APPENDIX A

SEMI-ANNUAL EFFLUENT REPORT
(JANUARY THROUGH JUNE, 2011)
FOR THE WHITE MESA MILL

PREPARED BY
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August 31, 2011

VIA FEDERAL EXPRESS

Mr. Rusty Lundberg
Co-Executive Secretary
Utah Water Quality Board
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144820
Salt Lake City, UT 84114-4820

Dear Mr. Lundberg:

Re: State of Utah Radioactive Material License No. UT1900479
White Mesa Mill, Blanding, Utah
Semi-Annual Effluent Monitoring Report for Period
January 1, 2011 through June 30, 2011

As required by Utah Administrative Code, R 313-24-4 (incorporating by reference 10 CFR 40.65 (subpart1)), and License Condition 11.3 A 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 January 1, 2011 through June 30, 2011.

If you have any questions regarding this report, please contact the undersigned at (303) 389-4132.

Yours very truly,

DENISON MINES (USA) CORP.
Jo Ann Tischler
Director, Compliance and Permitting

cc Ron F. Hochstein
Harold R. Roberts
David C. Frydenlund
David E. Turk
Katherine Weinel
Central Files

White Mesa Uranium Mill
Radioactive Materials License UT900479
Semi-Annual Effluent Monitoring Report
(January through June, 2011)

Prepared For:
Utah Department of Environmental Quality
Division of Radiation Control

Prepared by Denison Mines (USA) Corp.
1050 17th Street, Suite 950
Denver, CO 80265

August 31, 2011

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WHITE MESA URANIUM MILL
SEMI-ANNUAL EFFLUENT REPORT, JULY THROUGH DECEMBER, 2010

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).

Under these programs, 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 and BHV-2 (north), BHV-5 (east), and BHV-4 (south). BHV-1 serves as a surrogate for the nearest resident (BHV-1 is 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), which was monitored for airborne particulate up until November, 1995, at which time background was established, but is no longer monitored for air particulate; and
- A station specifically requested by the White Mesa Ute Community south of the Mill Site (BVH-6);

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

b) Vegetation at three site periphery locations, for uptake of radiation;

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

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

e) Soil radionuclide activity obtained near the air particulate monitoring stations, during the third quarter of each year;

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

g) 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

The environmental airborne particulate monitoring program at the Mill utilizes four air sampling stations. Four high-volume continuous air sampling stations (BHV-1, BHV-2, BHV-4, and BHV-5) are required by the License. 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 also serves as a conservative surrogate for concentrations at the nearest resident, because it is 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 approximately 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 data base had been compiled at BHV-3 to establish a representative airborne radionuclide background for the Mill. It should be noted, however, that while air sampling was discontinued at this location, gamma measurements and soil sampling continue to be collected at BHV-3.

In addition to the environmental air sampling locations described above, 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

2.2 Sampling Protocol and Analytical Results

Airborne particulate monitors are operated continuously at each of the high-volume air sampling stations referenced above. 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, and Pb-210 activity. Fugitive dust standards for the facility are limited by the Mill's State of

[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.

Utah Air Approval Order, which sets a 20% visual opacity standard. The specific locations of the Mill's airborne particulate monitoring stations are depicted on the figure entitled High Volume Air Monitoring Stations included as Attachment A. Station BHV-3, which is no longer sampled for air particulate is located approximately 3.5 miles west of the Mill facility and is not indicated on that Figure.

The analytical results of radionuclide particulate sampling for each monitoring station operated during this January through June, 2011 reporting period are provided in Attachment B under separate sampling station attachment tabs (Tabs 1-6). 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. The actual analytical results (and associated QA/QC information) reported by the laboratory 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 for the second half of 2010 and the underlying data are included as Attachment D.

It should be noted that 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.

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, 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 below, demonstrating elevated Pb-210 activity where no uranium milling operations are located nearby. Pb-210 activity concentrations can be expected to be even higher for locations in the western U.S. where uranium ore bodies are commonly located. 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]

Table 1- NCRP Report 94-Global Pb-210 Concentration Example

State	Pb-210 Concentration	
	uBq/M^3	uCi/ml
California	600	1.6E-14
Illinois	1500	4.1E-14
Ohio	300	8.1E-15
Massachusetts	700	1.9E-14

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 5 below. 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 supports the conclusion that airborne particulate is 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). It should also be noted that the analytical laboratory maintained Lower Limits of Detection consistent with NRC Regulatory Guide 4.14 for this reporting period.

In fact, 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

[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

ever exceeded the ECL at the Mill. With regard to that particular single measurement, while it is important to consider and evaluate an individual measurement exceeding the ECL, for public dose estimation purposes it is the average annual concentration that is of primary significance. 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 nine of the several thousand total gross radionuclide determinations to date exceeded the Mill's self-imposed 25% ALARA goal).

Table 2- Air Monitoring Station Results U-Nat (Comparison to Limits) 1st and 2nd Quarters 2011

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	9.01E-16	1.59E-15	9.00E-14	1.38E+00
BHV2	3.79E-16	3.07E-16	9.00E-14	3.81E-01
BHV4	1.29E-15	3.30E-15	9.00E-14	2.55E+00
BHV5	3.20E-15	6.98E-15	9.00E-14	5.66E+00
BHV6	2.70E-15	3.01E-15	9.00E-14	3.17E+00

Table 3- Air Monitoring Station Results Th-230 (Comparison to Limits) 1st and 2nd Quarters 2011

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	1.90E-16	5.31E-16	2.00E-14	1.80E+00
BHV2	4.01E-17	8.54E-17	2.00E-14	3.14E-01
BHV4	1.40E-16	5.44E-16	2.00E-14	1.71E+00
BHV5	8.89E-16	2.03E-15	2.00E-14	7.30E+00
BHV6	4.62E-16	7.07E-16	2.00E-14	2.92E+00

Table 4- Air Monitoring Station Results Ra-226 (Comparison to Limits) 1st and 2nd Quarters 2011

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	3.64E-16	4.99E-16	9.00E-13	4.79E-02
BHV2	9.11E-17	9.21E-17	9.00E-13	1.02E-02
BHV4	1.58E-16	4.18E-16	9.00E-13	3.20E-02
BHV5	1.10E-15	2.52E-15	9.00E-13	2.01E-01
BHV6	6.51E-16	5.75E-16	9.00E-13	6.81E-02

Table 5- Air Monitoring Station Results Pb-210 (Comparison to Limits) 1st and 2nd Quarters 2011

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	1.09E-14	8.38E-15	6.00E-13	1.61E+00
BHV2	1.06E-14	7.21E-15	6.00E-13	1.48E+00
BHV4	1.11E-14	8.26E-15	6.00E-13	1.61E+00
BHV5	1.48E-14	1.08E-14	6.00E-13	2.13E+00
BHV6	1.29E-14	7.97E-15	6.00E-13	1.74E+00

2.5 Radon-222

Due to the unavailability of monitoring equipment to detect the new 10 CFR Part 20 standard, and with the approval of NRC, Radon 222 monitoring at BHV stations was discontinued in 1995. Instead, Denison demonstrates compliance with these limits and the requirements of R313-15-301 by calculation, authorized by the NRC and as contemplated by R313-15-302(2)(a). A copy of the Technical Evaluation Report evidencing such approval was enclosed with correspondence to the Division on July 28, 2008.

This calculation is performed by use of the MILDOS code for estimating environmental radiation doses for uranium recovery operations (Strenge and Bender 1981) and more recently in 2003 by use of the updated MILDOS AREA code (Argonne 1998). The analysis under both the MILDOS and MILDOS AREA codes assumes the Mill to be processing high grade Arizona Strip ores at full capacity, and calculates the

concentrations of radioactive dust and radon at individual receptor locations around the Mill.

The MILDOS and MILDOS AREA codes calculate the combined Total Effective Dose Equivalent ("TEDE") from all relevant pathways, including both air particulate and radon, at a number of locations including the nearest residence (the individual likely to receive the highest dose from the licensed operation), approximately 1.6 miles north of the Mill. These calculations reveal projected doses to the individual likely to receive the highest dose from the licensed operations to be well below the 100 mrem regulatory limit in R313-15-301(1)(a) for all pathways, including air particulate and radon, and well below the ALARA goal of 10 mrem/yr for air emissions excluding radon as set out in R313-15-101(4). MILDOS AREA modeling was recently conducted in support of the Mill's 2007 License Renewal Application, utilizing the MILDOS-AREA code (Version 2.20β), to estimate the dose commitments at various receptor locations for processing of Colorado Plateau ore (0.25% U_3O_8 and 1.5% V_2O_5) and Arizona Strip ore (0.637% U_3O_8). The process rate was assumed to be at full capacity of 730,000 tons per year (an average of 2,000 tons per day) with an average uranium recovery yield of 94%. That modeling showed a TEDE of 2 mrem per year at the nearest resident (3 mrem per year at the nearest potential residence, being the location of BHV-1 at the northern property boundary of the Mill site), which included the dose from all radionuclide sources, including radon. The modeled dose from radon itself was therefore a fraction of TEDE and well within the regulatory limits.

3.0 EXTERNAL RADIATION (DIRECT GAMMA)

Gamma exposure rate estimates were measured for the 1st and 2nd quarters of 2011 utilizing passive integrating devices, optically stimulated luminescence dosimeters ("OSLs"). 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). 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 6 below. In addition, measurement data obtained at these locations are graphically presented at Attachment E to this report.

Table 6- Environmental Optically Stimulated Luminescence Dosimeter Measurements (Gamma)

Monitoring Station	1st Qtr Result (mrem)	2nd Qtr Result (mrem)	1st Qtr Result Less Background (mrem)	2nd Qtr Result Less Background (mrem)	Cumulative Semi-Annual Estimate* (mrem)
BHV1	41.7	26	7.7	3.6	11.3
BHV2	34.3	24.2	0.3	1.8	2.1
BHV3	34	22.4	0	0	0
BHV4	38.2	21.5	4.2	-0.9	4.2
BHV5	42.2	25.6	8.2	3.2	11.4
BHV6	32.7	24.8	-1.3	2.4	2.4

*Negative values treated as zero for cumulative dose

The results for this period indicate that above background measurements for stations BVH-1, BVH-2, BVH-4, BVH-5 and BHV-6 are within regulatory limits. BHV-1 is at the location of the nearest potential residence. The nearest actual residence is approximately 0.4 miles north of BHV-1. The annual individual member of the public limit is 100 mrem/yr for combined internal and external exposure.

4.0 VEGETATION SAMPLES

Vegetation samples are collected at three locations around the Mill property. The sampling locations are: 1) northeast, 2) northwest and 3) southwest of the Mill facility. The U.S. Nuclear Regulatory Commission ("NRC") Regulatory Guide 4.14 requires that three samples be collected during the grazing season, without specifying exact months or times during the season. During the 2011 grazing season, two sets of samples have been collected to date, on June 23, 2011 and in July 2011. A third set of samples is planned for the fall season. At the conclusion of the third quarter of 2011, three sets will have been collected consistent with Regulatory Guide 4.14. The data from the June 2011 sampling is included in the current January to June 2011 Semi-Annual Effluent Report ("SAER"). Data from the July and fall sampling will be included in the July to December 2011 SAER.

Section 4.2 of the Mill's Environmental Protection Manual states that vegetation samples are to be collected during the early spring, late spring and fall (i.e., the growing seasons). During the January to June 2011 period, the early spring samples were inadvertently omitted. The late spring sample was collected just past the end of spring (on June 23, 2011). An additional summer sample was collected in July 2011 in place of the omitted early spring sample. As a result, as discussed above, three samples will have been collected by the end of the 2011 grazing season meeting the requirements of NRC Regulatory Guide 4.14.

Graphical log-scale presentation of the vegetation sampling results for this reporting period, together with the analytical results reported by the Mill's contract laboratory (including QA/QC information) are included at Attachment F of this report. The 2nd quarter data results are within the variation of previous sampling episodes.

5.0 STACK SAMPLING

Under Section 5.0 of Tab 1.4 of the Mill's *Environmental Protection Manual,* Revision: DUSA-1, 2/07 (the "*Environmental Protection Manual*") gas stack samples are collected at the Mill in accordance with the calendar year schedule shown below:

Table 7 – Stack Sampling Requirements

Frequency	Feed Stack (Grizzly Baghouse)	Stack for Yellowcake Dryer	Packaging (Yellowcake Baghouse)
Quarterly	None	If operating, U-nat	If operating, U-nat
Semi-annually	If operating, U-nat, Th-230	If operating, U-nat, Th-230, Ra-226, Pb-210	If operating, U-nat, Th-230, Ra-226, Pb-210

The yellowcake dryer and yellowcake baghouse operated during the 1st quarter of 2011. The yellowcake dryer, yellowcake baghouse, and grizzly operated during the 2nd quarter of 2011.

The analytical results of stack sampling conducted for the 1st and 2nd Quarter of 2011, as well as for the 3rd and 4th Quarters of 2010, are provided in Table 8 below, indicating the uCi/cc concentration in the stack emissions and the stack's radionuclide release rate (uCi/sec) for U-Nat, Th-230, Ra-226 and Pb-210 at each of the stacks sampled. The actual analytical results reported by the laboratory for the 1st and 2nd quarters of 2011 are provided in Attachment G to this report.

It is also important to note that stack effluent concentrations are not comparable to environmental air sampling station ECL's 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.

Table 8- Stack Effluent Concentrations and Release Rates

	U-Nat u/Ci/cc	U-Nat. uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec
3rd Qtr, 2010								
North YC Dryer, Run 1	6.97E-09	4.21E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
North YC Dryer, Run 2	9.02E-09	5.32E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Yellowcake Baghouse	1.37E-09	4.57E-05	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
4th Qtr, 2010								
North YC Dryer, Run 1	1.44E-08	7.33E-03	2.10E-11	1.07E-05	3.32E-12	1.69E-06	8.89E-14	4.53E-08
North YC Dryer, Run 2	1.25E-08	6.51E-03	7.97E-12	4.14E-06	2.73E-12	1.42E-06	2.18E-13	1.13E-07
Yellowcake Baghouse	1.05E-09	9.19E-04	5.50E-12	4.80E-06	2.87E-13	2.51E-07	4.23E-14	3.69E-08
1st Qtr, 2011								
North YC Dryer, Run 1	5.02E-09	3.17E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
North YC Dryer, Run 2	3.67E-09	1.93E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Yellowcake Baghouse	2.90E-09	2.92E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
2nd Qtr, 2011								
North YC Dryer, Run 1	1.76E-08	9.21E-03	1.76E-12	9.25E-07	4.20E-14	2.20E-08	7.52E-12	3.94E-06
North YC Dryer, Run 2	1.54E-08	7.56E-03	2.12E-12	1.04E-06	4.79E-14	2.35E-08	7.94E-12	3.90E-06
Yellowcake Baghouse	8.58E-09	8.22E-03	1.97E-11	1.89E-05	1.96E-13	1.88E-07	8.32E-13	7.97E-07
Grizzly Baghouse	9.71E-12	5.96E-06	1.09E-13	6.67E-08	Not Required	Not Required	Not Required	Not Required

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 in the event that surface water is not available for sampling. Westwater Canyon surface water was not sampled in the first or second quarter 2011 because no water was present during this reporting period. Attempts to collect a surface water sample from Westwater Canyon will continue through the next reporting period. If no surface water is available, a sediment sample will be collected as required. The Mill's *Environmental Protection Manual*, requires that Cottonwood Creek be sampled for total dissolved solids (TDS) and total suspended solids (TSS) quarterly and dissolved and suspended radionuclides including Gross Alpha, Unat, Ra-226, Th-230 semi-annually. In accordance with these requirements, Cottonwood Creek was sampled for TDS and TSS during both the 1st and 2nd quarter and for the dissolved and suspended radionuclides noted above during the 2nd quarter.

Cottonwood Creek is an intermittent ephemeral drainage located southwest and down-gradient of the Mill complex. Westwater Canyon is a drainage located west of the Mill facility, which is rarely flowing. The field data sheets for the surface water sampling attempts, along with graphs showing historic results are included as Attachment H.

7.0 SOIL SAMPLING

Under Tab 4.1 of the Mill's *Environmental Protection Manual*, surface soils are required to be sampled at the Mill's air monitoring stations (BHV-1, BHV-2, BHV-3, BHV-4, BHV-5 and BHV-6) once per year during August or as soon as possible thereafter, but no later than September 30 of each year. In accordance with the Mill's *Environmental Protection Manual*, surface soils will be collected during the third quarter 2011 and will be discussed in the July through December 2011 report.

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 period of January through June, 2011. This information is retained at the Mill site for agency review.

9.0 SIGNATURE

This Report was prepared by Denison Mines (USA) Corp. on August 31, 2011.

Denison Mines (USA) Corp.

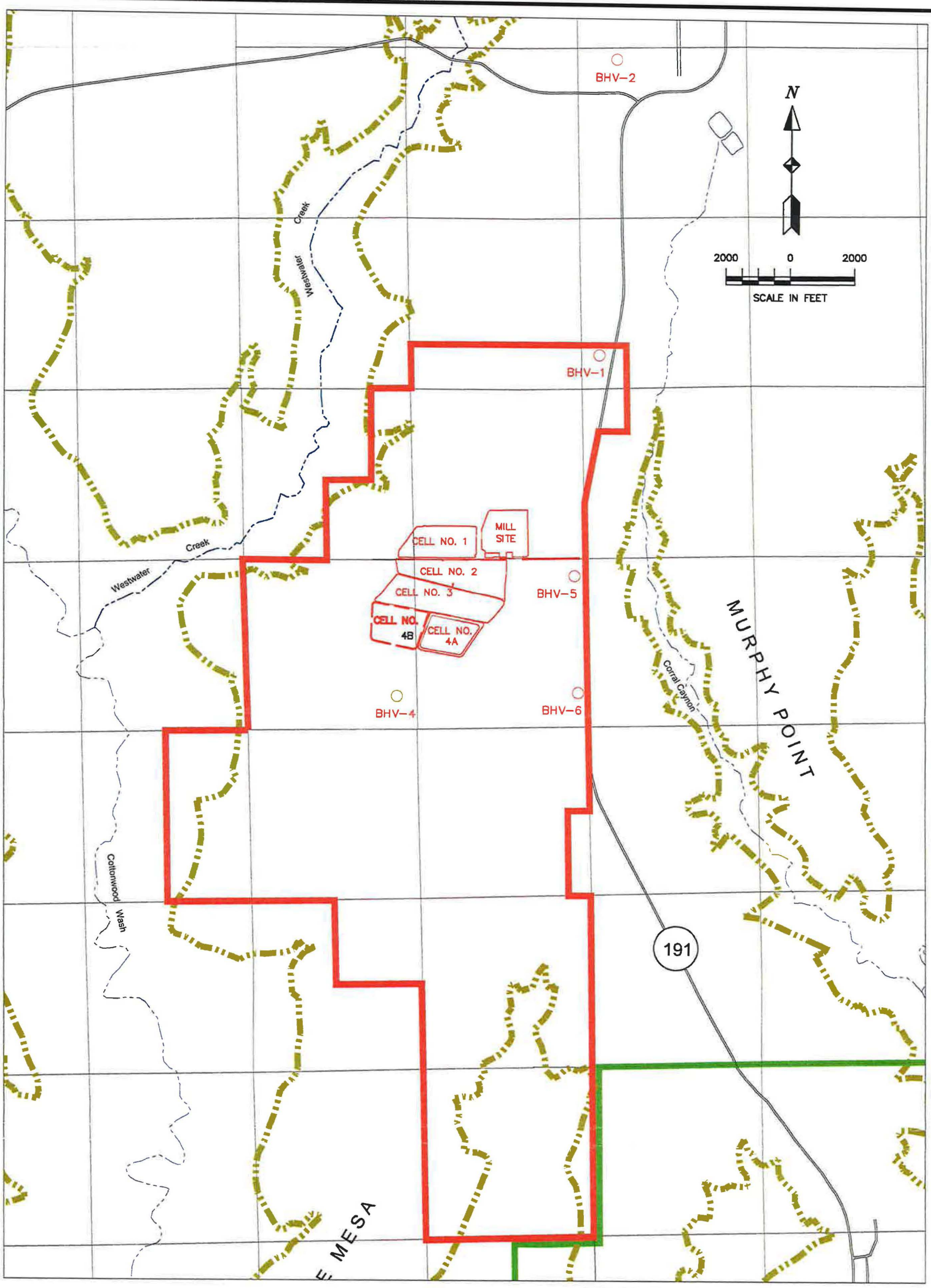
By:

David C. Frydenlund
Vice President, Regulatory Affairs and Counsel

ATTACHMENT A

HIGH VOLUME AIR MONITORING STATIONS

W:\USA\Utah\Mill\dwgs\Reclamation Plans\RecPlan 3.2-final\Figure 2.3-1 Air Monitoring.dwg Figure 2.3-1 14/01/2011 bmunkhbaatar



Property Boundary
Reservation Boundary
Canyon Rim
Air Monitor Stations

Denison Mines (USA) Corp.			
Project	WHITE MESA MILL		
REVISIONS	County: SAN JUAN	State: UT	
Date / By	Location:		
11/09 ds	Figure 2.3-1		
1/13/11 BM	High Volume		
1/27/11 BM	Air Monitoring Stations		
	Scale: as shown	Date: JAN 2011	figure 2.3-1_air monitorin .dwg
	Author: HRR	Drafted By: B. Munkhbaatar	

ATTACHMENT B

BHV AIR SAMPLING GRAPHS AND DATA TABLES

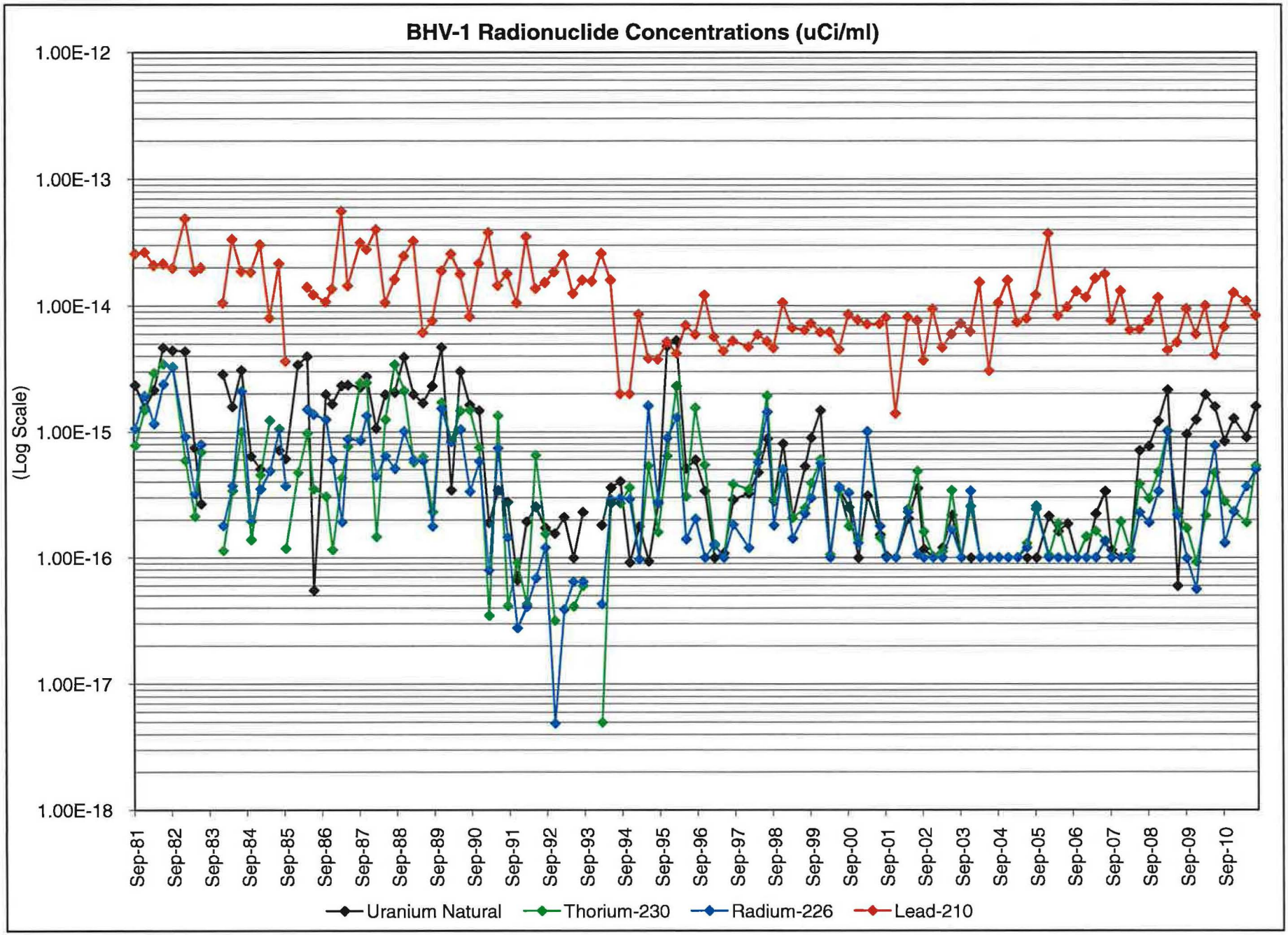
TAB 1

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-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	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	
	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	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	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	
	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	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	
	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
9/30/2008	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
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
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
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
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
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
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
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
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
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
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
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


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
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
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Sep-97
Sep-98
Sep-99
Sep-00
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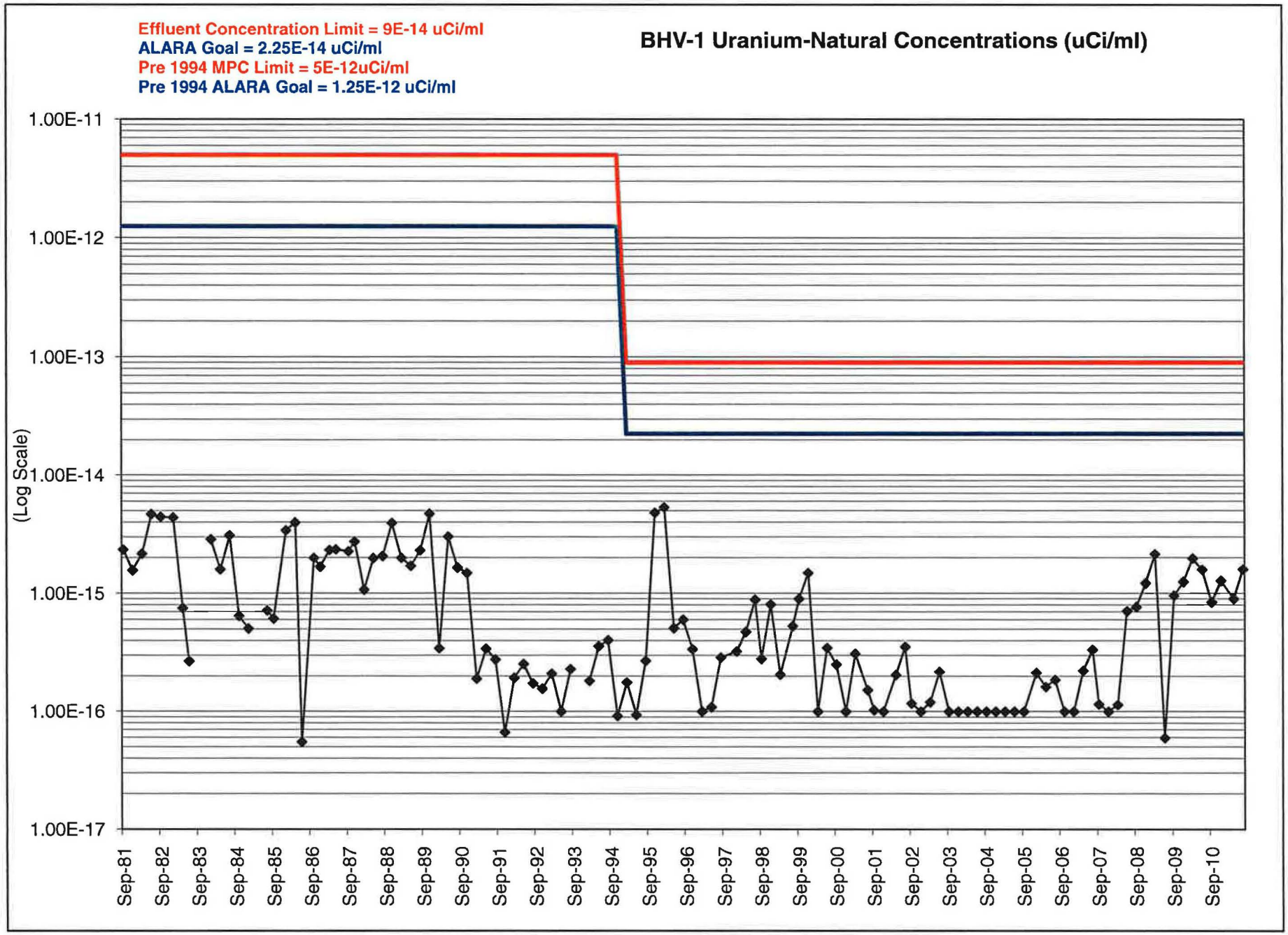
Sep-10
Uranium Natural
Thorium-230
Radium-226
Lead-210


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-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
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Sep-96
Sep-97
Sep-98
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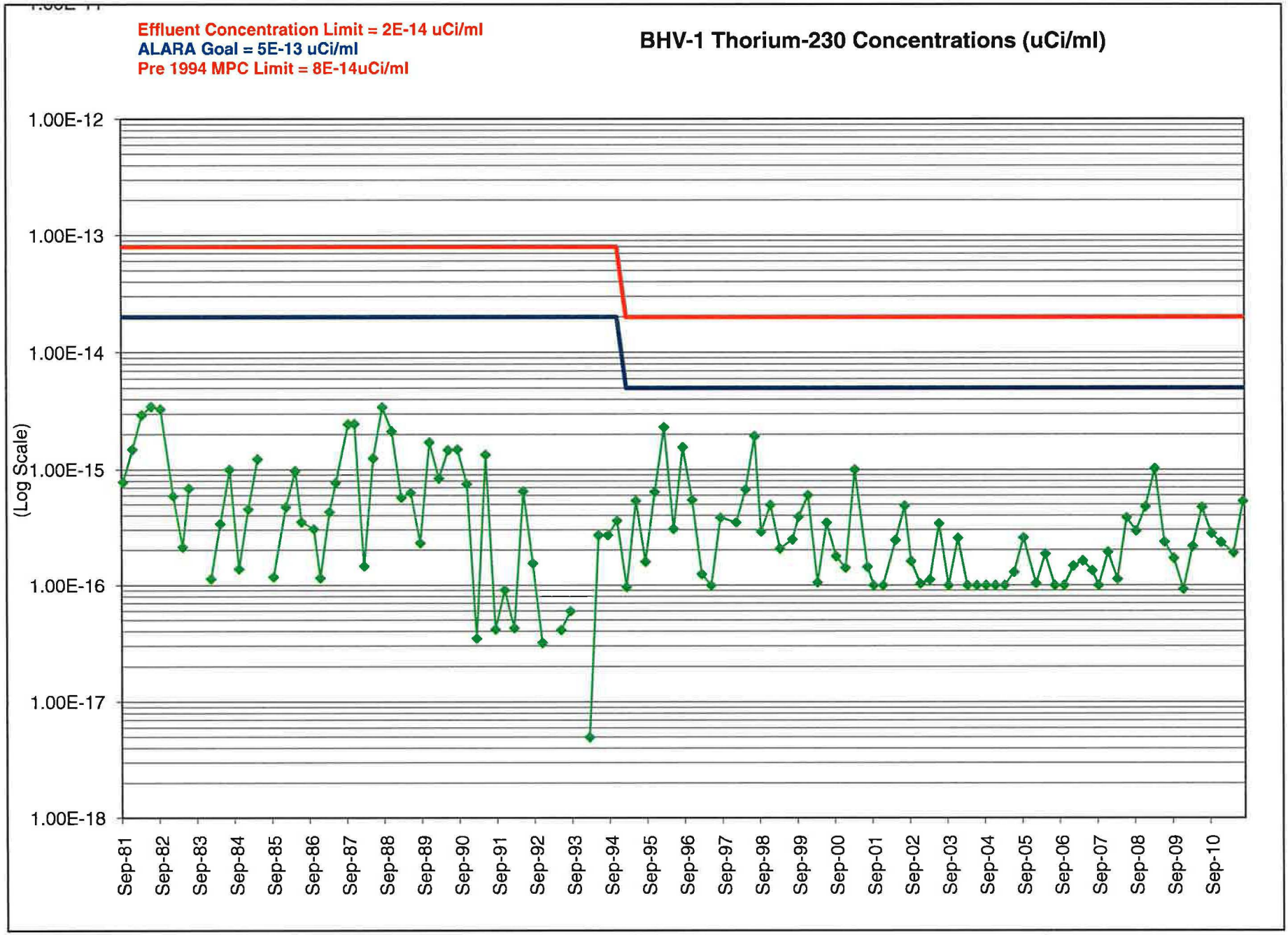
Sep-09
Sep-10


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 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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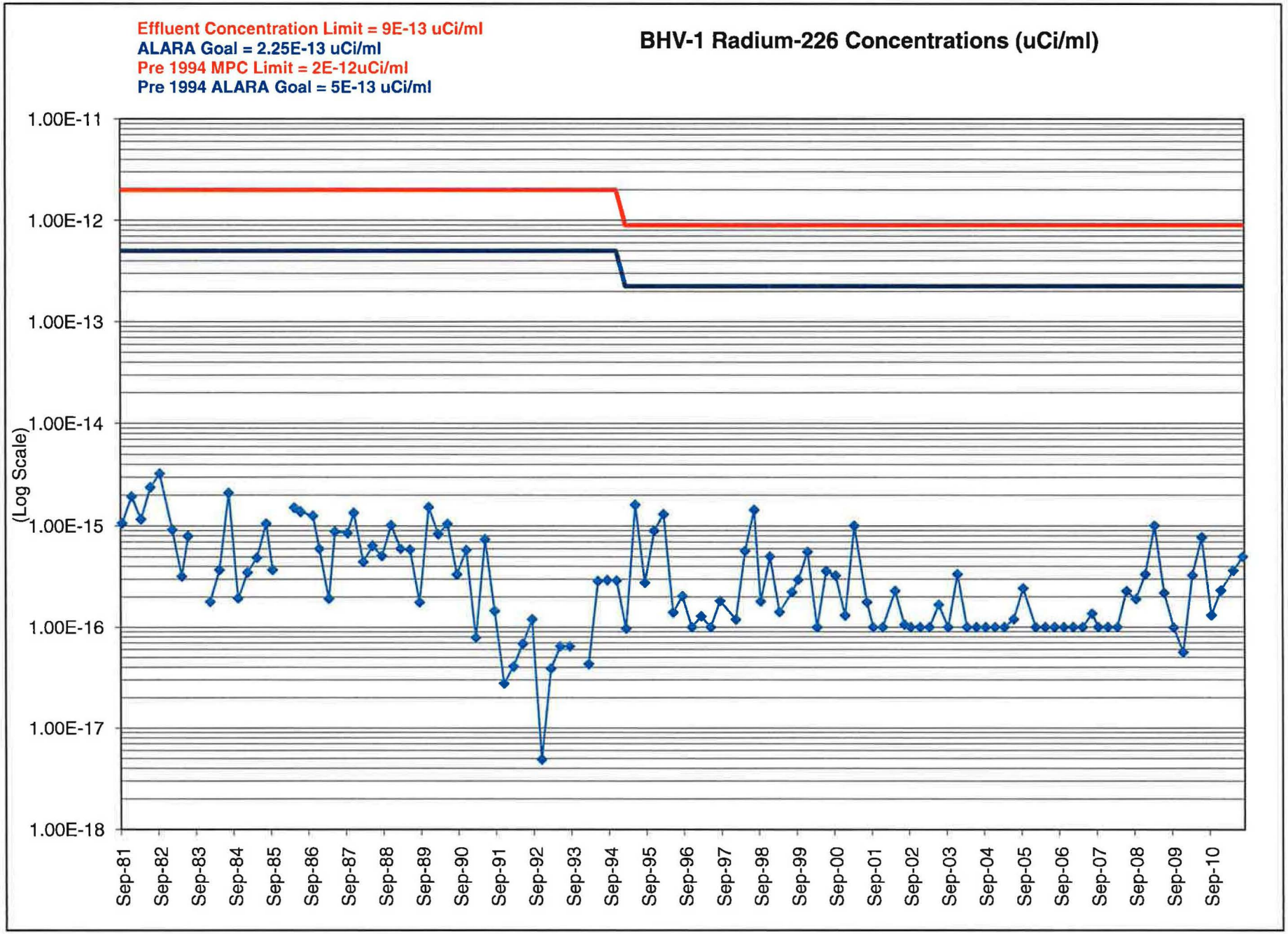
Sep-09
Sep-10


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
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Sep-97
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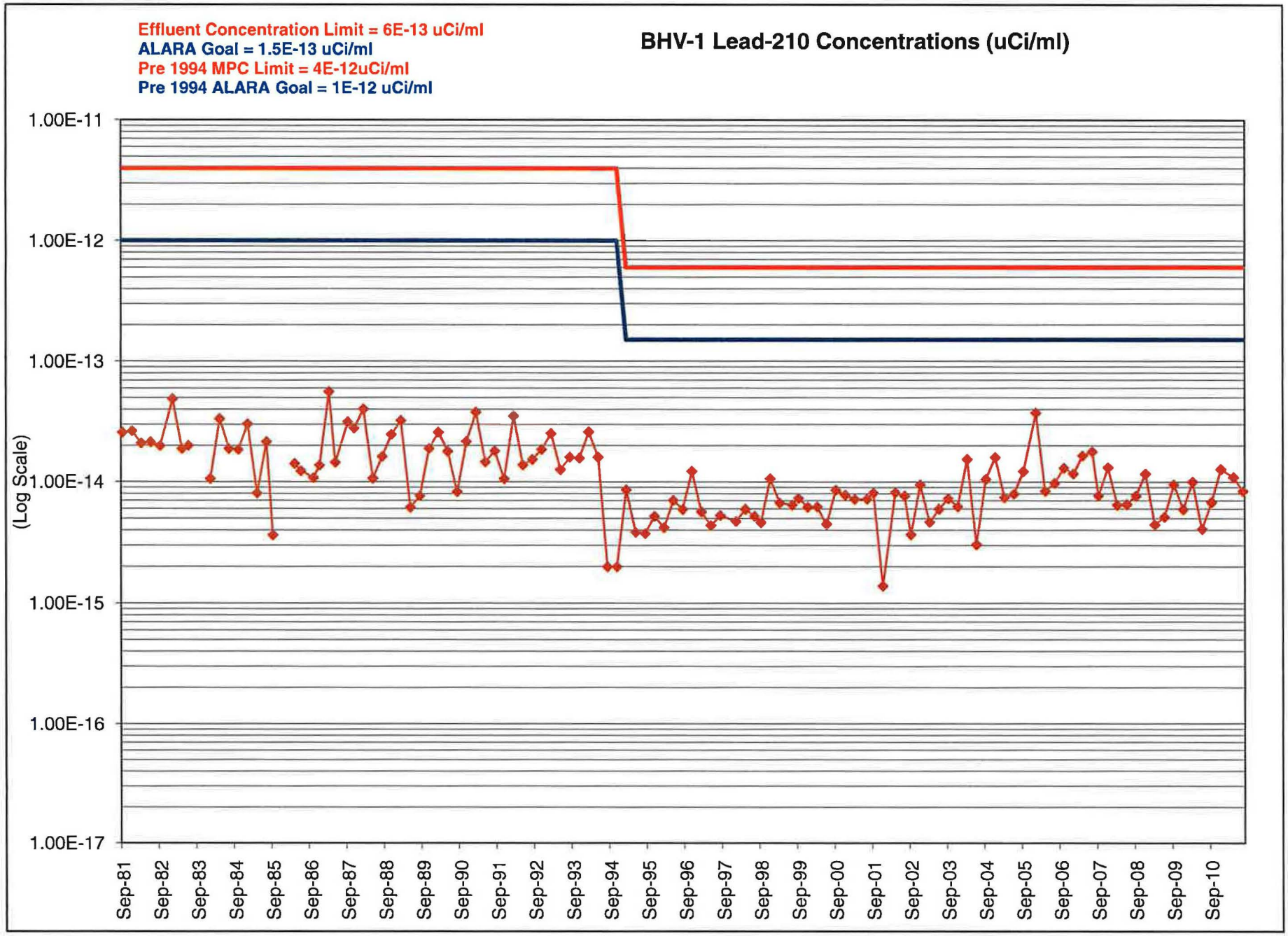
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-1 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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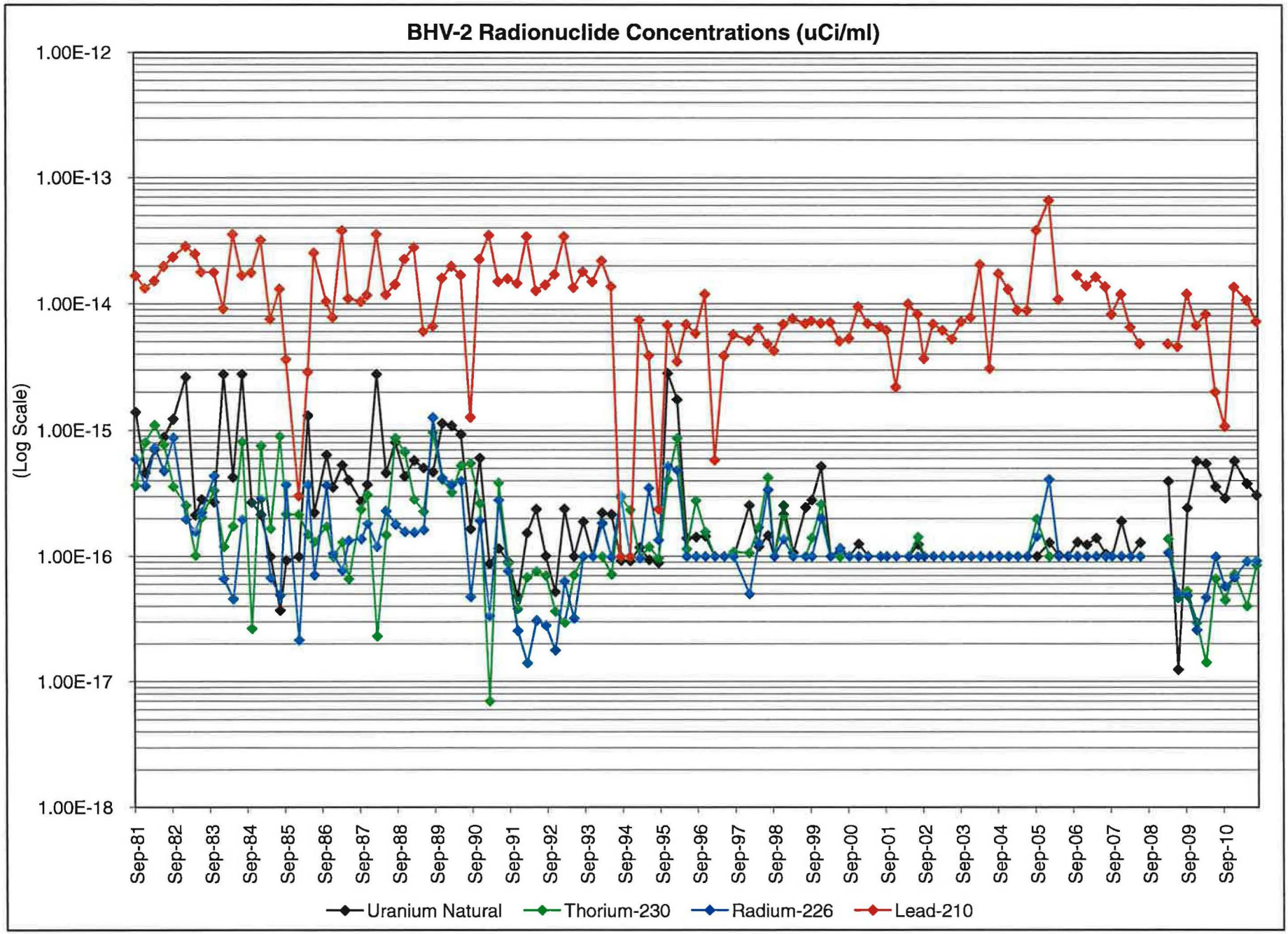
TAB 2

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-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	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	
	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	1.39E-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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	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	
	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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		6.00E-13	1.50E-13
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	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	
	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
9/30/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
12/31/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
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
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
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
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
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
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
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
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
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
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


