample Disposal: Lab / Client	

APPENDIX D

Vanadium Dryer

Figure 1. Facility Schematic Representation, Vanadium Dyer

Vanadium Packaging

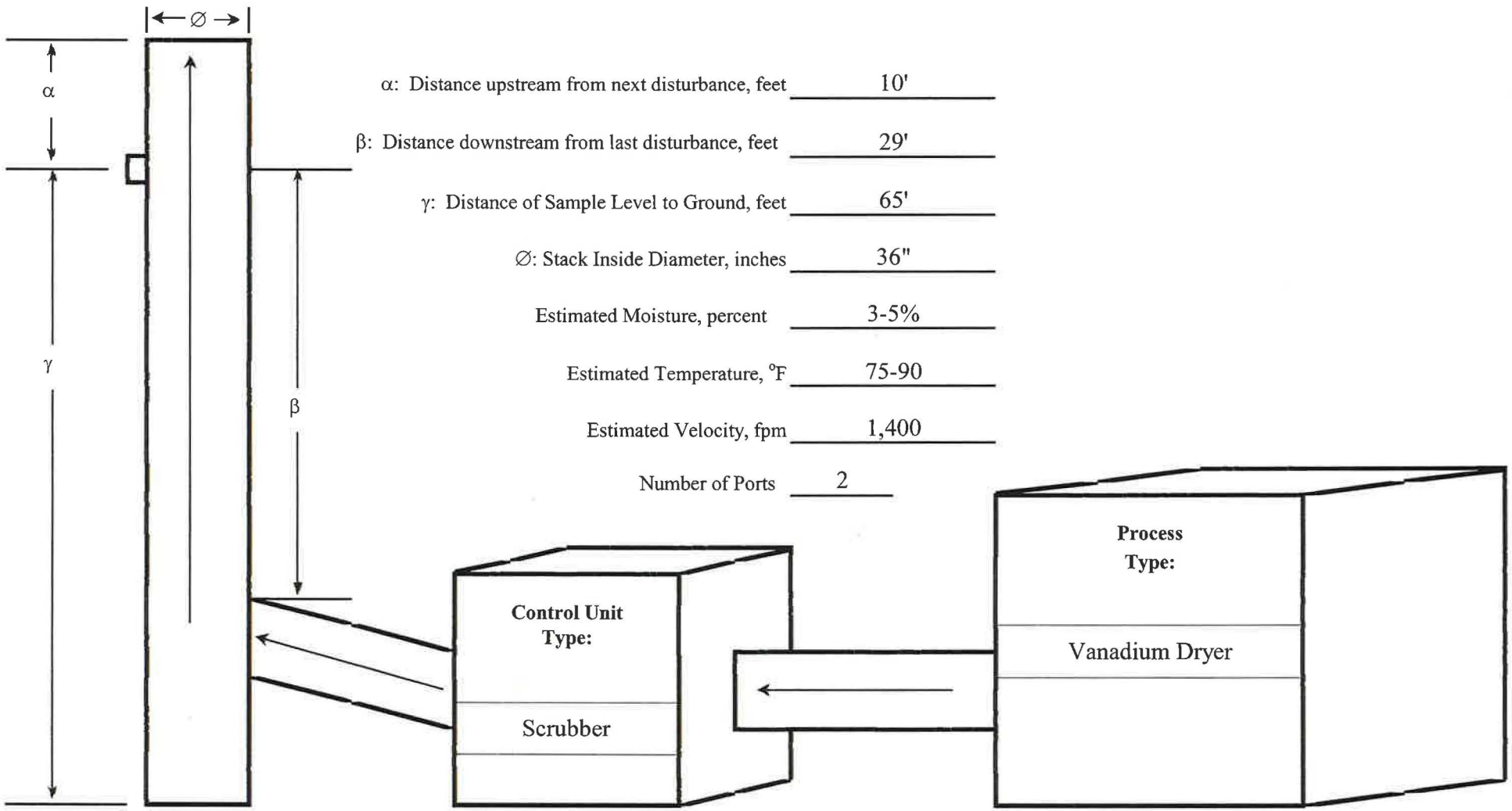
Figure 2. Facility Schematic Representation, Vanadium Packaging

Process Data (Retained by Energy Fuels)

Scrubber Pressure Drop and Water Flow Rates

Facility: Energy Fuels

Stack Identification: Vanadium Dryer



α: Distance upstream from next disturbance, feet 10'

β: Distance downstream from last disturbance, feet 29'

γ: Distance of Sample Level to Ground, feet 65'

∅: Stack Inside Diameter, inches 36"

Estimated Moisture, percent 3-5%

Estimated Temperature, °F 75-90

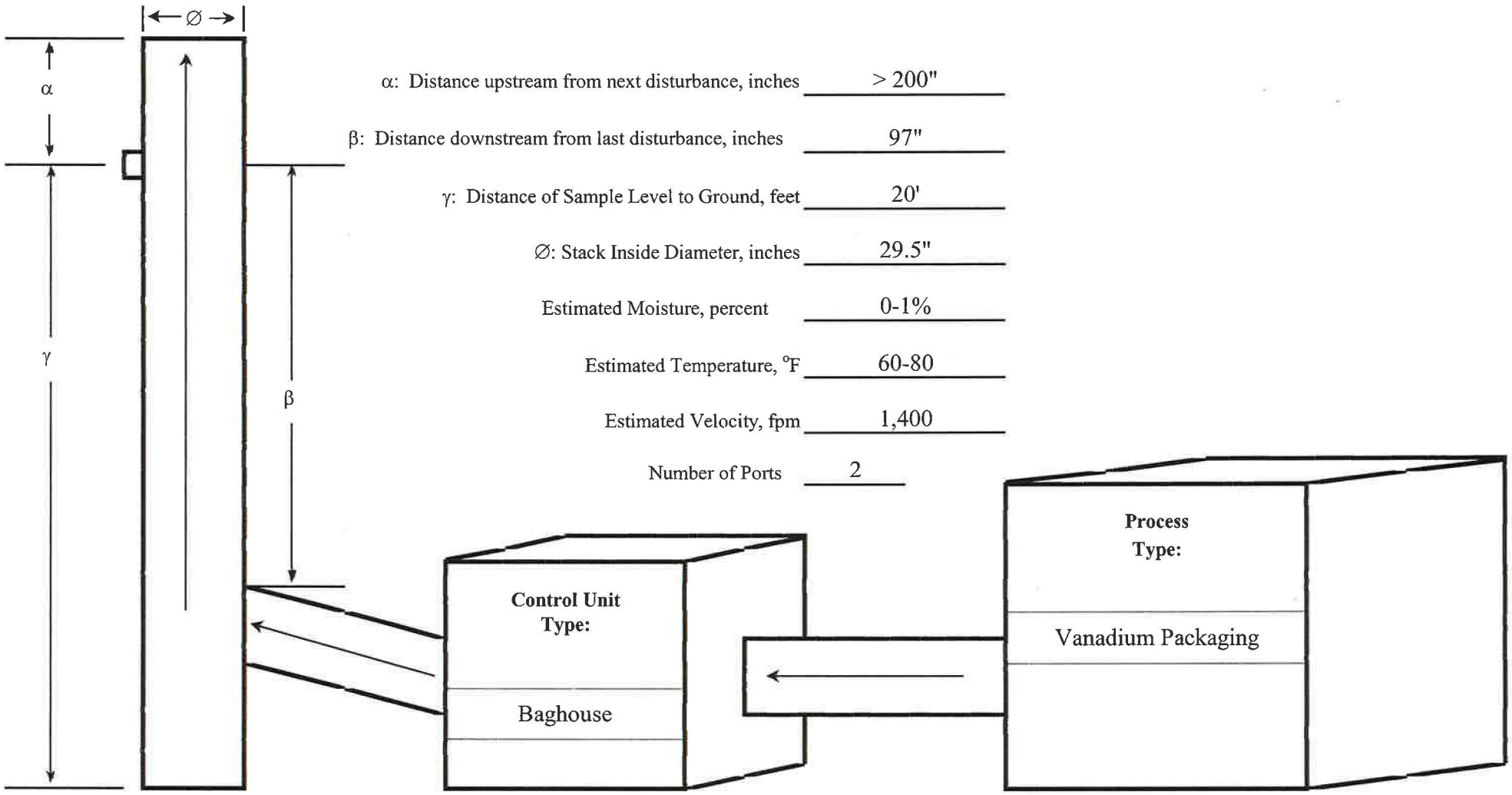
Estimated Velocity, fpm 1,400

Number of Ports 2

Figure 1. Facility Schematic Representation, Vanadium Dryer

Facility: Energy Fuels

Stack Identification: Vanadium Packaging



α: Distance upstream from next disturbance, inches > 200"

β: Distance downstream from last disturbance, inches 97"

γ: Distance of Sample Level to Ground, feet 20'

∅: Stack Inside Diameter, inches 29.5"

Estimated Moisture, percent 0-1%

Estimated Temperature, °F 60-80

Estimated Velocity, fpm 1,400

Number of Ports 2

Figure 2. Facility Schematic Representation, Vanadium Dryer

Facility Energy Fuels

Location Vanadium Dryer

Date 8/20/19

Run #	Time	East Scrubber		West Scrubber		Fusion Furnace	
		"H_2O	gpm	"H_2O	gpm	°F	
1	8:30	12.1	39.8	6.9	86.6	1390	
1	9:00	12.1	39.5	7.0	86.7	1390	
	9:30	12.3	39.6	6.8	86.6	1381	
↓	10:00	12.2	39.8	6.9	86.7	1385	
	10:30	12.3	39.6	6.8	86.8	1390	
	11:00	12.2	39.5	6.7	86.7	1390	
	11:30	12.3	39.4	6.6	866	1393	
	12:00	12.3	39.3	6.6	86.6	1390	
	12:30	12.2	39.2	6.5	86.7	1390	
	13:00	12.3	39.2	6.4	86.7	1385	
	13:30	12.3	39.0	6.4	86.7	1384	
	14:00	12.4	39.1	6.3	86.8	1384	
	14.30	12.4	39.0	6.2	86.8	1386	
	15:00	12.4	39.1	6.2	86.8	1391	
	15:30	12.3	39.2	6.1	86.9	1390	
	16:00	12.4	39.2	6.3	87.0	1389	

Facility Energy Fuels

Location Vanadium Dryer

Date 8/21/15

Run #	Time	East Scrubber		West Scrubber		Fusion Furnace	
		"H_2O	gpm	"H_2O	gpm	°F	
2	8:00	11.6	39.1	7.1	86.4	1350	
	8:30	11.6	39.1	7.2	86.5	1355	
	9:00	11.7	39.3	7.1	86.4	1357	
	9:30	11.6	39.0	7.0	86.3	1357	
	10:00	11.6	39.0	7.0	86.4	1359	
	10:30	11.7	39.3	6.9	86.3	1354	
	11:00	11.6	39.3	6.9	86.3	1354	
	11:30	11.7	38.9	6.7	86.1	1357	
	12:00	11.6	39.0	6.9	86.2	1354	
	12:30	11.7	39.1	6.9	86.3	1352	
	13:00	11.6	38.9	6.7	86.1	1350	
	13:30	12.0	40.3	6.4	86.6	1351	
	14:00	12.3	40.0	6.5	86.6	1358	
	14:30	11.9	39.5	6.6	86.3	1354	
	15:00	11.8	39.5	6.5	86.2	1354	
	15:30	12.0	39.9	6.5	86.2	1356	
	16:00	12.0	40.1	6.4	86.3	1356	

APPENDIX E

Calibration of the console dry gas meter(s), pitot tubes, nozzles diameters, and temperature sensors were carried out in accordance with the procedures outlined in the Quality Assurance Handbook. The appropriate calibration data are presented in the following pages. The nozzle calibrations are recorded on the first page of the field data sheets.

Figure 3 Schematic of Method 5/114 Sampling Train
Meter Box Calibration Data and Calculations Forms
Post-test Dry Gas Meter Calibration Data Forms
Type S Pitot Tube Inspection Data
Sample Box Temperature Sensor Calibration

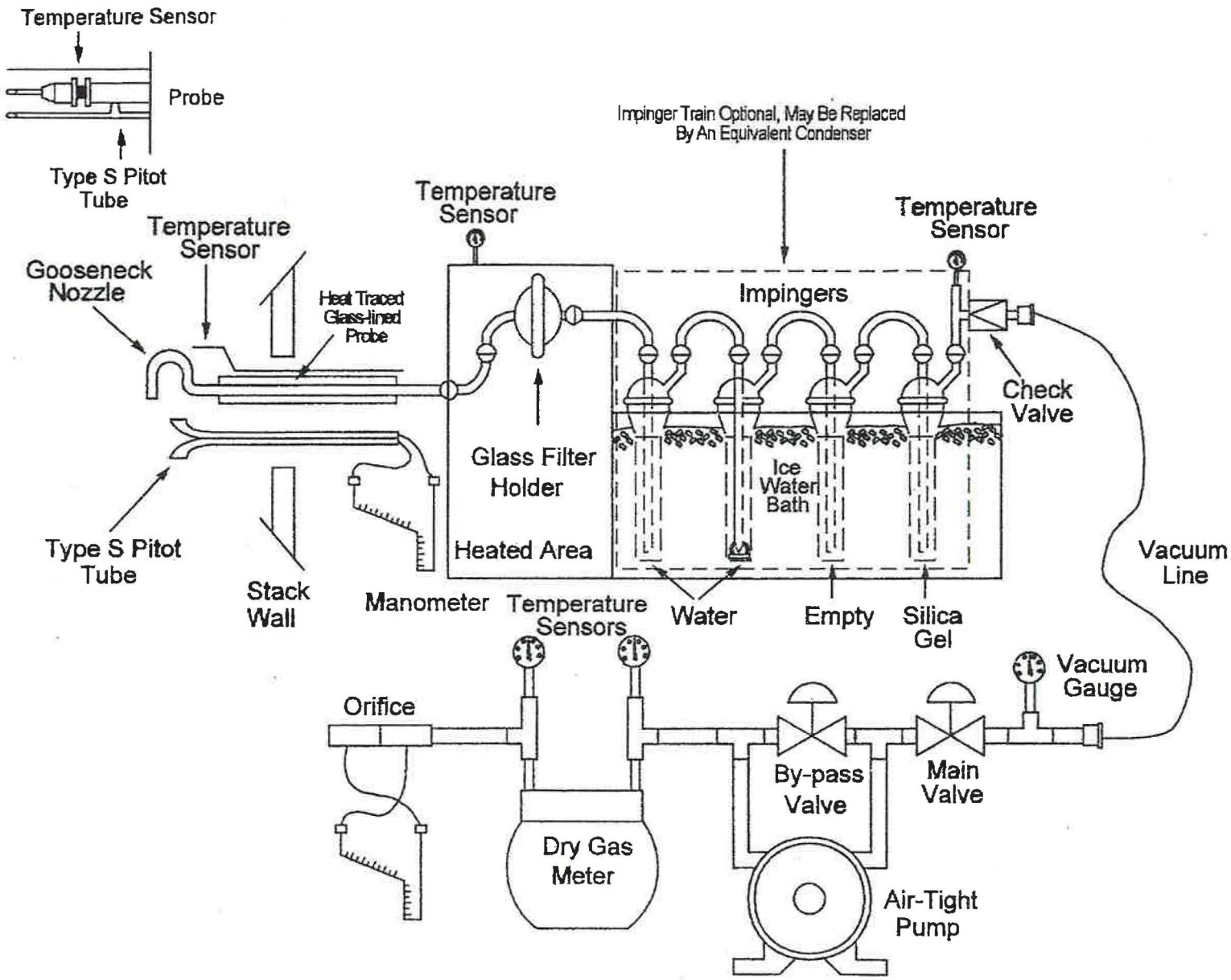


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

2019 Pre-Calibration

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

TECHNICIAN:	Alex Moore				
DATE:	12/19/2018	METER SERIAL #:	68092	BAROMETRIC PRESSURE (in Hg):	INITIAL 25.65 / FINAL 25.65 / AVG (P_{bar}) 25.65
METER PART #:	Console 6	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #6

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	9	90.906	102.765	11.860	64	75	84	65	69	73.3	11.00	2.90	10.1528	10.0372	0.989		1.677
	2	0.8137	9	102.765	112.526	9.761	65	82	87	69	71	77.3	9.00	2.90	8.2937	8.2045	0.989		1.668
	3	0.8137	9	112.526	117.949	5.423	65	86	88	71	72	79.3	5.00	2.90	4.5907	4.5559	0.992		1.663
																AVG =	0.990	-0.60	
19	1	0.5317	11	119.100	130.925	11.825	67	82	87	73	77	79.8	17.00	1.10	9.9497	10.1072	1.016		1.473
	2	0.5317	11	130.925	137.549	6.624	69	85	87	77	77	81.5	9.60	1.10	5.5555	5.6374	1.015		1.474
	3	0.5317	11	137.549	146.604	9.055	70	86	87	77	77	81.8	13.00	1.10	7.5909	7.7071	1.015		1.476
																AVG =	1.015	1.93	
12	1	0.3307	13	147.401	154.550	7.149	70	83	81	77	77	79.5	16.00	0.43	6.0065	5.8998	0.982		1.495
	2	0.3307	13	154.550	160.129	5.579	69	81	82	77	77	79.3	12.50	0.43	4.6896	4.6114	0.983		1.494
	3	0.3307	13	160.129	168.163	8.034	69	81	82	77	76	79.0	18.00	0.43	6.7564	6.6404	0.983		1.495
																AVG =	0.983	-1.33	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.996

AVERAGE $\Delta H_@$ = 1.546

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT
32	33	33
69	69	70
204	205	205

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

2019 Pre-Calibration

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

TECHNICIAN: M.McNamara
DATE: 12/18/2018
METER PART #: Console 7
METER SERIAL #: 25144
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.55 | FINAL 25.55 | AVG (P_{bar}) 25.55
EQUIPMENT ID #: Console #7

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (In H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	10	204.661	212.750	8.099	68	85	90	76	77	82.0	7.50	3.20	6.8007	6.7878	0.998		1.845
	2	0.8137	10	212.750	219.784	7.034	68	90	90	77	77	83.5	6.50	3.20	5.8901	5.8827	0.999		1.840
	3	0.8137	10	219.784	227.366	7.582	68	90	91	77	78	84.0	7.00	3.20	6.3431	6.3353	0.999		1.838
																AVG =	0.999	-0.79	
19	1	0.5317	13	187.251	192.411	5.160	72	81	84	69	72	76.5	7.50	1.25	4.3529	4.4186	1.015		1.709
	2	0.5317	13	192.411	197.585	5.174	70	84	84	73	74	78.8	7.50	1.25	4.3465	4.4270	1.019		1.695
	3	0.5317	13	197.585	204.150	6.565	69	84	86	74	75	79.8	9.50	1.25	5.5048	5.6128	1.020		1.689
																AVG =	1.018	1.12	
12	1	0.3307	12	228.300	233.545	5.245	72	87	86	78	79	82.5	12.00	0.45	4.3656	4.3972	1.007		1.569
	2	0.3307	12	233.545	238.823	5.278	72	86	86	79	81	83.0	12.00	0.45	4.3890	4.3972	1.002		1.568
	3	0.3307	12	238.823	244.115	5.292	72	86	87	81	81	83.8	12.00	0.45	4.3946	4.3972	1.001		1.565
																AVG =	1.003	-0.33	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 1.007

AVERAGE $\Delta H_@$ = 1.702

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT
32	33	32
70	71	71
204	204	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

Post Calibration
Energy Fuel

TECHNICIAN:	R Kitchen			INITIAL	FINAL	AVG (P_{bar})
DATE:	08/22/19	METER SERIAL #:	68092	BAROMETRIC PRESSURE (in Hg):	25.25	25.25	25.25
METER PART #:	Console 6	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #6		

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
15	1	0.4238	13	42.236	48.199	5.963	80	86	95	78	82	85.3	10.35	0.72	4.8841	4.7675	0.976		1.563
	2	0.4238	13	48.199	53.998	5.799	82	91	99	82	86	89.5	9.97	0.72	4.7130	4.5840	0.973		1.557
	3	0.4238	13	53.998	61.299	7.301	83	95	102	86	89	93.0	12.46	0.72	5.8962	5.7235	0.971		1.550
																AVG =	0.973	0.00	
	1																		
	2																		
	3															AVG =			
	1																		
	2																		
	3															AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.973

AVERAGE $\Delta H_@$ = 1.557

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

Energy Fuel

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

TECHNICIAN: R Kitchen

DATE: 08/22/19 | METER SERIAL #: 25144 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.25, FINAL 25.25, AVG (P_{bar}) 25.25

METER PART #: Console 7 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console #7

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
19	1	0.5317	13	23.155	29.035	5.880	86	98	98	95	93	96.0	8.330	1.20	4.7295	4.7874	1.012		1.644
	2	0.5317	13	29.035	34.269	5.234	84	97	99	93	92	95.3	7.420	1.20	4.2156	4.2722	1.013		1.640
	3	0.5317	13	34.269	39.772	5.503	84	99	101	92	93	96.3	7.79	1.20	4.4243	4.4853	1.014		1.637
																AVG =	1.013	0.00	
	1																		
	2																		
	3															AVG =			
	1																		
	2																		
	3															AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:

The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 1.013

AVERAGE $\Delta H_@$ = 1.640

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions

K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)

T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions

T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)

K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

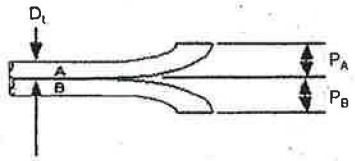
$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT

Type S Pitot Tube Inspection Data

Date: 12/20/18 Pitot Tube Identification: 38 G

Technician: M. McNamara

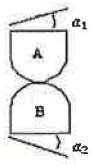


D_t = 0.375 in. Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le P_A$ & $P_B \le 1.50 \cdot D_t$? Yes

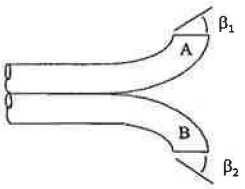
P_A = 0.491 in.

P_B = 0.491 in.



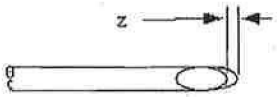
$\alpha_1 < 10°$ α_1 = 3 °

$\alpha_2 < 10°$ α_2 = 2 °

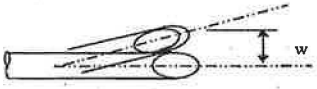


$\beta_1 < 5°$ β_1 = 1 °

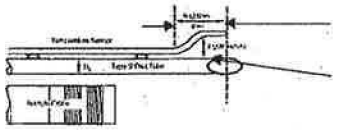
$\beta_2 < 5°$ β_2 = 0 °



$Z \le 0.125$ in. Z = 0.051 in.

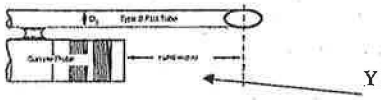


$W \le 0.03125$ in. W = 0.017 in.



$W > 3$ inches W = 4 in.

$Z > 3/4$ inch Z = 0.875 in.



$Y \ge 3$ inches Y = 3 3/4 in.

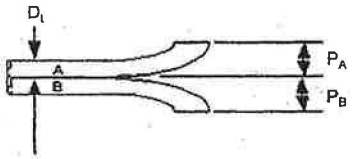
The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration Reference: Omega CL3512A				
Probe	Continuity Check			Yes
	Heat Check 248			Yes
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	68	69	1
Stack	AIR	69	71	2
	ICE WATER	33	33	0
	BOIL WATER	205	204	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12/20/18 Pitot Tube Identification: 38 G-2

Technician: M. McNamara

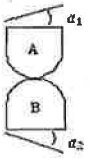


D_t = 0.375 in. Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le P_A \& P_B \le 1.50 \cdot D_t$? Yes

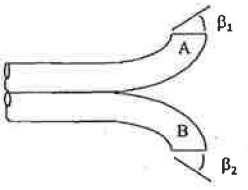
P_A = 0.476 in.

P_B = 0.476 in.



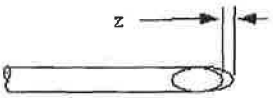
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 3 °

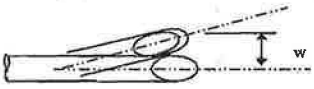


$\beta_1 < 5°$ β_1 = 3 °

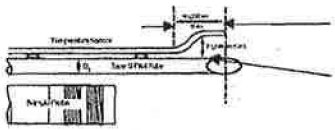
$\beta_2 < 5°$ β_2 = 3 °



$Z \le 0.125$ in. Z = 0.066 in.

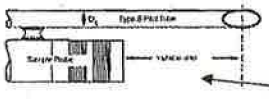


$W \le 0.03125$ in. W = 0.030 in.



W > 3 inches W = 4.75 in.

Z > 3/4 inch Z = 0.875 in.



$Y \ge 3$ inches Y = 3 1/2 in.

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration Reference: Omega CL3512A				
Probe	Continuity Check			Yes
	Heat Check 248			Yes
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	69	70	1
Stack	AIR	69	71	2
	ICE WATER	33	34	1
	BOIL WATER	204	205	1
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 1/2/19 Calibrator: Mike McNamara Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature		Temperature Difference (°F)
			Reference (°F)	Sensor (°F)	
A	Oven (3)	Water	33	33	0
		Water	204	203	-1
	Oven (4)	Water	33	33	0
		Water	204	203	-1
B	Oven (3)	Water	33	33	0
		Water	204	204	0
	Oven (4)	Water	33	33	0
		Water	204	204	0
C	Oven (3)	Water	33	33	0
		Water	204	205	1
	Oven (4)	Water	33	33	0
		Water	204	205	1
D	Oven (3)	Water	34	35	1
		Water	204	205	1
	Oven (4)	Water	34	35	1
		Water	205	205	0
E	Oven (3)	Water	33	34	1
		Water	204	205	1
	Oven (4)	Water	33	34	1
		Water	204	205	1
F	Oven	Water	33	33	0
		Water	204	205	1
G	Oven	Water	33	34	1
		Water	205	205	0
H	Oven	Water	33	32	-1
		Water	204	205	1
	Impinger Out A	Water	34	33	-1
		Water	205	205	0
	Impinger Out B	Water	33	33	0
		Water	205	205	0
	Impinger Out C	Water	34	34	0
		Water	205	205	0
	Impinger Out D	Water	33	33	0
		Water	205	204	-1
	Impinger Out E	Water	33	33	0
		Water	205	203	-2
	Impinger Out F	Water	33	33	0
		Water	204	203	-1
	Impinger Out G	Water	33	33	0
		Water	205	203	-2
	Impinger Out H	Water	33	33	0
		Water	205	204	-1
	Impinger Out I	Water	33	33	0
		Water	205	204	-1
	Impinger Out J	Water	33	33	0
		Water	205	203	-2
	Impinger Out K	Water	33	33	0
		Water	205	204	-1

APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

FOURTH QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
ENERGY FUELS RESOURCES
VANADIUM DRYER STACK
VANADIUM PACKAGING STACK

BLANDING, UTAH

October 28-30, 2019

By:

TETCO
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American Fork, UT 84003
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Fax (801) 492-9107 fax

Prepared for:

Energy Fuels Resources
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

January 3, 2020

CERTIFICATION OF REPORT INTEGRITY

Technical Emissions Testing Company (TETCO) certifies that this report represents the truth as well as can be derived by the methods employed. Every effort was made to obtain accurate and representative data and to comply with procedures set forth in the Federal Register.

Mike McNamara

Reviewer: _____

Date: 1/3/20

Dean Kitchen

Reviewer: _____

Date: 1-6-20

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INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the Vanadium Dryer and the Vanadium Packaging exhaust stacks. Emissions are calculated in terms of pico curies per dry standard cubic foot (pCi/dscf) and pico curies per hour (pCi/hr).

Test Location and Type of Process

Energy Fuels Resources is located about 5 miles south of Blanding, Utah. Vanadium containing material is processed and packed into barrels which are shipped to other facilities for additional processing. A scrubber serves as the main emission control device for the vanadium dryer. A baghouse serves as the control device for the vanadium packaging area.

Stack schematics are shown as Figures 1 and 2 in Appendix D.

Test Dates

Run 1 on the Vanadium Dryer and run 1 on the Vanadium Packaging exhausts were completed October 28-29, 2019. The second test runs were completed October 29-30, 2019.

Pollutants Tested and Methods Applied

These tests were a determination of radionuclide emissions in accordance with EPA Method 5/114.

Test run filters and front wash residues were sent to Inter-Mountain Labs in Sheridan, Wyoming.

Test Participants

Energy Fuels	Logan Shumway	Steve Snyder
TETCO	Mike McNamara Reed Kitchen	Doug Olsen

Deviations from EPA Methods

None.

Quality Assurance

Testing procedures and sample recovery techniques were according to those outlined in the Federal Register and the *Quality Assurance Handbook for Air Pollution Measurement Systems*.

SUMMARY OF RESULTS

Emission Results

Table I presents the findings of the test in Curies per dry standard cubic foot. Tables IV and V in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	Vanadium Dryer		Vanadium Packaging	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	0.046	1.838E+04	0.316	5.049 E+04
2	0.179	7.363E+04	0.237	3.764E+04
AVE	0.112	4.6021E+04	0..277	4.406E+04

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Production data was retained by Energy Fuels Resources.

Description of Collected Samples

The test filters for the Vanadium Dryer were heavily covered with a dull, lime green colored particulate. The front washes were clear in appearance.

The test filters for the Vanadium Packaging exhaust were moderately covered with Dark Brown colored particulate matter. The front washes were brown in appearance.

Discussion of Errors or Irregularities

None

Percent Isokinetic Sampling

Each test run was isokinetic within the ±10% of 100% criterion specified in the Federal Register. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	Vanadium Dryer	Vanadium Packaging
1	98	101
2	97	99

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber pressure drop and water flow rate readings are found in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Energy Fuels Resources.

SAMPLING AND ANALYTICAL PROCEDURES

Sampling Port Location

The inside diameter of the Vanadium Dryer exhaust stack was 36 inches. Two, four-inch diameter sample port were located 9.67 diameters (29 feet) downstream from the last disturbance and 3.33 diameters (10 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Vanadium Packaging exhaust stack was 29.5 inches. Two, four-inch diameter sample ports were located 3.29 diameters (9 inches) downstream from the last disturbance and more than 6.78 diameters (200 inches) upstream from the last disturbance. The sample port locations are depicted in Figure 2 in Appendix D.

Sampling Point Location

Table III shows the distance of each sampling point from the inside wall according to EPA Method 1. Each point was marked and identified with a wrapping of glass tape and numbered. These points were determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance From the Inside Wall (inches)	
	Vanadium Dryer	Vanadium Packaging
1	1.58	1.00
2	5.26	1.98
3	10.66	3.48
4	25.34	5.22
5	30.74	7.38
6	34.42	10.50
7		19.00
8		22.13
9		24.28
10		26.02
11		27.52
12		28.50

Sampling Train Description

To determine the emission rates for these stacks, 40 CFR 60, Appendix A, Methods 1-5/114 were followed.

All sampling trains were made of inert materials, (Teflon, stainless steel, and glass) to prevent interference of the sampled gas. The sample consoles used to conduct Methods 1-5/114 were constructed to meet the specifications outlined in the CFR. The temperature sensors were K-type thermocouples. Heater, vacuum, and pitot line connections were designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 3 in Appendix E is a sketch of the Methods 5/114 sampling train.

Sample boxes were prepared for testing by following the prescribed procedures outlined in Methods 5/114.

Sampling and Analytical Procedures

All sampling and analytical test procedures were as specified in 40 CFR 60, Appendix A, Methods 5/114.

Quality Assurance

All equipment setup, sampling procedures, sample recovery, and equipment calibrations were carried out according to the procedures specified in 40 CFR 60 and the *Quality Assurance Handbook for Air Pollution Measurement Systems*.

APPENDICES

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
D: Raw Production Data
E: Calibration Procedures and Results
F: Related Correspondence

APPENDIX A

Table IV Complete Results, Vanadium Dyer
Table V Complete Results, Vanadium Packaging
Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
ENERGY FUELS CORPORATION, BLANDING, UTAH
VANADIUM DRYER

dryer

Symbol	Description	Dimensions	Run #1	Run #2	
Date			10/28-29/19	10/29-30/19	
Filter #			7270	7223	
Begin	Time Test Began		16:20	13:53	
End	Time Test Ended		13:12	12:28	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.24	24.38	
ΔH	Orifice Pressure Drop	In. H_2O	0.842	0.858	
Y	Meter Calibration Y Factor	dimensionless	0.978	0.978	
Vm	Volume Gas Sampled--Meter Conditions	cf	305.527	304.444	
T_m	Avg Meter Temperature	°F	83.8	81.9	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.3345	0.3352	
Wt_{wc}	Weight Water Collected	Grams	269.5	214.7	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3100	0.3100	
CO_2	Volume % Carbon Dioxide	Percent	0.80	0.00	
O_2	Volume % Oxygen	Percent	20.20	20.50	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.00	79.50	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	235.628	237.004	
Vw	Volume Water Vapor	scf	12.707	10.123	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.0512	0.0410	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.0546	0.0461	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.0512	0.0410	
X_d	Fraction of Dry Gas	Fraction	0.949	0.959	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.94	28.82	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.38	28.38	
%I	Percent Isokinetic	Percent	98.4	97.0	**AVG**
T_s	Avg Stack Temperature	°F	87.6	82.5	**85.1**
A_s	Stack Cross Sectional Area	Sq. Ft.	7.069	7.069	
P_G	Stack Static Pressure	In. H_2O	-0.140	-0.140	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.17	24.31	
P_s	Stack Pressure	In. Hg. Abs	24.158	24.300	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	6.73E+03	6.86E+03	**6.80E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	9.11E+03	9.06E+03	**9.08E+03**
V_s	Velocity of Stack Gas	fpm	1.29E+03	1.28E+03	**1.28E+03**
Curies	Radionuclides per sample	pCi	10.75	42.37	
	Radionuclides per blank	pCi	0.00	0.00	
Net Curies	Net Radionuclides per sample	pCi	10.75	42.37	
Crad	Concentration of Radionuclides	pCi/dscf	0.046	0.179	**0.112**
ERrad	Emission Rate of Radionuclides	pCi/hr	1.841E+04	7.363E+04	**4.6021E+04**

TABLE V
COMPLETE RESULTS
ENERGY FUELS CORPORATION, BLANDING, UTAH
VANDIUM PACKAGING

Symbol	Description	Dimensions	Run #1	Run #2	
Date			10/28-29/19	10/29-30/19	
Filter #			7271	7272	
Begin	Time Test Began		14:43	12:12	
End	Time Test Ended		11:20	11:45	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.28	24.38	
ΔH	Orifice Pressure Drop	In. H_2O	0.739	0.723	
Y	Meter Calibration Y Factor	dimensionless	0.996	0.996	
Vm	Volume Gas Sampled--Meter Conditions	cf	288.106	278.547	
T_m	Avg Meter Temperature	°F	86.0	83.3	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.1828	0.1800	
Wt_{wc}	Weight Water Collected	Grams	6.5	8.0	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3900	0.3900	
CO_2	Volume % Carbon Dioxide	Percent	0.00	0.00	
O_2	Volume % Oxygen	Percent	20.90	20.90	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10	79.10	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	225.643	220.177	
Vw	Volume Water Vapor	scf	0.306	0.377	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.001	0.002	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.018	0.015	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.001	0.002	
X_d	Fraction of Dry Gas	Fraction	0.999	0.998	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84	28.84	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.82	28.82	
%I	Percent Isokinetic	Percent	100.9	99.4	**AVG**
T_s	Avg Stack Temperature	°F	54.4	49.4	**51.9**
A_s	Stack Cross Sectional Area	Sq. Ft.	4.746	4.746	
P_G	Stack Static Pressure	In. H_2O	-0.090	-0.090	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.26	24.36	
P_s	Stack Pressure	In. Hg. Abs	24.248	24.353	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	2.66E+03	2.64E+03	**2.65E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	3.21E+03	3.14E+03	**3.17E+03**
V_s	Velocity of Stack Gas	fpm	6.76E+02	6.61E+02	**6.68E+02**
Curies	Radionuclides per sample	pCi	71.26	52.29	
	Radionuclides per blank	pCi	0.00	0.00	
Net Curies	Net Radionuclides per sample	pCi	71.26	52.29	
Crad	Concentration of Radionuclides	pCi/dscf	0.316	0.237	**0.277**
ERrad	Emission Rate of Radionuclides	pCi/hr	5.049E+04	3.764E+04	**4.406E+04**

Method 5 Sample Equations

$$\%I = Vm_{std} \cdot (T_s + 460) \cdot 1039 / (\theta \cdot V_s \cdot P_s \cdot X_d \cdot D_n^2)$$

$$A_s = (Ds^2 / 4) \cdot \pi$$

$$B_{ws} = V_w / (Vm_{std} + V_w)$$

$$C_f = M_{fp} \cdot 0.01543 / Vm_{std}$$

$$C_{X\,(corr)} = C_{X\,(avg)} \cdot (20.9 - \text{desired } \%O_2) / (20.9 - \text{actual } \%O_2)$$

$$D_{eq} = 2 \cdot L \cdot W / (L + W)$$

$$D_{n\,des} = \sqrt{\{0.0269 \cdot (Pb_m + 0.0735) / [(T_m + 460) \cdot C_p \cdot X_d \cdot \sqrt{[(T_s + 460) \cdot M_s) / (P_s \cdot \Delta P)]}\}}$$

$$EA = (\%O_2 - 0.5\,\%CO) / [0.264\,\%N_2 - (\%O_2 - 0.5\,\%CO)]$$

$$ER_F = C_f \cdot Q_s \cdot 0.00857$$

$$ER_{mmBtu} = ER_X / (\text{mmBtu / hr})$$

$$\text{K-fact} = 846.72 \cdot Dn^4 \cdot \Delta H_@ \cdot C_p^2 \cdot X_d^2 \cdot M_d \cdot P_s \cdot (T_m + 460) / [M_s \cdot (T_s + 460) \cdot (Pb_m + \Delta H / 13.6)]$$

$$M_d = CO_2 \cdot 0.44 + O_2 \cdot 0.32 + N_2 \cdot 0.28$$

$$M_s = (M_d \cdot X_d) + (18 \cdot B_{ws})$$

$$P_s = Pb_p + (P_G / 13.6)$$

$$Q_a = V_s \cdot A_s$$

$$Q_s = Qa \cdot Xd \cdot Ps \cdot T_{std} / [(Ts + 460) \cdot P_{std}]$$

$$Q_W = Q_s / X_d$$

$$Vm_{std} = Vm \cdot Y \cdot T_{std} \cdot (Pb_m + \Delta H / 13.6) / [P_{std} \cdot (T_m + 460)]$$

$$V_s = 85.49 \cdot 60 \cdot Cp \cdot \sqrt{\Delta P} \cdot \sqrt{[(T_s + 460) / (P_s \cdot M_s)]}$$

$$V_w = Wt_{wc} \cdot 0.04715$$

$$X_d = 1 - B_{ws}$$

Method 5 Nomenclature

T_{std} = absolute temperature at standard conditions (528°R)

Tt = see θ

Vm = sample volume (ft^3) at meter conditions

Vm_{std} = volume standard (dscf), sample volume adjusted to 68°F and 29.92 inches Hg.

V_s = velocity of stack gas (fpm)

V_w = volume water vapor (scf) at 68°F and 29.92 inches Hg.

W = Width of rectangular stack (inches)

Wt_{wc} = weight of the condensed water collected (grams)

X_d = fraction of dry gas

Y = meter calibration Y-factor (dimensionless)

Method 5 Nomenclature

$\%I$ = percent isokinetic, percent

A_s = stack cross-sectional area (ft^3)

$AS\Delta P$ = see $\sqrt{\Delta P}$

Btu = unit heat value (British thermal unit)

B_{ws} = fraction of water in stack gas

C_f = concentration of particulate matter, front half (gr/dscf,lb/dscf, etc.)

C_{metal} = concentration of metals (ppm, $\mu g/ft^3$, etc.) atomic symbol replaces "metal"

CO_2 = percent carbon dioxide in the stack gas

C_p = pitot tube coefficient (0.84)

$C_{X\ (avg)}$ = species symbol replaces *x*.

$C_{X\ (corr)}$ = actual gas concentration corrected to required percent O_2

ΔH = orifice pressure drop (inches H_2O)

$\Delta H_@$ = orifice pressure (inches H_2O)

D_n = nozzle diameter (inches)

$D_{n\ des}$ = calculated desired nozzle size (inches)

ΔP = stack flow pressure differential (inches H_2O)

D_s = diameter of the stack (feet)

EA = percent excess air

ER_F = emission rate of front half particulate (lb/hr)

ER_{mmBtu} = emission rate per mmBtu or ton of fuel etc.

ER_X = emission rate of compound which replaces x

k-fact = multiplier of test point ΔP to determine test point ΔH

L = length of rectangular stack (inches)

mBtu = thousand Btu

M_d = molecular weight of stack gas, dry basis (lb/lb-mol)

M_F = mass of particulate on filter (mg)

M_{FP} = mass of particulate matter on filter and probe (mg)

mmBtu = million Btu

M_P = mass of particulate matter in probe (mg)

M_s = molecular weight of stack gas, wet basis (g/gmol)

N_2 = percent nitrogen in the stack gas

O_2 = percent oxygen in the stack gas

$\sqrt{\Delta P}$ = average of the square roots of ΔP (may also be referred to as $AS\Delta P$)

Pb_m = absolute barometric pressure at the dry gas meter (inches Hg)

Pb_p = absolute barometric pressure at the sample location (inches Hg)

P_G = stack static pressure (inches H_2O)

P_s = absolute stack pressure (inches Hg)

P_{std} = absolute pressure at standard conditions (29.92 inches Hg.)

θ = time of test (minutes)

Q_a = stack gas volumetric flow rate (acfm)

Q_s = stack gas volumetric flow rate (dscfm)

Q_W = wet stack gas std. volumetric flow (ft^3/min, wscfm)

T_m = meter temperature (^oF)

T_s = stack temperature (^oF)

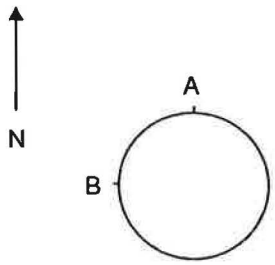
APPENDIX B

Vanadium Dryer

- Preliminary Velocity Traverse and Sampling Point Location Data
- Particulate Field Data

Vanadium Packaging

- Preliminary Velocity Traverse and Sampling Point Location Data
- Particulate Field Data



Stack Dia. 29.5 Reference: 0

Ports are > 250" Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Facility Energy Fuels

Stack Identification Vanadium Packaging Baghouse

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground 25' feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	2.1	1.00	1.00						
2	6.7	1.98	1.98						
3	11.8	3.48	3.48						
4	17.7	5.22	5.22						
5	25.0	7.38	7.38						
6	35.6	10.50	10.50						
7	64.4	19.00	19.00						
8	75.0	22.13	22.13						
9	82.3	24.28	24.28						
10	88.2	26.02	26.02						
11	93.3	27.52	27.52						
12	97.9	28.50	28.50						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

M5 Field Data Sheet

Filter 7270 TETCO Sample Box A

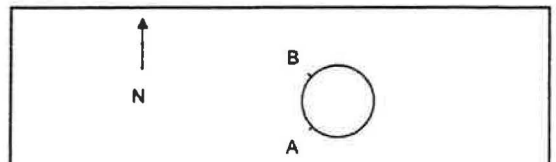
Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 10/28-29/2019

Location: Vanadium Dryer

Operator:



Stack Diameter 36" Port Reference 0"

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Assumed Moisture 5-9 %

Probe 386 Cp 0.84

Nozzle Calibration .310 .310 .310 .310 .309 .309 .309 .309

Avg D_n .309 inches .310

Gas Bag E-05

Console 3

Y-Factor .575

$\Delta H_@$ 1.65 in H_2O

Barometric Pressures

Pb_m 24.35 in Hg 24.20

Pb_p 24.25 in Hg 24.13

P_G -0.14 in H_2O

Traverse Point	Time Clock	Time Min (θ)	DGM (ft^3)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Oven	CPM Filter	Eff.	DGM Temp (T_m) Out	In
1	16:20	0	430.700	.12	.88	.88	4	~~235~~ 90	265	265		42	65	65
1		20	443.981	.12	.89	.89	4	90	241	265		42	71	78
2		40	456.261	.13	.97	.97	3	90	260	264		44	82	87
2		60	469.967	.11	.82	.82	4	90	261	262		45	85	89
3		80	482.679	.11	.82	.82	4	89	254	262		45	87	89
3		100	495.534	.12	.89	.89	4	89	256	253		44	89	91
4		120	508.541	.12	.89	.89	4	88	262	263		44	89	92
4	7:29	140	521.738	.11	.82	.82	3	87	235	240		37	69	69
5		160	534.426	.12	.89	.89	3	87	265	262		38	74	80
5		180	547.562	.12	.89	.89	3	87	264	262		42	77	79
6		200	560.648	.10	.74	.74	3	88	263	260		45	79	81
6		220	572.657	.10	.74	.74	3	85	262	261		45	80	81
		240	584.624	~~.10~~				5						
1	9:11	240	584.624	.10	.74	.74	4	87	256	268		46	79	81
1		260	596.554	.10	.74	.74	4	87	247	265		45	82	83
2		280	608.585	.11	.82	.82	4	80	253	263		46	84	86
2		300	621.139	.11	.82	.82	4	87	243	265		48	86	88
3		320	633.643	.12	.89	.89	4	89	238	267		50	88	90
3		340	646.841	.11	.82	.82	4	88	247	266		51	90	92
4		360	659.528	.11	.86	.86	4	84	252	267		51	91	93
4		380	672.368	.12	.93	.93	4	87	260	273		52	90	92
5		400	685.464	.12	.93	.93	5	88	265	269		55	86	88
5		420	698.758	.11	.86	.86	6	87	260	260		58	86	88
6		440	711.782	.10	.78	.78	6	88	262	263		57	87	87
6		460	724.218	.10	.78	.78	6	87	252	253		55	88	90
	13:12	480	736.770											
Total			~~305.770~~	8.0289	20.21			2102				4024		
Average			305.527	.3345	.842			87.6				83.8		

Water Collected 269.5 g

Time Sampled 480 min

Review

K = @T_m

K = @T_m

Leak Check:

	Pre	Post
ft^3/min	0.005	0.004
vac in Hg	25	15
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)
	521.738	12	0.005	521.981	12	0.007

M5 Field Data Sheet

Filter 7273 TETCO Sample Box A

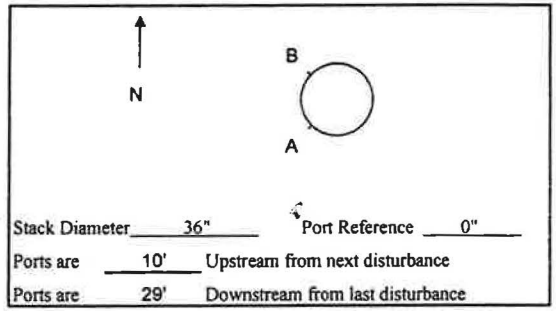
Page 1 of 1 Run # 2

Plant: Energy Fuels

Date: 10/29-30/2019

Location: Vanadium Dryer

Operator: [illegible]



Stack Diameter 36" Port Reference 0"

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Assumed Moisture 6 5-9 %

Probe 38 Cp 0.84

Nozzle Calibration .310 .310 .310 .310

Avg D_n .310 inches

Gas Bag E-05

Console 3

Y-Factor .975

$\Delta H_@$ 1.550 in H_2O

Barometric Pressures

Pb_m 24.20 in Hg 24.05

Pb_p 24.13 in Hg 24.48

P_G -0.14 in H_2O

Traverse Point	Time Clock	Time Min (θ)	DGM (ft^3)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Oven	CPM Filter	Eff.	DGM Temp (T_m) Out	In
1	13:53	0	737.402	-11	.84	.84	3	88	269	249		51	74	74
1		20	750.078	-11	.84	.84	3	87	265	263		55	80	82
2		40	762.754	-12	.92	.92	3	88	233	270		56	86	88
2		60	775.791	-12	.92	.92	3	88	238	265		57	89	91
3		80	789.127	-10	.77	.77	3	89	232	267		61	90	92
3		100	801.414	-10	.77	.77	3	89	242	266		59	88	89
4		120	813.700	-11	.87	.87	4	89	243	252		57	89	90
4		140	826.662	-13	1.02	1.02	4	87	231	238		55	87	90
5		160	840.558	-12	.95	.95	4	89	237	249		57	88	90
5		180	854.185	-12	.95	.95	4	90	234	251		56	88	90
6		200	867.699	-11	.87	.87	4	87	235	260		57	88	91
6		220	880.628	-11	.87	.87	4	88	236	235		55	88	90
		240												
4 1	8:27	240	893.479	-11	.82	.82	3	75	260	260		23	39	39
1		260	905.875	-11	.82	.82	3	75	261	261		34	51	44
2		280	917.700	-12	.89	.89	4	75	260	260		33	59	71
5 2		300	930.303	-12	.89	.89	4	78	264	265		33	68	72
3		320	942.911	-11	.82	.82	4	76	260	261		34	74	78
3		340	955.315	-11	.82	.82	4	76	255	259		37	79	82
6 4		360	967.529	-10	.75	.75	4	77	261	263		37	82	84
4		380	979.661	-10	.75	.75	4	78	262	261		39	85	88
5		400	991.451	-13	.97	.97	4	77	268	262		45	89	91
7 5		420	1005.126	-12	.89	.89	4	79	263	258		47	91	94
6		440	1018.121	-11	.82	.82	5	79	265	258		47	92	95
6		460	1030.670	-10	.75	.75	5	80	263	260		47	92	96
	12:27	480	1042.469											
Total			~~305.067~~ 8.043		20.58			1981					3929	
Average			304.444		.858			82.5					81.9	

Water Collected 214.7 g

Time Sampled 480 min

Review [illegible]

K= @T_m

K= @T_m

Leak Check:

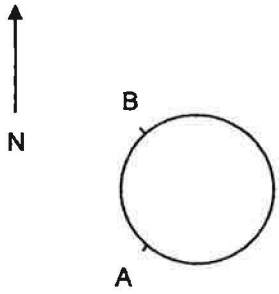
	Pre	Post
ft^3/min	0.005	0.005
vac in Hg	22	12
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)
	893.479	8	0.005	~~893.726~~ 894.102	8	0.003

.623

Prelim 6 pts blank



Stack Dia. 36 Reference: 0

Ports are 10' Upstream from next disturbance

Ports are 29' Downstream from last disturbance

Facility Energy Fuels

Stack Identification Vanadium Dryer

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 5-9 %

Sample Height from Ground 70' feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	4.4	1.58	1.58						
2	14.6	5.26	5.26						
3	29.6	10.66	10.66						
4	70.4	25.34	25.34						
5	85.4	30.74	30.74						
6	95.6	34.42	34.42						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ $\sqrt{\Delta P}$ _____

KEY => T_S ∠ Flow ΔP

114/5 Field Data Sheet

Filter 7271 TETCO Sample Box B

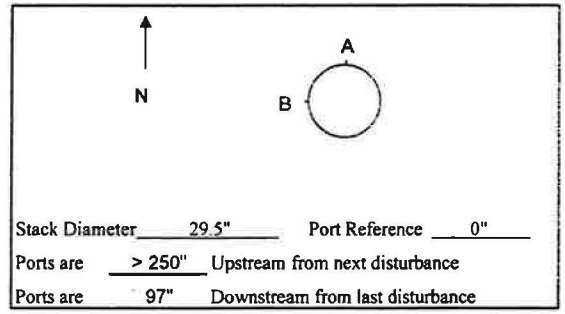
Page 1 of 1 Run # 1

Plant: Energy Fuels

Location: Vanadium Packaging Baghouse

Date: 10/28/19

Operator: M. McNamara



Stack Diameter 29.5" Port Reference 0"