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
Sep-94
Sep-95
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Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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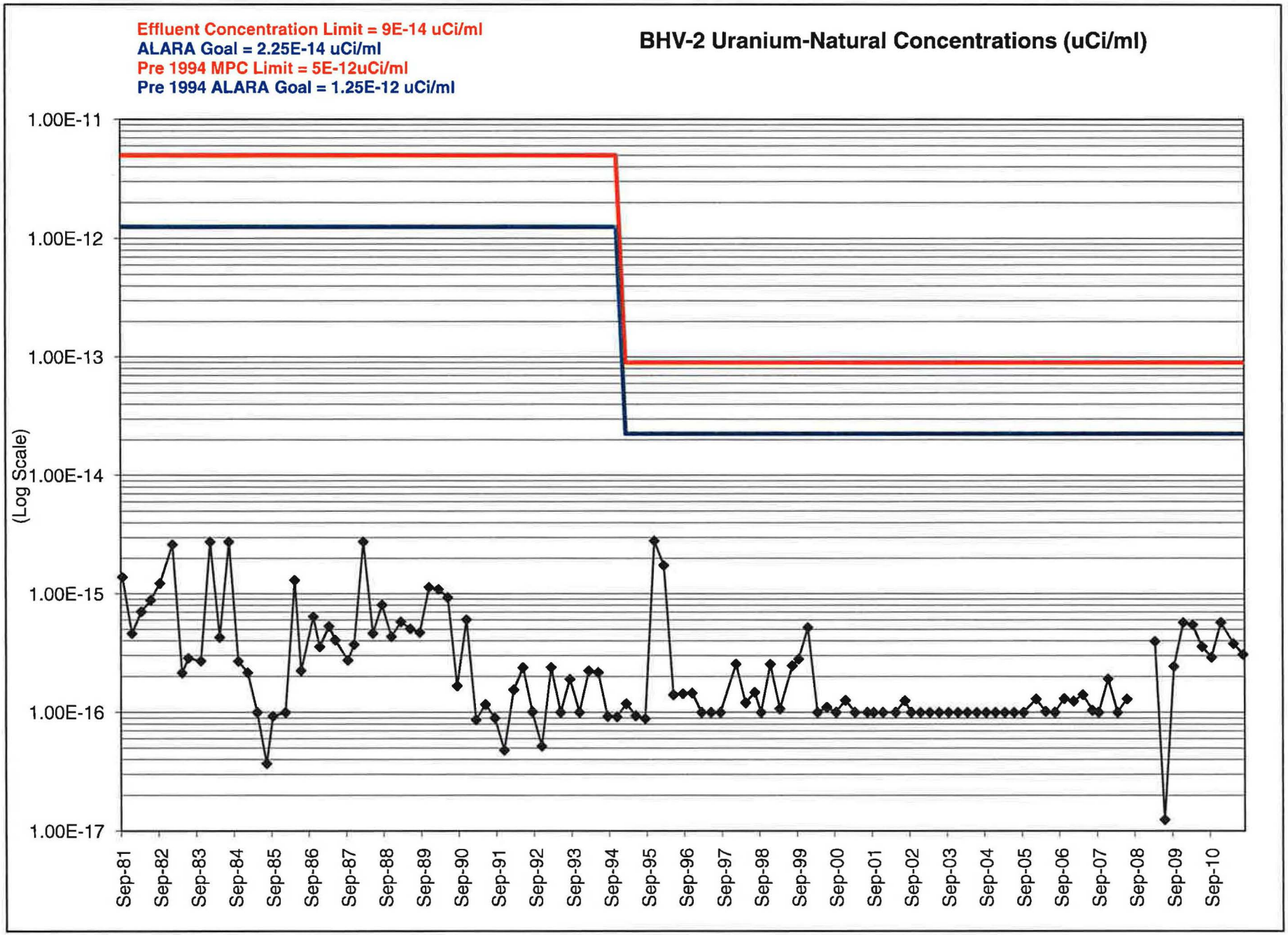
Sep-09
Sep-10
Uranium Natural
Thorium-230
Radium-226
Lead-210


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-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
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Sep-92
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Sep-97
Sep-98
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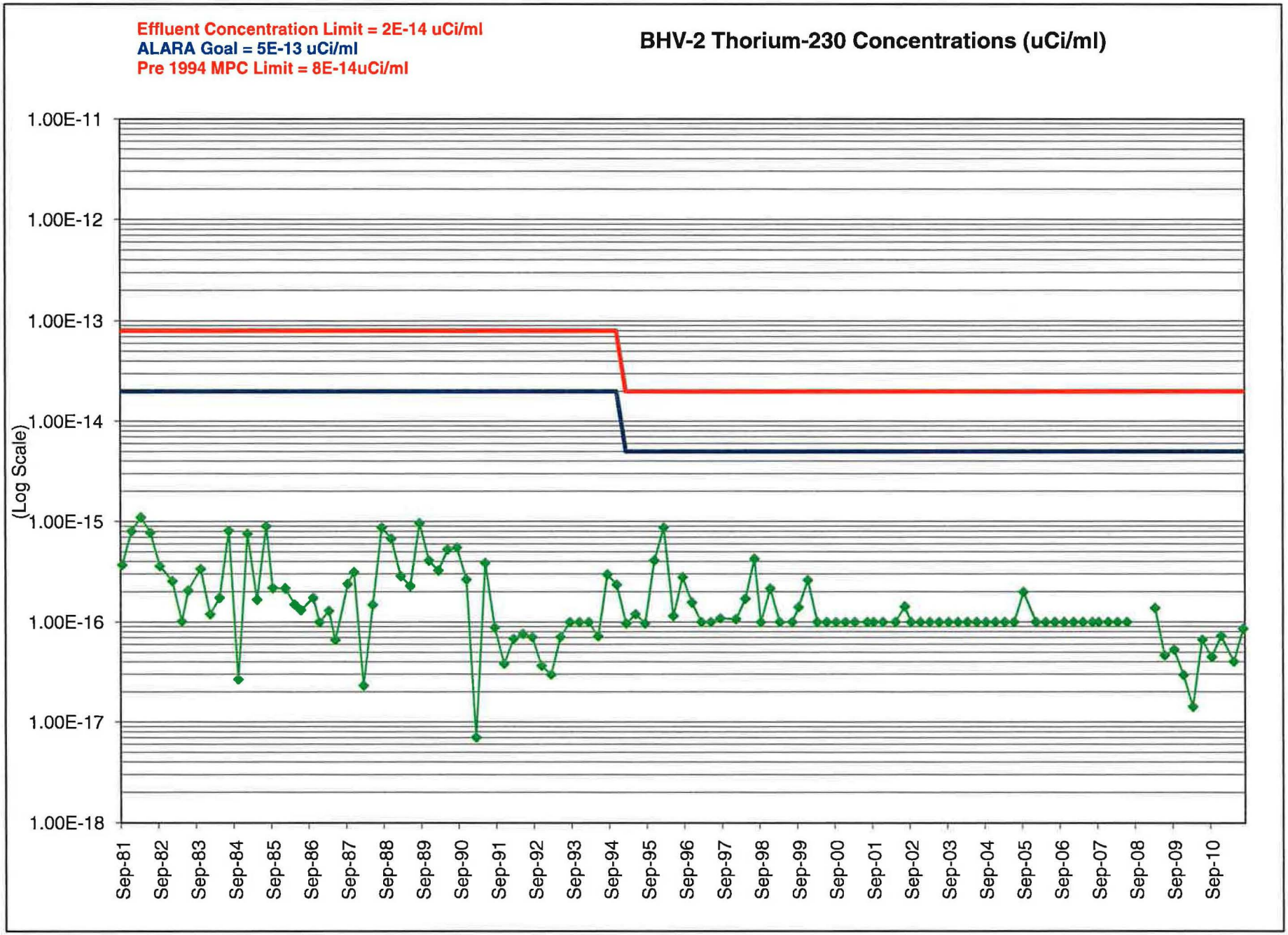
Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-2 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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Sep-89
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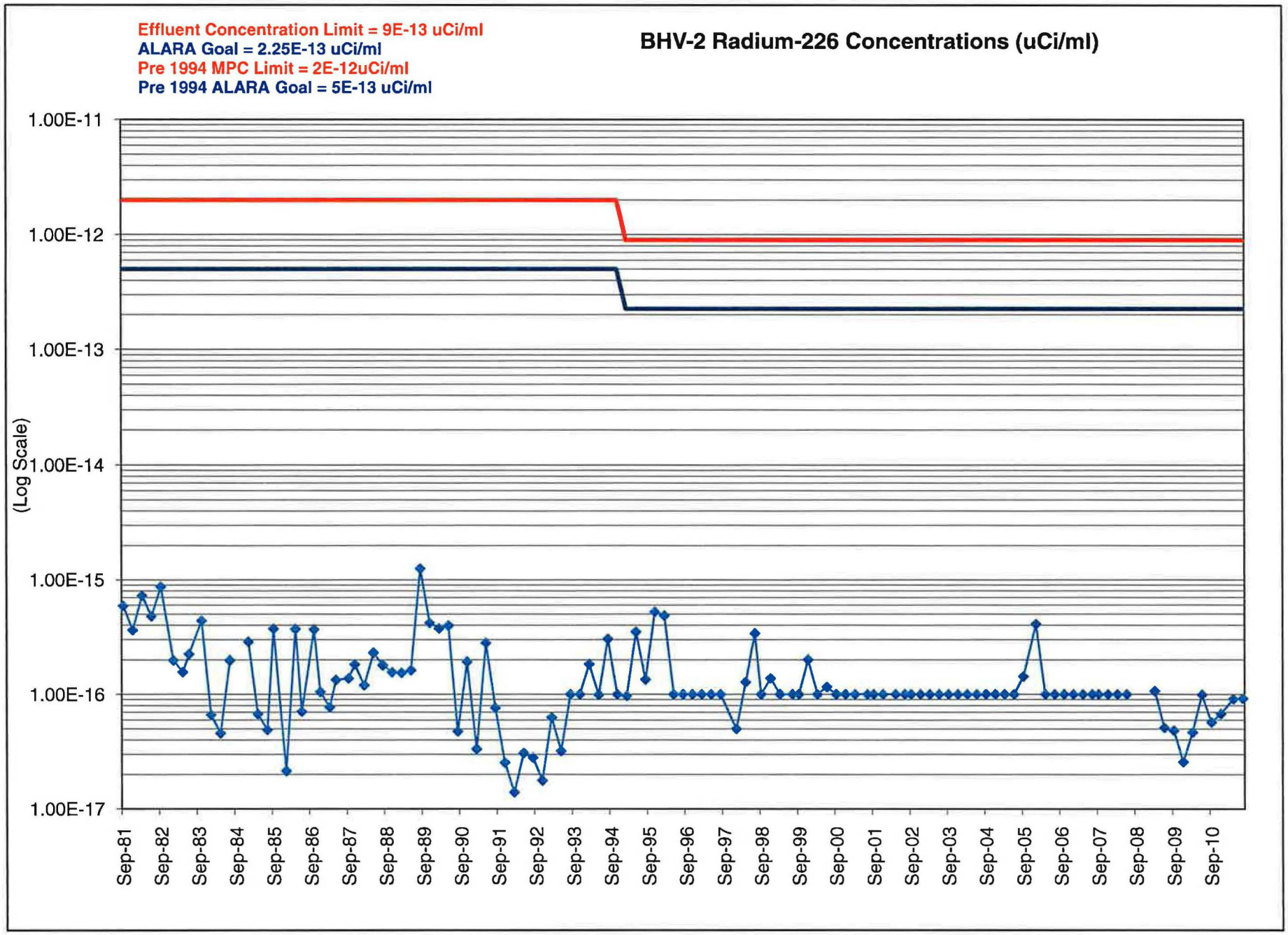
Sep-08
Sep-09
Sep-10


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
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Sep-88
Sep-89
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Sep-91
Sep-92
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Sep-94
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Sep-96
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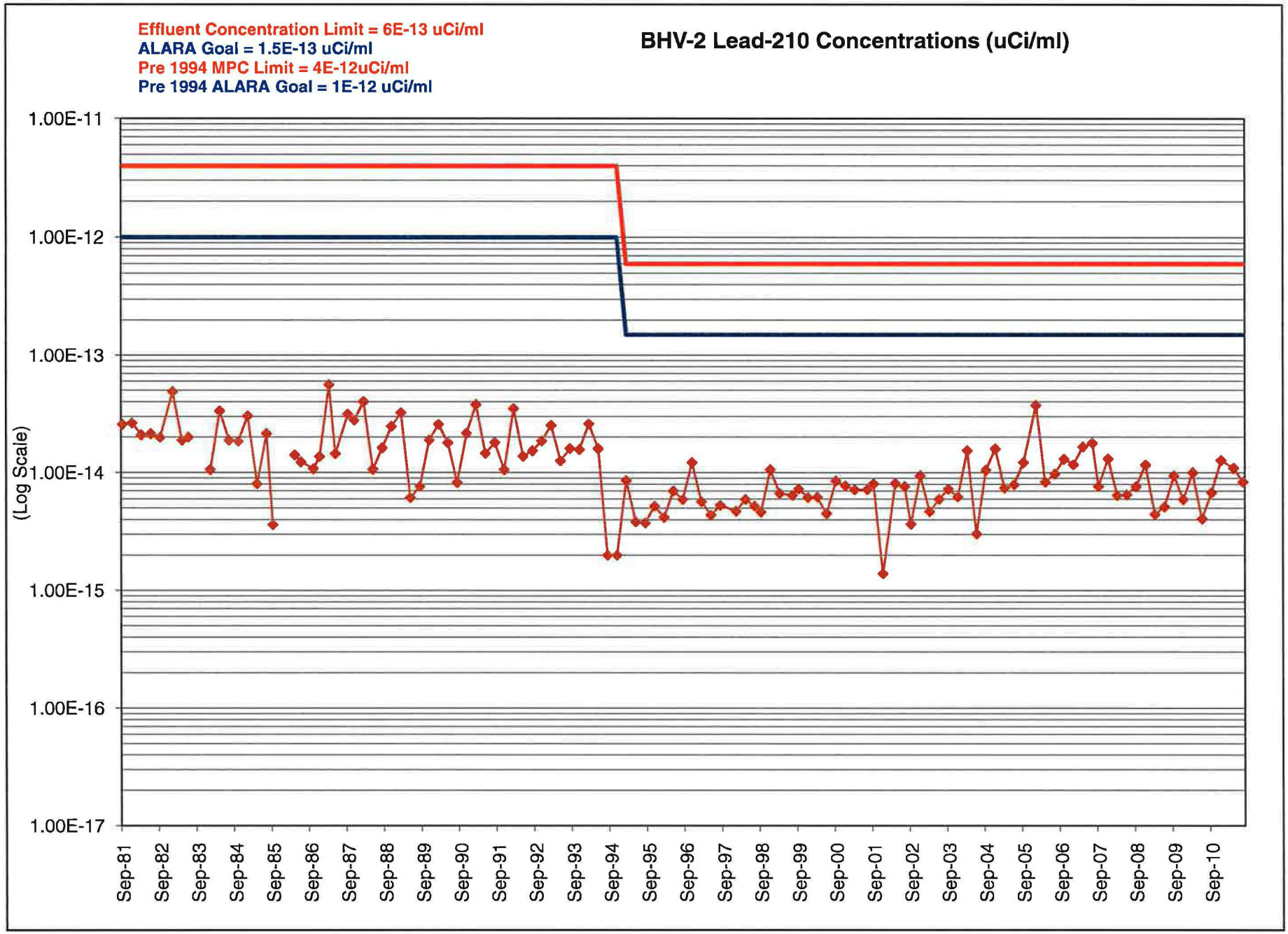
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-2 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
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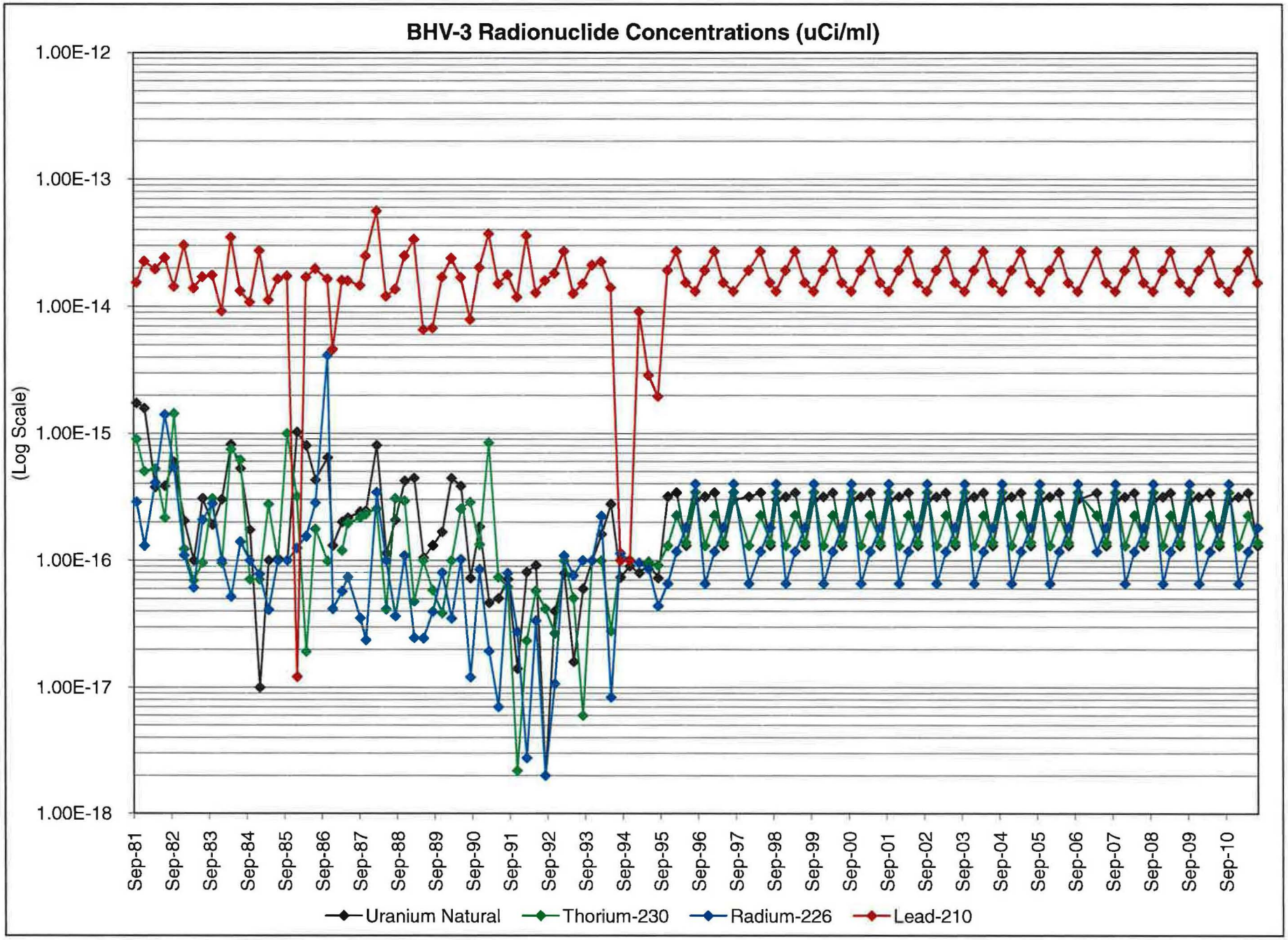
TAB 3

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-3T	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-13 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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T	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-13 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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T	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-13 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
9/30/2008	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


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
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
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Sep-90
Sep-91
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Sep-93
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Sep-97
Sep-98
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Sep-00
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Sep-03
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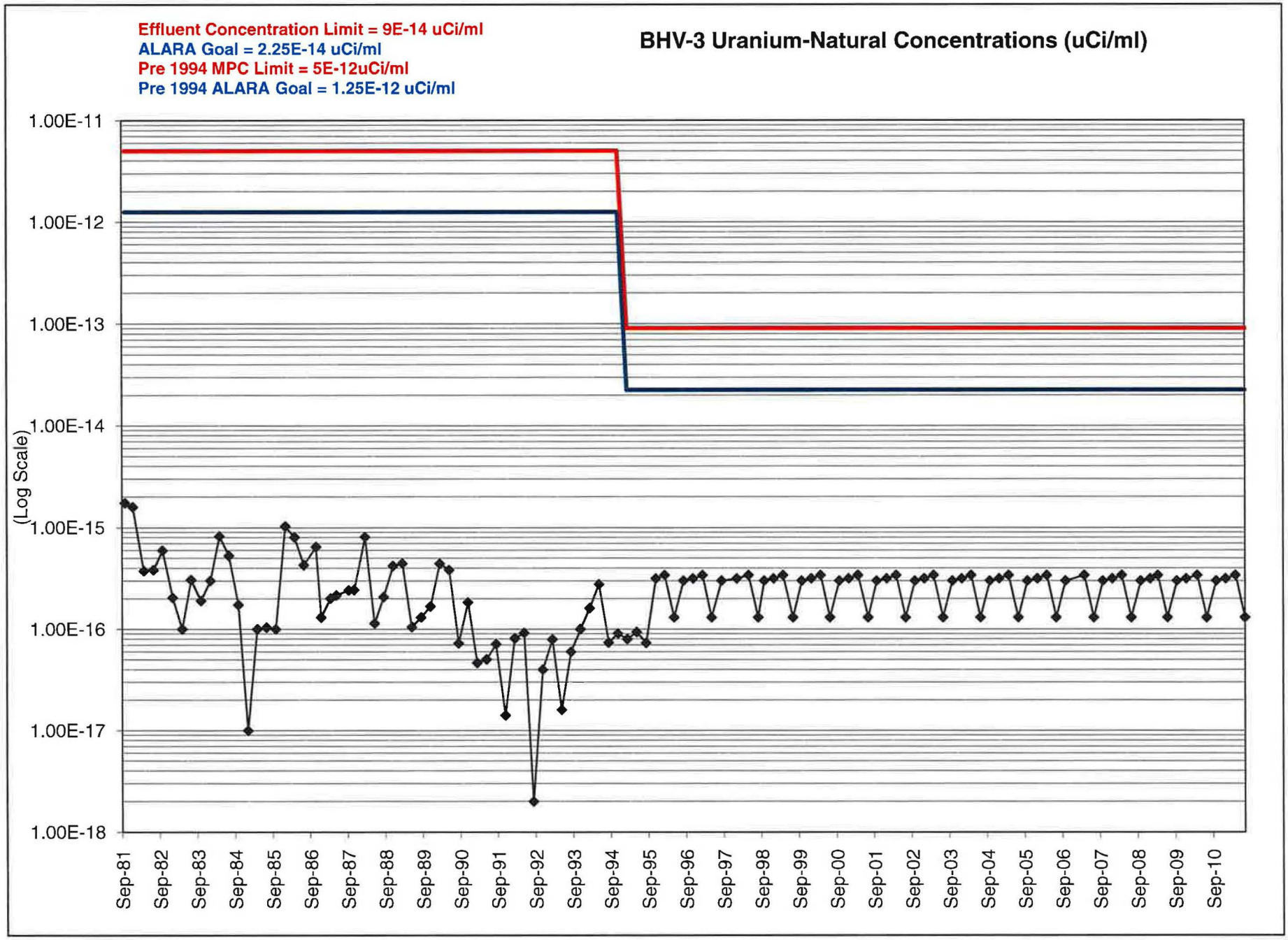
Sep-08
Sep-09
Sep-10
Uranium Natural
Thorium-230
Radium-226
Lead-210


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
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Sep-97
Sep-98
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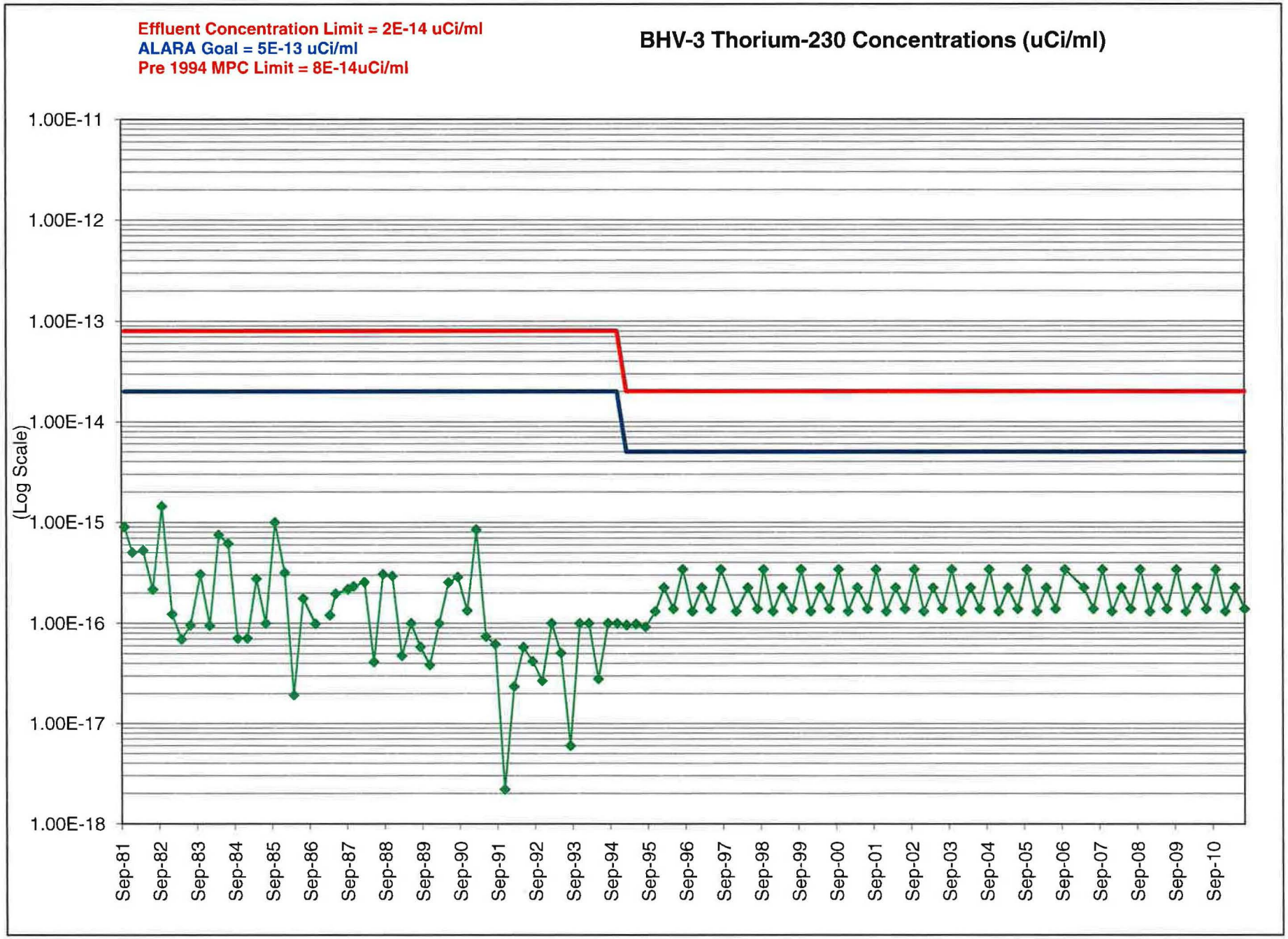
Sep-10


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
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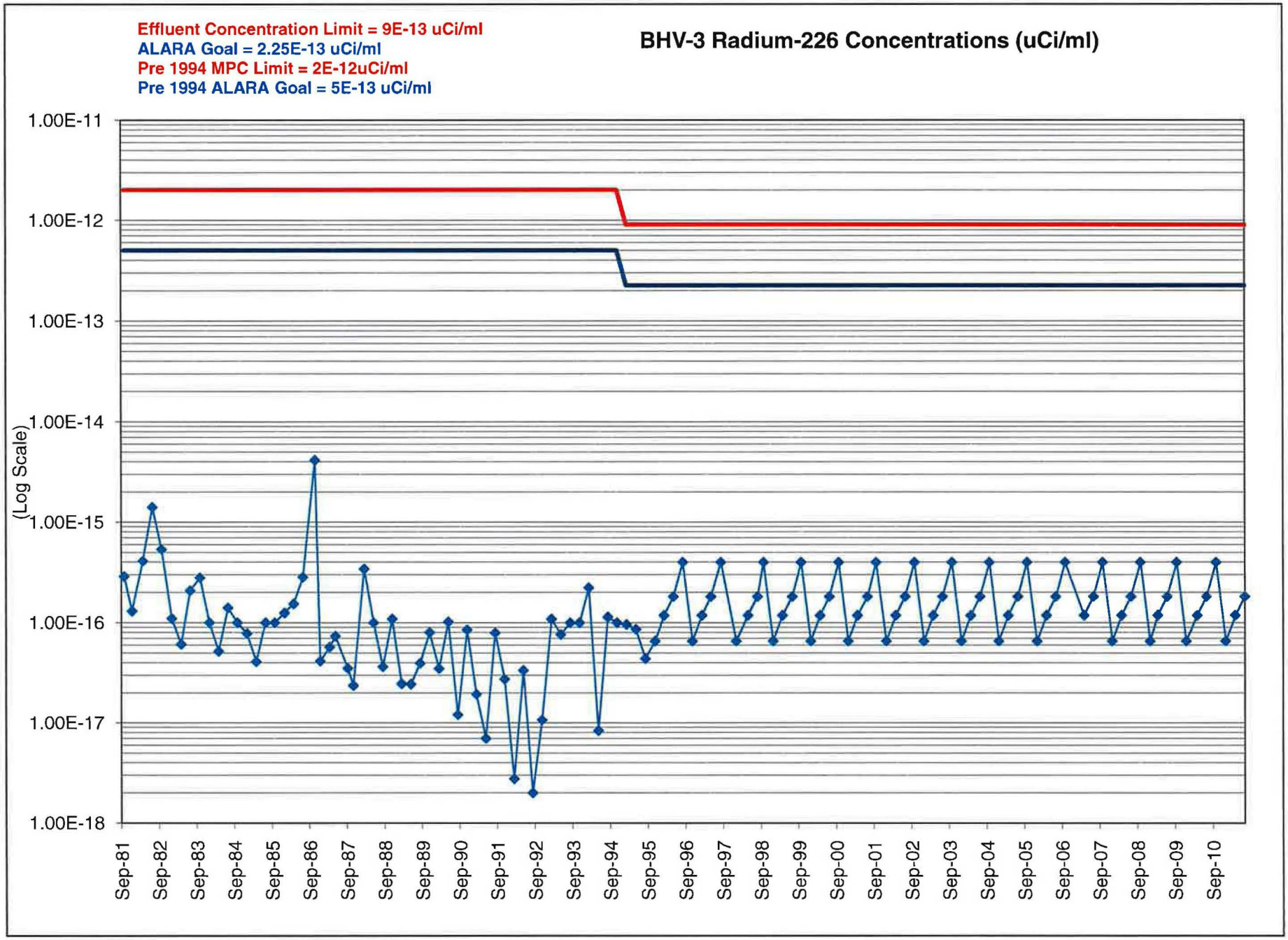
Sep-09
Sep-10


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
Sep-84
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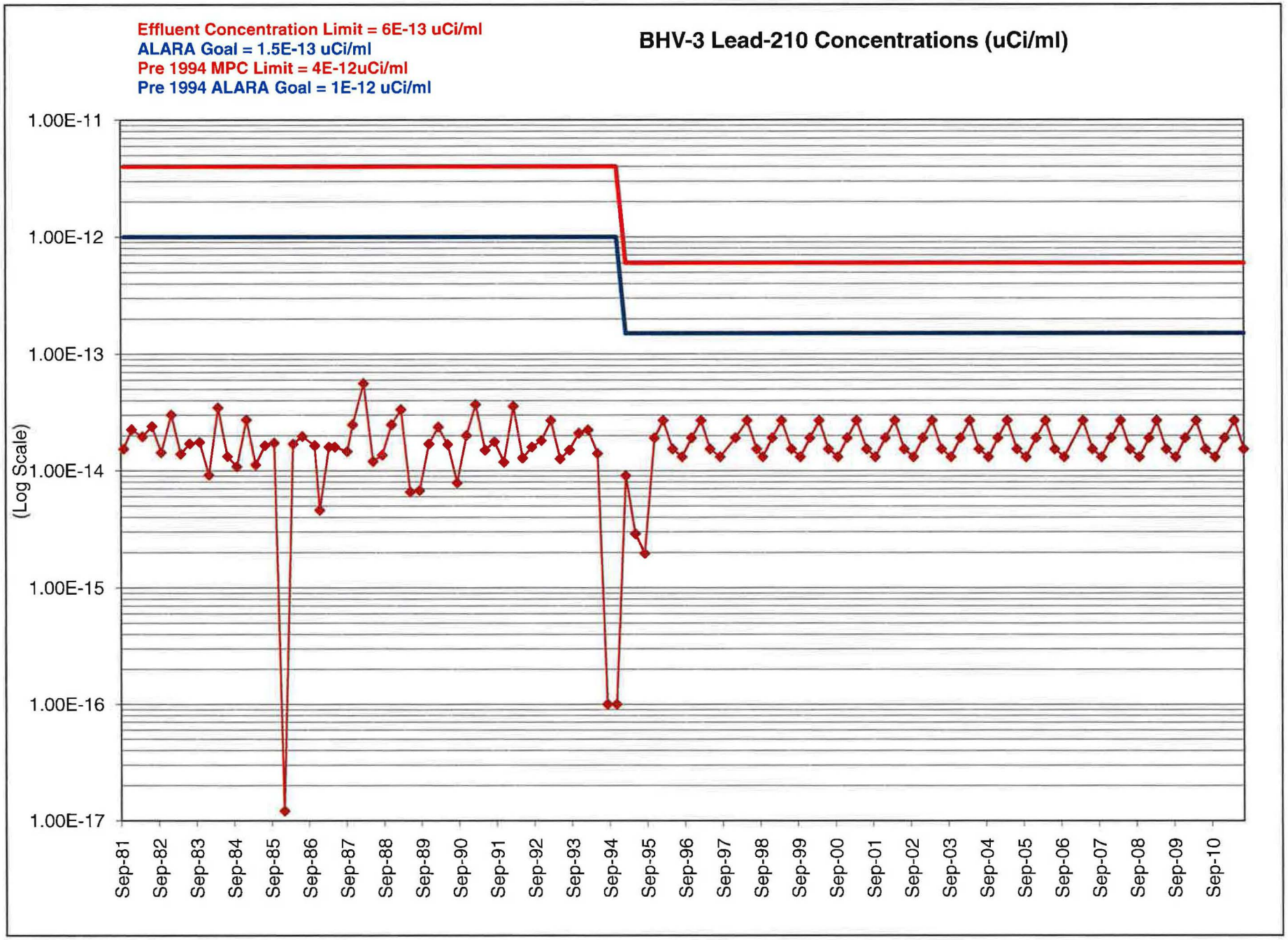
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-3 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
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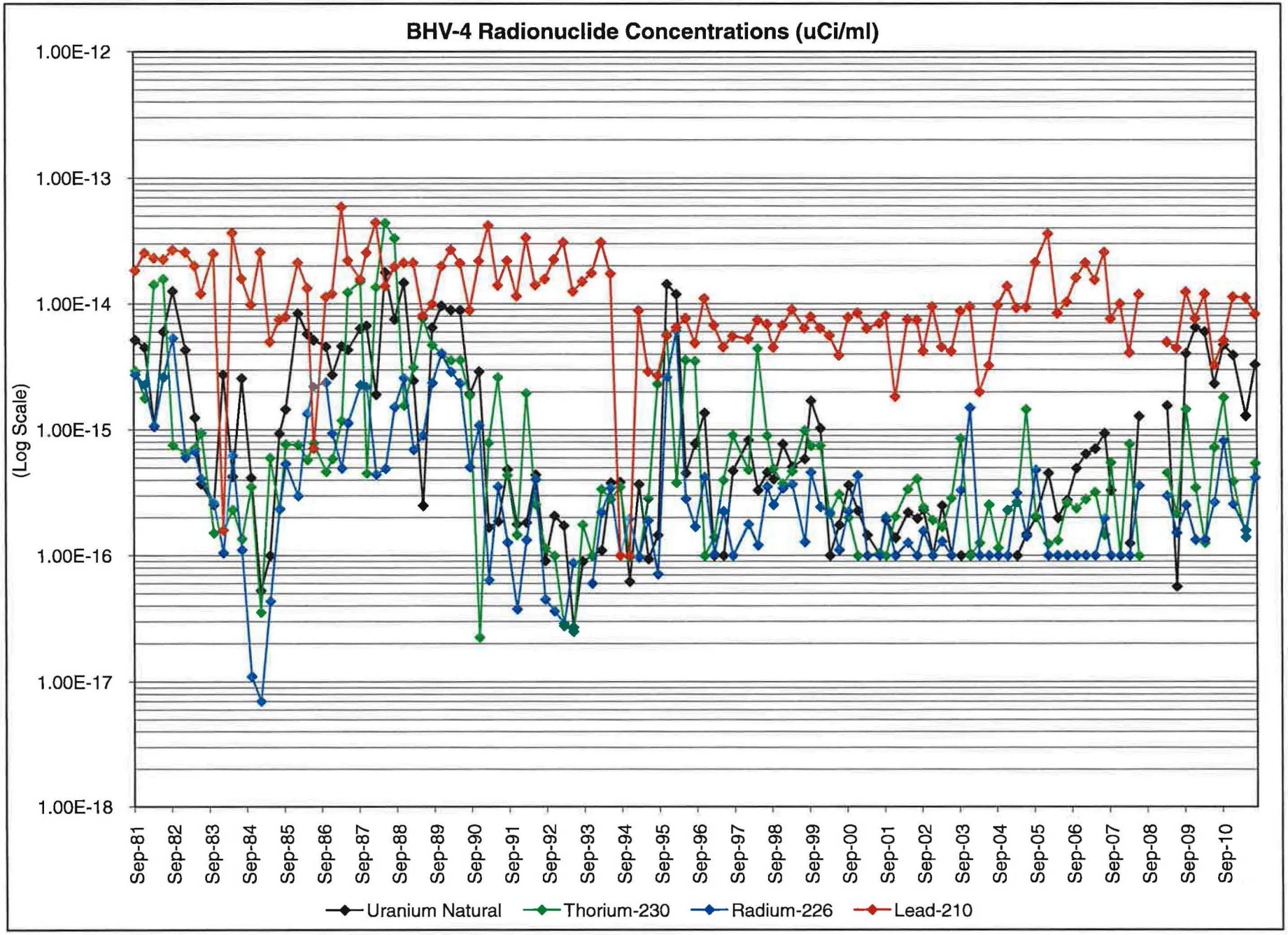
TAB 4

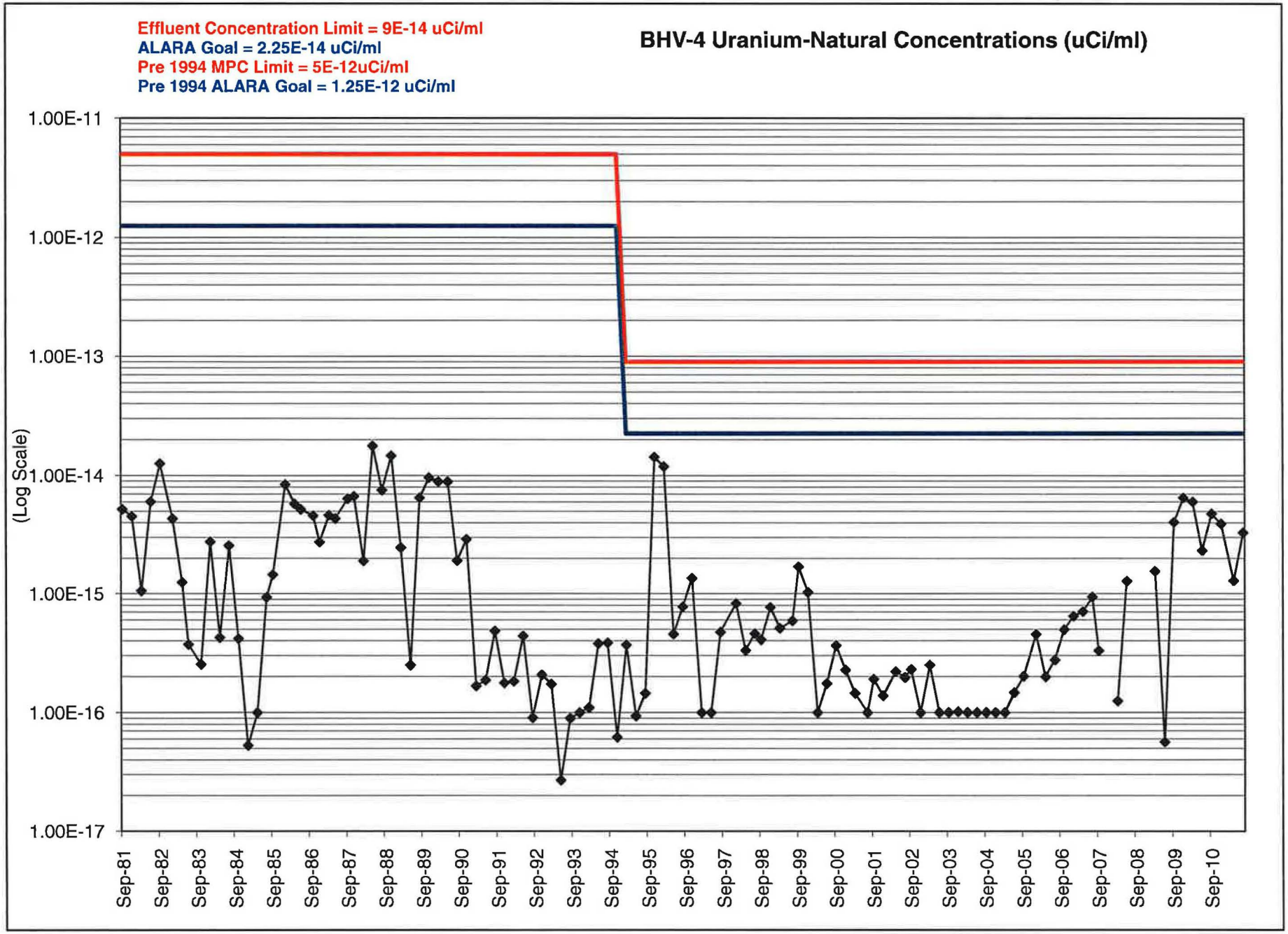
BHV-4 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	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	
	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	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	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	
	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
12/31/2007	1.42 E-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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	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	
	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
9/30/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
12/31/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
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
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
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
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
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
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
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
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
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
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