Ports are > 250" Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Traverse Point	Time: Clock	Time: Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O): Desired	ΔH (in H₂O): Actual	Vacuum (in Hg)	Temperatures (°F): Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m): Out	DGM Temp (T_m): In
1	14:43	0	961.901	.025	.54	.54	2	57	242	234	234	40	54	54
2		20	972.250	.025	.54	.54	2	58	240	232	232	38	59	76
3		40	982.290	.030	.65	.65	2	58	248	241	241	41	67	83
4		60	993.630	.035	.76	.76	2	59	251	244	244	44	75	91
5		80	1005.775	.035	.76	.76	2	58	240	249	249	41	81	98
6		100	1018.985	.030	.65	.65	2	58	244	242	242	42	85	101
7		120	1029.940	.035	.77	.78	2	58	249	232	237	43	87	103
8		140	1042.250	.035	.77	.77	2	58	249	248	248	43	90	106
9		160	1054.630	.035	.77	.77	2	57	249	244	244	43	92	108
10		180	1067.040	.035	.77	.77	2	58	240	249	249	43	93	109
11		200	1079.590	.035	.77	.77	2	57	252	253	253	43	94	110
12		220	1092.030	.040	.88	.88	2	56	244	237	237	43	95	108
	18:43	240	1105.196											
10/28/19 1	7:20	240	1105.196	.035	.78	.78	2	50	245	250	250	38	69	69
2		260	1117.040	.030	.66	.66	2	51	249	234	234	36	71	71
3		280	1128.710	.030	.66	.66	2	51	247	253	253	38	74	81
4		300	1139.940	.035	.78	.78	2	50	246	252	252	40	76	85
5		320	1151.800	.035	.78	.78	2	52	243	250	250	40	78	87
6		340	1163.985	.030	.66	.66	2	50	252	248	248	39	80	90
7		360	1175.630	.030	.66	.66	2	51	240	238	238	40	81	91
8		380	1187.060	.035	.78	.79	2	51	244	250	250	41	82	93
9		400	1199.490	.035	.78	.78	2	51	248	246	246	41	84	93
10		420	1211.940	.035	.78	.78	2	52	246	251	251	42	85	96
11		440	1224.400	.040	.89	.89	2	53	244	236	236	43	87	98
12		460	1236.875	.040	.89	.89	2	52	244	253	253	43	88	98
	11:20	480	1250.007											
Total			288.106	√4.3875	17.730		1306						4129	
Average				√.1828	.739		54.4						86.0	

Assumed Moisture 1 %

Probe 386-2 Cp 0.84

Nozzle Calibration .390 .390 .390 .390

Avg D_n .390 inches

Gas Bag Ambient Air

Console 6

Y-Factor − .996

$\Delta H_@$ 1.546 in H_2O

Barometric Pressures 10/28/19

Pb_m 24.35 in Hg 24.20

Pb_b 24.33 in Hg 24.18

P_G − .09 in H_2O

Leak Check:	Pre	Post
ft³/min	0.002	0.002
vac in Hg	20.0	10.0
Pitot Rate	0.0	0.0
In H_2O	~~.80~~ 2.3	~~.730~~ 2.3

Water Collected 6.5 g

Time Sampled 480 min

Review

K = @T_m

K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

# of batches 1

1114/5 Field Data Sheet

Filter 7272 TETCO Sample Box B

Page 1 of 1 Run # 2

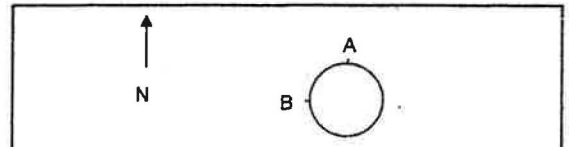
Plant: Energy Fuels

Date: 10/29/19

Location: Vanadium Packaging Baghouse

Operator: M. McNamara

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
1	12:12	0	250.800	.025	.55	.55	2	55	242	237	237	48	73	75
2		20	261.045	.025	.55	.55	2	57	243	243	243	41	87	83
3		40	271.480	.030	.66	.66	2	58	243	243	243	42	78	86
4		60	282.775	.030	.66	.66	2	59	251	244	244	42	81	91
5		80	294.130	.030	.66	.66	2	60	243	246	246	44	83	90
6		100	305.450	.030	.66	.66	2	61	251	249	249	41	80	88
7		120	316.790	.035	.77	.77	2	61	245	247	247	39	83	94
8		140	328.955	.035	.77	.77	2	62	243	249	249	40	87	97
9		160	341.985	.030	.66	.66	2	62	248	243	243	41	89	100
10		180	352.450	.035	.77	.77	2	64	243	244	244	39	91	98
11		200	363.005	.035	.77	.77	2	65	248	242	240	40	87	89
12		220	376.800	.035	.77	.77	2	65	244	239	239	39	87	96
	16:12	240	388.962											
10/30/19 1	7:45	240	388.962	.030	.67	.67	2	33	242	237	237	34	45	48
2		260	399.419	.030	.67	.67	2	35	249	234	234	36	45	72
3		280	410.440	.030	.67	.67	2	36	248	248	248	36	50	83
4		300	421.275	.030	.67	.67	2	39	247	237	237	37	63	88
5		320	432.640	.035	.79	.79	2	39	242	249	249	38	68	80
6		340	444.520	.035	.79	.79	2	39	251	236	236	38	72	84
7		360	456.400	.035	.79	.79	2	39	245	252	252	39	78	77
8		380	468.370	.040	.90	.90	2	39	242	236	236	39	81	93
9		400	481.055	.035	.79	.79	2	39	245	238	238	40	84	98
10		420	493.125	.035	.79	.79	2	39	249	235	235	40	86	101
11		440	505.170	.035	.79	.79	2	39	242	237	237	40	88	102
12		460	517.290	.035	.79	.79	2	41	240	252	252	41	91	106
	11:45	480	529.347											
Total			278.547 ✓	4.320 ✓	17.360 ✓			1186 ✓					3996 ✓	
Average				.1800 ✓	.723			49.4					83.3	



Stack Diameter 29.5" Port Reference 0"

Ports are > 250" Upstream from next disturbance

Ports are 97" Downstream from last disturbance

Assumed Moisture 1 %

Probe 386-2 Cp 0.84

Nozzle Calibration

.390 .390 .390 .390

Avg D_n .390 inches

Gas Bag Ambient Air

Console 6

Y-Factor .996

$\Delta H_@$ 1.546 in H_2O

Barometric Pressures

Pb_m 24.20 in Hg 24.55

Pb_p 24.18 in Hg 24.53

P_G -.09 in H_2O

Leak Check:	Pre	Post
ft³/min	@004	0.002
vac in Hg	20.0	10.0
Pitot Rate	0.0	0.0
In H_2O	2.5	2.5

Water Collected 8.0 g

Time Sampled 480 min

Review Nan

K = @T_m

K = @T_m

Barrels LHT 111

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

APPENDIX C

Vanadium Dryer
- Sample Recovery
- Gas Analysis Data (ORSAT)

Vanadium Packaging
- Sample Recovery
- Gas Analysis Data (Ambient Air)

Lab Analysis

Chain of Custody

Method 5

Facility: Energy Fuels — Date: 10/28-29/19

Stack Identification: Vanadium Dryer Scrubber — Method: 5

IMPINGERS

Run: 1 — Sample Box: A

Filter Number: 7270

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)	756.7	776.7	630.9	949.7			
Initial (g)	625.3	688.6	603.5	907.1			
Net (g)	131.4	88.1	27.4	42.6			

Total (g) 269.5

IMPINGERS

Run: 2 — Sample Box: A — 10/29-30/19

Filter Number: 7273

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)	805.3	754.4	618.7	971.2			
Initial (g)	672.9	706.8	608.5	949.7			
Net (g)	132.4	47.6	10.2	24.5			

Total (g) 214.7

IMPINGERS

Run: _____ — Sample Box: _____

Filter Number:

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)							
Initial (g)							
Net (g)							

Total (g) _____

Plant Energy Fuels Location Vanadium Saddle

Analytical Method CRSAT

Date 10/29
Test No. 1
Gas Bag No. E-05
Ambient Temp 40
Operator KM

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	0.8	0.8	0.8	0.8	0.8	0.8	0.8
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	21.0	~~21.0~~ 20.2	~~21.0~~ 21.0	20.2	21.0	20.2	20.2
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 10/30
Test No. 2
Gas Bag No. E-05
Ambient Temp 40
Operator KM

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	0	0	0	0	0	0	0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.5	20.5	20.5	20.5	20.5	20.5	20.5
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date
Test No.
Gas Bag No.
Ambient Temp
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2							
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).							
N_2 (Net is 100 Minus Actual O_2 Reading).							

†O_2 was determined using a gas analyzer
CO is not measured, as it has the same molecular weight as N_2

Method 5

Facility: Energy Fuels — Date: _____

Stack Identification: Vanadium Packaging Baghouse — Method: 5

IMPINGERS

Run: 1 — Sample Box: B — 10/28-29/19

Filter Number: 7271

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)	656.7	712.4	608.5	823.4			
Initial (g)	703.1	691.3	604.3	795.8			
Net (g)	-46.4	21.1	4.2	27.6			

Total (g) 6.5

IMPINGERS

Run: 2 — Sample Box: B — 10/29-30/19

Filter Number: 7272

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)	672.6	729.1	622.8	843.4			
Initial (g)	716.4	712.4	608.5	823.4			
Net (g)	-43.8	16.7	14.3	20.0			

Total (g) 8.0

IMPINGERS

Run: _____ — Sample Box: _____

Filter Number:

	Impinger Number						Initials
	1	2	3	4	5	6	
	Initial Volume of liquid (H_2O) in impingers, (ml)						
	100	100	-	SG			
Final (g)							
Initial (g)							
Net (g)							

Total (g) _____

Inter-Mountain Labs

Sheridan, WY and Gillette, WY

CHAIN OF CUSTODY RECORD

#WEB

All shaded fields must be completed.

This is a legal document; any misrepresentation may be construed as fraud.

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
Energy Fuels	Vanadium Dryer Scrubber Packaging Baghouse		435-678-4113

Report Address	Contact Name
391 East 620 South American Fork, Utah 84003	Dean or Paul Kitchen Email: tetco@tetco-ut.com Phone: 801-492-9609
Invoice Address	**Purchase Order #** / **Quote #**
EFRI C/Oaccounts Payable 225 Union Blvd Suite 600 Lakewood CO 80228	

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	U-Nat	Ra-226	Ra-228	Th-228	TH-230	Th-232	Lead-210		REMARKS
1		10/28-29/19	7:00	7270 Vanadium Scrubber RUN 1	FT	1	X	X	X	X	X	X	X		Conduct /Blanks
2		10/28-29/19	7:00	7271 Vanadium Baghouse RUN 1	FT	1	X	X	X	X	X	X	X		
3		10/29-30/19	7:00	7273 Vanadium Scrubber RUN 2	FT	1	X	X	X	X	X	X	X		
4		10/29-30/19	7:00	7272 Vanadium Baghouse RUN 2	FT	1	X	X	X	X	X	X	X		
5		10/28-29/19	7:00	7270 Vanadium Scrubber RUN 1	OT	1	X	X	X	X	X	X	X		
6		10/28-29/19	7:00	7271 Vanadium Baghouse RUN 1	OT	1	X	X	X	X	X	X	X		
7		10/29-30/19	7:00	7273 Vanadium Scrubber RUN 2	OT	1	X	X	X	X	X	X	X		
8		10/29-30/19	7:00	7272 Vanadium Baghouse RUN 2	OT	1	X	X	X	X	X	X	X		
9															
10															
11															
12															
13															
14															

ANALYSES / PARAMETERS

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
	[signature]	11/4/19	12:00	Kathy Boyd	11.6.19	9:30

SHIPPING INFO	MATRIX CODES		TURN AROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
UPS	Water	WT	Check desired service	Compliance Monitoring ? Y / N	
☒ FedEx	Soil	SL	☒ Standard turnaround	Program (SDWA, NPDES,...)	
☐ USPS	Solid	SD	☐ RUSH - 5 Working Days	PWSID / Permit #	Contact at Energy Fuels Blanding: Logan Shumway
☐ Hand Carried	Filter	FT	☐ URGENT - < 2 Working Days	Chlorinated? Y / N	
☐ Other	Other	OT	*Rush & Urgent Surcharges will be applied*	Sample Disposal: Lab Client	

Pace Analytical • Formerly Inter-Mountain Laboratories
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 12/27/2019

CLIENT: Energy Fuels (White Mesa)
Project: Vanadium Dryer Scrubber Packaging Baghouse
Lab Order: S1911054

CASE NARRATIVE

Report ID: S1911054001

Samples 7270 Vanadium Scrubber RUN 1 Filter & Beaker, 7271 Vanadium Baghouse RUN 1 Filter & Beaker, 7272 Vanadium Baghouse RUN 2 Filter & Beaker and 7273 Vanadium Scrubber RUN 2 Filter & Beaker were received on November 6, 2019.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition
40 CFR Parts 136 and 141
40 CFR Part 50, Appendices B, J, L, and O
Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012
ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical (Formerly Inter-Mountain Laboratories) except as indicated in this case narrative.

The uranium isotopes U234, U235, and U238 ratios are typical for the analysis of natural uranium. The quality checks for mass balance of both uranium and thorium meet expectations.

The Regulatory Required Detection Limit (RRDL) was not met for thorium species due to procedureal, matrix and expected air volumes of 6,000,000 ml.

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

Pace Analytical® Formerly Inter-Mountain Laboratories
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 12/27/2019
Report ID S1911054001

ProjectName: Vanadium Dryer Scrubber Packaging Baghouse
Lab ID: S1911054-001
ClientSample ID: 7270 Vanadium Scrubber RUN 1 Filter & Beaker
COC: WEB

WorkOrder: S1911054
CollectionDate:
DateReceived: 11/6/2019 9:30:00 AM
FieldSampler:
Matrix: Filter

Comments Sampled 10/28-29 2019

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	7.9E-6	µCi/Sample		2E-06	6E-14	OTW01	12/20/2019 945	AEF
Lead 210 Precision (±)	2.6E-6	µCi/Sample				OTW01	12/20/2019 945	AEF
Radium 226	2E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	11/20/2019 1108	WN
Radium 226 Precision (±)	1E-7	µCi/Sample				SM 7500RAB	11/20/2019 1108	WN
Radium 228	-2.4E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	12/07/2019 1853	WN
Radium 228 Precision (±)	2.6E-5	µCi/Sample				Ga-Tech	12/07/2019 1853	WN
Thorium 230	4E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-230 Precision (±)	3E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 228	0E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-228 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 232	0E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-232 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Uranium 234	1.3E-6	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 234 Precision (±)	8E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 235	1.4E-7	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 235 Precision (±)	3E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 238	8.1E-7	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 238 Precision (±)	6E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	11/22/2019 1251	MS
Uranium	3	µg/Sample		1	9E-15	EPA 200.8	11/22/2019 1251	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect
C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 12/27/2019
Report ID S1911054001

ProjectName: Vanadium Dryer Scrubber Packaging Baghouse
Lab ID: S1911054-003
ClientSample ID: 7273 Vanadium Scrubber RUN 2 Filter & Beaker
COC: WEB

WorkOrder: S1911054
CollectionDate:
DateReceived: 11/6/2019 9:30:00 AM
FieldSampler:
Matrix: Filter

Comments Sampled 10/28-29 2019

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	1.2E-5	µCi/Sample		2E-06	6E-14	OTW01	12/20/2019 945	AEF
Lead 210 Precision (±)	3.1E-6	µCi/Sample				OTW01	12/20/2019 945	AEF
Radium 226	2E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	11/20/2019 1108	WN
Radium 226 Precision (±)	1E-7	µCi/Sample				SM 7500RAB	11/20/2019 1108	WN
Radium 228	-4.4E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	12/08/2019 059	WN
Radium 228 Precision (±)	1.7E-5	µCi/Sample				Ga-Tech	12/08/2019 059	WN
Thorium 230	1.6E-6	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-230 Precision (±)	6E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 228	3E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-228 Precision (±)	2E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 232	0E-6 1E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-232 Precision (±)	0E-6 1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Uranium 234	1.5E-5	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 234 Precision (±)	3E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 235	1.7E-7	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 235 Precision (±)	3E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 238	1.3E-5	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 238 Precision (±)	3E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	11/22/2019 1258	MS
Uranium	69	µg/Sample		1	9E-15	EPA 200.8	11/22/2019 1258	MS

These results apply only to the samples tested. **RL - Reporting Limit**

Qualifiers:

B	Analyte detected in the associated Method Blank	C	Calculated Value
E	Value above quantitation range	G	Analyzed at IML Gillette laboratory
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
L	Analyzed by another laboratory	M	Value exceeds Monthly Ave or MCL or is less than LCL
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
S	Spike Recovery outside accepted recovery limits	U	Analysis reported under the reporting limit
X	Matrix Effect		

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company:	Energy Fuels (White Mesa) 391 East 620 South American Fork, UT 84003	**Date Reported** **Report ID**	12/27/2019 S1911054001
ProjectName:	Vanadium Dryer Scrubber Packaging Baghouse	**WorkOrder:**	S1911054
Lab ID:	S1911054-002	**CollectionDate:**	
ClientSample ID:	7271 Vanadium Baghouse RUN 1 Filter & Beaker	**DateReceived:**	11/6/2019 9:30:00 AM
COC:	WEB	**FieldSampler:**	
		Matrix:	Filter

Comments Sampled 10/28-29 2019

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	4.1E-5	µCi/Sample		2E-06	6E-14	OTW01	12/20/2019 945	AEF
Lead 210 Precision (±)	4.4E-6	µCi/Sample				OTW01	12/20/2019 945	AEF
Radium 226	9E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	11/20/2019 1108	WN
Radium 226 Precision (±)	3E-7	µCi/Sample				SM 7500RAB	11/20/2019 1108	WN
Radium 228	6E-7	µCi/Sample		1E-06	2E-13	Ga-Tech	12/07/2019 2156	WN
Radium 228 Precision (±)	4.2E-5	µCi/Sample				Ga-Tech	12/07/2019 2156	WN
Thorium 230	2.1E-5	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-230 Precision (±)	2.7E-6	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 228	1.7E-7	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-228 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 232	4E-8	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-232 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Uranium 234	2.7E-6	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 234 Precision (±)	1E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 235	2.5E-7	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 235 Precision (±)	4E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 238	4.6E-6	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 238 Precision (±)	1E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	11/22/2019 1255	MS
Uranium	17	µg/Sample		1	9E-15	EPA 200.8	11/22/2019 1255	MS

These results apply only to the samples tested. **RL - Reporting Limit**

Qualifiers:

B	Analyte detected in the associated Method Blank	C	Calculated Value
E	Value above quantitation range	G	Analyzed at IML Gillette laboratory
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
L	Analyzed by another laboratory	M	Value exceeds Monthly Ave or MCL or is less than LCL
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
S	Spike Recovery outside accepted recovery limits	U	Analysis reported under the reporting limit
X	Matrix Effect		

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
391 East 620 South
American Fork, UT 84003

Date Reported 12/27/2019
Report ID S1911054001

ProjectName: Vanadium Dryer Scrubber Packaging Baghouse
Lab ID: S1911054-004
ClientSample ID: 7272 Vanadium Baghouse RUN 2 Filter & Beaker
COC: WEB

WorkOrder: S1911054
CollectionDate:
DateReceived: 11/6/2019 9:30:00 AM
FieldSampler:
Matrix: Filter

Comments Sampled 10/28-29 2019

Analyses	Result	Units	Qual	RL	RRDL µCi/ml	Method	Date Analyzed/Init	
Radionuclides - Filter								
Lead 210	2.8E-5	µCi/Sample		2E-06	6E-14	OTW01	12/20/2019 945	AEF
Lead 210 Precision (±)	3.1E-5	µCi/Sample				OTW01	12/20/2019 945	AEF
Radium 226	5E-7	µCi/Sample		2E-07	9E-14	SM 7500RAB	11/20/2019 1108	WN
Radium 226 Precision (±)	2E-7	µCi/Sample				SM 7500RAB	11/20/2019 1108	WN
Radium 228	-4.1E-6	µCi/Sample		1E-06	2E-13	Ga-Tech	12/08/2019 402	WN
Radium 228 Precision (±)	1.8E-5	µCi/Sample				Ga-Tech	12/08/2019 402	WN
Thorium 230	1.5E-5	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-230 Precision (±)	2.1E-6	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 228	4E-8	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-228 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Thorium 232	8E-8	µCi/Sample		3E-15	3E-15	ACW10	12/18/2019 1544	WN
Thorium-232 Precision (±)	1E-7	µCi/Sample				ACW10	12/18/2019 1544	WN
Uranium 234	4.4E-6	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 234 Precision (±)	2E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 235	1.7E-7	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 235 Precision (±)	3E-7	µCi/Sample				ACW01	12/20/2019 1147	WN
Uranium 238	4.1E-6	µCi/Sample		4E-07	9E-15	ACW01	12/20/2019 1147	WN
Uranium 238 Precision (±)	2E-6	µCi/Sample				ACW01	12/20/2019 1147	WN
Metals - Total								
Thorium 232	ND	µg/Sample		45	3E-15	EPA 200.8	11/22/2019 1302	MS
Uranium	13	µg/Sample		1	9E-15	EPA 200.8	11/22/2019 1302	MS

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank	C	Calculated Value
E	Value above quantitation range	G	Analyzed at IML Gillette laboratory
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
L	Analyzed by another laboratory	M	Value exceeds Monthly Ave or MCL or is less than LCL
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
S	Spike Recovery outside accepted recovery limits	U	Analysis reported under the reporting limit
X	Matrix Effect		

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

Pace Analytical • Formerly Inter-Mountain Laboratories
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 12/27/2019
Work Order: S1911054 **Report ID:** S1911054001
Project: Vanadium Dryer Scrubber Packaging Baghouse

Lead 210 in Filters Sample Type **MBLK** Units: µCi/Sample

MB-765 (12/19/19 15:26)	RunNo: 174862						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	ND	2E-06					

Lead 210 in Filters Sample Type **LCS** Units: µCi/Sample

LCS-PB (12/19/19 15:26)	RunNo: 174862						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	1E-05	2E-06	1E-05		104	66 - 130	

Lead 210 in Filters Sample Type **MS** Units: µCi/Sample

MS (12/19/19 15:26)	RunNo: 174862						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead 210	1E-05	2E-06	1E-05	ND	95.1	66 - 130	

Lead 210 in Filters Sample Type **MSD** Units: µCi/Sample

MSD (12/19/19 15:26)	RunNo: 174862						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Lead 210	1E-05	2E-06	1E-05	9.83	105	30	

Radium 226 Air Filter Analysis Sample Type **MBLK** Units: µCi/Sample

MB-2085 (11/20/19 11:08)	RunNo: 173910	PrepDate: 11/12/19 0:00			BatchID 16835		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	ND	2E-07					

Radium 226 Air Filter Analysis Sample Type **LCS** Units: µCi/Sample

LCS-2085 (11/20/19 11:08)	RunNo: 173910	PrepDate: 11/12/19 0:00			BatchID 16835		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6E-06	2E-07	7E-06		88.1	67.1 - 122	

Radium 226 Air Filter Analysis Sample Type **MS** Units: µCi/Sample

MS-2085 (11/20/19 11:08)	RunNo: 173910	PrepDate: 11/12/19 0:00			BatchID 16835		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6E-06	2E-07	7E-06	ND	79.3	65 - 131	

Radium 226 Air Filter Analysis Sample Type **MSD** Units: µCi/Sample

MSD-2085 (11/20/19 11:08)	RunNo: 173910	PrepDate: 11/12/19 0:00			BatchID 16835		
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	6E-06	2E-07	6E-06	3.57	82.1	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 12/27/2019
Work Order: S1911054 **Report ID:** S1911054001
Project: Vanadium Dryer Scrubber Packaging Baghouse

Thorium Air Filter Analysis Sample Type **MBLK** Units: µCi/Sample

MB-711 (12/18/19 15:44) RunNo: 174858							
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-228	ND	2E-07					
Thorium-230	ND	2E-07					
Thorium-232	ND	2E-07					

Thorium Air Filter Analysis Sample Type **LCS** Units: µCi/Sample

LCS-711 (12/18/19 15:44) RunNo: 174858							
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium-230	1E-05	2E-07	1E-05		110	68 - 146	
Thorium-232	1E-05	2E-07	1E-05		105	68 - 146	

Thorium Air Filter Analysis Sample Type **LCSD** Units: µCi/Sample

LCSD-711 (12/18/19 15:44) RunNo: 174858							
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium-230	1E-05	2E-07	1E-05	8.90	100	20	

Uranium Isotopic Filters Sample Type **MBLK** Units: µCi/Sample

MB-R175002 (12/20/19 11:47) RunNo: 175002							
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium 234	ND	4E-07					
Uranium 235	ND	4E-07					
Uranium 238	ND	4E-07					

Uranium Isotopic Filters Sample Type **LCS** Units: µCi/Sample

LCS (12/20/19 11:47) RunNo: 175002							
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium 234	9E-06	4E-07	7E-06		132	50 - 150	
Uranium 235	3E-07	1E-07	3E-07		101	50 - 150	
Uranium 238	9E-06	4E-07	7E-06		126	50 - 150	

Uranium Isotopic Filters Sample Type **LCSD** Units: µCi/Sample

LCSD (12/20/19 11:47) RunNo: 175002							
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Uranium 234	8E-06	4E-07	9E-06	5.24	125	20	
Uranium 235	4E-07	1E-07	3E-07	7.69	109	20	
Uranium 238	9E-06	4E-07	9E-06	3.36	130	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 12/27/2019
Work Order: S1911054 **Report ID:** S1911054001
Project: Vanadium Dryer Scrubber Packaging Baghouse

Total (3050) Metals by EPA 200.8-Soil Sample Type **MBLK** Units: µg/Sample

MBLK (11/22/19 12:08) RunNo: 173950

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	ND	45					
Uranium	ND	1					

Total (3050) Metals by EPA 200.8-Soil Sample Type **LCS** Units: µg/Sample

LCS (11/22/19 12:05) RunNo: 173950

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	101	45	1E02		101	85 - 115	
Uranium	104	1	1E02		104	85 - 115	

Total (3050) Metals by EPA 200.8-Soil Sample Type **MS** Units: µg/Sample

S1911054-004AS (11/22/19 13:09) RunNo: 173950

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium	1060	45	1E03	ND	105	70 - 130	
Uranium	1080	1	1E03	13	106	70 - 130	

Total (3050) Metals by EPA 200.8-Soil Sample Type **MSD** Units: µg/Sample

S1911054-004AMSD (11/22/19 13:12) RunNo: 173950

Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium	1070	45	1060	0.996	106	20	
Uranium	1100	1	1080	1.64	108	20	

Total (3050) Metals by EPA 200.8-Soil Sample Type **DUP** Units: µg/Sample

S1911054-004AD (11/22/19 13:05) RunNo: 173950

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Thorium	ND	45	ND			20	
Uranium	13	1	13	2.55		20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

APPENDIX D

Vanadium Dryer

Figure 1. Facility Schematic Representation, Vanadium Dyer

Vanadium Packaging

Figure 2. Facility Schematic Representation, Vanadium Packaging

Process Data (Retained by Energy Fuels)

Scrubber Pressure Drop and Water Flow Rates

Facility: Energy Fuels

Stack Identification: Vanadium Dryer

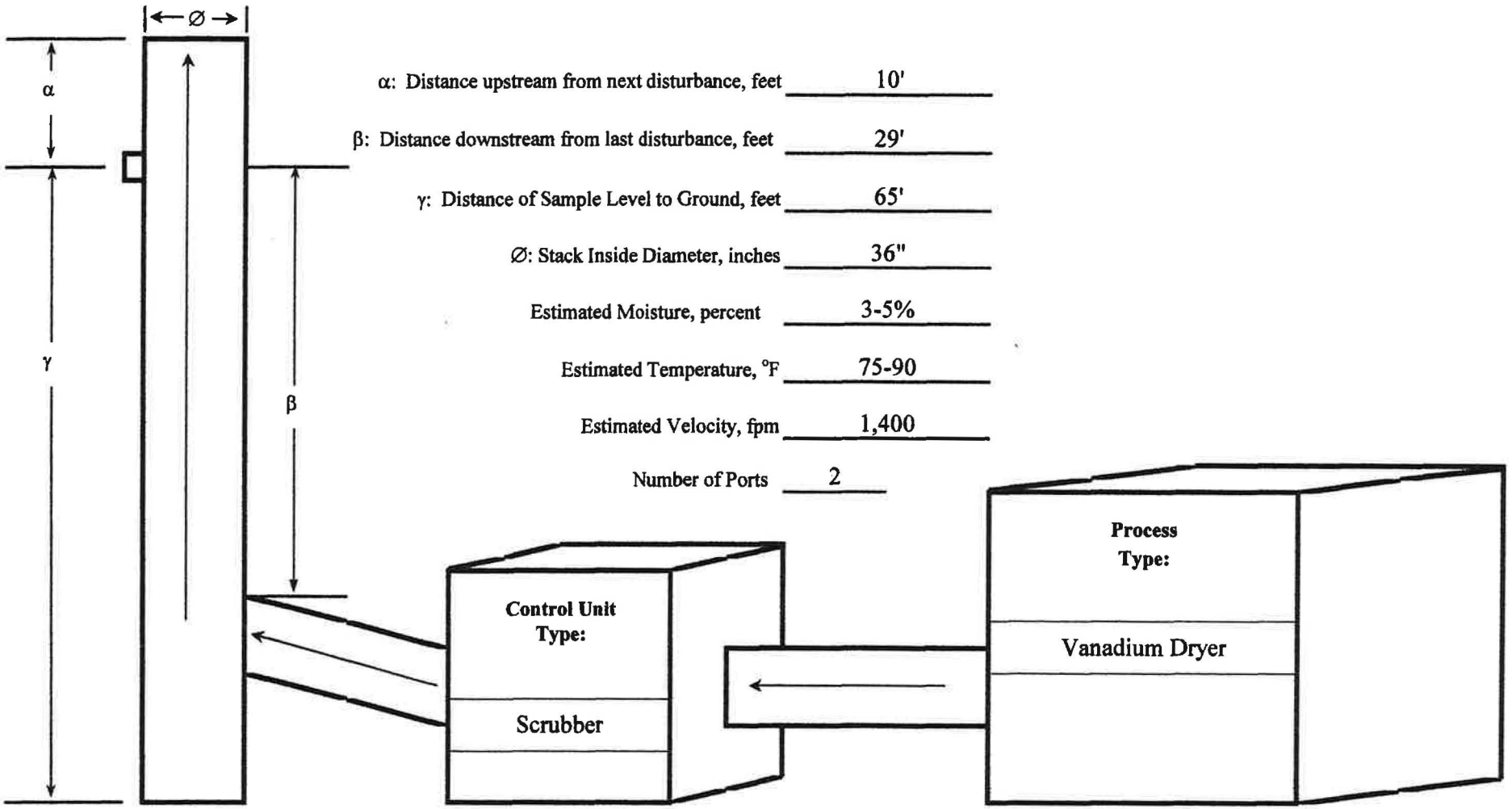


Figure 1. Facility Schematic Representation, Vanadium Dryer

Facility: Energy Fuels

Stack Identification: Vanadium Packaging

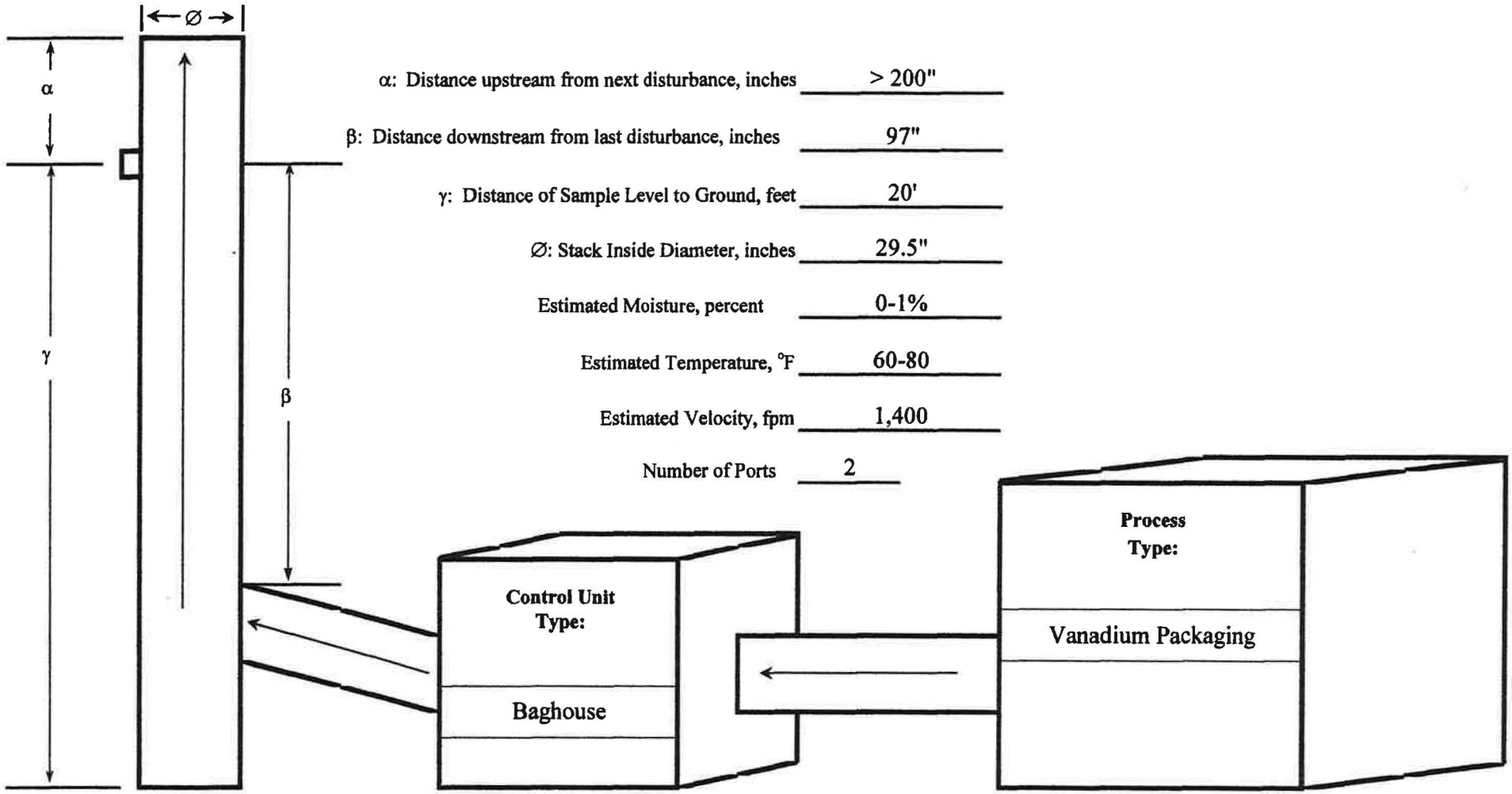


Figure 2. Facility Schematic Representation, Vanadium Dryer

Facility Energy Fuels

Location Vanadium Dryer

Date 10/28/19

Run #	Time	East Scrubber		West Scrubber		Fusion Furnace	
		"H_2O	gpm	"H_2O	gpm	°F	
1	4:30	11.9	43.1	8.1	86.4	1387	
1	5:00	11.9	43.2	8.2	86.2	1388	
1	5:30	12.0	42.6	8.1	86.3	1387	
1	6:00	11.9	43.1	8.1	86.2	1386	
1	6:30	11.9	43.1	8.1	86.3	1385	
10/29 1	7:30	12.0	42.6	8.1	86.4	1381	
	8:00	12.0	4226	8.2	86.3	1380	
	8:30	12.0	43.1	8.2	86.4	1380	
	9:00	12.0	43.1	8.2	86.3	1379	
	9:30	11.9	42.6	8.2	86.2	1378	
	10:00	12.0	42.7	8.3	86.3	1379	
	10:30	12.0	42.7	8.2	86.3	1380	
	11:00	11.9	42.6	8.2	86.3	1381	
	11:30	11.9	42.6	8.1	86.2	1385	
	12:00	11.9	427	8.1	86.4	1387	
	12:30	12.0	42.8	8.2	86.4	1387	
	1300	12.0	42.7	8.1	86.2	1385	
	13:30	11.9	42.6	8.2	86.2	1381	

Facility Energy Fuels

Location Vanadium Dryer

Date 10/29-30/19

Run #	Time	East Scrubber		West Scrubber		Fusion Furnace	
		"H_2O	gpm	"H_2O	gpm	°F	
2	13:45	12.4	42.5	8.0	86.4	1389	
2	14:15	12.3	42.4	8.1	86.4	1391	
2	14:45	12.4	42.1	8.0	86.5	1387	
	15:15	12.1	42.5	8.1	86.5	1388	
	15:45	12.1	42.6	8.0	86.4	1387	
	16:15	12.2	42.5	8.1	86.4	1387	
	16:45	12.3	42.5	8.1	86.5	1388	
	17:15	12.4	42.6	8.0	86.2	1387	
	17:45	12.3	42.4	8.1	86.2	1387	
	8:30	12.5	43.1	8.8	81.5	1420	
	9:00	12.4	43.1	8.8	81.5	1410	
	9:30	12.5	43.2	8.8	82.3	1410	
	10:00	12.4	43.1	8.9	82.1	1400	
	10:30	12.5	43.0	8.8	82.1	1405	
	11:00	12.5	43.0	8.7	82.0	1403	
	11:30	12.4	42.5	8.6	81.9	1406	
	12:00	12.5	42.7	8.7	81.9	1406	
	12:30	12.5	43.0	8.6	82.0	1405	

APPENDIX E

Calibration of the console dry gas meter(s), pitot tubes, nozzles diameters, and temperature sensors were carried out in accordance with the procedures outlined in the Quality Assurance Handbook. The appropriate calibration data are presented in the following pages. The nozzle calibrations are recorded on the first page of the field data sheets.

Figure 3 Schematic of Method 5/114 Sampling Train
Meter Box Calibration Data and Calculations Forms
Post-test Dry Gas Meter Calibration Data Forms
Type S Pitot Tube Inspection Data
Sample Box Temperature Sensor Calibration

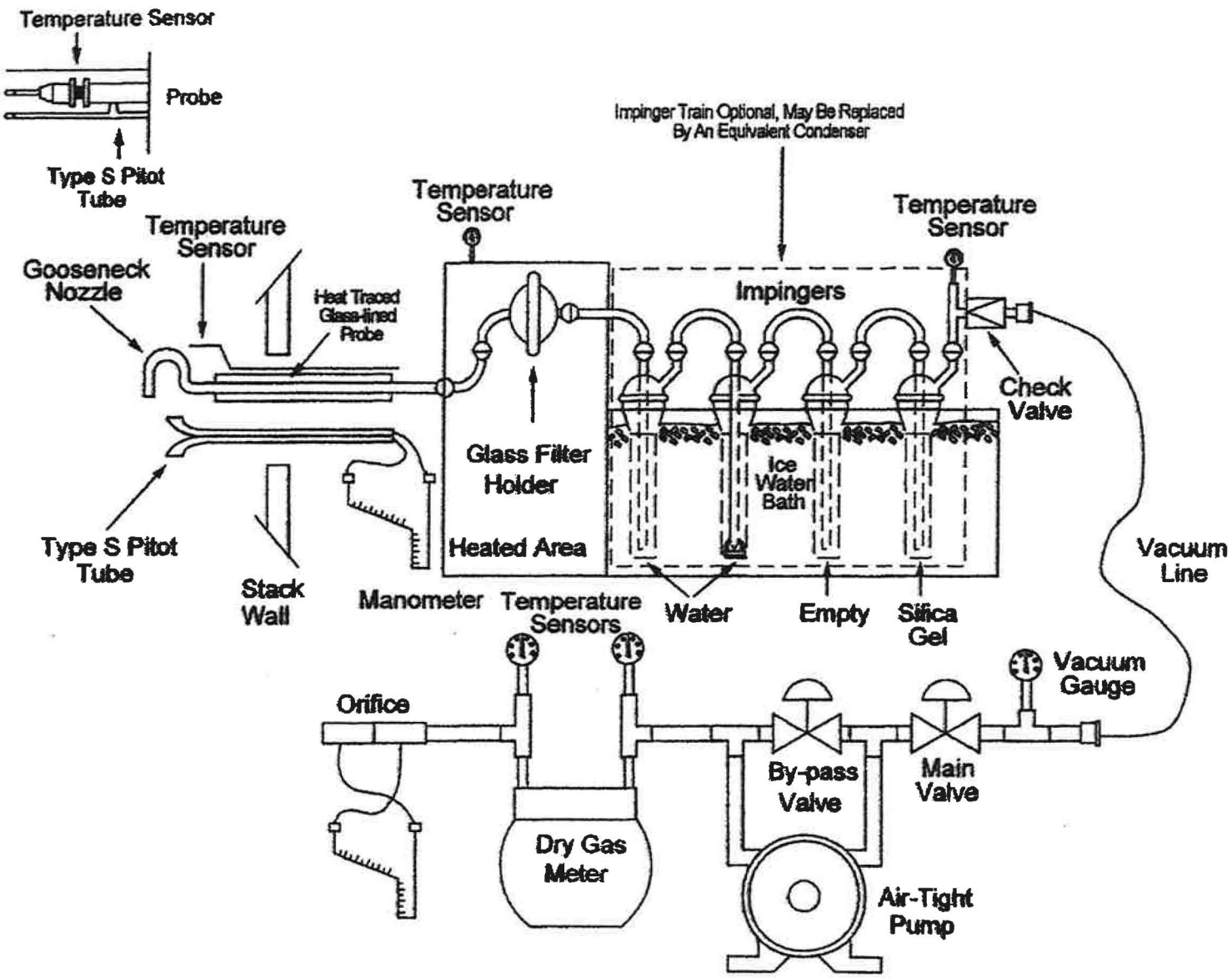


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

2019 Pre-Calibration

TECHNICIAN: M.McNamara
DATE: 12/19/2018
METER PART #: Console 3
METER SERIAL #: 300315
CRITICAL ORIFICE SET SERIAL #: 1483S
EQUIPMENT ID #: Console #3

BAROMETRIC PRESSURE (In Hg):	INITIAL	FINAL	AVG (P_{bar})
	25.75	25.75	25.75

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (In H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	12	26.012	31.646	5.633	62	95	95	85	85	90.0	5.00	3.00	4.6946	4.5868	0.977		1.671
	2	0.8137	12	31.645	37.294	5.649	62	95	94	85	86	90.0	5.00	3.00	4.7080	4.5868	0.974		1.671
	3	0.8137	12	37.294	42.974	5.680	62	94	94	86	89	90.8	5.00	3.00	4.7274	4.5868	0.970		1.669
																AVG =	0.974	-0.47	
19	1	0.5317	13	8.204	13.912	5.708	62	80	81	70	74	76.3	8.00	1.10	4.8629	4.7954	0.986		1.464
	2	0.5317	13	13.912	19.278	5.366	62	81	81	74	74	77.5	7.50	1.10	4.6516	4.4957	0.966		1.461
	3	0.5317	13	19.278	24.650	5.372	62	81	83	74	76	78.5	7.50	1.10	4.6482	4.4957	0.968		1.466
																AVG =	0.966	0.99	
12	1	0.3307	13	51.500	57.209	5.709	62	86	90	77	80	83.0	12.50	0.45	4.7846	4.6603	0.974		1.626
	2	0.3307	13	57.209	62.709	5.500	62	90	90	80	83	85.8	12.00	0.45	4.5862	4.4739	0.976		1.618
	3	0.3307	13	62.709	67.795	5.086	62	90	93	83	85	87.8	11.00	0.45	4.2256	4.1011	0.971		1.613
																AVG =	0.973	-0.52	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.978

AVERAGE $\Delta H_@$ = 1.650

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/In. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT
32	33	32
62	63	63
204	205	206

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

2019 Pre-Calibration

TECHNICIAN:	Alex Moore				INITIAL	FINAL	AVG (P_{bar})
DATE:	12/19/2018	METER SERIAL #:	68092	BAROMETRIC PRESSURE (in Hg):	25.65	25.65	25.65
METER PART #:	Console 6	CRITICAL ORIFICE SET SERIAL #:	14539	EQUIPMENT ID #:	Console #6		

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (In H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	9	90.905	102.765	11.860	64	75	84	65	69	73.3	11.00	2.90	10.1628	10.0372	0.989		1.677
	2	0.8137	9	102.765	112.526	9.761	65	82	87	69	71	77.3	9.00	2.90	8.2937	8.2046	0.989		1.668
	3	0.8137	9	112.526	117.949	5.423	65	86	88	71	72	79.3	5.00	2.90	4.5907	4.5559	0.992		1.663
																AVG =	0.990	-0.60	
19	1	0.5317	11	119.100	130.925	11.825	67	82	87	73	77	79.8	17.00	1.10	9.9497	10.1072	1.016		1.473
	2	0.5317	11	130.925	137.549	6.624	69	86	87	77	77	81.5	9.50	1.10	5.5665	5.6374	1.015		1.474
	3	0.5317	11	137.549	146.604	9.055	70	86	87	77	77	81.8	13.00	1.10	7.5909	7.7071	1.016		1.476
																AVG =	1.016	1.93	
12	1	0.3307	13	147.401	154.550	7.149	70	83	81	77	77	79.5	16.00	0.43	6.0065	5.8968	0.982		1.495
	2	0.3307	13	154.550	160.129	5.579	69	81	82	77	77	79.3	12.50	0.43	4.6896	4.6114	0.983		1.494
	3	0.3307	13	160.129	168.163	8.034	69	81	82	77	76	79.0	18.00	0.43	6.7564	6.6404	0.983		1.495
																AVG =	0.983	-1.33	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.996

AVERAGE $\Delta H_@$ = 1.646

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/In. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT
32	33	33
69	69	70
204	205	205

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

Post Calibration
Energy Fuels
Vanadium Dryer

TECHNICIAN:	M. McNamara				INITIAL	FINAL	AVG (P_{bar})
DATE:	10/31/2019	METER SERIAL #:	300315	BAROMETRIC PRESSURE (in Hg):	25.75	25.75	25.75
METER PART #:	Console 3	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #3		

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH ($In H_2O$)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
15	1	0.4238	9	76.048	81.966	5.918	67	81	84	86	87	85.0	10.500	0.70	4.9450	4.9929	1.010		1.455
	2	0.4238	9	81.966	87.592	5.626	67	81	82	87	84	83.5	10.000	0.70	4.7140	4.7551	1.009		1.459
	3	0.4238	9	87.592	93.191	5.599	67	82	82	84	84	83.0	10.000	0.70	4.6957	4.7551	1.013		1.460
																AVG =	1.010	0.00	
	1																		
	2																		
	3																		
																AVG =			
	1																		
	2																		
	3																		
																AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 1.010

AVERAGE $\Delta H_@$ = 1.458

(1) $$V_{m(std)} = K_1 * V_m * \frac{P_{bar} + (\Delta H / 13.6)}{T_m}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$V_{cr(std)} = K' * \frac{P_{bar} * \Theta}{\sqrt{T_{amb}}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{V_{cr(std)}}{V_{m(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the **GREEN** cells, YELLOW cells are calculated.

Post Calibration
Energy Fuel
Packaging Baghouse

TECHNICIAN: M. McNamara
DATE: 10/31/2019
METER PART #: Console 6
METER SERIAL #: 68092
CRITICAL ORIFICE SET SERIAL #: 1463S
EQUIPMENT ID #: Console #6

	INITIAL	FINAL	AVG (P_{bar})
BAROMETRIC PRESSURE (In Hg):	25.75	25.75	25.75

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (In H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
15	1	0.4238	12	537.297	542.624	5.327	63	53	61	70	90	68.8	9.50	0.72	4.8905	4.5346	0.988		1.532
	2	0.4238	12	542.624	548.305	5.681	63	61	70	90	86	76.8	10.00	0.72	4.8203	4.7733	0.990		1.508
	3	0.4238	12	548.305	554.042	5.737	63	70	73	88	86	78.8	10.00	0.72	4.8497	4.7733	0.984		1.503
																AVG =	0.987	0.00	
	1																		
	2																		
	3															AVG =			
	1																		
	2																		
	3															AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.987

AVERAGE $\Delta H_@$ = 1.514

(1) $$V_{m(std)} = K_1 * V_m * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$
= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$V_{cr(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$
= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{V_{cr(std)}}{V_{m(std)}}$$
= DGM calibration factor

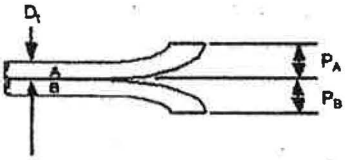
$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

TEMPERATURE SENSORS °F		
REFERENCE	IN	OUT

Type S Pitot Tube Inspection Data

Date: 12/20/18 Pitot Tube Identification: 38 G

Technician: M. McNamara

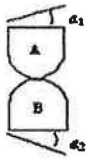


D_t = 0.375 in. Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le P_A$ & $P_B \le 1.50 \cdot D_t$? Yes

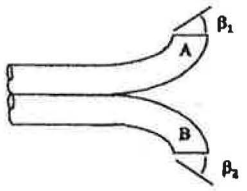
P_A = 0.491 in.

P_B = 0.491 in.



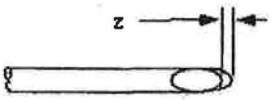
$\alpha_1 < 10°$ α_1 = 3 °

$\alpha_2 < 10°$ α_2 = 2 °

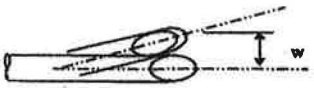


$\beta_1 < 5°$ β_1 = 1 °

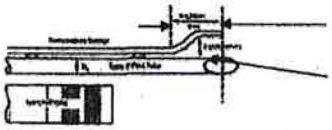
$\beta_2 < 5°$ β_2 = 0 °



$Z \le 0.125$ in. Z = 0.051 in.

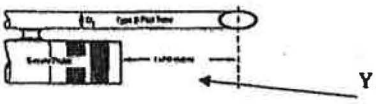


$W \le 0.03125$ in. W = 0.017 in.



W > 3 inches W = 4 in.

Z > 3/4 inch Z = 0.875 in.



Y ≥ 3 inches Y = 3 3/4 in.

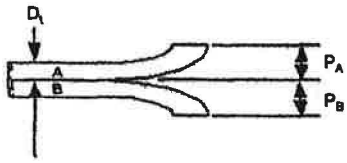
The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration Reference: Omega CL3512A				
Probe	Continuity Check			Yes
	Heat Check 248			Yes
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	68	69	1
Stack	AIR	69	71	2
	ICE WATER	33	33	0
	BOIL WATER	205	204	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12/20/18 Pitot Tube Identification: 38 G-2

Technician: M. McNamara

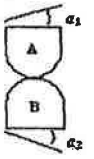


D_t = 0.375 in. Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le P_A \& P_B \le 1.50 \cdot D_t$? Yes

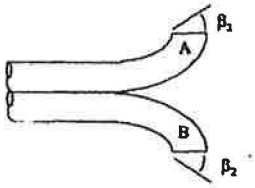
P_A = 0.476 in.

P_B = 0.476 in.



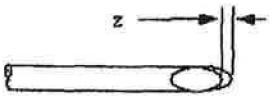
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 3 °

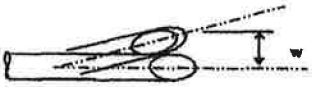


$\beta_1 < 5°$ β_1 = 3 °

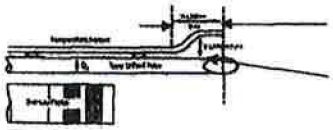
$\beta_2 < 5°$ β_2 = 3 °



$Z \le 0.125$ in. Z = 0.066 in.

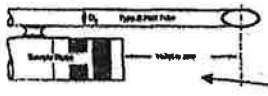


$W \le 0.03125$ in. W = 0.030 in.



W > 3 inches W = 4.75 in.

Z > 3/4 inch Z = 0.875 in.



$Y \ge 3$ inches Y = 3 1/2 in.