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
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
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-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
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
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Sep-91
Sep-92
Sep-93
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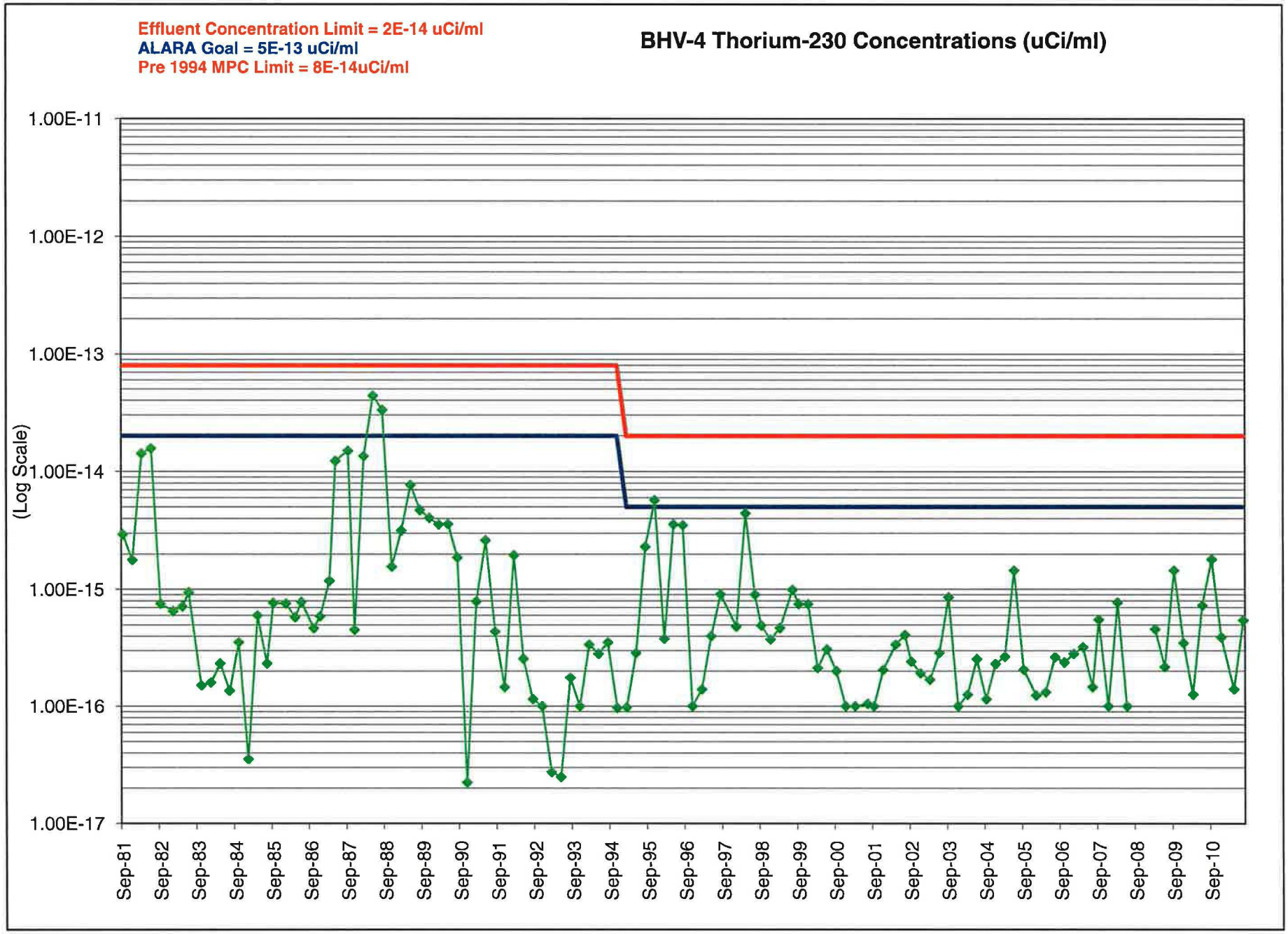
Sep-10


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 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
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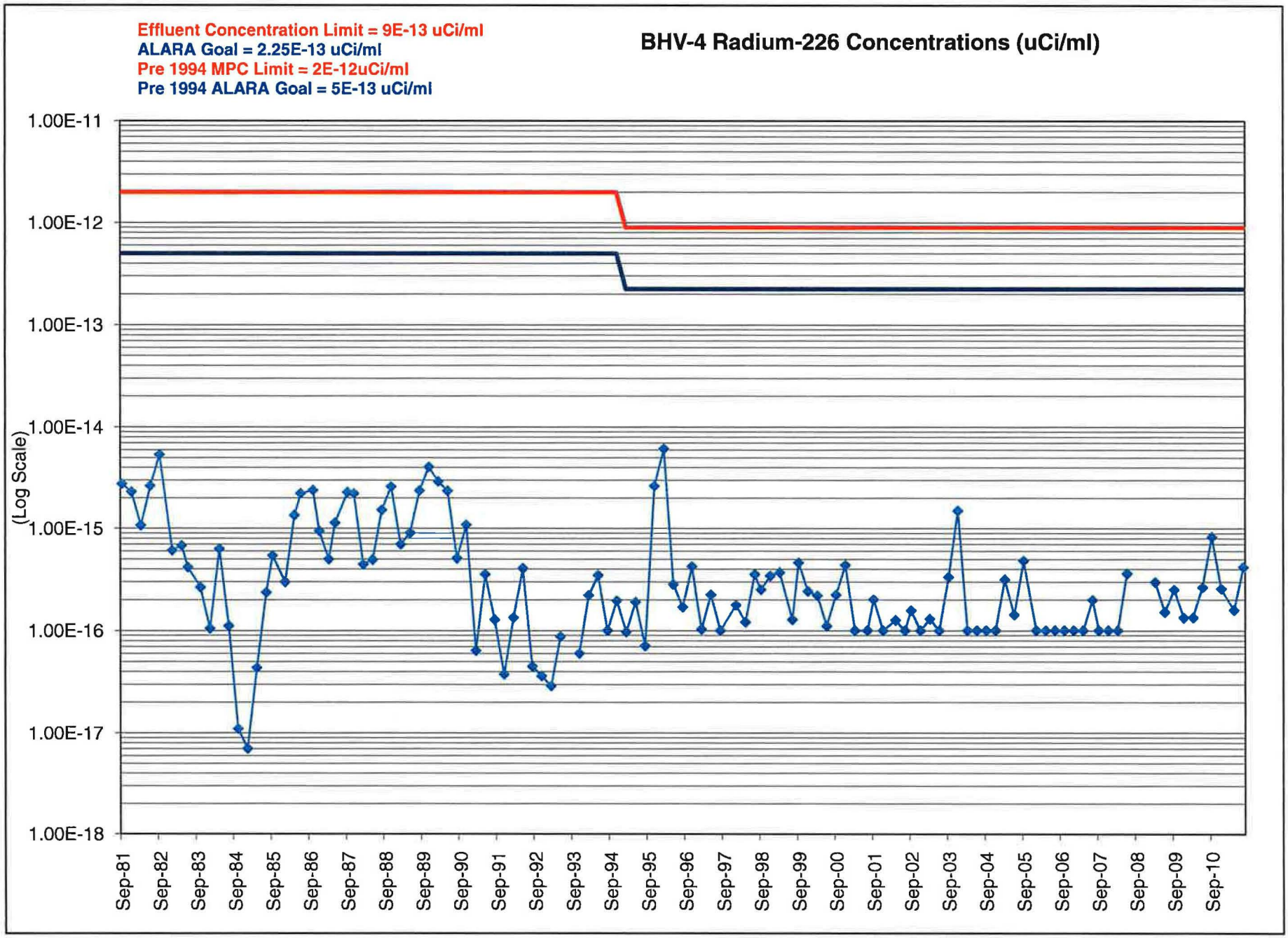
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-4 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
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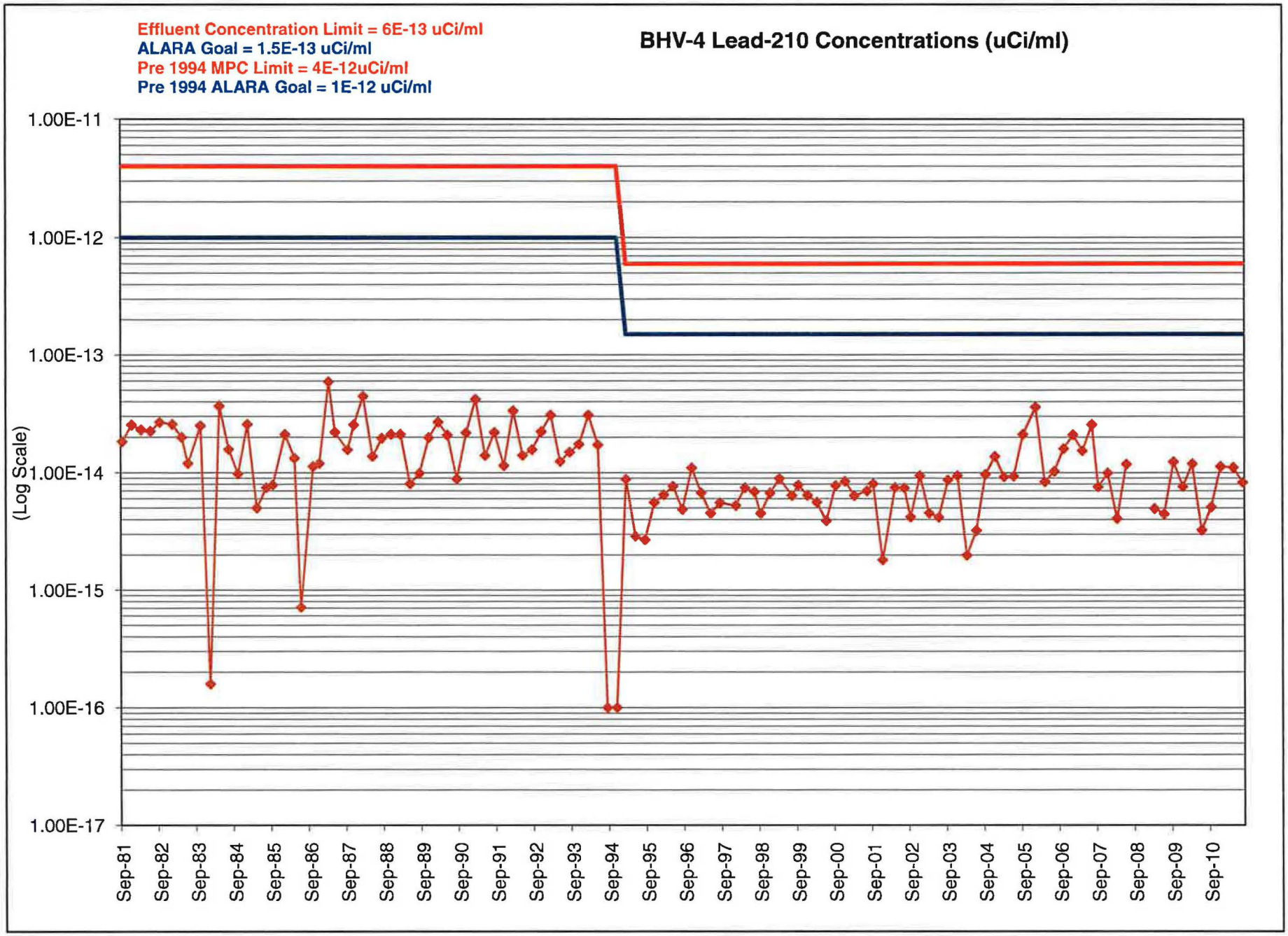
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-4 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
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Sep-10

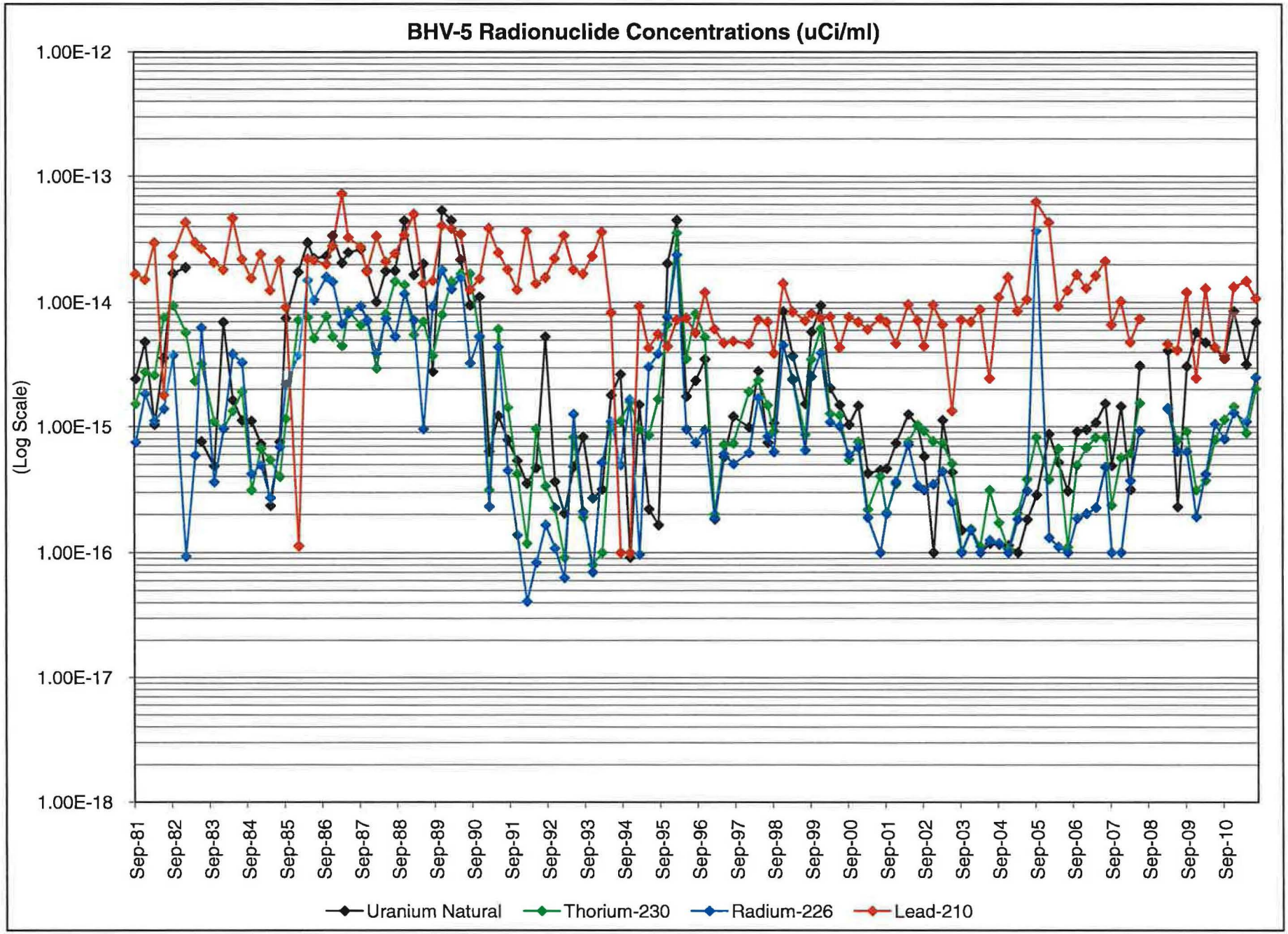
TAB 5

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-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	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	
	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	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	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	
	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	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	
	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
9/30/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
12/31/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
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
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
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
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
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
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
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
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
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
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


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
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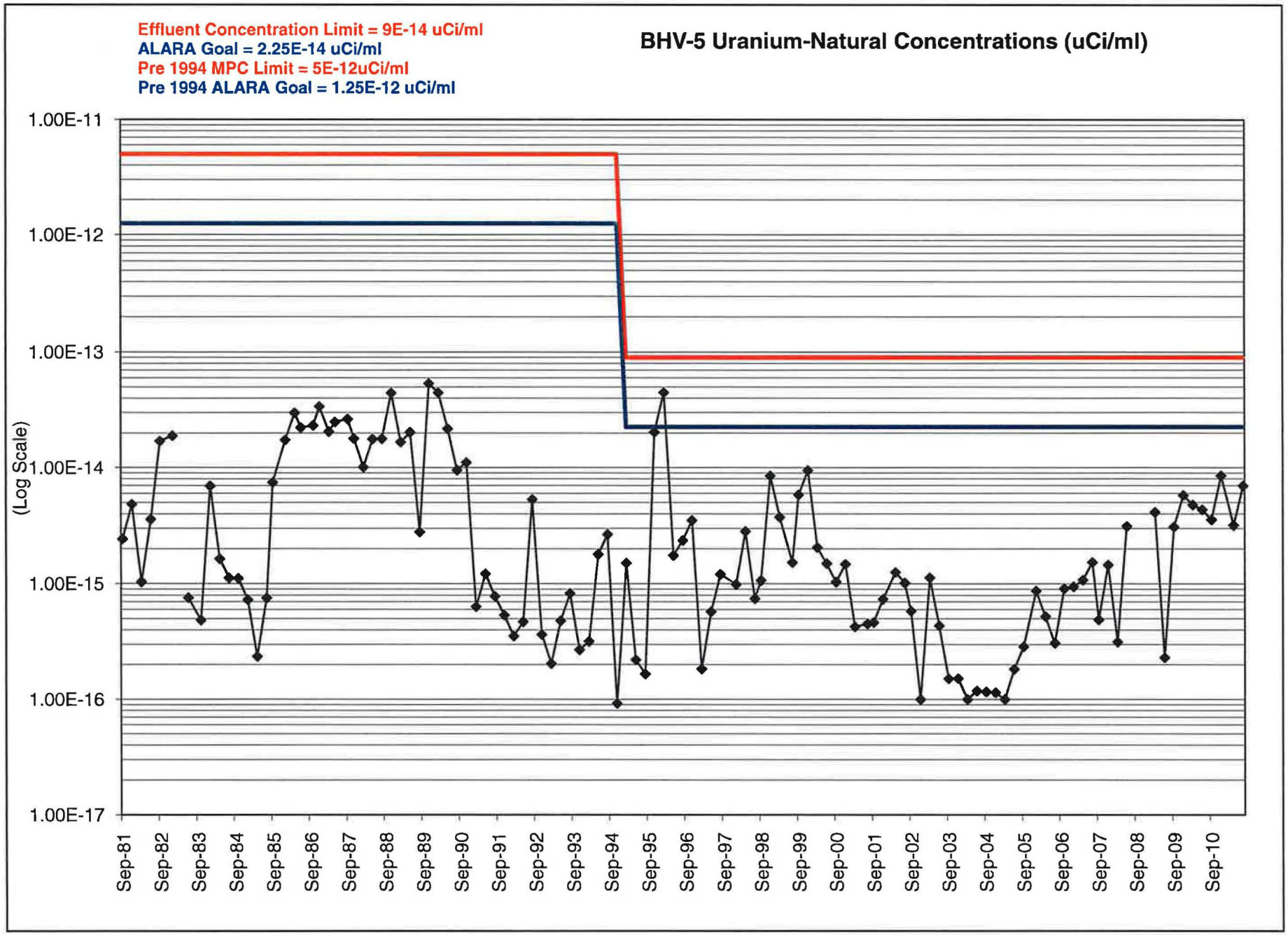
Sep-09
Sep-10
Uranium Natural
Thorium-230
Radium-226
Lead-210


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-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
Sep-95
Sep-96
Sep-97
Sep-98
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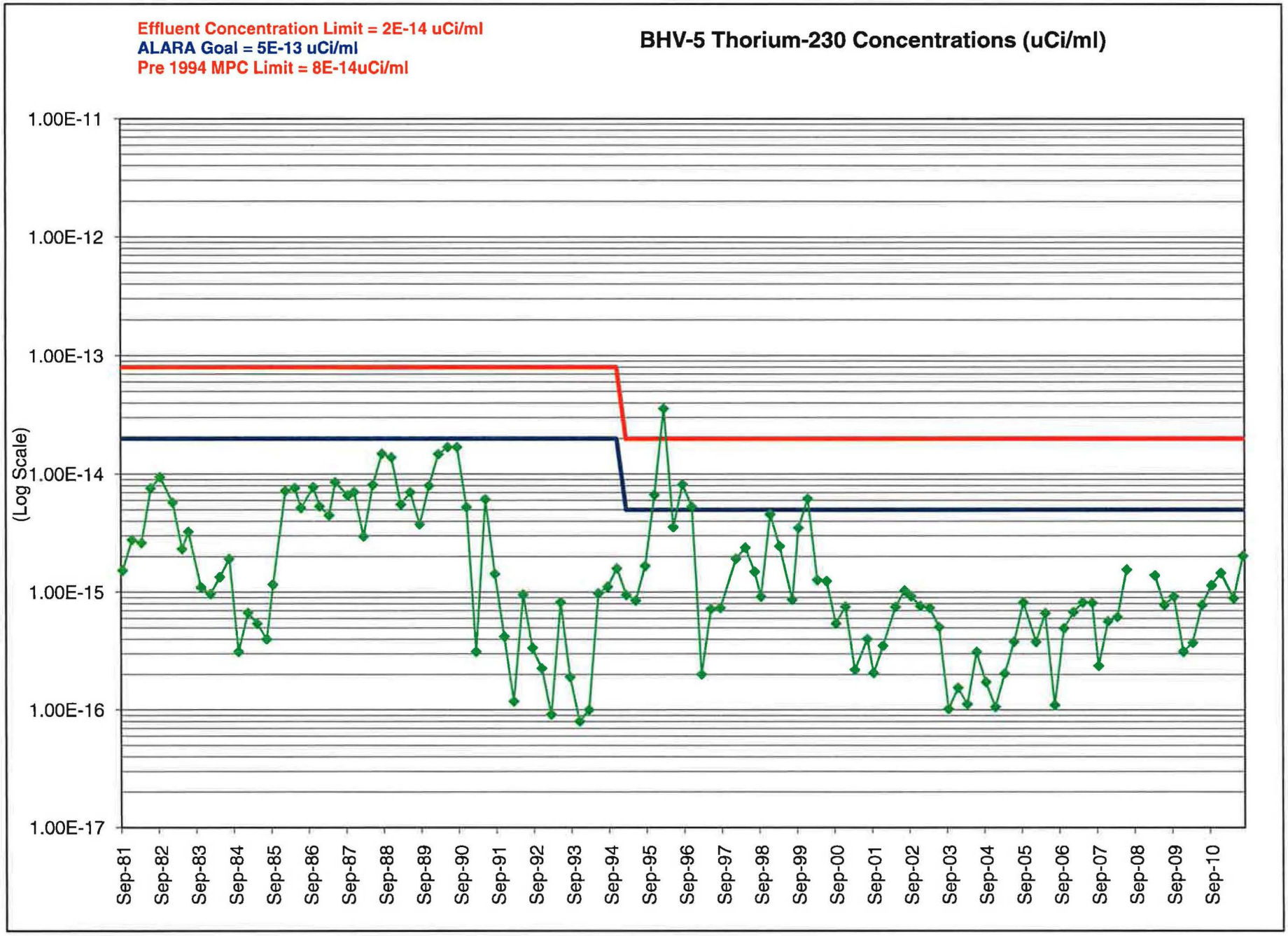
Sep-08
Sep-09
Sep-10


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 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
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
Sep-95
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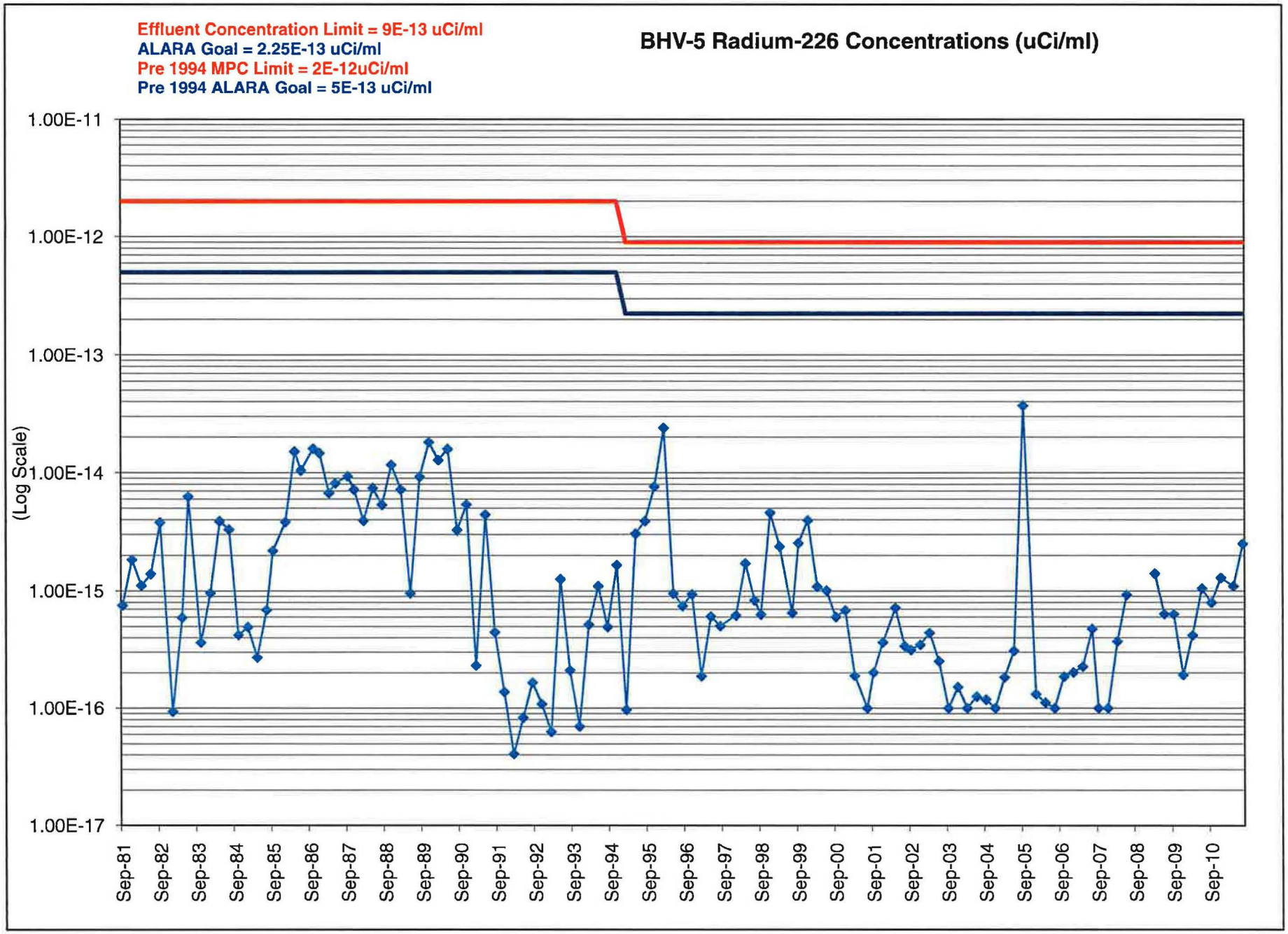
Sep-08
Sep-09
Sep-10


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
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
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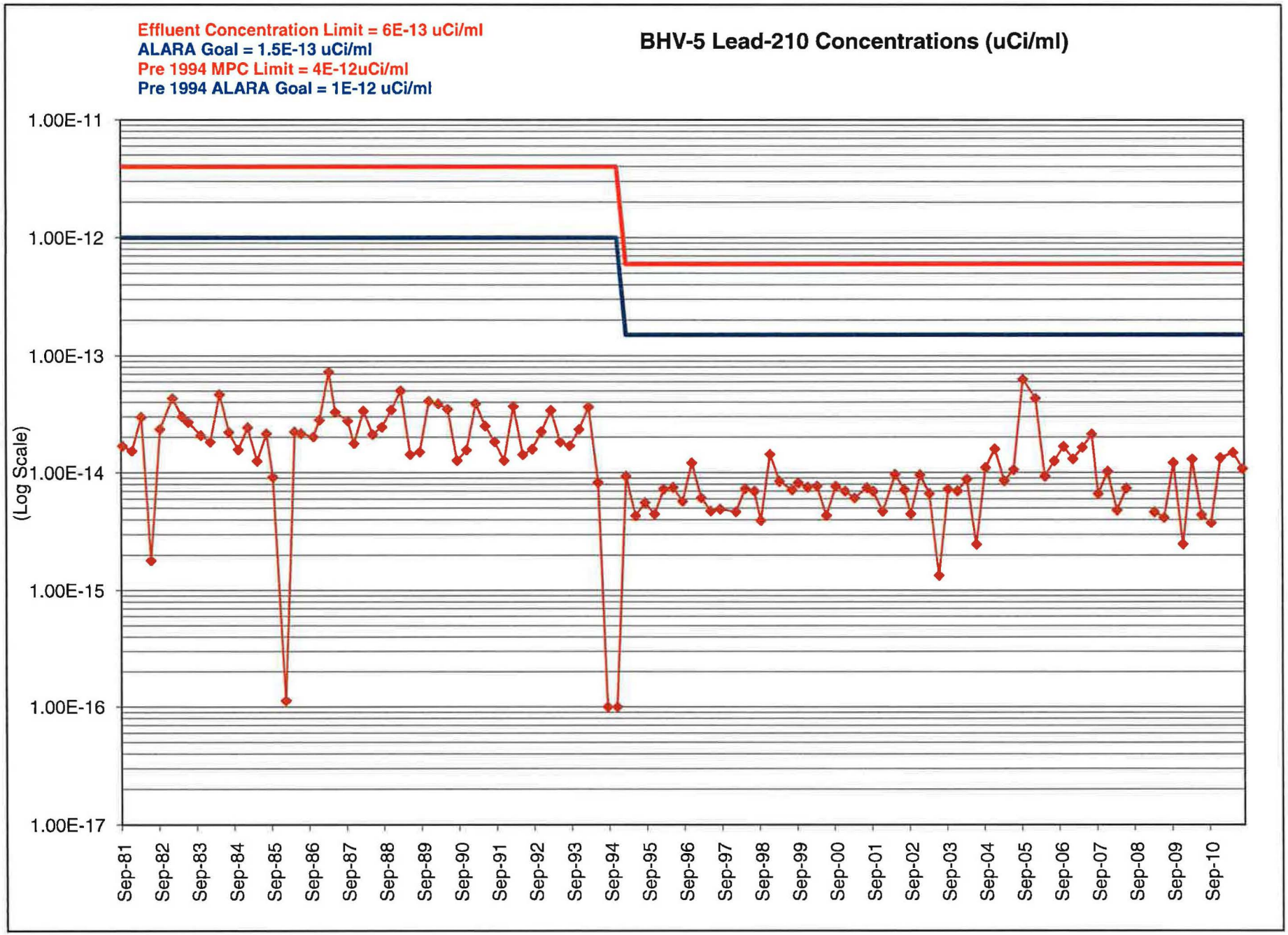
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-5 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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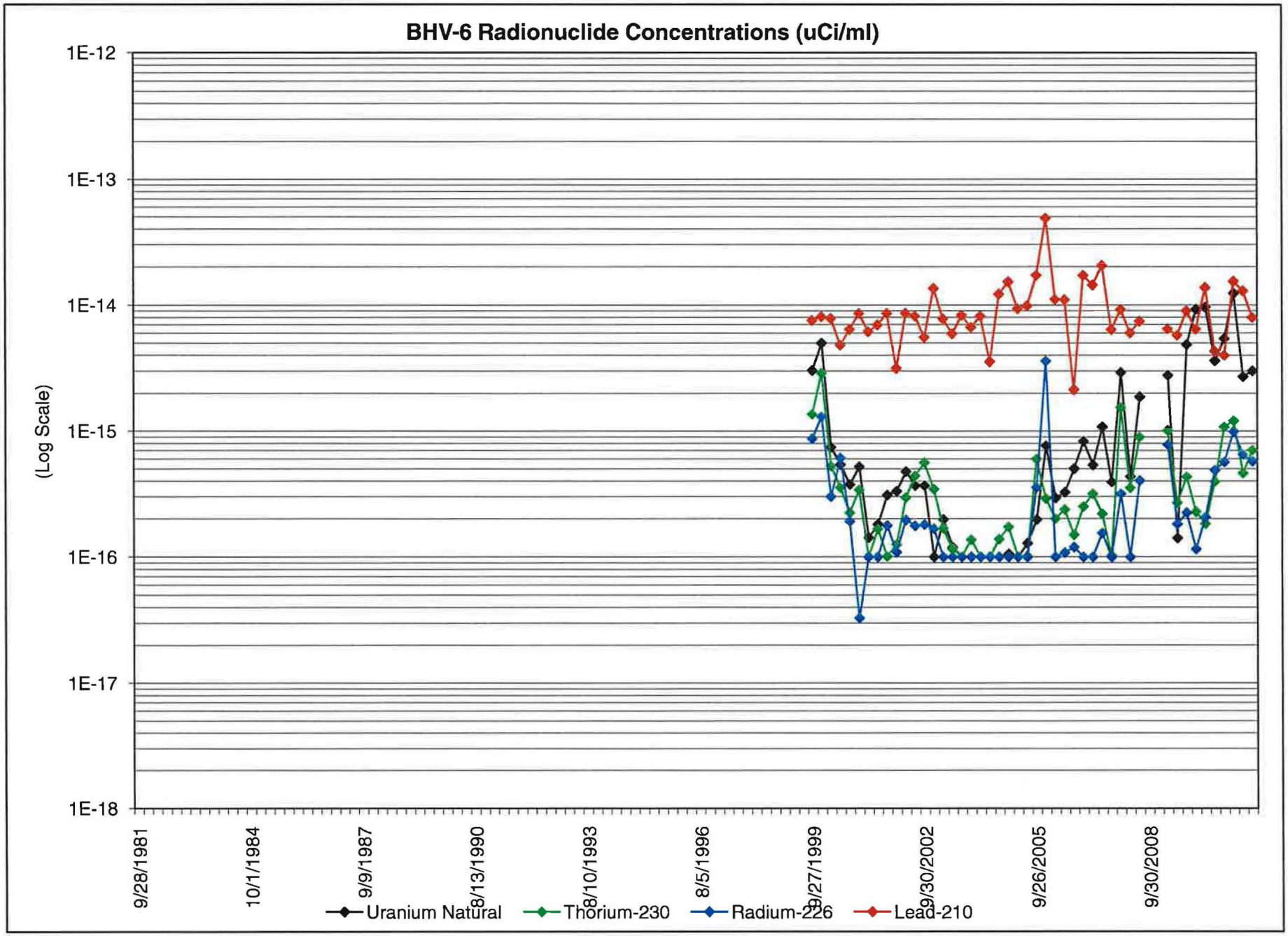
TAB 6

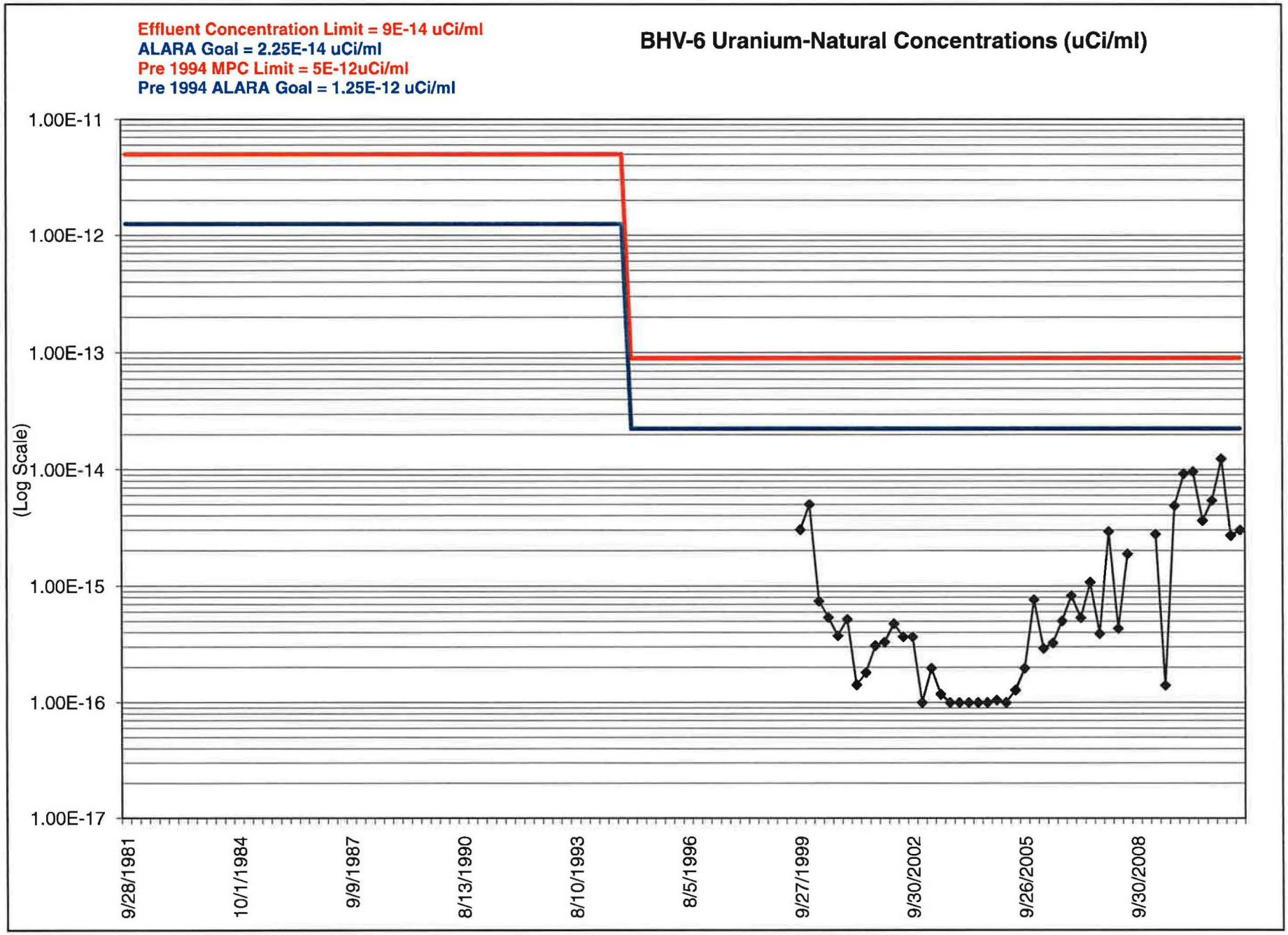
BHV-6 AIR SAMPLING GRAPHS AND DATA TABLE

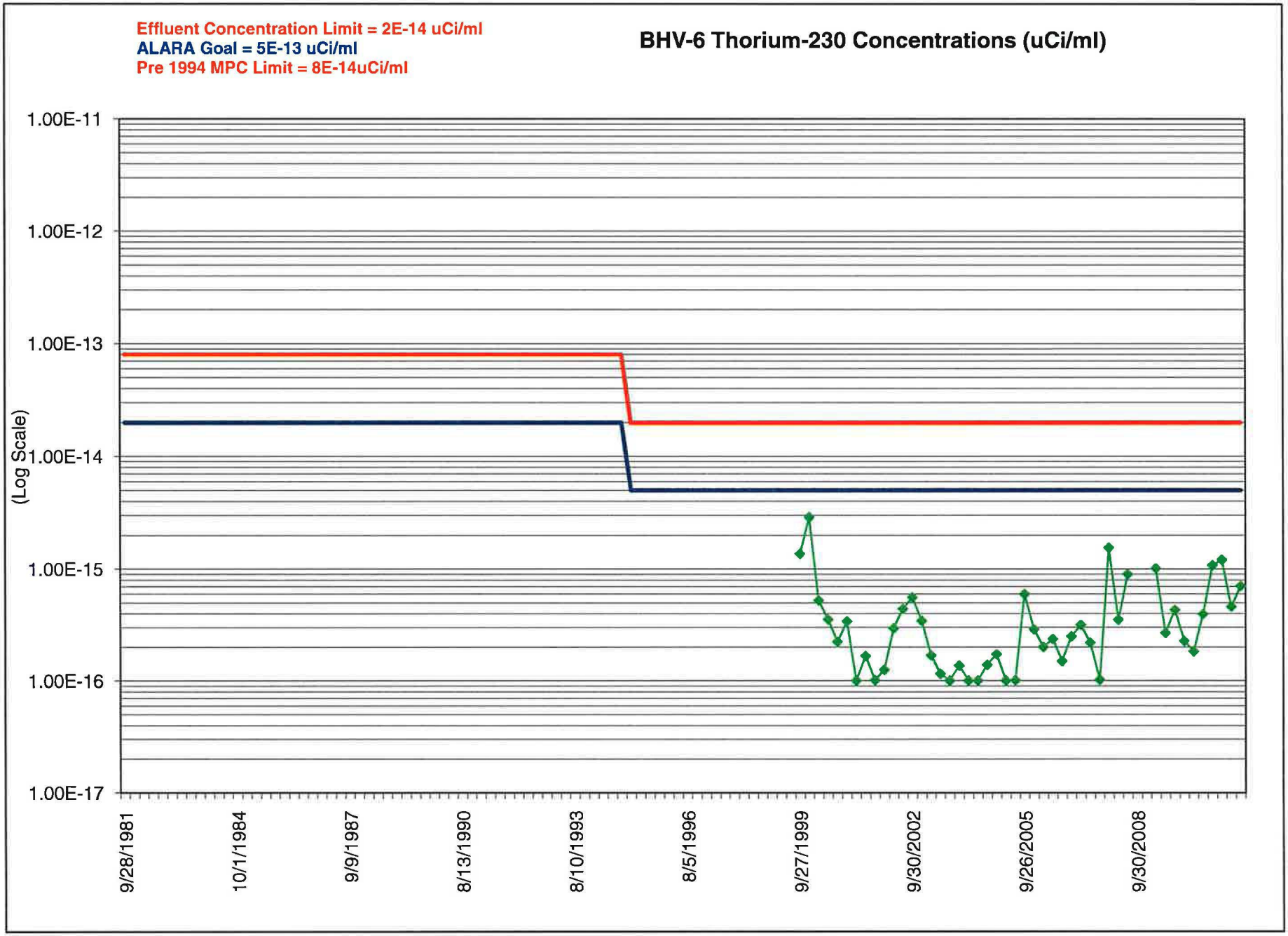
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	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		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

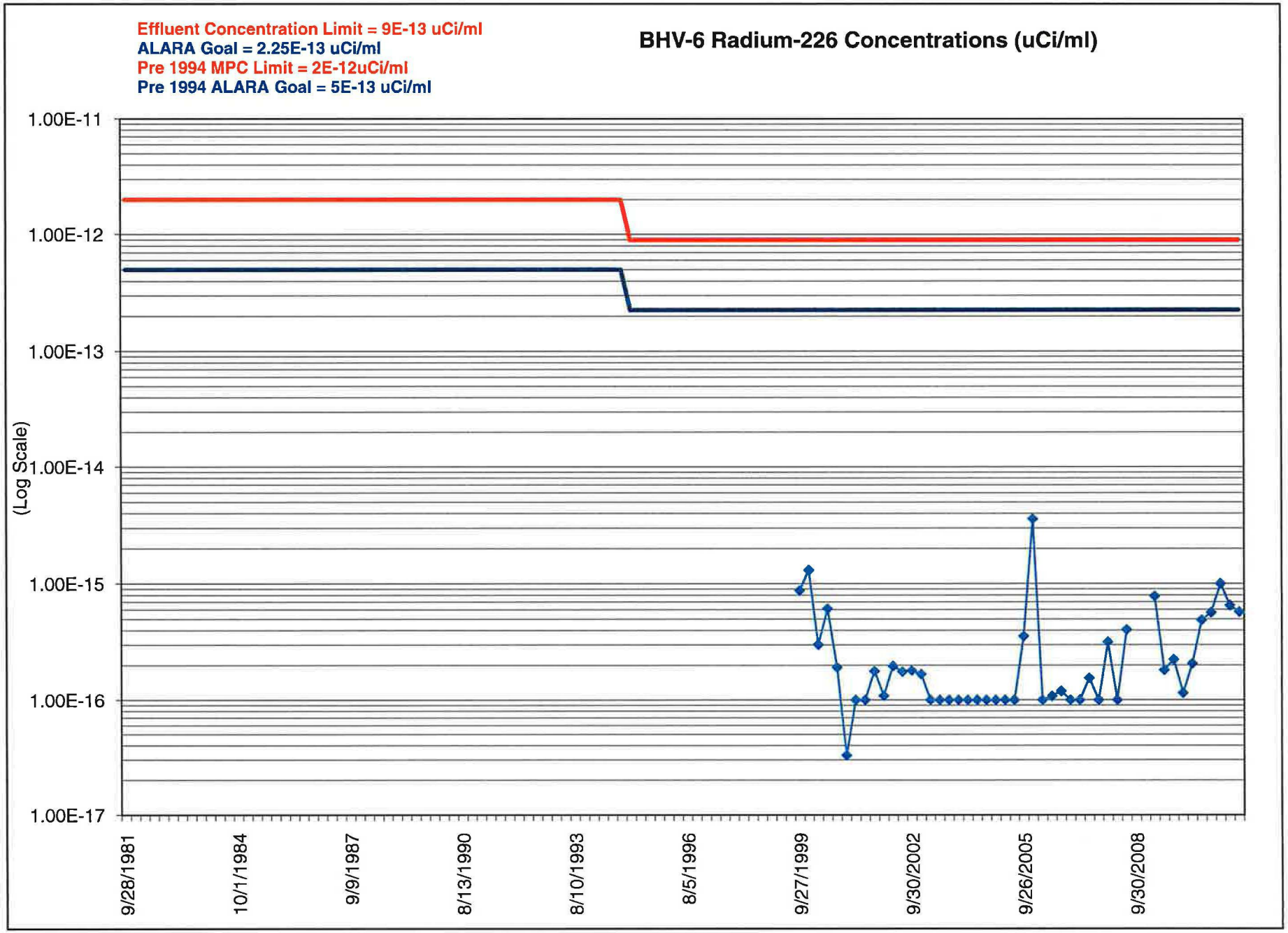
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	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	
	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
9/30/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
12/31/2008		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
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
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
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
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
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
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
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
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
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
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


BHV-6 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1E-12
1E-13
1E-14
1E-15
1E-16
1E-17
1E-18
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
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-6 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
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 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
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008


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
10/1/1984
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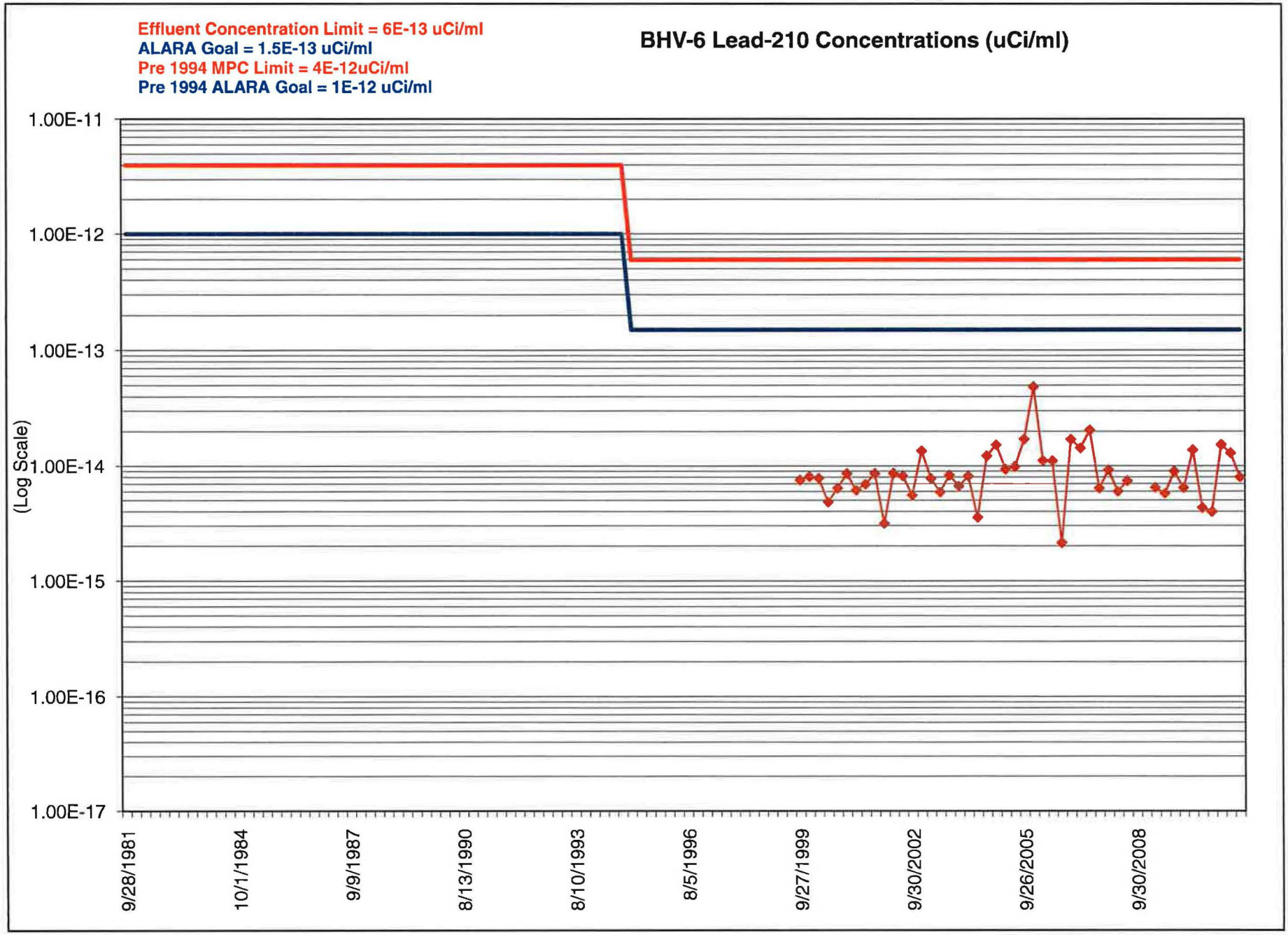
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008


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
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008

ATTACHMENT C

AIR PARTICULATE LABORATORY RESULTS AND QA/QC

ANALYTICAL SUMMARY REPORT

May 29, 2011

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

Workorder No.: C11040259

Project Name: 1st Quarter BHV Air 2011

Energy Laboratories, Inc. Casper WY received the following 6 samples for Denison Mines USA Corp on 4/7/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C11040259-001	BHV-1	04/04/11 00:00	04/07/11	Filter	Composite of two or more samples Metals, Total Digestion, Total Metals Lead 210 Radium 226 Thorium, Isotopic
C11040259-002	BHV-2	04/04/11 00:00	04/07/11	Filter	Same As Above
C11040259-003	BHV-4	04/04/11 00:00	04/07/11	Filter	Same As Above
C11040259-004	BHV-5	04/04/11 00:00	04/07/11	Filter	Same As Above
C11040259-005	BHV-6	04/04/11 00:00	04/07/11	Filter	Same As Above
C11040259-006	Blank	04/04/11 00:00	04/07/11	Filter	Same As Above

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By: Interim Branch Manager

Digitally signed by
Steve Carlston
Date: 2011.05.29 17:45:42 -06:00

CLIENT: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Sample Delivery Group: C11040259

Report Date: 05/29/11

CASE NARRATIVE

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

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

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

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

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

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

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

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

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

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-CS were subcontracted to Energy Laboratories, 415 Graham Rd., College Station, TX, EPA Number TX01520.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: BHV-1

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
C11040259-001	^{nat}U	9.01E-16	N/A	N/A	1E-16	9E-14	1.00E+00
First Quarter 2011	^{230}Th	1.90E-16	2E-17	3E-18	1E-16	3E-14	6.32E-01
Air Volume in mLs	^{226}Ra	3.64E-16	2E-17	2E-18	1E-16	9E-13	4.04E-02
1.35E+11	^{210}Pb	1.09E-14	1E-16	8E-17	2E-15	6E-13	1.82E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-001
Client Sample ID BHV-1

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.179	mg/filter		0.0003		SW6020	04/13/11 18:40 / sml
Uranium, Activity	121	pCi/Filter		0.2		SW6020	04/13/11 18:40 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1470	pCi/Filter				E909.0	05/17/11 05:59 / eli-cs
Lead 210 precision (±)	19	pCi/Filter				E909.0	05/17/11 05:59 / eli-cs
Lead 210 MDC	11	pCi/Filter				E909.0	05/17/11 05:59 / eli-cs
Radium 226	49.1	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	2.0	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	26	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	2.6	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.35	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: BHV-2

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
C11040259-002	^{nat}U	3.79E-16	N/A	N/A	1E-16	9E-14	4.21E-01
First Quarter 2011	^{230}Th	4.01E-17	6E-18	2E-18	1E-16	3E-14	1.34E-01
Air Volume in mLs	^{226}Ra	9.11E-17	8E-18	2E-18	1E-16	9E-13	1.01E-02
1.31E+11	^{210}Pb	1.06E-14	1E-16	8E-17	2E-15	6E-13	1.76E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-002
Client Sample ID BHV-2

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0735	mg/filter		0.0003		SW6020	04/13/11 18:45 / sml
Uranium, Activity	49.8	pCi/Filter		0.2		SW6020	04/13/11 18:45 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1390	pCi/Filter				E909.0	05/17/11 12:36 / eli-cs
Lead 210 precision (±)	17	pCi/Filter				E909.0	05/17/11 12:36 / eli-cs
Lead 210 MDC	9.9	pCi/Filter				E909.0	05/17/11 12:36 / eli-cs
Radium 226	12.0	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	1.0	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	5.3	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	0.83	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.29	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: BHV-4

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
C11040259-003	^{nat}U	1.29E-15	N/A	N/A	1E-16	9E-14	1.44E+00
First Quarter 2011	^{230}Th	1.40E-16	2E-17	3E-18	1E-16	3E-14	4.66E-01
Air Volume in mLs	^{226}Ra	1.58E-16	1E-17	3E-18	1E-16	9E-13	1.75E-02
1.25E+11	^{210}Pb	1.11E-14	1E-16	8E-17	2E-15	6E-13	1.86E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-003
Client Sample ID BHV-4

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.239	mg/filter		0.0003		SW6020	04/13/11 18:49 / sml
Uranium, Activity	162	pCi/Filter		0.2		SW6020	04/13/11 18:49 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1400	pCi/Filter				E909.0	05/17/11 14:47 / eli-cs
Lead 210 precision (±)	17	pCi/Filter				E909.0	05/17/11 14:47 / eli-cs
Lead 210 MDC	9.9	pCi/Filter				E909.0	05/17/11 14:47 / eli-cs
Radium 226	19.7	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	1.4	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	18	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	2.0	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.35	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: BHV-5

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
C11040259-004	^{nat}U	3.20E-15	N/A	N/A	1E-16	9E-14	3.56E+00
First Quarter 2011	^{230}Th	8.89E-16	8E-17	3E-18	1E-16	3E-14	2.96E+00
Air Volume in mLs	^{226}Ra	1.10E-15	3E-17	2E-18	1E-16	9E-13	1.22E-01
1.32E+11	^{210}Pb	1.48E-14	2E-16	7E-17	2E-15	6E-13	2.46E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-004
Client Sample ID BHV-5

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.624	mg/filter		0.0003		SW6020	04/13/11 19:09 / sml
Uranium, Activity	423	pCi/Filter		0.2		SW6020	04/13/11 19:09 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1950	pCi/Filter				E909.0	05/17/11 16:59 / eli-cs
Lead 210 precision (±)	20	pCi/Filter				E909.0	05/17/11 16:59 / eli-cs
Lead 210 MDC	9.9	pCi/Filter				E909.0	05/17/11 16:59 / eli-cs
Radium 226	145	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	3.6	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	117	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	10	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.38	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: BHV-6

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
C11040259-005	^{nat}U	2.70E-15	N/A	N/A	1E-16	9E-14	3.00E+00
First Quarter 2011	^{230}Th	4.62E-16	4E-17	3E-18	1E-16	3E-14	1.54E+00
Air Volume in mLs	^{226}Ra	6.51E-16	2E-17	2E-18	1E-16	9E-13	7.24E-02
1.32E+11	^{210}Pb	1.29E-14	1E-16	7E-17	2E-15	6E-13	2.14E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-005
Client Sample ID BHV-6

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.527	mg/filter		0.0003		SW6020	04/13/11 19:13 / sml
Uranium, Activity	356	pCi/Filter		0.2		SW6020	04/13/11 19:13 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1700	pCi/Filter				E909.0	05/17/11 19:11 / eli-cs
Lead 210 precision (±)	19	pCi/Filter				E909.0	05/17/11 19:11 / eli-cs
Lead 210 MDC	9.8	pCi/Filter				E909.0	05/17/11 19:11 / eli-cs
Radium 226	86.0	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	2.8	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	61	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	5.8	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.37	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: May 29, 2011
PROJECT: 1st Quarter BHV Air 2011

SAMPLE ID: Blank

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
C11040259-006	^{nat}U	1.22E-17	N/A	N/A	1E-16	9E-14	1.35E-02
First Quarter 2011	^{230}Th	5.84E-19	2E-18	3E-18	1E-16	3E-14	1.95E-03
Air Volume in mLs	^{226}Ra	5.16E-18	2E-18	3E-18	1E-16	9E-13	5.73E-04
1.36E+11	^{210}Pb	-4.51E-17	4E-17	7E-17	2E-15	6E-13	-7.51E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011
Lab ID: C11040259-006
Client Sample ID Blank

Report Date: 05/29/11
Collection Date: 04/04/11
DateReceived: 04/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0024	mg/filter		0.0003		SW6020	04/13/11 19:17 / sml
Uranium, Activity	1.7	pCi/Filter		0.2		SW6020	04/13/11 19:17 / sml
RADIONUCLIDES - TOTAL							
Lead 210	-6	pCi/Filter	U			E909.0	05/17/11 21:23 / eli-cs
Lead 210 precision (±)	5.8	pCi/Filter				E909.0	05/17/11 21:23 / eli-cs
Lead 210 MDC	9.9	pCi/Filter				E909.0	05/17/11 21:23 / eli-cs
Radium 226	0.7	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 precision (±)	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Radium 226 MDC	0.3	pCi/Filter				E903.0	04/25/11 23:45 / trs
Thorium 230	0.08	pCi/Filter	U			E908.0	05/02/11 13:56 / dmf
Thorium 230 precision (±)	0.30	pCi/Filter				E908.0	05/02/11 13:56 / dmf
Thorium 230 MDC	0.37	pCi/Filter				E908.0	05/02/11 13:56 / dmf

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011

Report Date: 05/29/11
Work Order: C11040259

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: R145159
Sample ID: LCS-29538		Laboratory Control Sample				Run: TENNELEC-3_110419A				04/25/11 23:45
Radium 226		12.2	pCi/Filter		101	70	130			
Sample ID: MB-29538	3	Method Blank				Run: TENNELEC-3_110419A				04/25/11 23:44
Radium 226		0.03	pCi/Filter							U
Radium 226 precision (±)		0.1	pCi/Filter							
Radium 226 MDC		0.2	pCi/Filter							
Sample ID: C11040296-001HMS		Sample Matrix Spike				Run: TENNELEC-3_110419A				04/26/11 01:24
Radium 226		10	pCi/L		101	70	130			
Sample ID: C11040296-001HMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_110419A				04/26/11 01:24
Radium 226		9.2	pCi/L		93	70	130	8.7	24.1	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011

Report Date: 05/29/11
Work Order: C11040259

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: R145606
Sample ID: LCS-29538		Laboratory Control Sample				Run: EGG-ORTEC_110428B				05/02/11 13:56
Thorium 230		10.9	pCi/Filter		111	70	130			
Sample ID: MB-29538	3	Method Blank				Run: EGG-ORTEC_110428B				05/02/11 13:56
Thorium 230		-0.08	pCi/Filter							U
Thorium 230 precision (±)		0.07	pCi/Filter							
Thorium 230 MDC		0.1	pCi/Filter							
Sample ID: C11040257-001AMS		Sample Matrix Spike				Run: EGG-ORTEC_110428B				05/02/11 13:56
Thorium 230		56.4	pCi/Filter		109	70	130			
Sample ID: C11040257-001AMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_110428B				05/02/11 13:56
Thorium 230		57.7	pCi/Filter		112	70	130	2.4	31.8	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011

Report Date: 05/29/11
Work Order: C11040259

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_13784
Sample ID: C11040259-001AMSD		Sample Matrix Spike Duplicate				Run: SUB-T40416				05/17/11 10:24
Lead 210		2250	pCi/Filter		73	70	130	4.4	13.6	
Sample ID: C11040259-001AMS		Sample Matrix Spike				Run: SUB-T40416				05/17/11 08:11
Lead 210		2160	pCi/Filter		65	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the MS MSD pair are acceptable, the response is considered to be matrix related. The batch is approved.										
Sample ID: LCS-13784		Laboratory Control Sample				Run: SUB-T40416				05/17/11 03:47
Lead 210		279	pCi/Filter		80	70	130			
Sample ID: MB-13784	3	Method Blank				Run: SUB-T40416				05/17/11 01:35
Lead 210		-4	pCi/Filter							U
Lead 210 precision (±)		6	pCi/Filter							
Lead 210 MDC		10	pCi/Filter							

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: Denison Mines USA Corp
Project: 1st Quarter BHV Air 2011

Report Date: 05/29/11
Work Order: C11040259

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: 29538
Sample ID: MB-29538		Method Blank				Run: ICPMS4-C_110413A				04/13/11 18:28
Uranium		4E-05	mg/filter							
Sample ID: LCS2-29538		Laboratory Control Sample				Run: ICPMS4-C_110413A				04/13/11 18:32
Uranium		0.107	mg/filter	0.00030	107	85	115			
Sample ID: C11040259-006AMS		Sample Matrix Spike				Run: ICPMS4-C_110413A				04/13/11 19:21
Uranium		0.0588	mg/filter	0.00030	113	75	125			
Sample ID: C11040259-006AMSD		Sample Matrix Spike Duplicate				Run: ICPMS4-C_110413A				04/13/11 19:26
Uranium		0.0585	mg/filter	0.00030	112	75	125	0.4	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

Workorder Receipt Checklist

C11040259

Denison Mines USA Corp

Login completed by: Halley Ackerman
Date Received: 4/7/2011
Reviewed by: BL2000\kschroeder
Received by: ha
Reviewed Date: 4/14/2011
Carrier name: 2Day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on 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?	Yes ☑	No ☐	
Container/Temp Blank temperature:	NA °C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: Denison Mines	Project Name, PWS, Permit, Etc.: 1st Quarter	Sample Origin State: UT	EPA/State Compliance: Yes ☑ No ☐
Report Mail Address: P.O Box 809 Blanding UT 84511	Contact Name: Ryan Palmer Phone/Fax: 678-2221	Email:	Sampler: (Please Print) Tanner Holliday
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order:

Special Report/Formats:

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

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

Comments:

Shipped by: UPS ATTS 2DA
Cooler ID(s): Box
Receipt Temp: N/A °C
On Ice: Y (N)
Custody Seal: On Bottle Y N; On Cooler (Y) N; Intact (Y) N; Signature Match (Y) N

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Solids/Solids Vegetation Bioassay Other DW - Drinking Water)	UNAT	Th230	Ra 226	Pb 210						SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1	BHV-1	1/3/11 / 4-4-11		13-A	X	X	X	X								
2	BHV-2				X	X	X	X								
3	BHV-4				X	X	X	X								
4	BHV-5				X	X	X	X								
5	BHV-6				X	X	X	X								
6	Blank	1/3/11 / 4/4/11		13-A	X	X	X	X								
7																
8																
9																
10																

LABORATORY USE ONLY C1040359

Custody Record MUST be Signed

Relinquished by (print): Ryan Palmer	Date/Time: 4-5-2011 1100	Signature:	Received by (print): / Date/Time: / Signature:
Relinquished by (print):	Date/Time:	Signature:	Received by (print): / Date/Time: / Signature:
Sample Disposal: Return to Client: _____	Lab Disposal: _____		Received by Laboratory: Date/Time: 4-7-11 915 Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

August 07, 2011

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

Workorder No.: C11070215

Project Name: 2nd Quarter BHV Air 2011

Energy Laboratories, Inc. Casper WY received the following 6 samples for Denison Mines USA Corp on 7/7/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C11070215-001	BHV-1	07/04/11 00:00	07/07/11	Filter	Composite of two or more samples Metals, Total Digestion, Total Metals Lead 210 Radium 226 Thorium, Isotopic
C11070215-002	BHV-2	07/04/11 00:00	07/07/11	Filter	Same As Above
C11070215-003	BHV-4	07/04/11 00:00	07/07/11	Filter	Same As Above
C11070215-004	BHV-5	07/04/11 00:00	07/07/11	Filter	Same As Above
C11070215-005	BHV-6	07/04/11 00:00	07/07/11	Filter	Same As Above
C11070215-006	Blank	07/04/11 00:00	07/07/11	Filter	Same As Above

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing. All samples are reported on an as received basis unless otherwise indicated. Samples corrected for dry weight indicate units that have -dry appended.

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

Report Approved By: Interim Branch Manager

Digitally signed by
Steve Carlston
Date: 2011.08.07 13:58:26 -06:00

CLIENT: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Sample Delivery Group: C11070215

Report Date: 08/07/11

CASE NARRATIVE

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

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

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

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

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

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

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

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

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

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-CS were subcontracted to Energy Laboratories, 415 Graham Rd., College Station, TX, EPA Number TX01520.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: BHV-1

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
C11040259-001	^{nat}U	9.01E-16	N/A	N/A	1E-16	9E-14	1.00E+00
First Quarter 2011	^{230}Th	1.90E-16	2E-17	3E-18	1E-16	3E-14	6.32E-01
Air Volume in mLs	^{226}Ra	3.64E-16	2E-17	2E-18	1E-16	9E-13	4.04E-02
1.35E+11	^{210}Pb	1.09E-14	1E-16	8E-17	2E-15	6E-13	1.82E+00

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
C11070215-001	^{nat}U	1.59E-15	N/A	N/A	1E-16	9E-14	1.77E+00
Second Quarter 2011	^{230}Th	5.31E-16	5E-17	4E-18	1E-16	3E-14	1.77E+00
Air Volume in mLs	^{226}Ra	4.99E-16	2E-17	3E-18	1E-16	9E-13	5.54E-02
1.38E+11	^{210}Pb	8.38E-15	2E-16	1E-16	2E-15	6E-13	1.40E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-001
Client Sample ID BHV-1

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.323	mg/filter		0.0003		SW6020	07/13/11 15:22 / sml
Uranium, Activity	219	pCi/Filter		0.2		SW6020	07/13/11 15:22 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1150	pCi/Filter				E909.0	07/28/11 16:54 / eli-cs
Lead 210 precision (±)	23	pCi/Filter				E909.0	07/28/11 16:54 / eli-cs
Lead 210 MDC	14	pCi/Filter				E909.0	07/28/11 16:54 / eli-cs
Radium 226	68.8	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	2.8	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	73	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	7.2	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.60	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: BHV-2

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
C11040259-002	^{nat}U	3.79E-16	N/A	N/A	1E-16	9E-14	4.21E-01
First Quarter 2011	^{230}Th	4.01E-17	6E-18	2E-18	1E-16	3E-14	1.34E-01
Air Volume in mLs	^{226}Ra	9.11E-17	8E-18	2E-18	1E-16	9E-13	1.01E-02
1.31E+11	^{210}Pb	1.06E-14	1E-16	8E-17	2E-15	6E-13	1.76E+00

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
C11070215-002	^{nat}U	3.07E-16	N/A	N/A	1E-16	9E-14	3.41E-01
Second Quarter 2011	^{230}Th	8.54E-17	1E-17	3E-18	1E-16	3E-14	2.85E-01
Air Volume in mLs	^{226}Ra	9.21E-17	9E-18	3E-18	1E-16	9E-13	1.02E-02
1.38E+11	^{210}Pb	7.21E-15	1E-16	9E-17	2E-15	6E-13	1.20E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-002
Client Sample ID BHV-2

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0625	mg/filter		0.0003		SW6020	07/13/11 15:39 / sml
Uranium, Activity	42.3	pCi/Filter		0.2		SW6020	07/13/11 15:39 / sml
RADIONUCLIDES - TOTAL							
Lead 210	994	pCi/Filter				E909.0	07/28/11 20:12 / eli-cs
Lead 210 precision (±)	19	pCi/Filter				E909.0	07/28/11 20:12 / eli-cs
Lead 210 MDC	12	pCi/Filter				E909.0	07/28/11 20:12 / eli-cs
Radium 226	12.7	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	1.3	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	12	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	1.7	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.46	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: BHV-4

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
C11040259-003	^{nat}U	1.29E-15	N/A	N/A	1E-16	9E-14	1.44E+00
First Quarter 2011	^{230}Th	1.40E-16	2E-17	3E-18	1E-16	3E-14	4.66E-01
Air Volume in mLs	^{226}Ra	1.58E-16	1E-17	3E-18	1E-16	9E-13	1.75E-02
1.25E+11	^{210}Pb	1.11E-14	1E-16	8E-17	2E-15	6E-13	1.86E+00

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
C11070215-003	^{nat}U	3.30E-15	N/A	N/A	1E-16	9E-14	3.66E+00
Second Quarter 2011	^{230}Th	5.44E-16	5E-17	6E-18	1E-16	3E-14	1.81E+00
Air Volume in mLs	^{226}Ra	4.18E-16	2E-17	4E-18	1E-16	9E-13	4.65E-02
1.17E+11	^{210}Pb	8.26E-15	2E-16	1E-16	2E-15	6E-13	1.38E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-003
Client Sample ID BHV-4

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.571	mg/filter		0.0003		SW6020	07/13/11 15:43 / sml
Uranium, Activity	386	pCi/Filter		0.2		SW6020	07/13/11 15:43 / sml
RADIONUCLIDES - TOTAL							
Lead 210	967	pCi/Filter				E909.0	07/28/11 21:18 / eli-cs
Lead 210 precision (±)	19	pCi/Filter				E909.0	07/28/11 21:18 / eli-cs
Lead 210 MDC	12	pCi/Filter				E909.0	07/28/11 21:18 / eli-cs
Radium 226	49.0	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	2.5	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	64	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	6.1	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.73	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: BHV-5

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
C11040259-004	^{nat}U	3.20E-15	N/A	N/A	1E-16	9E-14	3.56E+00
First Quarter 2011	^{230}Th	8.89E-16	8E-17	3E-18	1E-16	3E-14	2.96E+00
Air Volume in mLs	^{226}Ra	1.10E-15	3E-17	2E-18	1E-16	9E-13	1.22E-01
1.32E+11	^{210}Pb	1.48E-14	2E-16	7E-17	2E-15	6E-13	2.46E+00

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
C11070215-004	^{nat}U	6.98E-15	N/A	N/A	1E-16	9E-14	7.75E+00
Second Quarter 2011	^{230}Th	2.03E-15	2E-16	6E-18	1E-16	3E-14	6.76E+00
Air Volume in mLs	^{226}Ra	2.52E-15	5E-17	3E-18	1E-16	9E-13	2.80E-01
1.38E+11	^{210}Pb	1.08E-14	2E-16	8E-17	2E-15	6E-13	1.81E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-004
Client Sample ID BHV-5

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	1.42	mg/filter		0.0003		SW6020	07/13/11 16:03 / sml
Uranium, Activity	962	pCi/Filter		0.2		SW6020	07/13/11 16:03 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1490	pCi/Filter				E909.0	07/28/11 22:24 / eli-cs
Lead 210 precision (±)	23	pCi/Filter				E909.0	07/28/11 22:24 / eli-cs
Lead 210 MDC	12	pCi/Filter				E909.0	07/28/11 22:24 / eli-cs
Radium 226	347	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	6.6	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	280	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	25	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.88	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: BHV-6

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
C11040259-005	^{nat}U	2.70E-15	N/A	N/A	1E-16	9E-14	3.00E+00
First Quarter 2011	^{230}Th	4.62E-16	4E-17	3E-18	1E-16	3E-14	1.54E+00
Air Volume in mLs	^{226}Ra	6.51E-16	2E-17	2E-18	1E-16	9E-13	7.24E-02
1.32E+11	^{210}Pb	1.29E-14	1E-16	7E-17	2E-15	6E-13	2.14E+00

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
C11070215-005	^{nat}U	3.01E-15	N/A	N/A	1E-16	9E-14	3.35E+00
Second Quarter 2011	^{230}Th	7.07E-16	7E-17	5E-18	1E-16	3E-14	2.36E+00
Air Volume in mLs	^{226}Ra	5.75E-16	2E-17	3E-18	1E-16	9E-13	6.39E-02
1.38E+11	^{210}Pb	7.97E-15	1E-16	9E-17	2E-15	6E-13	1.33E+00

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-005
Client Sample ID BHV-6

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.613	mg/filter		0.0003		SW6020	07/13/11 16:07 / sml
Uranium, Activity	415	pCi/Filter		0.2		SW6020	07/13/11 16:07 / sml
RADIONUCLIDES - TOTAL							
Lead 210	1100	pCi/Filter				E909.0	07/28/11 23:30 / eli-cs
Lead 210 precision (±)	20	pCi/Filter				E909.0	07/28/11 23:30 / eli-cs
Lead 210 MDC	12	pCi/Filter				E909.0	07/28/11 23:30 / eli-cs
Radium 226	79.2	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	3.1	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.4	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	97	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	9.3	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.75	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Denison Mines USA Corp
REPORT DATE: August 7, 2011
PROJECT: 2nd Quarter BHV Air 2011

SAMPLE ID: Blank

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
C11040259-006	^{nat}U	1.22E-17	N/A	N/A	1E-16	9E-14	1.35E-02
First Quarter 2011	^{230}Th	5.84E-19	2E-18	3E-18	1E-16	3E-14	1.95E-03
Air Volume in mLs	^{226}Ra	5.16E-18	2E-18	3E-18	1E-16	9E-13	5.73E-04
1.36E+11	^{210}Pb	-4.51E-17	4E-17	7E-17	2E-15	6E-13	-7.51E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

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
C11070215-006	^{nat}U	1.05E-17	N/A	N/A	1E-16	9E-14	1.17E-02
Second Quarter 2011	^{230}Th	6.69E-18	2E-18	2E-18	1E-16	3E-14	2.23E-02
Air Volume in mLs	^{226}Ra	-4.89E-20	2E-18	3E-18	1E-16	9E-13	-5.43E-06
1.36E+11	^{210}Pb	-8.89E-18	5E-17	9E-17	2E-15	6E-13	-1.48E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

+LLD's are from 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
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011
Lab ID: C11070215-006
Client Sample ID Blank

Report Date: 08/07/11
Collection Date: 07/04/11
DateReceived: 07/07/11
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0021	mg/filter		0.0003		SW6020	07/13/11 16:12 / sml
Uranium, Activity	1.4	pCi/Filter		0.2		SW6020	07/13/11 16:12 / sml
RADIONUCLIDES - TOTAL							
Lead 210	-1	pCi/Filter	U			E909.0	07/29/11 00:37 / eli-cs
Lead 210 precision (±)	7.1	pCi/Filter				E909.0	07/29/11 00:37 / eli-cs
Lead 210 MDC	12	pCi/Filter				E909.0	07/29/11 00:37 / eli-cs
Radium 226	-0.007	pCi/Filter	U			E903.0	07/20/11 21:55 / trs
Radium 226 precision (±)	0.3	pCi/Filter				E903.0	07/20/11 21:55 / trs
Radium 226 MDC	0.5	pCi/Filter				E903.0	07/20/11 21:55 / trs
Thorium 230	0.91	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 precision (±)	0.34	pCi/Filter				E908.0	07/26/11 15:46 / dmf
Thorium 230 MDC	0.34	pCi/Filter				E908.0	07/26/11 15:46 / dmf

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011

Report Date: 08/07/11
Work Order: C11070215

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: R148357
Sample ID: MB-30350	3	Method Blank				Run: BERTHOLD 770-2_110715A				07/20/11 17:30
Radium 226		-0.1	pCi/Filter							U
Radium 226 precision (±)		0.1	pCi/Filter							
Radium 226 MDC		0.3	pCi/Filter							
Sample ID: LCS-30350		Laboratory Control Sample				Run: BERTHOLD 770-2_110715A				07/20/11 17:30
Radium 226		23.8	pCi/Filter		101	70	130			
Sample ID: C11061115-001HMS		Sample Matrix Spike				Run: BERTHOLD 770-2_110715A				07/20/11 17:30
Radium 226		24	pCi/L		99	70	130			
Sample ID: C11061115-001HMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-2_110715A				07/20/11 17:30
Radium 226		24	pCi/L		103	70	130	1.4	21.5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011

Report Date: 08/07/11
Work Order: C11070215

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 30397
Sample ID: C11070215-002AMS		Sample Matrix Spike				Run: EGG-ORTEC_110722A				07/26/11 15:46
Thorium 230		108	pCi/Filter		101	70	130			
Sample ID: C11070215-002AMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_110722A				07/26/11 15:46
Thorium 230		110	pCi/Filter		103	70	130	1.4	29.5	
Sample ID: LCS-30397		Laboratory Control Sample				Run: EGG-ORTEC_110722A				07/26/11 15:46
Thorium 230		10.9	pCi/Filter		110	70	130			
Sample ID: MB-30397	3	Method Blank				Run: EGG-ORTEC_110722A				07/26/11 15:46
Thorium 230		0.2	pCi/Filter							
Thorium 230 precision (±)		0.1	pCi/Filter							
Thorium 230 MDC		0.1	pCi/Filter							

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: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011

Report Date: 08/07/11
Work Order: C11070215

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_14463
Sample ID: C11070215-001AMSD		Sample Matrix Spike Duplicate				Run: SUB-T41490				07/28/11 19:06
Lead 210		2450	pCi/Filter		121	70	130	4.8	14.5	
Sample ID: C11070215-001AMS		Sample Matrix Spike				Run: SUB-T41490				07/28/11 18:00
Lead 210		2340	pCi/Filter		117	70	130			
Sample ID: LCS-14463		Laboratory Control Sample				Run: SUB-T41490				07/28/11 15:48
Lead 210		337	pCi/Filter		95	70	130			
Sample ID: MB-14463	3	Method Blank				Run: SUB-T41490				07/28/11 14:42
Lead 210		0.5	pCi/Filter							U
Lead 210 precision (±)		7	pCi/Filter							
Lead 210 MDC		10	pCi/Filter							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 2nd Quarter BHV Air 2011

Report Date: 08/07/11
Work Order: C11070215

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: 30397
Sample ID: MB-30397		Method Blank				Run: ICPMS4-C_110713A				07/13/11 15:10
Uranium		0.0001	mg/filter							
Sample ID: LCS2-30397		Laboratory Control Sample				Run: ICPMS4-C_110713A				07/13/11 15:14
Uranium		0.109	mg/filter	0.00030	109	85	115			
Sample ID: C11070228-003AMS		Sample Matrix Spike				Run: ICPMS4-C_110713A				07/13/11 16:32
Uranium		9.48E-09	mg/filter	0.00030	117	75	125			
Sample ID: C11070228-003AMSD		Sample Matrix Spike Duplicate				Run: ICPMS4-C_110713A				07/13/11 16:36
Uranium		9.43E-09	mg/filter	0.00030	116	75	125		20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Denison Mines USA Corp

C11070215

Login completed by: Debra Williams
Date Received: 7/7/2011
Reviewed by: BL2000\kschroeder
Received by: ckw
Reviewed Date: 7/7/2011
Carrier name: 2nd Day Air

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on 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?	Yes ☑	No ☐	
Container/Temp Blank temperature:	°C NA		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: Denison Mines	Project Name, PWS, Permit, Etc.: 2nd Quarter 2011	Sample Origin State: UT	EPA/State Compliance: Yes ☑ No ☐
Report Mail Address: PO Box 809 Blanding UT 84511	Contact Name: Ryan Palmer Phone/Fax: 435 678 2221	Email:	Sampler: (Please Print) Tanner Holliday
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order:

Special Report/Formats:

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

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

ANALYSIS REQUESTED

Standard Turnaround (TAT)

RUSH

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

Comments:

Shipped by: UPS 2day

Cooler ID(s): Box

Receipt Temp: NA °C

On Ice: Y (N)

Custody Seal: On Bottle Y (N); On Cooler Y (N)

Intact: Y N

Signature Match: Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	UNAT	TH 230	RA 226	Pb 210						SEE ATTACHED
1	BHV-1	4/4/2011 7/4/11		13-A	X	X	X	X						
2	BHV-2				X	X	X	X						
3	BHV-4				X	X	X	X						
4	BHV-5				X	X	X	X						
5	BHV-6				X	X	X	X						
6	Blank	4/4/11 7/4/11		13-A	X	X	X	X						
7														
8														
9														
10														

LABORATORY USE ONLY

L1107021 5

Custody Record MUST be Signed

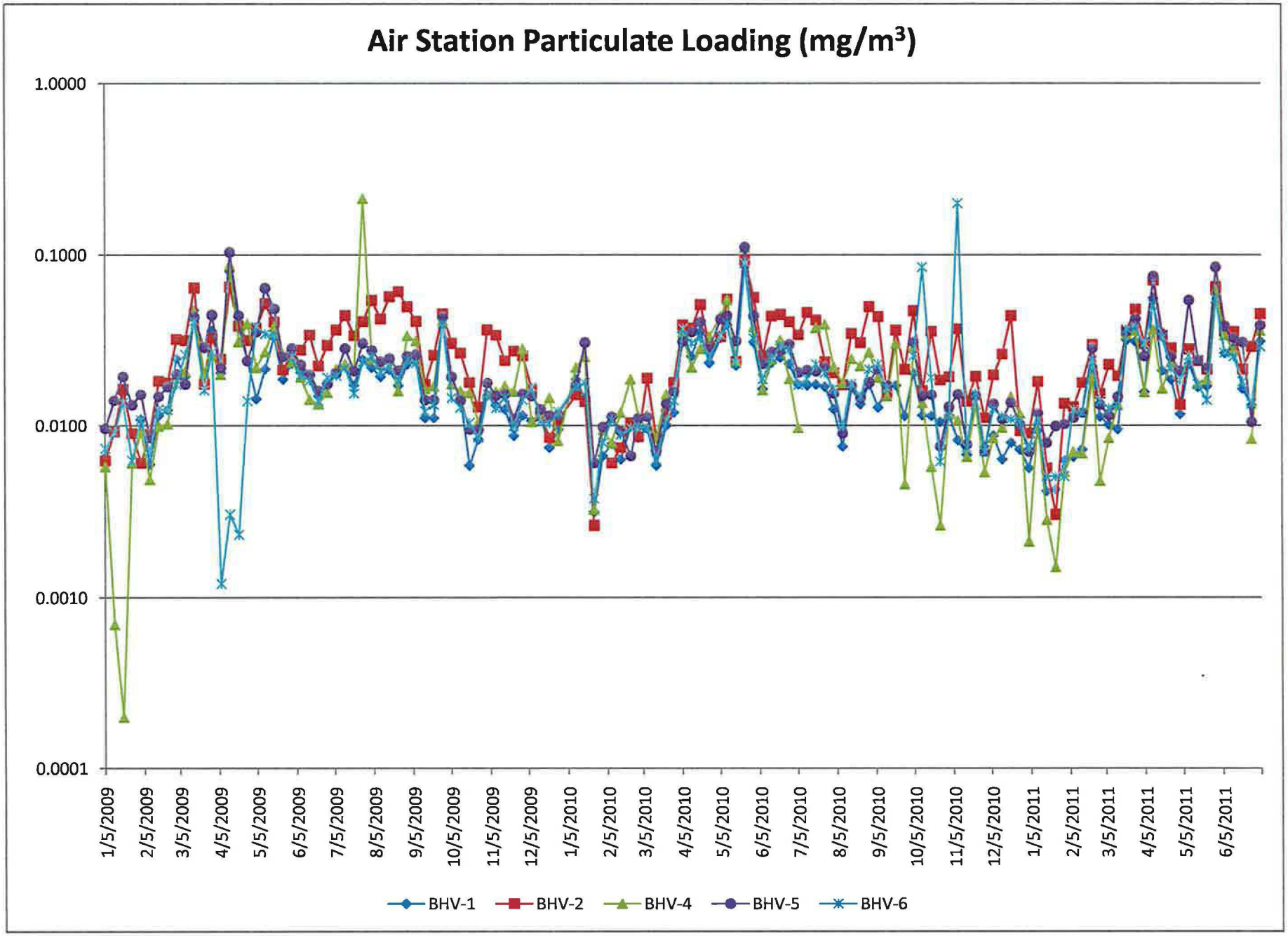
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Tanner Holliday	7/5/2011 1100	Tanner Holliday			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	7-7-11 930	

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ATTACHMENT D

AIR PARTICULATE LOADING GRAPHS AND SUPPORTING DATA


Air Station Particulate Loading (mg/m³)
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0.1000
0.0100
0.0010
0.0001
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2/5/2009
3/5/2009
4/5/2009
5/5/2009
6/5/2009
7/5/2009
8/5/2009
9/5/2009
10/5/2009
11/5/2009
12/5/2009
1/5/2010
2/5/2010
3/5/2010
4/5/2010
5/5/2010
6/5/2010
7/5/2010
8/5/2010
9/5/2010
10/5/2010
11/5/2010
12/5/2010
1/5/2011
2/5/2011
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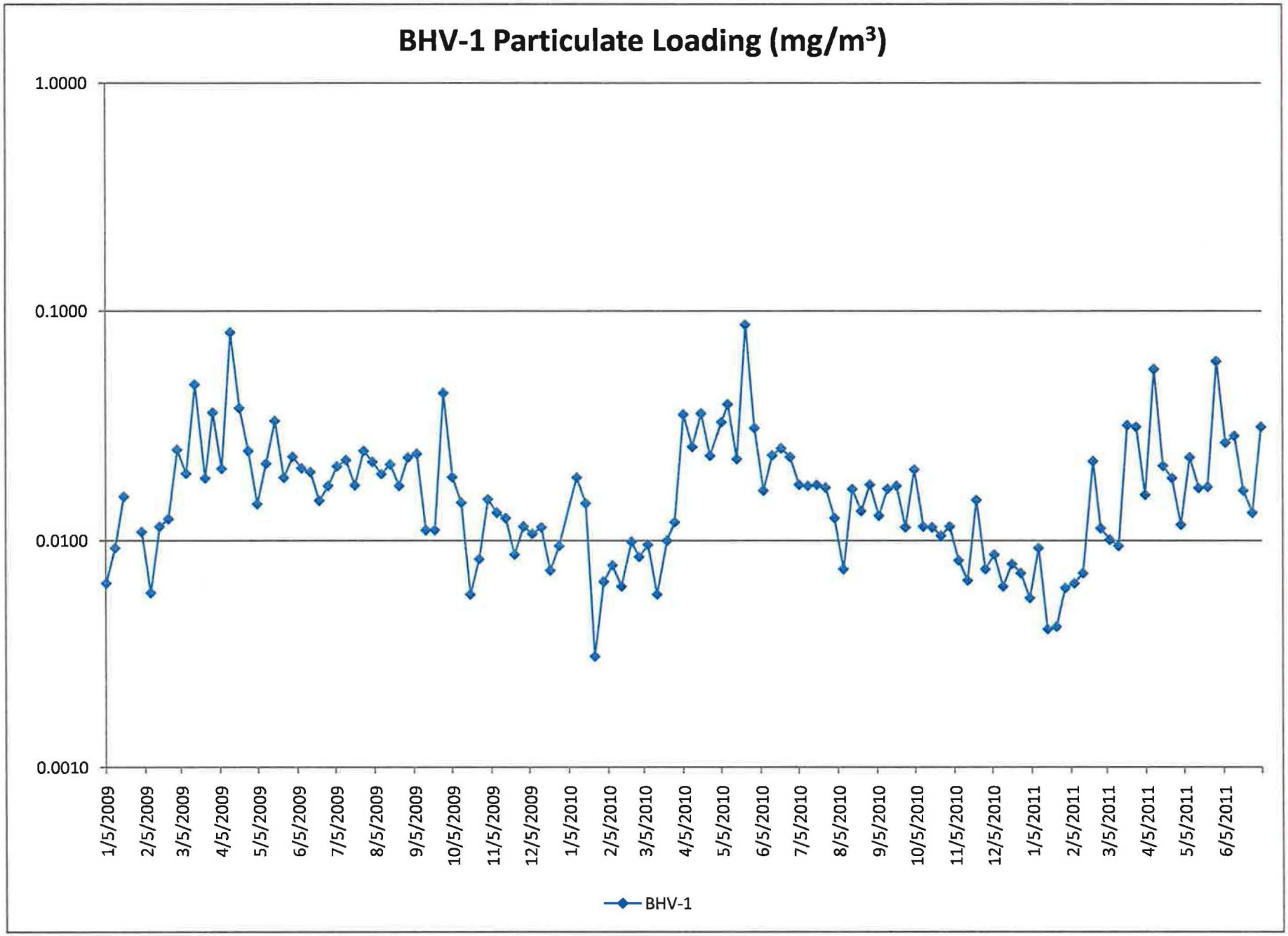
BHV-2
BHV-4
BHV-5
BHV-6