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration Reference: Omega CL3512A				
Probe	Continuity Check			Yes
	Heat Check 248			Yes
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	69	70	1
Stack	AIR	69	71	2
	ICE WATER	33	34	1
	BOIL WATER	204	205	1
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 1/2/19 Calibrator: Mike McNamara Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature		Temperature Difference (°F)
			Reference (°F)	Sensor (°F)	
A	Oven (3)	Water	33	33	0
		Water	204	203	-1
	Oven (4)	Water	33	33	0
		Water	204	203	-1
B	Oven (3)	Water	33	33	0
		Water	204	204	0
	Oven (4)	Water	33	33	0
		Water	204	204	0
C	Oven (3)	Water	33	33	0
		Water	204	205	1
	Oven (4)	Water	33	33	0
		Water	204	205	1
D	Oven (3)	Water	34	35	1
		Water	204	205	1
	Oven (4)	Water	34	35	1
		Water	205	205	0
E	Oven (3)	Water	33	34	1
		Water	204	205	1
	Oven (4)	Water	33	34	1
		Water	204	205	1
F	Oven	Water	33	33	0
		Water	204	205	1
G	Oven	Water	33	34	1
		Water	205	205	0
H	Oven	Water	33	32	-1
		Water	204	205	1
	Impinger Out A	Water	34	33	-1
		Water	205	205	0
	Impinger Out B	Water	33	33	0
		Water	205	205	0
	Impinger Out C	Water	34	34	0
		Water	205	205	0
	Impinger Out D	Water	33	33	0
		Water	205	204	-1
	Impinger Out E	Water	33	33	0
		Water	205	203	-2
	Impinger Out F	Water	33	33	0
		Water	204	203	-1
	Impinger Out G	Water	33	33	0
		Water	205	203	-2
	Impinger Out H	Water	33	33	0
		Water	205	204	-1
	Impinger Out I	Water	33	33	0
		Water	205	204	-1
	Impinger Out J	Water	33	33	0
		Water	205	203	-2
	Impinger Out K	Water	33	33	0
		Water	205	204	-1

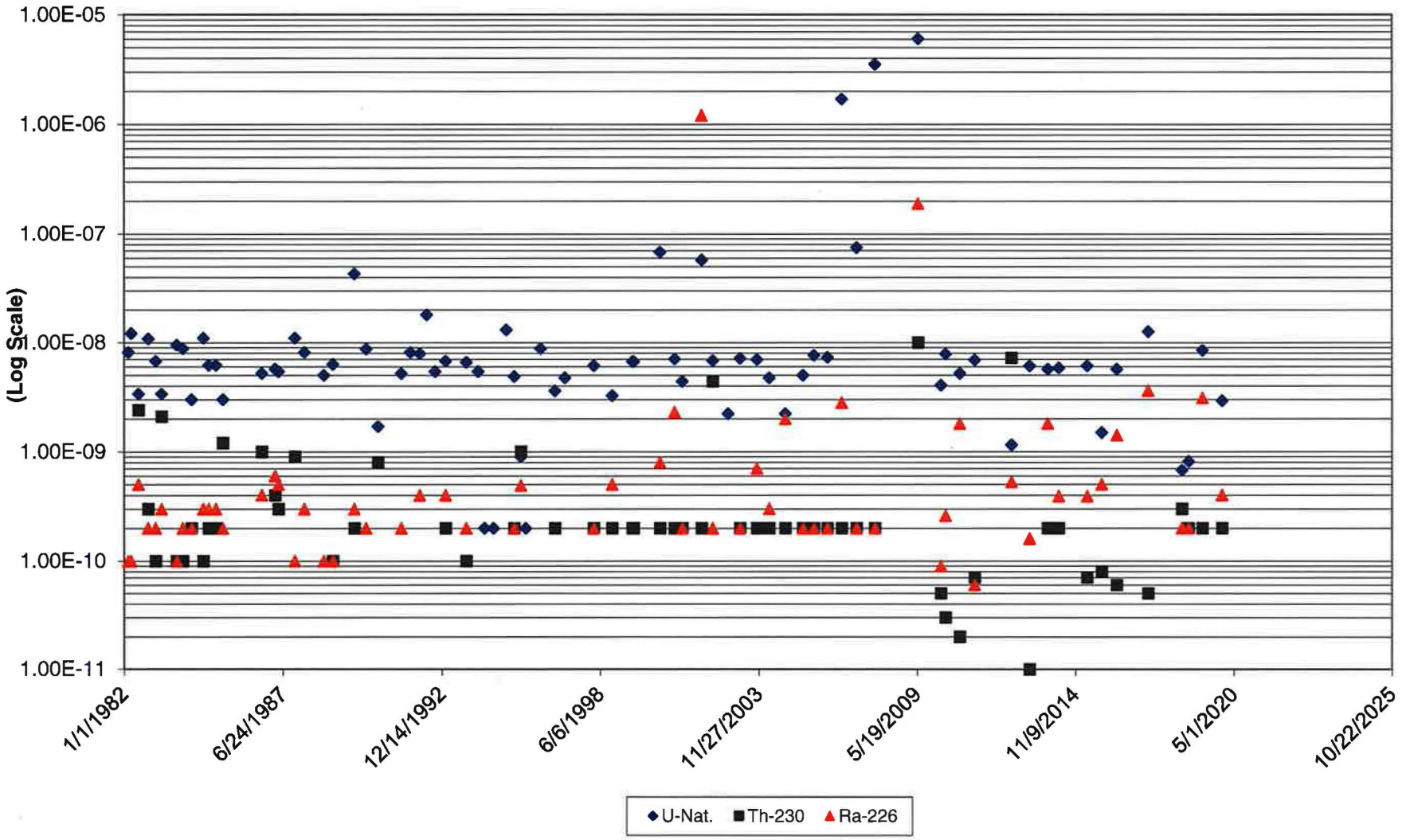
APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

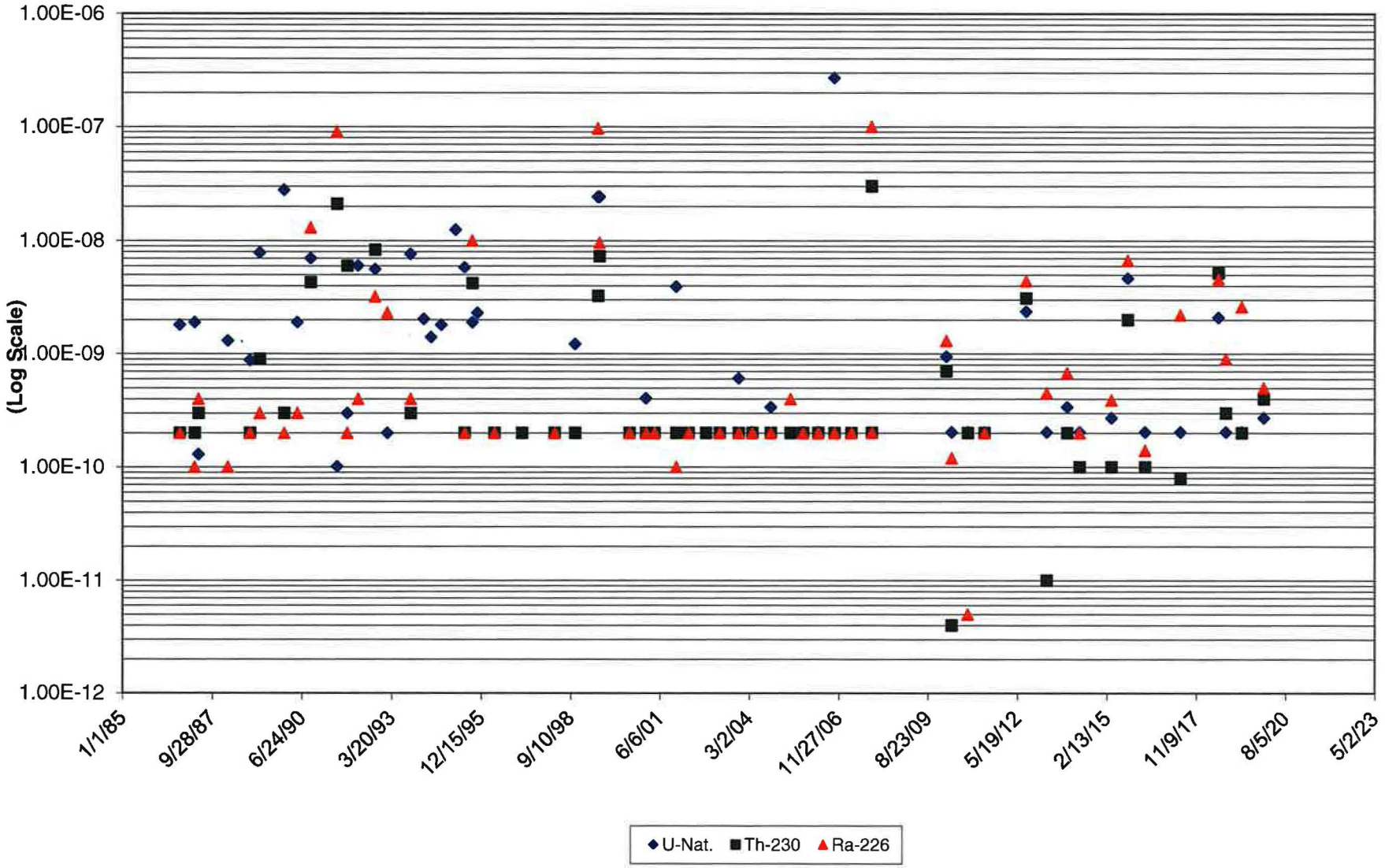
ATTACHMENT H

SURFACE WATER GRAPHS AND FIELD DATA SHEETS

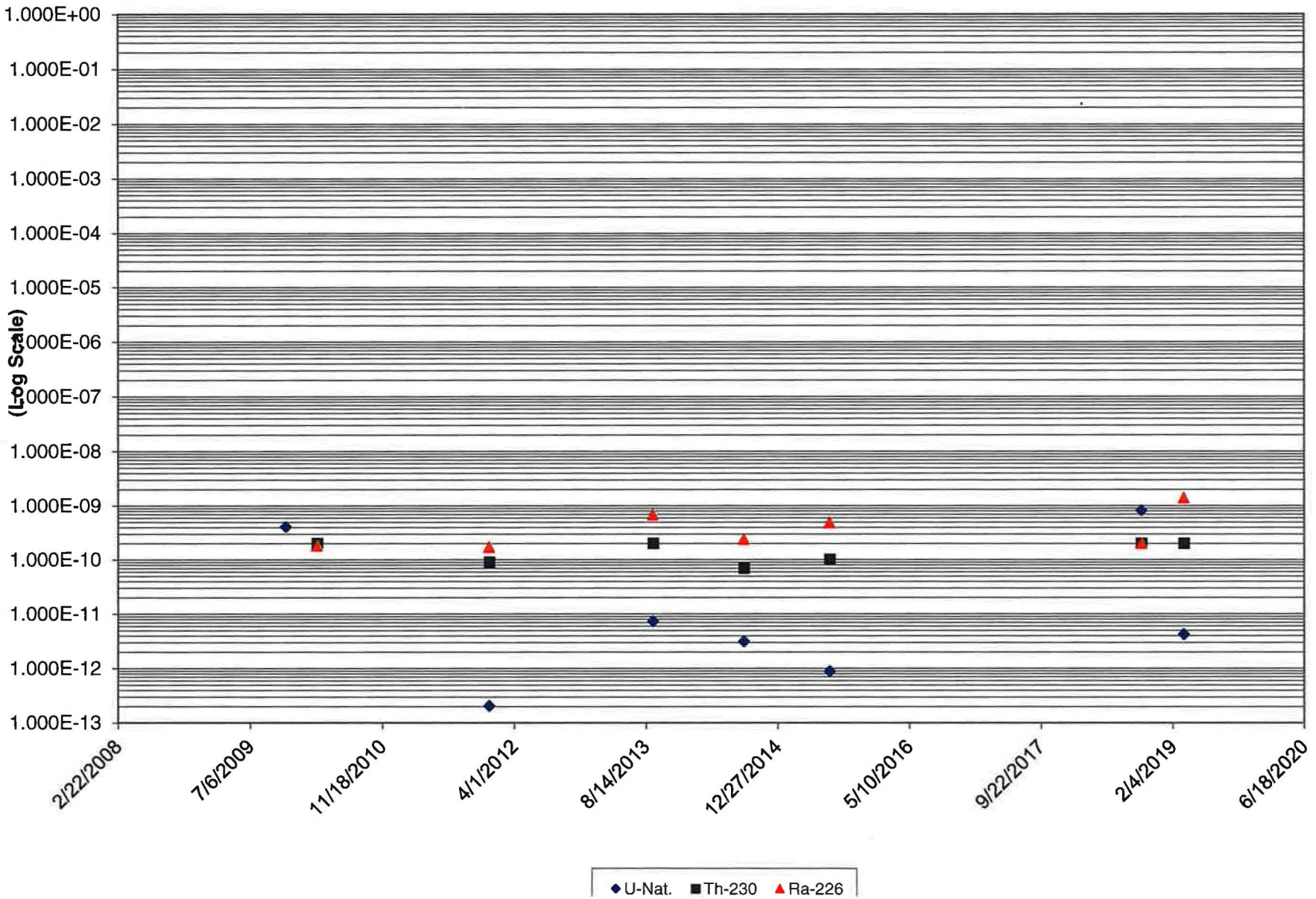
Cottonwood Creek Dissolved Radionuclide Concentrations (uCi/ml)



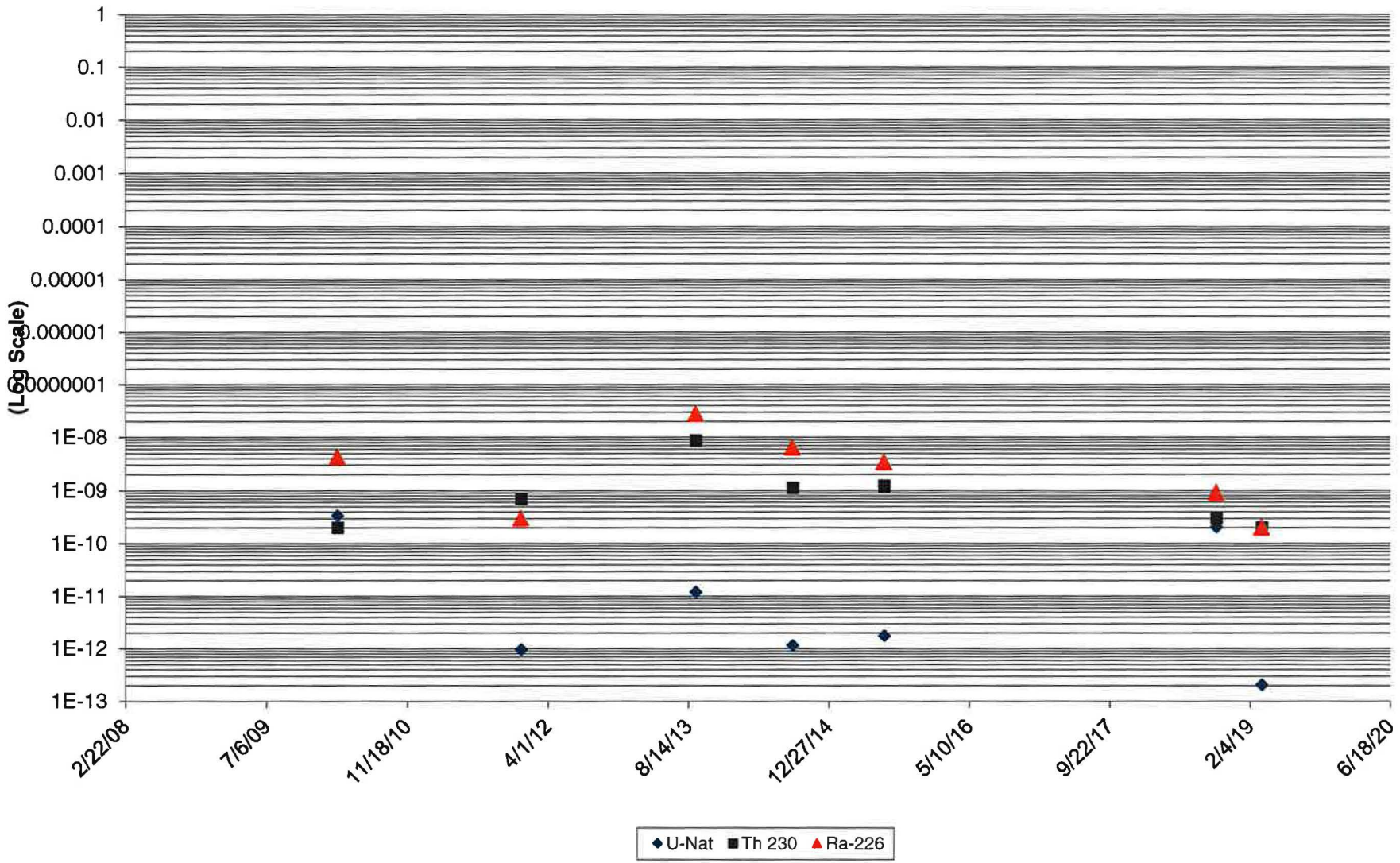
Cottonwood Creek Suspended Radionuclide Concentrations (uCi/ml)



Westwater Creek Dissolved Radionuclide Concentrations (uCi/ml)



Westwater Creek Suspended Radionuclide Concentrations (uCi/ml)



Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek / Westwater Canyon / Other (describe) _____

DATE: 9/19/2019, 9/25/2019, 9/30/2019 BY: TH
(Sampler's initials)

pH BUFFER 7.0 _____ pH BUFFER 4.0 _____

SPECIFIC CONDUCTIVITY _____ µMHOs

STEAM DEPTH: _____

pH of WATER _____ TEMP _____

COND µmhos _____ COND µmhos _____

pH Units _____ pH units _____

Temp °C _____ Temp °C _____

COND µmhos _____ COND µmhos _____

pH units _____ pH units _____

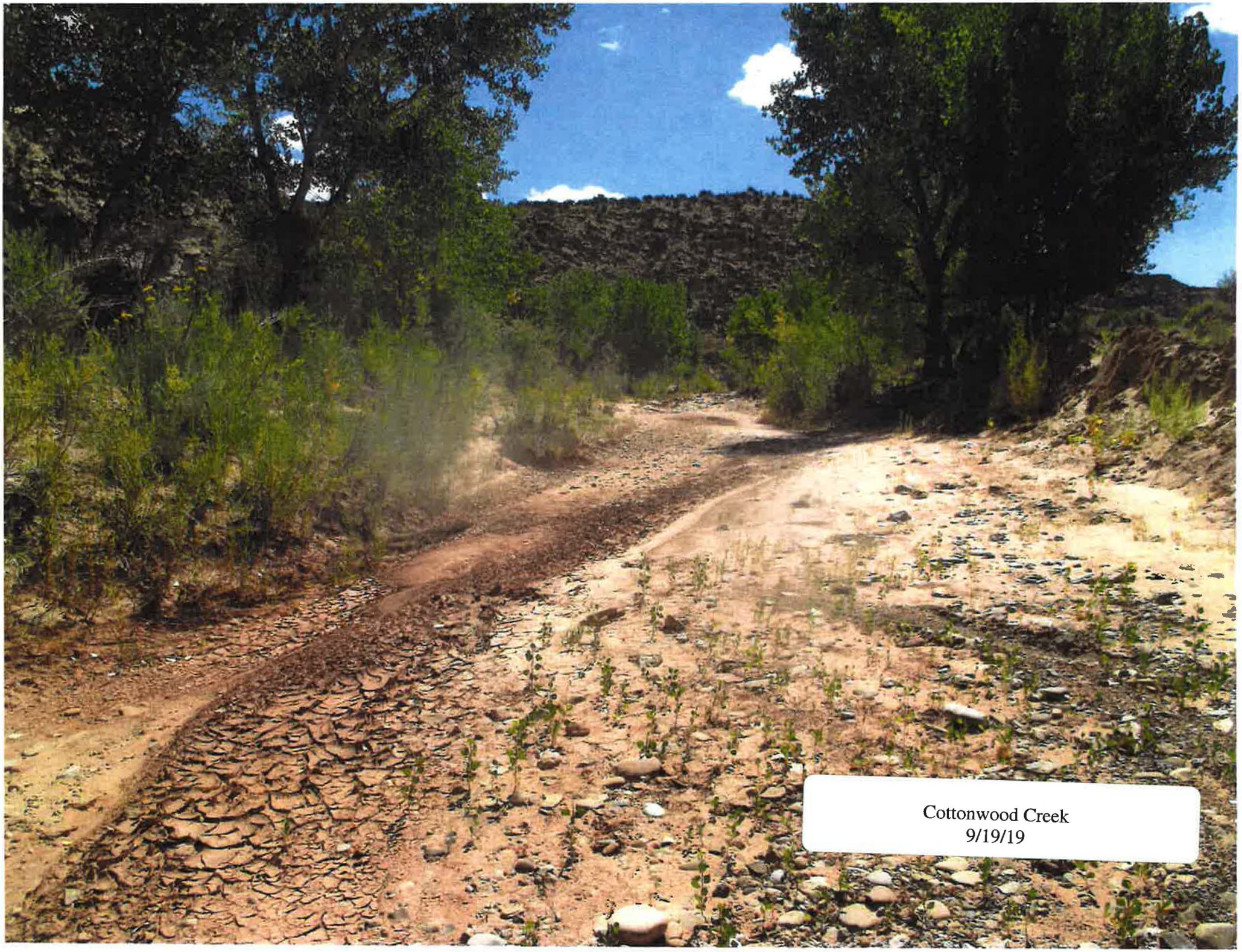
Temp °C _____ Temp °C _____

Comments:

9/19/2019, no water to sample

9/25/2019, no water to sample

9/30/2019, no water to sample


Cottonwood Creek
9/19/19

Cottonwood Creek
9/25/2019

Cottonwood Creek
9/30/2019

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek Westwater Canyon Other (describe) _____

DATE: 12/5/2019 BY: TH
(Sampler's initials)

pH BUFFER 7.0 7.0 pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 543.6 µMHOs

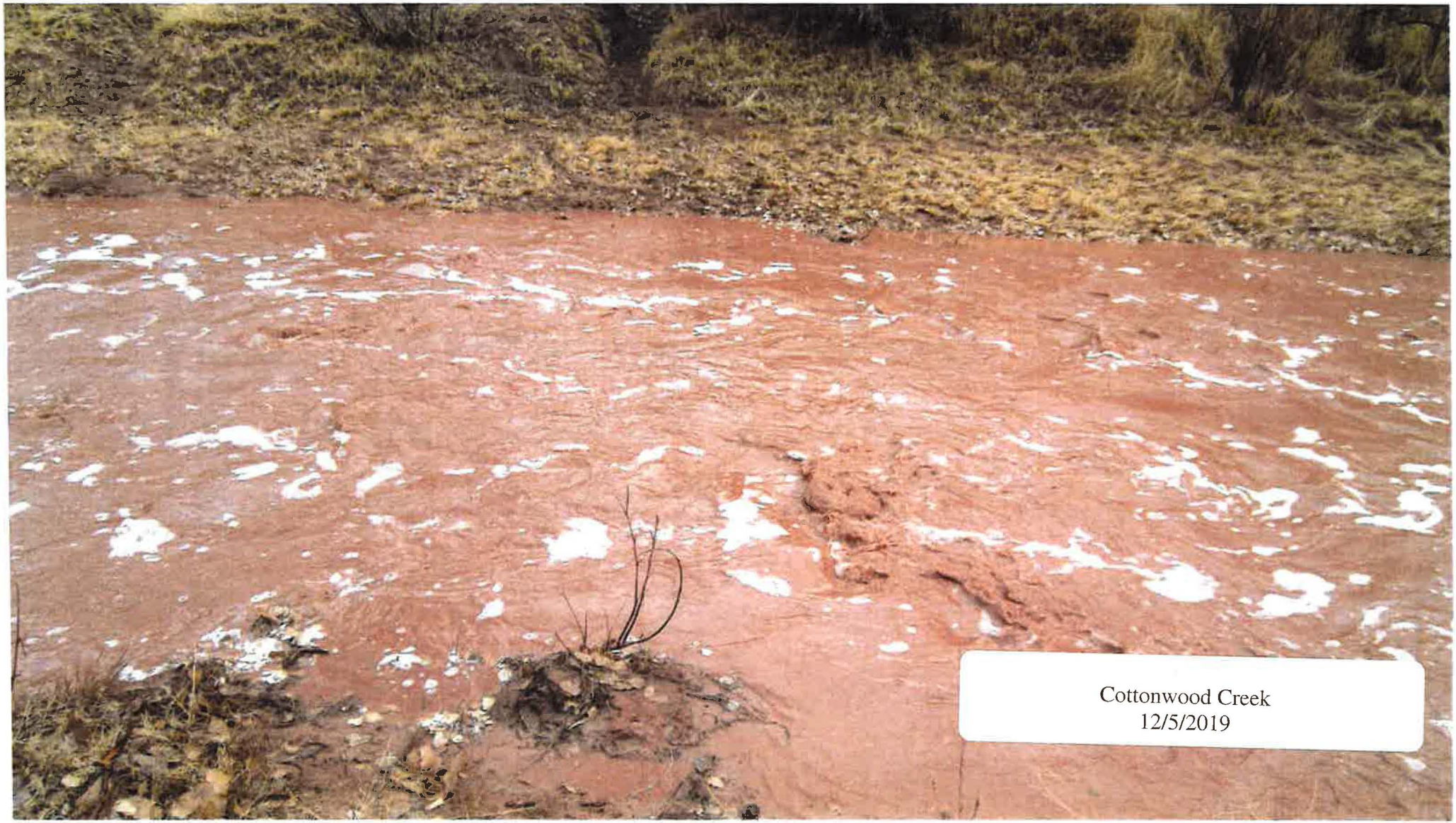
STEAM DEPTH: 8"

pH of WATER 8.41 TEMP 3.38

COND µmhos 543.1	COND µmhos 543.6
pH Units 8.40	pH units 8.39
Temp °C 3.39	Temp °C 3.40
COND µmhos 543.5	COND µmhos 544.3
pH units 8.44	pH units 8.41
Temp °C 3.38	Temp °C 3.37

Comments: LDO 105.0
Turb 2629

Arrived on site at 0855. Samples collected at 0900. Grab samples was the method used. left site at 0907


Cottonwood Creek
12/5/2019

Inter-Mountain Labs

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

Page 1 of 1

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

179822

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
Energy Fuels	Q4 Surface Water 2019	Tanner Holliday	435 678 4115

Report Address	Contact Name	Purchase Order #	Quote #
225 Union blvd, Suite 600 Lakewood, CO 80228	Kathy Weinel Email kweinel@energyfuels.com Phone 303 389 4134		1661

Invoice Address:

Preservative Lot #
1:1 HNO3-M-120618-1
H2SO4-4712H86
NaOH-Wet-2-72-1

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	Quote 1661	ANALYSES / PARAMETERS	REMARKS
1	1912105-09	12/5/19	0900	Cottonwood	WT	5	X		All samples are RAW non filtered, non preserved
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
1.9 °C R01	Tanner Holliday Tanner Holliday	12/5/19	1100	Kathy Bays	12.9.19	13:05

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
■ UPS	Water	WT	**Check desired service**	Compliance Monitoring? (Y) / N	
☐ Fed Express	Soil	SL	■ Standard turnaround	Program (SDWA, NPDES,...)	All samples are RAW non filtered, non preserved
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit #	
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated? Y (N)	
☐ Other _____	Other	OT	***Rush & Urgent Surcharges will be applied***	Sample Disposal: (Lab) Client	

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Date: 1/2/2020

CLIENT: Energy Fuels (White Mesa)
Project: Q4 Surface Water 2019
Lab Order: S1912105

CASE NARRATIVE

Report ID: S1912105001

Sample Cottonwood was received on December 9, 2019.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition
40 CFR Parts 136 and 141
40 CFR Part 50, Appendices B, J, L, and O
Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012
ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical (Formerly Inter-Mountain Laboratories) except as indicated in this case narrative.

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

Pace Analytical® Formerly Inter-Mountain Laboratories
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

Company: Energy Fuels (White Mesa)
6425 S. Highway 191
Blanding, UT 84511

Date Reported 1/2/2020
Report ID S1912105001

ProjectName: Q4 Surface Water 2019
Lab ID: S1912105-001
ClientSample ID: Cottonwood
COC: 179822
PWS ID:

WorkOrder: S1912105
CollectionDate: 12/5/2019 9:00:00 AM
DateReceived: 12/9/2019 1:05:00 PM
FieldSampler: TH
Matrix: Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
General Parameters							
Total Dissolved Solids (180)	400	mg/L		10	SM 2540	12/10/2019 1404	IJQ
Total Suspended Solids	262	mg/L		5	SM 2540	12/10/2019 839	DAJ
Metals - Dissolved							
Uranium	0.0043	mg/L		0.0003	EPA 200.8	12/12/2019 110	MS
Metals - Suspended							
Uranium	0.0004	mg/L		0.0003	EPA 200.8	12/13/2019 1041	MS
Radionuclides - Dissolved							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	12/27/2019 1146	WN
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/27/2019 1146	WN
Thorium 230	ND	pCi/L		0.2	ACW10	12/17/2019 1450	WN
Thorium 230 Precision (±)	NA	pCi/L			ACW10	12/17/2019 1450	WN
Thorium 229 Tracer (30-120)	100	%			ACW10	12/17/2019 1450	WN
Radionuclides - Suspended							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	12/27/2019 1146	WN
Radium 226 (Suspended) Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/27/2019 1146	WN
Thorium 230	0.4	pCi/L		0.2	ACW10	12/19/2019 1435	WN
Thorium 230 Precision (±)	0.1	pCi/L			ACW10	12/19/2019 1435	WN
Thorium 229 Tracer (30-120)	110	%			ACW10	12/19/2019 1435	WN
Radionuclides - Total							
Gross Alpha	ND	pCi/L		2	SM 7110B	12/19/2019 1526	AEF
Gross Alpha Precision (±)	NA	pCi/L			SM 7110B	12/19/2019 1526	AEF

These results apply only to the samples tested.

RL - Reporting Limit

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect
C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

Reviewed by: _____
Wade Nieuwsma, Assistant Laboratory Manager

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 1/2/2020
Work Order: S1912105 **Report ID:** S1912105001
Project: Q4 Surface Water 2019

Dissolved Metals by ICPMS EPA 200.8 - Water Sample Type **MBLK** Units: mg/L

MBLK (12/12/19 01:51) RunNo: 174537

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	ND	0.0003					

Dissolved Metals by ICPMS EPA 200.8 - Water Sample Type **LCS** Units: mg/L

LCS (12/12/19 08:56) RunNo: 174537

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	0.0981	0.0003	0.1		98.1	85 - 115	

Dissolved Metals by ICPMS EPA 200.8 - Water Sample Type **MS** Units: mg/L

S1912104-011CS (12/12/19 00:53) RunNo: 174537

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium	1.09	0.001	1.1	ND	99.3	70 - 130	

Dissolved Metals by ICPMS EPA 200.8 - Water Sample Type **MSD** Units: mg/L

S1912104-011CMSD (12/12/19 00:58) RunNo: 174537

Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Uranium	1.11	0.001	1.09	1.42	101	20	

Gross Alpha, Beta by SM 7110B Sample Type **MBLK** Units: pCi/L

MBLK-609 (12/19/19 11:34) RunNo: 174824

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Gross Alpha	ND	2					

Gross Alpha, Beta by SM 7110B Sample Type **LCS** Units: pCi/L

LCS A-609 (12/19/19 11:34) RunNo: 174824

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Gross Alpha	59	2	70.5		83.2	60 - 124	

Gross Alpha, Beta by SM 7110B Sample Type **MS** Units: pCi/L

S1910428-002AMSA (12/19/19 11:34) RunNo: 174824

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Gross Alpha	184	5	141	ND	130	30 - 130	

Gross Alpha, Beta by SM 7110B Sample Type **DUP** Units: pCi/L

S1910428-001ADUP (12/19/19 11:34) RunNo: 174824

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Gross Alpha	5	4	7	26.0		20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 1/2/2020
Work Order: S1912105 **Report ID:** S1912105001
Project: Q4 Surface Water 2019

Radium 226 in Water - Dissolved Sample Type **MBLK** Units: pCi/L

MB-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16972		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Dissolved)	ND	0.2					

Radium 226 in Water - Dissolved Sample Type **LCS** Units: pCi/L

LCS-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16972		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Dissolved)	5.8	0.2	7		83.5	67.1 - 122	

Radium 226 in Water - Dissolved Sample Type **MS** Units: pCi/L

MS-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16972		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Dissolved)	6.0	0.2	7	ND	85.5	65 - 131	

Radium 226 in Water - Dissolved Sample Type **MSD** Units: pCi/L

MSD-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16972		
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226 (Dissolved)	5.6	0.2	6.0	6.90	79.8	20	

Radium 226 in Water - Suspended Sample Type **MBLK** Units: pCi/L

MB-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16971		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Suspended)	ND	0.2					

Radium 226 in Water - Suspended Sample Type **LCS** Units: pCi/L

LCS-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16971		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Suspended)	5.8	0.2	7		83.5	67.1 - 122	

Radium 226 in Water - Suspended Sample Type **MS** Units: pCi/L

MS-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16971		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226 (Suspended)	6.0	0.2	7	ND	85.5	65 - 131	

Radium 226 in Water - Suspended Sample Type **MSD** Units: pCi/L

MSD-2103 (12/27/19 11:46)	RunNo: 175080	PrepDate: 12/16/19 0:00			BatchID 16971		
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226 (Suspended)	5.6	0.2	6.0	6.90	79.8	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 1/2/2020
Work Order: S1912105 **Report ID:** S1912105001
Project: Q4 Surface Water 2019

Thorium 230 in Water - Dissolved Sample Type **MBLK** Units: pCi/L

MB-710 (12/16/19 14:19)	RunNo: 174856						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium 230 (Dissolved)	ND	0.2					

Thorium 230 in Water - Dissolved Sample Type **LCS** Units: pCi/L

LCS-710 (12/16/19 14:19)	RunNo: 174856						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium 230 (Dissolved)	13	0.2	12		101	68 - 146	

Thorium 230 in Water - Dissolved Sample Type **LCSD** Units: pCi/L

LCSD-710 (12/16/19 14:20)	RunNo: 174856						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium 230 (Dissolved)	12	0.2	13	6.31	94.5	20	

Thorium 230 in Water - Suspended Sample Type **MBLK** Units: pCi/L

MB-711 (12/18/19 15:44)	RunNo: 174858						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium 230 (Suspended)	ND	0.2					

Thorium 230 in Water - Suspended Sample Type **LCS** Units: pCi/L

LCS-710 (12/16/19 14:19)	RunNo: 174856						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium 230 (Suspended)	13	0.2	12		101	68 - 146	

LCS-711 (12/18/19 15:44)	RunNo: 174858						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Thorium 230 (Suspended)	14	0.2	12		110	68 - 146	

Thorium 230 in Water - Suspended Sample Type **LCSD** Units: pCi/L

LCSD-710 (12/16/19 14:20)	RunNo: 174856						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium 230 (Suspended)	12	0.2	13	6.31	94.5	20	

LCSD-711 (12/18/19 15:44)	RunNo: 174858						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Thorium 230 (Suspended)	13	0.2	14	8.90	100	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Energy Fuels (White Mesa) **Date:** 1/2/2020
Work Order: S1912105 **Report ID:** S1912105001
Project: Q4 Surface Water 2019

Solids By SM 2540 Sample Type **MBLK** Units: mg/L

DI (12/10/19 08:35) RunNo: 174535

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Suspended Solids	ND	5					

DI (12/10/19 13:27) RunNo: 174628

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Dissolved Solids (180)	ND	10					

Solids By SM 2540 Sample Type **LCS** Units: mg/L

CONTROL (12/10/19 08:36) RunNo: 174535

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Suspended Solids	94	5	100		94.0	80 - 110	

CONTROL (12/10/19 13:28) RunNo: 174628

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Dissolved Solids (180)	220	10	226		96.5	80 - 110	

Solids By SM 2540 Sample Type **DUP** Units: mg/L

S1912119-003A (12/10/19 14:10) RunNo: 174628

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Total Dissolved Solids (180)	5290	10	5320	0.566		20	

Suspended Natural Uranium Sample Type **MBLK** Units: mg/L

MBLK (12/13/19 10:35) RunNo: 174604

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium Suspended	ND	0.0003					

Suspended Natural Uranium Sample Type **LCS** Units: mg/L

LCS (12/13/19 10:30) RunNo: 174604

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium Suspended	0.0963	0.0003	0.1		96.3	85 - 115	

Suspended Natural Uranium Sample Type **MS** Units: mg/L

S1912105-001CS (12/13/19 10:53) RunNo: 174604

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Uranium Suspended	2.12	0.0003	2.1	0.0004	101	70 - 130	

Suspended Natural Uranium Sample Type **MSD** Units: mg/L

S1912105-001CMSD (12/13/19 10:59) RunNo: 174604

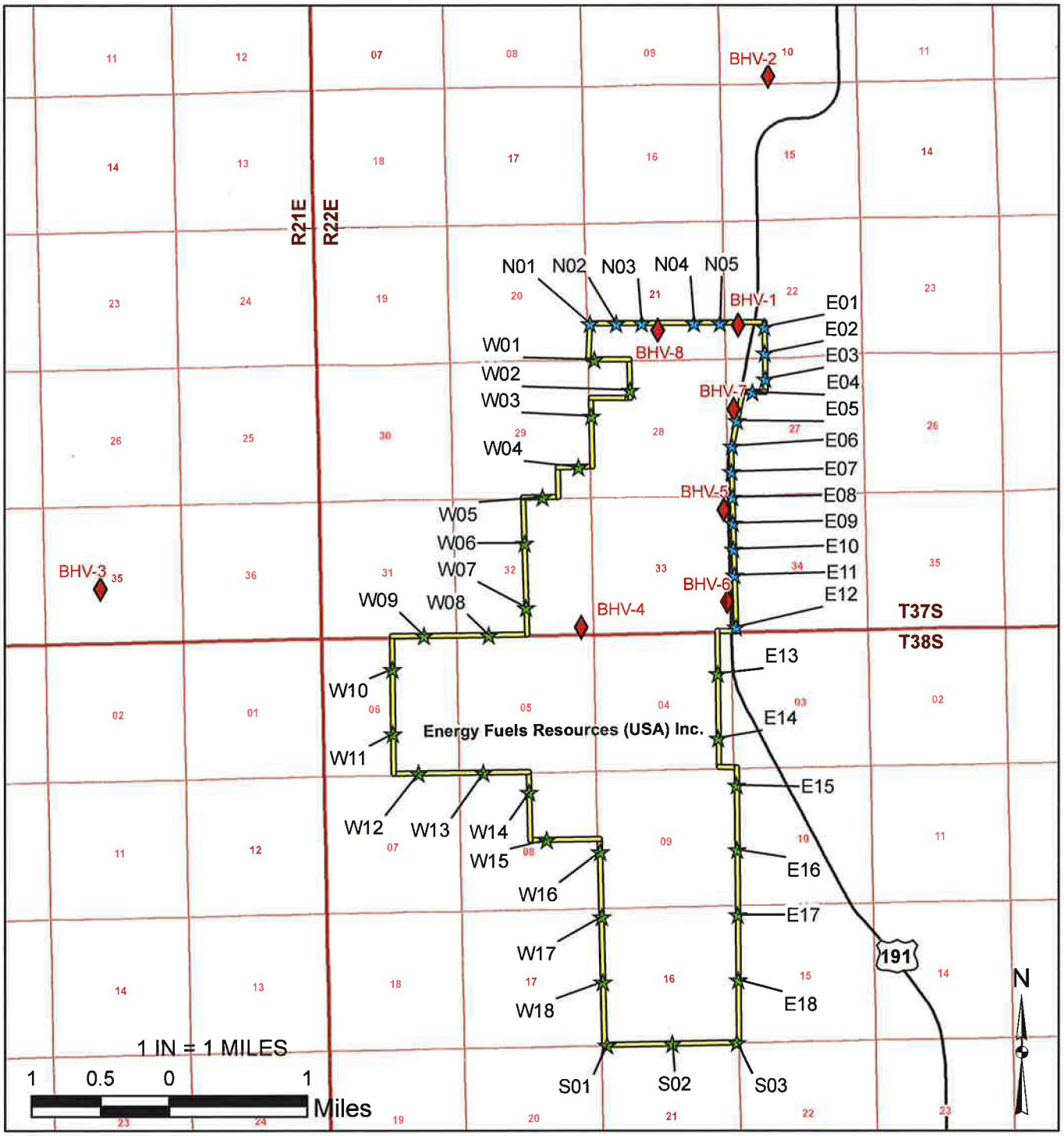
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Uranium Suspended	2.12	0.0003	2.12	0.162	101	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
G	Analyzed at IML Gillette laboratory	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit	O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits
X	Matrix Effect		

ATTACHMENT I

SOIL SAMPLE GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC



Legend

Proposed Soil Monitoring Location

- 1,000 Feet
- 2,500 Feet
- Air Monitoring Station
- Property Boundary
- Road
- Township and Range
- Section

Coordinate System: NAD 1983 StatePlane Utah South FIPS 4303 Feet

ENERGY FUELS

REVISIONS		Project:	WHITE MESA MILL	
Date:	By:	County: San Juan		State: Utah
		Location: -		

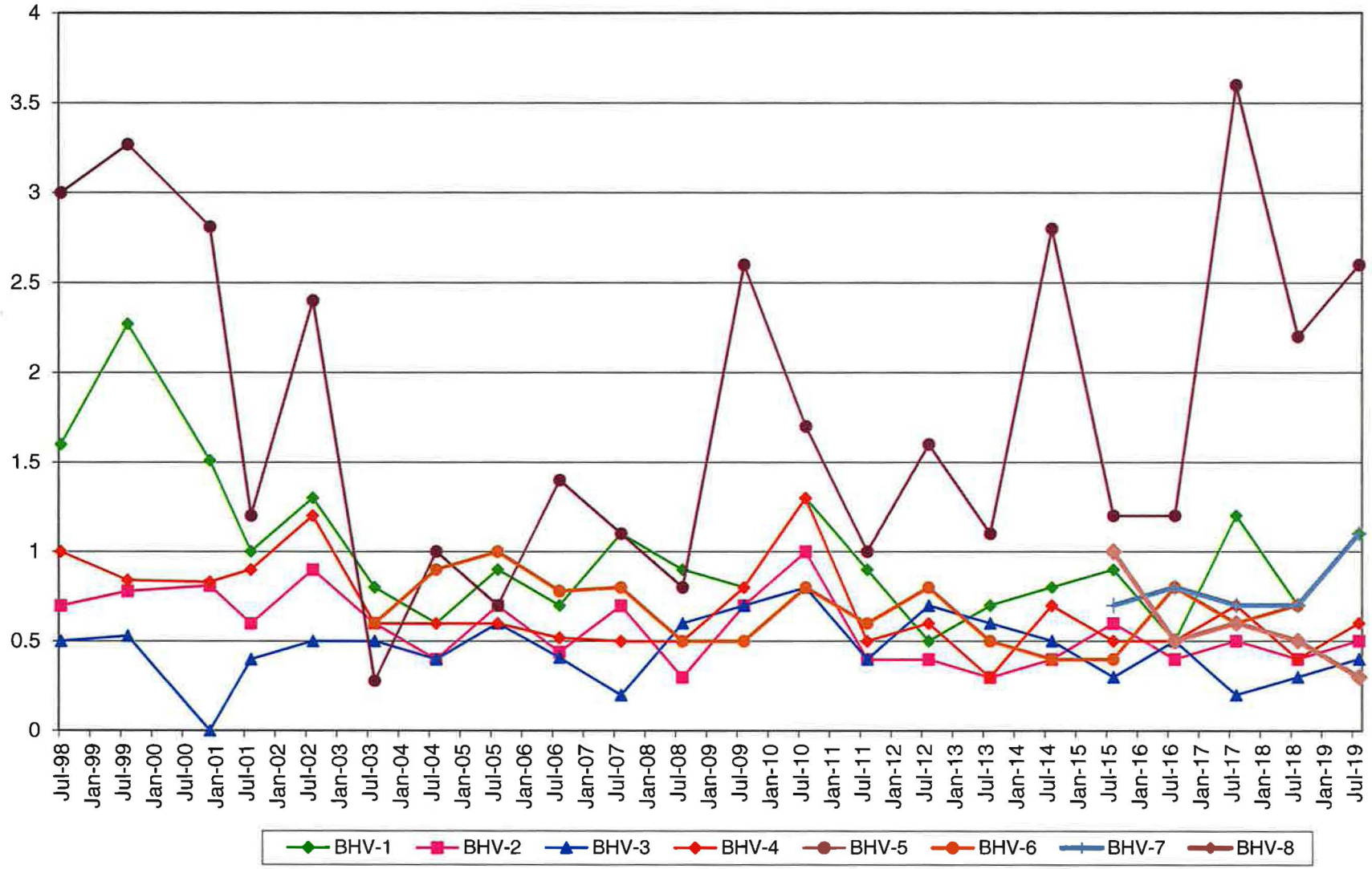
FIGURE I-1

SOIL MONITORING LOCATIONS

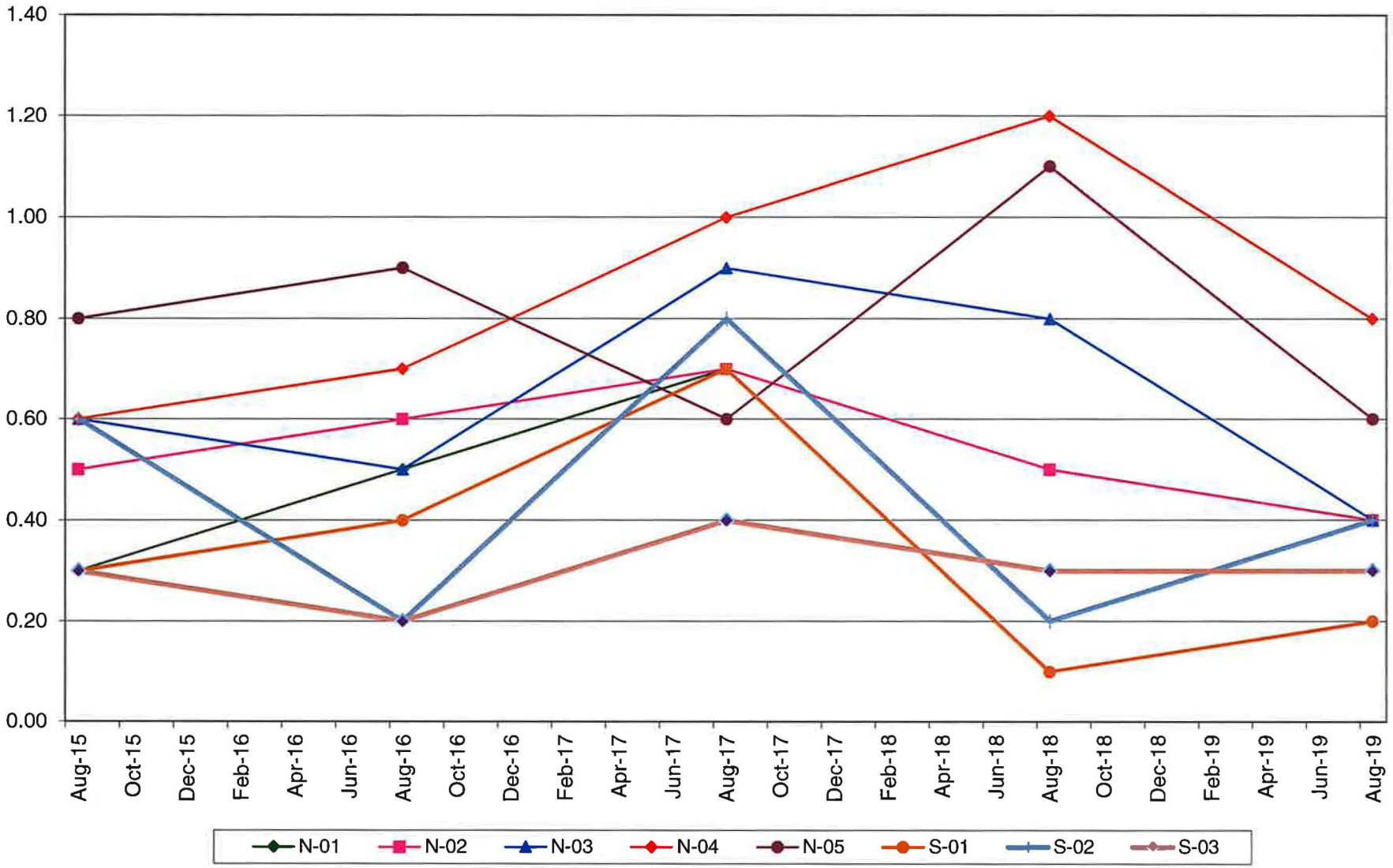
Author: rellis	Date: 2/20/2017	Drafted By: rellis

S:\SourceUT\WhiteMesaMill\Maps\SoilMonitoringLocations.mxd / 2/20/2017 4:08:09 PM by rellis

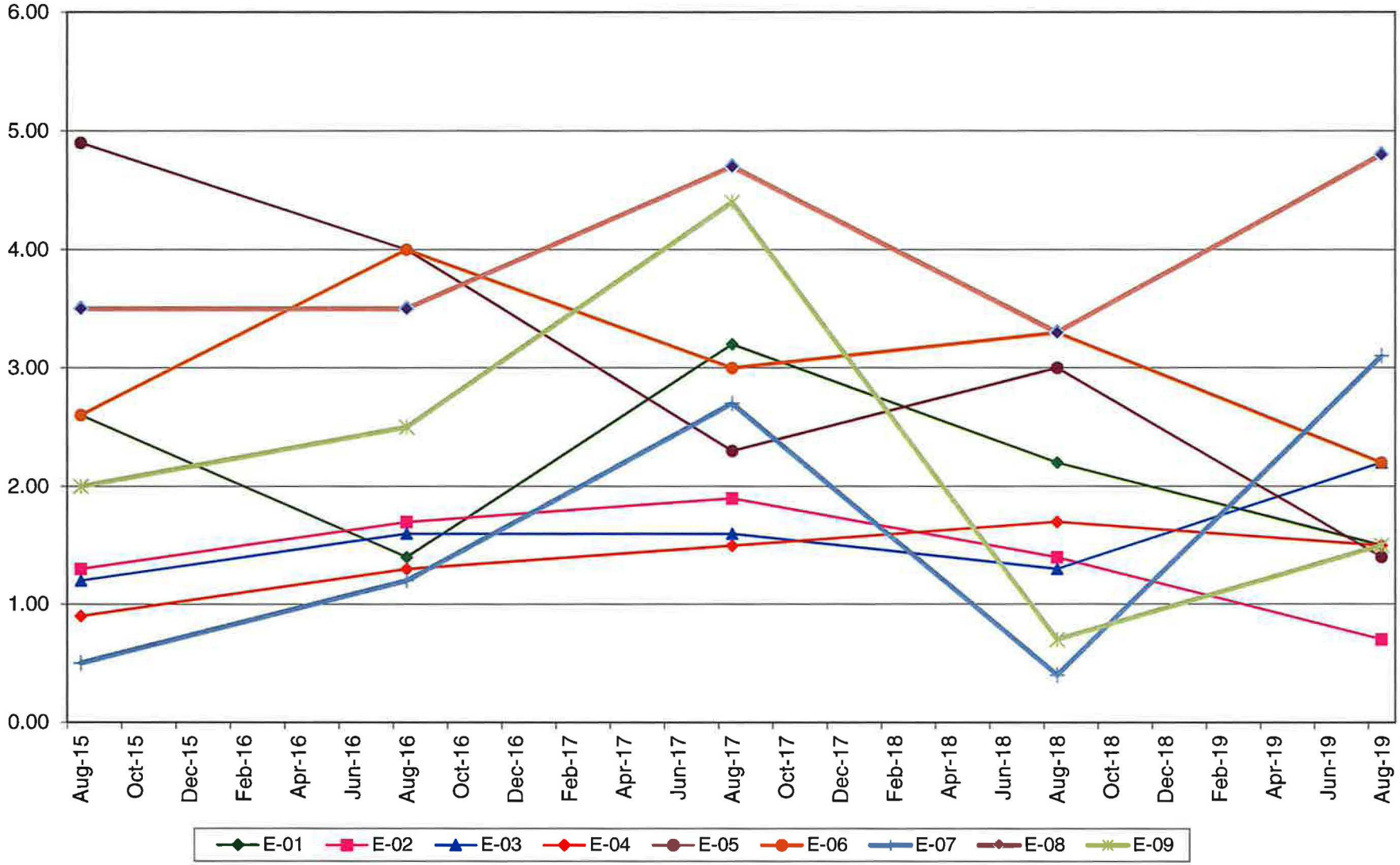
BHV Radium-226 Concentrations In Soil (pCi/g)