BHV-1 Particulate Loading (mg/m³)
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3/5/2009
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5/5/2009
6/5/2009
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8/5/2009
9/5/2009
10/5/2009
11/5/2009
12/5/2009
1/5/2010
2/5/2010
3/5/2010
4/5/2010
5/5/2010
6/5/2010
7/5/2010
8/5/2010
9/5/2010
10/5/2010
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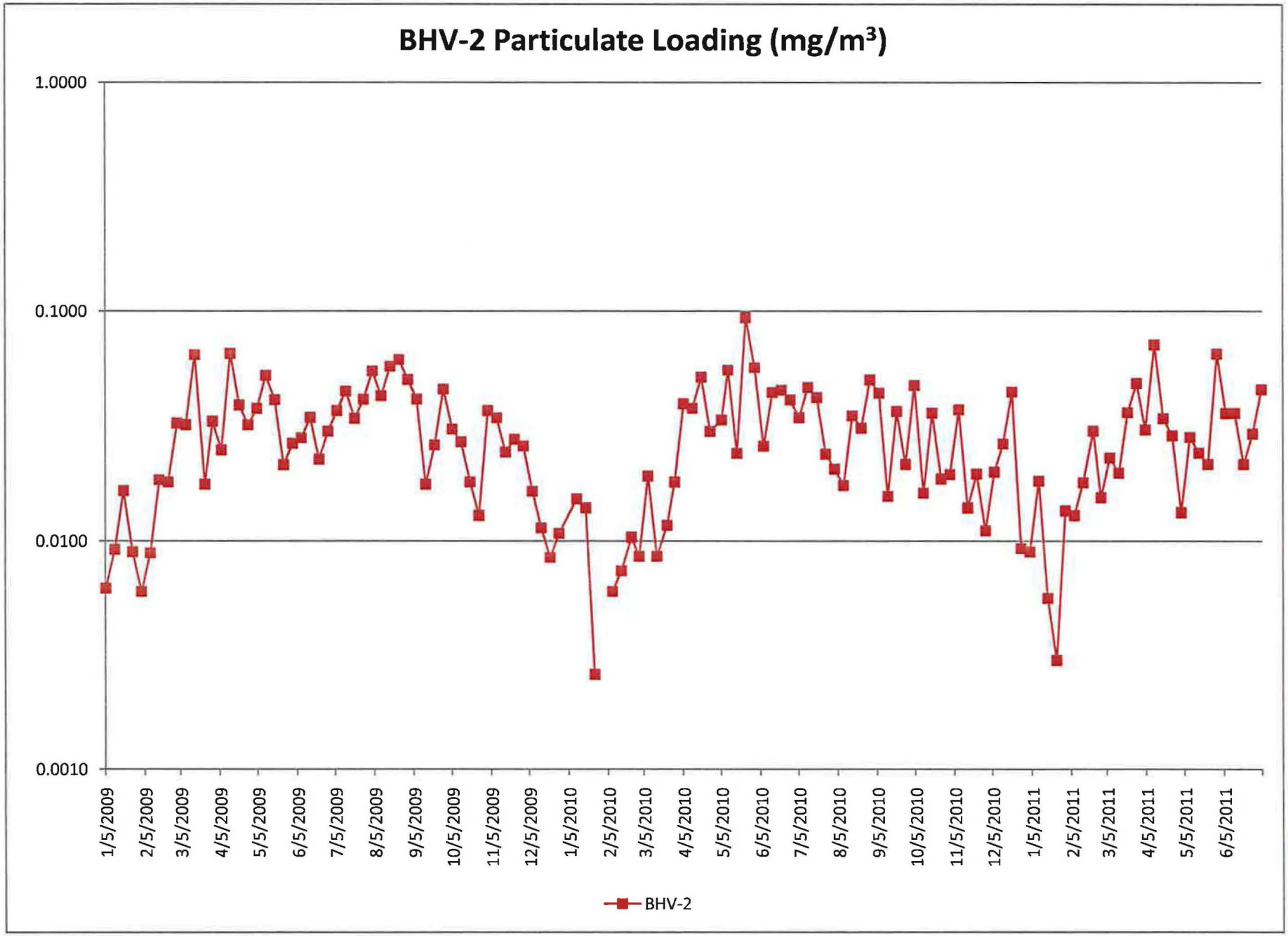
5/5/2011
6/5/2011
BHV-1


BHV-2 Particulate Loading (mg/m³)
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3/5/2009
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5/5/2009
6/5/2009
7/5/2009
8/5/2009
9/5/2009
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11/5/2009
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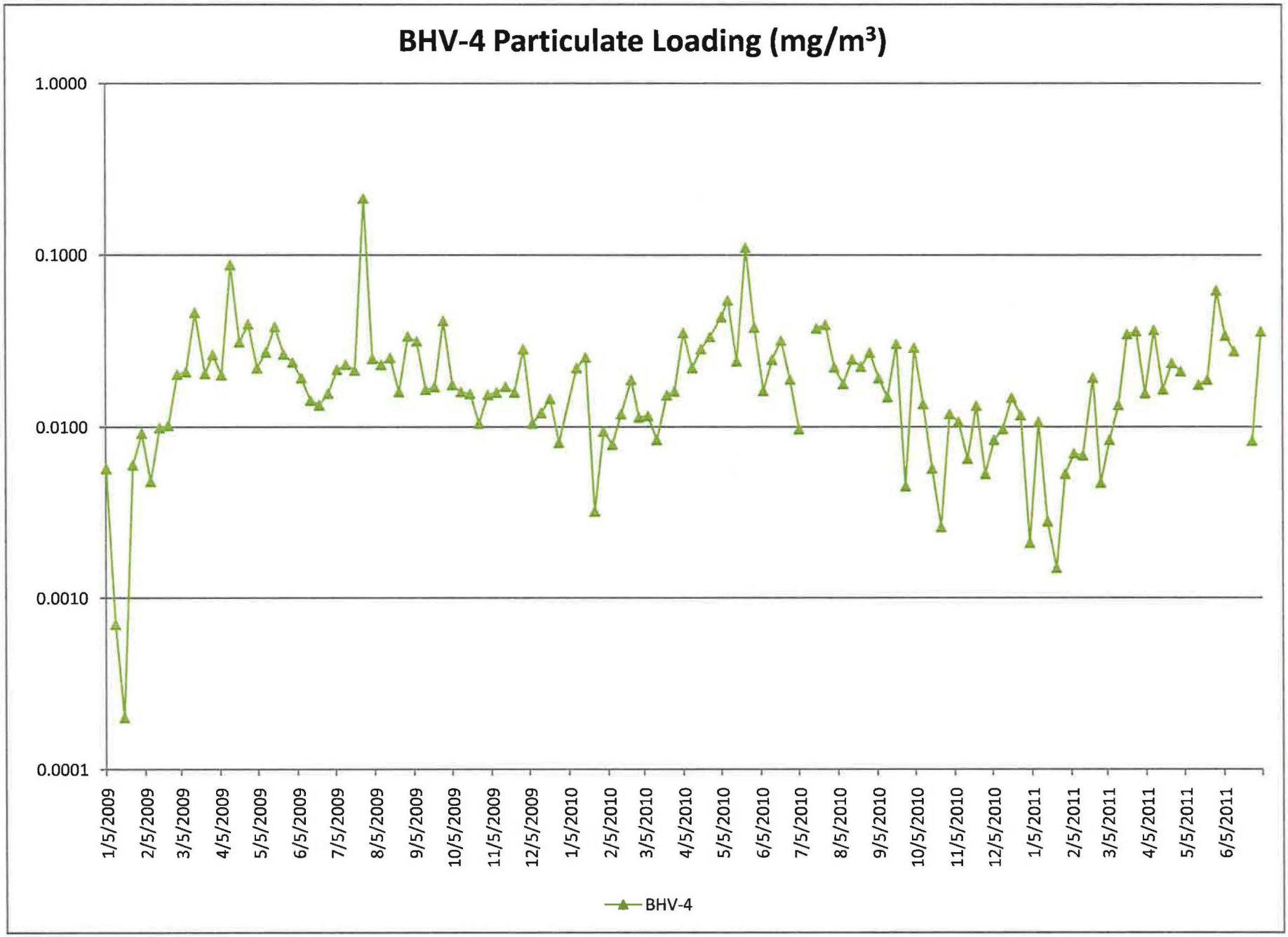
BHV-2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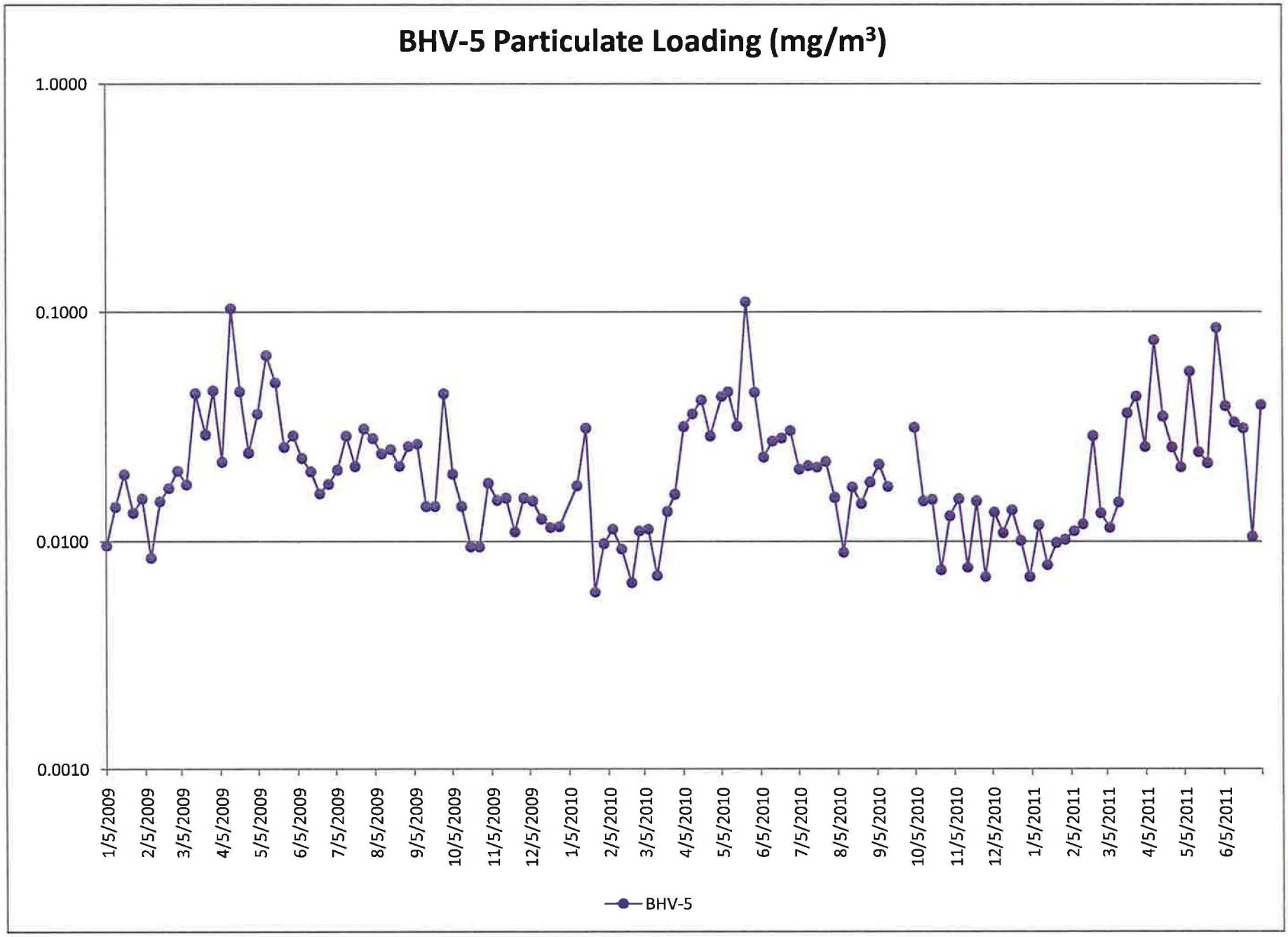
BHV-4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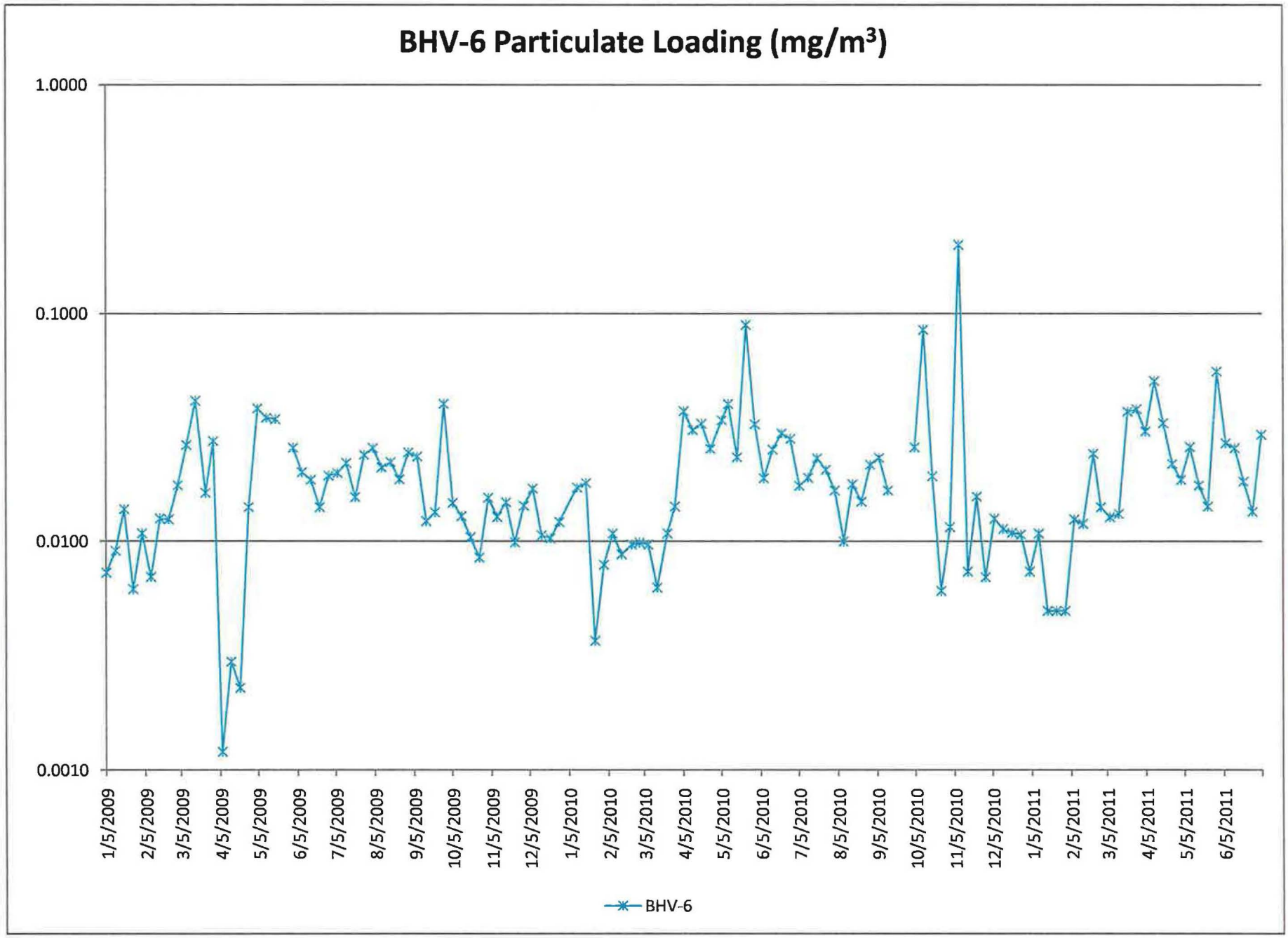
BHV-5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BHV-6

Period: January 4, 2011 through April 5, 2011 (1st Quarter 2010)

BHV-1 on stream % 98.9% **BHV-1** Total Volume: 4.76E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400769	3-Jan-11	10-Jan-11	4.3737	4.2875	0.0862	26673.8	26524.4	8962.8	9,263,636	0.0093	88.9%	36.5
2	8153706	10-Jan-11	17-Jan-11	4.5015	4.4591	0.0424	26838.4	26673.8	9876.6	10,347,944	0.0041	98.0%	37.0
3	8153701	17-Jan-11	24-Jan-11	4.5169	4.4726	0.0443	27006.1	26838.4	10062.6	10,542,821	0.0042	99.8%	37.0
4	8400764	24-Jan-11	31-Jan-11	4.3489	4.2843	0.0646	27172.9	27006.1	10006.2	10,483,729	0.0062	99.3%	37.0
5	8400757	31-Jan-11	7-Feb-11	4.3670	4.2963	0.0707	27345.7	27172.9	10365.0	10,859,652	0.0065	102.8%	37.0
6	8400751	07-Feb-11	14-Feb-11	4.3523	4.2764	0.0759	27513.3	27345.7	10059.6	10,539,678	0.0072	99.8%	37.0
7	8400745	14-Feb-11	22-Feb-11	4.5413	4.3123	0.2290	27677.7	27513.3	9863.4	10,306,184	0.0222	85.6%	36.9
8	8400739	22-Feb-11	28-Feb-11	4.4408	4.3215	0.1193	27845.4	27677.7	10062.6	10,514,327	0.0113	116.5%	36.9
9	8400733	28-Feb-11	7-Mar-11	4.4423	4.3350	0.1073	28015.6	27845.4	10210.2	10,668,553	0.0101	101.3%	36.9
10	8400727	07-Mar-11	14-Mar-11	4.5000	4.4026	0.0974	28180.0	28015.6	9867.6	10,226,747	0.0095	97.9%	36.6
11	8153893	14-Mar-11	21-Mar-11	4.8345	4.5073	0.3272	28345.6	28180.0	9933.6	10,238,892	0.0320	98.5%	36.4
12	8153889	21-Mar-11	28-Mar-11	4.8549	4.5269	0.3280	28514.6	28345.6	10137.0	10,448,543	0.0314	100.6%	36.4
13	8153882	28-Mar-11	4-Apr-11	4.7049	4.5399	0.1650	28683.6	28514.6	10144.2	10,455,964	0.0158	100.6%	36.4
	Totals	91	2184.0	4.5214615	4.3862846	0.1352			129551.4	134,896,670	0.0131	99.2%	36.8

BHV-2 on stream % 96.1% **BHV-2** Total Volume: 4.63E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400768	03-Jan-11	10-Jan-11	4.3712	4.2694	0.1018	36802.9	36712.9	5402.4	5,583,731	0.0182	53.6%	36.5
2	8153707	10-Jan-11	17-Jan-11	4.5262	4.4670	0.0592	37029.8	36862.9	10011.6	10,489,387	0.0056	99.3%	37.0
3	8153702	17-Jan-11	24-Jan-11	4.5282	4.4970	0.0312	37195.4	37029.8	9936.6	10,410,808	0.0030	98.6%	37.0
4	8400763	24-Jan-11	31-Jan-11	4.4544	4.3125	0.1419	37362.7	37195.4	10042.8	10,522,076	0.0135	99.6%	37.0
5	8400756	31-Jan-11	07-Feb-11	4.4422	4.3025	0.1397	37534.8	37362.7	10324.8	10,817,534	0.0129	102.4%	37.0
6	8400750	07-Feb-11	14-Feb-11	4.5059	4.3179	0.1880	37702.0	37534.8	10033.2	10,512,018	0.0179	99.5%	37.0
7	8400744	14-Feb-11	22-Feb-11	4.6270	4.3174	0.3096	37866.8	37702.0	9888.0	10,331,889	0.0300	85.8%	36.9
8	8400738	22-Feb-11	28-Feb-11	4.4864	4.3244	0.1620	38034.2	37866.8	10039.8	10,490,503	0.0154	116.2%	36.9
9	8400732	28-Feb-11	07-Mar-11	4.5879	4.3425	0.2454	38204.8	38034.2	10238.4	10,698,019	0.0229	101.6%	36.9
10	8400726	07-Mar-11	14-Mar-11	4.5913	4.3908	0.2005	38368.8	38204.8	9840.0	10,198,143	0.0197	97.6%	36.6
11	8153895	14-Mar-11	21-Mar-11	4.9000	4.5298	0.3702	38534.8	38368.8	9957.0	10,263,011	0.0361	98.8%	36.4
12	8153890	21-Mar-11	28-Mar-11	4.9993	4.4944	0.5049	38703.6	38534.8	10132.8	10,444,214	0.0483	100.5%	36.4
13	8153883	28-Mar-11	04-Apr-11	4.8264	4.5088	0.3176	38872.7	38703.6	10144.2	10,455,964	0.0304	100.6%	36.4
	Totals	91	2184.0	4.60357	4.39034	0.2132			125991.6	131,217,295	0.0211	96.5%	36.8

BHV-4 on stream % 91.8% **BHV-4** Total Volume: 4.42E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400767	03-Jan-11	10-Jan-11	4.3533	4.2769	0.0764	12474.7	12359.4	6917.4	7,149,582	0.0107	68.6%	36.5
2	8153708	10-Jan-11	17-Jan-11	4.4982	4.4817	0.0165	12568.6	12474.7	5634.0	5,902,873	0.0028	55.9%	37.0
3	8153703	17-Jan-11	24-Jan-11	4.5059	4.4946	0.0113	12688.3	12568.6	7179.0	7,521,606	0.0015	71.2%	37.0
4	8400762	24-Jan-11	31-Jan-11	4.3469	4.2909	0.0560	12856.8	12688.3	10109.4	10,591,854	0.0053	100.3%	37.0
5	8400755	31-Jan-11	07-Feb-11	4.3435	4.2679	0.0756	13027.7	12856.8	10254.0	10,743,355	0.0070	101.7%	37.0
6	8400749	07-Feb-11	14-Feb-11	4.3748	4.3028	0.0720	13196.3	13027.7	10119.0	10,601,912	0.0068	100.4%	37.0
7	8400743	14-Feb-11	22-Feb-11	4.5247	4.3257	0.1990	13361.0	13196.3	9882.6	10,326,246	0.0193	85.8%	36.9
8	8400737	22-Feb-11	28-Feb-11	4.3452	4.2963	0.0489	13528.6	13361.0	10057.2	10,508,684	0.0047	116.4%	36.9
9	8400731	28-Feb-11	07-Mar-11	4.4019	4.3119	0.0900	13699.3	13528.6	10240.2	10,699,900	0.0084	101.6%	36.9
10	8400725	07-Mar-11	14-Mar-11	4.5626	4.4265	0.1361	13863.1	13699.3	9824.4	10,181,975	0.0134	97.5%	36.6
11	8153896	14-Mar-11	21-Mar-11	4.8648	4.5081	0.3567	14029.0	13863.1	9956.4	10,262,392	0.0348	98.8%	36.4
12	8153891	21-Mar-11	28-Mar-11	4.9032	4.5259	0.3773	14197.0	14029.0	10080.0	10,389,791	0.0363	100.0%	36.4
13	8153884	28-Mar-11	04-Apr-11	4.6763	4.5130	0.1633	14364.9	14197.0	10074.0	10,383,607	0.0157	99.9%	36.4
	Totals	91	2184.0	4.51548	4.38632	0.1292			120327.6	125,263,778	0.0128	92.2%	36.8

BHV-5 on stream % 96.7% **BHV-5** Total Volume: 4.66E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400766	03-Jan-11	10-Jan-11	4.4122	4.3042	0.1080	36193.2	36045.4	8868.6	9,166,274	0.0118	88.0%	36.5
2	8153709	10-Jan-11	17-Jan-11	4.5390	4.4721	0.0669	36328.5	36193.2	8116.2	8,503,532	0.0079	80.5%	37.0
3	8153899	17-Jan-11	24-Jan-11	4.6295	4.5336	0.0959	36482.6	36328.5	9246.0	9,687,250	0.0099	91.7%	37.0
4	8400761	24-Jan-11	31-Jan-11	4.3723	4.2642	0.1081	36650.9	36482.6	10101.6	10,583,682	0.0102	100.2%	37.0
5	8400754	31-Jan-11	07-Feb-11	4.4108	4.2917	0.1191	36822.0	36650.9	10267.8	10,757,814	0.0111	101.9%	37.0
6	8400748	07-Feb-11	14-Feb-11	4.4055	4.2802	0.1253	36990.5	36822.5	10080.0	10,561,051	0.0119	100.0%	37.0
7	8400742	14-Feb-11	22-Feb-11	4.6182	4.3224	0.2958	37154.7	36990.5	9855.6	10,298,034	0.0287	85.6%	36.9
8	8400736	22-Feb-11	28-Feb-11	4.4709	4.3308	0.1401	37322.3	37154.7	10054.8	10,506,177	0.0133	116.4%	36.9
9	8400730	28-Feb-11	07-Mar-11	4.4675	4.3450	0.1225	37492.8	37322.3	10228.8	10,687,988	0.0115	101.5%	36.9
10	8400724	07-Mar-11	14-Mar-11	4.5828	4.4312	0.1516	37657.2	37492.8	9867.6	10,226,747	0.0148	97.9%	36.6
11	8153897	14-Mar-11	21-Mar-11	4.8945	4.5262	0.3683	37822.7	37657.0	9939.0	10,244,458	0.0360	98.6%	36.4
12	8153892	21-Mar-11	28-Mar-11	4.9667	4.5254	0.4413	37990.7	37822.7	10081.2	10,391,028	0.0425	100.0%	36.4
13	8153885	28-Mar-11	04-Apr-11	4.7820	4.5161	0.2659	38158.1	37990.7	10045.8	10,354,540	0.0257	99.7%	36.4
	Totals	91	2184.0	4.58092	4.39562	0.1853			126753	131,968,574	0.0181	97.1%	36.8

Period: January 4, 2011 through April 5, 2011 (1st Quarter 2010)

BHV-6 on stream % 96.7% **BHV-6** Total Volume: 4.66E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400765	03-Jan-11	10-Jan-11	4.3800	4.2809	0.0991	1973.2	1825.3	8872.8	9,170,615	0.0108	88.0%	36.5
2	8153710	10-Jan-11	17-Jan-11	4.4979	4.4556	0.0423	2108.6	1973.2	8122.2	8,509,819	0.0050	80.6%	37.0
3	8153704	17-Jan-11	24-Jan-11	4.5280	4.4790	0.0490	2263.2	2108.6	9280.8	9,723,711	0.0050	92.1%	37.0
4	8400760	24-Jan-11	31-Jan-11	4.3556	4.3033	0.0523	2431.3	2263.2	10084.2	10,565,452	0.0050	100.0%	37.0
5	8400753	31-Jan-11	07-Feb-11	4.4589	4.3259	0.1330	2602.4	2431.3	10263.6	10,753,413	0.0124	101.8%	37.0
6	8400747	07-Feb-11	14-Feb-11	4.4284	4.3027	0.1257	2770.9	2602.4	10108.8	10,591,226	0.0119	100.3%	37.0
7	8400741	14-Feb-11	22-Feb-11	4.5313	4.2819	0.2494	2935.3	2770.9	9867.6	10,310,573	0.0242	85.7%	36.9
8	8400735	22-Feb-11	28-Feb-11	4.4723	4.3251	0.1472	3102.9	2935.3	10056.0	10,507,430	0.0140	116.4%	36.9
9	8400729	28-Feb-11	07-Mar-11	4.5319	4.3962	0.1357	3273.5	3102.9	10235.4	10,694,884	0.0127	101.5%	36.9
10	8400723	07-Mar-11	14-Mar-11	4.5567	4.4225	0.1342	3437.6	3273.5	9848.4	10,206,848	0.0131	97.7%	36.6
11	8153898	14-Mar-11	21-Mar-11	4.9076	4.5278	0.3798	3603.2	3437.6	9936.0	10,241,365	0.0371	98.6%	36.4
12	8153888	21-Mar-11	28-Mar-11	4.9254	4.5292	0.3962	3771.3	3603.2	10080.6	10,390,409	0.0381	100.0%	36.4
13	8153886	28-Mar-11	04-Apr-11	4.8300	4.5168	0.3132	3938.2	3771.3	10017.6	10,325,473	0.0303	99.4%	36.4
	Totals	91	2184.0	4.56954	4.39592	0.1736			126774	131,991,218	0.0169	97.1%	36.8

ALL BHV on stream % 96.1%

Week #	Blanks	Start Date	Stop Date	Net
1	8153705	03-Jan-11	10-Jan-11	4.4871
2	8153900	10-Jan-11	17-Jan-11	4.4808
3	8400759	17-Jan-11	24-Jan-11	4.2868
4	8400758	24-Jan-11	31-Jan-11	4.2449
5	8400752	31-Jan-11	07-Feb-11	4.3191
6	8400746	07-Feb-11	14-Feb-11	4.3180
7	8400740	14-Feb-11	22-Feb-11	4.3201
8	8400734	22-Feb-11	28-Feb-11	4.3008
9	8400728	28-Feb-11	07-Mar-11	4.3325
10	8153894	07-Mar-11	14-Mar-11	4.5203
11	8153887	14-Mar-11	21-Mar-11	4.4993
12	8153881	21-Mar-11	28-Mar-11	4.5035
13	8153875	28-Mar-11	04-Apr-11	4.5082
	Totals	91	2184.0	4.3940

Period: April 5, 2011 through July 5, 2011 (2nd Quarter 2011)

BHV-1 on stream % 101.0% **BHV-1** Total Volume: 4.87E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8153876	4-Apr-11	11-Apr-11	5.0637	4.4850	0.5787	28850.1	28683.6	9988.8	10,324,073	0.0561	99.1%	36.5
2	8153870	11-Apr-11	18-Apr-11	4.7359	4.5115	0.2244	29018.4	28850.1	10096.2	10,578,024	0.0212	100.2%	37.0
3	8400721	18-Apr-11	25-Apr-11	4.6449	4.4479	0.1970	29186.1	29018.4	10063.2	10,543,450	0.0187	99.8%	37.0
4	8400715	25-Apr-11	2-May-11	4.5507	4.4261	0.1246	29355.1	29186.1	10137.6	10,621,400	0.0117	100.6%	37.0
5	8400709	02-May-11	9-May-11	4.6184	4.3763	0.2421	29522.1	29355.1	10024.2	10,502,588	0.0231	99.4%	37.0
6	8400702	09-May-11	16-May-11	4.5690	4.3920	0.1770	29688.9	29522.1	10006.8	10,484,358	0.0169	99.3%	37.0
7	8400997	16-May-11	23-May-11	4.5190	4.3382	0.1808	29857.8	29688.9	10133.4	10,588,305	0.0171	100.5%	36.9
8	8400991	23-May-11	30-May-11	5.0540	4.3246	0.7294	30049.7	29857.8	11514.6	12,031,509	0.0606	114.2%	36.9
9	8400985	30-May-11	6-Jun-11	4.5512	4.3075	0.2437	30194.9	30049.7	8714.4	9,105.604	0.0268	86.5%	36.9
10	8153864	06-Jun-11	13-Jun-11	4.8220	4.5244	0.2976	30361.7	30194.9	10002.6	10,366,661	0.0287	99.2%	36.6
11	8153858	13-Jun-11	20-Jun-11	4.6910	4.5195	0.1715	30529.7	30361.7	10080.0	10,389,791	0.0165	100.0%	36.4
12	8400977	20-Jun-11	27-Jun-11	4.4738	4.3369	0.1369	30697.1	30529.7	10049.4	10,358,251	0.0132	99.7%	36.4
13	8400971	27-Jun-11	4-Jul-11	4.6759	4.2996	0.3763	30890.6	30697.1	11604.6	11,961,247	0.0315	115.1%	36.4
	Totals	91	2184.0	4.6899615	4.4068846	0.2831			132415.8	137,855,261	0.0263	101.0%	36.8

BHV-2 on stream % 101.0% **BHV-2** Total Volume: 4.87E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8153877	04-Apr-11	11-Apr-11	5.2444	4.5078	0.7366	39039.4	38872.7	10002.6	10,338,336	0.0712	99.2%	36.5
2	8153871	11-Apr-11	18-Apr-11	4.8957	4.5359	0.3598	39207.5	39039.4	10087.2	10,568,595	0.0340	100.1%	37.0
3	8400720	18-Apr-11	25-Apr-11	4.7165	4.4149	0.3016	39374.8	39207.5	10035.6	10,514,532	0.0287	99.6%	37.0
4	8400714	25-Apr-11	02-May-11	4.5849	4.4433	0.1416	39544.3	39374.9	10165.2	10,650,317	0.0133	100.8%	37.0
5	8400708	02-May-11	09-May-11	4.7269	4.4315	0.2954	39710.7	39544.3	9982.2	10,458,584	0.0282	99.0%	37.0
6	8400703	09-May-11	16-May-11	4.6389	4.3848	0.2541	39878.1	39710.7	10047.0	10,526,476	0.0241	99.7%	37.0
7	8400996	16-May-11	23-May-11	4.5604	4.3334	0.2270	40046.4	39878.1	10098.6	10,551,943	0.0215	100.2%	36.9
8	8400990	23-May-11	30-May-11	5.1102	4.3271	0.7831	40238.3	40046.4	11512.2	12,029,002	0.0651	114.2%	36.9
9	8400984	30-May-11	06-Jun-11	4.6406	4.3157	0.3249	40383.0	40238.3	8680.2	9,069,869	0.0358	86.1%	36.9
10	8153865	06-Jun-11	13-Jun-11	4.9004	4.5266	0.3738	40550.9	40383.0	10076.4	10,443,147	0.0358	100.0%	36.6
11	8153859	13-Jun-11	20-Jun-11	4.7116	4.4887	0.2229	40718.3	40550.9	10042.2	10,350,829	0.0215	99.6%	36.4
12	8400976	20-Jun-11	27-Jun-11	4.6206	4.3186	0.3020	40885.8	40718.3	10051.2	10,360,106	0.0292	99.7%	36.4
13	8400973	27-Jun-11	04-Jul-11	4.8613	4.3177	0.5436	41079.3	40885.8	11610.0	11,966,813	0.0454	115.2%	36.4
	Totals	91	2184.0	4.78557	4.41123	0.3743			132390.6	137,828,549	0.0349	101.0%	36.8

BHV-4 on stream % 85.9% **BHV-4** Total Volume: 4.14E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8153878	04-Apr-11	11-Apr-11	4.9000	4.5215	0.3785	14530.8	14364.9	9952.8	10,286,865	0.0368	98.7%	36.5
2	8153872	11-Apr-11	18-Apr-11	4.5120	4.5036	0.0084	14538.9	14530.8	487.2	510,451	0.0165	4.8%	37.0
3	8400719	18-Apr-11	25-Apr-11	4.6179	4.3733	0.2446	14703.8	14538.9	9896.4	10,368,689	0.0236	98.2%	37.0
4	8400713	25-Apr-11	02-May-11	4.6332	4.4070	0.2262	14874.3	14703.8	10229.4	10,717,581	0.0211	101.5%	37.0
5	8400707	02-May-11	09-May-11	4.4075	4.4192	-0.0117	15041.0	14874.3	10002.6	10,479,957	-0.0011	99.2%	37.0
6	8400704	09-May-11	16-May-11	4.5817	4.3967	0.1850	15207.9	15041.0	10012.2	10,490,016	0.0176	99.3%	37.0
7	8400995	16-May-11	23-May-11	4.4659	4.2669	0.1990	15376.8	15207.9	10134.6	10,589,559	0.0188	100.5%	36.9
8	8400989	23-May-11	30-May-11	5.0888	4.3346	0.7542	15568.7	15376.8	11515.8	12,032,763	0.0627	114.2%	36.9
9	8400983	30-May-11	06-Jun-11	4.6341	4.3246	0.3095	15713.4	15568.7	8679.6	9,069,242	0.0341	86.1%	36.9
10	8153866	06-Jun-11	13-Jun-11	4.7811	4.4954	0.2857	15879.9	15713.4	9987.6	10,351,115	0.0276	99.1%	36.6
11	8153860	13-Jun-11	20-Jun-11	4.4954	4.5011	-0.0057	15879.9	15879.9	0.6	618	-9.2167	0.0%	36.4
12	8400975	20-Jun-11	27-Jun-11	4.3639	4.2779	0.0860	16047.5	15879.9	10058.4	10,367,527	0.0083	99.8%	36.4
13	8400969	27-Jun-11	04-Jul-11	4.7065	4.2765	0.4300	16240.0	16047.5	11546.4	11,901,258	0.0361	114.5%	36.4
	Totals	91	2184.0	4.62985	4.39218	0.2377			112503.6	117,165,641	-0.6857	85.9%	36.8

BHV-5 on stream % 101.1% **BHV-5** Total Volume: 4.87E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8153879	04-Apr-11	11-Apr-11	5.2932	4.5170	0.7762	38325.1	38158.1	10020.6	10,356,941	0.0749	99.4%	36.5
2	8153873	11-Apr-11	18-Apr-11	4.8720	4.5025	0.3695	38494.1	38325.1	10136.4	10,620,143	0.0348	100.6%	37.0
3	8400718	18-Apr-11	25-Apr-11	4.7131	4.4456	0.2675	38660.5	38494.1	9985.8	10,462,356	0.0256	99.1%	37.0
4	8400712	25-Apr-11	02-May-11	4.6483	4.4225	0.2258	38830.9	38660.0	10251.0	10,740,212	0.0210	101.7%	37.0
5	8400706	02-May-11	09-May-11	4.9720	4.3985	0.5735	38998.2	38830.9	10038.6	10,517,676	0.0545	99.6%	37.0
6	8401000	09-May-11	16-May-11	4.6046	4.3493	0.2553	39164.6	38998.2	9988.2	10,464,870	0.0244	99.1%	37.0
7	8400994	16-May-11	23-May-11	4.5646	4.3331	0.2315	39333.4	39164.6	10124.4	10,578,901	0.0219	100.4%	36.9
8	8400988	23-May-11	30-May-11	5.3001	4.2786	1.0215	39525.3	39333.4	11517.0	12,034,017	0.0849	114.3%	36.9
9	8400982	30-May-11	06-Jun-11	4.6633	4.3127	0.3506	39670.0	39525.3	8682.6	9,072,376	0.0386	86.1%	36.9
10	8153867	06-Jun-11	13-Jun-11	4.8722	4.5326	0.3396	39836.6	39670.0	9993.6	10,357,333	0.0328	99.1%	36.6
11	8153861	13-Jun-11	20-Jun-11	4.8331	4.5085	0.3246	40005.6	39836.6	10143.0	10,454,727	0.0310	100.6%	36.4
12	8400979	20-Jun-11	27-Jun-11	4.4222	4.3139	0.1083	40172.7	40005.6	10020.6	10,328,565	0.0105	99.4%	36.4
13	8400974	27-Jun-11	04-Jul-11	4.7935	4.3273	0.4662	40365.4	40172.7	11562.6	11,917,956	0.0391	114.7%	36.4
	Totals	91	2184.0	4.81171	4.40324	0.4085		7797800	132464.4	137,906,073	0.0380	101.1%	36.8

Period: April 5, 2011 through July 5, 2011 (2nd Quarter 2011)

BHV-6 on stream % 101.1%

BHV-6 Total Volume: 4.87E+06

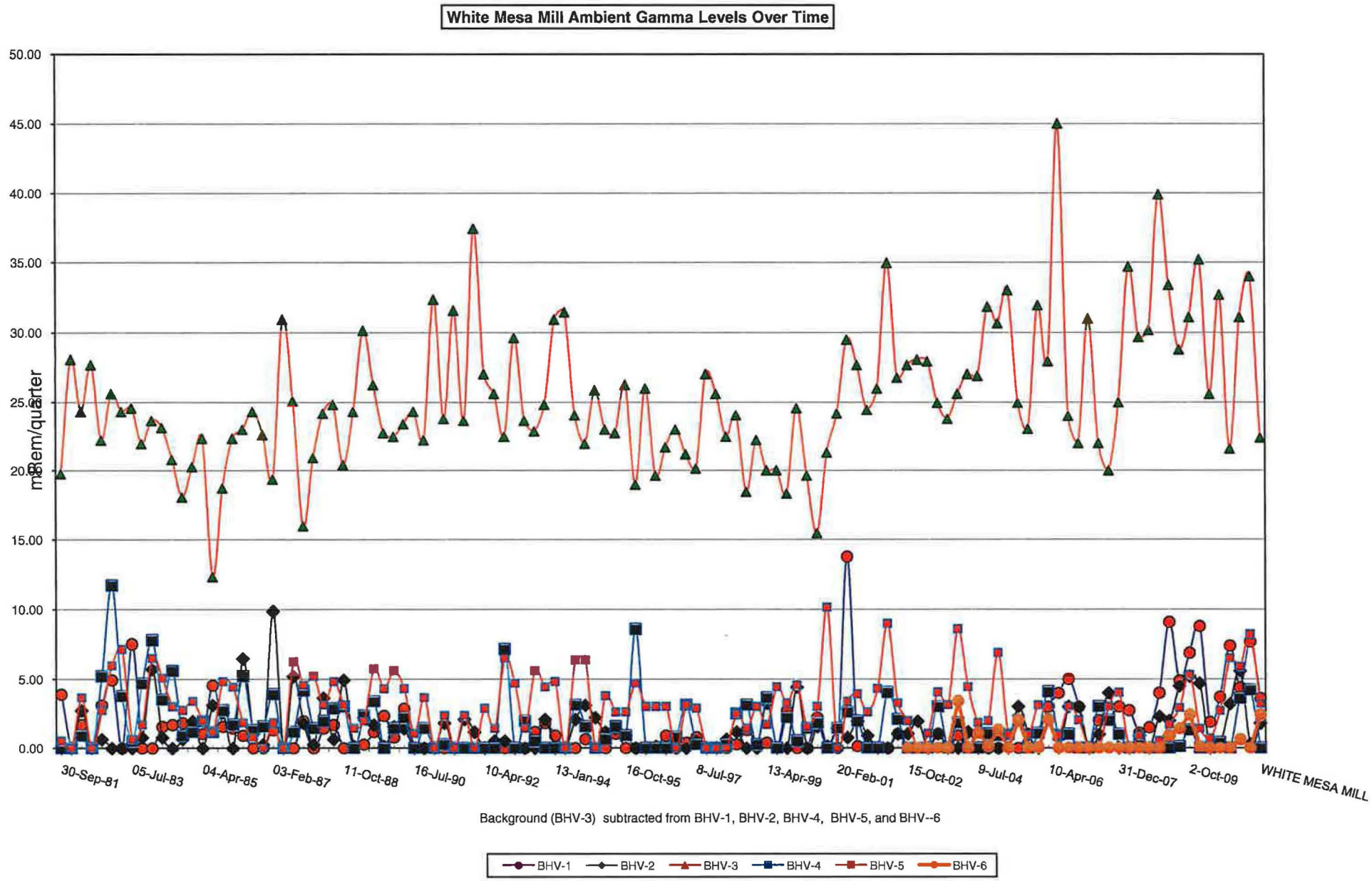
Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8153880	04-Apr-11	11-Apr-11	5.0261	4.4999	0.5262	4105.4	3938.2	10033.2	10,369,964	0.0507	99.5%	36.5
2	8153874	11-Apr-11	18-Apr-11	4.8707	4.5197	0.3510	4274.6	4105.4	10150.2	10,634,601	0.0330	100.7%	37.0
3	8400717	18-Apr-11	25-Apr-11	4.6669	4.4378	0.2291	4441.4	4274.6	10008.6	10,486,244	0.0218	99.3%	37.0
4	8400711	25-Apr-11	02-May-11	4.6318	4.4340	0.1978	4611.5	4441.4	10205.4	10,692,436	0.0185	101.2%	37.0
5	8400705	02-May-11	09-May-11	4.6670	4.3952	0.2718	4778.2	4611.5	10001.4	10,478,700	0.0259	99.2%	37.0
6	8400999	09-May-11	16-May-11	4.4894	4.3058	0.1836	4945.2	4778.2	10020.6	10,498,816	0.0175	99.4%	37.0
7	8400993	16-May-11	23-May-11	4.4807	4.3315	0.1492	5114.0	4945.2	10126.2	10,580,782	0.0141	100.5%	36.9
8	8400987	23-May-11	30-May-11	4.9981	4.3260	0.6721	5305.9	5114.0	11517.6	12,034,644	0.0558	114.3%	36.9
9	8400981	30-May-11	06-Jun-11	4.5186	4.2751	0.2435	5450.3	5305.9	8662.8	9,051,687	0.0269	85.9%	36.9
10	8153868	06-Jun-11	13-Jun-11	4.7920	4.5267	0.2653	5617.0	5450.3	9999.6	10,363,551	0.0256	99.2%	36.6
11	8153862	13-Jun-11	20-Jun-11	4.6950	4.5055	0.1895	5785.7	5617.0	10120.8	10,431,845	0.0182	100.4%	36.4
12	8400980	20-Jun-11	27-Jun-11	4.4575	4.3188	0.1387	5953.2	5785.7	10055.4	10,364,435	0.0134	99.8%	36.4
13	8400972	27-Jun-11	04-Jul-11	4.6210	4.2719	0.3491	6145.6	5953.2	11542.8	11,897,548	0.0293	114.5%	36.4
	Totals	91	2184.0	4.68575	4.39599	0.2898			132444.6	137,885,253	0.0270	101.1%	36.8