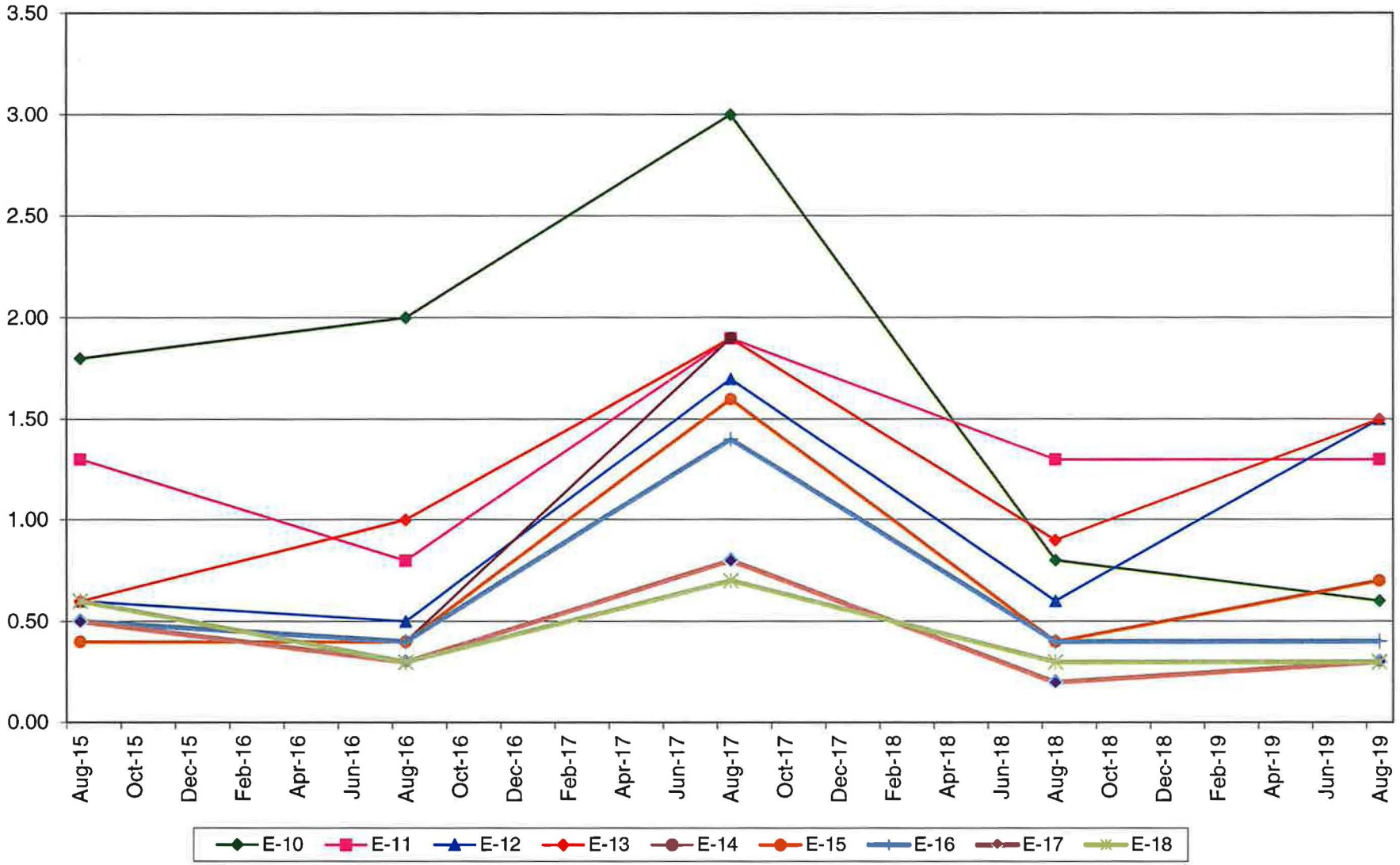
North and South Ra-226 Concentrations In Soil (pCi/g)



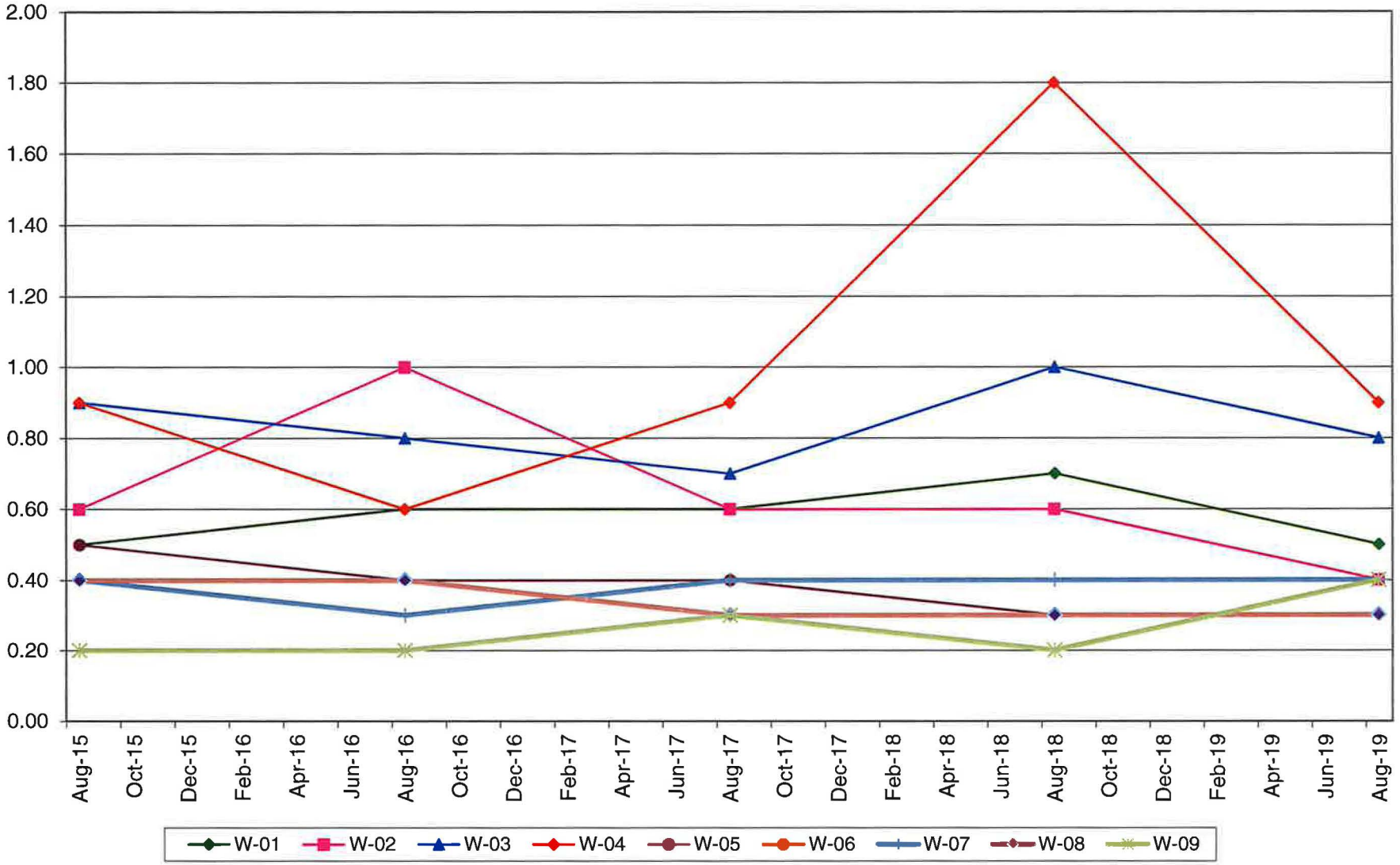
East (E-01 - E-09) Ra-226 Concentrations In Soil (pCi/g)



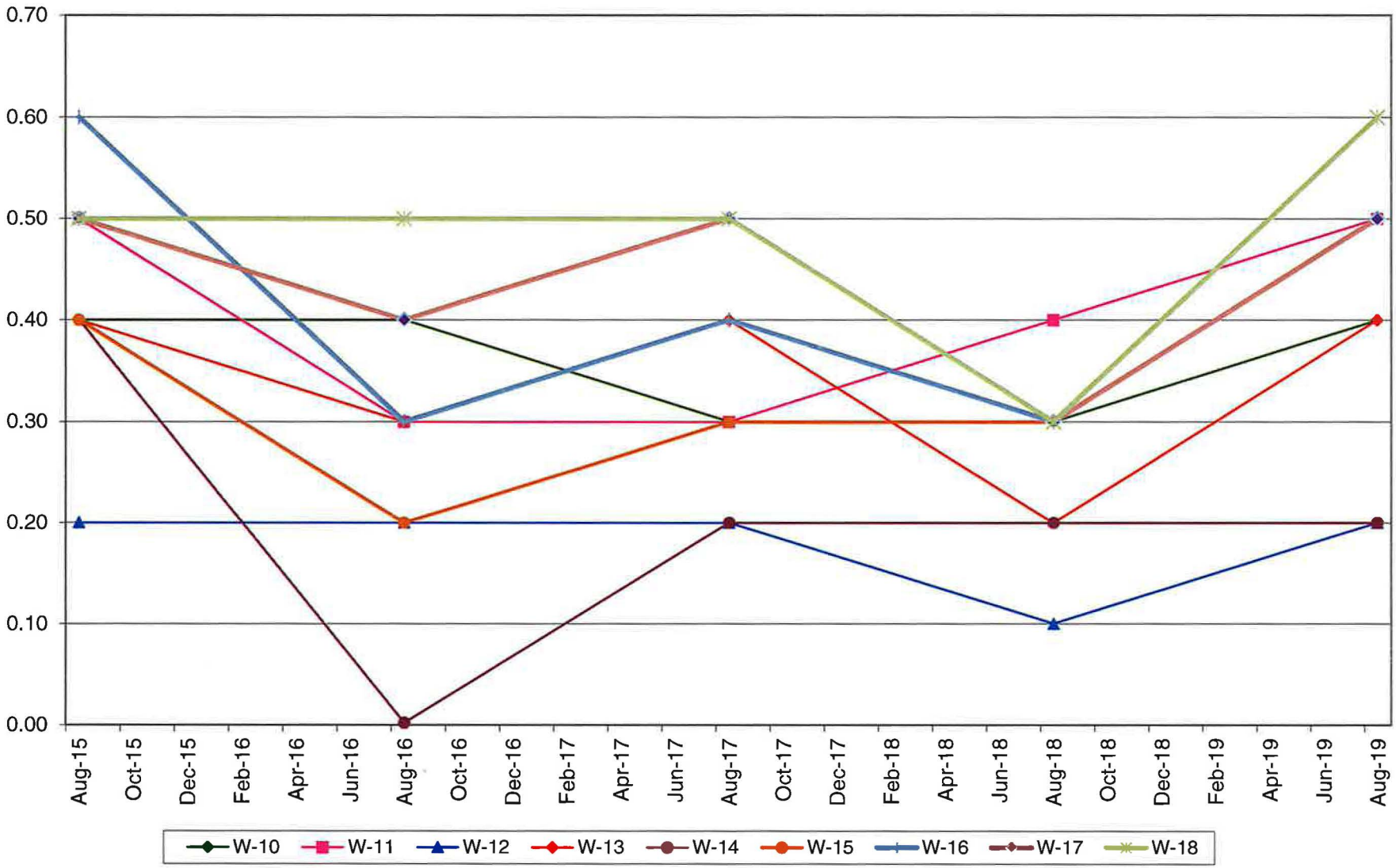
East (E-10 - E-18) Ra-226 Concentrations In Soil (pCi/g)



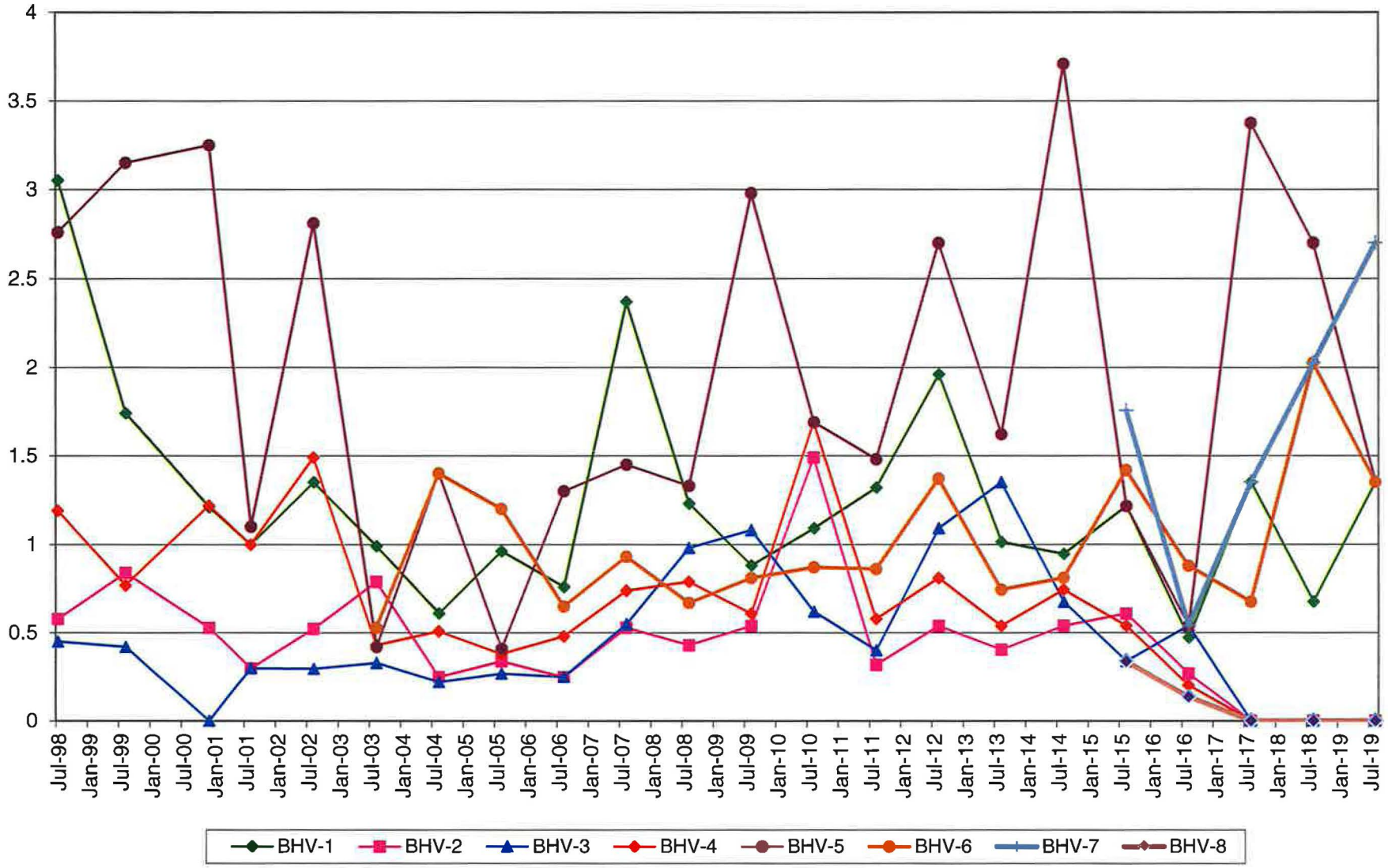
West (W-01 - W-09) Ra-226 Concentrations In Soil (pCi/g)



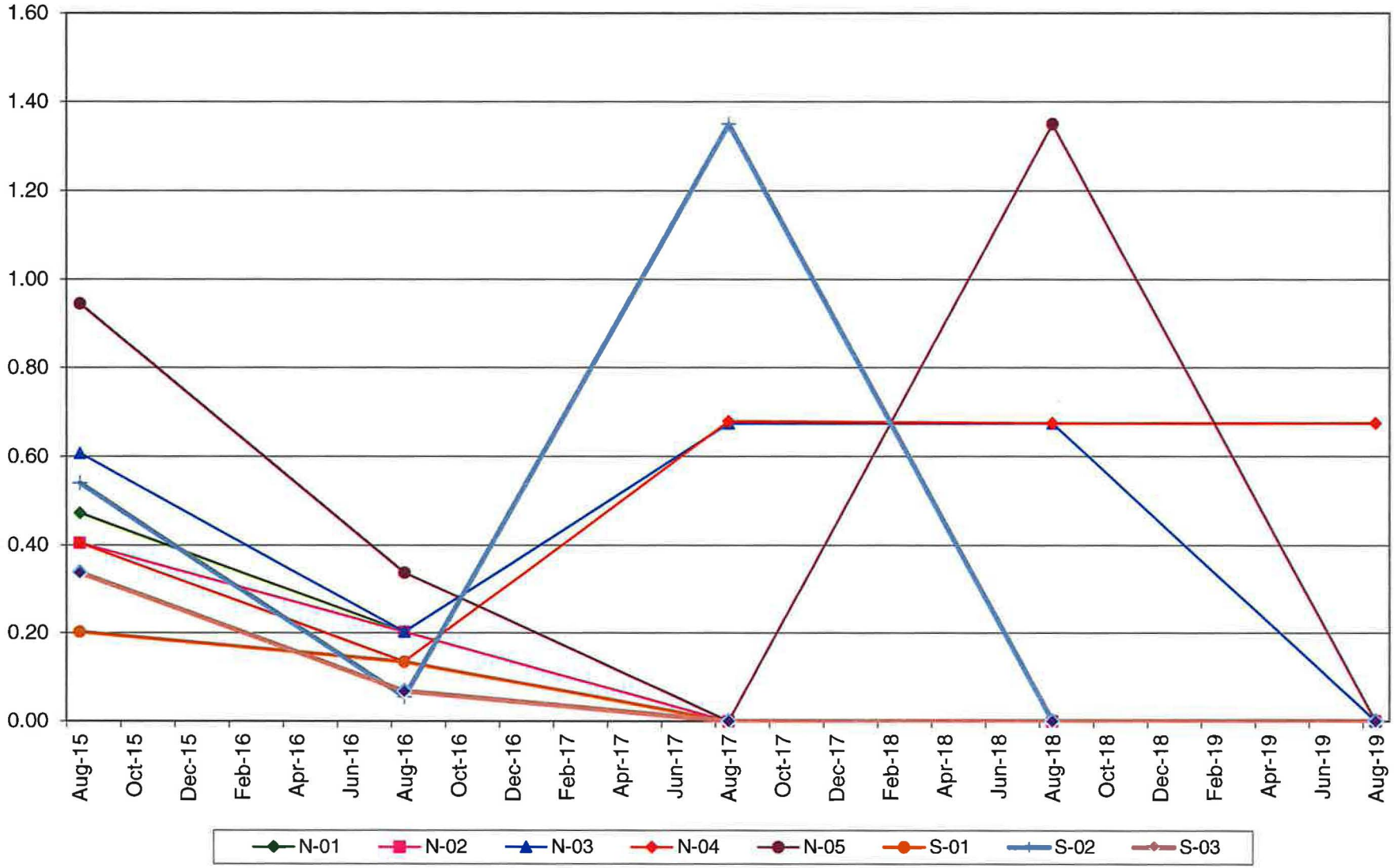
West (W-10 - W-18) Ra-226 Concentrations In Soil (pCi/g)



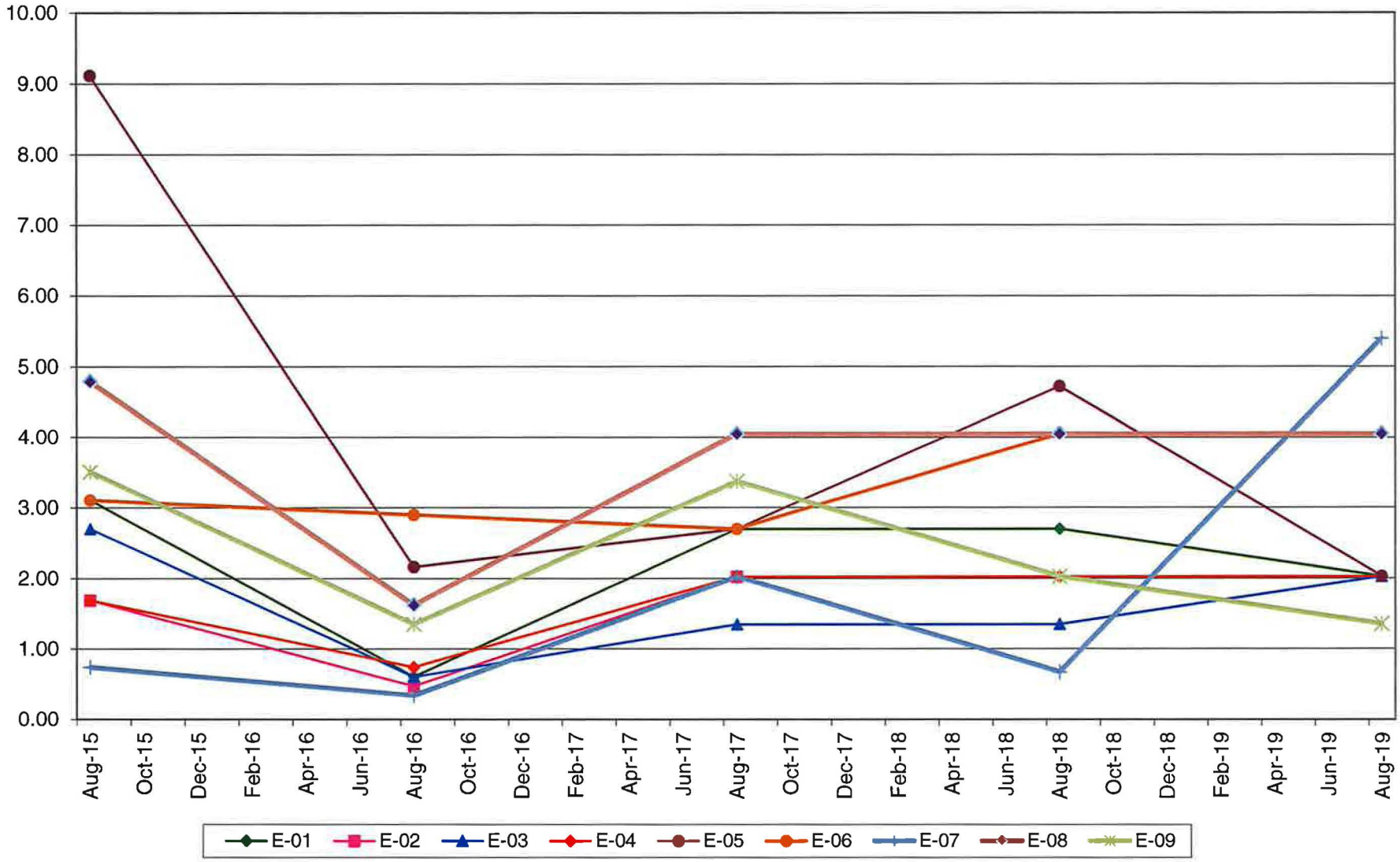
BHV Uranium-Nat. Concentrations In Soil (pCi/g)



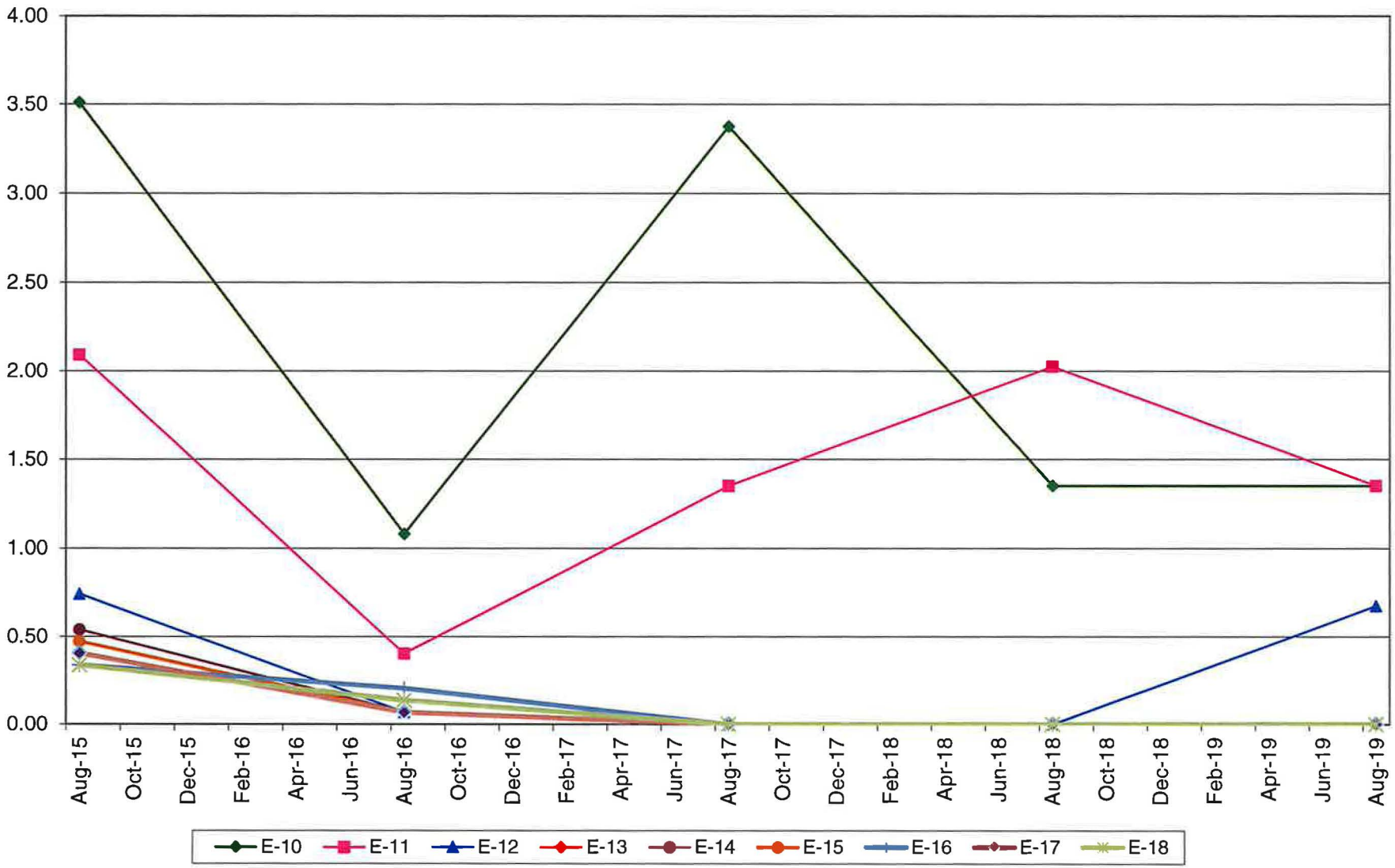
North and South Uranium-Nat. Concentrations In Soil (pCi/g)

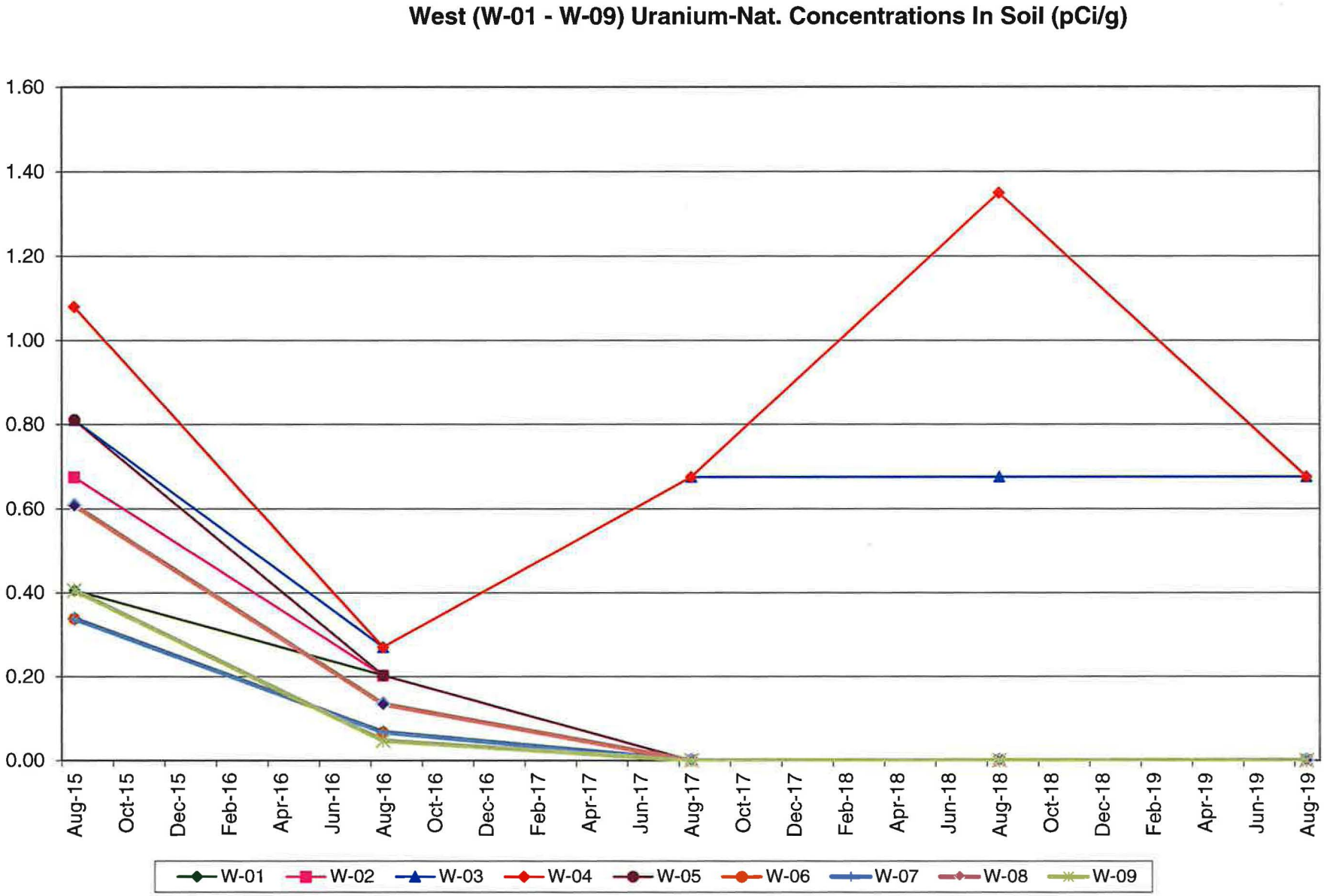


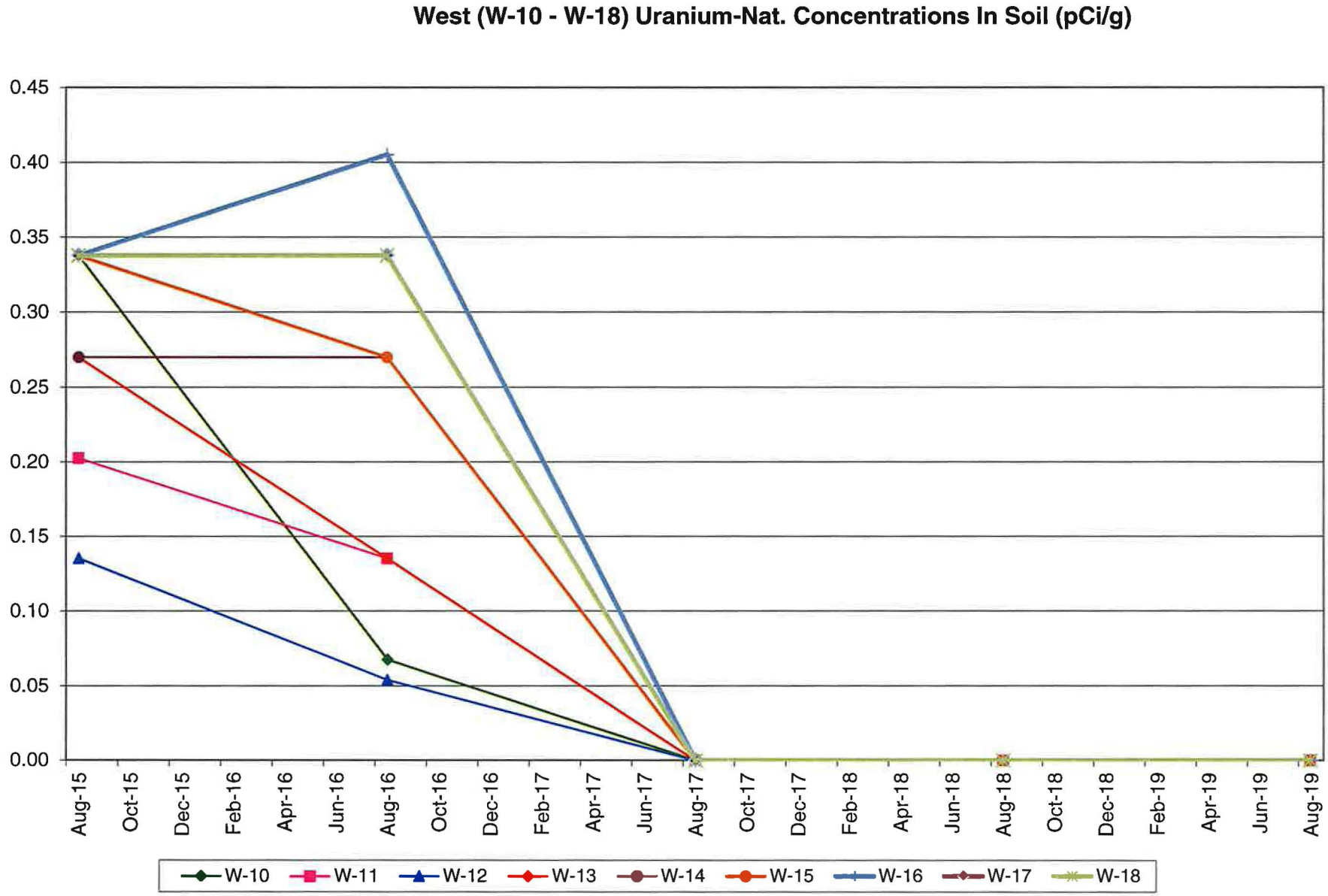
East (E-01 - E-09) Uranium-Nat. Concentrations In Soil (pCi/g)



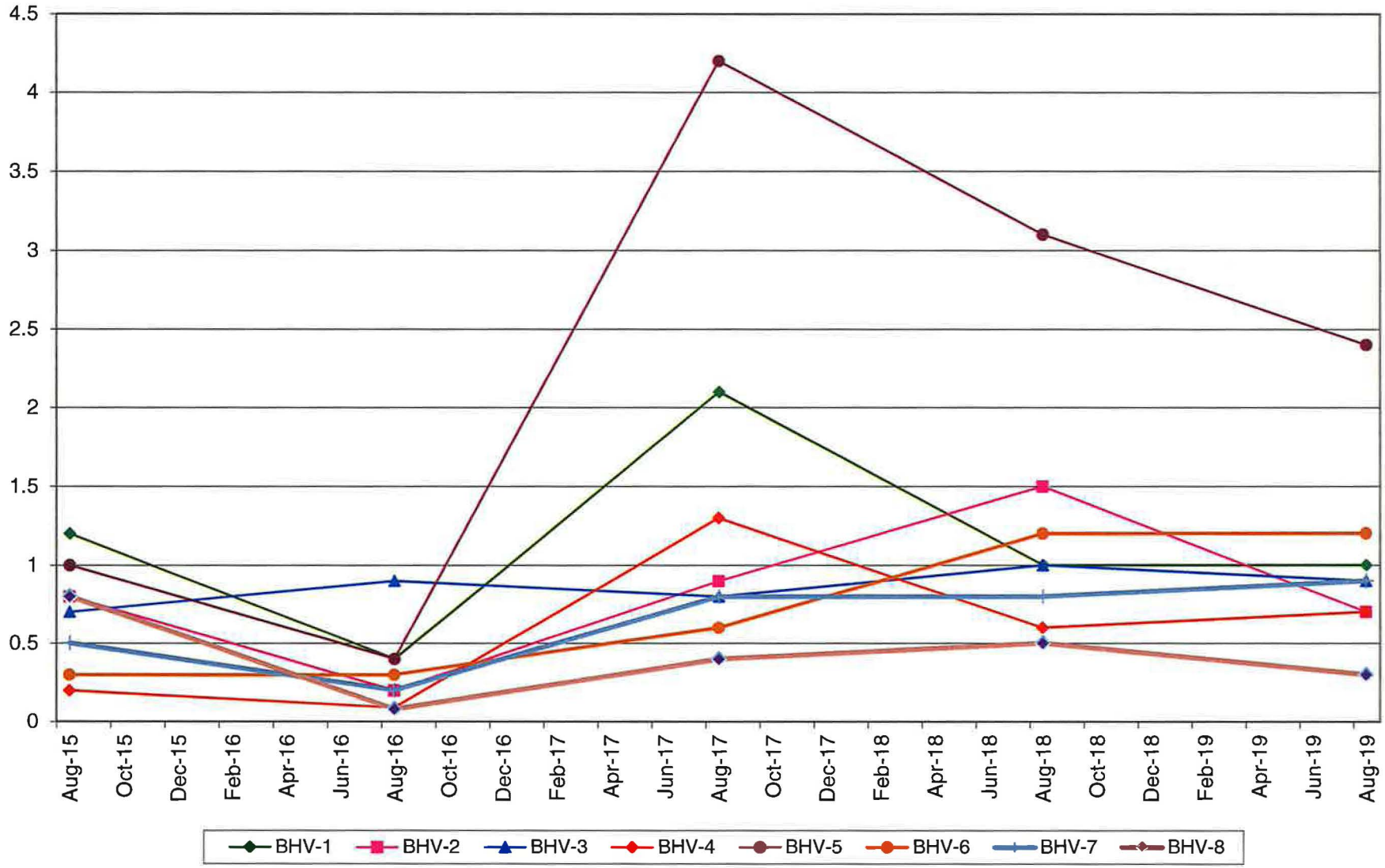
East (E-10 - E-18) Uranium-Nat. Concentrations In Soil (pCi/g)



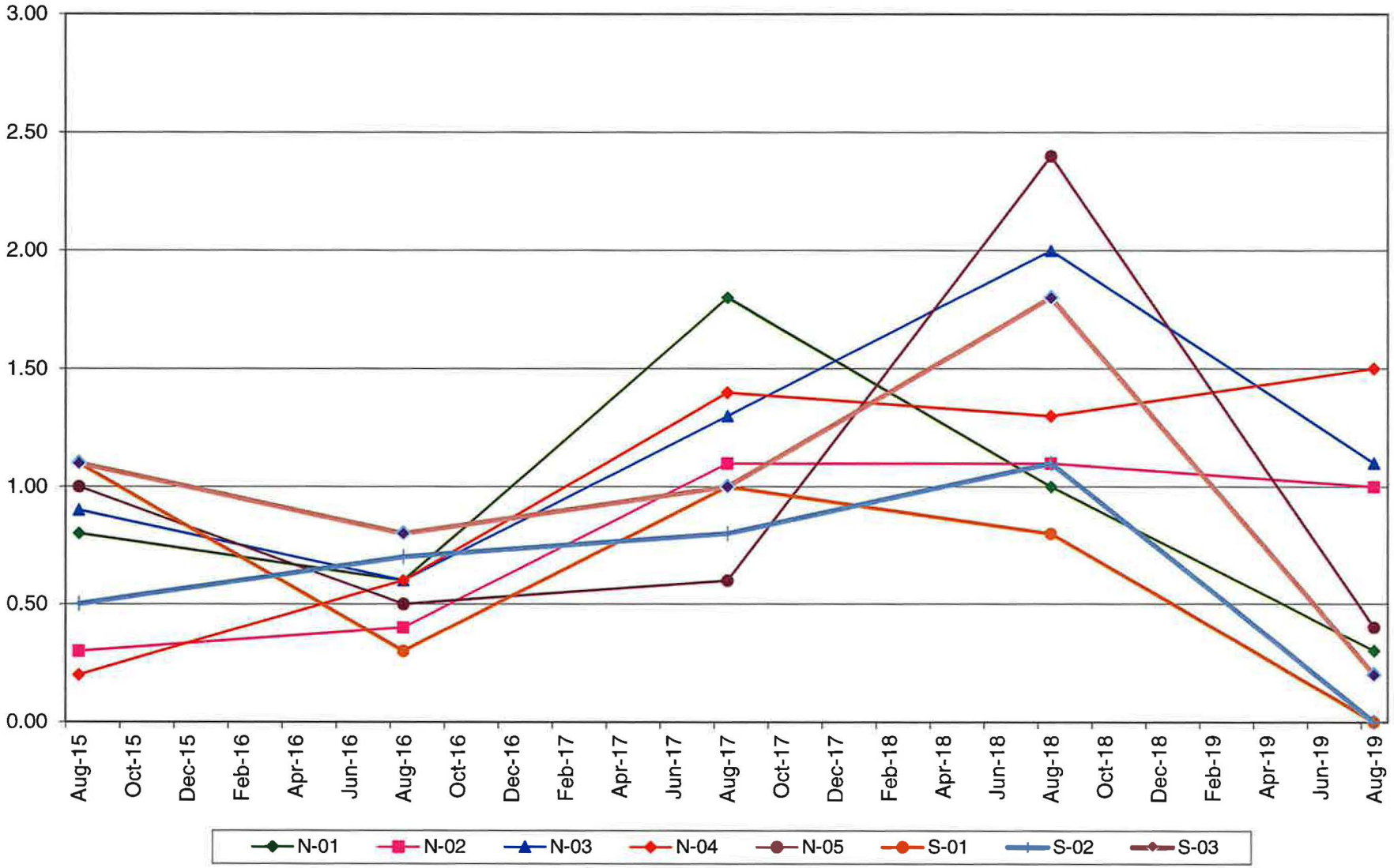

West (W-01 - W-09) Uranium-Nat. Concentrations In Soil (pCi/g)
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
W-01
W-02
W-03
W-04
W-05
W-06
W-07
W-08
W-09


West (W-10 - W-18) Uranium-Nat. Concentrations In Soil (pCi/g)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
W-10
W-11
W-12
W-13
W-14
W-15
W-16
W-17
W-18

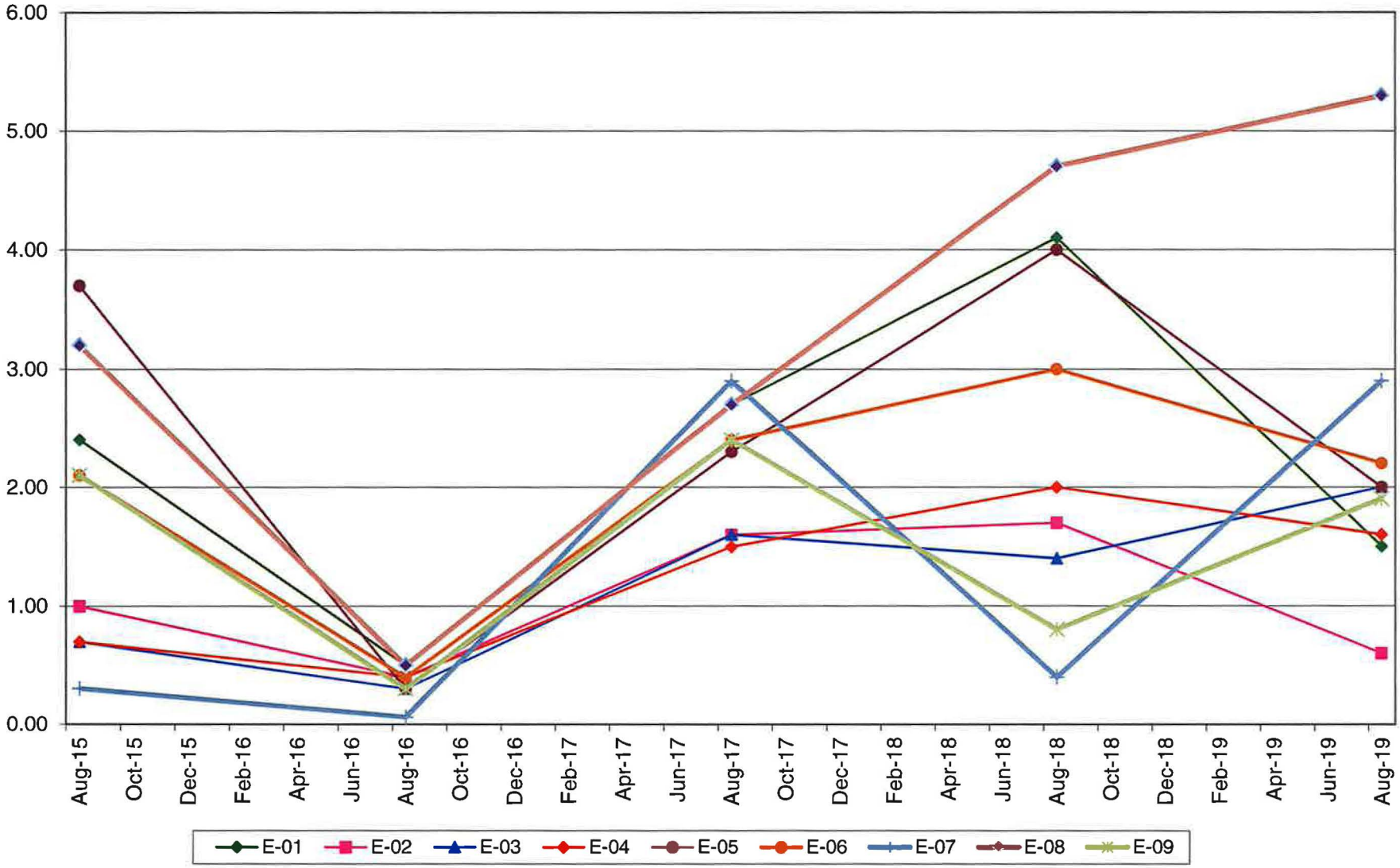
BHV Pb-210 Concentrations In Soil (pCi/g)



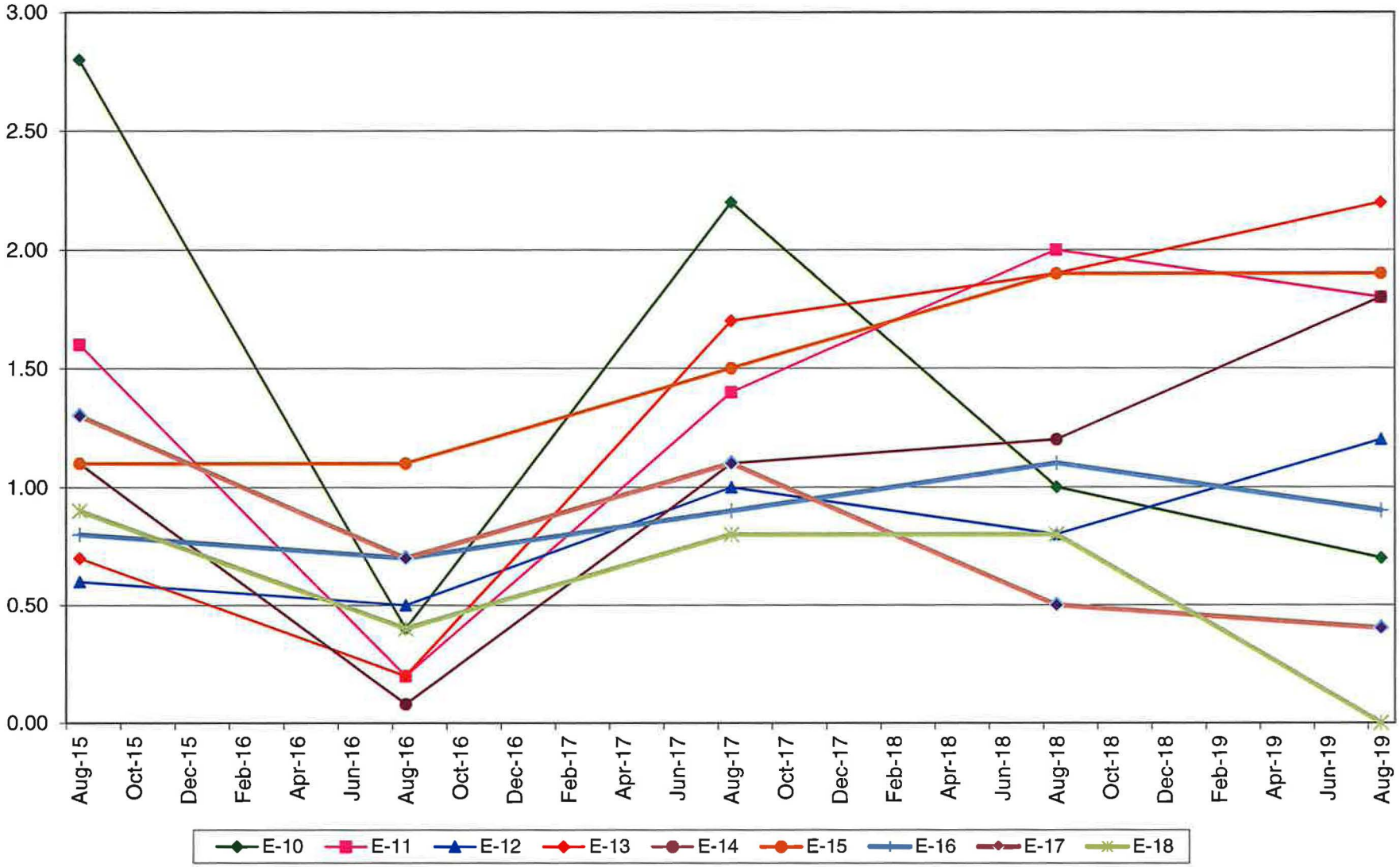
North and South Pb-210 Concentrations In Soil (pCi/g)

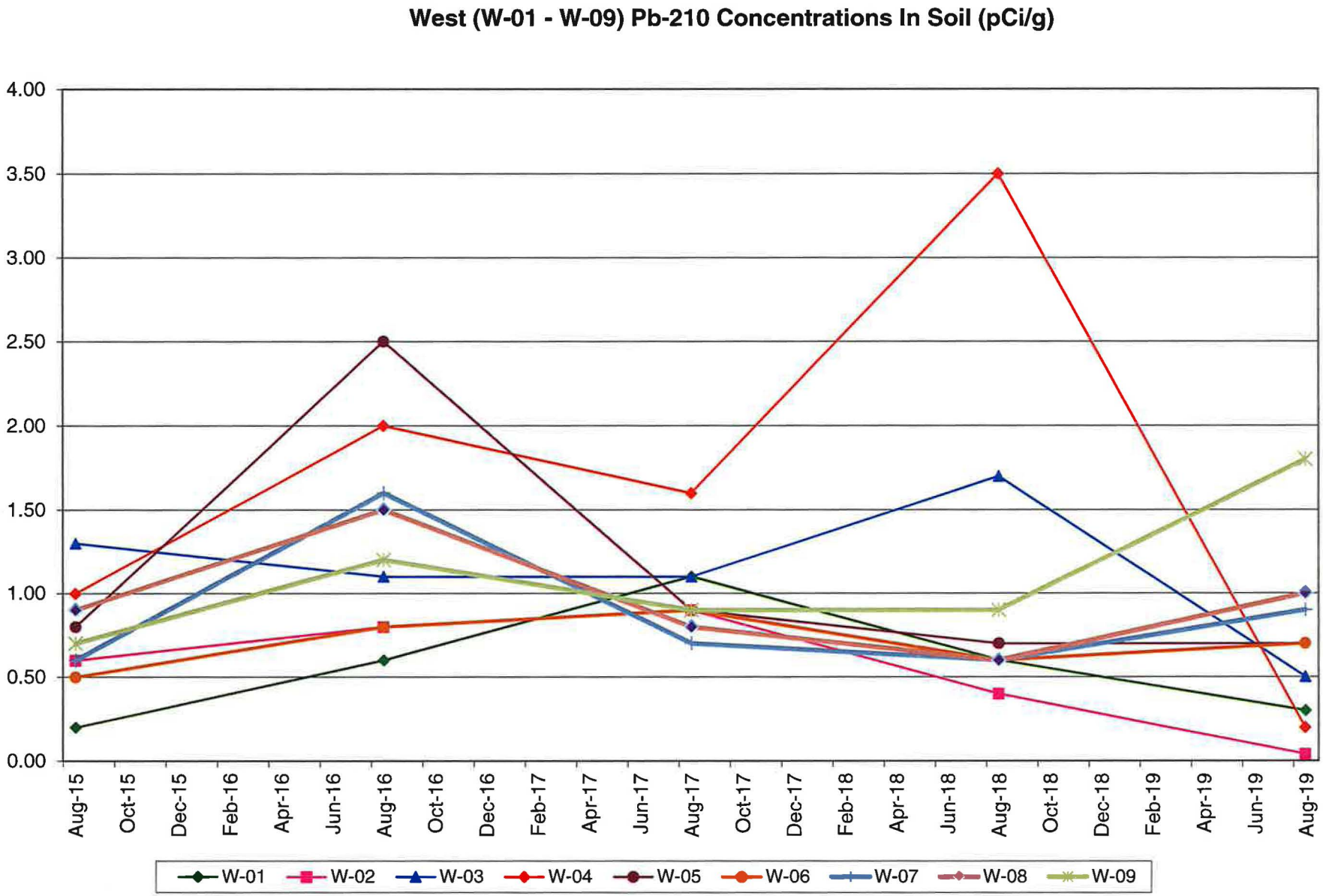


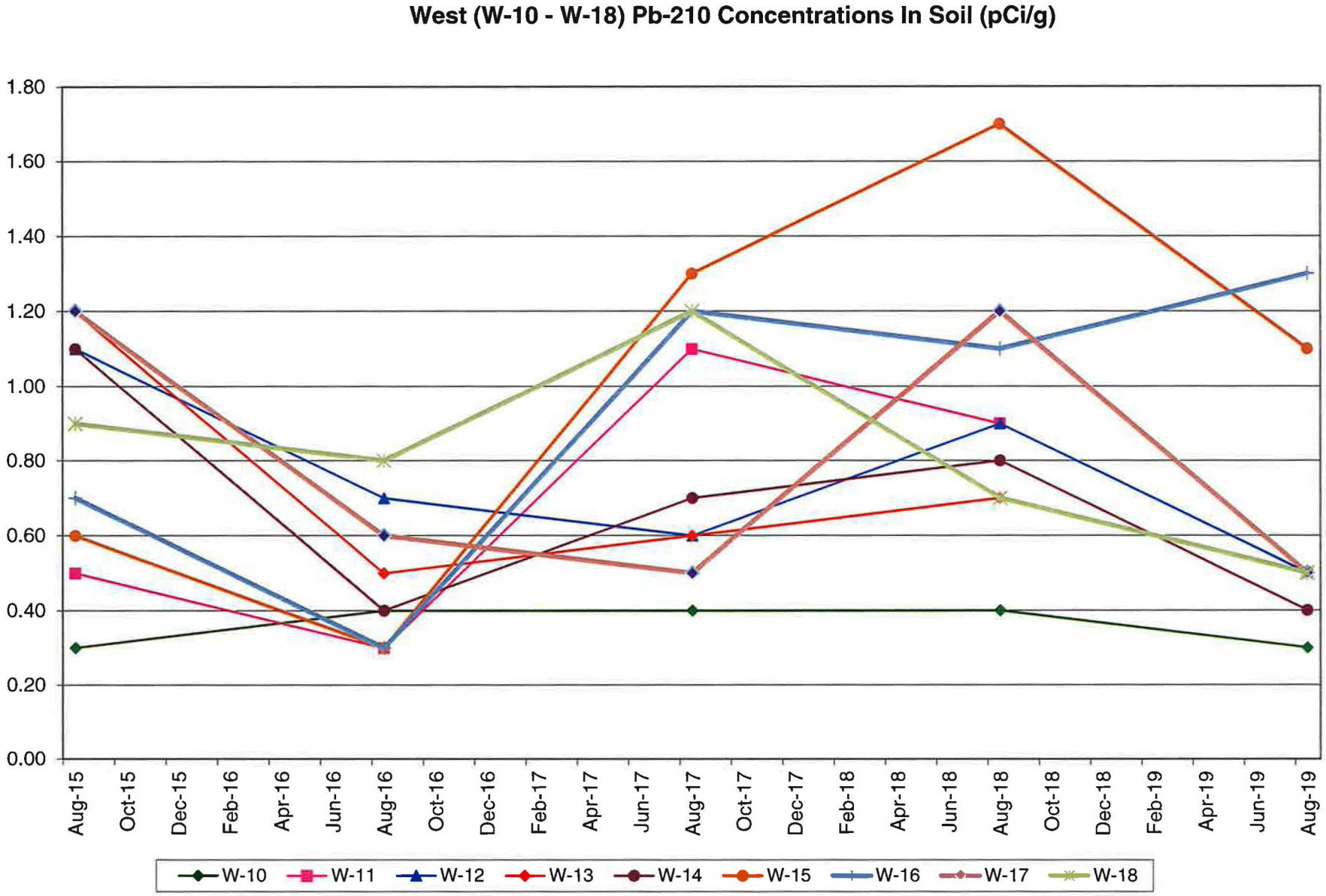
East (E-01 - E-09) Pb-210 Concentrations In Soil (pCi/g)



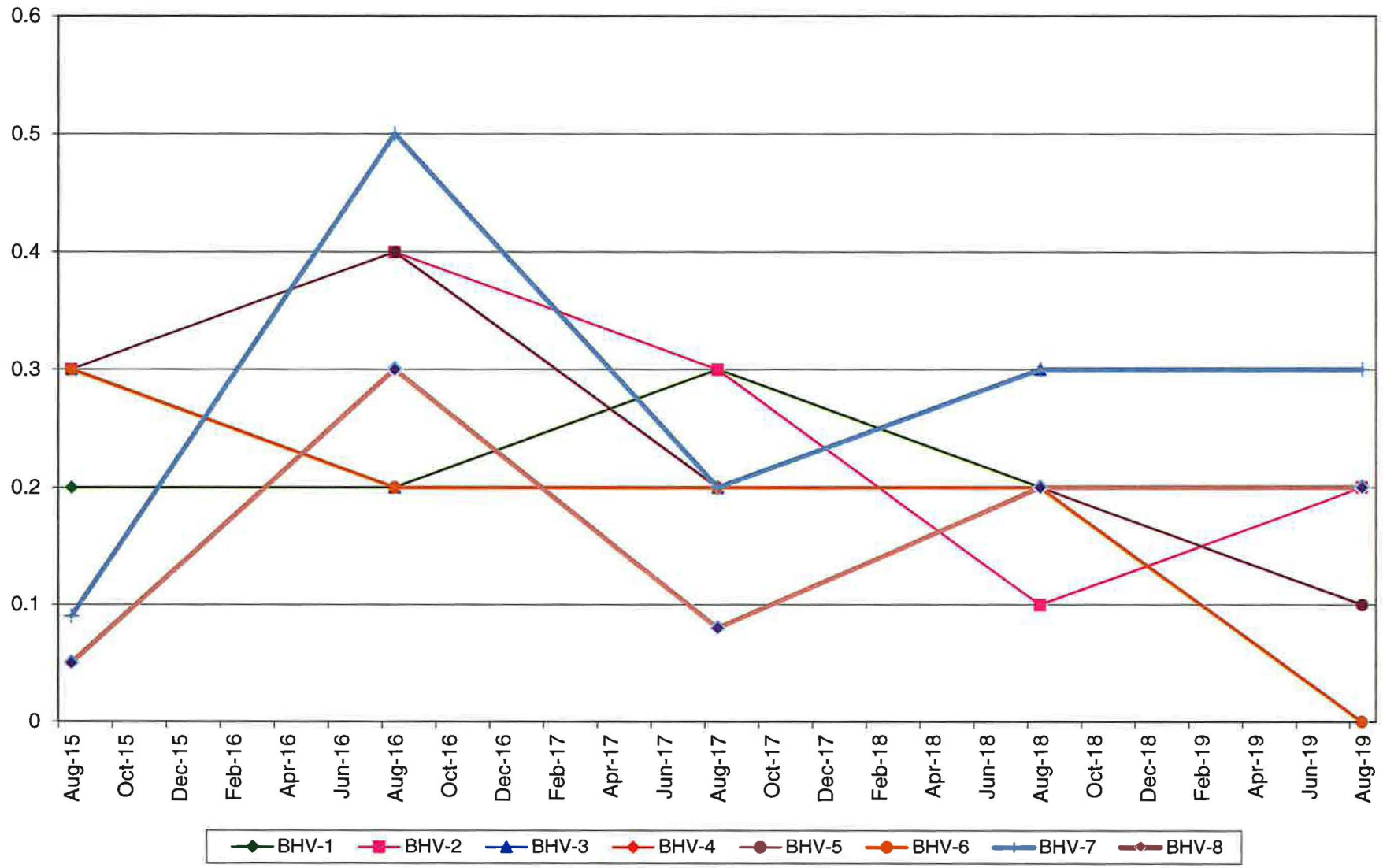
East (E-10 - E-18) Pb-210 Concentrations In Soil (pCi/g)

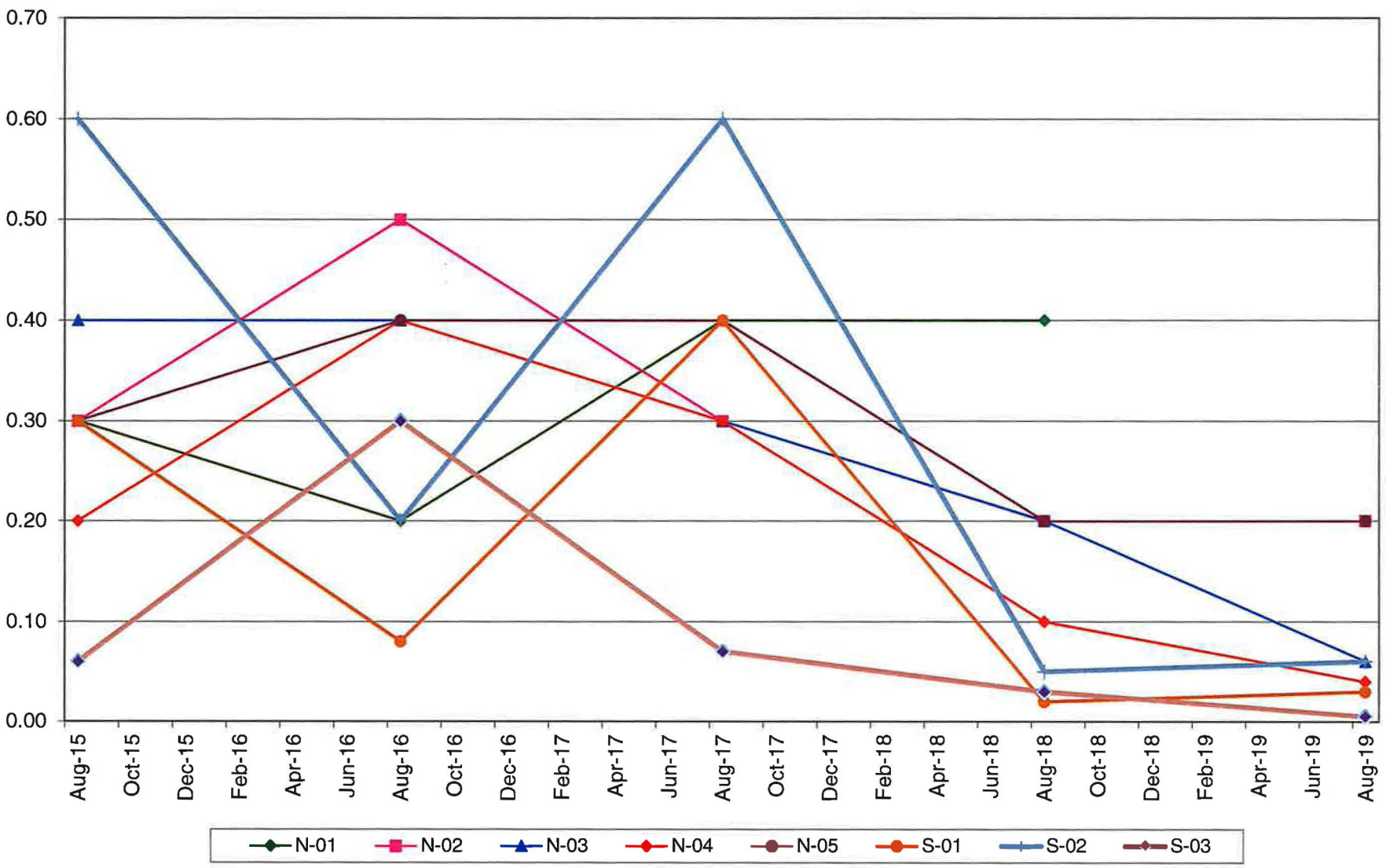



West (W-01 - W-09) Pb-210 Concentrations In Soil (pCi/g)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
W-01
W-02
W-03
W-04
W-05
W-06
W-07
W-08
W-09


West (W-10 - W-18) Pb-210 Concentrations In Soil (pCi/g)
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
W-10
W-11
W-12
W-13
W-14
W-15
W-16
W-17
W-18

BHV Th-232 Concentrations In Soil (pCi/g)




North and South Th-232 Concentrations In Soil (pCi/g)
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
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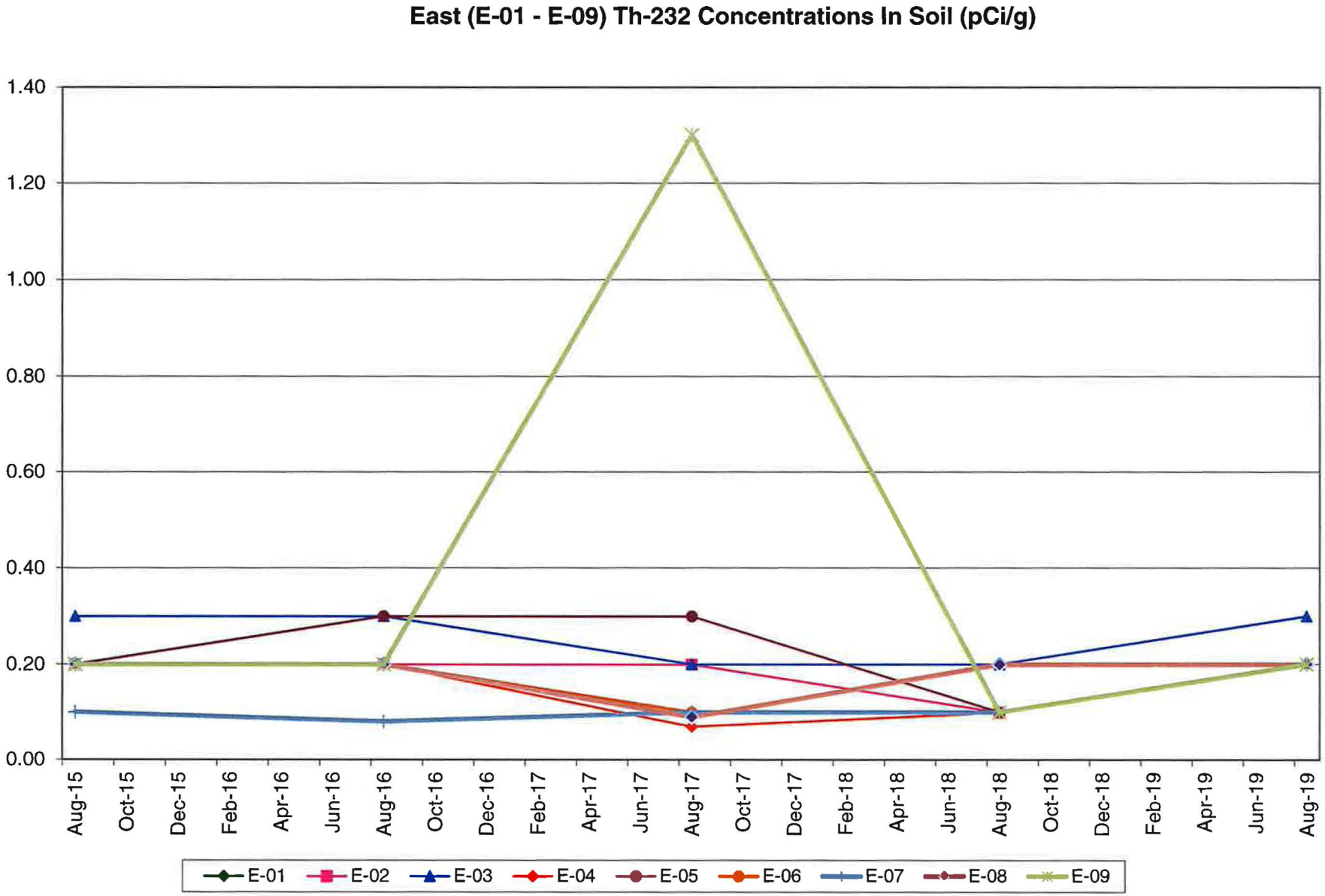
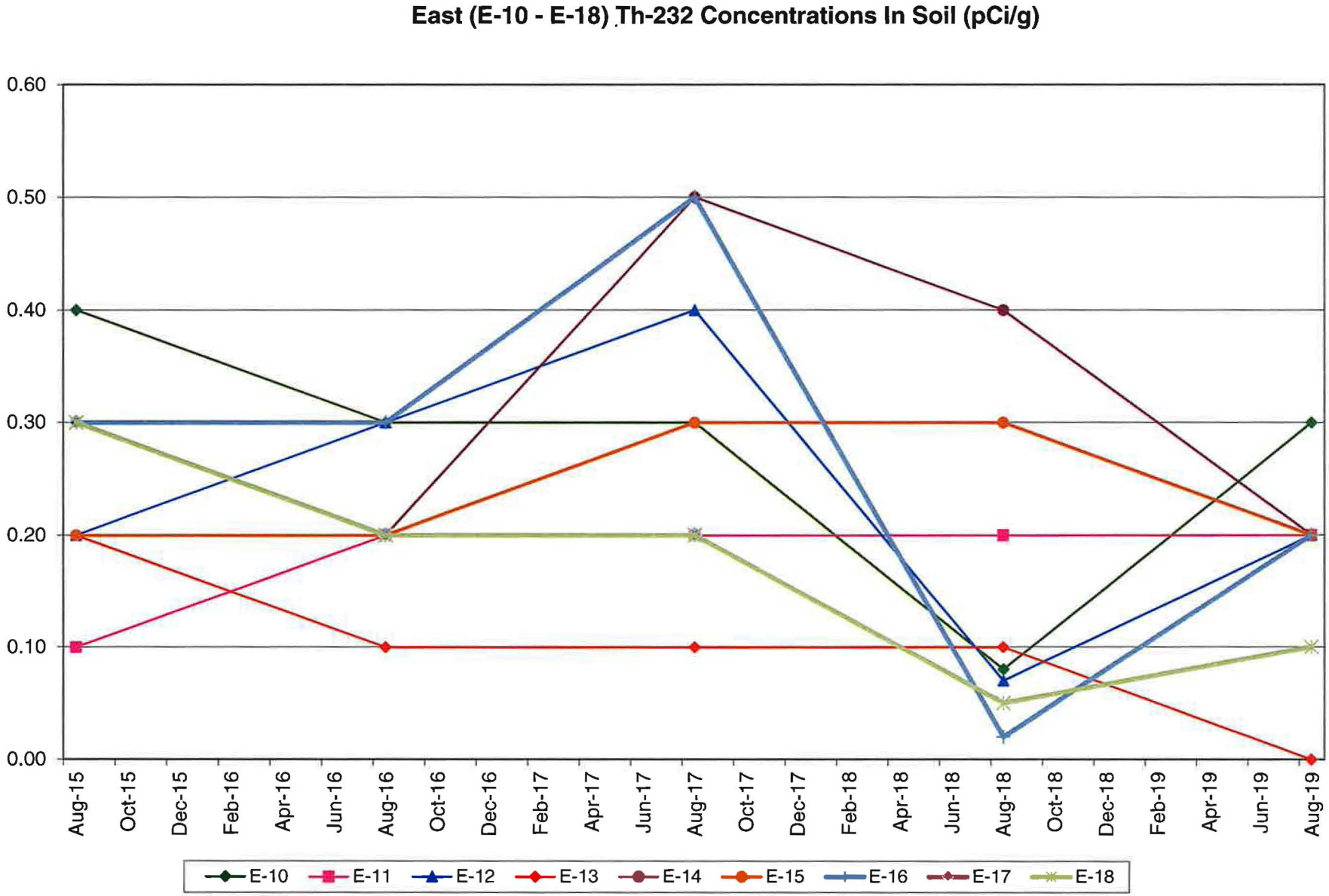
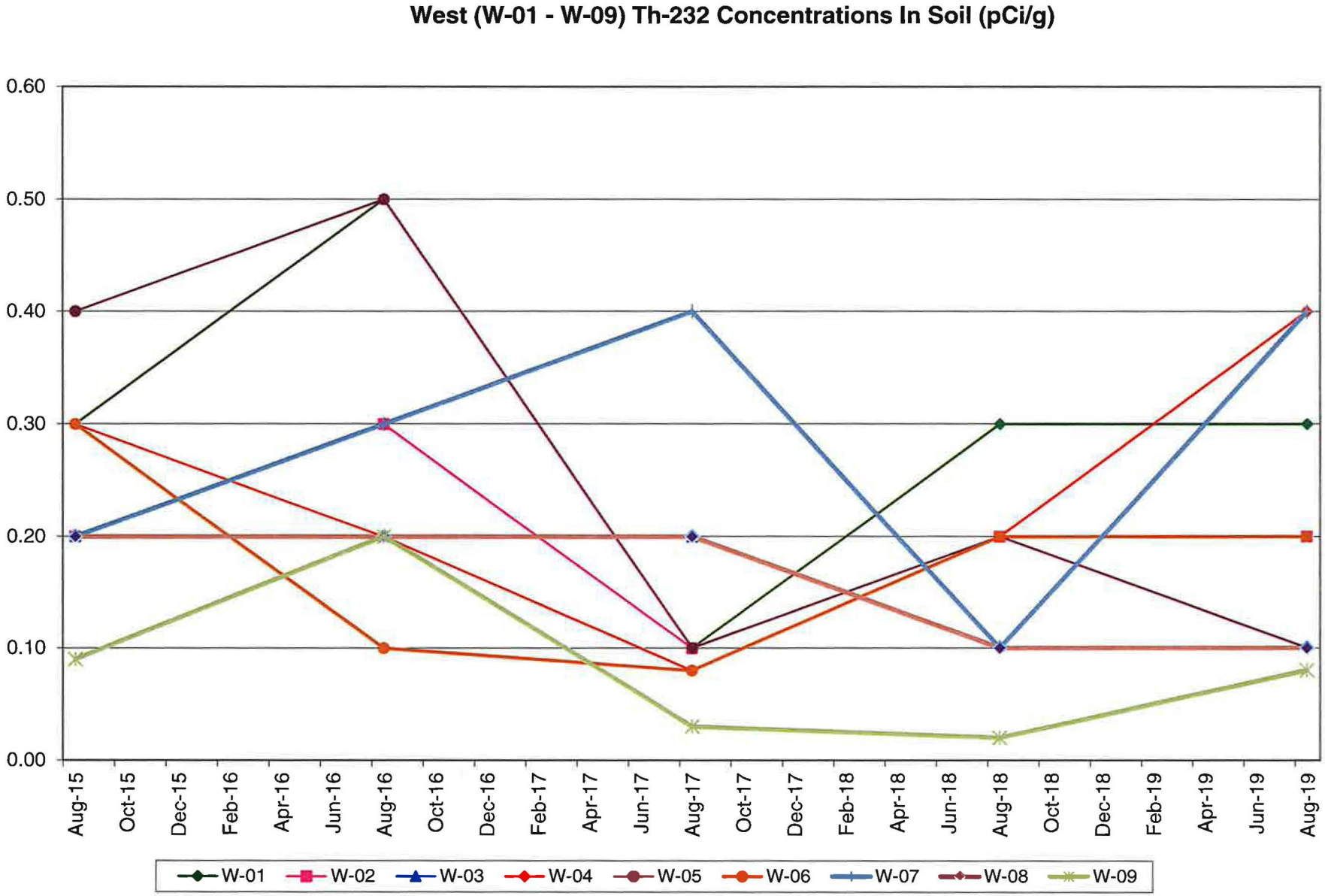
N-03
N-04
N-05
S-01
S-02
S-03


East (E-01 - E-09) Th-232 Concentrations In Soil (pCi/g)
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
E-01
E-02
E-03
E-04
E-05
E-06
E-07
E-08
E-09


East (E-10 - E-18) Th-232 Concentrations In Soil (pCi/g)
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
E-10
E-11
E-12
E-13
E-14
E-15
E-16
E-17
E-18


West (W-01 - W-09) Th-232 Concentrations In Soil (pCi/g)
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
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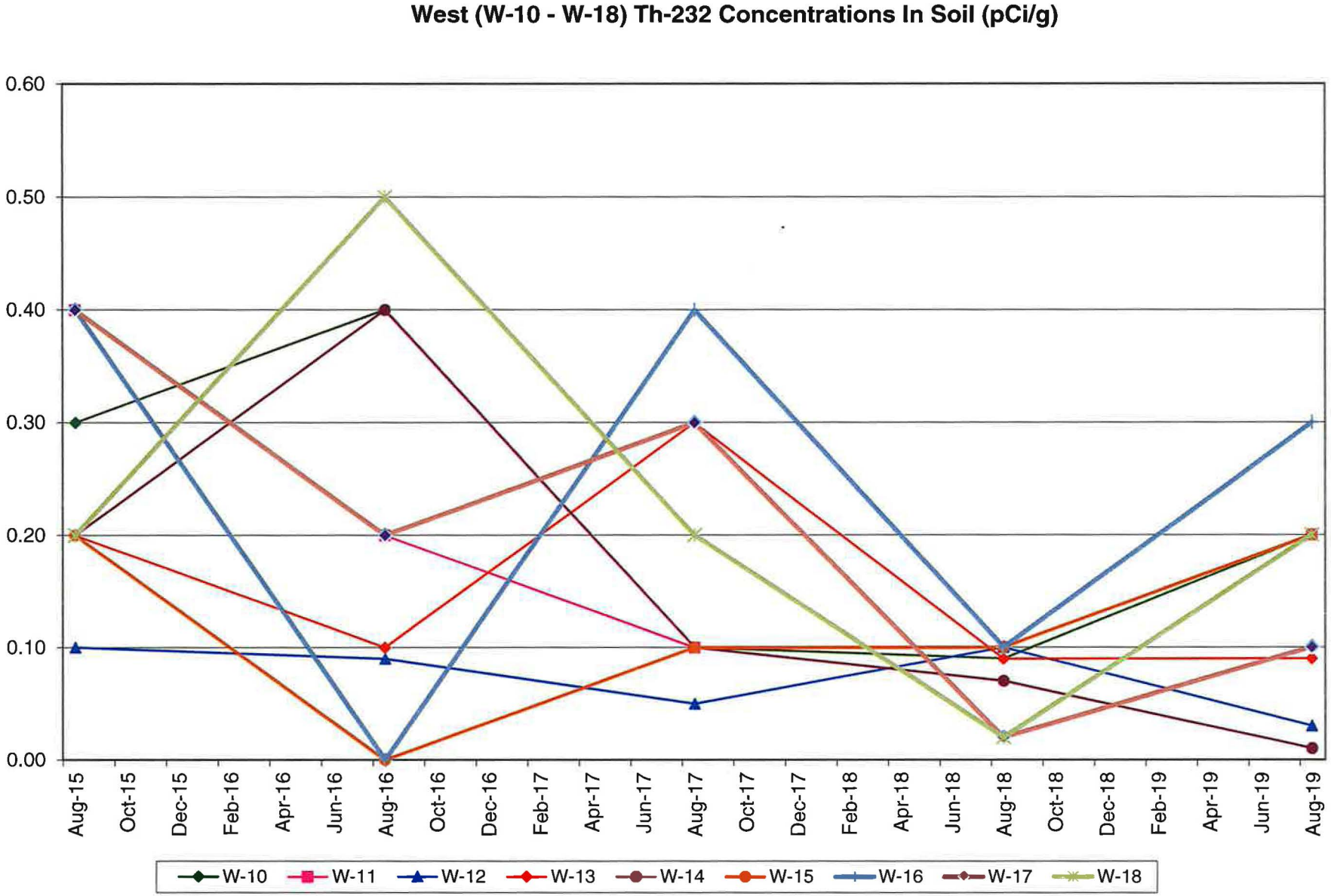
W-05
W-06
W-07
W-08
W-09


West (W-10 - W-18) Th-232 Concentrations In Soil (pCi/g)
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
W-10
W-11
W-12
W-13
W-14
W-15
W-16
W-17
W-18

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-001
Client Sample ID: BHV-01

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 09:50
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:27 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 07:38 / meh
RADIONUCLIDES							
Lead 210	1	pCi/g-dry				E909.0	09/28/19 00:44 / ajl
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/28/19 00:44 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 00:44 / ajl
Radium 226	1.1	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-002
Client Sample ID: BHV-02

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 08:42
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	09/06/19 12:28 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 08:02 / meh
RADIONUCLIDES							
Lead 210	0.7	pCi/g-dry				E909.0	09/28/19 02:54 / ajl
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/28/19 02:54 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 02:54 / ajl
Radium 226	0.5	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-008
Client Sample ID: Black Mesa

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 09:07
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:38 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 08:41 / meh
RADIONUCLIDES							
Lead 210	0.9	pCi/g-dry				E909.0	09/28/19 18:57 / ajl
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/28/19 18:57 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 18:57 / ajl
Radium 226	0.4	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-003
Client Sample ID: BHV-04

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 08:20
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:29 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 08:21 / meh
RADIONUCLIDES							
Lead 210	0.7	pCi/g-dry				E909.0	09/28/19 08:03 / ajl
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/28/19 08:03 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 08:03 / ajl
Radium 226	0.6	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.1	pCi/g-dry	U			E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-004
Client Sample ID: BHV-05

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 08:10
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:29 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 08:25 / meh
RADIONUCLIDES							
Lead 210	2.4	pCi/g-dry				E909.0	09/28/19 10:29 / ajl
Lead 210 precision (±)	0.7	pCi/g-dry				E909.0	09/28/19 10:29 / ajl
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/28/19 10:29 / ajl
Radium 226	2.6	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.5	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.1	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-005
Client Sample ID: BHV-06

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 08:30
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:30 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 08:29 / meh
RADIONUCLIDES							
Lead 210	1.2	pCi/g-dry				E909.0	09/28/19 11:53 / ajl
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/28/19 11:53 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 11:53 / ajl
Radium 226	1.2	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.05	pCi/g-dry	U			E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.01	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-006
Client Sample ID: BHV-07

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 09:33
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:30 / kjp
METALS, TOTAL							
Uranium	4	mg/kg-dry		1		SW6020	09/16/19 08:33 / meh
RADIONUCLIDES							
Lead 210	0.9	pCi/g-dry				E909.0	09/28/19 13:53 / ajl
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/28/19 13:53 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 13:53 / ajl
Radium 226	1.1	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.3	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19090037-007
Client Sample ID: BHV-08

Revised Date: 11/21/19
Report Date: 10/08/19
Collection Date: 08/27/19 09:43
DateReceived: 08/30/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	ND	wt%		0.2		D2974	09/06/19 12:36 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 08:37 / meh
RADIONUCLIDES							
Lead 210	0.3	pCi/g-dry				E909.0	09/28/19 16:06 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/28/19 16:06 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/28/19 16:06 / ajl
Radium 226	0.3	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/30/19 10:21 / ajl
Thorium 232	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	10/03/19 17:39 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	10/03/19 17:39 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-019
Client Sample ID: N 01

Report Date: 09/30/19
Collection Date: 08/20/19 07:10
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.8	wt%		0.2		D2974	08/27/19 14:32 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 08:49 / meh
RADIONUCLIDES							
Lead 210	0.3	pCi/g-dry				E909.0	09/14/19 01:44 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/14/19 01:44 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/14/19 01:44 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-020
Client Sample ID: N 02

Report Date: 09/30/19
Collection Date: 08/20/19 07:13
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 14:32 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 09:28 / meh
RADIONUCLIDES							
Lead 210	1	pCi/g-dry				E909.0	09/19/19 01:47 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/19/19 01:47 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 01:47 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 17:02 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 17:02 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 17:02 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-021
Client Sample ID: N 03

Report Date: 09/30/19
Collection Date: 08/20/19 07:16
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:37 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 09:32 / meh
RADIONUCLIDES							
Lead 210	1.1	pCi/g-dry				E909.0	09/19/19 04:17 / plj
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/19/19 04:17 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 04:17 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 11:20 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 11:20 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:20 / trs
Thorium 232	0.06	pCi/g-dry	U			E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.01	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-022
Client Sample ID: N 04

Report Date: 09/30/19
Collection Date: 08/20/19 07:18
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:41 / kjp
METALS, TOTAL							
Uranium	1	mg/kg-dry		1		SW6020	09/16/19 09:36 / meh
RADIONUCLIDES							
Lead 210	1.5	pCi/g-dry				E909.0	09/19/19 06:42 / plj
Lead 210 precision (±)	0.5	pCi/g-dry				E909.0	09/19/19 06:42 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 06:42 / plj
Radium 226	0.8	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.04	pCi/g-dry	U			E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.009	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-023
Client Sample ID: N 05

Report Date: 09/30/19
Collection Date: 08/20/19 07:20
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:41 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 09:39 / meh
RADIONUCLIDES							
Lead 210	1.0	pCi/g-dry				E909.0	09/19/19 11:26 / plj
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/19/19 11:26 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 11:26 / plj
Radium 226	0.6	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-006
Client Sample ID: S 01

Report Date: 09/30/19
Collection Date: 08/20/19 09:12
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:15 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:27 / meh
RADIONUCLIDES							
Lead 210	-0.1	pCi/g-dry	U			E909.0	09/12/19 12:37 / plj
Lead 210 precision (±)	0.1	pCi/g-dry				E909.0	09/12/19 12:37 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 12:37 / plj
Radium 226	0.2	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.06	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.03	pCi/g-dry	U			E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.007	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-007
Client Sample ID: S 02

Report Date: 09/30/19
Collection Date: 08/20/19 09:25
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.7	wt%		0.2		D2974	08/27/19 14:16 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:31 / meh
RADIONUCLIDES							
Lead 210	-0.07	pCi/g-dry	U			E909.0	09/12/19 16:12 / plj
Lead 210 precision (±)	0.1	pCi/g-dry				E909.0	09/12/19 16:12 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 16:12 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.06	pCi/g-dry	U			E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.01	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-008
Client Sample ID: S 03

Report Date: 09/30/19
Collection Date: 08/20/19 08:32
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:17 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:35 / meh
RADIONUCLIDES							
Lead 210	0.2	pCi/g-dry	U			E909.0	09/12/19 19:48 / plj
Lead 210 precision (±)	0.1	pCi/g-dry				E909.0	09/12/19 19:48 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 19:48 / plj
Radium 226	0.3	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.07	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.005	pCi/g-dry	U			E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.07	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-024
Client Sample ID: E 01

Report Date: 09/30/19
Collection Date: 08/20/19 07:22
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:41 / kjp
METALS, TOTAL							
Uranium	3	mg/kg-dry		1		SW6020	09/16/19 09:43 / meh
RADIONUCLIDES							
Lead 210	1.5	pCi/g-dry				E909.0	09/19/19 13:54 / plj
Lead 210 precision (±)	0.5	pCi/g-dry				E909.0	09/19/19 13:54 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 13:54 / plj
Radium 226	1.5	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.1	pCi/g-dry	U			E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-025
Client Sample ID: E 02

Report Date: 09/30/19
Collection Date: 08/20/19 07:24
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:41 / kjp
METALS, TOTAL							
Uranium	1	mg/kg-dry		1		SW6020	09/24/19 05:00 / jcg
RADIONUCLIDES							
Lead 210	0.6	pCi/g-dry				E909.0	09/19/19 16:04 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/19/19 16:04 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 16:04 / plj
Radium 226	0.7	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.3	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.06	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-026
Client Sample ID: E 03

Report Date: 09/30/19
Collection Date: 08/20/19 07:27
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:45 / kjp
METALS, TOTAL							
Uranium	3	mg/kg-dry		1		SW6020	09/16/19 09:51 / meh
RADIONUCLIDES							
Lead 210	2.0	pCi/g-dry				E909.0	09/19/19 18:53 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/19/19 18:53 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 18:53 / plj
Radium 226	2.2	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.4	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.3	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-027
Client Sample ID: E 04

Report Date: 09/30/19
Collection Date: 08/20/19 07:31
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 14:45 / kjp
METALS, TOTAL							
Uranium	3	mg/kg-dry		1		SW6020	09/16/19 09:55 / meh
RADIONUCLIDES							
Lead 210	1.6	pCi/g-dry				E909.0	09/19/19 20:47 / plj
Lead 210 precision (±)	0.5	pCi/g-dry				E909.0	09/19/19 20:47 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 20:47 / plj
Radium 226	1.5	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 11:21 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-028
Client Sample ID: E 05

Report Date: 09/30/19
Collection Date: 08/20/19 07:35
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:45 / kjp
METALS, TOTAL							
Uranium	3	mg/kg-dry		1		SW6020	09/16/19 10:15 / meh
RADIONUCLIDES							
Lead 210	2.0	pCi/g-dry				E909.0	09/19/19 22:53 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/19/19 22:53 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/19/19 22:53 / plj
Radium 226	1.4	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-029
Client Sample ID: E 06

Report Date: 09/30/19
Collection Date: 08/20/19 07:40
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 14:45 / kjp
METALS, TOTAL							
Uranium	6	mg/kg-dry		1		SW6020	09/16/19 10:19 / meh
RADIONUCLIDES							
Lead 210	2.2	pCi/g-dry				E909.0	09/20/19 00:46 / plj
Lead 210 precision (±)	0.7	pCi/g-dry				E909.0	09/20/19 00:46 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/20/19 00:46 / plj
Radium 226	2.2	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.4	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-030
Client Sample ID: E 07

Report Date: 09/30/19
Collection Date: 08/20/19 07:45
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 14:51 / kjp
METALS, TOTAL							
Uranium	8	mg/kg-dry		1		SW6020	09/16/19 10:22 / meh
RADIONUCLIDES							
Lead 210	2.9	pCi/g-dry				E909.0	09/20/19 02:35 / plj
Lead 210 precision (±)	0.9	pCi/g-dry				E909.0	09/20/19 02:35 / plj
Lead 210 MDC	0.4	pCi/g-dry				E909.0	09/20/19 02:35 / plj
Radium 226	3.1	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.6	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-031
Client Sample ID: E 08

Report Date: 09/30/19
Collection Date: 08/20/19 08:00
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:52 / kjp
METALS, TOTAL							
Uranium	6	mg/kg-dry		1		SW6020	09/16/19 10:26 / meh
RADIONUCLIDES							
Lead 210	5.3	pCi/g-dry				E909.0	09/20/19 04:08 / plj
Lead 210 precision (±)	1.6	pCi/g-dry				E909.0	09/20/19 04:08 / plj
Lead 210 MDC	0.5	pCi/g-dry				E909.0	09/20/19 04:08 / plj
Radium 226	4.8	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.9	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.07	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-032
Client Sample ID: E 09

Report Date: 09/30/19
Collection Date: 08/20/19 08:02
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:52 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/18/19 07:07 / meh
RADIONUCLIDES							
Lead 210	1.9	pCi/g-dry				E909.0	09/20/19 05:11 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/20/19 05:11 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/20/19 05:11 / plj
Radium 226	1.5	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.06	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-033
Client Sample ID: E 10

Report Date: 09/30/19
Collection Date: 08/20/19 08:04
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:52 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 10:35 / meh
RADIONUCLIDES							
Lead 210	0.7	pCi/g-dry				E909.0	09/20/19 07:07 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/20/19 07:07 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/20/19 07:07 / plj
Radium 226	0.6	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.05	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.3	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-034
Client Sample ID: E 11

Report Date: 09/30/19
Collection Date: 08/20/19 08:06
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 18:34 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 10:38 / meh
RADIONUCLIDES							
Lead 210	1.8	pCi/g-dry				E909.0	09/20/19 09:54 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/20/19 09:54 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/20/19 09:54 / plj
Radium 226	1.3	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:15 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-035
Client Sample ID: E 12

Report Date: 09/30/19
Collection Date: 08/20/19 08:08
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 18:35 / kjp
METALS, TOTAL							
Uranium	1	mg/kg-dry		1		SW6020	09/16/19 10:42 / meh
RADIONUCLIDES							
Lead 210	1.2	pCi/g-dry				E909.0	09/20/19 22:49 / ajl
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/20/19 22:49 / ajl
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/20/19 22:49 / ajl
Radium 226	1.5	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:46 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-036
Client Sample ID: E 13

Report Date: 09/30/19
Collection Date: 08/20/19 08:11
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 18:35 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 10:46 / meh
RADIONUCLIDES							
Lead 210	2.2	pCi/g-dry				E909.0	09/21/19 00:55 / ajl
Lead 210 precision (±)	0.7	pCi/g-dry				E909.0	09/21/19 00:55 / ajl
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/21/19 00:55 / ajl
Radium 226	1.5	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 precision (±)	0.3	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Thorium 232	0.1	pCi/g-dry	U			E908.0	09/16/19 14:46 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:46 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-001
Client Sample ID: E 14

Report Date: 09/30/19
Collection Date: 08/20/19 08:16
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:08 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 02:33 / meh
RADIONUCLIDES							
Lead 210	1.8	pCi/g-dry				E909.0	09/11/19 22:29 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/11/19 22:29 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/11/19 22:29 / plj
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-002
Client Sample ID: E 15

Report Date: 09/30/19
Collection Date: 08/20/19 08:18
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:10 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 02:56 / meh
RADIONUCLIDES							
Lead 210	1.9	pCi/g-dry				E909.0	09/12/19 00:14 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/12/19 00:14 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/12/19 00:14 / plj
Radium 226	0.7	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-003
Client Sample ID: E 16

Report Date: 09/30/19
Collection Date: 08/20/19 08:21
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.9	wt%		0.2		D2974	08/27/19 14:12 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:00 / meh
RADIONUCLIDES							
Lead 210	0.9	pCi/g-dry				E909.0	09/12/19 03:56 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/12/19 03:56 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 03:56 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-004
Client Sample ID: E 17

Report Date: 09/30/19
Collection Date: 08/20/19 08:45
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:13 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:04 / meh
RADIONUCLIDES							
Lead 210	0.4	pCi/g-dry				E909.0	09/12/19 06:14 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/12/19 06:14 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 06:14 / plj
Radium 226	0.3	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 precision (±)	0.07	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Thorium 232	0.02	pCi/g-dry	U			E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.06	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-005
Client Sample ID: E 18

Report Date: 09/30/19
Collection Date: 08/20/19 08:26
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.9	wt%		0.2		D2974	08/27/19 14:14 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:08 / meh
RADIONUCLIDES							
Lead 210	0.01	pCi/g-dry	U			E909.0	09/12/19 09:08 / plj
Lead 210 precision (±)	0.1	pCi/g-dry				E909.0	09/12/19 09:08 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 09:08 / plj
Radium 226	0.3	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 11:17 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-009
Client Sample ID: W 01

Report Date: 09/30/19
Collection Date: 08/20/19 07:05
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 14:23 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:39 / meh
RADIONUCLIDES							
Lead 210	0.3	pCi/g-dry				E909.0	09/12/19 23:01 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/12/19 23:01 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/12/19 23:01 / plj
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.3	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.06	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-010
Client Sample ID: W 02

Report Date: 09/30/19
Collection Date: 08/20/19 07:00
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	1.0	wt%		0.2		D2974	08/27/19 14:24 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:43 / meh
RADIONUCLIDES							
Lead 210	0.04	pCi/g-dry	U			E909.0	09/13/19 02:03 / plj
Lead 210 precision (±)	0.1	pCi/g-dry				E909.0	09/13/19 02:03 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 02:03 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-011
Client Sample ID: W 03

Report Date: 09/30/19
Collection Date: 08/20/19 06:55
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.7	wt%		0.2		D2974	08/27/19 14:25 / kjp
METALS, TOTAL							
Uranium	1	mg/kg-dry		1		SW6020	09/16/19 03:47 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/13/19 05:28 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/13/19 05:28 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 05:28 / plj
Radium 226	0.8	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-012
Client Sample ID: W 04

Report Date: 09/30/19
Collection Date: 08/20/19 06:50
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	1.1	wt%		0.2		D2974	08/27/19 14:25 / kjp
METALS, TOTAL							
Uranium	1	mg/kg-dry		1		SW6020	09/16/19 03:51 / meh
RADIONUCLIDES							
Lead 210	0.2	pCi/g-dry				E909.0	09/13/19 08:15 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/13/19 08:15 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 08:15 / plj
Radium 226	0.9	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.2	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.4	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.07	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.08	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-013
Client Sample ID: W 05

Report Date: 09/30/19
Collection Date: 08/20/19 10:35
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:26 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:55 / meh
RADIONUCLIDES							
Lead 210	0.7	pCi/g-dry				E909.0	09/13/19 11:20 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/13/19 11:20 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 11:20 / plj
Radium 226	0.3	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.08	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-014
Client Sample ID: W 06

Report Date: 09/30/19
Collection Date: 08/20/19 10:28
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:29 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 03:59 / meh
RADIONUCLIDES							
Lead 210	0.7	pCi/g-dry				E909.0	09/13/19 13:50 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/13/19 13:50 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 13:50 / plj
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-015
Client Sample ID: W 07

Report Date: 09/30/19
Collection Date: 08/20/19 10:26
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 14:29 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 04:03 / meh
RADIONUCLIDES							
Lead 210	0.9	pCi/g-dry				E909.0	09/13/19 16:21 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/13/19 16:21 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 16:21 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:11 / trs
Thorium 232	0.4	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.08	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-016
Client Sample ID: W 08

Report Date: 09/30/19
Collection Date: 08/20/19 10:23
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 14:29 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 04:22 / meh
RADIONUCLIDES							
Lead 210	1.0	pCi/g-dry				E909.0	09/13/19 18:42 / plj
Lead 210 precision (±)	0.3	pCi/g-dry				E909.0	09/13/19 18:42 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/13/19 18:42 / plj
Radium 226	0.3	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 precision (±)	0.08	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-017
Client Sample ID: W 09

Report Date: 09/30/19
Collection Date: 08/20/19 10:19
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 14:30 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 04:26 / meh
RADIONUCLIDES							
Lead 210	1.8	pCi/g-dry				E909.0	09/13/19 20:56 / plj
Lead 210 precision (±)	0.6	pCi/g-dry				E909.0	09/13/19 20:56 / plj
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/13/19 20:56 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Thorium 232	0.08	pCi/g-dry	U			E908.0	09/12/19 17:21 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/12/19 17:21 / nsr
Thorium 232 MDC	0.09	pCi/g-dry				E908.0	09/12/19 17:21 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-018
Client Sample ID: W 10

Report Date: 09/30/19
Collection Date: 08/20/19 10:16
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	1.3	wt%		0.2		D2974	08/27/19 14:32 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 04:30 / meh
RADIONUCLIDES							
Lead 210	0.3	pCi/g-dry				E909.0	09/13/19 22:39 / plj
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/13/19 22:39 / plj
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/13/19 22:39 / plj
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Radium 226 MDC	0.04	pCi/g-dry				E903.0	09/16/19 13:12 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/13/19 09:55 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/13/19 09:55 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-037
Client Sample ID: W 11

Report Date: 09/30/19
Collection Date: 08/20/19 10:12
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 18:35 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 05:29 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/21/19 04:47 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 04:47 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 04:47 / ajl
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:46 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-038
Client Sample ID: W 12

Report Date: 09/30/19
Collection Date: 08/20/19 10:05
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 18:38 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 05:53 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/21/19 07:32 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 07:32 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 07:32 / ajl
Radium 226	0.2	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 precision (±)	0.08	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Thorium 232	0.03	pCi/g-dry	U			E908.0	09/16/19 14:46 / nsr
Thorium 232 precision (±)	0.006	pCi/g-dry				E908.0	09/16/19 14:46 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:46 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-039
Client Sample ID: W 13

Report Date: 09/30/19
Collection Date: 08/20/19 09:52
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	1.0	wt%		0.2		D2974	08/27/19 18:38 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 05:57 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/21/19 10:23 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 10:23 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 10:23 / ajl
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Radium 226 MDC	0.08	pCi/g-dry				E903.0	09/16/19 12:00 / trs
Thorium 232	0.09	pCi/g-dry	U			E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.02	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-040
Client Sample ID: W 14

Report Date: 09/30/19
Collection Date: 08/20/19 09:45
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 18:40 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:01 / meh
RADIONUCLIDES							
Lead 210	0.4	pCi/g-dry				E909.0	09/21/19 13:16 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 13:16 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 13:16 / ajl
Radium 226	0.2	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.08	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.01	pCi/g-dry	U			E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-041
Client Sample ID: W 15

Report Date: 09/30/19
Collection Date: 08/20/19 09:35
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.3	wt%		0.2		D2974	08/27/19 18:40 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:04 / meh
RADIONUCLIDES							
Lead 210	1.1	pCi/g-dry				E909.0	09/21/19 16:15 / ajl
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/21/19 16:15 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 16:15 / ajl
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-042
Client Sample ID: W 16

Report Date: 09/30/19
Collection Date: 08/20/19 09:30
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.6	wt%		0.2		D2974	08/27/19 18:42 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:24 / meh
RADIONUCLIDES							
Lead 210	1.3	pCi/g-dry				E909.0	09/21/19 18:25 / ajl
Lead 210 precision (±)	0.4	pCi/g-dry				E909.0	09/21/19 18:25 / ajl
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/21/19 18:25 / ajl
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.3	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.06	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.2	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-043
Client Sample ID: W 17

Report Date: 09/30/19
Collection Date: 08/20/19 09:22
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.7	wt%		0.2		D2974	08/27/19 18:42 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:28 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/21/19 20:31 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 20:31 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 20:31 / ajl
Radium 226	0.5	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-044
Client Sample ID: W 18

Report Date: 09/30/19
Collection Date: 08/20/19 09:06
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.7	wt%		0.2		D2974	08/27/19 18:43 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:32 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/21/19 23:17 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/21/19 23:17 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/21/19 23:17 / ajl
Radium 226	0.6	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.05	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-045
Client Sample ID: E 10D

Report Date: 09/30/19
Collection Date: 08/20/19 08:04
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.4	wt%		0.2		D2974	08/27/19 18:43 / kjp
METALS, TOTAL							
Uranium	2	mg/kg-dry		1		SW6020	09/16/19 06:36 / meh
RADIONUCLIDES							
Lead 210	0.5	pCi/g-dry				E909.0	09/22/19 02:10 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/22/19 02:10 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/22/19 02:10 / ajl
Radium 226	0.6	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.04	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-046
Client Sample ID: W 15D