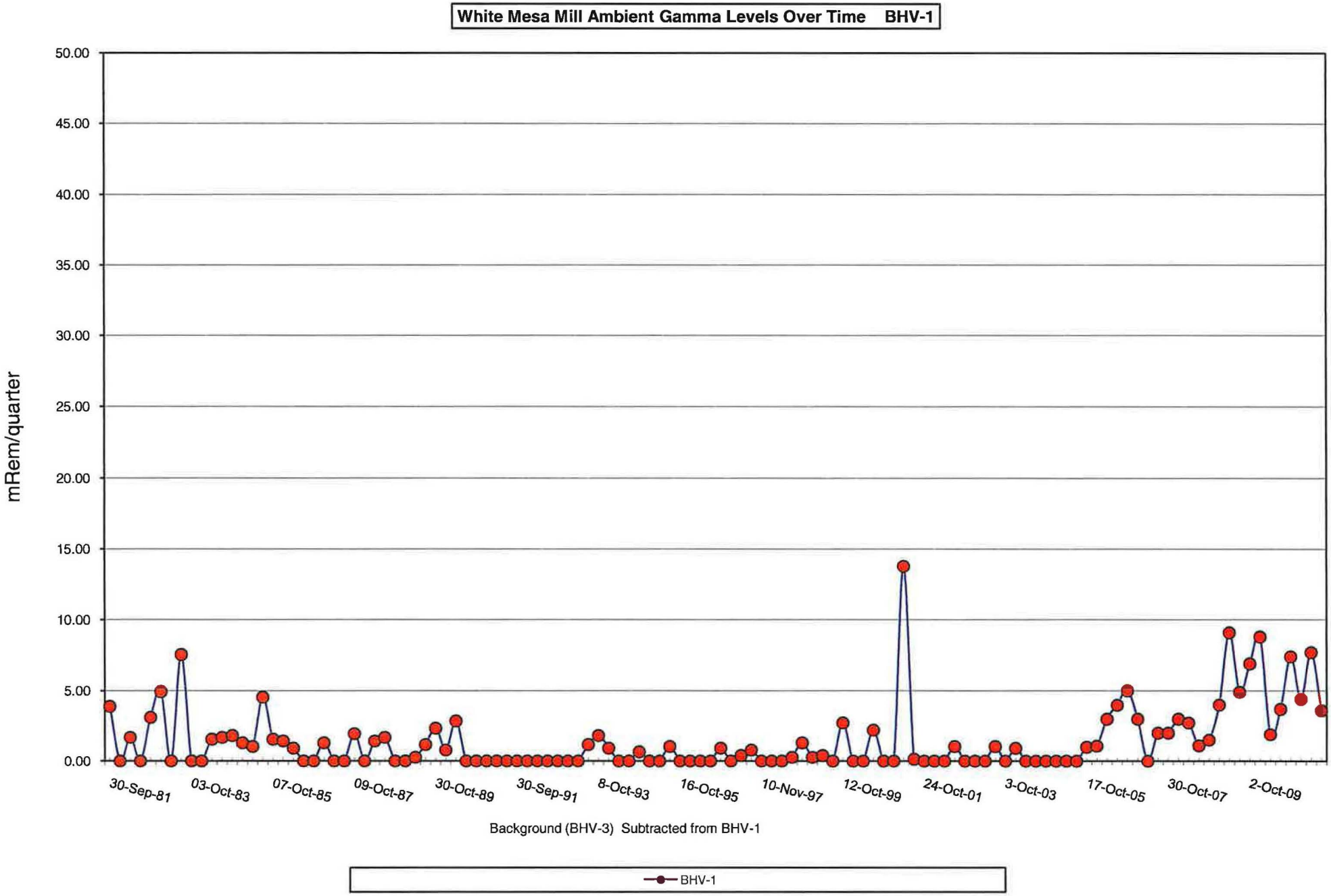
ALL BHV on stream % 98.0%

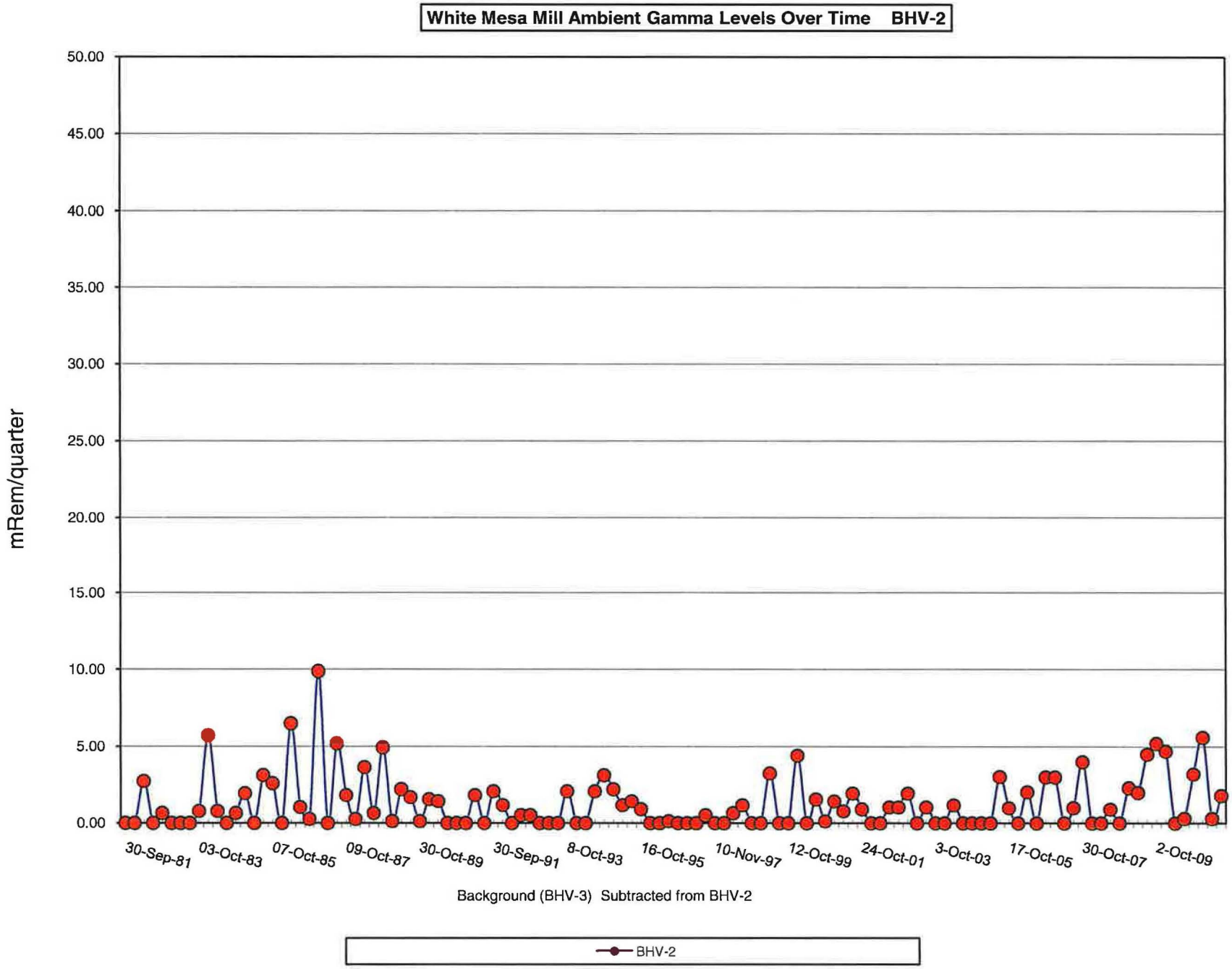
Week #	Blanks	Start Date	Stop Date	Net
1	8153869	04-Apr-11	11-Apr-11	4.4980
2	8400722	11-Apr-11	18-Apr-11	4.4061
3	8400716	18-Apr-11	25-Apr-11	4.4186
4	8400710	25-Apr-11	02-May-11	4.4222
5	8400701	02-May-11	09-May-11	4.4305
6	8400998	09-May-11	16-May-11	4.3180
7	8400992	16-May-11	23-May-11	4.2808
8	8400986	23-May-11	30-May-11	4.3208
9	8153863	30-May-11	06-Jun-11	4.5047
10	8153857	06-Jun-11	13-Jun-11	4.5049
11	8400978	13-Jun-11	20-Jun-11	4.3089
12	8400970	20-Jun-11	27-Jun-11	4.3220
13	8153851	27-Jun-11	04-Jul-11	4.5145
	Totals	91	2184.0	4.4038

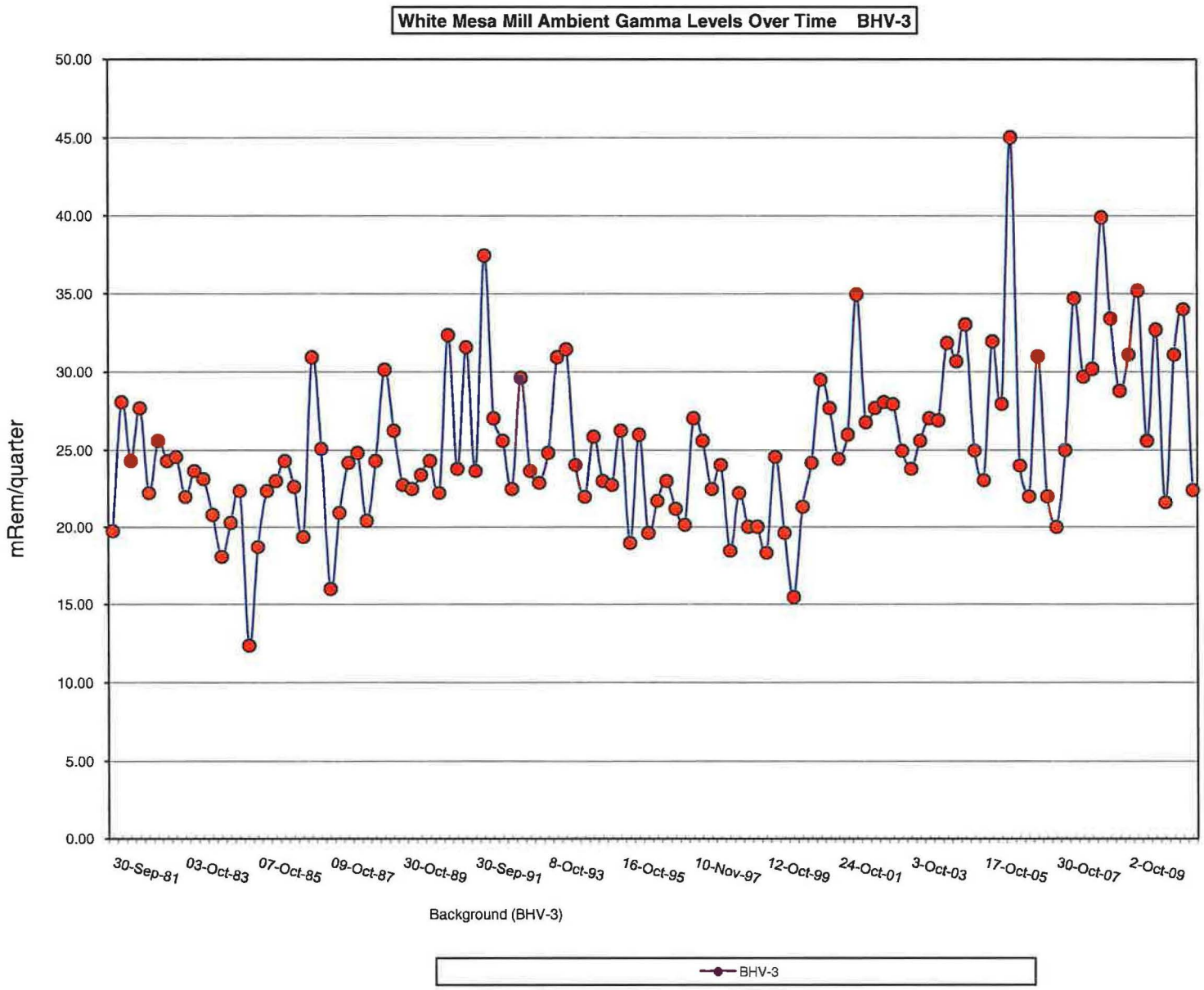
ATTACHMENT E

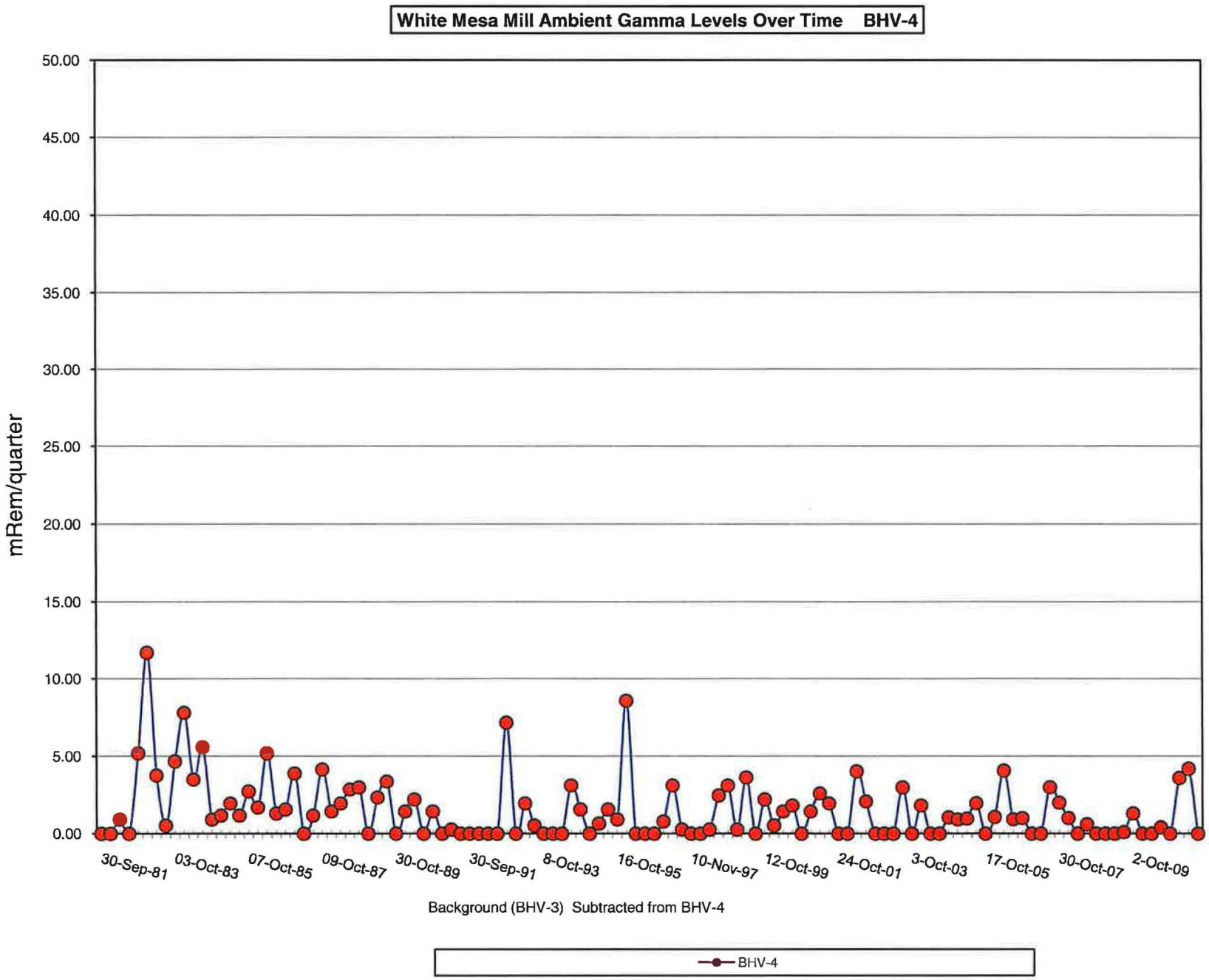
ENVIRONMENTAL GAMMA GRAPHS AND SUPPORTING DATA

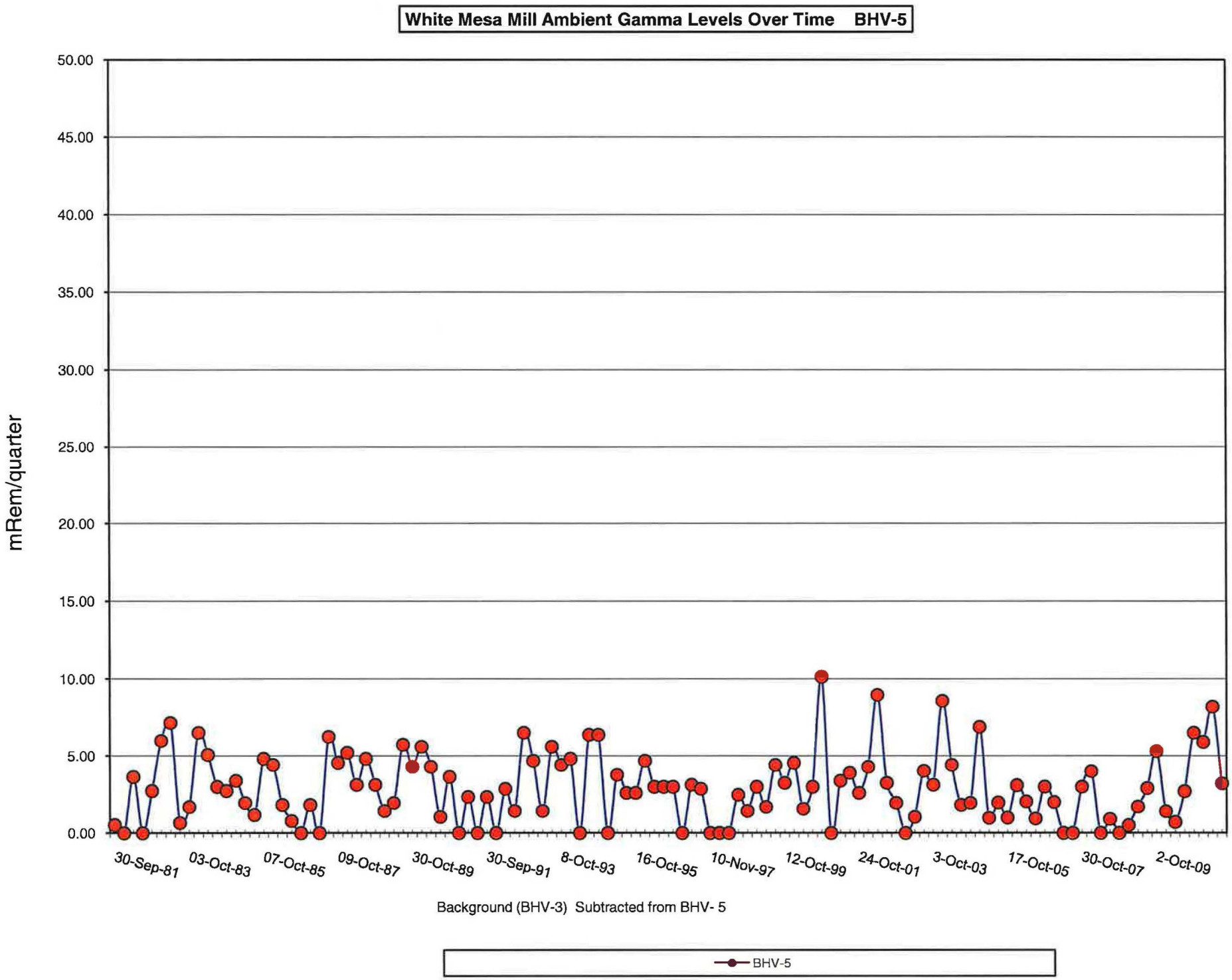

White Mesa Mill Ambient Gamma Levels Over Time
mrem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
05-Jul-83
04-Apr-85
03-Feb-87
11-Oct-88
16-Jul-90
10-Apr-92
13-Jan-94
16-Oct-95
8-Jul-97
13-Apr-99
20-Feb-01
15-Oct-02
9-Jul-04
10-Apr-06
31-Dec-07
2-Oct-09
WHITE MESA MILL
Background (BHV-3) subtracted from BHV-1, BHV-2, BHV-4, BHV-5, and BHV--6
BHV-1
BHV-2
BHV-3
BHV-4
BHV-5
BHV-6

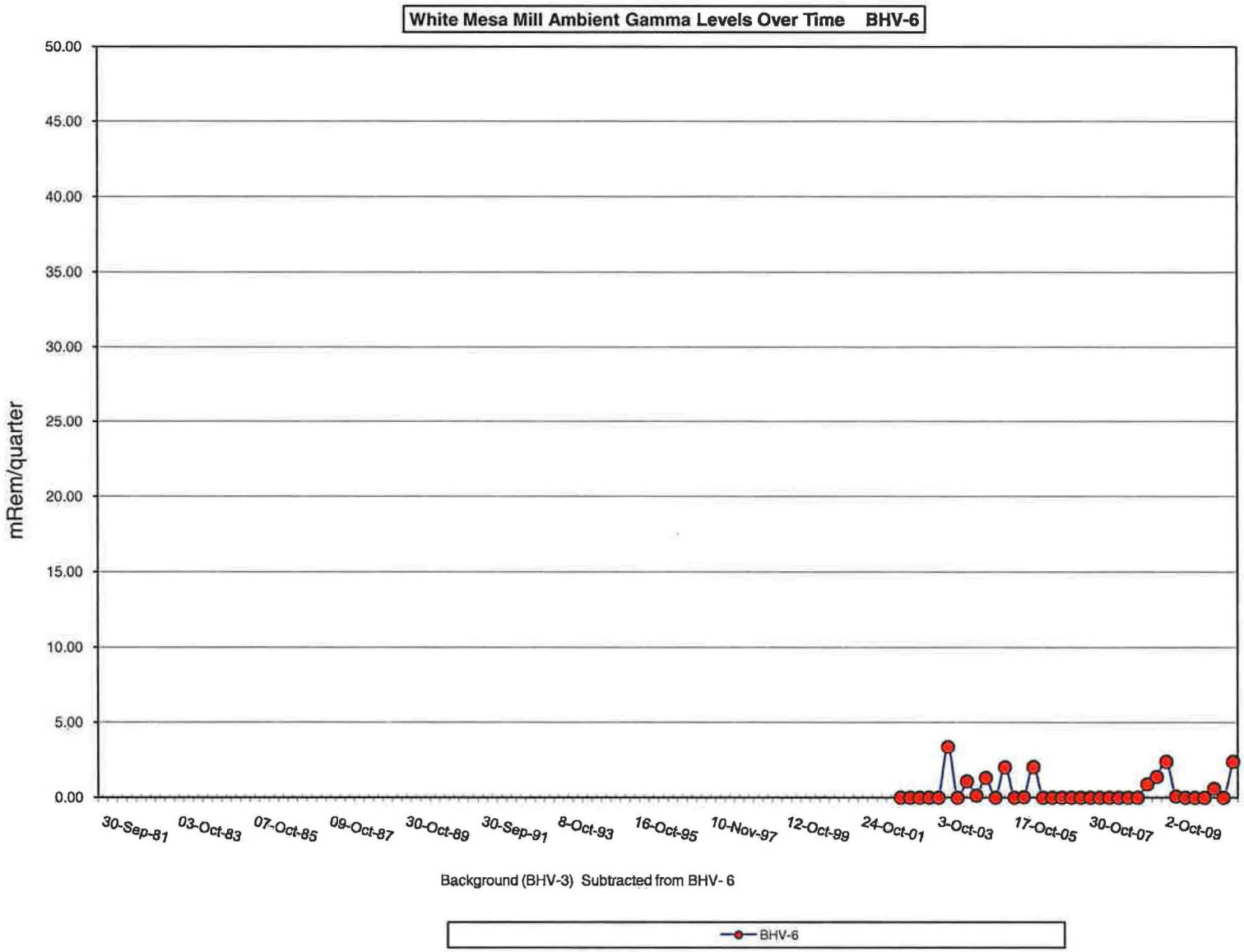

White Mesa Mill Ambient Gamma Levels Over Time BHV-1
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
Background (BHV-3) Subtracted from BHV-1
BHV-1


White Mesa Mill Ambient Gamma Levels Over Time BHV-2
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
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
Background (BHV-3) Subtracted from BHV-2
BHV-2


White Mesa Mill Ambient Gamma Levels Over Time BHV-3
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
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
Background (BHV-3)
BHV-3


White Mesa Mill Ambient Gamma Levels Over Time BHV-4
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
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
Background (BHV-3) Subtracted from BHV-4
BHV-4


White Mesa Mill Ambient Gamma Levels Over Time BHV-5
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
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
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
03-Oct-83
07-Oct-85
09-Oct-87
30-Oct-89
30-Sep-91
8-Oct-93
16-Oct-95
10-Nov-97
12-Oct-99
24-Oct-01
3-Oct-03
17-Oct-05
30-Oct-07
2-Oct-09
Background (BHV-3) Subtracted from BHV- 6
BHV-6

White Mesa Mill First Quarter 2011 Environmental 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	1/7/2011	4/28/2011	111	38.9	0.01	0.350	2.45
1	V2O5 Control Room	1/7/2011	4/28/2011	111	59.8	0.02	0.539	3.77
2	BHV-6	1/7/2011	4/28/2011	111	32.7	0.01	0.295	2.06
3	Ore Stor. - Molycorp Area	1/7/2011	4/28/2011	111	961	0.36	8.658	60.60
4	Vanadium Precip.Area	1/7/2011	4/28/2011	111	119	0.04	1.072	7.50
5	Yellocake Drying Area	1/7/2011	4/28/2011	111	165.4	0.06	1.490	10.43
6	Leach	1/7/2011	4/28/2011	111	297.8	0.11	2.683	18.78
7	SAG Mill Control Room	1/7/2011	4/28/2011	111	357.7	0.13	3.223	22.56
8	Yellowcake Precip.	1/7/2011	4/28/2011	111	125.4	0.05	1.130	7.91
9	Central Control Room	1/7/2011	4/28/2011	111	98.8	0.04	0.890	6.23
10	Trommel Screen (ore pad)	1/7/2011	4/28/2011	111	337.3	0.13	3.039	21.27
11	North East Corner Ore Pad	1/7/2011	4/28/2011	111	215	0.08	1.937	13.56
12	Met. Lab	1/7/2011	4/28/2011	111	85.4	0.03	0.769	5.39
13	Filter Press Room	1/7/2011	4/28/2011	111	214.6	0.08	1.933	13.53
14	BHV-1	1/7/2011	4/28/2011	111	41.7	0.02	0.376	2.63
15	BHV-2	1/7/2011	4/28/2011	111	34.3	0.01	0.309	2.16
16	BHV-3	1/7/2011	4/28/2011	111	34	0.01	0.306	2.14
17	BHV-4	1/7/2011	4/28/2011	111	38.2	0.01	0.344	2.41
18	BHV-5	1/7/2011	4/28/2011	111	42.2	0.02	0.380	2.66
19	SAG Mill	1/7/2011	4/28/2011	111	471.1	0.18	4.244	29.71
20	Tails	1/7/2011	4/28/2011	111	144.6	0.05	1.303	9.12
21	CCD	1/7/2011	4/28/2011	111	89.1	0.03	0.803	5.62
22	North SX	1/7/2011	4/28/2011	111	102.8	0.04	0.926	6.48
23	Administration Building	1/7/2011	4/28/2011	111	49.9	0.02	0.450	3.15
24	Admin Parking Lot	1/7/2011	4/28/2011	111	106	0.04	0.955	6.68
25	Yellowcake Packaging	1/7/2011	4/28/2011	111	871.4	0.33	7.850	54.95
26	Yellowcake Storage	1/7/2011	4/28/2011	111	421.9	0.16	3.801	26.61
27	Bucking Room	1/7/2011	4/28/2011	111	112.8	0.04	1.016	7.11
28	Mill Lunch Room	1/7/2011	4/28/2011	111	65.7	0.02	0.592	4.14
29	South SX	1/7/2011	4/28/2011	111	180.1	0.07	1.623	11.36
30	Mtce. Super.'s Office	1/7/2011	4/28/2011	111	60.4	0.02	0.544	3.81
31	Ore Feed Grizzly	1/7/2011	4/28/2011	111	447.1	0.17	4.028	28.20
32	Scalehouse	1/7/2011	4/28/2011	111	233.4	0.09	2.103	14.72
33	Sample Plant (OBS)	1/7/2011	4/28/2011	111	370.9	0.14	3.341	23.39
34	Front Gate	1/7/2011	4/28/2011	111	232.8	0.09	2.097	14.68
45	AF - Barrel Dump Station	1/7/2011	4/28/2011	111	284	0.11	2.559	17.91
46	AF Circuit - South	1/7/2011	4/28/2011	111	142.9	0.05	1.287	9.01
47	AF Circuit - North	1/7/2011	4/28/2011	111	172	0.06	1.550	10.85
51	North Control # 1	1/7/2011	4/28/2011	111	40.6	0.02	0.366	2.56
52	North Control # 2	1/7/2011	4/28/2011	111	37.9	0.01	0.341	2.39
53	Vault	1/7/2011	4/28/2011	111	39	0.01	0.351	2.46

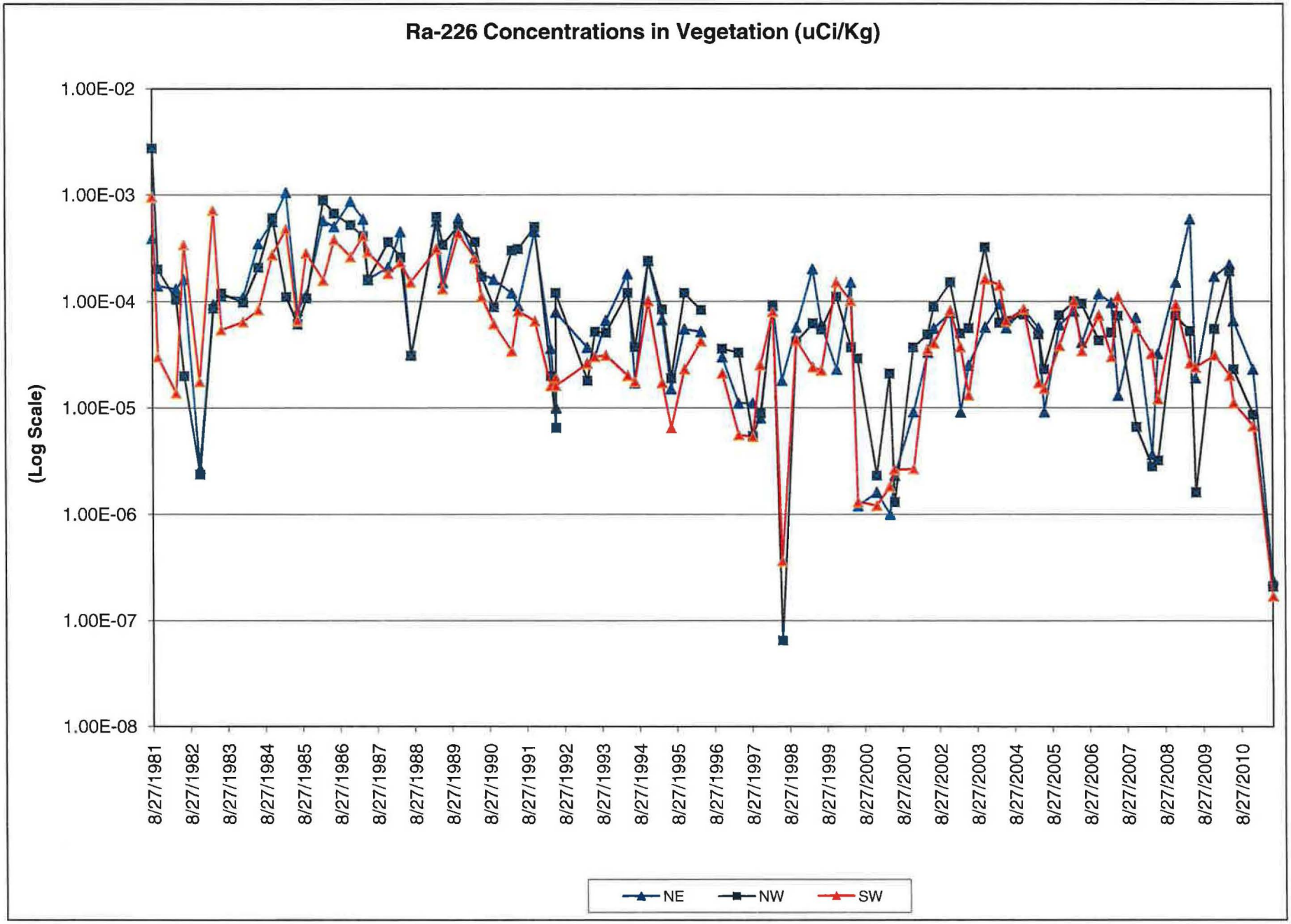
White Mesa Mill Second Quarter 2011 Environmental Gamma Monitor Results

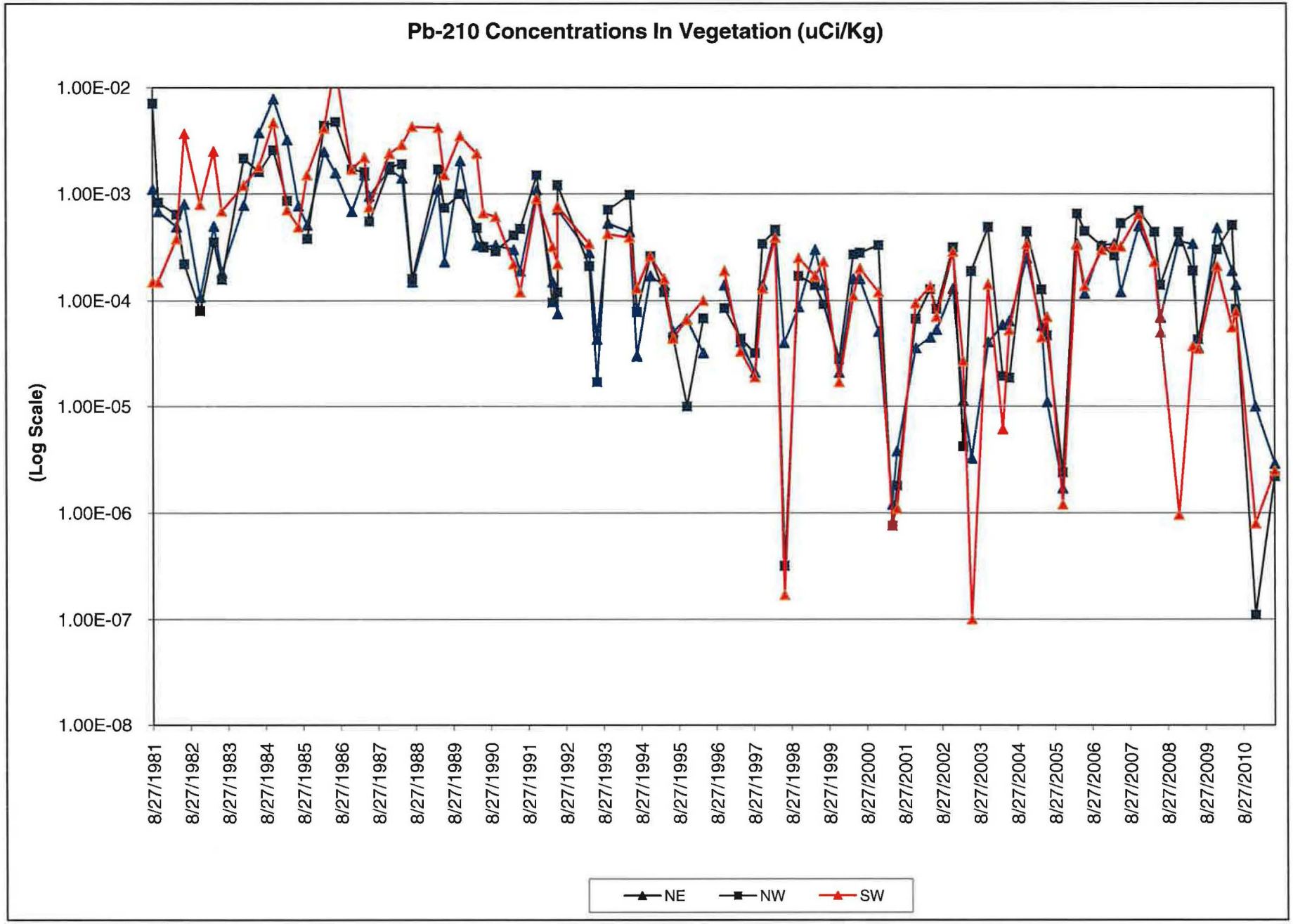
Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	4/28/2011	7/6/2011	69	27.7	0.02	0.401	2.81
1	V2O5 Control Room	4/28/2011	7/6/2011	69	34.9	0.02	0.506	3.54
2	BHV-6	4/28/2011	7/6/2011	69	24.8	0.01	0.359	2.52
3	Ore Stor. - Molycorp Area	4/28/2011	7/6/2011	69	487.9	0.29	7.071	49.50
4	Vanadium Precip.Area	4/28/2011	7/6/2011	69	71.5	0.04	1.036	7.25
5	Yellocake Drying Area	4/28/2011	7/6/2011	69	162.2	0.10	2.351	16.46
6	Leach	4/28/2011	7/6/2011	69		0.00	0.000	0.00*
7	SAG Mill Control Room	4/28/2011	7/6/2011	69	220.9	0.13	3.201	22.41
8	Yellowcake Precip.	4/28/2011	7/6/2011	69	73.7	0.04	1.068	7.48
9	Central Control Room	4/28/2011	7/6/2011	69	60.6	0.04	0.878	6.15
10	Trommel Screen (ore pad)	4/28/2011	7/6/2011	69	225.9	0.14	3.274	22.92
11	North East Corner Ore Pad	4/28/2011	7/6/2011	69		0.00	0.000	0.00*
12	Met. Lab	4/28/2011	7/6/2011	69	49	0.03	0.710	4.97
13	Filter Press Room	4/28/2011	7/6/2011	69	143.3	0.09	2.077	14.54
14	BHV-1	4/28/2011	7/6/2011	69	26	0.02	0.377	2.64
15	BHV-2	4/28/2011	7/6/2011	69	24.2	0.01	0.351	2.46
16	BHV-3	4/28/2011	7/6/2011	69	22.4	0.01	0.325	2.27
17	BHV-4	4/28/2011	7/6/2011	69	21.5	0.01	0.312	2.18
18	BHV-5	4/28/2011	7/6/2011	69	25.6	0.02	0.371	2.60
19	SAG Mill	4/28/2011	7/6/2011	69	282.1	0.17	4.088	28.62
20	Tails	4/28/2011	7/6/2011	69	90.9	0.05	1.317	9.22
21	CCD	4/28/2011	7/6/2011	69	55.7	0.03	0.807	5.65
22	North SX	4/28/2011	7/6/2011	69	65.2	0.04	0.945	6.61
23	Administration Building	4/28/2011	7/6/2011	69	27.8	0.02	0.403	2.82
24	Admin Parking Lot	4/28/2011	7/6/2011	69	66.6	0.04	0.965	6.76
25	Yellowcake Packaging	4/28/2011	7/6/2011	69	623.7	0.38	9.039	63.27
26	Yellowcake Storage	4/28/2011	7/6/2011	69	220.1	0.13	3.190	22.33
27	Bucking Room	4/28/2011	7/6/2011	69	75.2	0.05	1.090	7.63
28	Mill Lunch Room	4/28/2011	7/6/2011	69	44.7	0.03	0.648	4.53
29	South SX	4/28/2011	7/6/2011	69	104.3	0.06	1.512	10.58
30	Mtce. Super.'s Office	4/28/2011	7/6/2011	69	38.3	0.02	0.555	3.89
31	Ore Feed Grizzly	4/28/2011	7/6/2011	69	284.5	0.17	4.123	28.86
32	Scalehouse	4/28/2011	7/6/2011	69	152.4	0.09	2.209	15.46
33	Sample Plant (OBS)	4/28/2011	7/6/2011	69	244.1	0.15	3.538	24.76
34	Front Gate	4/28/2011	7/6/2011	69	246.4	0.15	3.571	25.00
45	AF - Barrel Dump Station	4/28/2011	7/6/2011	69	126	0.08	1.826	12.78
46	AF Circuit - South	4/28/2011	7/6/2011	69	33.4	0.02	0.484	3.39
47	AF Circuit - North	4/28/2011	7/6/2011	69	56.1	0.03	0.813	5.69
51	North Control # 1	4/28/2011	7/6/2011	69	25.1	0.02	0.364	2.55
52	North Control # 2	4/28/2011	7/6/2011	69	21.3	0.01	0.309	2.16

* Lost Badge

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
8/27/1995
8/27/1996
8/27/1997
8/27/1998
8/27/1999
8/27/2000
8/27/2001
8/27/2002
8/27/2003
8/27/2004
8/27/2005
8/27/2006
8/27/2007
8/27/2008
8/27/2009
8/27/2010
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
8/27/1996
8/27/1997
8/27/1998
8/27/1999
8/27/2000
8/27/2001
8/27/2002
8/27/2003
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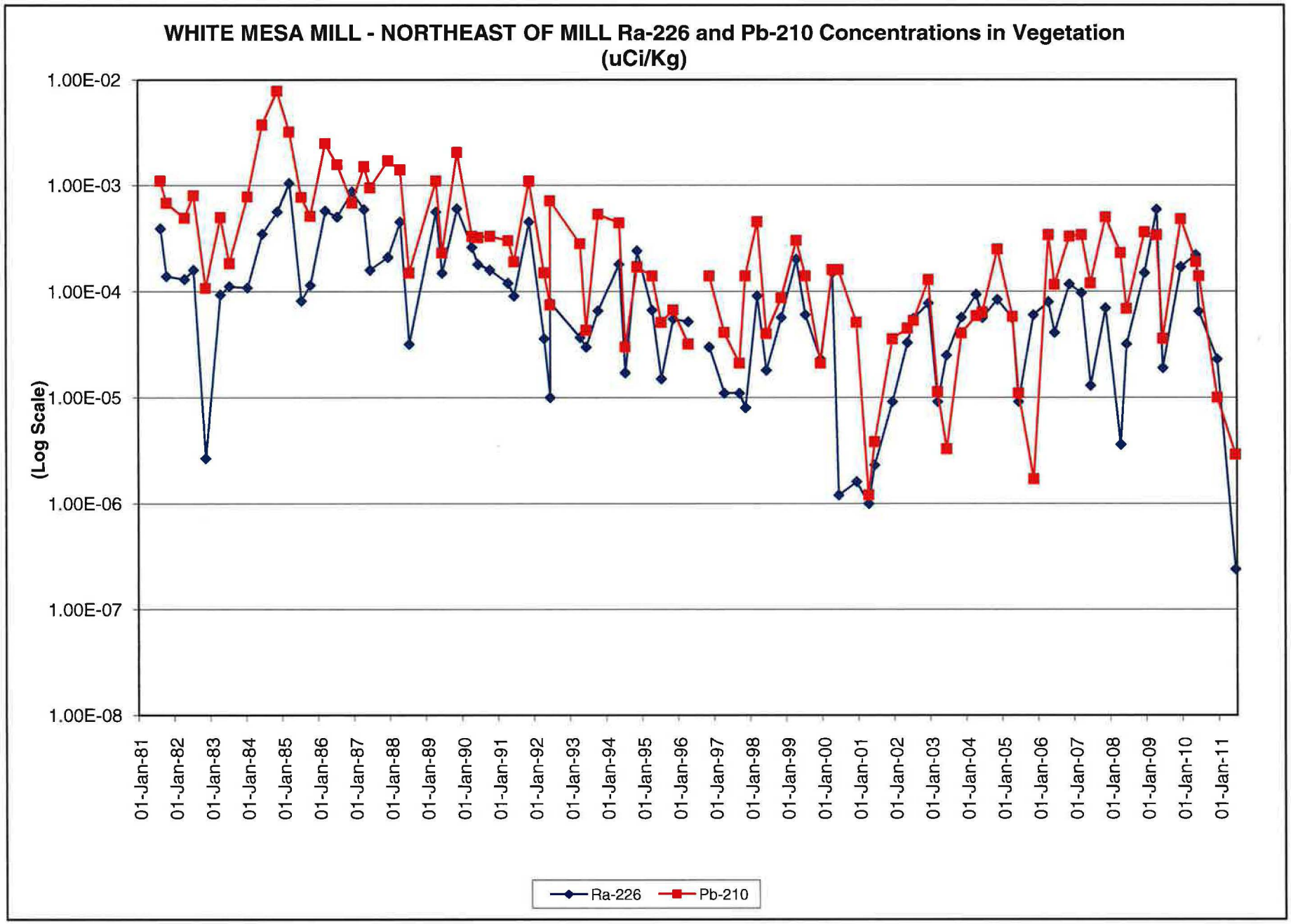
8/27/2008
8/27/2009
8/27/2010
NE
NW
SW


WHITE MESA MILL - NORTHEAST OF MILL Ra-226 and 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
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94
01-Jan-95
01-Jan-96
01-Jan-97
01-Jan-98
01-Jan-99
01-Jan-00
01-Jan-01
01-Jan-02
01-Jan-03
01-Jan-04
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01-Jan-06
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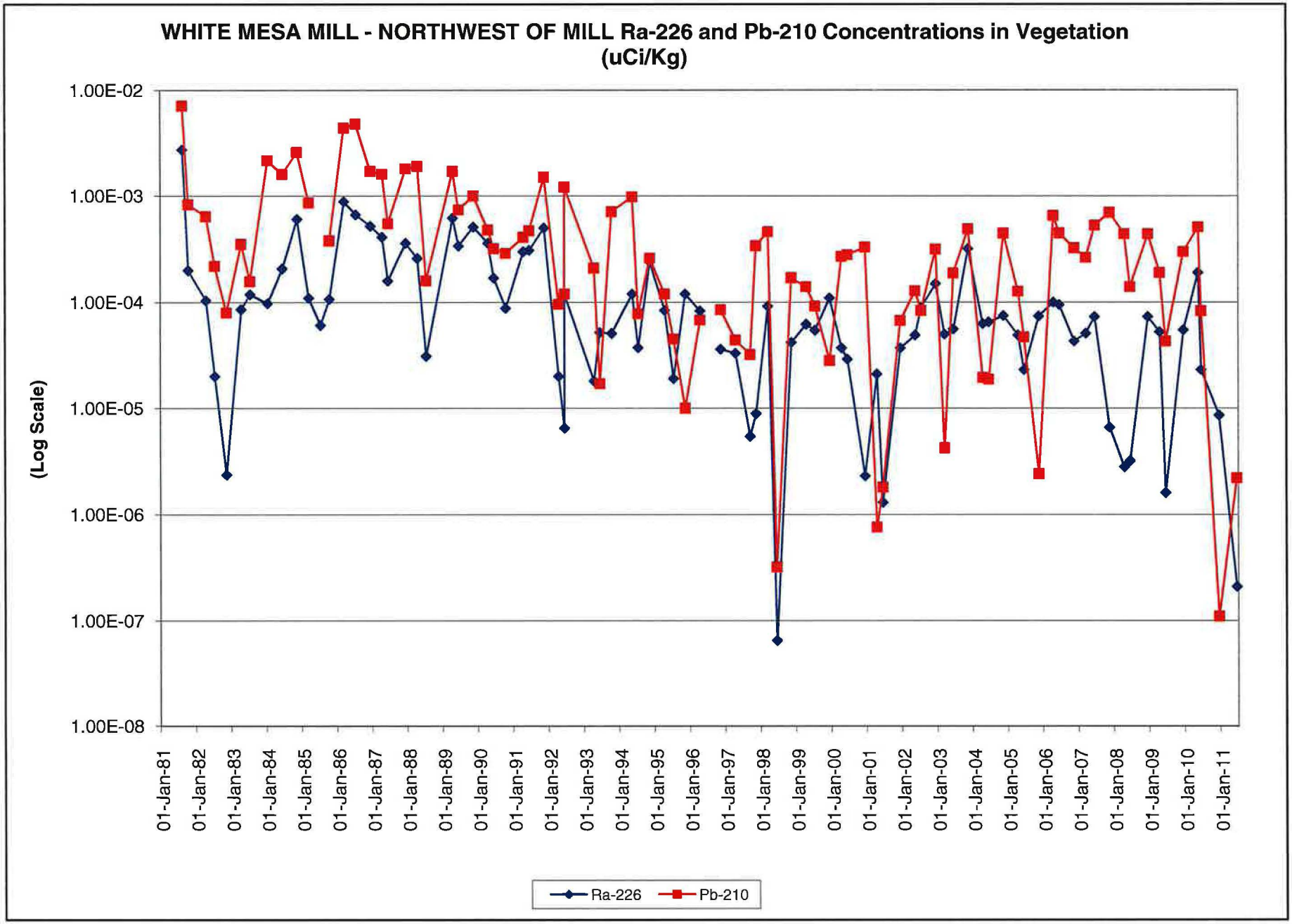
01-Jan-09
01-Jan-10
01-Jan-11
Ra-226
Pb-210


WHITE MESA MILL - NORTHWEST OF MILL Ra-226 and 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
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94
01-Jan-95
01-Jan-96
01-Jan-97
01-Jan-98
01-Jan-99
01-Jan-00
01-Jan-01
01-Jan-02
01-Jan-03
01-Jan-04
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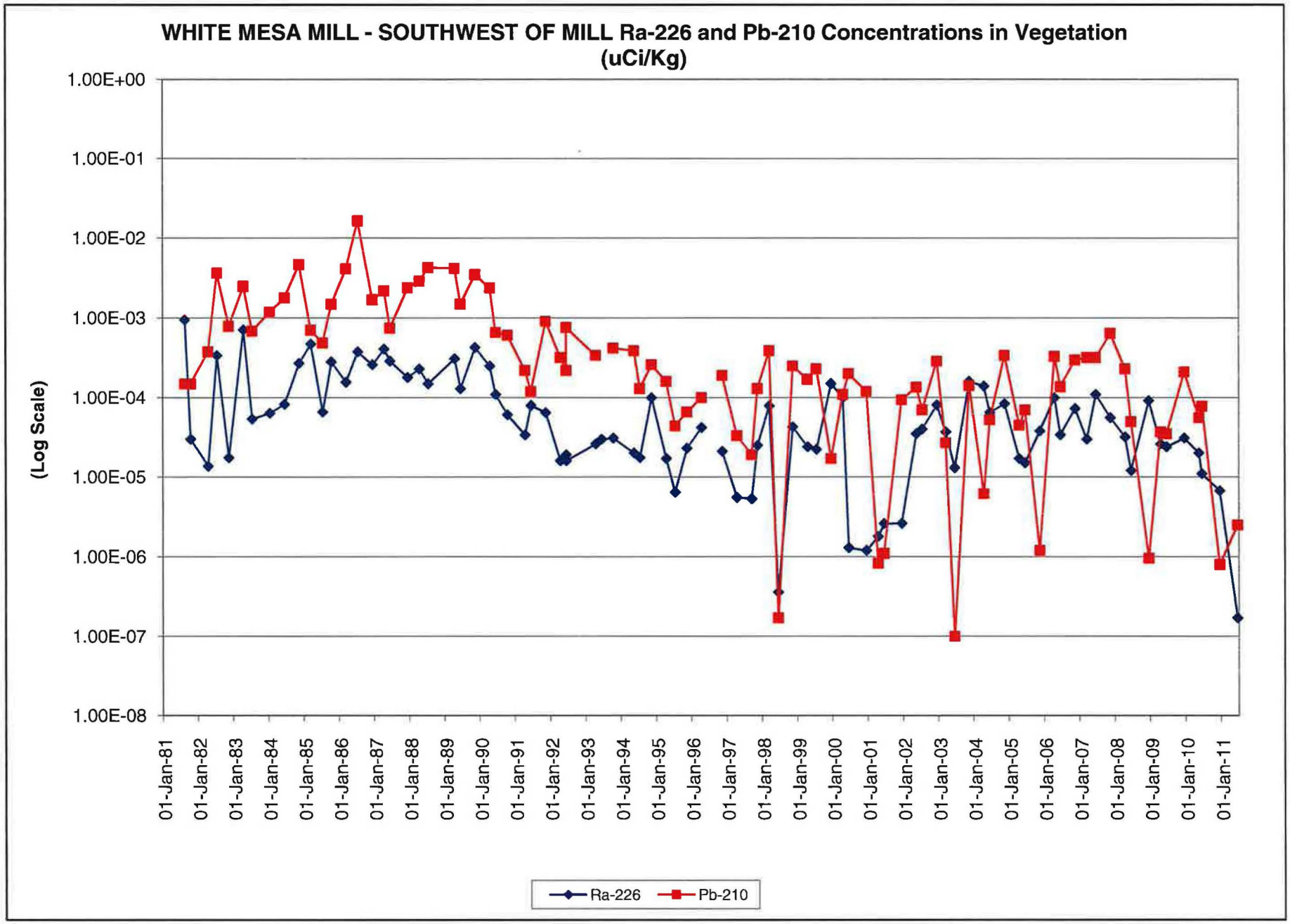
01-Jan-10
01-Jan-11
Ra-226
Pb-210


WHITE MESA MILL - SOUTHWEST OF MILL Ra-226 and Pb-210 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-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94
01-Jan-95
01-Jan-96
01-Jan-97
01-Jan-98
01-Jan-99
01-Jan-00
01-Jan-01
01-Jan-02
01-Jan-03
01-Jan-04
01-Jan-05
01-Jan-06
01-Jan-07
01-Jan-08
01-Jan-09
01-Jan-10
01-Jan-11
Ra-226
Pb-210

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHEAST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	3.90E-04	1.0E-05	5.0E-08	1.10E-03	1.0E-04	1.0E-06
4th '81	20-Oct-81	1.40E-04	1.0E-05	5.0E-08	6.80E-04	8.0E-05	1.0E-06
2nd '82	15-Apr-82	1.31E-04	1.3E-05	1.0E-06	4.90E-04	7.0E-05	8.0E-05
3rd '82	01-Jul-82	1.60E-04	1.0E-05	5.0E-08	8.00E-04	1.7E-04	1.0E-07
4th '82	30-Nov-82	2.67E-06	1.1E-06	1.0E-06	1.08E-04	9.0E-06	1.0E-05
2nd '83	13-Apr-83	9.36E-05	6.2E-06	8.0E-09	4.97E-04	9.3E-05	1.0E-04
3rd '83	01-Jul-83	1.12E-04	1.2E-05	6.0E-06	1.84E-04	1.2E-05	1.0E-06
4th '83	30-Jan-84	1.09E-04	8.0E-06	4.0E-06	7.80E-04	6.2E-05	6.0E-05
2nd '84	28-Jun-84	3.47E-04	1.2E-05	2.0E-09	3.75E-03	1.6E-04	4.0E-08
4th '84	14-Nov-84	5.61E-04	2.0E-04	2.0E-07	7.82E-03	3.3E-04	7.0E-08
2nd '85	27-Mar-85	1.05E-03	3.0E-05	2.0E-06	3.22E-03	1.4E-04	2.0E-05
3rd '85	15-Jul-85	8.20E-05	7.0E-06	3.0E-06	7.70E-04	1.3E-04	2.0E-04
4th '85	09-Oct-85	1.15E-04	1.0E-05	3.0E-06	5.10E-04	3.0E-05	2.0E-05
2nd '86	24-Mar-86	5.72E-04	2.1E-05	4.0E-06	2.49E-03	1.0E-04	1.0E-05
3rd '86	10-Jul-86	5.01E-04	1.3E-05	3.0E-06	1.57E-03	1.7E-03	2.0E-04
4th '86	18-Dec-86	8.70E-04	5.0E-05	3.0E-06	6.80E-04	3.0E-05	3.0E-06
2nd '87	20-Apr-87	5.90E-04	7.0E-05	5.0E-08	1.50E-03	1.0E-04	1.0E-06
3rd '87	05-Jun-87	1.60E-04	3.0E-05	5.0E-08	9.50E-04	4.0E-05	1.0E-06
4th '87	22-Dec-87	2.10E-04	4.0E-05	5.0E-08	1.70E-03	1.0E-04	1.0E-06
2nd '88	19-Apr-88	4.50E-04	7.0E-05	5.0E-08	1.40E-03	1.0E-04	1.0E-06
3rd '88	28-Jul-88	3.20E-05	2.2E-05	5.0E-08	1.50E-04	4.4E-04	1.0E-06
2nd '89	07-Apr-89	5.60E-04	4.0E-05	***	1.10E-03	1.0E-01	***
3rd '89	06-Jun-89	1.50E-04	2.0E-05	***	2.30E-04	2.0E-05	***
4th '89	07-Nov-89	6.00E-04	5.0E-05	7.0E-06	2.04E-03	7.0E-05	1.4E-05
1st '90	17-Apr-90	2.60E-04	3.0E-05	4.0E-06	3.30E-04	2.0E-05	2.2E-05
2nd '90	20-Jun-90	1.80E-04	2.0E-05	5.0E-08	3.20E-04	2.0E-05	1.0E-06
3rd '90	17-Oct-90	1.60E-04	2.0E-05	5.0E-08	3.30E-04	2.0E-05	1.0E-06
1st '91	10-Apr-91	1.20E-04	2.0E-05	5.0E-06	3.00E-04	2.0E-05	1.0E-06
2nd '91	11-Jun-91	9.10E-05	1.6E-05	2.0E-07	1.90E-04	2.0E-05	2.0E-07
3rd '91	20-Nov-91	4.50E-04	4.0E-05	5.0E-08	1.09E-03	5.0E-05	1.0E-06
1st '92	22-Apr-92	3.60E-05	1.0E-05	2.0E-06	1.50E-04	2.0E-05	1.0E-05
2nd '92	10-Jun-92	1.00E-05	7.0E-06	2.0E-07	7.50E-05	2.0E-05	1.0E-06
3rd '92	10-Jun-92	7.90E-05	3.5E-05	3.0E-06	7.10E-04	7.0E-05	2.0E-05
1st '93	13-Apr-93	3.70E-05	2.2E-05	3.0E-06	2.80E-04	3.0E-05	2.0E-05
2nd '93	26-Jun-93	3.00E-05	1.5E-05	3.0E-06	4.30E-05	3.5E-05	2.0E-05
3rd '93	12-Oct-93	6.60E-05	2.7E-05	3.0E-06	5.30E-04	6.0E-05	2.0E-05
1st '94	11-May-94	1.80E-04	4.0E-05	3.0E-05	4.40E-04	6.0E-05	2.0E-04
2nd '94	19-Jul-94	1.71E-05	1.2E-06	9.0E-08	3.00E-05	6.1E-06	4.5E-06
3rd '94	28-Nov-94	2.40E-04	1.5E-05	1.7E-07	1.70E-04	1.1E-05	8.3E-07
1st '95	11-Apr-95	6.70E-05	5.4E-06	1.6E-07	1.40E-04	1.3E-05	7.9E-07
2nd '95	06-Jul-95	1.50E-05	1.5E-06	1.5E-07	5.10E-05	4.5E-06	7.6E-07
3rd '95	15-Nov-95	5.50E-05	5.0E-06	1.8E-07	6.70E-05	1.0E-05	8.8E-07
1st '96	23-Apr-96	5.20E-05	2.5E-06	1.5E-07	3.20E-05	4.5E-06	1.8E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	3.00E-05	2.5E-06	1.8E-07	1.40E-04	7.1E-06	9.3E-07
1st '97	21-Apr-97	1.10E-05	4.7E-07	1.2E-07	4.10E-05	3.6E-06	6.1E-07
3rd '97	05-Sep-97	1.10E-05	4.3E-07	1.3E-07	2.10E-05	7.3E-07	6.7E-07
4th '97	20-Nov-97	8.00E-06	1.2E-06	5.6E-07	1.40E-04	4.6E-06	1.1E-07
1st '98	23-Mar-98	<9.10E-05	9.1E-05	9.1E-05	<4.50E-04	4.5E-04	4.5E-04
2nd '98	16-Jun-98	1.80E-05	1.2E-06	6.3E-08	4.00E-05	1.8E-06	3.2E-07
4th '98	05-Nov-98	5.70E-05	1.0E-06	8.2E-08	8.70E-05	5.0E-06	4.1E-07
2nd '99	15-Apr-99	2.00E-04	3.0E-06	1.2E-07	3.00E-04	1.0E-05	6.0E-05
3rd '99	07-Jul-99	6.03E-05	1.4E-06	8.3E-08	1.40E-04	4.7E-06	4.2E-07
4th '99	02-Dec-99	2.30E-05	1.0E-06	2.3E-07	2.10E-05	1.0E-06	1.1E-06
2nd '00	21-Apr-00	1.50E-04	3.0E-06	1.2E-07	1.60E-04	8.0E-06	5.9E-07
2nd '00	22-Jun-00	1.20E-06	1.0E-07	2.8E-07	1.60E-04	1.0E-05	1.4E-06

4th '00	21-Dec-00	1.60E-06	1.1E-06	3.7E-07	5.10E-05	5.0E-06	1.9E-06
1st '01	30-Apr-01	1.00E-06	1.0E-07	2.4E-07	<1.2E-06	1.0E-07	2.4E-07
2nd '01	14-Jun-01	2.30E-06	2.0E-07	9.9E-08	3.80E-06	2.0E-07	5.0E-07
4th '01	17-Dec-01	9.10E-06	2.4E-06	1.2E-07	3.57E-05	3.0E-06	6.0E-07
1st '02	07-May-02	3.30E-05	1.8E-06	7.6E-07	4.50E-05	2.6E-06	1.0E-05
2nd '02	07-Jul-02	5.55E-05	2.8E-06	7.6E-07	5.31E-05	3.9E-06	1.0E-05
4th '02	15-Dec-02	7.75E-05	3.6E-06	7.6E-07	1.29E-04	6.2E-06	1.0E-05
1st '03	21-Mar-03	9.10E-06	1.3E-06	3.6E-07	1.13E-05	1.6E-06	3.4E-06
2nd '03	10-Jun-03	2.50E-05	1.3E-06	3.6E-07	3.26E-06	2.0E-06	7.4E-08
4th '03	20-Nov-03	5.70E-05	3.5E-06	1.5E-07	4.05E-05	5.8E-06	8.3E-07
1st '04	08-Apr-04	9.38E-05	3.7E-06	1.1E-07	5.88E-05	3.0E-06	5.5E-07
2nd '04	12-Jun-04	5.63E-05	3.4E-06	1.8E-07	6.42E-05	5.9E-06	9.0E-07
4th '04	30-Nov-04	8.41E-05	5.50E-06	2.00E-08	2.48E-04	1.40E-05	3.00E-07
1st '05	21-Apr-05	5.60E-05	3.00E-06	1.40E-07	5.80E-05	4.00E-06	6.90E-07
2nd '05	13-Jun-05	9.10E-06	1.50E-06	1.80E-07	1.10E-05	1.20E-05	9.00E-07
4th '05	10-Nov-05	6.00E-05	3.00E-06	1.10E-10	1.70E-06	6.40E-07	5.50E-10
1st '06	03-Apr-06	8.00E-05	5.00E-06	5.00E-08	3.40E-04	1.20E-05	1.00E-06
2nd '06	16-Jun-06	4.10E-05	3.10E-06	5.00E-08	1.16E-04	6.10E-06	1.00E-06
4th '06	28-Nov-06	1.17E-04	4.60E-06	1.90E-07	3.28E-04	9.50E-06	9.50E-07
1st '07	30-Mar-07	9.70E-05	4.40E-06	1.90E-07	3.40E-04	8.70E-06	8.4-07
2nd '07	1-Jun-07	1.30E-05	1.60E-06	1.90E-07	1.20E-04	6.60E-06	9.70E-07
4th '07	23-Nov-07	7.00E-05	8.20E-06	2.00E-07	5.00E-04	2.00E-05	1.20E-06
1st '08	22-Apr-08	3.6E-06	3.00E-06	5.20E-07	2.3E-04	1.40E-05	1.00E-06
2nd '08	18-Jun-08	3.2E-05	3.20E-06	1.80E-06	6.9E-05	3.50E-05	5.50E-05
4th '08	12-Dec-08						
1st '09	28-Apr-09	5.9E-04	1.35E-05	1.50E-06	3.4E-04	1.30E-05	1.50E-06
2nd '09	17-Jun-09	1.9E-05	1.45E-06	4.90E-07	3.6E-05	1.10E-05	1.80E-05
4th '09	18-Dec-09	1.7E-04	5.90E-06		4.8E-04	1.20E-05	
1st '10	13-May-10	2.2E-04	7.20E-06	1.10E-06	1.9E-04	1.90E-05	2.90E-05
2nd '10	18-Jun-10	6.5E-05	3.40E-06	7.60E-07	1.4E-04	1.90E-05	2.90E-05
4th '10	20-Dec-10	2.3E-05	1.70E-06	5.20E-07	1.0E-05	1.50E-06	2.30E-06
2nd '11	23-Jun-11	2.4E-07	1.4E-07	1.8E-07	<2.9E-06	1.7E-06	2.9E-06

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

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	2.73E-03	5.0E-05	5.0E-08	7.10E-03	3.0E-04	1.0E-06
4th '81	20-Oct-81	2.00E-04	1.0E-05	5.0E-08	8.30E-04	5.0E-05	1.0E-06
2nd '82	15-Apr-82	1.04E-04	9.0E-06	7.0E-06	6.40E-04	5.0E-05	4.0E-05
3rd '82	01-Jul-82	2.00E-05	1.0E-05	5.0E-08	2.20E-04	9.0E-05	1.0E-07
4th '82	30-Nov-82	2.36E-06	9.5E-07	1.0E-06	8.00E-05	1.0E-05	1.0E-05
2nd '83	13-Apr-83	8.58E-05	1.4E-05	2.0E-08	3.53E-04	1.9E-05	1.0E-05
3rd '83	01-Jul-83	1.19E-04	1.1E-05	5.0E-06	1.58E-04	1.3E-05	1.0E-05
4th '83	30-Jan-84	9.78E-05	7.0E-06	2.0E-06	2.16E-03	3.4E-04	3.0E-04
2nd '84	28-Jun-84	2.08E-04	1.0E-05	3.0E-09	1.60E-03	7.0E-05	3.0E-08
4th '84	14-Nov-84	6.05E-04	1.6E-04	2.0E-07	2.58E-03	1.1E-04	3.0E-08
2nd '85	27-Mar-85	1.10E-04	8.0E-06	3.0E-06	8.63E-04	4.2E-05	3.0E-05
3rd '85	15-Jul-85	6.10E-05	6.0E-06	2.0E-06	5.40E-04	5.0E-05	5.0E-05
4th '85	09-Oct-85	1.07E-04	6.0E-06	2.0E-06	3.80E-04	3.0E-05	2.0E-05
2nd '86	24-Mar-86	8.86E-04	1.8E-05	2.0E-06	4.40E-03	1.9E-04	3.0E-05
3rd '86	10-Jul-86	6.66E-04	1.8E-05	3.0E-06	4.78E-03	2.1E-04	6.0E-05
4th '86	18-Dec-86	5.20E-04	1.0E-04	3.0E-06	1.70E-03	1.0E-04	6.0E-05
2nd '87	20-Apr-87	4.10E-04	1.0E-04	5.0E-08	1.60E-03	1.0E-04	1.0E-06
3rd '87	05-Jun-87	1.60E-04	3.0E-05	5.0E-08	5.50E-04	4.0E-05	1.0E-06
4th '87	22-Dec-87	3.60E-04	5.0E-05	5.0E-08	1.80E-03	1.0E-04	1.0E-06
2nd '88	19-Apr-88	2.60E-04	5.0E-05	5.0E-08	1.90E-03	1.0E-04	1.0E-06
3rd '88	28-Jul-88	3.10E-05	1.9E-05	5.0E-08	1.60E-04	4.0E-05	1.0E-06
2nd '89	07-Apr-89	6.20E-04	5.0E-05	***	1.70E-03	1.0E-04	***
3rd '89	06-Jun-89	3.40E-04	3.0E-05	***	7.40E-04	3.0E-05	***
4th '89	07-Nov-89	5.10E-04	6.0E-05	7.0E-06	1.00E-03	7.0E-05	1.4E-05
1st '90	17-Apr-90	3.60E-04	3.0E-05	4.0E-06	4.80E-04	2.0E-05	2.2E-05
2nd '90	20-Jun-90	1.70E-04	2.0E-05	5.0E-08	3.20E-04	2.0E-05	1.0E-06
3rd '90	17-Oct-90	8.80E-05	1.6E-05	5.0E-08	2.90E-04	2.0E-05	1.0E-06
1st '91	10-Apr-91	3.00E-04	3.0E-05	5.0E-06	4.10E-04	2.0E-05	1.0E-06
2nd '91	11-Jun-91	3.10E-04	3.0E-05	2.0E-07	4.70E-04	2.0E-05	2.0E-07
3rd '91	20-Nov-91	5.00E-04	4.0E-05	5.0E-08	1.50E-03	1.0E-04	1.0E-06
1st '92	22-Apr-92	2.00E-05	8.0E-06	2.0E-06	9.60E-05	1.4E-05	1.0E-05
2nd '92	10-Jun-92	6.50E-06	6.0E-06	2.0E-06	1.20E-04	2.0E-05	1.0E-06
3rd '92	10-Jun-92	1.20E-04	4.0E-05	3.0E-06	1.21E-03	8.0E-05	2.0E-05
1st '93	13-Apr-93	1.80E-05	1.7E-05	3.0E-06	2.10E-04	3.0E-05	2.0E-05
2nd '93	26-Jun-93	5.20E-05	1.9E-05	3.0E-06	1.70E-05	3.6E-05	2.0E-05
3rd '93	12-Oct-93	5.10E-05	2.3E-05	3.0E-06	7.10E-04	6.0E-05	2.0E-05
1st '94	11-May-94	1.20E-04	1.0E-05	3.0E-05	9.80E-04	1.6E-04	2.0E-04
2nd '94	19-Jul-94	3.73E-05	1.6E-06	8.4E-08	7.80E-05	7.1E-06	4.2E-07
3rd '94	28-Nov-94	2.40E-04	1.5E-05	1.7E-07	2.60E-04	1.3E-05	8.3E-07
1st '95	11-Apr-95	8.40E-05	6.1E-06	1.5E-07	1.20E-04	1.1E-05	7.5E-05
2nd '95	06-Jul-95	1.90E-05	1.5E-06	1.4E-07	4.50E-05	4.3E-06	7.2E-07
3rd '95	15-Nov-95	1.20E-04	6.8E-06	1.4E-07	1.00E-05	5.8E-06	7.1E-07
1st '96	23-Apr-96	8.30E-05	3.3E-06	1.9E-07	6.80E-05	6.3E-06	1.8E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	3.60E-05	2.5E-06	1.6E-07	8.50E-05	5.6E-06	8.4E-07
1st '97	21-Apr-97	3.30E-05	2.3E-06	1.7E-07	4.40E-05	4.8E-06	8.4E-07
3rd '97	05-Sep-97	5.40E-06	3.5E-07	1.6E-07	3.20E-05	9.0E-07	7.8E-07
4th '97	20-Nov-97	8.90E-06	7.2E-07	5.4E-07	3.40E-04	6.7E-06	1.1E-07
1st '98	23-Mar-98	<9.20E-05	9.2E-05	9.2E-05	<4.60E-04	4.6E-04	4.6E-04
2nd '98	16-Jun-98	< 6.50E-08	6.5E-08	6.5E-08	<3.20E-07	3.2E-07	3.2E-07
4th '98	05-Nov-98	4.20E-05	1.0E-06	1.1E-07	1.70E-04	1.0E-05	5.5E-07
2nd '99	15-Apr-99	6.20E-05	1.0E-06	1.0E-07	1.40E-04	7.0E-06	1.0E-07
3rd '99	07-Jul-99	5.45E-05	1.4E-06	8.3E-08	9.20E-05	4.0E-06	4.2E-07
4th '99	02-Dec-99	1.10E-04	3.0E-06	2.2E-07	2.80E-05	1.0E-06	1.1E-06
2nd '00	21-Apr-00	3.70E-05	1.0E-06	2.4E-07	2.70E-04	1.0E-05	1.2E-06

2nd '00	22-Jun-00	2.90E-05	1.0E-06	3.3E-07	2.80E-04	2.0E-05	1.7E-06
4th '00	21-Dec-00	2.30E-06	1.4E-06	3.7E-07	3.30E-04	5.0E-05	1.9E-06
1st '01	30-Apr-01	2.10E-05	1.0E-06	1.5E-07	<7.6E-07	N/A	7.6E-07
2nd '01	14-Jun-01	1.30E-06	4.0E-08	1.2E-07	1.80E-06	3.0E-08	5.9E-07
4th '01	17-Dec-01	3.70E-05	7.67E-07	8.30E-08	6.72E-05	2.62E-06	6.00E-07
1st '02	07-May-02	4.90E-05	2.40E-06	7.60E-07	1.28E-04	5.61E-06	1.00E-05
2nd '02	07-Jul-02	8.88E-05	4.32E-06	7.60E-07	8.33E-05	4.32E-06	1.00E-05
4th '02	15-Dec-02	1.50E-04	6.2E-06	7.60E-07	3.16E-04	1.07E-05	1.0E-05
1st '03	21-Mar-03	5.00E-05	3.4E-06	2.71E-06	<4.2e-6		4.20E-06
2nd '03	10-Jun-03	5.60E-05	2.0E-06	4.10E-07	1.88E-04	5.14E-06	8.2E-08
4th '03	20-Nov-03	3.20E-04	8.2E-06	1.70E-07	4.89E-04	1.25E-05	8.3E-07
1st '04	08-Apr-04	6.29E-05	4.1E-06	2.00E-07	1.94E-05	4.00E-06	1.0E-06
2nd '04	12-Jun-04	6.51E-05	3.4E-06	1.30E-07	1.87E-05	3.90E-06	6.5E-07
4th '04	30-Nov-04	7.50E-05	4.6E-06	2.0E-08	4.45E-04	1.40E-05	3.0E-07
1st '05	21-Apr-05	4.90E-05	2.70E-06	1.30E-07	1.27E-04	4.80E-06	6.50E-07
2nd '05	13-Jun-05	2.30E-05	2.10E-06	1.50E-07	4.70E-05	5.10E-06	7.60E-07
4th '05	10-Nov-05	7.40E-05	3.50E-06	1.20E-10	2.40E-06	8.10E-08	5.80E-10
1st '06	03-Apr-06	1.00E-04	6.00E-06	5.00E-08	6.54E-04	1.50E-05	1.00E-06
2nd '06	16-Jun-06	9.50E-05	5.90E-06	5.00E-08	4.48E-04	1.40E-05	1.00E-06
4th '06	28-Nov-06	8.13E-05	4.10E-06	2.20E-07	3.25E-04	1.12E-06	1.00E-05
1st '07	30-Mar-07	4.30E-05	2.60E-06	1.70E-07	2.64E-04	7.20E-06	8.60E-07
2nd '07	1-Jun-07	5.10E-05	3.20E-06	2.30E-07	5.30E-04	1.40E-06	1.20E-06
4th '07	23-Nov-07	7.30E-05	6.6E-06	5.0E-08	7.00E-04	2.20E-05	1.10E-06
1st '08	22-Apr-08	2.8E-06	2.8E-06	7.20E-07	4.40E-04	2.0E-05	1.0E-06
2nd '08	18-Jun-08	3.2E-06	3.3E-06	1.80E-06	1.40E-04	3.3E-05	5.5E-05
4th '08	12-Dec-08	7.3E-05	3.2E-06	7.40E-07	4.40E-04	2.5E-05	3.2E-05
1st '09	28-Apr-09	5.3E-05	3.6E-06	1.10E-06	1.90E-04	1.5E-05	2.2E-05
2nd '09	17-Jun-09	2.3E-05	1.6E-05	5.2E-07	4.30E-05	1.00E-05	1.7E-05
4th '09	18-Dec-09	5.50E-05	3.50E-06		3.0E-04	1.10E-05	
1st '10	13-May-10	1.9E-04	6.10E-06	9.40E-07	5.1E-04	2.40E-05	3.10E-05
2nd '10	18-Jun-10	2.3E-05	2.00E-06	7.70E-07	8.3E-05	1.80E-05	2.90E-05
4TH '10	20-Dec-10	8.6E-06	9.10E-07	3.90E-07	1.1E-07	6.80E-07	1.10E-06
2nd '11	23-Jun-11	2.1E-07	1.20E-07	1.40E-07	<2.2E-06	1.30E-06	2.20E-06

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

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
SOUTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	9.50E-04	2.0E-05	5.0E-08	1.50E-04	1.0E-05	1.0E-06
4th '81	20-Oct-81	3.00E-05	3.0E-06	5.0E-08	1.50E-04	2.0E-05	1.0E-06
2nd '82	15-Apr-82	1.37E-05	3.0E-06	3.0E-06	3.80E-04	4.0E-05	4.0E-05
3rd '82	01-Jul-82	3.40E-04	2.0E-05	5.0E-08	3.68E-03	2.7E-04	1.0E-07
4th '82	30-Nov-82	1.75E-05	3.0E-06	2.0E-06	7.92E-04	4.0E-06	2.0E-05
2nd '83	13-Apr-83	7.13E-04	7.3E-05	9.0E-08	2.51E-03	3.0E-04	3.0E-04
3rd '83	01-Jul-83	5.39E-05	4.5E-06	2.0E-06	6.88E-04	4.3E-05	4.0E-05
4th '83	30-Jan-84	6.40E-05	7.0E-06	4.0E-06	1.20E-03	1.0E-04	4.0E-05
2nd '84	28-Jun-84	8.27E-05	6.3E-06	3.0E-09	1.80E-03	1.0E-04	9.0E-08
4th '84	14-Nov-84	2.72E-04	1.5E-04	2.0E-07	4.70E-03	7.2E-04	3.0E-07
2nd '85	27-Mar-85	4.73E-04	1.6E-07	3.0E-06	7.07E-04	3.6E-05	3.0E-05
3rd '85	15-Jul-85	6.60E-05	7.0E-06	4.0E-06	4.90E-04	3.0E-05	3.0E-05
4th '85	09-Oct-85	2.83E-04	2.0E-05	7.0E-06	1.50E-03	1.0E-04	7.0E-05
2nd '86	24-Mar-86	1.57E-04	1.0E-05	4.0E-06	4.14E-03	1.8E-04	3.0E-05
3rd '86	10-Jul-86	3.78E-04	1.0E-05	2.0E-06	1.65E-02	7.0E-04	1.0E-04
4th '86	18-Dec-86	2.60E-04	2.0E-05	2.0E-06	1.70E-03	1.0E-04	1.0E-04
2nd '87	20-Apr-87	4.10E-04	7.0E-05	5.0E-08	2.20E-03	1.0E-04	1.0E-06
3rd '87	05-Jun-87	2.90E-04	4.0E-05	5.0E-08	7.50E-04	5.0E-05	1.0E-06
4th '87	22-Dec-87	1.80E-04	3.0E-05	5.0E-08	2.40E-03	1.0E-04	1.0E-06
2nd '88	19-Apr-88	2.30E-04	5.0E-05	5.0E-08	2.90E-03	1.0E-04	1.0E-06
3rd '88	28-Jul-88	1.50E-04	3.0E-05	5.0E-08	4.30E-03	2.0E-04	1.0E-06
2nd '89	07-Apr-89	3.10E-04	4.0E-05	***	4.20E-03	1.0E-04	***
3rd '89	06-Jun-89	1.30E-04	2.0E-05	***	1.50E-03	1.0E-04	***
4th '89	07-Nov-89	4.30E-04	5.0E-05	1.4E-05	3.50E-03	1.4E-04	2.7E-05
1st '90	17-Apr-90	2.50E-04	3.0E-05	5.0E-06	2.39E-03	5.0E-05	2.5E-05
2nd '90	20-Jun-90	1.10E-04	2.0E-05	5.0E-08	6.60E-04	3.0E-05	1.0E-06
3rd '90	17-Oct-90	6.10E-05	1.4E-05	5.0E-08	6.10E-04	3.0E-05	1.0E-06
1st '91	10-Apr-91	3.40E-05	1.1E-05	5.0E-06	2.20E-04	1.0E-05	1.0E-06
2nd '91	11-Jun-91	8.00E-05	6.0E-06	2.0E-07	1.20E-04	1.0E-05	2.0E-07
3rd '91	20-Nov-91	6.50E-05	1.4E-05	5.0E-08	9.10E-04	5.0E-05	1.0E-06
1st '92	22-Apr-92	1.60E-05	7.0E-06	2.0E-06	3.20E-04	2.0E-05	1.0E-05
2nd '92	10-Jun-92	1.90E-05	1.0E-05	2.0E-07	2.20E-04	2.0E-05	1.0E-06
3rd '92	10-Jun-92	1.60E-05	1.8E-05	3.0E-06	7.60E-04	6.0E-05	2.0E-05
1st '93	13-Apr-93	2.60E-05	2.0E-05	3.0E-06	3.40E-04	3.0E-05	2.0E-05
2nd '93	26-Jun-93	3.00E-05	1.4E-05	3.0E-06	0.00E+00	3.0E-05	2.0E-05
3rd '93	12-Oct-93	3.10E-05	1.6E-05	3.0E-06	4.20E-04	6.0E-05	2.0E-05
1st '94	11-May-94	2.00E-05	5.0E-06	3.0E-05	3.90E-04	8.0E-05	2.0E-04
2nd '94	19-Jul-94	1.75E-05	1.7E-06	7.6E-08	1.30E-04	7.8E-06	3.8E-07
3rd '94	28-Nov-94	1.00E-04	9.0E-06	1.5E-07	2.60E-04	1.2E-05	7.4E-07
1st '95	11-Apr-95	1.70E-05	1.5E-06	1.6E-07	1.60E-04	1.5E-05	8.1E-07
2nd '95	06-Jul-95	6.40E-06	6.0E-07	1.4E-07	4.40E-05	4.2E-06	7.0E-07
3rd '95	15-Nov-95	2.30E-05	2.2E-06	1.7E-07	6.60E-05	9.6E-06	8.3E-07
1st '96	23-Apr-96	4.20E-05	2.2E-06	1.7E-07	1.00E-04	6.7E-06	1.8E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	2.10E-05	2.0E-06	1.6E-07	1.90E-04	7.3E-06	8.2E-07
1st '97	21-Apr-97	5.50E-06	4.2E-07	1.4E-07	3.30E-05	3.9E-06	7.0E-07
3rd '97	05-Sep-97	5.30E-06	3.2E-07	1.3E-07	1.90E-05	6.9E-07	6.3E-07
4th '97	20-Nov-97	2.50E-05	9.5E-07	5.9E-07	1.30E-04	4.7E-06	1.2E-07
1st '98	23-Mar-98	<7.90E-05	7.9E-05	7.9E-05	<3.90E-04	3.9E-04	3.9E-04
2nd '98	16-Jun-98	3.60E-07	1.4E-07	3.3E-08	<1.7E-07	1.7E-07	1.7E-07
4th '98	05-Nov-98	4.30E-05	1.0E-06	7.6E-08	2.50E-04	1.0E-05	3.8E-07
2nd '99	15-Apr-99	2.40E-05	1.0E-06	1.2E-07	1.70E-04	8.0E-06	6.2E-07
3rd '99	07-Jul-99	2.23E-05	8.6E-07	1.2E-07	2.30E-04	7.0E-06	5.9E-07
4th '99	02-Dec-99	1.50E-04	3.0E-06	2.0E-07	1.70E-05	1.0E-06	1.0E-06
2nd '00	21-Apr-00	1.00E-04	2.0E-06	1.2E-07	1.10E-04	7.0E-06	6.1E-07

2nd '00	22-Jun-00	1.30E-06	1.0E-07	2.4E-07	2.00E-04	1.0E-05	1.2E-06
4th '00	21-Dec-00	1.20E-06	9.0E-07	2.4E-07	1.20E-04	3.0E-05	1.2E-06
1st '01	30-Apr-01	1.80E-06	1.0E-07	1.7E-07	<8.3E-07	N/A	8.3E-07
2nd '01	14-Jun-01	2.60E-06	2.0E-07	9.9E-08	1.10E-06	2.0E-08	5.0E-07
4th '01	17-Dec-01	2.63E-06	4.6E-05	1.2E-07	9.40E-05	3.7E-06	6.0E-07
1st '02	07-May-02	3.50E-05	2.2E-06	7.6E-07	1.36E-04	5.6E-06	1.0E-05
2nd '02	07-Jul-02	4.02E-05	2.3E-06	7.6E-07	7.04E-05	4.1E-06	1.0E-05
4th '02	15-Dec-02	8.10E-05	3.9E-06	7.6E-07	2.87E-04	8.5E-06	1.0E-05
1st '03	21-Mar-03	3.70E-05	2.6E-06	2.4E-06	2.69E-05	2.0E-06	3.7E-06
2nd '03	10-Jun-03	1.30E-05	1.0E-06	5.2E-07	<1.00E-07		1.0E-07
4th '03	20-Nov-03	1.60E-04	1.3E-05	1.2E-07	1.42E-04	6.4E-06	5.9E-07
1st '04	08-Apr-04	1.40E-04	7.7E-06	1.1E-07	6.10E-06	2.7E-06	5.5E-07
2nd '04	12-Jun-04	6.51E-05	3.2E-06	1.5E-07	5.27E-05	4.9E-06	7.6E-07
4th '04	30-Nov-04	8.40E-05	5.7E-06	3.0E-08	3.39E-04	1.6E-05	3.0E-07
1st '05	21-Apr-05	1.70E-05	1.6E-06	1.3E-07	4.50E-05	3.5E-06	6.5E-07
2nd '05	13-Jun-05	1.50E-05	1.6E-06	1.4E-07	7.00E-05	5.1E-06	6.9E-07
4th '05	10-Nov-05	3.80E-05	2.1E-06	8.6E-10	1.20E-06	4.8E-08	4.3E-10
1st '06	03-Apr-06	1.00E-04	6.0E-06	5.0E-08	3.30E-04	1.1E-05	1.0E-06
2nd '06	16-Jun-06	3.40E-05	2.5E-06	5.0E-08	1.37E-04	6.0E-06	1.0E-06
4th '06	28-Nov-06	7.31E-05	3.20E-06	1.60E-07	2.98E-04	8.50E-06	8.20E-07
1st '07	30-Mar-07	3.00E-05	2.20E-06	1.70E-07	3.20E-04	7.90E-06	8.40E-07
2nd '07	1-Jun-07	1.10E-04	4.60E-06	2.3-07	3.20E-04	1.10E-05	1.10E-06
4th '07	23-Nov-07	5.60E-05	5.20E-06	5.00E-08	6.40E-04	1.90E-05	1.00E-06
1st '08	22-Apr-08	3.20E-05	2.30E-06	7.20E-07	2.30E-04	1.50E-05	1.00E-06
2nd '08	18-Jun-08	1.25E-05	2.20E-06	1.80E-06	5.00E-05	3.00E-05	4.80E-03
4th '08	12-Dec-08						
1st '09	28-Apr-09	2.60E-05	2.90E-06	1.40E-06	3.70E-05	1.50E-06	2.50E-05
2nd '09	17-Jun-09	2.40E-05	1.40E-06	3.90E-07	3.50E-05	7.90E-06	1.30E-05
4th '09	18-Dec-09	3.1E-05	2.30E-06		2.1E-04	8.40E-06	
1st '10	13-May-10	2.0E-05	2.10E-06	9.40E-07	5.6E-05	1.50E-05	2.40E-05
2nd '10	18-Jun-10	1.1E-05	1.30E-06	6.60E-07	7.8E-05	1.60E-05	2.50E-05
4th '10	20-Dec-10	6.7E-06	9.10E-07	4.80E-07	8.0E-07	7.90E-07	1.30E-06
2nd '11	23-Jun-11	<1.7E-07	6.9E-08	1.7E-07	<2.5E-06	1.5E-06	2.5E-06

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

ANALYTICAL SUMMARY REPORT

August 02, 2011

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

Workorder No.: C11061059

Project Name: Late Spring Vegetation

Energy Laboratories, Inc. Casper WY received the following 3 samples for Denison Mines USA Corp on 6/24/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C11061059-001	North East	06/23/11 9:00	06/24/11	Vegetation	Digestion, Radiochemistry Lead 210 Radium 226
C11061059-002	North West	06/23/11 9:45	06/24/11	Vegetation	Same As Above
C11061059-003	South West	06/23/11 10:15	06/24/11	Vegetation	Same As Above

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing. All samples are reported on an as received basis unless otherwise indicated. Samples corrected for dry weight indicate units that have -dry appended.

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

Report Approved By:

Stephanie D Waldrop
Reporting Supervisor

Digitally signed by
Stephanie Waldrop
Date: 2011.08.02 15:46:38 -06:00

CLIENT: Denison Mines USA Corp
Project: Late Spring Vegetation
Sample Delivery Group: C11061059

Report Date: 08/02/11

CASE NARRATIVE

BRANCH LABORATORY SUBCONTRACT ANALYSIS
Tests associated with analyst identified as ELI-CS were subcontracted to Energy Laboratories, 415 Graham Rd., College Station, TX, EPA Number TX01520.