Report Date: 09/30/19
Collection Date: 08/20/19 09:35
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 18:45 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:40 / meh
RADIONUCLIDES							
Lead 210	1.4	pCi/g-dry				E909.0	09/22/19 04:57 / ajl
Lead 210 precision (±)	0.5	pCi/g-dry				E909.0	09/22/19 04:57 / ajl
Lead 210 MDC	0.3	pCi/g-dry				E909.0	09/22/19 04:57 / ajl
Radium 226	0.4	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.1	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.08	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/16/19 14:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 14:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Lab ID: C19081079-047
Client Sample ID: W 05D

Report Date: 09/30/19
Collection Date: 08/20/19 10:35
DateReceived: 08/22/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	0.5	wt%		0.2		D2974	08/27/19 18:47 / kjp
METALS, TOTAL							
Uranium	ND	mg/kg-dry		1		SW6020	09/16/19 06:44 / meh
RADIONUCLIDES							
Lead 210	0.6	pCi/g-dry				E909.0	09/22/19 06:57 / ajl
Lead 210 precision (±)	0.2	pCi/g-dry				E909.0	09/22/19 06:57 / ajl
Lead 210 MDC	0.2	pCi/g-dry				E909.0	09/22/19 06:57 / ajl
Radium 226	0.07	pCi/g-dry	U			E903.0	09/16/19 13:42 / trs
Radium 226 precision (±)	0.07	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Radium 226 MDC	0.08	pCi/g-dry				E903.0	09/16/19 13:42 / trs
Thorium 232	0.2	pCi/g-dry				E908.0	09/16/19 19:45 / nsr
Thorium 232 precision (±)	0.03	pCi/g-dry				E908.0	09/16/19 19:45 / nsr
Thorium 232 MDC	0.1	pCi/g-dry				E908.0	09/16/19 19:45 / nsr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

November 21, 2019

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C19090037 Quote ID: C5645

Project Name: Annual Soils 2019

Energy Laboratories, Inc. Casper WY received the following 8 samples for Energy Fuels Resources (USA) Inc on 8/30/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C19090037-001	BHV-01	08/27/19 09:50	08/30/19	Soil	Metals by ICP/ICPMS, Total or Soluble Moisture Percent Moisture Digestion, Total Metals Digestion For RadioChemistry ELI_50-169 Drying/Grinding, Radiochemistry Lead 210 Radium 226 Thorium, Isotopic
C19090037-002	BHV-02	08/27/19 08:42	08/30/19	Soil	Same As Above
C19090037-003	BHV-04	08/27/19 08:20	08/30/19	Soil	Same As Above
C19090037-004	BHV-05	08/27/19 08:10	08/30/19	Soil	Same As Above
C19090037-005	BHV-06	08/27/19 08:30	08/30/19	Soil	Same As Above
C19090037-006	BHV-07	08/27/19 09:33	08/30/19	Soil	Same As Above
C19090037-007	BHV-08	08/27/19 09:43	08/30/19	Soil	Same As Above
C19090037-008	Black Mesa	08/27/19 09:07	08/30/19	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unles otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Tracey A. Archer

Digitally signed by
Tracey Archer
Date: 2019.11.21 18:44:34 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Work Order: C19090037

Revised Date: 11/21/19
Report Date: 10/08/19

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

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

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

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

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

REVISED/SUPPLEMENTAL REPORT
Revised 11/21/2019
This report is being issued to correct the Thorium data reported. Th230 was reported on 10/08/2019, Th232 was requested and is being reported in this revision.
The report has been revised and replaces any previously issued report in its entirety.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19090037 **Report Date:** 09/17/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **SW6020**									Analytical Run: ICPMS5-C_190915A	
Lab ID: **QCS**	Initial Calibration Verification Standard								09/15/19 14:08	
Uranium		0.0192	mg/L	0.00030	96	90	110			
Lab ID: **ICSA**	Interference Check Sample A								09/15/19 14:39	
Uranium		7.50E-06	mg/L	0.00030						
Lab ID: **ICSAB**	Interference Check Sample AB								09/15/19 14:43	
Uranium		3.42E-06	mg/L	0.00030						
Method: **SW6020**									Batch: 55070	
Lab ID: **MB-55070**	Method Blank					Run: ICPMS5-C_190915A			09/16/19 07:23	
Uranium		ND	mg/kg	0.8						
Lab ID: **LCS3-55070**	Laboratory Control Sample					Run: ICPMS5-C_190915A			09/16/19 07:26	
Uranium		93.0	mg/kg	2.0	101	80	120			
Lab ID: **C19090037-001ADIL**	Serial Dilution					Run: ICPMS5-C_190915A			09/16/19 07:42	
Uranium		ND	mg/kg-dry	4.0					10	
Lab ID: **C19090037-001APDS**	Post Digestion/Distillation Spike					Run: ICPMS5-C_190915A			09/16/19 07:46	
Uranium		6.83	mg/kg-dry	1.0	102	75	125			
Lab ID: **C19090037-001AMS3**	Sample Matrix Spike					Run: ICPMS5-C_190915A			09/16/19 07:50	
Uranium		26.3	mg/kg-dry	1.0	99	75	125			
Lab ID: **C19090037-001AMSD**	Sample Matrix Spike Duplicate					Run: ICPMS5-C_190915A			09/16/19 07:54	
Uranium		24.8	mg/kg-dry	1.0	98	75	125	6.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch **Revised Date:** 11/21/19

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19090037 **Report Date:** 10/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-9435
Lab ID: LCS1-55092		Laboratory Control Sample				Run: G542M_190924A				09/30/19 10:21
Radium 226		2.3	pCi/g-dry		92	67	120			
Lab ID: MB-55092	3	Method Blank				Run: G542M_190924A				09/30/19 10:21
Radium 226		0.006	pCi/g-dry							U
Radium 226 precision (±)		0.006	pCi/g-dry							
Radium 226 MDC		0.010	pCi/g-dry							
Lab ID: C19090037-001BMS1		Sample Matrix Spike				Run: G542M_190924A				09/30/19 10:21
Radium 226		3.3	pCi/g-dry		89	70	130			
Lab ID: C19090037-001BMS1		Sample Matrix Spike Duplicate				Run: G542M_190924A				09/30/19 10:21
Radium 226		3.2	pCi/g-dry		85	70	130	4.0	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch **Revised Date:** 11/21/19

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19090037 **Report Date:** 10/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: R251625
Lab ID: MB-55092	6	Method Blank				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		-0.0002	pCi/g-dry							U
Thorium 230 precision (±)		0.01	pCi/g-dry							
Thorium 230 MDC		0.02	pCi/g-dry							
Thorium 232		0.003	pCi/g-dry							U
Thorium 232 precision (±)		0.007	pCi/g-dry							
Thorium 232 MDC		0.01	pCi/g-dry							
Lab ID: LCS5-55092		Laboratory Control Sample				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		5.3	pCi/g-dry		113	80	120			
Lab ID: C19090037-003BMS5		Sample Matrix Spike				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		1.7	pCi/g-dry		26	70	130			S
- Spike response is not in range for this analysis.										
Lab ID: C19090037-003BMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		3.8	pCi/g-dry		70	70	130	74	20	R
- The RPD for the MSD is not in range. The MSD recoveryis acceptable, the MB is acceptable, and the LCS is acceptable.										
Lab ID: C19090119-001AMS5		Sample Matrix Spike				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		19	pCi/g-dry		103	70	130			
Lab ID: C19090119-001AMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_191001A			10/03/19 17:39	
Thorium 230		19	pCi/g-dry		98	70	130	0.7	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch **Revised Date:** 11/21/19

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19090037 **Report Date:** 10/08/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: PB-210-1059
Lab ID: LCS3-55092		Laboratory Control Sample				Run: PACKARD 3100TR_190919A			09/27/19 16:18	
Lead 210		1.8	pCi/g-dry		76	70	130			
Lab ID: MB-55092	3	Method Blank				Run: PACKARD 3100TR_190919A			09/27/19 17:59	
Lead 210		0.006	pCi/g-dry							U
Lead 210 precision (±)		0.02	pCi/g-dry							
Lead 210 MDC		0.04	pCi/g-dry							
Lab ID: C19090037-002BMS3		Sample Matrix Spike				Run: PACKARD 3100TR_190919A			09/28/19 05:19	
Lead 210		2.6	pCi/g-dry		81	70	130			
Lab ID: C19090037-002BMS3		Sample Matrix Spike Duplicate				Run: PACKARD 3100TR_190919A			09/28/19 06:40	
Lead 210		2.5	pCi/g-dry		76	70	130	4.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

Work Order Receipt Checklist

Energy Fuels Resources (USA) Inc

C19090037

Login completed by: Dorian Quis
Date Received: 8/30/2019

Reviewed by: Kasey Vidick
Received by: amm

Reviewed Date: 9/4/2019
Carrier name: 2Day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

Contact and Corrective Action Comments:

None

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 4115
tholliday@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Annual Soils 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-01	8/27/2019	950	U-NAT, Ra-226, Pb-210, TH-232
BHV-02	8/27/2019	842	U-NAT, Ra-226, Pb-210, TH-232
BHV-04	8/27/2019	820	U-NAT, Ra-226, Pb-210, TH-232
BHV-05	8/27/2019	810	U-NAT, Ra-226, Pb-210, TH-232
BHV-06	8/27/2019	830	U-NAT, Ra-226, Pb-210, TH-232
BHV-07	8/27/2019	933	U-NAT, Ra-226, Pb-210, TH-232
BHV-08	8/27/2019	943	U-NAT, Ra-226, Pb-210, TH-232
Black Mesa	8/27/2019	907	U-NAT, Ra-226, Pb-210, TH-232
			C.1909003J

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	8/28/2019 1130	Rosie Middleton	8/30/19 10:41
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

Dori Quis

From: Tessa Parke <tparke@energylab.com>
Sent: Tuesday, September 03, 2019 4:33 PM
To: casper_login
Subject: FW: Soil Samples

FYI – For C19090037

From: Kathy Weinel [mailto:KWeinel@energyfuels.com]
Sent: Tuesday, September 03, 2019 4:06 PM
To: Tessa Parke
Subject: RE: Soil Samples

Tessa,

I had a wonderful holiday – I hope you had a good extended weekend.

No these samples are not 11e2 – they are plain old garden variety soils (Pun intended). They are collected at our perimeter fence surrounding the site or at the high vol air stations.

K

Energy Fuels Resources (USA) Inc.

Kathy Weinel
Quality Assurance Manager

t: 303.389.4134 | f: 303.389.4125
225 Union Blvd., Suite 600
Lakewood, CO 80228

http://www.energyfuels.com

This e-mail is intended for the exclusive use of person(s) mentioned as the recipient(s). This message and any attached files with it are confidential and may contain privileged or proprietary information. If you are not the intended recipient(s) please delete this message and notify the sender. You may not use, distribute print or copy this message if you are not the intended recipient(s).

From: Tessa Parke <tparke@energylab.com>
Sent: Tuesday, September 3, 2019 3:03 PM
To: Kathy Weinel <KWeinel@energyfuels.com>
Subject: Soil Samples

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hey Kathy,

On those soil samples that we just got in are they 11e2? I just need to make sure we mark them correctly. Hope you had a good Labor Day weekend.

Sincerely,
Tessa

Tessa Parke
Project Manager
Office: 307.995.3249
Fax: 307.234.1639
tparke@energylab.com

This transmission is CONFIDENTIAL. If you have received this in error,
please contact Energy Laboratories, Inc. immediately.

ANALYTICAL SUMMARY REPORT

September 30, 2019

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C19081079

Project Name: Annual Soils 2019

Energy Laboratories, Inc. Casper WY received the following 47 samples for Energy Fuels Resources (USA) Inc on 8/22/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C19081079-001	E 14	08/20/19 08:16	08/22/19	Soil	Metals by ICP/ICPMS, Total or Soluble Moisture Percent Moisture Digestion, Total Metals Digestion For RadioChemistry ELI_50-169 Drying/Grinding, Radiochemistry Lead 210 Radium 226 Thorium, Isotopic
C19081079-002	E 15	08/20/19 08:18	08/22/19	Soil	Same As Above
C19081079-003	E 16	08/20/19 08:21	08/22/19	Soil	Same As Above
C19081079-004	E 17	08/20/19 08:45	08/22/19	Soil	Same As Above
C19081079-005	E 18	08/20/19 08:26	08/22/19	Soil	Same As Above
C19081079-006	S 01	08/20/19 09:12	08/22/19	Soil	Same As Above
C19081079-007	S 02	08/20/19 09:25	08/22/19	Soil	Same As Above
C19081079-008	S 03	08/20/19 08:32	08/22/19	Soil	Same As Above
C19081079-009	W 01	08/20/19 07:05	08/22/19	Soil	Same As Above
C19081079-010	W 02	08/20/19 07:00	08/22/19	Soil	Same As Above
C19081079-011	W 03	08/20/19 06:55	08/22/19	Soil	Same As Above
C19081079-012	W 04	08/20/19 06:50	08/22/19	Soil	Same As Above
C19081079-013	W 05	08/20/19 10:35	08/22/19	Soil	Same As Above
C19081079-014	W 06	08/20/19 10:28	08/22/19	Soil	Same As Above
C19081079-015	W 07	08/20/19 10:26	08/22/19	Soil	Same As Above
C19081079-016	W 08	08/20/19 10:23	08/22/19	Soil	Same As Above
C19081079-017	W 09	08/20/19 10:19	08/22/19	Soil	Same As Above
C19081079-018	W 10	08/20/19 10:16	08/22/19	Soil	Same As Above
C19081079-019	N 01	08/20/19 07:10	08/22/19	Soil	Same As Above
C19081079-020	N 02	08/20/19 07:13	08/22/19	Soil	Same As Above
C19081079-021	N 03	08/20/19 07:16	08/22/19	Soil	Same As Above

ANALYTICAL SUMMARY REPORT

C19081079-022	N 04	08/20/19 07:18 08/22/19	Soil	Same As Above
C19081079-023	N 05	08/20/19 07:20 08/22/19	Soil	Same As Above
C19081079-024	E 01	08/20/19 07:22 08/22/19	Soil	Same As Above
C19081079-025	E 02	08/20/19 07:24 08/22/19	Soil	Same As Above
C19081079-026	E 03	08/20/19 07:27 08/22/19	Soil	Same As Above
C19081079-027	E 04	08/20/19 07:31 08/22/19	Soil	Same As Above
C19081079-028	E 05	08/20/19 07:35 08/22/19	Soil	Same As Above
C19081079-029	E 06	08/20/19 07:40 08/22/19	Soil	Same As Above
C19081079-030	E 07	08/20/19 07:45 08/22/19	Soil	Same As Above
C19081079-031	E 08	08/20/19 08:00 08/22/19	Soil	Same As Above
C19081079-032	E 09	08/20/19 08:02 08/22/19	Soil	Same As Above
C19081079-033	E 10	08/20/19 08:04 08/22/19	Soil	Same As Above
C19081079-034	E 11	08/20/19 08:06 08/22/19	Soil	Same As Above
C19081079-035	E 12	08/20/19 08:08 08/22/19	Soil	Same As Above
C19081079-036	E 13	08/20/19 08:11 08/22/19	Soil	Same As Above
C19081079-037	W 11	08/20/19 10:12 08/22/19	Soil	Same As Above
C19081079-038	W 12	08/20/19 10:05 08/22/19	Soil	Same As Above
C19081079-039	W 13	08/20/19 09:52 08/22/19	Soil	Same As Above
C19081079-040	W 14	08/20/19 09:45 08/22/19	Soil	Same As Above
C19081079-041	W 15	08/20/19 09:35 08/22/19	Soil	Same As Above
C19081079-042	W 16	08/20/19 09:30 08/22/19	Soil	Same As Above
C19081079-043	W 17	08/20/19 09:22 08/22/19	Soil	Same As Above
C19081079-044	W 18	08/20/19 09:06 08/22/19	Soil	Same As Above
C19081079-045	E 10D	08/20/19 08:04 08/22/19	Soil	Same As Above
C19081079-046	W 15D	08/20/19 09:35 08/22/19	Soil	Same As Above
C19081079-047	W 05D	08/20/19 10:35 08/22/19	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By: Tessa Parke
Project Manager

Digitally signed by
Tessa Parke
Date: 2019.09.30 13:13:03 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: Annual Soils 2019
Work Order: C19081079

Report Date: 09/30/19

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

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

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

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

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

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

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

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

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.
Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/24/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS5-C_190915A	
Lab ID: QCS	Initial Calibration Verification Standard								09/15/19 14:08	
Uranium		0.0192	mg/L	0.00030	96	90	110			
Lab ID: ICSA	Interference Check Sample A								09/15/19 14:39	
Uranium		7.50E-06	mg/L	0.00030						
Lab ID: ICSAB	Interference Check Sample AB								09/15/19 14:43	
Uranium		3.42E-06	mg/L	0.00030						
Method: SW6020									Batch: 54931	
Lab ID: MB-54931	Method Blank					Run: ICPMS5-C_190915A			09/16/19 02:29	
Uranium		ND	mg/kg	0.9						
Lab ID: C19081079-001ADIL	Serial Dilution					Run: ICPMS5-C_190915A			09/16/19 02:36	
Uranium		ND	mg/kg-dry	4.1					10	
Lab ID: C19081079-001APDS	Post Digestion/Distillation Spike					Run: ICPMS5-C_190915A			09/16/19 02:40	
Uranium		5.54	mg/kg-dry	1.0	101	75	125			
Lab ID: C19081079-001AMS3	Sample Matrix Spike					Run: ICPMS5-C_190915A			09/16/19 02:44	
Uranium		26.3	mg/kg-dry	1.0	102	75	125			
Lab ID: C19081079-001AMSD	Sample Matrix Spike Duplicate					Run: ICPMS5-C_190915A			09/16/19 02:48	
Uranium		26.5	mg/kg-dry	1.0	102	75	125	0.6	20	
Method: SW6020									Batch: 54946	
Lab ID: MB-54946	Method Blank					Run: ICPMS5-C_190915A			09/16/19 08:45	
Uranium		ND	mg/kg	2						
Lab ID: C19081079-019ADIL	Serial Dilution					Run: ICPMS5-C_190915A			09/16/19 08:53	
Uranium		ND	mg/kg-dry	4.1					10	
Lab ID: C19081079-019APDS	Post Digestion/Distillation Spike					Run: ICPMS5-C_190915A			09/16/19 08:56	
Uranium		5.27	mg/kg-dry	1.0	112	75	125			
Lab ID: C19081079-019AMS3	Sample Matrix Spike					Run: ICPMS5-C_190915A			09/16/19 09:16	
Uranium		26.1	mg/kg-dry	1.0	111	75	125			
Lab ID: C19081079-019AMSD	Sample Matrix Spike Duplicate					Run: ICPMS5-C_190915A			09/16/19 09:20	
Uranium		27.0	mg/kg-dry	1.0	110	75	125	3.1	20	
Method: SW6020									Batch: 54964	
Lab ID: MB-54964	Method Blank					Run: ICPMS5-C_190915A			09/16/19 05:25	
Uranium		ND	mg/kg	0.8						
Lab ID: C19081079-037ADIL	Serial Dilution					Run: ICPMS5-C_190915A			09/16/19 05:33	
Uranium		ND	mg/kg-dry	4.2					10	
Lab ID: C19081079-037APDS	Post Digestion/Distillation Spike					Run: ICPMS5-C_190915A			09/16/19 05:37	
Uranium		5.17	mg/kg-dry	1.0	107	75	125			

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/24/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: 54964
Lab ID: C19081079-037AMS3		Sample Matrix Spike				Run: ICPMS5-C_190915A				09/16/19 05:41
Uranium		26.0	mg/kg-dry	1.0	104	75	125			
Lab ID: C19081079-037AMSD		Sample Matrix Spike Duplicate				Run: ICPMS5-C_190915A				09/16/19 05:45
Uranium		14.0	mg/kg-dry	1.0	56	75	125	60	20	SR
Method: SW6020										Analytical Run: ICPMS5-C_190917A
Lab ID: QCS		Initial Calibration Verification Standard								09/18/19 03:37
Uranium		0.0194	mg/L	0.00030	97	90	110			
Lab ID: ICSA		Interference Check Sample A								09/18/19 04:08
Uranium		1.34E-05	mg/L	0.00030						
Lab ID: ICSAB		Interference Check Sample AB								09/18/19 04:12
Uranium		8.63E-06	mg/L	0.00030						
Method: SW6020										Batch: 54946
Lab ID: MB-54946		Method Blank				Run: ICPMS5-C_190917A				09/18/19 06:59
Uranium		ND	mg/kg	2						
Method: SW6020										Analytical Run: ICPMS5-C_190924A
Lab ID: QCS		Initial Calibration Verification Standard								09/24/19 03:34
Uranium		0.0192	mg/L	0.00030	96	90	110			
Lab ID: ICSA		Interference Check Sample A								09/24/19 04:05
Uranium		7.29E-06	mg/L	0.00030						
Lab ID: ICSAB		Interference Check Sample AB								09/24/19 04:09
Uranium		6.37E-06	mg/L	0.00030						
Method: SW6020										Batch: 54946
Lab ID: MB-54946		Method Blank				Run: ICPMS5-C_190924A				09/24/19 04:56
Uranium		ND	mg/kg	2						

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/27/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 54912
Lab ID: C19081079-021BMS1		Sample Matrix Spike				Run: G5000W_190909A				09/16/19 11:21
Radium 226		2.5	pCi/g-dry		84	70	130			
Lab ID: C19081079-021BMS1		Sample Matrix Spike Duplicate				Run: G5000W_190909A				09/16/19 11:21
Radium 226		2.6	pCi/g-dry		87	70	130	3.2	20	
Lab ID: LCS1-54912		Laboratory Control Sample				Run: G5000W_190909A				09/16/19 13:15
Radium 226		2.4	pCi/g-dry		96	67	120			
Lab ID: MB-54912	3	Method Blank				Run: G5000W_190909A				09/16/19 13:15
Radium 226		0.009	pCi/g-dry							U
Radium 226 precision (±)		0.007	pCi/g-dry							
Radium 226 MDC		0.009	pCi/g-dry							
Method: E903.0										Batch: R251132
Lab ID: LCS1-54978		Laboratory Control Sample				Run: G542M_190910A				09/16/19 11:59
Radium 226		2.3	pCi/g-dry		92	67	120			
Lab ID: MB-54978	3	Method Blank				Run: G542M_190910A				09/16/19 11:59
Radium 226		0.008	pCi/g-dry							U
Radium 226 precision (±)		0.008	pCi/g-dry							
Radium 226 MDC		0.01	pCi/g-dry							
Lab ID: C19081079-035BMS1		Sample Matrix Spike				Run: G542M_190910A				09/16/19 12:00
Radium 226		3.4	pCi/g-dry		77	70	130			
Lab ID: C19081079-035BMSD		Sample Matrix Spike Duplicate				Run: G542M_190910A				09/16/19 12:00
Radium 226		3.6	pCi/g-dry		84	70	130	4.9	20	
Method: E903.0										Batch: 54911
Lab ID: C19081079-001BMS1		Sample Matrix Spike				Run: G542M-2_190909A				09/16/19 11:17
Radium 226		2.7	pCi/g-dry		91	70	130			
Lab ID: LCS1-54911		Laboratory Control Sample				Run: G542M-2_190909A				09/16/19 17:02
Radium 226		2.0	pCi/g-dry		82	67	120			
Lab ID: MB-54911	3	Method Blank				Run: G542M-2_190909A				09/16/19 17:02
Radium 226		0.006	pCi/g-dry							U
Radium 226 precision (±)		0.005	pCi/g-dry							
Radium 226 MDC		0.007	pCi/g-dry							
Lab ID: C19081079-001BMS1		Sample Matrix Spike Duplicate				Run: G542M-2_190909A				09/16/19 11:17
Radium 226		2.5	pCi/g-dry		82	70	130	8.8	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/27/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 54911
Lab ID: LCS5-54911		Laboratory Control Sample				Run: EGG-ORTEC_2_190830B			09/12/19 17:21	
Thorium 230		3.9	pCi/g-dry		83	80	120			
Lab ID: MB-54911	3	Method Blank				Run: EGG-ORTEC_2_190830B			09/12/19 17:21	
Thorium 232		-0.002	pCi/g-dry							U
Thorium 232 precision (±)		0.005	pCi/g-dry							
Thorium 232 MDC		0.01	pCi/g-dry							
Lab ID: C19081079-003BMS5		Sample Matrix Spike				Run: EGG-ORTEC_2_190830B			09/12/19 17:21	
Thorium 230		3.1	pCi/g-dry		62	70	130			S
- Spike response is not in range for this analysis. Since the LCS and the RPD recoveries are in range, the response is considered to be matrix related.										
Lab ID: C19081079-003BMS5		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_190830B			09/12/19 17:21	
Thorium 230		3.0	pCi/g-dry		60	70	130	1.8	20	S
- Spike response is not in range for this analysis. Since the LCS and the RPD recoveries are in range, the response is considered to be matrix related.										
Method: E908.0										Batch: R250920
Lab ID: MB-54911	3	Method Blank				Run: EGG-ORTEC_2_190910A			09/13/19 09:55	
Thorium 232		-0.001	pCi/g-dry							U
Thorium 232 precision (±)		0.009	pCi/g-dry							
Thorium 232 MDC		0.02	pCi/g-dry							
Lab ID: LCS5-54912		Laboratory Control Sample				Run: EGG-ORTEC_2_190910A			09/13/19 09:55	
Thorium 230		4.8	pCi/g-dry		105	80	120			
Lab ID: MB-54912	3	Method Blank				Run: EGG-ORTEC_2_190910A			09/13/19 09:55	
Thorium 232		0.001	pCi/g-dry							U
Thorium 232 precision (±)		0.006	pCi/g-dry							
Thorium 232 MDC		0.01	pCi/g-dry							
Lab ID: C19081079-023BMS5		Sample Matrix Spike				Run: EGG-ORTEC_2_190910A			09/13/19 09:55	
Thorium 230		2.4	pCi/g-dry		45	70	130			S
- Spike response is not in range for this analysis. Since the LCS and the RER recoveries are in range, the response is considered to be matrix related.										
Lab ID: C19081079-023BMS5		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_190910A			09/13/19 09:55	
Thorium 230		3.3	pCi/g-dry		66	70	130	30	20	SR
- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 2.0.										

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/27/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E908.0**										Batch: 54978
Lab ID: **LCS5-54978**		Laboratory Control Sample				Run: EGG-ORTEC_2_190910C				09/16/19 14:45
Thorium 230		4.3	pCi/g-dry		92	80	120			
Lab ID: **MB-54978**	3	Method Blank				Run: EGG-ORTEC_2_190910C				09/16/19 14:45
Thorium 232		0.0	pCi/g-dry							U
Thorium 232 precision (±)		0.004	pCi/g-dry							
Thorium 232 MDC		0.01	pCi/g-dry							
Lab ID: **C19081079-037BMS5**		Sample Matrix Spike				Run: EGG-ORTEC_2_190910C				09/16/19 14:46
Thorium 230		3.7	pCi/g-dry		73	70	130			
Lab ID: **C19081079-037BMSD**		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_190910C				09/16/19 14:46
Thorium 230		3.3	pCi/g-dry		63	70	130			S

- Spike response is not in range for this analysis. Since the LCS and the RPD recoveries are in range, the response is considered to be matrix related.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Work Order:** C19081079 **Report Date:** 09/27/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: Pb210-1056
Lab ID: LCS3-54911		Laboratory Control Sample				Run: PACKARD 3100TR_190904D			09/11/19 14:07	
Lead 210		2.5	pCi/g-dry		110	80	120			
Lab ID: MB-54911	3	Method Blank				Run: PACKARD 3100TR_190904D			09/11/19 15:34	
Lead 210		0.01	pCi/g-dry							U
Lead 210 precision (±)		0.02	pCi/g-dry							
Lead 210 MDC		0.04	pCi/g-dry							
Lab ID: C19081079-002BMS3		Sample Matrix Spike				Run: PACKARD 3100TR_190904D			09/12/19 01:57	
Lead 210		4.6	pCi/g-dry		120	70	130			
Lab ID: C19081079-002BMS3		Sample Matrix Spike Duplicate				Run: PACKARD 3100TR_190904D			09/12/19 02:56	
Lead 210		4.5	pCi/g-dry		114	70	130	3.6	20	
Method: E909.0										Batch: 54912
Lab ID: LCS3-54912		Laboratory Control Sample				Run: TRICARB LSC_190904C			09/18/19 16:25	
Lead 210		2.3	pCi/g-dry		100	80	120			
Lab ID: MB-54912	3	Method Blank				Run: TRICARB LSC_190904C			09/18/19 18:14	
Lead 210		-0.03	pCi/g-dry							U
Lead 210 precision (±)		0.03	pCi/g-dry							
Lead 210 MDC		0.05	pCi/g-dry							
Lab ID: C19081079-022BMS3		Sample Matrix Spike				Run: TRICARB LSC_190904C			09/19/19 08:51	
Lead 210		4.0	pCi/g-dry		110	70	130			
Lab ID: C19081079-022BMS3		Sample Matrix Spike Duplicate				Run: TRICARB LSC_190904C			09/19/19 10:07	
Lead 210		3.9	pCi/g-dry		104	70	130	3.3	20	
Method: E909.0										Batch: 54978
Lab ID: LCS3-54978		Laboratory Control Sample				Run: TRICARB LSC_190905A			09/20/19 13:45	
Lead 210		2.0	pCi/g-dry		88	80	120			
Lab ID: MB-54978	3	Method Blank				Run: TRICARB LSC_190905A			09/20/19 15:25	
Lead 210		-0.007	pCi/g-dry							U
Lead 210 precision (±)		0.02	pCi/g-dry							
Lead 210 MDC		0.04	pCi/g-dry							
Lab ID: C19081079-036BMS3		Sample Matrix Spike				Run: TRICARB LSC_190905A			09/21/19 02:31	
Lead 210		4.9	pCi/g-dry		120	70	130			
Lab ID: C19081079-036BMSD		Sample Matrix Spike Duplicate				Run: TRICARB LSC_190905A			09/21/19 03:27	
Lead 210		2.9	pCi/g-dry		32	70	130	51	20	SR

- Spike response is not in range for this analysis. Since the LCS recovery is in range and the RER is <2, the response is considered to be matrix related.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.
U - Not detected at minimum detectable concentration

Work Order Receipt Checklist

Energy Fuels Resources (USA) Inc C19081079

Login completed by: Casie C. Peppersack
Date Received: 8/22/2019
Reviewed by: Kasey Vidick
Received by: cns
Reviewed Date: 8/26/2019
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	25.3°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

Contact and Corrective Action Comments:

Multiple temperatures include 27.0, 4.0, 0.3 and 0.0. The lower temps were for the aqueous samples. 8/23/19 CP

0190810 79

Sheet 2 of 3

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 2221
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Annual Soils 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
E 14	8/20/2019	816	U-NAT, Ra-226, Pb-210, TH-232
E 15	8/20/2019	818	U-NAT, Ra-226, Pb-210, TH-232
E 16	8/20/2019	821	U-NAT, Ra-226, Pb-210, TH-232
E 17	8/20/2019	845	U-NAT, Ra-226, Pb-210, TH-232
E 18	8/20/2019	826	U-NAT, Ra-226, Pb-210, TH-232
S 01	8/20/2019	912	U-NAT, Ra-226, Pb-210, TH-232
S 02	8/20/2019	925	U-NAT, Ra-226, Pb-210, TH-232
S 03	8/20/2019	832	U-NAT, Ra-226, Pb-210, TH-232
W 01	8/20/2019	705	U-NAT, Ra-226, Pb-210, TH-232
W 02	8/20/2019	700	U-NAT, Ra-226, Pb-210, TH-232
W 03	8/20/2019	655	U-NAT, Ra-226, Pb-210, TH-232
W 04	8/20/2019	650	U-NAT, Ra-226, Pb-210, TH-232
W 05	8/20/2019	1035	U-NAT, Ra-226, Pb-210, TH-232
W 06	8/20/2019	1028	U-NAT, Ra-226, Pb-210, TH-232
W 07	8/20/2019	1026	U-NAT, Ra-226, Pb-210, TH-232
W 08	8/20/2019	1023	U-NAT, Ra-226, Pb-210, TH-232
W 09	8/20/2019	1019	U-NAT, Ra-226, Pb-210, TH-232
W 10	8/20/2019	1016	U-NAT, Ra-226, Pb-210, TH-232

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	8/21/2019 1500		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
			8/22/19 145

C19081079

Sheet 1 of 3

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 2221
qpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Annual Soils 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
N 01	8/20/2019	710	U-NAT, Ra-226, Pb-210, TH-232
N 02	8/20/2019	713	U-NAT, Ra-226, Pb-210, TH-232
N 03	8/20/2019	716	U-NAT, Ra-226, Pb-210, TH-232
N 04	8/20/2019	718	U-NAT, Ra-226, Pb-210, TH-232
N 05	8/20/2019	720	U-NAT, Ra-226, Pb-210, TH-232
E 01	8/20/2019	722	U-NAT, Ra-226, Pb-210, TH-232
E 02	8/20/2019	724	U-NAT, Ra-226, Pb-210, TH-232
E 03	8/20/2019	727	U-NAT, Ra-226, Pb-210, TH-232
E 04	8/20/2019	731	U-NAT, Ra-226, Pb-210, TH-232
E 05	8/20/2019	735	U-NAT, Ra-226, Pb-210, TH-232
E 06	8/20/2019	740	U-NAT, Ra-226, Pb-210, TH-232
E 07	8/20/2019	745	U-NAT, Ra-226, Pb-210, TH-232
E 08	8/20/2019	800	U-NAT, Ra-226, Pb-210, TH-232
E 09	8/20/2019	802	U-NAT, Ra-226, Pb-210, TH-232
E 10	8/20/2019	804	U-NAT, Ra-226, Pb-210, TH-232
E 11	8/20/2019	806	U-NAT, Ra-226, Pb-210, TH-232
E 12	8/20/2019	808	U-NAT, Ra-226, Pb-210, TH-232
E 13	8/20/2019	811	U-NAT, Ra-226, Pb-210, TH-232

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	8/21/2019 1500		8/21/19 1500
	Date/Time		Date/Time
Relinquished By:(Signature)	8/22/19 1345	Received By:(Signature)	8/22/19 145

C19081079

Sheet 3 of 3

ENERGY FUELS RESOURCES

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy.
Casper WY, 82601

Contact: Tanner Holliday
Ph: 435 678 4115
tholliday@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Annual Soils 2019	Tanner Holliday	Tanner Holliday

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
W 11	8/20/2019	1012	U-NAT, Ra-226, Pb-210, TH-232
W 12	8/20/2019	1005	U-NAT, Ra-226, Pb-210, TH-232
W 13	8/20/2019	952	U-NAT, Ra-226, Pb-210, TH-232
W 14	8/20/2019	945	U-NAT, Ra-226, Pb-210, TH-232
W 15	8/20/2019	935	U-NAT, Ra-226, Pb-210, TH-232
W 16	8/20/2019	930	U-NAT, Ra-226, Pb-210, TH-232
W 17	8/20/2019	922	U-NAT, Ra-226, Pb-210, TH-232
W 18	8/20/2019	906	U-NAT, Ra-226, Pb-210, TH-232
E 10D	8/20/2019	804	U-NAT, Ra-226, Pb-210, TH-232
W 15D	8/20/2019	935	U-NAT, Ra-226, Pb-210, TH-232
W 05D	8/20/2019	1035	U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232
			U-NAT, Ra-226, Pb-210, TH-232

Comments: Please send report to Kathy Weinel at kweinel@energyfuels.com

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Tanner Holliday	8/21/2019 1500		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
			8/22/19

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Table I-1
WHITE MESA MILL
Soil Sampling Results at BHV Stations 1-8
(pCi/g)

	BHV-1				BHV-2				BHV-3				BHV-4				BHV-5				BHV-6				BHV-7				BHV-8			
Date	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
9/7/1980	0.65	0.42	-	-	0.34	0.42	-	-	0.42	0.42	-	-	0.41	12.194	-	-	0.23	14.89	-	-			-	-			-	-			-	-
9/8/1981	0.4	1.8	-	-	0.3	0.6	-	-	0.3	0.6	-	-	0.2	3	-	-	0.3	0.6	-	-			-	-			-	-			-	-
12/3/1981	0.79	0.77	-	-	0.44	0.56	-	-	0.89	0.42	-	-	0.75	0.63	-	-	0.55	0.42	-	-			-	-			-	-			-	-
6/30/1982	0.423	0.384	-	-	0.412	0.18	-	-	0.265	0.207	-	-	0.478	0.26	-	-	0.449	0.216	-	-			-	-			-	-			-	-
5/5/1983	0.471	0.41	-	-	0.569	0.55	-	-	0.461	0.34	-	-	0.643	0.34	-	-	0.147	0.14	-	-			-	-			-	-			-	-
6/4/1984	0.713	0.866	-	-	0.618	0.683	-	-	0.489	0.471	-	-	0.124	0.324	-	-	0.132	0.31	-	-			-	-			-	-			-	-
10/12/1984	2.96	0.886	-	-	2.33	0.069	-	-	2.88	0.721	-	-	3.49	0.804	-	-	2.55	0.817	-	-			-	-			-	-			-	-
8/28/1985	1.63	0.8	-	-	2.19	0.424	-	-	2.27	0.424	-	-	4.33	0.294	-	-	1.28	0.577	-	-			-	-			-	-			-	-
8/1/1986	0.369	0.654	-	-	0.466	0.866	-	-	0.382	0.694	-	-	0.396	0.826	-	-	0.728	0.836	-	-			-	-			-	-			-	-
8/17/1987	0.6	0.8	-	-	1.5	0.9	-	-	0.8	0.6	-	-	1.2	0.7	-	-	1.5	1.3	-	-			-	-			-	-			-	-
8/28/1988	1.5	1.6	-	-	1.3	0.7	-	-	0.6	0.9	-	-	1	1.3	-	-	3.8	5	-	-			-	-			-	-			-	-
8/25/1988	1.2	1.6	-	-	1.1	3	-	-	0.8	1	-	-	1.1	1.4	-	-	2.9	5.7	-	-			-	-			-	-			-	-
8/1/1990	2.9	5.8	-	-	1	1.4	-	-	0.8	1.4	-	-	1.8	1.3	-	-	3.7	3.2	-	-			-	-			-	-			-	-
8/5/1991	3.9	8.8	-	-	1.7	2.6	-	-	2.6	5.7	-	-	1.8	2.6	-	-	2.5	4.4	-	-			-	-			-	-			-	-
8/13/1992	1.2	2.2	-	-	0.9	1.4	-	-	0.8	1.2	-	-	0.9	0.9	-	-	1.1	1.8	-	-			-	-			-	-			-	-
8/13/1993	2	1.7	-	-	1.4	1.7	-	-	1.1	1.9	-	-	0.8	1.6	-	-	4.8	3.5	-	-			-	-			-	-			-	-
8/3/1994	1	1.6	-	-	0.7	0.8	-	-	0.7	0.9	-	-	0.7	1.1	-	-	3	3.8	-	-			-	-			-	-			-	-
8/28/1995	2.81	4.7	-	-	0.68	0.2	-	-	0.88	0.65	-	-	0.58	0.24	-	-	2.8	1.6	-	-			-	-			-	-			-	-
8/13/1996	1.7	2.15	-	-	0.6	0.46	-	-	0.3	0.21	-	-	0.5	0.52	-	-	1.9	2.01	-	-			-	-			-	-			-	-
8/1/1997	0.54	0.31	-	-	0.56	0.16	-	-	0.41	0.27	-	-	0.41	0.26	-	-	1.7	1.5	-	-			-	-			-	-			-	-
7/1/1998	1.6	3.05	-	-	0.7	0.58	-	-	0.5	0.45	-	-	1	1.19	-	-	3	2.76	-	-			-	-			-	-			-	-
8/24/1999	2.27	1.74	-	-	0.78	0.84	-	-	0.53	0.42	-	-	0.84	0.77	-	-	3.27	3.15	-	-			-	-			-	-			-	-
12/1/2000	1.51	1.21	-	-	0.81	0.53	-	-	*	*	-	-	0.83	1.22	-	-	2.81	3.25	-	-			-	-			-	-			-	-
8/23/2001	1	1	-	-	0.6	0.3	-	-	0.4	0.3	-	-	0.9	1	-	-	1.2	1.1	-	-			-	-			-	-			-	-
8/1/2002	1.3	1.35	-	-	0.9	0.524	-	-	0.5	0.297	-	-	1.2	1.49	-	-	2.4	2.81	-	-			-	-			-	-			-	-
8/5/2003	0.8	0.99	-	-	0.6	0.79	-	-	0.5	0.33	-	-	0.6	0.43	-	-	0.28	0.42	-	-	0.6	0.53	-	-			-	-			-	-
8/9/2004	0.6	0.61	-	-	0.4	0.25	-	-	0.4	0.22	-	-	0.6	0.51	-	-	1	1.4	-	-	0.9	1.4	-	-			-	-			-	-
8/3/2005	0.9	0.96	-	-	0.7	0.34	-	-	0.6	0.27	-	-	0.6	0.38	-	-	0.7	0.41	-	-	1	1.2	-	-			-	-			-	-
8/7/2006	0.7	0.76	-	-	0.44	0.25	-	-	0.41	0.25	-	-	0.52	0.48	-	-	1.4	1.3	-	-	0.78	0.65	-	-			-	-			-	-
8/8/2007	1.1	2.37	-	-	0.7	0.53	-	-	0.2	0.55	-	-	0.5	0.74	-	-	1.1	1.45	-	-	0.8	0.93	-	-			-	-			-	-
8/20/2008	0.9	1.23	-	-	0.3	0.43	-	-	0.6	0.98	-	-	0.5	0.79	-	-	0.8	1.33	-	-	0.5	0.67	-	-			-	-			-	-
8/10/2009	0.8	0.88	-	-	0.7	0.54	-	-	0.7	1.08	-	-	0.8	0.61	-	-	2.6	2.98	-	-	0.5	0.81	-	-			-	-			-	-
8/2/2010	1.3	1.09	-	-	1	1.49	-	-	0.8	0.62	-	-	1.3	1.69	-	-	1.7	1.69	-	-	0.8	0.87	-	-			-	-			-	-
8/23/2011	0.9	1.32	-	-	0.4	0.32	-	-	0.4	0.4	-	-	0.5	0.58	-	-	1	1.48	-	-	0.6	0.86	-	-			-	-			-	-
8/20/2012	0.5	1.96	-	-	0.4	0.54	-	-	0.7	1.09	-	-	0.6	0.81	-	-	1.6	2.7	-	-	0.8	1.37	-	-			-	-			-	-
8/21/2013	0.7	1.013	-	-	0.3	0.405	-	-	0.6	1.35	-	-	0.3	0.54	-	-	1.1	1.62	-	-	0.5	0.743	-	-			-	-			-	-
8/25/2014	0.8	0.945	-	-	0.4	0.54	-	-	0.5	0.675	-	-	0.7	0.743	-	-	2.8	3.71	-	-	0.4	0.81	-	-			-	-			-	-
8/18/2015	0.9	1.215	1.2	0.2	0.6	0.608	0.8	0.3	0.3	0.338	0.7	0.3	0.5	0.54	0.2	0.3	1.2	1.215	1.0	0.3	0.4	1.418	0.3	0.3	0.7	1.76	0.5	0.09	1.0	0.338	0.8	0.05
8/9/2016	0.5	0.4725	0.4	0.2	0.4	0.27	0.2	0.4	0.5	0.54	0.9	0.2	0.5	0.2025	0.09	0.4	1.2	0.54	0.4	0.4	0.8	0.88	0.3	0.2	0.8	0.54	0.2	0.5	0.5	0.135	0.08	0.3
8/8/2017	1.2	1.35	2.1	0.3	0.5	0	0.9	0.3	0.2	0	0.8	0.2	0.7	0	1.3	0.2	3.6	3.38	4.2	0.2	0.6	0.68	0.6	0.2	0.7	1.35	0.8	0.2	0.6	0	0.4	0.08
8/23/2018	0.7	0.675	1	0.2	0.4	0	1.5	0.1	0.3	0	1	0.3	0.4	0	0.6	0.2	2.2	2.70	3.1	0.2	0.7	2.03	1.2	0.2	0.7	2.03	0.8	0.3	0.5	0	0.5	0.2
8/27/2019	1.1	1.35	1	0.2	0.5	0	0.7	0.2	0.4	0	0.9	0.2	0.6	0	0.7	0	2.6	1.35	2.4	0.1	1.2	1.35	1.2	0	1.1	2.70	0.9	0.3	0.3	0	0.3	0.2

- Data not available.

Table I-2
WHITE MESA MILL
Soil Sampling Results in the Four Cardinal Directions
(pCi/g)

	N-01				N-02				N-03				N-04				N-05				S-01				S-02				S-03			
Sample date	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
Aug-15	0.30	0.47	0.80	0.30	0.50	0.41	0.30	0.30	0.60	0.61	0.90	0.40	0.60	0.41	0.20	0.20	0.80	0.95	1.00	0.30	0.30	0.20	1.10	0.30	0.60	0.54	0.50	0.60	0.30	0.34	1.10	0.06
Aug-16	0.50	0.20	0.60	0.20	0.60	0.20	0.40	0.50	0.50	0.20	0.60	0.40	0.70	0.14	0.60	0.40	0.90	0.34	0.50	0.40	0.40	0.14	0.30	0.08	0.20	0.05	0.70	0.20	0.20	0.07	0.80	0.30
Aug-17	0.7	0	1.8	0.4	0.7	0	1.1	0.3	0.9	0.7	1.3	0.3	1.0	0.7	1.4	0.3	0.6	0	0.6	0.4	0.7	0	1.0	0.4	0.8	1.4	0.8	0.6	0.4	0	1.0	0.07
Aug-18	0.5	0	1.0	0.4	0.5	0	1.1	0.2	0.8	0.7	2.0	0.2	1.2	0.7	1.3	0.1	1.1	1.4	2.4	0.2	0.1	0	0.8	0.02	0.2	0	1.1	0.05	0.3	0	1.8	0.03
Aug-19	0.4	0	0.3	0.1	0.4	0	1.0	0.2	0.4	0	1.1	0.06	0.8	0.7	1.5	0.04	0.6	0	0.4	0.2	0.2	0	0	0.03	0.4	0	0	0.06	0.3	0	0.2	0.005

Table I-2
WHITE MESA MILL
Soil Sampling Results in the Four Cardinal Directions
(pCi/g)

Sample date	E-01				E-02				E-03				E-04				E-05				E-06				E-07				E-08				E-09			
	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
Aug-15	2.60	3.11	2.40	0.20	1.30	1.69	1.00	0.20	1.20	2.70	0.70	0.30	0.90	1.69	0.70	0.20	4.90	9.11	3.70	0.20	2.60	3.11	2.10	0.20	0.50	0.74	0.30	0.10	3.50	4.79	3.20	0.20	2.00	3.51	2.10	0.20
Aug-16	1.40	0.61	0.50	0.30	1.70	0.47	0.40	0.20	1.60	0.61	0.30	0.30	1.30	0.74	0.40	0.20	4.00	2.16	0.30	0.30	4.00	2.90	0.40	0.20	1.20	0.34	0.06	0.08	3.50	1.62	0.50	0.20	2.50	1.35	0.30	0.20
Aug-17	3.2	2.70	2.7	0.3	1.9	2.03	1.6	0.2	1.6	1.35	1.6	0.2	1.5	2.03	1.5	0.07	2.3	2.70	2.3	0.3	3.0	2.70	2.4	0.10	2.7	2.03	2.9	0.1	4.7	4.05	2.7	0.09	4.4	3.38	2.4	1.3
Aug-18	2.2	2.70	4.1	0.1	1.4	1.35	1.7	0.1	1.3	1.35	1.4	0.2	1.7	2.03	2.0	0.10	3.0	4.73	4.0	0.1	3.3	4.05	3.0	0.08	0.4	0.68	0.4	0.1	3.3	4.05	4.7	0.20	0.7	2.03	0.8	0.1
Aug-19	1.5	2.03	1.5	0.0	0.7	0.68	0.6	0.3	2.2	2.03	2.0	0.3	1.5	2.03	1.6	0.20	1.4	2.03	2.0	0.2	2.2	4.05	2.2	0.10	3.1	5.40	2.9	0.2	4.8	4.05	5.3	0.20	1.5	1.35	1.9	0.2

Table I-2
WHITE MESA MILL
Soil Sampling Results in the Four Cardinal Directions
(pCi/g)

E-10				E-11				E-12				E-13				E-14				E-15				E-16				E-17				E-18			
Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
1.80	3.51	2.80	0.40	1.30	2.09	1.60	0.10	0.60	0.74	0.60	0.20	0.60	0.41	0.70	0.20	0.40	0.54	1.10	0.20	0.40	0.47	1.10	0.20	0.50	0.34	0.80	0.30	0.50	0.41	1.30	0.30	0.60	0.34	0.90	0.30
2.00	1.08	0.40	0.30	0.80	0.41	0.20	0.20	0.50	0.07	0.50	0.30	1.00	0.07	0.20	0.10	0.40	0.07	0.08	0.20	0.40	0.07	1.10	0.20	0.40	0.20	0.70	0.30	0.30	0.07	0.70	0.20	0.30	0.14	0.40	0.20
3.0	3.38	2.2	0.3	1.9	1.35	1.4	0.2	1.7	0	1.0	0.4	1.9	0	1.7	0.1	1.9	0	1.1	0.5	1.6	0	1.5	0.3	1.4	0	0.9	0.5	0.8	0	1.1	0.2	0.7	0	0.8	0.20
0.8	1.35	1.0	0.08	1.3	2.03	2.0	0.2	0.6	0	0.8	0.07	0.9	0	1.9	0.1	0.4	0	1.2	0.4	0.4	0	1.9	0.3	0.4	0	1.1	0.02	0.2	0	0.5	0.08	0.3	0	0.8	0.05
0.6	1.35	0.7	0.30	1.3	1.35	1.8	0.2	1.5	0.68	1.2	0.20	1.5	1.35	2.2	0	0.5	0	1.8	0.2	0.7	0	1.9	0.2	0.4	0	0.9	0.20	0.3	0	0.4	0	0.3	0	0	0.10

Table I-2
WHITE MESA MILL
Soil Sampling Results in the Four Cardinal Directions
(pCi/g)

Sample date	W-01				W-02				W-03				W-04				W-05				W-06				W-07				W-08				W-09			
	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
Aug-15	0.50	0.41	0.20	0.30	0.60	0.68	0.60	0.20	0.90	0.81	1.30	0.20	0.90	1.08	1.00	0.30	0.50	0.81	0.80	0.40	0.40	0.34	0.50	0.30	0.40	0.34	0.60	0.20	0.40	0.61	0.90	0.20	0.20	0.41	0.70	0.09
Aug-16	0.60	0.20	0.60	0.50	1.00	0.20	0.80	0.30	0.80	0.27	1.10	0.20	0.60	0.27	2.00	0.20	0.40	0.20	2.50	0.50	0.40	0.07	0.80	0.10	0.30	0.07	1.60	0.30	0.40	0.14	1.50	0.20	0.20	0.05	1.20	0.20
Aug-17	0.6	0	1.1	0.1	0.6	0	0.9	0.1	0.7	0.68	1.1	0.2	0.9	0.68	1.6	0.08	0.4	0	0.9	0.1	0.3	0	0.9	0.1	0.4	0	0.7	0.4	0.3	0	0.8	0.2	0.3	0	0.9	0.03
Aug-18	0.7	0	0.6	0.3	0.6	0	0.4	0.2	1.0	0.68	1.7	0.4	1.8	1.35	3.5	0.20	0.3	0	0.7	0.2	0.3	0	0.6	0.2	0.4	0	0.6	0.1	0.3	0	0.6	0.1	0.2	0	0.9	0.02
Aug-19	0.5	0	0.3	0.3	0.4	0	0.04	0.2	0.8	0.68	0.5	0.2	0.9	0.68	0.2	0.40	0.3	0	0.7	0.1	0.5	0	0.7	0.2	0.4	0	0.9	0.4	0.3	0	1.0	0.1	0.4	0	1.8	0.08

Table I-2
WHITE MESA MILL
Soil Sampling Results in the Four Cardinal Directions
(pCi/g)

W-10				W-11				W-12				W-13				W-14				W-15				W-16				W-17				W-18			
Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232	Ra-226	U-Nat	Pb-210	Th-232
0.40	0.34	0.30	0.30	0.50	0.20	0.50	0.40	0.20	0.14	1.10	0.10	0.40	0.27	1.20	0.20	0.40	0.27	1.10	0.20	0.40	0.34	0.60	0.20	0.60	0.34	0.70	0.40	0.50	0.34	1.20	0.40	0.50	0.34	0.90	0.20
0.40	0.07	0.40	0.40	0.30	0.14	0.30	0.20	0.20	0.05	0.70	0.09	0.30	0.14	0.50	0.10	0.002	0.27	0.40	0.40	0.20	0.27	0.30	0.00	0.30	0.41	0.30	0.00	0.40	0.34	0.60	0.20	0.50	0.34	0.80	0.50
0.3	0	0.4	0.1	0.3	0	1.1	0.1	0.2	0	0.6	0.1	0.4	0	0.6	0.3	0.2	0	0.7	0.10	0.3	0	1.3	0.1	0.4	0	1.2	0.4	0.5	0	0.5	0.30	0.5	0	1.2	0.20
0.3	0	0.4	0.1	0.4	0	0.9	0.1	0.1	0	0.9	0.1	0.2	0	0.7	0.09	0.2	0	0.8	0.07	0.3	0	1.7	0.1	0.3	0	1.1	0.1	0.3	0	1.2	0.02	0.3	0	0.7	0.02
0.4	0	0.3	0.2	0.5	0	0.5	0.2	0.2	0	0.5	0.03	0.4	0	0.5	0.09	0.2	0	0.4	0.01	0.5	0	1.1	0.2	0.5	0	1.3	0.3	0.5	0	0.5	0.10	0.6	0	0.5	0.20

Table I-3
WHITE MESA MILL
Soil Sampling Results
Duplicate Sample Results
(pCi/g)

Constituent	E-10	E-10D	%RPD
Uranium (mg/kg)	2	2	0.0
Lead 210 (pCi/g)	0.7	0.5	33.3
Radium 226 (pCi/g)	0.6	0.6	0.0
Thorium 232 (pCi/g)	0.3	0.2	40.0

Constituent	W-15	W-15D	%RPD
Uranium (mg/kg)	<1	<1	NC
Lead 210 (pCi/g)	1.1	1.4	24.0
Radium 226 (pCi/g)	0.5	0.4	22.2
Thorium 232 (pCi/g)	0.2	0.2	0.0

Constituent	W-05	W-05D	%RPD
Uranium (mg/kg)	<1	<1	NC
Lead 210 (pCi/g)	0.7	0.6	15.4
Radium 226 (pCi/g)	0.3	<0.08	NC
Thorium 232 (pCi/g)	0.1	0.2	66.7

Duplicate RPD results are outside of the 35% RPD limit.
Per the approved SOP, an RPD greater than 35% is acceptable if the one or both of the reported results are less than 5 times the RL. These results are provided for information only.

ATTACHMENT J

RADON MONITORING GRAPHS AND DATA

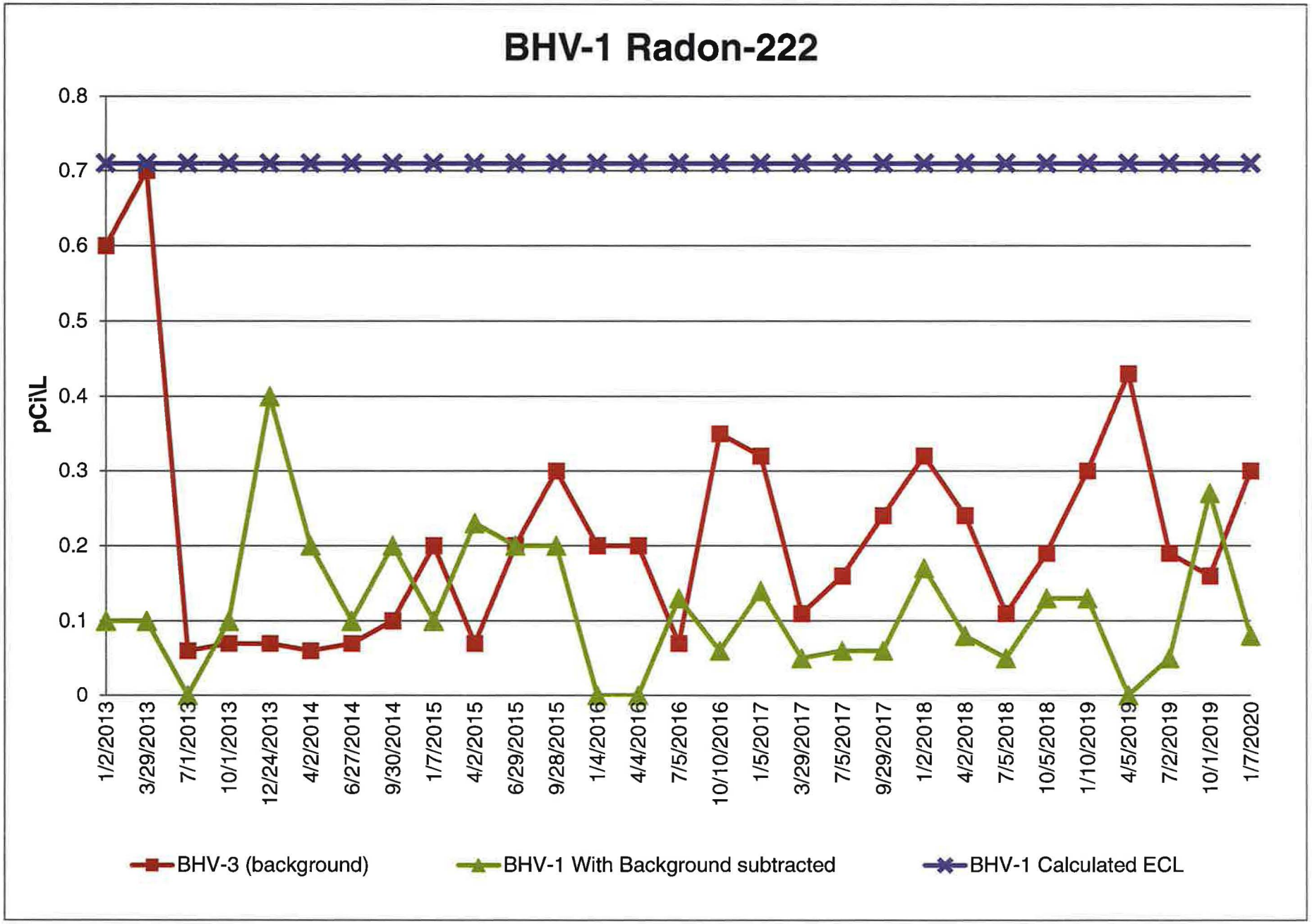
White Mesa Mill Radon Sampling Results*

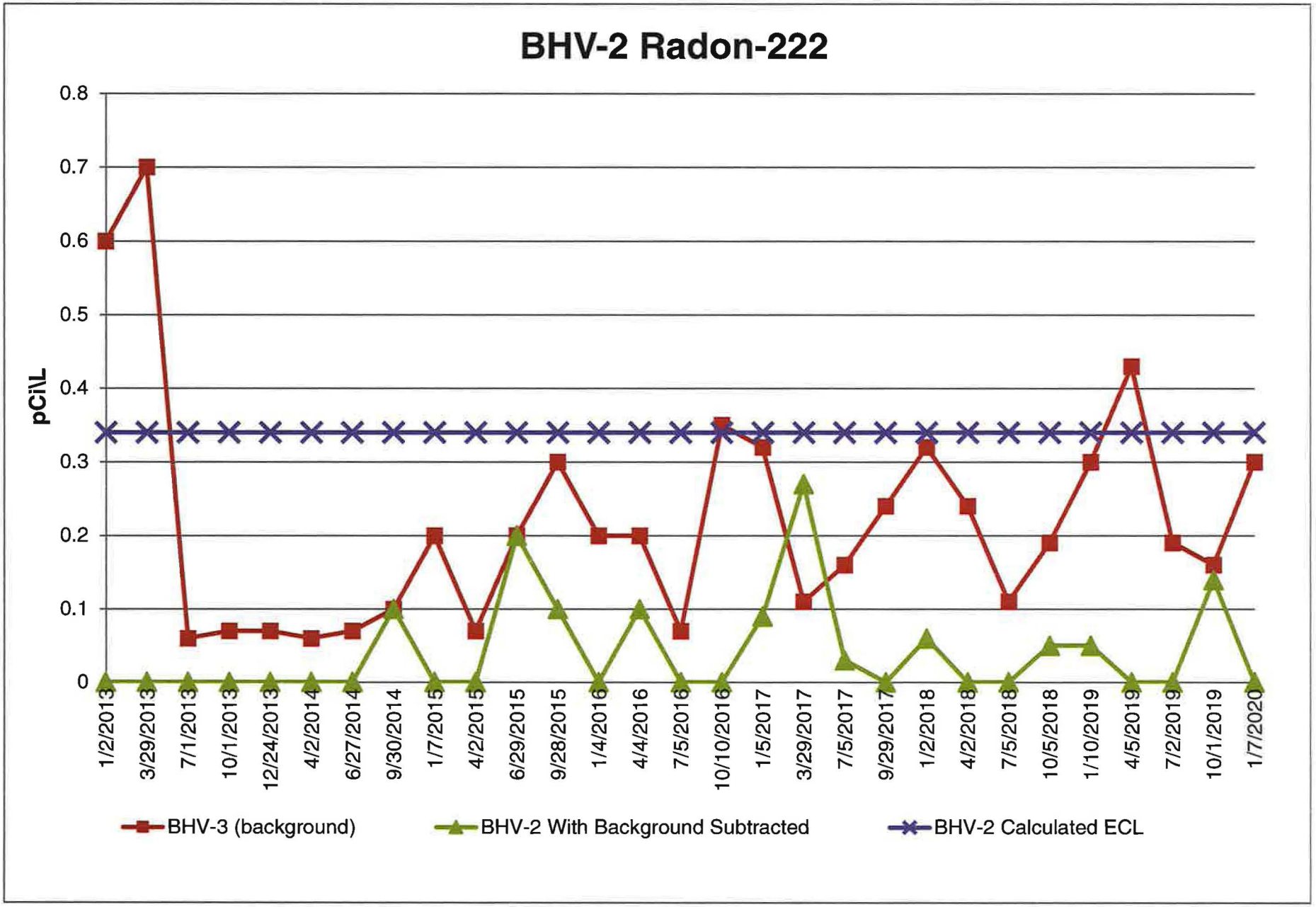
Date	BHV-1 (pCi/L)	BHV-1 Calculated ECL	BHV-2 (pCi/L)	BHV-2 Calculated ECL	BHV-3 (pCi/L)	BHV-4 (pCi/L)	BHV-4 Calculated ECL	BHV-5 (pCi/L)	BHV-5 Calculated ECL	BHV-6 (pCi/L)	BHV-6 Calculated ECL	BHV-7 (pCi/L)	BHV-7 Calculated ECL	BHV-8 (pCi/L)	BHV-8 Calculated ECL
01/02/13	0.1	0.71	0	0.34	0.6	0.4	0.5	0	1.43	0.4	0.83	NS	1.12	NS	0.71
03/29/13	0.1	0.71	0	0.34	0.7	0.3	0.5	0.5	1.43	0.1	0.83	NS	1.12	NS	0.71
07/01/13	0	0.71	0	0.34	0.06	0	0.5	0	1.43	0	0.83	NS	1.12	NS	0.71
10/01/13	0.1	0.71	0	0.34	0.07	0	0.5	NA	1.43	0	0.83	NS	1.12	NS	0.71
12/24/13	0.4	0.71	0	0.34	0.07	0.33	0.5	0.43	1.43	0.73	0.83	NS	1.12	NS	0.71
04/02/14	0.2	0.71	0	0.34	0.06	0.04	0.5	0.54	1.43	0.24	0.83	NS	1.12	NS	0.71
06/27/14	0.1	0.71	0	0.34	0.07	0	0.5	0.03	1.43	0.03	0.83	NS	1.12	NS	0.71
09/30/14	0.2	0.71	0.1	0.34	0.1	0.2	0.5	0.3	1.43	0.2	0.83	NS	1.12	NS	0.71
01/07/15	0.1	0.71	0	0.34	0.2	0.3	0.5	0.6	1.43	0.2	0.83	0.2	1.12	0.1	0.71
04/02/15	0.23	0.71	0	0.34	0.07	0.23	0.5	0.43	1.43	0.23	0.83	0.33	1.12	0.03	0.71
06/29/15	0.2	0.71	0.2	0.34	0.2	0.4	0.5	0.4	1.43	0.3	0.83	0.2	1.12	0.2	0.71
09/28/15	0.2	0.71	0.1	0.34	0.3	0.2	0.5	0.6	1.43	0.3	0.83	0	1.12	0.1	0.71
01/04/16	0	0.71	0	0.34	0.2	0.4	0.5	0.7	1.43	0.1	0.83	0.2	1.12	0.1	0.71
04/04/16	0	0.71	0.1	0.34	0.2	0	0.5	0.7	1.43	0.1	0.83	0	1.12	0	0.71
07/05/16	0.1	0.71	0	0.34	0.07	0	0.5	0.23	1.43	0	0.83	0	1.12	0	0.71
10/10/16	0.06	0.71	0	0.34	0.35	0.30	0.5	0.38	1.43	0.08	0.83	0.03	1.12	0	0.71
01/05/17	0.14	0.71	0.09	0.34	0.32	0.25	0.5	0.38	1.43	0.19	0.83	0	1.12	0.14	0.71
03/29/17	0.05	0.71	0.27	0.34	0.11	0.21	0.5	0.51	1.43	0.35	0.83	0.13	1.12	0.16	0.71
07/05/17	0.06	0.71	0	0.34	0.16	0.14	0.5	0.25	1.43	0.19	0.83	0.11	1.12	0.11	0.71
09/29/17	0.06	0.71	0	0.34	0.24	0	0.5	0.08	1.43	0	0.83	0.06	1.12	0	0.71
01/02/18	0.17	0.71	0.06	0.34	0.32	0.30	0.5	0.54	1.43	0.27	0.83	0.11	1.12	0.25	0.71
04/02/18	0.08	0.71	0	0.34	0.24	0.25	0.5	0.41	1.43	0.14	0.83	0.14	1.12	0.17	0.71
07/05/18	0.05	0.71	0	0.34	0.11	0.03	0.5	0.24	1.43	0.08	0.83	0.08	1.12	0	0.71
10/05/18	0.13	0.71	0.05	0.34	0.19	0.27	0.5	0.27	1.43	0.22	0.83	0.13	1.12	0.16	0.71
01/10/19	0.13	0.71	0.05	0.34	0.30	0.40	0.5	0.59	1.43	0.21	0.83	0.19	1.12	0.21	0.71
04/05/19	0.00	0.71	0	0.34	0.43	0.11	0.5	0.27	1.43	0	0.83	0	1.12	0	0.71
07/02/19	0.05	0.71	0	0.34	0.19	0.03	0.5	0.19	1.43	0.11	0.83	0	1.12	0	0.71
10/01/19	0.27	0.71	0.14	0.34	0.16	0.43	0.5	0.49	1.43	0.22	0.83	0.43	1.12	0.33	0.71
01/07/20	0.08	0.71	0	0.34	0.30	0.16	0.5	0.32	1.43	0.21	0.83	0.13	1.12	0.16	0.71

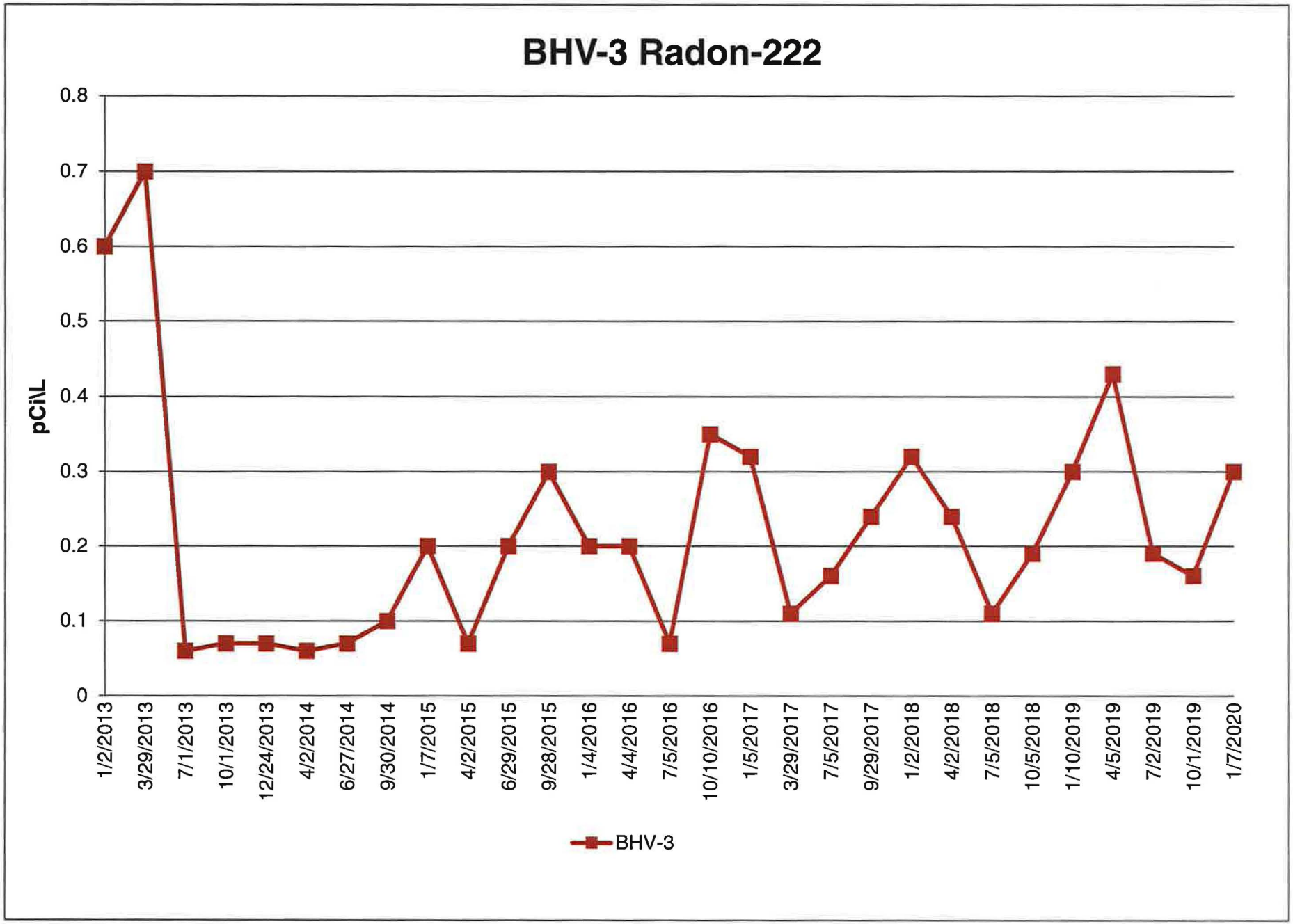
* - Measurements obtained from BHV-3 have been designated as background due to BHV-3's remoteness from the Mill site. The results in the table above are the above-background results with background (BHV-3) subtracted. Any negative values are reported as zero for graphical purposes.

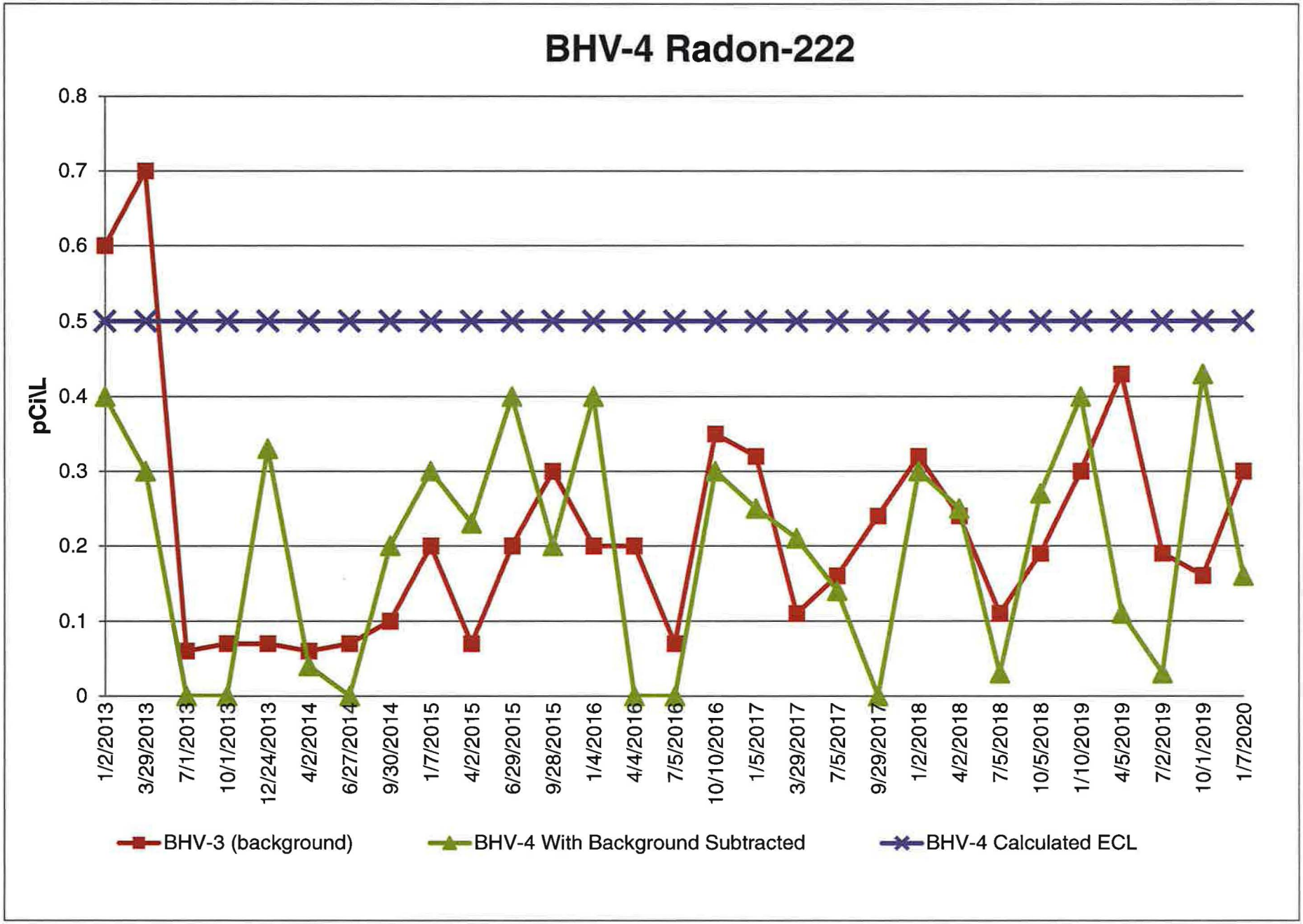
NA - Not Available - the canister was damaged. No data reported.

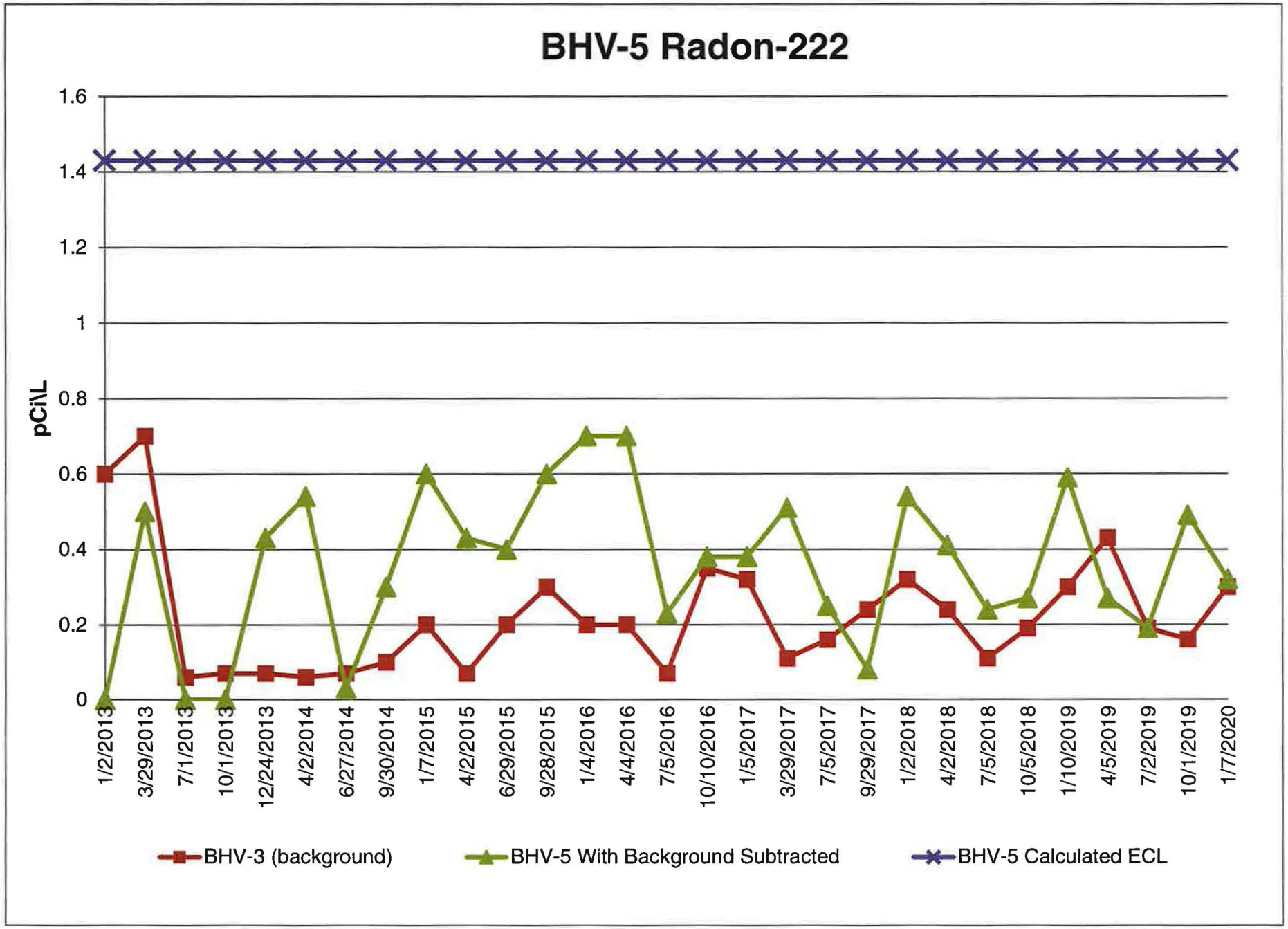
NS - Not Sampled - EFRI installed and began radon sampling at BHV-7 and BHV-8 in the fourth quarter of 2014.

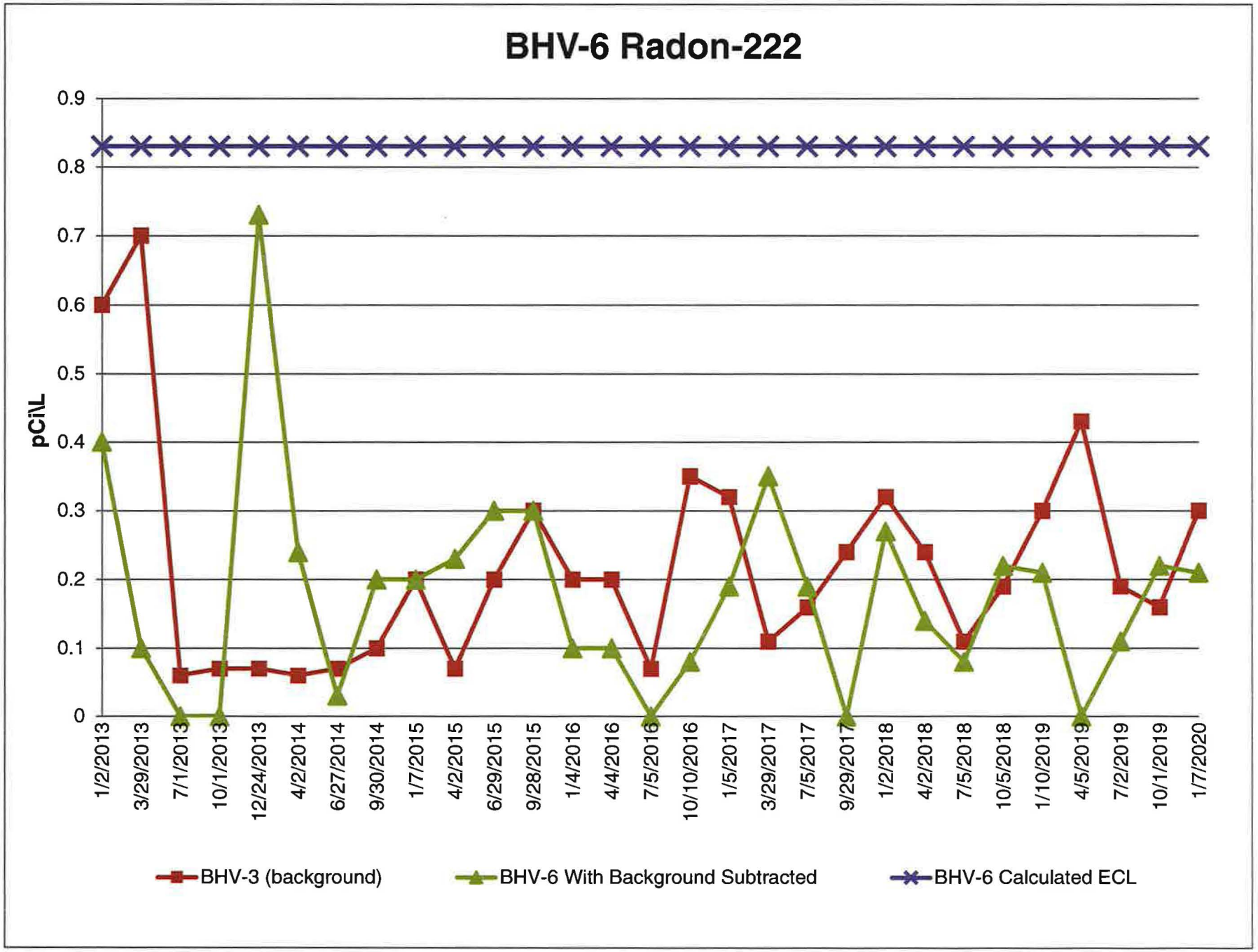

BHV-1 Radon-222
pCi\L
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-1 With Background subtracted
BHV-1 Calculated ECL

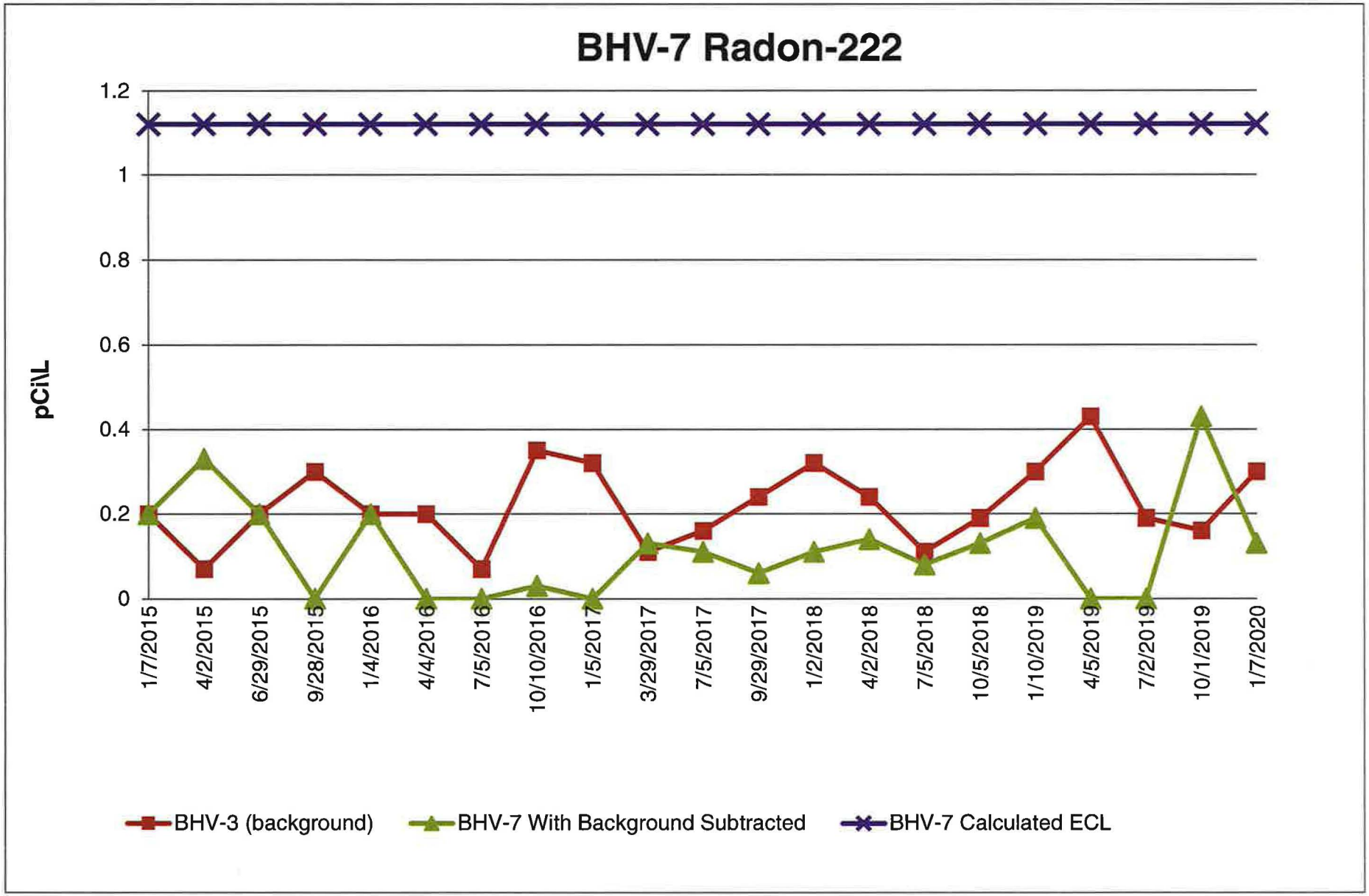

BHV-2 Radon-222
pCi\L
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-2 With Background Subtracted
BHV-2 Calculated ECL

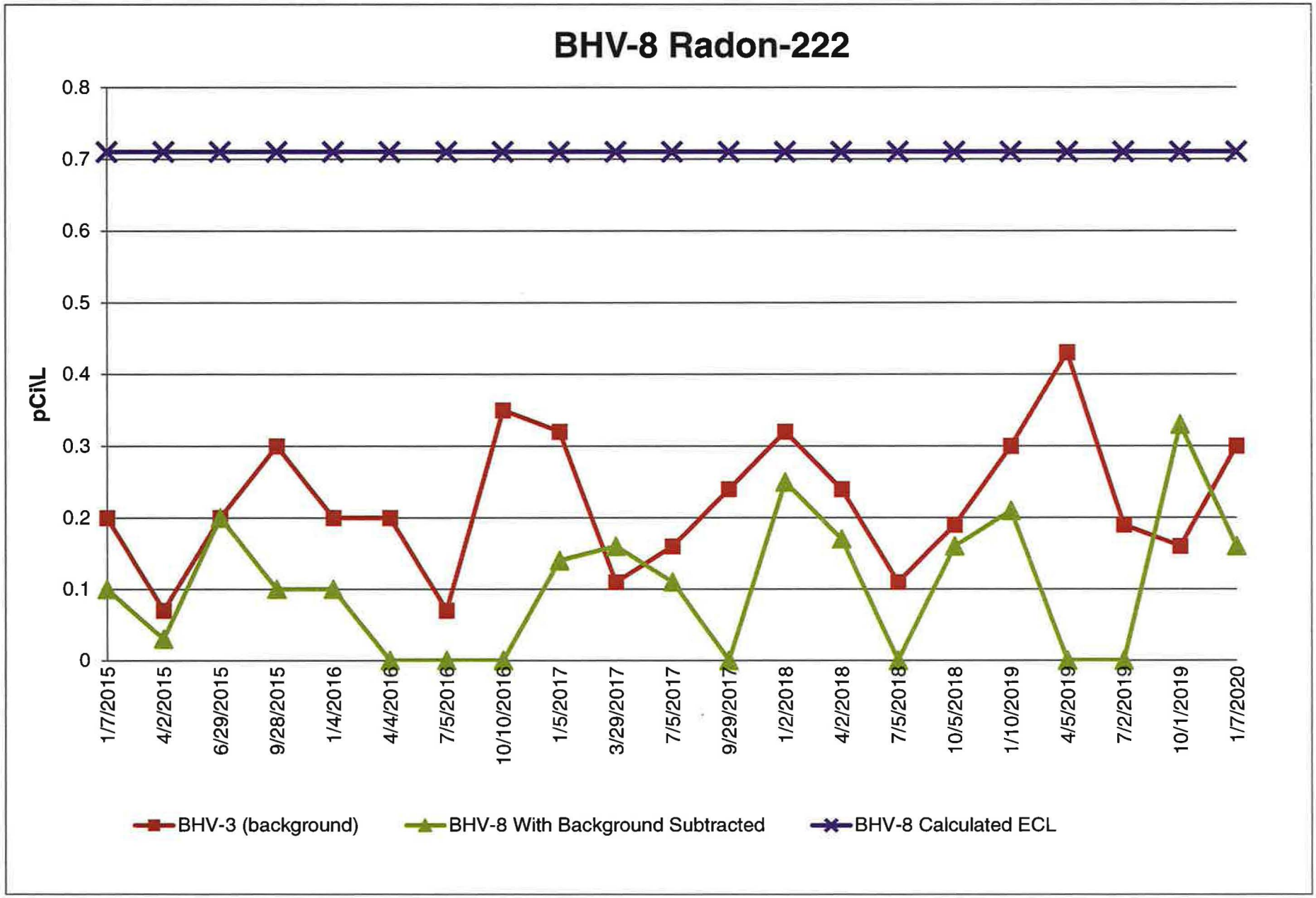

BHV-3 Radon-222
pCi\L
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3


BHV-4 Radon-222
pCi\L
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-4 With Background Subtracted
BHV-4 Calculated ECL


BHV-5 Radon-222
pCi\L
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-5 With Background Subtracted
BHV-5 Calculated ECL


BHV-6 Radon-222
pCi\L
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2013
3/29/2013
7/1/2013
10/1/2013
12/24/2013
4/2/2014
6/27/2014
9/30/2014
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-6 With Background Subtracted
BHV-6 Calculated ECL


BHV-7 Radon-222
pCi\L
1.2
1
0.8
0.6
0.4
0.2
0
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-7 With Background Subtracted
BHV-7 Calculated ECL


BHV-8 Radon-222
pCi\L
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/7/2015
4/2/2015
6/29/2015
9/28/2015
1/4/2016
4/4/2016
7/5/2016
10/10/2016
1/5/2017
3/29/2017
7/5/2017
9/29/2017
1/2/2018
4/2/2018
7/5/2018
10/5/2018
1/10/2019
4/5/2019
7/2/2019
10/1/2019
1/7/2020
BHV-3 (background)
BHV-8 With Background Subtracted
BHV-8 Calculated ECL

White Mesa Mill Radon Sampling

Quarterly Field Blank Results

Date	Field Blank (pCi/L)
1/2/2013	2.4
3/29/2013	1.4
7/1/2013	0.7
10/1/2013	0.3
12/24/2013	0.7
4/2/2014	1.6
6/27/2014	1.1
9/30/2014	0.8
1/7/2015	1.4
4/2/2015	1.0
6/29/2015	1.7
9/28/2015	1.5
1/4/2016	1.8
4/4/2016	2.0
7/5/2016	1.1
10/10/2016	1.6
1/5/2017	1.6
3/29/2017	1.1
7/5/2017	0.7
9/29/2017	0.84
1/2/2018	1.6
4/2/2018	1.9
7/5/2018	0.8
10/5/2018	1.0
1/10/2019	1.5
4/5/2019	1.6
7/2/2019	1.1
10/1/2019	1.1
1/7/2020	1.7

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RADON MONITORING REPORT
Issued by an Accredited Laboratory

SWEDAC ACCREDITERING 1489 ISO/IEC 17025

REPORT NUMBER
5494949:1

REPORT DATE
10/14/2019

PRINT DATE
10/14/2019

Test results

Detector	Start date	Stop date	Location	Detector comment	Location type	Avg Radon Conc. pCi/l	Total Radon Exp pCi-days/l
984639-5	07/02/2019	10/01/2019	BHV-1-1		Out-door	0.43 ± 0.11	38 ± 11
233199-9	07/02/2019	10/01/2019	BHV-2-1		Out-door	0.30 ± 0.11	28 ± 11
264030-8	07/02/2019	10/01/2019	BHV-4-1		Out-door	0.59 ± 0.14	55 ± 14
548030-6	07/02/2019	10/01/2019	BHV-5-1		Out-door	0.65 ± 0.17	60 ± 16
245159-9	07/02/2019	10/01/2019	BHV-6-1		Out-door	0.38 ± 0.11	34 ± 11
346217-3	07/02/2019	10/01/2019	BHV-7-1		Out-door	0.59 ± 0.14	55 ± 14
775425-2	07/02/2019	10/01/2019	BHV-8-1		Out-door	0.49 ± 0.14	44 ± 14
539351-7	07/02/2019	10/01/2019	BHV-2A-1		Out-door	0.32 ± 0.11	30 ± 11
222769-2	07/02/2019	10/01/2019	Black Mesa 1		Out-door	0.16 ± 0.09	16 ± 9
965062-3	07/02/2019	10/01/2019	Office MM		In-door	1.1 ± 0.17	101 ± 18

US_RT_HS_001_V1.10 / 2017-05-04 / JO / LB

Comment to the results

Tryggve Rönnqvist (Electronically signed)

Signature Radonova Laboratories AB Laboratory Measurement Specialist

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RADON MONITORING REPORT
Issued by an Accredited Laboratory

SWEDAC ACKREDITERING 1489 ISO/IEC 17025

107831-AL, 107830-RT, NRSB ARL1904

REPORT NUMBER 5494949: 1

REPORT DATE 10/14/2019

PRINT DATE 10/14/2019

MEASUREMENT PERFORMED FOR
6425 S HWY 191
Blanding UT 84511

Energy Fuels
6425 S HWY 191
Blanding UT 84511
United States

REPORT RECEIVER(S)

The analysis results are located on page 2 of this document.

Description of the measurement
The measurement was performed with a closed high-sensitivity alpha-track detector.
The detector(s) arrived to Radonova Laboratories AB 10/07/2019. They were measured 10/11/2019 .

Property data and address

6425 S HWY 191
Blanding UT 84511

Transit Detector 1:	725312
Transit Detector 2:	128122
Transit Detector 3:	

Measurement method: closed alpha-track high sensitivity detector
The radon measurement was performed with a closed alpha-track detector following the quality assurance guidance given in EPA 402-R-95-012.
The detector container is manufactured from electrically conducting plastic. Through a small slit (filter), radon gas enters the detector. The track-detecting material (film) inside the detector is hit by alpha particles generated by the radon entering the container and the decay products formed from it. On the film, the alpha particles make small tracks which are enlarged through chemical etching and later counted in a microscope in order to determine the radon exposure. Transit detectors are used for the return delivery of the high-sensitivity detectors in order to make a more accurate background subtraction.

Radonova Laboratories AB is accredited (no. 1489) by SWEDAC to conduct radon-gas measurements using the closed alpha-track detector method. The analysis equipment is checked daily and the detectors are calibrated at regular intervals.
NRPP Licenses: 107831 AL, 107830 RT

Measured radon concentrations
For each detector, the measured value of the radon concentration is given. For each value an uncertainty associated with the measurement to a 95% confidence level also given. For example a measurement result of 4.0 ± 0.5 pCi/l means that the radon concentration is most likely contained in the range 3.5-4.5 pCi/l .
If the start or end date of the measurement has not been provided, the radon concentration cannot be calculated. In such cases, the total exposure in pCi*days/l will be reported.

More information about radon measurements and mitigation can be found in the AARST and EPA publications:
- ANSI/AARST Protocol for Conducting Measurements of Radon and Radon-Decay Products in Schools and Large Buildings
- ANSI/AARST Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings.
- ANSI/AARST Radon Mitigation Standards for Schools and Large Buildings.
- ANSI/AARST Radon Mitigation Standards for Multifamily Buildings.
- EPA Radon Measurements in Schools, EPA 402-R-92-014, July 1993.
- A Citizen´s Guide to Radon
- Home Buyer´s and Seller´s Gudie to Radon
- Consumer´s Gudie to Radon Reduction

For more information about the interpretation of your test results or about other radon related issues we suggest contacting your state radon office.

Signature on the report
With the signature on the report, the person responsible for the radon analysis at Radonova Laboratories AB hereby certifies that the measurement procedures follows the guidance in accordance with EPA 402-R-95-012 and that the demands from SWEDAC are fulfilled.

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RADON MONITORING REPORT
Issued by an Accredited Laboratory

SWEDAC ACKREDITERING 1489 ISO/IEC 17025

REPORT NUMBER
5588686:1

REPORT DATE
01/21/2020

PRINT DATE
01/21/2020

Test results

Detector	Start date	Stop date	Location	Detector comment	Location type	Avg Radon Conc. pCi/l	Total Radon Exp pCi-days/l
483784-5	10/01/2019	01/07/2020	BHV-1-1		Out-door	0.38 ± 0.11	38 ± 11
180877-3	10/01/2019	01/07/2020	BHV-2-1		Out-door	0.22 ± 0.09	21 ± 9
774956-7	10/01/2019	01/07/2020	BHV-4-1		Out-door	0.46 ± 0.11	45 ± 11
351381-9	10/01/2019	01/07/2020	BHV-5-1		Out-door	0.62 ± 0.14	62 ± 14
938901-6	10/01/2019	01/07/2020	BHV-6-1		Out-door	0.51 ± 0.14	50 ± 14
452727-1	10/01/2019	01/07/2020	BHV-7-1		Out-door	0.43 ± 0.11	42 ± 11
119287-1	10/01/2019	01/07/2020	BHV-8-1		Out-door	0.46 ± 0.11	44 ± 11
566226-7	10/01/2019	01/07/2020	BHV-2A-1		Out-door	0.46 ± 0.11	46 ± 11
585072-2	10/01/2019	01/07/2020	Office-1		In-door	1.7 ± 0.25	164 ± 25
364556-1	10/01/2019	01/07/2020	Black Mesa 1		Out-door	0.30 ± 0.09	30 ± 9

US_RT_HS_001 - V1.10 / 2017-05-04- / JO / LB

Comment to the results

Tryggve Rönnqvist (Electronically signed)

Signature Radonova Laboratories AB Laboratory Measurement Specialist

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RADON MONITORING REPORT
Issued by an Accredited Laboratory

SWEDAC ACCREDITERING 1489 ISO/IEC 17025

107831-AL, 107830-RT, NRSB ARL1904

REPORT NUMBER 5588686: 1

REPORT DATE 01/21/2020

PRINT DATE 01/21/2020

MEASUREMENT PERFORMED FOR
6425 S Hwy 191
Blanding UT 84511

REPORT RECEIVER(S)
Energy Fuels Resouces

Energy Fuels Resouces
Garrin Palmer
6425 S. Highway 191
PO Box 809
Blanding UT 84511
United States

The analysis results are located on page 2 of this document.

Description of the measurement
The measurement was performed with a closed high-sensitivity alpha-track detector.
The detector(s) arrived to Radonova Laboratories AB 01/13/2020. They were measured 01/20/2020 .

Property data and address
6425 S Hwy 191
Blanding UT 84511

Transit Detector 1: 657648
Transit Detector 2:
Transit Detector 3:

Measurement method: closed alpha-track high sensitivity detector
The radon measurement was performed with a closed alpha-track detector following the quality assurance guidance given in EPA 402-R-95-012.
The detector container is manufactured from electrically conducting plastic. Through a small slit (filter), radon gas enters the detector. The track-detecting material (film) inside the detector is hit by alpha particles generated by the radon entering the container and the decay products formed from it. On the film, the alpha particles make small tracks which are enlarged through chemical etching and later counted in a microscope in order to determine the radon exposure.
Transit detectors are used for the return delivery of the high-sensitivity detectors in order to make a more accurate background subtraction.

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Measured radon concentrations
For each detector, the measured value of the radon concentration is given. For each value an uncertainty associated with the measurement to a 95% confidence level also given. For example a measurement result of 4.0 ± 0.5 pCi/l means that the radon concentration is most likely contained in the range 3.5-4.5 pCi/l .
If the start or end date of the measurement has not been provided, the radon concentration cannot be calculated. In such cases, the total exposure in pCi*days/l will be reported.

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- ANSI/AARST Radon Mitigation Standards for Schools and Large Buildings.
- ANSI/AARST Radon Mitigation Standards for Multifamily Buildings.
- EPA Radon Measurements in Schools, EPA 402-R-92-014, July 1993.
- A Citizen´s Guide to Radon
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- Consumer´s Gudie to Radon Reduction

For more information about the interpretation of your test results or about other radon related issues we suggest contacting your state radon office.

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DISCLAIMER – Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

Calculation of Location-Specific Effluent Concentration Limits for Radon Track Etch Monitoring Stations at White Mesa Mill

Calculation Methodology

For the purpose of evaluating alpha track data and compliance with the effluent concentration limit for radon, two referenced limits are listed in the regulations (10 CFR Part 20 Appendix B, Table 2, which are incorporated by reference into R313-15-302(2)(b)(i)). One limit (1x 10^{-10} uCi/ml or 0.1 pCi/l) is applicable in instances where radon daughters are present with the radon, and are in 100% equilibrium with the parent Rn-222. The other listed concentration limit (1 x 10^{-8} uCi/ml or 10 pCi/l) is applicable when radon daughters are not present. Both limits represent the concentration at which a member of the public would receive a 50 mrem dose assuming 100% (8760 hours) occupancy.

At the White Mesa Mill, the assumption of 100% equilibrium of radon progeny with parent Rn-222 is unrealistic given the short half-lives of the nuclides considered and the short travel time to the monitoring locations. Radon emanates from the ground (or mill tailings) without daughters present, and the daughters grow in over time. It is therefore necessary to evaluate radon daughter equilibrium at each air monitoring station utilizing site-specific wind speed and distance information to derive site-specific Effluent Concentration Limits (ECLs) for each station.

Such disequilibrium situations and alternative calculations are anticipated by the regulations and, in particular, R313-15-302(3) provides a means by which the licensee may adjust the effluent concentration values in 10 CFR Part 20 Appendix B, Table 2, which are incorporated by reference into R313-15-302(2)(b)(i), to account for disequilibrium. The regulatory purpose of such an adjustment is to appropriately take into account the actual characteristics of the measured effluents, including radioactive decay equilibrium.

An established (EPA, 1986) outdoor equilibrium formula to determine the appropriate Equilibrium Factor for use in calculating the ECL for disequilibrium conditions was used. The EPA expression of the outdoor Equilibrium Factor (EF) is derived by the following equation:

$$EF = 1.0 - 0.0479\exp^{(-t/4.39)} - 2.1963\exp^{(-t/38.6)} + 1.2442\exp^{(-t/28.4)}$$

[Where: t is the travel time in minutes (distance/wind speed)]

Once the Equilibrium Factor has been determined, the ECL for each air monitoring station is determined by dividing the 0.1 pCi/l limit (for situations when daughters are present) by the Equilibrium Factor (EF).

Results

By utilizing the above formula, the appropriate (equilibrium adjusted) ECLs for the location was calculated. In developing the ECLs, distances and corresponding travel times have been determined by:

- assuming a nominal centroid located approximately at the vanadium dryer stack,

- calculating average wind speeds appropriate for each direction from the centroid to each monitoring station location, and
- using Google Earth to develop the distances.

Meteorological data collected at the Mill's Met Station were utilized to compute the average wind speed for different directions. These data are applicable and sufficient for the purpose of these calculations.

It should be noted when comparing actual measurement values to the derived ECLs that the derived ECL provides ample protection for members of the public. More specifically, if dose calculations had been performed utilizing current ICRP 65 dose conversion conventions, the ECLs established here would represent approximately 25 mrem for continuous exposure at the monitoring stations. Therefore these values can serve as appropriate ALARA goals, since they yield doses well below the 100 mrem standard for individual members of the public.

References

United States Environmental Protection Agency (EPA). (1986). *Final rule for radon-222 emissions from licensed uranium mill tailings.* Washington, D.C.: Office of Radiation Programs, U.S. Environmental Protection Agency.

ATTACHMENT K

CELL 2 RADON FLUX DATA

Cell 2
2019 Radon Flux Measurement Program
Second Half 2019 Sampling Results

White Mesa Mill
6425 South Highway 191
Blanding, Utah 84511

Prepared for: Energy Fuels Resources (USA) Inc.
6425 S. Highway 191
P.O. Box 809
Blanding, Utah 84511

Prepared by: Tellco Environmental
P.O. Box 3987
Grand Junction, Colorado 81502

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Appendix A. Charcoal Canister Analyses Support Documents

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Appendix C. Radon Flux Sample Laboratory Data, Including Blanks

Appendix D. Sample Locations Map (Figure 2)

1. INTRODUCTION

During October 9-10, 2019 Tellco Environmental, LLC (Tellco) of Grand Junction, Colorado, provided support to Energy Fuels Resources (USA) Inc. (Energy Fuels) to conduct radon flux measurements on Cell 2 at its White Mesa Mill site.

Pursuant to Utah Department of Environmental Quality (UDEQ) requirements, Energy Fuels conducts radon flux measurements on a semiannual basis. This report presents the radon flux measurements results for Cell 2 that represent the second half of the year 2019.

Tellco was contracted to provide radon canisters, equipment, and canister-placement personnel as well as lab analysis of samples collected. Energy Fuels personnel provided support for loading and unloading charcoal from the canisters. This report details the procedures employed by Energy Fuels and Tellco to obtain the results presented in Section 9.0 of this report.

2. SITE DESCRIPTION

The White Mesa Mill facility is located in San Juan County in southeastern Utah, six miles south of Blanding, Utah. The mill began operations in 1980 for the purpose of extracting uranium and vanadium from feed stocks.

Cell 2, which has a total area of approximately 270,624 m^2, has been filled and covered. This cell is comprised of one region, a soil cover of varying thickness. There was no standing liquid and were no exposed tailings within Cell 2 during this sampling.

3. REGULATORY REQUIREMENTS FOR CELL 2

Radon emissions from the uranium mill tailings for Cell 2 at this site are regulated by the State of Utah's Division of Waste Management and Radiation Control (DWMRC). In accordance with DWMRC requirements specified in correspondence dated July 23, 2014, Energy Fuels must measure the radon flux on Cell 2 in accordance with 40 CFR 61, Appendix B, Method 115, "Monitoring for Radon-222 Emissions" semiannually. The average annual measured radon flux for Cell 2 shall not exceed a value of 20 picoCuries per meter squared per second (pCi/m^2-s).

4. SAMPLING METHODOLOGY

Radon emissions were measured using Large Area Activated Charcoal Canisters (canisters) in conformance with 40 CFR, Part 61, Appendix B, Method 115, Restrictions to Radon Flux Measurements, (EPA, 2019). These are passive gas adsorption sampling devices used to determine the flux rate of radon-222 gas from a surface. The canisters were constructed using a 10-inch diameter PVC end cap containing a bed of 180 grams of activated, granular charcoal. The prepared charcoal was placed in the canisters on a support grid on top of a ½ inch thick layer of foam and secured with a retaining ring under 1½ inches of foam (see Figure 1, page 9).

One hundred sampling locations were distributed throughout Cell 2 (consisting of one region) as depicted on the Sample Locations Map (see Figure 2, Appendix D). Each charged canister was placed

directly onto the surface (open face down) and exposed to the surface for 24 hours. Radon gas adsorbed onto the charcoal and the subsequent radioactive decay of the entrained radon resulted in radioactive lead-214 and bismuth-214. These radon progeny isotopes emit characteristic gamma photons that can be detected through gamma spectroscopy. The original total activity of the adsorbed radon was calculated from these gamma ray measurements using calibration factors derived from cross-calibration of standard sources containing known total activities of radium-226 with geometry identical to the counted samples and from the principles of radioactive decay.

After approximately 24 hours, the exposed charcoal was transferred to a sealed plastic sample container (to prevent sample loss and/or further exposure during transport), identified and labeled, and transported to the Tellco laboratory in Grand Junction, Colorado for analysis. Tellco personnel maintained custody of the samples from collection through lab analysis.

Upon completion of on-site activities, the field equipment was alpha and beta-gamma scanned by Energy Fuels Radiation Safety personnel for possible contamination resulting from fieldwork activities. All of the field equipment used was subsequently released for unrestricted use.

5. FIELD OPERATIONS

5.1 Equipment Preparation

All charcoal was dried at 110°C before use in the field. Unused charcoal and recycled charcoal were treated the same. 180-gram aliquots of dried charcoal were weighed and placed in sample containers.

Proper balance operation was verified daily by checking a standard weight. The balance readout agreed with the known standard weight to within ± 0.1 percent.

After acceptable balance check, empty containers were individually placed on the balance and the scale was re-zeroed with the container on the balance. Unexposed and dried charcoal was carefully added to the container until the readout registered 180 grams. The lid was immediately placed on the container and sealed with plastic tape. The balance was checked for readout drift between readings.

Sealed containers with unexposed charcoal were placed individually in the shielded counting well, with the bottom of the container centered over the detector, and the background count rate was documented. Three five-minute background counts were conducted on ten percent of the containers, selected at random to represent the "batch". If the background counts were too high to achieve an acceptable lower limit of detection (LLD), the entire charcoal batch was labeled non-conforming and recycled through the heating/drying process.

5.2 Sample Locations, Identification, and Placement

On October 9, 2019, 100 sampling locations were spread out throughout the Cell 2 covered region. The approximate sampling locations that were established for previous samplings of Cell 2 were used for the placement of the canisters, although the actual sample identification numbers (IDs) are different. An individual ID was assigned to each sample point, using a sequential alphanumeric system indicating the charcoal batch and physical location within the region (e.g., F01…F100). This ID was written on an adhesive label and affixed to the top of the canister. The sample ID, date, and

time of placement were recorded on the radon flux measurements data sheets for the set of one hundred measurements.

Prior to placing a canister at each sample location, the retaining ring, screen, and foam pad of each canister were removed to expose the charcoal support grid. A pre-measured charcoal charge was selected from a batch, opened and distributed evenly across the support grid. The canister was then reassembled and placed face down on the surface at each sampling location. Care was exercised not to push the device into the soil surface. The canister rim was "sealed" to the surface using a berm of local borrow material.

Five canisters (blanks) were similarly processed and these canisters were kept inside an airtight plastic bag during the 24-hour testing period.

5.3 Sample Retrieval

On October 10, 2019 at the end of the 24-hour testing period, all canisters were retrieved, disassembled and each charcoal sample was individually poured through a funnel into a container. Identification numbers were transferred to the appropriate container, which was sealed and placed in a box for transport. Retrieval date and time were recorded on the same data sheets as the sample placement information. The blank samples were similarly processed.

All 100 of the charcoal samples from the Cell 2 covered region were successfully retrieved and containerized during the retrieval and unloading process. Upon completion of on-site activities, the field equipment was alpha and beta-gamma scanned by Energy Fuels Radiation Safety personnel and released for unrestricted use.

5.4 Environmental Conditions

A rain gauge was placed at Cell 2 to monitor rainfall during sampling; additionally, Energy Fuels maintains an onsite rain gauge.

In accordance with 40 CFR, Part 61, Appendix B, Method 115:

- Measurements were not initiated within 24 hours of rainfall at the site.
- No rainfall occurred during the 24-hour sampling period after the canisters had been deployed.
- All canister seals remained intact during the 24-hour sampling period and none of the canisters were surrounded by water.

6. SAMPLE ANALYSIS

6.1 Apparatus

Apparatus used for the analysis:

- Single- or multi-channel pulse height analysis system, Ludlum Model 2200 with a Teledyne 3" x 3" sodium iodide, thallium-activated (NaI(Tl)) detector.

- Lead shielded counting well approximately 40 cm deep with 5-cm thick lead walls and a 7-cm thick base and 5 cm thick top.
- National Institute of Standards and Technology (NIST) traceable aqueous solution radium-226 absorbed onto 180 grams of activated charcoal.
- Ohaus Port-O-Gram balance with 0.1-gram sensitivity.

6.2 Sample Inspection and Documentation

Once in the laboratory, the integrity of each charcoal container was verified by visual inspection of the plastic container. Laboratory personnel checked for damaged or unsealed containers and also checked that the data sheet was complete.

All 100 of the sample containers and 5 blank containers inspected at the Tellco analytical laboratory were ultimately verified as valid with no damaged or unsealed containers observed.

6.3 Background and Sample Counting

The gamma ray counting system was checked daily, including background and radium-226 source measurements prior to and after each counting session. Based on calibration statistics, using two sources with known radium-226 content, background and source control limits were established for each Ludlum/Teledyne system with shielded counting well (see Appendix A).

Gamma ray counting of exposed charcoal samples included the following steps:

- The length of count time was determined by the activity of the sample being analyzed, according to a data quality objective of a minimum of 1,000 accrued counts for any given sample.
- The sample container was centered on the NaI gamma detector and the shielded well door was closed.
- The sample was counted over a determined count length and then the mid-sample count time, date, and gross counts were documented on the radon flux measurements data sheet and used in the calculations.
- The above steps were repeated for each exposed charcoal sample.
- Approximately 10 percent of the containers counted were selected for recounting. These containers were promptly recounted within a few days following the original count.

7. QUALITY CONTROL (QC) AND DATA VALIDATION

Charcoal flux measurement QC samples included the following intra-laboratory analytical frequency objectives:

- Blanks, 5 percent, and
- Recounts, 10 percent

All sample data were subjected to validation protocols that included assessments of sensitivity, precision, accuracy, and completeness. As described below, all Method 115-required data quality objectives (EPA, 2019) were attained.

7.1 Sensitivity

A total of five blanks were analyzed by measuring the radon progeny activity in samples subjected to all aspects of the measurement process, excepting exposure to the source region. These blank sample measurements comprised approximately 5 percent of the field measurements. Analysis of the five blank samples measured radon flux rates ranging from less than 0.03 to 0.09 pCi/m^2-s, with an arithmetic average of approximately 0.05 pCi/m^2-s. The lower limit of detection (LLD) for the field blanks was approximately 0.04 pCi/m^2-s.

7.2 Precision

Ten recount measurements, distributed throughout the sample set, were performed by replicating analyses of individual field samples (see Appendix B). These recount measurements comprised approximately 10 percent of the total number of samples analyzed. The precision of recount measurements, expressed as relative percent difference (RPD), for sample result values that were above 1 pCi/m^2-sec ranged from less than 0.1 percent to approximately 8.7 percent, with an average of approximately 4.5 percent. This complies with the precision objective of +/- 10 percent.

7.3 Accuracy

Accuracy of field measurements was assessed daily by counting two laboratory control samples with known Ra-226 content. Accuracy of these lab control sample measurements, expressed as percent bias, ranged from approximately -1.3 percent to +0.9 percent. The arithmetic average bias of the lab control sample measurements was approximately -0.1 percent (see Appendix A). This complies with the accuracy objective of +/- 10 percent bias.

7.4 Completeness

All 100 samples from the Cell 2 cover region were verified as valid, representing 100 percent completeness, which complies with the completeness objective of 85 percent.

8. CALCULATIONS

Radon flux rates were calculated for charcoal collection samples using calibration factors derived from cross-calibration to sources with known total activity with identical geometry as the charcoal containers. A yield efficiency factor was used to calculate the total activity of the sample charcoal containers. Individual field sample result values presented were not reduced by the results of the field blank analyses.

In practice, radon flux rates were calculated by a database computer program. The algorithms utilized by the data base program were as follows:

Equation 8.1:

$$\text{pCi Rn-222/m}^2\text{sec} = \frac{N}{[Ts*A*b*0.5^{(d/91.75)}]}$$

where: N = net sample count rate, cpm under 220-662 keV peak
Ts = sample duration, seconds
b = instrument calibration factor, cpm per pCi; values used:
0.16895, for M-01/D-21 and
0.16975, for M-02/D-20
d = decay time, elapsed hours between sample mid-time and count mid-time
A = area of the canister, m^2

Equation 8.2:

$$\text{Error},2\sigma = 2 \times \frac{\sqrt{\frac{\text{Gross Sample, cpm}}{\text{Sample Count,t,min}} + \frac{\text{Background Sample,cpm}}{\text{Background Count,t,min}}}}{\text{Net,cpm}} \times \text{Sample Concentration}$$

Equation 8.3:

$$\text{LLD} = \frac{2.71 + (4.65)(S_b)}{[Ts*A*b*0.5^{(d/91.75)}]}$$

where: 2.71 = constant
4.65 = confidence interval factor
S_b = standard deviation of the background count rate
Ts = sample duration, seconds
b = instrument calibration factor, cpm per pCi; values used:
0.16895, for M-01/D-21 and
0.16975, for M-02/D-20
d = decay time, elapsed hours between sample mid-time and count mid-time
A = area of the canister, m^2

9. RESULTS

9.1 Mean Radon Flux

Referencing 40 CFR, Part 61, Subpart W, Appendix B, Method 115 - Monitoring for Radon-222 Emissions, Subsection 2.1.7 - Calculations, "the mean radon flux for each region of the pile and for the total pile shall be calculated and reported as follows:

(a) The individual radon flux calculations shall be made as provided in Appendix A EPA 86(1). The mean radon flux for each region of the pile shall be calculated by summing all individual flux measurements for the region and dividing by the total number of flux measurements for the region.

(b) The mean radon flux for the total uranium mill tailings pile shall be calculated as follows:

$$J_s = \frac{J_1A_1 + \ldots J_2A_2 [+] \ldots J_iA_i}{A_t}$$

Where: J_s = Mean flux for the total pile (pCi/m^2-s)
J_i = Mean flux measured in region i (pCi/m^2-s)
A_i = Area of region i (m^2)
A_t = Total area of the pile (m^2)"

40 CFR 61, Subpart W, Appendix B, Method 115, Subsection 2.1.8, Reporting states "The results of individual flux measurements, the approximate locations on the pile, and the mean radon flux for each region and the mean radon flux for the total stack [pile] shall be included in the emission test report. Any condition or unusual event that occurred during the measurements that could significantly affect the results should be reported."

9.2 Site Results

Site Specific Sample Results (reference Appendix C)

(a) The mean radon flux for the Cell 2 region at the site is as follows:

Cell 2 - Cover Region = 2.3 pCi/m^2-s (based on 270,624 m^2 area)

Note: Reference Appendix C of this report for the entire summary of individual measurement results.

(b) Using the data presented above, the calculated mean radon flux for Cell 2 is as follows:

Cell 2 = 2.3 pCi/m^2-s

$$\frac{(2.3)(270{,}624)}{270{,}624} = 2.3$$

As shown above, the arithmetic mean of the radon flux rate measurements representing the second half of the year 2019 for Cell 2 at Energy Fuels' White Mesa milling facility is well below the U.S. Nuclear Regulatory Commission and EPA regulatory standard of 20 pCi/m^2-s. No condition or unusual events were observed during the measurements that could significantly affect the results.

Appendix C presents the summary of individual measurement results, including blank sample analysis. Sample locations are depicted on Figure 2, which is included in Appendix D. The map was produced by Tellco.

References

U. S. Environmental Protection Agency, *Radon Flux Measurements on Gardinier and Royster Phosphogypsum Piles Near Tampa and Mulberry, Florida*, EPA 520/5-85-029, NTIS #PB86-161874, January 1986.

U. S. Environmental Protection Agency, *Title 40, Code of Federal Regulations*, July 2019.

U. S. Nuclear Regulatory Commission, *Radiological Effluent and Environmental Monitoring at Uranium Mills*, Regulatory Guide 4.14, April 1980.

U. S. Nuclear Regulatory Commission, *Title 10, Code of Federal Regulations*, Part 40, Appendix A, January 2019.

Figure 1

Large Area Activated Charcoal Canisters Diagram

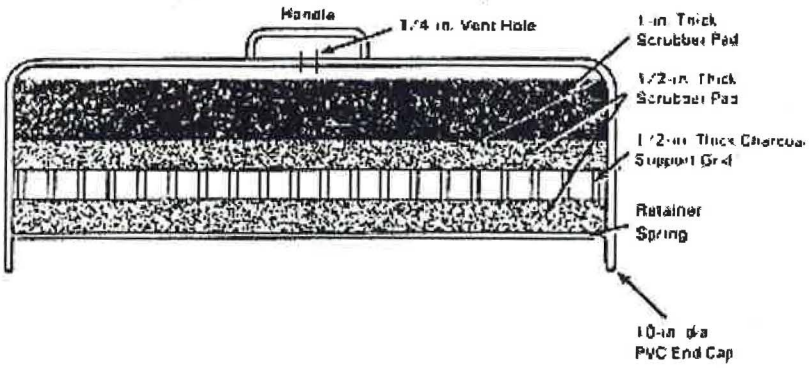


FIGURE 1 Large-Area Radon Collector

Appendix A

Charcoal Canister Analyses Support Documents

ACCURACY APPRAISAL TABLE
CELL 2 SAMPLES

ENERGY FUELS RESOURCES
WHITE MESA MILL, BLANDING, UTAH
2019 RADON FLUX MEASUREMENTS
COVER REGION
SAMPLING DATES: 10/09/19-10/10/19
ANALYSIS DATES: 10/13/19-10/14/19

SYSTEM	COUNT	Bkg Counts (1 min. each)			Source Counts (1 min. each)			AVG NET	YIELD	FOUND	SOURCE	KNOWN	% BIAS
I.D.	DATE	#1	#2	#3	#1	#2	#3	cpm	cpm/pCi	pCi	ID	pCi	
M-01/D-21	10/13/2019	115	128	122	9986	10124	10312	10019	0.1690	59302	GS-04	59300	0.0%
M-01/D-21	10/13/2019	131	127	136	10160	10113	10224	10034	0.1690	59392	GS-04	59300	0.2%
M-01/D-21	10/14/2019	126	153	141	10136	10149	10240	10035	0.1690	59396	GS-04	59300	0.2%
M-01/D-21	10/14/2019	114	120	130	10411	10052	10094	10064	0.1690	59570	GS-04	59300	0.5%
M-01/D-21	10/13/2019	115	128	122	10263	10198	10231	10109	0.1690	59834	GS-05	59300	0.9%
M-01/D-21	10/13/2019	131	127	136	10055	10193	10234	10029	0.1690	59363	GS-05	59300	0.1%
M-01/D-21	10/14/2019	126	153	141	10178	10104	10251	10038	0.1690	59412	GS-05	59300	0.2%
M-01/D-21	10/14/2019	114	120	130	10126	10234	10263	10086	0.1690	59700	GS-05	59300	0.7%
M-02/D-20	10/13/2019	118	116	142	10195	10147	10036	10001	0.1698	58914	GS-04	59300	-0.7%
M-02/D-20	10/13/2019	131	107	110	10136	10197	10203	10063	0.1698	59279	GS-04	59300	0.0%
M-02/D-20	10/14/2019	123	147	105	10054	10009	10147	9945	0.1698	58586	GS-04	59300	-1.2%
M-02/D-20	10/14/2019	106	129	115	10150	10107	10203	10037	0.1698	59126	GS-04	59300	-0.3%
M-02/D-20	10/13/2019	118	116	142	10147	10122	10395	10096	0.1698	59476	GS-05	59300	0.3%
M-02/D-20	10/13/2019	131	107	110	9977	10039	10377	10015	0.1698	58999	GS-05	59300	-0.5%
M-02/D-20	10/14/2019	123	147	105	10013	10268	10136	10014	0.1698	58993	GS-05	59300	-0.5%
M-02/D-20	10/14/2019	106	129	115	9963	10092	10116	9940	0.1698	58559	GS-05	59300	-1.3%
											AVERAGE PERCENT BIAS FOR ALL ANALYTICAL SESSIONS:		-0.1%

MIN -1.3%
MAX 0.9%

CHARCOAL CANISTER ANALYSIS SYSTEM

SITE LOCATION: White Mesa Mill, Blanding, Utah

CLIENT: Energy Fuels Resources (USA) Inc.

Calibration Check Log

System ID: M-02/D-20 Calibration Date: 10/7/19 Due Date: 10/7/20

Scaler S/N: 51563 High Voltage: 963 Window: 4.42 Thrshld: 2.20

Detector S/N: 041532 Source ID/SN: Ra224/GS-05 Source Activity: 59.3 Kpc

Blank Canister Bkgd. Range, cpm: 2 σ = 96 to 150 3 σ = 82 to 163

Gross Source Range, cpm: 2 σ = 9895 to 10384 3 σ = 9772 to 10507

Technician: DLC Copy DLC

All counts times are one minute.

Date	By	Background Counts (1 min. each)				Source Counts (1 min. each)				ok?
		#1	#2	#3	Avg.	#1	#2	#3	Average	Y/N
10/13/19	DLC	118	116	142	125	10147	10122	10395	10221	Y
10/13/19	DLC	131	107	110	116	9977	10039	10377	10131	Y
10/14/19	DLC	123	147	105	125	10013	10268	10136	10139	Y
10/14/19	DLC	106	129	115	117	9963	10092	10116	10057	Y
10/15/19	DLC	119	126	133	126	10147	9982	10069	10066	Y
10/15/19	DLC	109	123	115	116	10028	10181	10014	10074	Y

Y/N: Y = average background and source cpm falls within the control limits.
N = average background and source cpm does not fall within the control limits.

The acceptable ranges were determined from prior background and source check data.

CHARCOAL CANISTER ANALYSIS SYSTEM

SITE LOCATION: White Mesa Mill, Blanding, Utah

CLIENT: Energy Fuels Resources (USA) Inc.

Calibration Check Log

System ID: M-02/D-20 Calibration Date: 10/7/19 Due Date: 10/7/20

Scaler S/N: 51563 High Voltage: 963 Window: 4.42 Thrshld: 2.20

Detector S/N: 041532 Source ID/SN: Ra226/GS-04 Source Activity: 59.3 KpC

Blank Canister Bkgd. Range, cpm: 2 σ = 96 to 150 3 σ = 82 to 163

Gross Source Range, cpm: 2 σ = 9846 to 10444 3 σ = 9696 to 10594

Technician: DL Cope

All counts times are one minute.

Date	By	Background Counts (1 min. each)				Source Counts (1 min. each)				ok?
		#1	#2	#3	Avg.	#1	#2	#3	Average	Y/N
10/13/19	DLC	118	116	142	125	10195	10147	10036	10126	Y
10/13/19	DLC	131	107	110	116	10136	10197	10203	10179	Y
10/14/19	DLC	123	147	105	125	10054	10009	10147	10070	Y
10/14/19	DLC	106	129	115	117	10150	10107	10203	10153	Y
10/15/19	DLC	119	126	133	126	10257	10120	10157	10178	Y
10/15/19	DLC	109	123	115	116	10212	10111	10324	10216	Y

Y/N: Y = average background and source cpm falls within the control limits.
N = average background and source cpm does not fall within the control limits.

The acceptable ranges were determined from prior background and source check data.

CHARCOAL CANISTER ANALYSIS SYSTEM

SITE LOCATION: White Mesa Mill, Blanding, Utah

CLIENT: Energy Fuels Resources (USA) Inc.

Calibration Check Log

System ID: M-01/D-21 Calibration Date: 10/7/19 Due Date: 10/7/20

Scaler S/N: 51572 High Voltage: 1175 Window: 4.42 Thrshld: 2.20

Detector S/N: 041533 Source ID/SN: Ra226/GS-05 Source Activity: 59.3Kpc

Blank Canister Bkgd. Range, cpm: 2 σ = 100 to 157 3 σ = 86 to 171

Gross Source Range, cpm: 2 σ = 9914 to 10457 3 σ = 9781 to 10592

Technician: D L Cope DLC

All counts times are one minute.

Date	By	Background Counts (1 min. each)				Source Counts (1 min. each)				ok?
		#1	#2	#3	Avg.	#1	#2	#3	Average	Y/N
10/13/19	DLC	115	128	122	122	10263	10190	10231	10231	Y
10/13/19	DLC	131	127	136	131	10055	10193	10234	10161	Y
10/14/19	DLC	126	153	141	140	10178	10104	10251	10178	Y
10/14/19	DLC	114	120	130	121	10126	10234	10263	10208	Y
10/15/19	DLC	110	119	117	115	10258	10309	10194	10254	Y
10/15/19	DLC	125	150	136	137	10134	10143	10282	10186	Y

Y/N: Y = average background and source cpm falls within the control limits.
N = average background and source cpm does not fall within the control limits.

The acceptable ranges were determined from prior background and source check data.

CHARCOAL CANISTER ANALYSIS SYSTEM

SITE LOCATION: White Mesa Mill, Blanding, Utah

CLIENT: Energy Fuels Resources (USA) Inc.

Calibration Check Log

System ID: M-01 / D-21 Calibration Date: 10/7/19 Due Date: 10/7/20

Scaler S/N: 51572 High Voltage: 1175 Window: 4.42 Thrshld: 2.20

Detector S/N: 041533 Source ID/SN: Ra226/GS-04 Source Activity: 59.3 Kpc

Blank Canister Bkgd. Range, cpm: 2 σ = 100 to 157 3 σ = 86 to 171

Gross Source Range, cpm: 2 σ = 9928 to 10476 3 σ = 9792 to 10613

Technician: DL Cope DZe

All counts times are one minute.

Date	By	Background Counts (1 min. each)				Source Counts (1 min. each)				ok?
		#1	#2	#3	Avg.	#1	#2	#3	Average	Y/N
10/13/19	DLC	115	128	122	122	9986	10124	10312	10141	Y
10/13/19	DLC	131	127	136	131	10160	10113	10224	10166	Y
10/14/19	DLC	126	153	141	140	10136	10149	10240	10175	Y
10/14/19	DZe	114	120	130	121	10411	10052	10094	10186	Y
10/15/19	DZe	110	119	117	115	10150	10251	10022	10141	Y
10/15/19	DZe	125	150	136	137	10325	10246	10209	10260	Y
						10289	10282	10198	10256	Y

Y/N: Y = average background and source cpm falls within the control limits.
N = average background and source cpm does not fall within the control limits.

The acceptable ranges were determined from prior background and source check data.

BALANCE OPERATION DAILY CHECK

Balance Model: Ohaus Port-o-gram

Standard Weight (g): 200.0 g

Date	Pre-check (g)	Post-check (g)	O.K. ± 0.1 % ?	By
10/13/19	200.0	200.0	Yes	DL Cogan
10/14/19	199.9	200.0	yes	DL Cogan
10/15/19	200.0	200.0	Yes	DL Cogan

Appendix B

Recount Data Analyses

CLIENT: ENERGY FUELS RESOURCES PROJECT: RADON FLUX MEASUREMENTS, WHITE MESA MILL PROJECT NO.: 19004.03

PILE: 2 BATCH: F SURFACE: SOIL AIR TEMP MIN: N/A WEATHER: NO RAIN
AREA: COVER DEPLOYED: 10 9 19 RETRIEVED: 10 10 19 CHARCOAL BKG: 148 cpm Wt. Out: 180.0 g.
FIELD TECHNICIANS: CE, DLC, JD, TE COUNTED BY: DLC DATA ENTRY BY: DLC TARE WEIGHT: 29.2 g.
COUNTING SYSTEM I.D.: M01/D21, M02/D20 CAL. DUE: 10/07/20

RECOUNT CANISTER ANALYSIS:

GRID	SAMPLE	RETRIV		ANALYSIS				MID-TIME		CNT	GROSS	GROSS	RADON	±	LLD	PRECISION
LOCATION	I. D.	HR	MIN	HR	MIN	MO	DA	YR	HR	MIN	(MIN)	COUNTS	WT IN	pCi/m²s	pCi/m²s	pCi/m²s	% RPD
F10	F10	8	18	8	24	10	13	19	14	20	3	1381	214.4	0.8	0.1	0.05	
F10	F10	8	18	8	24	10	14	19	14	25	4	1604	214.4	0.8	0.1	0.06	0.0%
F20	F20	8	39	8	30	10	13	19	14	35	1	4254	211.2	10.6	1.1	0.05	
F20	F20	8	39	8	30	10	14	19	14	24	1	3679	211.2	10.9	1.1	0.06	2.8%
F30	F30	8	18	8	24	10	13	19	15	11	5	1100	209.7	0.2	0.0	0.05	
F30	F30	8	18	8	24	10	14	19	14	31	5	1094	209.7	0.2	0.0	0.06	0.0%
F40	F40	8	39	8	30	10	13	19	15	30	1	1190	210.8	2.7	0.3	0.05	
F40	F40	8	39	8	30	10	14	19	14	30	1	1022	210.8	2.7	0.3	0.06	0.0%
F50	F50	8	18	8	24	10	13	19	15	59	4	1091	214.2	0.3	0.0	0.05	
F50	F50	8	18	8	24	10	14	19	14	37	5	1219	214.2	0.3	0.1	0.06	0.0%
F60	F60	8	39	8	30	10	13	19	16	25	1	1421	211.5	3.3	0.3	0.05	
F60	F60	8	39	8	30	10	14	19	14	35	1	1181	211.5	3.2	0.3	0.06	3.1%
F70	F70	8	8	8	22	10	13	19	16	40	2	1225	213.3	1.2	0.1	0.05	
F70	F70	8	8	8	22	10	14	19	14	42	2	1137	213.3	1.3	0.1	0.06	8.0%
F80	F80	8	48	8	36	10	13	19	17	5	2	1195	211.6	1.2	0.1	0.05	
F80	F80	8	48	8	36	10	14	19	14	42	2	1018	211.6	1.1	0.1	0.06	8.7%
F90	F90	8	44	8	35	10	13	19	17	33	5	1056	211.4	0.2	0.1	0.05	
F90	F90	8	44	8	35	10	14	19	14	46	5	1155	211.4	0.3	0.1	0.06	40.0%
F100	F100	8	49	8	39	10	13	19	17	53	4	1144	213.1	0.4	0.1	0.05	
F100	F100	8	49	8	39	10	14	19	14	46	5	1194	213.1	0.3	0.1	0.06	28.6%
																OVERALL AVERAGE PERCENT PRECISION FOR THE CELL 2 COVER REGION:	9.1%

Appendix C

Radon Flux Sample Laboratory Data (including Blanks)

CLIENT: ENERGY FUELS RESOURCES PROJECT: RADON FLUX MEASUREMENTS, WHITE MESA MILL PROJECT NO.: 19004.03

PILE: 2 BATCH: F SURFACE: SOIL AIR TEMP MIN: N/A WEATHER: NO RAIN
AREA: COVER DEPLOYED: 10 9 19 RETRIEVED: 10 10 19 CHARCOAL BKG: 148 cpm Wt. Out: 180.0 g.
FIELD TECHNICIANS: CE, DLC, JD, TE COUNTED BY: DLC DATA ENTRY BY: DLC TARE WEIGHT: 29.2 g.
COUNTING SYSTEM I.D.: M01/D21, M02/D20 CAL. DUE: 10/07/20

GRID LOCATION	SAMPLE I. D.	DEPLOY HR	DEPLOY MIN	RETRIV HR	RETRIV MIN	ANALYSIS MO	ANALYSIS DA	ANALYSIS YR	MID-TIME HR	MID-TIME MIN	CNT (MIN)	GROSS COUNTS	GROSS WT IN	RADON pCi/m²s	± pCi/m²s	LLD pCi/m²s	COMMENTS:
F01	F01	8	0	8	20	10	13	19	14	5	4	1003	212.0	0.3	0.0	0.05	
F02	F02	8	2	8	20	10	13	19	14	5	3	1133	212.6	0.6	0.1	0.05	
F03	F03	8	4	8	21	10	13	19	14	9	4	1001	212.2	0.3	0.0	0.05	
F04	F04	8	6	8	21	10	13	19	14	9	4	1076	214.0	0.3	0.0	0.05	
F05	F05	8	8	8	22	10	13	19	14	13	3	1414	214.4	0.8	0.1	0.05	
F06	F06	8	10	8	22	10	13	19	14	13	3	1111	210.4	0.6	0.1	0.05	
F07	F07	8	12	8	23	10	13	19	14	17	3	1004	213.1	0.5	0.1	0.05	
F08	F08	8	14	8	23	10	13	19	14	16	1	1370	212.7	3.1	0.3	0.05	
F09	F09	8	16	8	24	10	13	19	14	20	3	1125	213.2	0.6	0.1	0.05	
F10	F10	8	18	8	24	10	13	19	14	20	3	1381	214.4	0.8	0.1	0.05	
F11	F11	8	20	8	25	10	13	19	14	23	2	1267	212.4	1.2	0.1	0.05	
F12	F12	8	22	8	25	10	13	19	14	24	3	1185	212.6	0.6	0.1	0.05	
F13	F13	8	24	8	26	10	13	19	14	27	2	1577	211.4	1.6	0.2	0.05	
F14	F14	8	26	8	26	10	13	19	14	28	3	1199	213.0	0.6	0.1	0.05	
F15	F15	8	28	8	27	10	13	19	14	30	2	1054	211.7	1.0	0.1	0.05	
F16	F16	8	31	8	28	10	13	19	14	31	3	1243	212.5	0.7	0.1	0.05	
F17	F17	8	33	8	29	10	13	19	14	34	1	1812	210.8	4.3	0.4	0.05	
F18	F18	8	35	8	29	10	13	19	14	34	1	4413	210.3	11.0	1.1	0.05	
F19	F19	8	37	8	30	10	13	19	14	35	1	5364	212.2	13.5	1.3	0.05	
F20	F20	8	39	8	30	10	13	19	14	35	1	4254	211.2	10.6	1.1	0.05	
F21	F21	8	0	8	20	10	13	19	14	39	4	1008	211.1	0.3	0.0	0.05	
F22	F22	8	2	8	20	10	13	19	14	38	3	1005	210.7	0.5	0.1	0.05	
F23	F23	8	4	8	21	10	13	19	14	50	7	1144	208.0	0.0	0.0	0.05	
F24	F24	8	6	8	21	10	13	19	14	50	7	1001	210.5	0.0	0.0	0.05	
F25	F25	8	8	8	22	10	13	19	14	58	7	1035	208.5	0.0	0.0	0.05	
F26	F26	8	10	8	22	10	13	19	14	57	5	1143	213.2	0.2	0.0	0.05	
F27	F27	8	12	8	23	10	13	19	15	5	5	1084	210.7	0.2	0.0	0.05	
F28	F28	8	14	8	23	10	13	19	15	5	5	1216	209.8	0.2	0.0	0.05	
F29	F29	8	16	8	24	10	13	19	15	11	6	1132	208.2	0.1	0.0	0.05	
F30	F30	8	18	8	24	10	13	19	15	11	5	1100	209.7	0.2	0.0	0.05	
F31	F31	8	20	8	25	10	13	19	15	19	1	1023	210.1	2.3	0.2	0.05	
F32	F32	8	22	8	25	10	13	19	15	19	2	1116	213.4	1.1	0.1	0.05	

CLIENT: ENERGY FUELS RESOURCES PROJECT: RADON FLUX MEASUREMENTS, WHITE MESA MILL PROJECT NO.: 19004.03

PILE: 2 BATCH: F SURFACE: SOIL AIR TEMP MIN: N/A WEATHER: NO RAIN
AREA: COVER DEPLOYED: 10 9 19 RETRIEVED: 10 10 19 CHARCOAL BKG: 148 cpm Wt. Out: 180.0 g.
FIELD TECHNICIANS: CE, DLC, JD, TE COUNTED BY: DLC DATA ENTRY BY: DLC TARE WEIGHT: 29.2 g.
COUNTING SYSTEM I.D.: M01/D21, M02/D20 CAL. DUE: 10/07/20

GRID LOCATION	SAMPLE I. D.	DEPLOY HR	DEPLOY MIN	RETRIV HR	RETRIV MIN	ANALYSIS MO	ANALYSIS DA	ANALYSIS YR	MID-TIME HR	MID-TIME MIN	CNT (MIN)	GROSS COUNTS	GROSS WT IN	RADON pCi/m²s	± pCi/m²s	LLD pCi/m²s	COMMENTS:
F33	F33	8	24	8	26	10	13	19	15	23	5	1134	210.8	0.2	0.0	0.05	
F34	F34	8	26	8	26	10	13	19	15	22	3	1051	210.9	0.5	0.1	0.05	
F35	F35	8	29	8	28	10	13	19	15	27	1	1161	211.5	2.6	0.3	0.05	
F36	F36	8	31	8	28	10	13	19	15	27	1	5582	208.0	14.0	1.4	0.05	
F37	F37	8	33	8	29	10	13	19	15	28	1	23733	208.7	61.2	6.1	0.05	
F38	F38	8	35	8	29	10	13	19	15	28	1	5617	209.9	14.2	1.4	0.05	
F39	F39	8	37	8	30	10	13	19	15	31	3	1105	208.5	0.6	0.1	0.05	
F40	F40	8	39	8	30	10	13	19	15	30	1	1190	210.8	2.7	0.3	0.05	
F41	F41	8	0	8	20	10	13	19	15	36	5	1147	212.8	0.2	0.0	0.05	
F42	F42	8	2	8	20	10	13	19	15	36	5	1029	212.9	0.1	0.0	0.05	
F43	F43	8	4	8	21	10	13	19	15	42	6	1126	217.1	0.1	0.0	0.05	
F44	F44	8	6	8	21	10	13	19	15	41	3	1104	217.1	0.6	0.1	0.05	
F45	F45	8	8	8	22	10	13	19	15	48	5	1043	217.3	0.2	0.0	0.05	
F46	F46	8	10	8	22	10	13	19	15	48	5	1155	214.2	0.2	0.0	0.05	
F47	F47	8	12	8	23	10	13	19	15	54	5	1006	210.9	0.1	0.0	0.05	
F48	F48	8	14	8	23	10	13	19	15	54	5	1199	213.7	0.2	0.0	0.05	
F49	F49	8	16	8	24	10	13	19	15	59	4	1147	212.7	0.4	0.1	0.05	
F50	F50	8	18	8	24	10	13	19	15	59	4	1091	214.2	0.3	0.1	0.05	
F51	F51	8	20	8	25	10	13	19	16	5	4	1035	213.9	0.3	0.1	0.05	
F52	F52	8	22	8	25	10	13	19	16	5	4	1093	213.4	0.3	0.1	0.05	
F53	F53	8	24	8	26	10	13	19	16	11	6	1001	211.8	0.0	0.0	0.05	
F54	F54	8	27	8	26	10	13	19	16	11	5	1069	212.8	0.2	0.0	0.05	
F55	F55	8	29	8	28	10	13	19	16	17	5	1027	209.6	0.1	0.0	0.05	
F56	F56	8	31	8	28	10	13	19	16	15	1	4710	209.6	11.9	1.2	0.05	
F57	F57	8	33	8	29	10	13	19	16	21	1	1621	211.2	3.8	0.4	0.05	
F58	F58	8	35	8	29	10	13	19	16	22	4	1096	209.3	0.3	0.1	0.05	
F59	F59	8	37	8	30	10	13	19	16	25	1	1605	212.3	3.8	0.4	0.05	
F60	F60	8	39	8	30	10	13	19	16	25	1	1421	211.5	3.3	0.3	0.05	
F61	F61	8	42	8	35	10	13	19	16	28	4	1111	210.8	0.3	0.1	0.05	
F62	F62	8	44	8	35	10	13	19	16	28	3	1127	209.8	0.6	0.1	0.05	
F63	F63	8	46	8	36	10	13	19	16	32	3	1001	209.6	0.5	0.1	0.05	
F64	F64	8	48	8	36	10	13	19	16	32	2	1643	213.5	1.8	0.2	0.05	

CLIENT: ENERGY FUELS RESOURCES PROJECT: RADON FLUX MEASUREMENTS, WHITE MESA MILL PROJECT NO.: 19004.03

PILE: 2 BATCH: F SURFACE: SOIL AIR TEMP MIN: N/A WEATHER: NO RAIN
AREA: COVER DEPLOYED: 10 9 19 RETRIEVED: 10 10 19 CHARCOAL BKG: 148 cpm Wt. Out: 180.0 g.
FIELD TECHNICIANS: CE, DLC, JD, TE COUNTED BY: DLC DATA ENTRY BY: DLC TARE WEIGHT: 29.2 g.
COUNTING SYSTEM I.D.: M01/D21, M02/D20 CAL. DUE: 10/07/20

GRID LOCATION	SAMPLE I. D.	DEPLOY HR	DEPLOY MIN	RETRIV HR	RETRIV MIN	ANALYSIS MO	ANALYSIS DA	ANALYSIS YR	MID-TIME HR	MID-TIME MIN	CNT (MIN)	GROSS COUNTS	GROSS WT IN	RADON pCi/m²s	± pCi/m²s	LLD pCi/m²s	COMMENTS:
F65	F65	8	50	8	37	10	13	19	16	35	1	1564	208.6	3.7	0.4	0.05	
F66	F66	8	52	8	37	10	13	19	16	35	1	2107	213.5	5.1	0.5	0.05	
F67	F67	8	54	8	38	10	13	19	16	36	1	1717	212.2	4.1	0.4	0.05	
F68	F68	8	4	8	56	10	13	19	16	37	2	1110	215.8	1.0	0.1	0.05	Black Pipes
F69	F69	8	6	8	21	10	13	19	16	40	2	1184	211.9	1.2	0.1	0.05	
F70	F70	8	8	8	22	10	13	19	16	40	2	1225	213.3	1.2	0.1	0.05	
F71	F71	8	10	8	22	10	13	19	16	43	2	1202	218.3	1.2	0.1	0.05	
F72	F72	8	12	8	23	10	13	19	16	44	4	1088	217.1	0.3	0.1	0.05	
F73	F73	8	14	8	24	10	13	19	16	49	4	1059	218.4	0.3	0.1	0.05	
F74	F74	8	16	8	25	10	13	19	16	49	3	1361	215.0	0.8	0.1	0.05	
F75	F75	8	18	8	25	10	13	19	16	54	4	1124	218.3	0.3	0.1	0.05	
F76	F76	8	20	8	26	10	13	19	16	54	4	1023	217.9	0.3	0.1	0.05	
F77	F77	8	42	8	35	10	13	19	16	57	1	1706	210.2	4.1	0.4	0.05	
F78	F78	8	44	8	35	10	13	19	17	0	6	1007	209.6	0.1	0.0	0.05	
F79	F79	8	46	8	36	10	13	19	17	6	4	1077	210.4	0.3	0.1	0.05	
F80	F80	8	48	8	36	10	13	19	17	5	2	1195	211.6	1.2	0.1	0.05	
F81	F81	8	50	8	37	10	13	19	17	12	5	1002	209.9	0.1	0.0	0.05	
F82	F82	8	52	8	37	10	13	19	17	12	3	1089	212.3	0.6	0.1	0.05	
F83	F83	8	54	8	38	10	13	19	17	16	2	1004	210.4	0.9	0.1	0.05	
F84	F84	8	56	8	38	10	13	19	17	18	5	1005	210.5	0.1	0.0	0.05	
F85	F85	8	23	8	27	10	13	19	17	24	5	1078	211.1	0.2	0.0	0.05	
F86	F86	8	25	8	28	10	13	19	17	23	2	1244	213.8	1.2	0.1	0.05	
F87	F87	8	27	8	28	10	13	19	17	28	3	1003	214.6	0.5	0.1	0.05	
F88	F88	8	29	8	29	10	13	19	17	28	3	1202	217.6	0.7	0.1	0.05	
F89	F89	8	42	8	35	10	13	19	17	33	5	1271	209.9	0.3	0.0	0.05	
F90	F90	8	44	8	35	10	13	19	17	33	5	1056	211.4	0.2	0.0	0.05	
F91	F91	8	46	8	36	10	13	19	17	37	3	1300	213.5	0.8	0.1	0.05	
F92	F92	8	48	8	36	10	13	19	17	37	3	1285	211.9	0.7	0.1	0.05	
F93	F93	8	50	8	37	10	13	19	17	40	1	1485	214.0	3.5	0.4	0.05	
F94	F94	8	52	8	37	10	13	19	17	42	4	1197	211.2	0.4	0.1	0.05	
F95	F95	8	54	8	38	10	13	19	17	45	1	1334	212.7	3.2	0.3	0.05	
F96	F96	8	56	8	38	10	13	19	17	46	2	1756	212.8	1.9	0.2	0.05	

CLIENT: ENERGY FUELS RESOURCES PROJECT: RADON FLUX MEASUREMENTS, WHITE MESA MILL PROJECT NO.: 19004.03

PILE: 2 BATCH: F SURFACE: SOIL AIR TEMP MIN: N/A WEATHER: NO RAIN
AREA: COVER DEPLOYED: 10 9 19 RETRIEVED: 10 10 19 CHARCOAL BKG: 148 cpm Wt. Out: 180.0 g.
FIELD TECHNICIANS: CE, DLC, JD, TE COUNTED BY: DLC DATA ENTRY BY: DLC TARE WEIGHT: 29.2 g.
COUNTING SYSTEM I.D.: M01/D21, M02/D20 CAL. DUE: 10/07/20

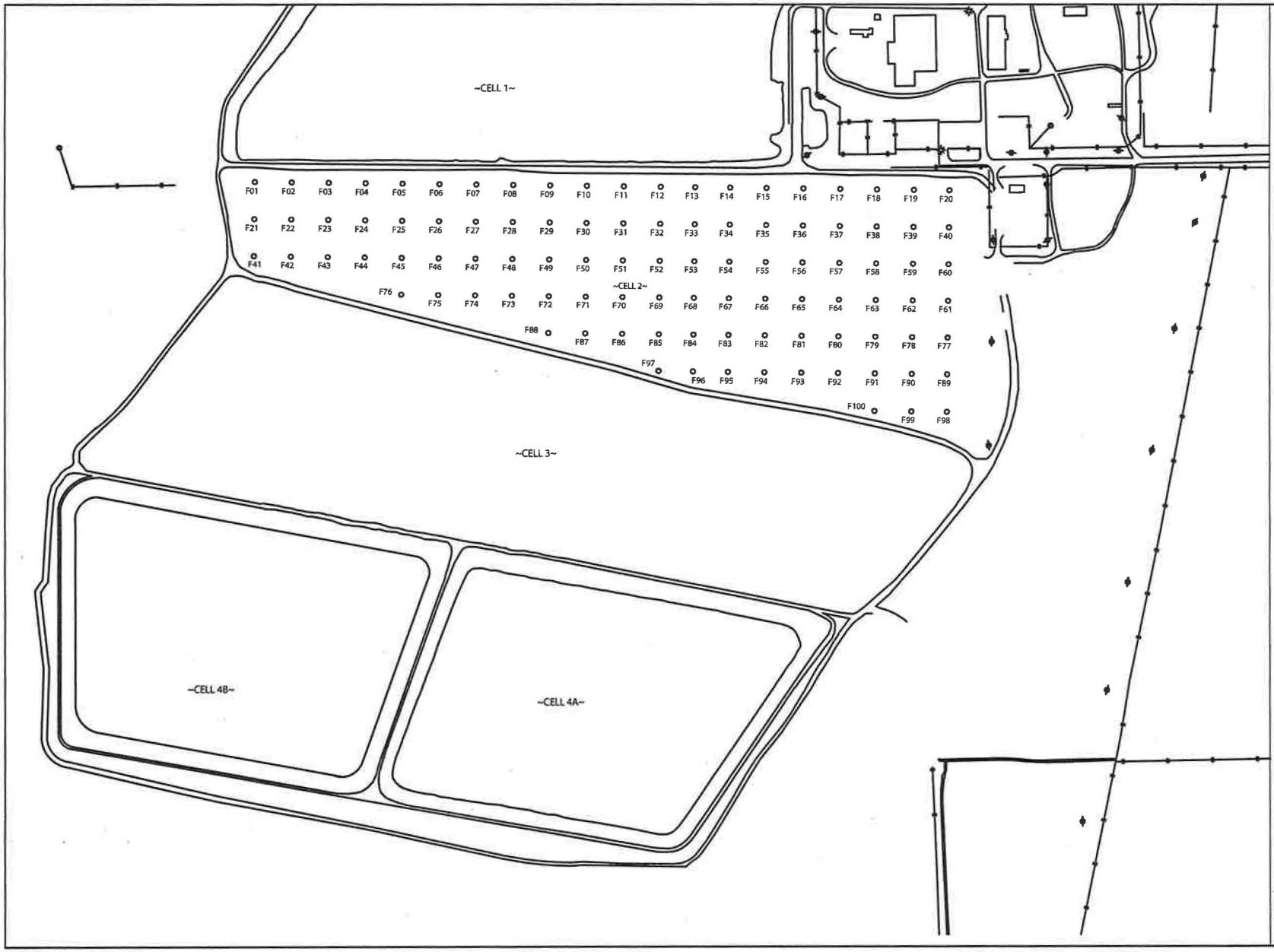
GRID LOCATION	SAMPLE I. D.	DEPLOY HR	DEPLOY MIN	RETRIV HR	RETRIV MIN	ANALYSIS MO	ANALYSIS DA	ANALYSIS YR	MID-TIME HR	MID-TIME MIN	CNT (MIN)	GROSS COUNTS	GROSS WT IN	RADON pCi/m²s	± pCi/m²s	LLD pCi/m²s	COMMENTS:
F97	F97	8	58	8	39	10	13	19	17	48	1	1119	209.7	2.6	0.3	0.05	
F98	F98	8	45	8	37	10	13	19	17	49	2	1029	212.5	1.0	0.1	0.05	
F99	F99	8	47	8	38	10	13	19	17	52	3	1005	213.0	0.5	0.1	0.05	
F100	F100	8	49	8	39	10	13	19	17	53	4	1144	213.1	0.4	0.1	0.05	
	AVERAGE RADON FLUX RATE FOR THE CELL 2 COVER REGION:													2.3	pCi/m²s		
														0.0	MIN		

BLANK CANISTER ANALYSIS: 61.2 MAX

GRID LOCATION	SAMPLE I. D.	RETRIV HR	RETRIV MIN	ANALYSIS MO	ANALYSIS DA	ANALYSIS YR	MID-TIME HR	MID-TIME MIN	CNT (MIN)	GROSS COUNTS	GROSS WT IN	RADON pCi/m²s	± pCi/m²s	LLD pCi/m²s	COMMENTS:
F BLANK 1	F BLANK 1	8	20	10	13	19	10	55	10	1713	208.2	0.06	0.03	0.04	CONTROL
F BLANK 2	F BLANK 2	8	20	10	13	19	10	55	10	1687	209.2	0.05	0.03	0.04	CONTROL
F BLANK 3	F BLANK 3	8	20	10	13	19	11	8	10	1828	209.3	0.09	0.03	0.04	CONTROL
F BLANK 4	F BLANK 4	8	20	10	13	19	11	8	10	1633	209.1	0.04	0.03	0.04	CONTROL
F BLANK 5	F BLANK 5	8	20	10	13	19	11	21	10	1589	208.7	0.03	0.03	0.04	CONTROL
	AVERAGE BLANK CANISTER ANALYSIS FOR THE CELL 2 COVER REGION:											0.05	pCi/m²s		

Appendix D

Sample Locations Map (Figure 2)



WHITE MESA MILL

BLANDING, UTAH

RADON FLUX

CELL 2

SECOND HALF 2019
10/09/19-10/10/19

PREPARED FOR
ENERGY FUELS RESOURCES

LEGEND

F01 ○ - SAMPLE LOCATION ON COVERED AREAS

FIGURE 2

N

SCALE IN FEET
200 100 0 200 400

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ENVIRONMENTAL, LLC

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