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

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

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

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

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

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

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

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

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

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: Denison Mines USA Corp
Project: Late Spring Vegetation
Lab ID: C11061059-001
Client Sample ID: North East

Report Date: 08/02/11
Collection Date: 06/23/11 09:00
DateReceived: 06/24/11
Matrix: Vegetation

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	-3.0E-08	uCi/kg	U			E909.0	07/28/11 08:01 / eli-cs
Lead 210 precision (±)	1.7E-06	uCi/kg				E909.0	07/28/11 08:01 / eli-cs
Lead 210 MDC	2.9E-06	uCi/kg				E909.0	07/28/11 08:01 / eli-cs
Lead 210 altu	-0.030	pCi/kg	U			E909.0	07/28/11 08:01 / eli-cs
Lead 210 precision (±) altu	1.7	pCi/kg				E909.0	07/28/11 08:01 / eli-cs
Lead 210 MDC altu	2.9	pCi/kg				E909.0	07/28/11 08:01 / eli-cs
Radium 226	2.4E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 precision (±)	1.4E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 MDC	1.8E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu	0.24	pCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu precision (±)	0.14	pCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu MDC	0.18	pCi/kg				E903.0	07/20/11 23:32 / trs

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: Denison Mines USA Corp
Project: Late Spring Vegetation
Lab ID: C11061059-002
Client Sample ID: North West

Report Date: 08/02/11
Collection Date: 06/23/11 09:45
DateReceived: 06/24/11
Matrix: Vegetation

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	-3.3E-07	uCi/kg	U			E909.0	07/28/11 11:01 / eli-cs
Lead 210 precision (±)	1.3E-06	uCi/kg				E909.0	07/28/11 11:01 / eli-cs
Lead 210 MDC	2.2E-06	uCi/kg				E909.0	07/28/11 11:01 / eli-cs
Lead 210 altu	-0.33	pCi/kg	U			E909.0	07/28/11 11:01 / eli-cs
Lead 210 precision (±) altu	1.3	pCi/kg				E909.0	07/28/11 11:01 / eli-cs
Lead 210 MDC altu	2.2	pCi/kg				E909.0	07/28/11 11:01 / eli-cs
Radium 226	2.1E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 precision (±)	1.2E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 MDC	1.4E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu	0.21	pCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu precision (±)	0.12	pCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu MDC	0.14	pCi/kg				E903.0	07/20/11 23:32 / trs

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: Denison Mines USA Corp
Project: Late Spring Vegetation
Lab ID: C11061059-003
Client Sample ID: South West

Report Date: 08/02/11
Collection Date: 06/23/11 10:15
DateReceived: 06/24/11
Matrix: Vegetation

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	-7.3E-07	uCi/kg	U			E909.0	07/28/11 12:01 / eli-cs
Lead 210 precision (±)	1.5E-06	uCi/kg				E909.0	07/28/11 12:01 / eli-cs
Lead 210 MDC	2.5E-06	uCi/kg				E909.0	07/28/11 12:01 / eli-cs
Lead 210 altu	-0.73	pCi/kg	U			E909.0	07/28/11 12:01 / eli-cs
Lead 210 precision (±) altu	1.5	pCi/kg				E909.0	07/28/11 12:01 / eli-cs
Lead 210 MDC altu	2.5	pCi/kg				E909.0	07/28/11 12:01 / eli-cs
Radium 226	-8.9E-08	uCi/kg	U			E903.0	07/20/11 23:32 / trs
Radium 226 precision (±)	6.9E-08	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 MDC	1.7E-07	uCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu	-0.089	pCi/kg	U			E903.0	07/20/11 23:32 / trs
Radium 226 altu precision (±)	0.069	pCi/kg				E903.0	07/20/11 23:32 / trs
Radium 226 altu MDC	0.17	pCi/kg				E903.0	07/20/11 23:32 / trs

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: Late Spring Vegetation

Report Date: 08/02/11
Work Order: C11061059

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 30410
Sample ID: MB-30410	3	Method Blank				Run: BERTHOLD 770-1_110715A				07/20/11 23:32
Radium 226		2E-07	uCi/kg							U
Radium 226 precision (±)		2E-07	uCi/kg							
Radium 226 MDC		3E-07	uCi/kg							
Sample ID: LCS-30410		Laboratory Control Sample				Run: BERTHOLD 770-1_110715A				07/20/11 23:32
Radium 226		3.0E-05	uCi/kg		116	70	130			
Sample ID: C11061059-002AMS		Sample Matrix Spike				Run: BERTHOLD 770-1_110715A				07/20/11 23:32
Radium 226		2.5E-05	uCi/kg		109	70	130			
Sample ID: C11061059-002AMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-1_110715A				07/20/11 23:32
Radium 226		2.6E-05	uCi/kg		111	70	130	3.3	20.7	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: Late Spring Vegetation

Report Date: 08/02/11
Work Order: C11061059

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_14459
Sample ID: C11061059-001AMSD		Sample Matrix Spike Duplicate				Run: SUB-T41494				07/28/11 10:01
Lead 210		0.00023	uCi/kg		95	70	130	10	18.3	
Sample ID: C11061059-001AMS		Sample Matrix Spike				Run: SUB-T41494				07/28/11 09:01
Lead 210		0.00020	uCi/kg		83	70	130			
Sample ID: LCS-14459		Laboratory Control Sample				Run: SUB-T41494				07/28/11 07:01
Lead 210		0.00030	uCi/kg		81	70	130			
Sample ID: MB-14459	3	Method Blank				Run: SUB-T41494				07/28/11 06:01
Lead 210		2E-06	uCi/kg							U
Lead 210 precision (±)		7E-06	uCi/kg							
Lead 210 MDC		1E-05	uCi/kg							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

Workorder Receipt Checklist

C11061059

Denison Mines USA Corp

Login completed by: Edith McPike
Reviewed by: BL2000\kschroeder
Reviewed Date: 6/28/2011

Date Received: 6/24/2011
Received by: dw
Carrier name: NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on 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?	Yes ☑	No ☐	
Container/Temp Blank temperature:	°C NA		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Contact and Corrective Action Comments:

Received 2 samples on 6-27-11.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: Denison Mines	Project Name, PWS, Permit, Etc.: Late Spring Vegitation	Sample Origin State: UT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 809 Blanding UT 84511	Contact Name: Ryan Palmer Phone/Fax: 435 678 2221	Email:	Sampler: (Please Print) Tyavrin Palmer
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order:

Special Report/Formats:

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

ANALYSIS REQUESTED

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

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

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

Comments: received other 2 samples 6-27-11 915

Shipped by: UPS NDA
Cooler ID(s): Client
Receipt Temp: NA °C
On Ice: Y N
Custody Seal: On Bottle Y (N); On Cooler (Y) N
Intact (Y) N
Signature Match (Y) N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Ra 226	Pb 210									
1 NorthEast	6/23/2011	0900	1-V	X	X									
2 North West	6/23/2011	0945	1-V	X	X									
3 SouthWest	6/23/2011	1015	1-V	X	X									
4														
5														
6														
7														
8														
9														
10														

LABORATORY USE ONLY
L11061659

Custody Record MUST be Signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
Ryan Palmer	6/23/2011 1130				

Received by Laboratory: Date/Time: 6-24-11 925 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ATTACHMENT G

STACK SAMPLE LABORATORY RESULTS

FIRST QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
DENISON MINES CORPORATION
NORTH YELLOW CAKE SCRUBBER
YELLOW CAKE DRYER BAGHOUSE

BLANDING, UTAH

February 15-16, 2011

by:

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

Prepared for:

Denison Mines Corporation
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

May 31, 2011

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: 5/31/11

Dean A. Kitchen

Reviewer: _____

Date: 5-31-11

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INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the North Yellow Cake Scrubber and the Yellow Cake Dryer Baghouse exhausts in terms of Curies per dry standard cubic foot (Ci/dscf).

These tests were for U-Nat only.

Test Location and Type of Process

Denison Mines (USA) Corporation is located about 5 miles south of Blanding, Utah. Uranium ore is processed into yellow cake, which is shipped to other facilities for additional processing. There are two yellow cake dryers with individual scrubbers. Both dryer enclosures discharge into the Dryer Baghouse. The Packaging enclosure also discharges into the Dryer Baghouse. The North Yellow Cake (NYC) dryer was the only operating dryer at the time of the test. The South Yellow Cake Dryer is currently not operational. The Grizzly Baghouse serve as the main dust control device for the raw ore unloading and conveying to the processing building.

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

Test Dates

One test run was completed on the NYC Dryer February 15, 2011 and one run on February 16th.

One run was completed on the Dryer Baghouse February 15, 2011.

Pollutants Tested and Methods Applied

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

Test run filters and front wash residues were sent to Test America located in Richland, Washington for radionuclide analysis.

Test Participants

Test Facility	Ryan Palmer	
State Agency	None	
TETCO	Doug Olsen Kawai McNamara	Mike McNamara

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-VI in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	North Yellow Cake Scrubber		Yellow Cake Dryer Baghouse	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	1.419E+02	1.143E +07	8.224E+01	1.050E+07
2	1.042E+02	6.951E+06		
AVE	**1.230E+02**	**9.190E+06**	**8.224E+01**	**1.050E+07**

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Scrubber water flow, pressure drop readings (Δp) were recorded and are found in Appendix D. The Dryer Baghouse pressure drop readings (Δp) were recorded and are found on the test run sheets. Production data will be submitted by Denison Mines.

Description of Collected Samples

The test filters for the North Yellow Cake Scrubber were heavily covered with a white or pinkish white colored particulate. The front washes were clear in appearance.

The test filters for the Yellow Cake Dryer Baghouse were lightly colored with a tan colored particulate. The front wash was clear in appearance.

Discussion of Errors or Irregularities

None

Percent Isokinetic Sampling

Each of the tests were isokinetic within the ±10% of 100% criterion specified in the Federal Register. They also meet the Utah State Department of Environmental Quality, Division of Air Quality specification of isokinetic sampling point by point. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	North Yellow Cake Scrubber	Yellow Cake Dryer Baghouse
1	96	98
2	99	

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber water flow, pressure and baghouse Δp readings were recorded and are found on the test run sheets or in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Denison Mines.

SAMPLING AND ANALYSIS PROCEDURES

Sampling Port Location

The inside diameter of the North Yellow Cake Scrubber stack is 18.0 inches. The two, four-inch diameter sample port are located 6.3 diameters (9.5 feet) downstream from the last disturbance and 6.3 diameters (9.5 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Yellow Cake Dryer Baghouse stack is 16.0 inches. The two, four-inch diameter sample ports are located 28.38 diameters (454 inches) downstream from the last disturbance and 3.56 diameters (57 inches) upstream from the next 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 is marked and identified with a wrapping of glass tape and numbered. These points are determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance (inches) from Inside Wall	
	NYC Scrubber	Dryer Baghouse
1	0.58	0.70
2	1.89	2.34
3	3.49	4.74
4	5.81	11.26
5	12.19	13.66
6	14.51	15.30
7	16.11	
8	17.42	

Sampling Train Description

To determine the actual emission rates for this stack, 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 and particulate.

The stack analyzers used to conduct Methods 1-5/114 are constructed to meet the specifications outlined in the CFR. The temperature sensors are K-type thermocouples. Heater, vacuum and pitot line connections have been designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 4 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 set-up, 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*.

APPENDIX

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
D: Raw Production Data
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APPENDIX A

Table IV Complete Results, North Yellow Cake Scrubber
Table V Complete Results, Yellow Cake Dryer Baghouse

Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
DENISON MINES CORPORATION, BLANDING, UTAH
NORTH YELLOWCAKE SCRUBBER EXHAUST

Symbol	Description	Dimensions	Run #1	Run #2	
Date			2/15/11	2/16/11	
Filter #			5714	5617	
Begin	Time Test Began		8:06	7:40	
End	Time Test Ended		16:17	15:55	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.50	24.35	
ΔH	Orifice Pressure Drop	In. H_2O	1.288	0.934	
Y	Meter Calibration Y Factor	dimensionless	0.993	0.993	
Vm	Volume Gas Sampled--Meter Conditions	cf	355.420	307.159	
T_m	Avg Meter Temperature	°F	97.1	95.4	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.2694	0.2224	
Wt_{wc}	Weight Water Collected	Grams	855.7	572.3	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3805	0.3805	
CO_2	Volume % Carbon Dioxide	Percent	3.00	3.00	
O_2	Volume % Oxygen	Percent	17.00	16.90	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	80.00	80.10	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	274.962	236.648	
Vw	Volume Water Vapor	scf	40.346	26.984	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.128	0.102	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.060	0.055	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.060	0.055	
X_d	Fraction of Dry Gas	Fraction	0.940	0.945	
M_d	Molecular Wt. Dry Gas	lb/lbmol	29.16	29.16	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.49	28.54	
%I	Percent Isokinetic	Percent	95.5	99.2	**AVG**
T_s	Avg Stack Temperature	°F	90.9	88.1	**89.5**
A_s	Stack Cross Sectional Area	Sq. Ft.	1.767	1.767	
P_G	Stack Static Pressure	In. H_2O	-0.050	-0.050	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.43	24.28	
P_s	Stack Pressure	In. Hg. Abs	24.426	24.276	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.34E+03	1.11E+03	**1.23E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.82E+03	1.51E+03	**1.67E+03**
V_s	Velocity of Stack Gas	fpm	1.03E+03	8.52E+02	**9.43E+02**
Curies	Radionuclides per sample	pCi	39021.0	24649.0	
Crad	Concentration of Radionuclides	pCi/dscf	141.914	104.159	**123.037**
ERrad	Emission Rate of Radionuclides	pCi/hr	1.143E+07	6.951E+06	**9.190E+06**

* If the measured moisture content is greater than the saturated moisture level (supersaturated), the saturated moisture value will be used in all calculations (40 CFR 60, Method 4, Section 12.1.7).

TABLE V
COMPLETE RESULTS, PM
DENISON MINES CORPORATION
YELLOW CAKE DRYER BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		2/15/11
Filter #			5715
Begin	Time Test Began		9:23
End	Time Test Ended		11:25
Pb_m	Meter Barometric Pressure	In. Hg. Abs	25.50
ΔH	Orifice Pressure Drop	In. H_2O	1.303
Y	Meter Calibration Y Factor	dimensionless	1.001
Vm	Volume Gas Sampled--Meter Conditions	cf	91.348
T_m	Avg Meter Temperature	°F	97.5
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5056
Wt_{wc}	Weight Water Collected	Grams	18.2
T_t	Duration of Test	Minutes	120
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.2758
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	74.085
Vw	Volume Water Vapor	scf	0.858
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.011
X_d	Fraction of Dry Gas	Fraction	0.989
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.71
%I	Percent Isokinetic	Percent	97.6
T_s	Avg Stack Temperature	°F	89.8
A_s	Stack Cross Sectional Area	Sq. Ft.	1.396
P_G	Stack Static Pressure	In. H_2O	-0.18
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	25.43
P_s	Stack Pressure	In. Hg. Abs	25.417
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	2.13E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	2.64E+03
V_s	Velocity of Stack Gas	fpm	1.89E+03
Curies	Radionuclides per sample	pCi	6093.0
Crad	Concentration of Radionuclides	pCi/dscf	82.2433
ERrad	Emission Rate of Radionuclides	pCi/hr	1.050E+07

M5 Nomenclature

%I = percent isokinetic, percent

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

ASΔP = see $\sqrt{\Delta P}$

Btu = unit heat value (British thermal unit)

B_{ws} = fraction of water in stack gas

C_B = concentration of particulate matter, back half (gr/dscf,lb/dscf, etc.)

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)

ΔP = stack flow pressure differential (inches H_2O)

D_s = diameter of the stack (feet)

D_n = nozzle diameter (inches)

EA = percent excess air

ER_B = emission rate of back half particulate (lb/hr)

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 ASΔP)

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_s = stack temperature (^oF)

T_{std} = absolute temperature at standard conditions (528^oR)

Tt = see θ

u_m = mean molecular speed (cm/s)

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_{wc} = 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)

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

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

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

$$C_B = M_B \cdot 0.01543 / Vm_{std}$$

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

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

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

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

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

$$ER_B = C_B \cdot Q_s \cdot 0.00857$$

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

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

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

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

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

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

$$Q_a = V_s \cdot A_s$$

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

$$Q_W = Q_s / X_d$$

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

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

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

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

APPENDIX B

North Yellow Cake Scrubber

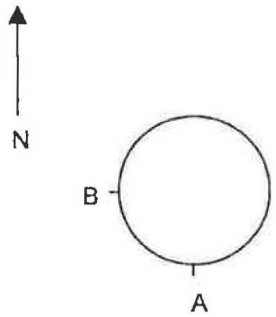
Preliminary Velocity Traverse and Sampling Point Location Data
Particulate Field Data

Yellow Cake Dryer Baghouse

Preliminary Velocity Traverse and Sampling Point Location Data
Particulate Field Data

North Yellow Cake Dryer Scrubber

Prelim 8 pts blank



Stack Dia. 18 Reference: 0

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' Downstream from last disturbance

Facility Denison Mines

Stack Identification North Yellow Cake Scrubber

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) _____ %

Sample Height from Ground _____ feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	3.2	0.58	0.58						
2	10.5	1.89	1.89						
3	19.4	3.49	3.49						
4	32.3	5.81	5.81						
5	67.7	12.19	12.19						
6	80.6	14.51	14.51						
7	89.5	16.11	16.11						
8	96.8	17.42	17.42						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

5 Field Data Sheet

Filter 5714 / 5716 TETCO Sample Box C

Page 1 of 2 Run # 1

Plant: Denison Mines

Date: 2/15/11

Location: North Yellowcake Dryer Scrubber

Operator: RA

N

B

A

Stack Diameter 18" Port Reference 0.0"

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' 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	In
A 1	8:06	0	494.280	.045	.73	.73	2	90	228	228	229	49	77	78
1		15	502.616	.060	1.00	1.00	2	88	229	250	243	46	78	84
2		30	512.176	.070	1.20	1.20	2	88	265	267	260	48	82	90
2		45	522.545	.072	1.23	1.23	3	89	266	270	269	50	86	95
3		60	533.103	.078	1.33	1.33	3	90	268	270	268	51	89	96
3		75	544.092	.074	1.36	1.36	4	90	250	236	238	52	91	101
4		90	555.091	.075	1.31	1.31	4	90	229	253	248	53	93	101
4		105	566.030	.077	1.34	1.34	5	89	270	257	252	55	95	104
5		120	577.134	.082	1.43	1.43	5	91	261	263	258	57	96	102
588 5		135	588.735	.088	1.53	1.53	6	90	265	265	261	61	95	101
6		150	601.823	.073	1.27	1.27	6	91	235	235	261	58	95	105
6		165	611.791	.081	1.42	1.42	6	91	236	257	250	59	96	104
7		180	623.081	.085	1.49	1.49	6	92	232	260	256	60	95	103
7		195	634.744	.085	1.49	1.49	7	94	231	259	253	63	96	105
8		210	646.569	.085	1.49	1.49	8	93	246	256	249	66	99	107
8		225	658.260	.088	1.55	1.55	8	93	255	260	255	66	98	104
X	12:06	240	~~670.009~~ 670.009											
Total			175.809											
Average														

Assumed Moisture 4-13 %

Probe 27-6 Cp 0.84

Nozzle Calibration 380 380 381 381

Avg D_n 3805 inches

Gas Bag E-05

Console 6

Y-Factor 993

$\Delta H_@$ 1.657 in H_2O

Barometric Pressures 24.50

Pb_{in} ~~24.55~~ in Hg

Pb_{p} ~~24.48~~ in Hg 24.43

P_G -.05 in H_2O

Leak Check	Pre	Post
ft³/min	0.007	0.004
vac in Hg	21	15
Pitot Rate	0.00 ~~0.007~~	0.0
in H_2O	.25	.25

Water Collected ____ g

Time Sampled ____ min

Review RA

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)
	670.009			670.268		

X changed filter at point change

5 Field Data Sheet

TETCO
Filter 5716 Sample Box C

Page 2 of 2 Run # 1

Plant: Denison Mines
Date: 2/15/11

Location: North Yellowcake Dryer Scrubber
Operator: [illegible]

N
B
A

Stack Diameter 18" Port Reference 0.0"
Ports are 9.5' Upstream from next disturbance
Ports are 9.5' Downstream from last disturbance

Assumed Moisture 4-13 %
Probe 27-6 Cp 0.84
Nozzle Calibration
.380 .380 .381 .381
Avg D_n .3805 inches
Gas Bag E-05
Console 6
Y-Factor .993
$\Delta H_@$ 1.657 in H_2O

Barometric Pressures
Pb_m 24.50 in Hg
Pb_p 24.43 in Hg
P_G -.0.5 in H_2O

Leak Check	Pre	Post
ft³/min	0.008	0.005
vac in Hg	22	15
Pitot Rate	0.0	0.0
In H_2O	.25	.25

Water Collected 855.7 g
Time Sampled 480 min
Review [illegible]

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
4 00	1	12:17	240	670.799	.085	1.49	1.49	3	90	252	231	230	62	94	92
15	1		255	681.232	.085	1.49	1.49	3	91	263	237	233	54	94	98
30	2		270	693.929	.075	1.32	1.32	4	89	264	245	239	56	91	94
45	2		285	705.365	.075	1.32	1.32	4	84	256	252	246	57	91	98
5 00	3		300	716.412	.062	1.09	1.09	4	86	268	254	248	58	93	101
15	3		315	726.618	.082	1.44	1.44	4	90	269	258	253	60	94	99
30	4		330	738.165	.075	1.32	1.32	5	90	270	259	255	62	96	103
45	4		345	749.066	.073	1.30	1.30	5	92	258	248	242	53	96	105
6 00	5		360	761.066	.055	1.02	1.02	5	92	239	248	242	53	96	103
772. 15	5		375	772.066	.055	1.02	1.02	5	91	240	249	249	53	96	102
930 30	6		390	783.102	.067	1.24	1.21	6	91	251	252	248	55	97	104
45	6		405	794.189	.065	1.20	1.20	6	91	253	254	249	56	98	106
7 00	7		420	805.255	.060	1.11	1.11	6	93	243	259	253	58	99	106
15	7		435	816.202	.075	1.39	1.39	6	97	267	259	254	60	100	107
30	8		450	827.803	.065	1.20	1.20	6	97	268	262	255	60	101	109
45	8		465	839.291	.060	1.11	1.11	8	96	269	266	261	62	102	110
8			480	850.410											
				179.611											
				175.809											
Total				355.420	8.6208	41.23			2909					6214	
Average					.2694	1.288			90.9					97.1	

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)
	670.268			670.799		

5 Field Data Sheet

Filter 5617 / 5618 TETCO Sample Box C

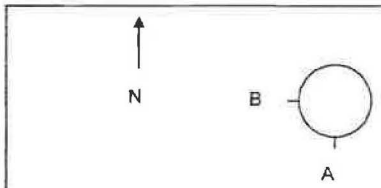
Page 1 of 2 Run # R 2

Plant: Denison Mines

Date: 2/16/11

Location: North Yellowcake Dryer Scrubber

Operator: TM



Stack Diameter 18" Port Reference 0.0"

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' 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	In
1	7:40	0	851.301	.040	.73	.73	2	85	270	237	232	48	61	62
1		15	859.770	.043	.80	.80	2	86	244	241	235	47	66	74
2		30	868.531	.045	.83	.83	2	86	243	247	241	48	72	80
2		45	877.413	.043	.80	.80	2	87	228	249	245	50	78	84
3		60	886.335	.040	.74	.74	2	88	241	254	249	50	82	87
3		75	894.988	.043	.80	.80	2	89	238	235	255	52	85	90
4		90	903.671	.043	.80	.80	3	89	229	250	245	52	87	91
4		105	912.800	.047	.89	.89	4	88	229	249	245	53	88	92
5		120	922.105	.047	.89	.89	4	87	230	247	243	53	90	95
5		135	931.410	.045	.85	.85	5	87	265	253	248	54	91	96
6		150	940.648	.055	1.04	1.04	5	89	267	251	245	53	91	96
6		165	950.540	.055	1.04	1.04	5	89	257	249	244	51	93	98
7		180	960.349	.053	1.00	1.00	6	88	263	250	244	52	94	99
7		195	970.228	.053	1.00	1.00	6	88	263	254	248	53	95	101
8		210	980.288	.055	1.04	1.04	6	88	263	252	247	50	95	101
8		225	990.589	.057	1.07	1.07	7	89	244	250	244	50	97	103
	11:40	240	1000.591											
			149.290											

Total 149.290 √

Average √

Assumed Moisture 4-13 %

Probe 27-6 Cp 0.84

Nozzle Calibration .380 .380 .381 .381

Avg D_n .3805 inches

Gas Bag E-05

Console 6

Y-Factor .993

$\Delta H_@$ 1.657 in H_2O

Barometric Pressures

Pb_m 24.35 in Hg

Pb_p 24.28 in Hg

P_G (.05) in H_2O

Leak Check	Pre	Post
ft³/min	0.008	0.004
vac in Hg	21	21

Pitot Rate		
	0.0	0.0
In H_2O	.25	.25

Water Collected g

Time Sampled 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)
	1000.591			1001.005		

5 Field Data Sheet

TETCO
Filter 5618 Sample Box

Page 2 of 2 Run # 2

Plant: Denison Mines
Date: 2/16/11

Location: North Yellowcake Dryer Scrubber
Operator:

N
B
A

Stack Diameter 18" Port Reference 0.0"
Ports are 9.5' Upstream from next disturbance
Ports are 9.5' 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	In
4 00	1	11:55	240	1.501	0.05	.94	.94	2	88	270	229	229	59	94	92
15	1		255	11.275	.05	.94	.94	2	87	271	239	235	51	95	101
30	2		270	20.934	.048	.90	.90	2	86	265	246	243	53	97	102
45	2		285	30.400	.048	.90	.90	3	86	270	252	247	54	98	103
5 00	3		300	40.011	.050	.95	.95	3	87	240	240	236	55	99	105
15	3		315	49.925	.050	.95	.95	3	87	258	236	231	54	101	106
30	4		330	59.605	.048	.90	.90	3	87	265	237	233	55	102	106
45	4		345	69.246	.051	.97	.97	3	86	243	235	231	56	102	107
6 00	5		360	79.058	.054	1.03	1.03	4	85	230	235	229	53	103	107
15	5		375	89.029	.060	1.14	1.14	5	89	265	240	233	52	102	107
30	6		390	99.721	.058	1.10	1.10	5	90	266	247	241	53	102	107
45	6		405	110.263	.055	1.05	1.05	5	90	244	240	233	54	102	108
7 00	7		420	120.421	.055	1.05	1.05	6	92	245	236	231	54	103	108
15	7		435	130.483	.050	.95	.95	5	92	242	229	231	54	103	108
30	8		450	140.200	.048	.91	.91	6	93	248	249	242	53	103	108
45	8		465	149.798	.048	.91	.91	6	92	256	258	251	53	103	108
8 00		15:55	480	159.370											
				157.869											
				149.290											
Total				307.159	7.1166	29.88			2820					6107	
Average					.2224	.934			88.1					95.4	

Assumed Moisture 4-13 %
Probe 27-6 Cp 0.84
Nozzle Calibration
.380 .380 .381 .381
Avg D_n .3805 inches
Gas Bag E-05
Console 6
Y-Factor .993
$\Delta H_@$ 1.657 in H_2O

Barometric Pressures
Pb_m 24.35 in Hg
Pb_p 24.28 in Hg
P_G (.05) in H_2O

Leak Check:	Pre	Post
ft³/min	0.007	0.004
vac in Hg	21	15
Pitot Rate	0.0	0.0
in H_2O	.25	.25

Water Collected 572.3 g
Time Sampled 480 min
Review

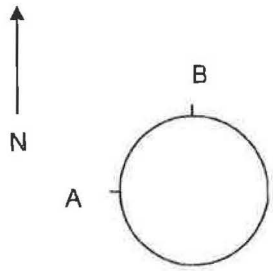
K = @T_m
K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)
	1001.005					

Yellow Cake Dryer Baghouse

Prelim 6 pts blank



Stack Dia 16 Reference: 0

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

Facility Denison Mines

Stack Identification North Yellow Cake Dryer 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 _____ feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	4.4	0.70	0.70						
2	14.6	2.34	2.34						
3	29.6	4.74	4.74						
4	70.4	11.26	11.26						
5	85.4	13.66	13.66						
6	95.6	15.30	15.30						

Averages:

T_s _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_s ∠ Flow ΔP

Field Data Sheet

TETCO
Filter 5715 Sample Box D

Page 1 of 1 Run # 1

Plant: Denison Mines
Date: 2/15/11

Location: North Yellowcake Dryer Baghouse
Operator: M. Mendoza

N
B
A

Stack Diameter 16" Port Reference 0.0"
Ports are 57" Upstream from next disturbance
Ports are 468" 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	In
B	1	9:23	0	176.002	.22	1.12	1.12	3	85	260	263	270	64	77	77
	2		10	184.450	.23	1.17	1.17	3	87	224	246	266	56	82	84
	3		20	190.430	.23	1.15	1.15	3	88	270	246	267	57	85	91
	4		30	197.525	.29	1.45	1.45	4	88	270	243	263	57	90	98
	5		40	205.490	.31	1.55	1.55	4	90	235	244	265	58	94	105
	6		50	213.740	.31	1.57	1.57	4	91	225	242	261	61	96	109
A	1	10:25	60	222.103	.21	1.07	1.07	3	91	242	242	262	61	96	107
	2		70	229.190	.20	1.02	1.02	4	90	257	250	258	59	99	108
	3		80	236.075	.20	1.02	1.02	4	91	251	241	259	58	100	110
	4		90	243.015	.29	1.47	1.47	4	91	232	238	258	60	100	110
	5		100	251.110	.30	1.52	1.52	4	93	243	241	261	60	100	111
	6		110	259.165	.30	1.52	1.52	4	93	241	240	260	60	101	111
		11:25	120	267.350											
Total				91.348	6.0669	15.63			1078					2341	
Average					.5056	1.303			89.8					97.5	

Assumed Moisture 1 %
Probe 18-6 Cp 0.84
Nozzle Calibration
.275 .276 .276 .276
Avg D_n .2758 inches
Gas Bag Ambient Air
Console 5
Y-Factor 1.001
$\Delta H_@$ 1.486 in H_2O

Barometric Pressures
Pb_m 25.5 in Hg
Pb_n 25.43 in Hg
P_G -.18 in H_2O

Leak Check	Pre	Post
ft³/min	0.007	0.002
vac in Hg	20.0	7.0
Pitot Rate	0.0	0.0
in H_2O	9.0	9.0

Water Collected 18.2 g
Time Sampled 120 min
Review [illegible]

K = @T_m
K = @T_m

Comments:

Time	Baghouse ΔP	Time	Baghouse ΔP
9:25	2.1	10:46	3.9
9:45	2.8	10:06	3.9
10:05	3.1		
10:26	3.9		

6 Barrels

APPENDIX C

North Yellow Cake Scrubber
- Sample Recovery
- Gas Analysis Data (ORSAT)

Yellow Cake Dryer Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Chain of Custody

Lab Analysis

North Yellow Cake Dryer Scrubber

METHOD 5

Facility: Denison Mine

Date:

Stack Identification: NYC Scrubber

IMPINGERS

Run: 1 Sample Box: C 2/15/11

5714
5716

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	785.7	809.3	754.4	627.9	614.7	859.6
Initial (g)	473.0	524.3	689.1	608.2	604.7	696.6
Net (g)	312.7	285.0	65.3	19.7	10.0	163.0

Total (g) 855.7

IMPINGERS

Run: 2 Sample Box: C 2/16/11

5717

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	810.0	683.0	732.9	629.2	617.7	888.9
Initial (g)	477.6	528.6	704.3	627.7	614.6	837.2
Net (g)	332.4	154.4	28.6	1.5	3.7	51.7

Total (g) 572.3

IMPINGERS

Run: Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g)

IMPINGERS

Run: Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g)

Plant Dennison

Location MAV/C Scrubber

Analytical Method 5

Date 2/15/11
Test No. 1
Gas Bag No. E-05
Ambient Temp 70
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	3.0	3.0	3.0	3.0	3.0	3.0	3.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.0	~~20~~ 17.0	20.0	17.0	20.0	17.0	17.0
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 2/16/11
Test No. 2
Gas Bag No. E-05
Ambient Temp 70
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	3.0	3.0	3.0	3.0	3.0	3.0	3.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	19.9	16.9	19.9	16.9	19.9	16.9	16.9
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

Yellow Cake Dryer Baghouse

NYC Baghouse M5

Facility: Denison Mines

Date: 2/15/11

Stack Identification: NYC Baghouse

IMPINGERS

Run: 1

Sample Box: D

2
5715

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	—	Silica Gel		
	1	2	3	4	5	6
Final (g)	696.9	698.2	614.7	876.5		
Initial (g)	710.1	690.4	609.1	858.5		
Net (g)	-13.2	7.8	5.6	18.0		

Total (g) 18.2

PH 6

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Tetco	Project Manager: Dean Kitchen	Date: 2/18/2011	Chain of Custody Number:
Address: 391 East 620 South	Telephone Number (Area Code)/Fax Number: 801-492-9106	Lab Number:	Page _____ of _____
City: American Fork; State: Ut; Zip Code: 84003	Site Contact: Scott Christensen, Ryan Palmer	Lab Contact:	
Project Name and Location (State): Denison Mine 2011 1st Quarter	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): U-Nat	TH-230	Ra-226	Lead-210								Special Instructions/ Conditions of Receipt
R1 Baghouse filter (5715) and beaker	2/15/2011	10:00	X												X											
R1 NYC filters (5714,5716) and beaker	2/15/2011	8:00	X												X											
R2 NYC filters (5717,5718) and beaker	2/16/2011	8:00	X												X											

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify):

1. Relinquished By: [signature]	Date: 2/18/11	Time: 8 A	1. Received By	Date	Time
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Analytical Data Package Prepared For

Denison Mines (USA) Corp.

Denison Mine 2011 1st Quarter

Radiochemical Analysis By

TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code:

Data Package Contains 14 ***Pages***

Report No.: 46110

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
42802		R1 BAGHOUSE FILTER (5715) & BE	J1B240526-1	METXG1AA	9METXG10	1055400
		R1 NYC FILTERS (5714,5716) & B	J1B240526-2	METXV1AA	9METXV10	1055400
		R2 NYC FILTERS (5717,5718) & B	J1B240526-3	METX21AA	9METX210	1055400

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

March 31, 2011

Denison Mines (USA) Corp
1050 17th Street, Suite 950
Denver, CO 80265

Attention: Dean Kitchen

Date Received at Lab	:	February 22, 2011
Project Name	:	Denison Mine 2011 1st Quarter
Sample Type	:	Three (3) Stack Filter Samples
SDG Number	:	42802

CASE NARRATIVE

I. Introduction

On February 22, 2011, three stack filter samples were received at TestAmerica's Richland laboratory for radiochemical analysis. Upon receipt, the samples were assigned the TestAmerica identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Numbers J1B240526.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analysis requested was:

Alpha Spectroscopy
Uranium-234, -235, -238 by method RL-ALP-004

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Alpha Spectroscopy

Uranium-234, 235, 238

The LCS recovery yield exceeds acceptance criteria. The LCS was recounted and is now within acceptance limits. The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. The sample activity exceeds the MDA and detection limit for the samples and the batch blank activity is below the samples and the LCS. Data is accepted. Except as noted, the LCS, batch blank, sample and sample duplicate results are within acceptance limits.

I certify that this Certificate of Analysis is in compliance with the SOW and/or NELAC, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Erika Jordan
Customer Service Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 31-Mar-11

TestAmerica

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46110 **SDG No:** 42802

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RER2
1055400 FFSR									
R1 BAGHOUSE FILTER (5715) & BE									
	METXG1AA	U-234	2.87E-03 +- 5.3E-04		UCI/SA	94%	3.90E-05	9.00E-15	
		U-235	1.23E-04 +- 6.2E-05		UCI/SA	94%	3.15E-05	9.00E-15	
		U-238	3.10E-03 +- 5.7E-04		UCI/SA	94%	3.15E-05	9.00E-15	
R1 NYC FILTERS (5714,5716) & B									
	METXV1AA	U-234	1.90E-02 +- 3.0E-03		UCI/SA	95%	3.35E-05	9.00E-15	
		U-235	6.21E-04 +- 1.5E-04		UCI/SA	95%	2.70E-05	9.00E-15	
		U-238	1.94E-02 +- 3.1E-03		UCI/SA	95%	4.40E-05	9.00E-15	
R2 NYC FILTERS (5717,5718) & B									
	METX21AA	U-234	1.23E-02 +- 2.0E-03		UCI/SA	100%	2.95E-05	9.00E-15	
		U-235	3.49E-04 +- 1.1E-04		UCI/SA	100%	2.38E-05	9.00E-15	
		U-238	1.20E-02 +- 2.0E-03		UCI/SA	100%	2.95E-05	9.00E-15	

No. of Results: 9

TestAmerica **RER2** **- Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.**

rptSTLRchSaSum mary2 V5.2.12 A2002

QC Results Summary

Date: 31-Mar-11

TestAmerica

Ordered by Method, Batch No, QC Type,.

Report No. : 46110 **SDG No.:** 42802

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
FFSR								
1055400 BLANK QC,								
MEVA41AA	U-234	7.28E-09 +- 1.5E-08	U	UCI/SA	93%			2.93E-08
	U-235	-5.83E-10 +- 1.5E-08	U	UCI/SA	93%			2.93E-08
	U-238	-5.83E-10 +- 1.5E-08	U	UCI/SA	93%			2.93E-08
1055400 LCS,								
MEVA42AC	U-234	1.11E-06 +- 2.6E-07		UCI/SA	72%	113%	0.1	3.83E-08
	U-238	1.24E-06 +- 2.8E-07		UCI/SA	72%	121%	0.2	4.52E-08

No. of Results: 5

TestAmerica

rptSTLRchQcSummary V5.2.12 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 31-Mar-11

Lab Name:	**TestAmerica**	**SDG:**	42802	**Collection Date:**	2/15/2011 10:00:00 AM
Lot-Sample No.:	**J1B240526-1**	**Report No. :**	46110	**Received Date:**	2/22/2011 10:00:00 AM
Client Sample ID:	**R1 BAGHOUSE FILTER (5715) & BE**	**COC No. :**		**Matrix:**	OTHER

Denison Mine 2011 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1055400	FFSR			**Work Order:** METXG1AA		**Report DB ID:** 9METXG10						
U-234	**2.87E-03**		2.8E-04	5.3E-04	3.90E-05	UCI/SA	94%	*(73.5)*	3/30/11 04:48 a	1.0	0.00101	ALP213
						1.02E-05	9.00E-15	*(10.8)*		Sample	Sample	
U-235	**1.23E-04**		5.9E-05	6.2E-05	3.15E-05	UCI/SA	94%	*(3.9)*	3/30/11 04:48 a	1.0	0.00101	ALP213
						6.42E-06	9.00E-15	*(4.)*		Sample	Sample	
U-238	**3.10E-03**		2.9E-04	5.7E-04	3.15E-05	UCI/SA	94%	*(98.4)*	3/30/11 04:48 a	1.0	0.00101	ALP213
						6.42E-06	9.00E-15	*(10.9)*		Sample	Sample	

Ratio U-234/238 = 0.9

No. of Results: 3 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 31-Mar-11

Lab Name: TestAmerica | **SDG:** 42802 | **Collection Date:** 2/15/2011 8:00:00 AM

Lot-Sample No.: J1B240526-2 | **Report No. :** 46110 | **Received Date:** 2/22/2011 10:00:00 AM

Client Sample ID: R1 NYC FILTERS (5714,5716) & B | **COC No. :** | **Matrix:** OTHER

Denison Mine 2011 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1055400	FFSR			**Work Order:** METXV1AA		**Report DB ID:** 9METXV10						
U-234	**1.90E-02**		6.4E-04	3.0E-03	3.35E-05	UCI/SA	95%	*(566.3)*	3/30/11 04:48 a	1.0	0.00115	ALP214
						9.42E-06	9.00E-15	*(12.6)*		Sample	Sample	
U-235	**6.21E-04**		1.2E-04	1.5E-04	2.70E-05	UCI/SA	95%	*(23.)*	3/30/11 04:48 a	1.0	0.00115	ALP214
						6.17E-06	9.00E-15	*(8.2)*		Sample	Sample	
U-238	**1.94E-02**		6.5E-04	3.1E-03	4.40E-05	UCI/SA	95%	*(440.1)*	3/30/11 04:48 a	1.0	0.00115	ALP214
						1.47E-05	9.00E-15	*(12.6)*		Sample	Sample	

Ratio U-234/238 = 1.0

No. of Results: 3 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 31-Mar-11

Lab Name:	TestAmerica	**SDG:**	42802	**Collection Date:**	2/16/2011 8:00:00 AM
Lot-Sample No.:	J1B240526-3	**Report No. :**	46110	**Received Date:**	2/22/2011 10:00:00 AM
Client Sample ID:	R2 NYC FILTERS (5717,5718) & B	**COC No. :**		**Matrix:**	OTHER

Denison Mine 2011 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1055400	FFSR			**Work Order:**	METX21AA		**Report DB ID:**	9METX210				
U-234	**1.23E-02**		5.4E-04	2.0E-03	2.95E-05	UCI/SA	100%	*(415.7)*	3/30/11 04:48 a	1.0	0.00116	ALP215
						6.74E-06	9.00E-15	*(12.3)*		Sample	Sample	
U-235	**3.49E-04**		9.1E-05	1.1E-04	2.38E-05	UCI/SA	100%	*(14.7)*	3/30/11 04:48 a	1.0	0.00116	ALP215
						3.89E-06	9.00E-15	*(6.6)*		Sample	Sample	
U-238	**1.20E-02**		5.3E-04	2.0E-03	2.95E-05	UCI/SA	100%	*(407.7)*	3/30/11 04:48 a	1.0	0.00116	ALP215
						6.74E-06	9.00E-15	*(12.3)*		Sample	Sample	

Ratio U-234/238 = 1.0

No. of Results: 3 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 31-Mar-11

Lab Name: TestAmerica

Matrix: OTHER

SDG: 42802

Report No. : 46110

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1055400	FFSR			**Work Order:**	MEVA41AA		**Report DB ID:**	MEVA41AB				
U-234	7.28E-09	U	1.5E-08	1.5E-08	2.93E-08	UCI/SA	93%	0.25	3/30/11 04:48 a	1.0	1.0	ALP216
					4.79E-09	9.00E-15		0.99		Sample	Sample	
U-235	-5.83E-10	U	1.5E-08	1.5E-08	2.93E-08	UCI/SA	93%	-0.02	3/30/11 04:48 a	1.0	1.0	ALP216
					4.79E-09	9.00E-15		-0.08		Sample	Sample	
U-238	-5.83E-10	U	1.5E-08	1.5E-08	2.93E-08	UCI/SA	93%	-0.02	3/30/11 04:48 a	1.0	1.0	ALP216
					4.79E-09	9.00E-15		-0.08		Sample	Sample	
								Ratio U-234/238 = -12.5				

No. of Results: 3 **Comments:**

TestAmerica
rptSTLRchBlank
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 31-Mar-11

Lab Name: TestAmerica

Matrix: OTHER

SDG: 42802

Report No. : 46110

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1055400	FFSR			**Work Order:**	MEVA42AC		**Report DB ID:**	MEVA42CS					
U-234	1.11E-06		1.9E-07	2.6E-07	3.83E-08	UCI/SA	72%	9.84E-07	3.05E-08	113%	3/31/11 04:13 a	1.0	ALP12
							Rec Limits:	75	125	0.1		Sample	
U-238	1.24E-06		2.0E-07	2.8E-07	4.52E-08	UCI/SA	72%	1.03E-06	3.20E-08	121%	3/31/11 04:13 a	1.0	ALP12
							Rec Limits:	75	125	0.2		Sample	

No. of Results: 2 **Comments:**

TestAmerica **Bias** **- (Result/Expected)-1 as defined by ANSI N13.30.**

rptSTLRchLcs
V5.2.12 A2002

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

J1B240526

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Tetco	Dean Kitchen	2/18/2011	

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page _____ of _____
391 East 620 South	801-492-9106		

City	State	Zip Code	Site Contact	Lab Contact
American Fork	Ut	84003	Scott Christensen,Ryan Palmer	

Project Name and Location (State)	Carrier/Waybill Number
Denison Mine 2011 1st Quarter	

Contract/Purchase Order/Quote No.

Special Instructions/ Conditions of Receipt Don.

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	U-Nat	TH-230	Ra-226	Lead-210	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
R1 Baghouse filter (5715) and beaker	2/15/2011	10:00	X										X				METXG	Q# 82397
R1 NYC filters (5714,5716) and beaker	2/15/2011	8:00	X										X				METXV	J1B240526
R2 NYC filters (5717,5718) and beaker	2/16/2011	8:00	X										X				METX2	SDG 42802
																		DW - 3.22.11

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
[signature]	2/18/11	8 A	[signature] TAR	2.22.11	10am
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 2·22·11 @ 10AM GM Screen Result (out) .3 (in) .4 Initials [✓]

Client: Den SDG #: 42802 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J1B240526 Chain of Custody # _____

Shipping Container ID: _____ NA [✓] Air Bill # _____ NA [✓]

Item 1 through 5 for shipping container only. Initial appropriate response.

1. Custody Seals on shipping container intact? Yes [✓] No [ ] No Custody Seal [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ] No Custody Seal [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]

Item 6 through 10 for samples. Initial appropriate response.

6. Number of samples in shipping container (Each sample may contain multiple bottles): 3 @ 2 Containers per sample.
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have:
   - [✓] tape
   - ____ custody seals
   - ____ hazard labels
   - [✓] appropriate sample labels

   J1B240526
9. Samples:
   - [✓] are in good condition (Jiffies & Baker)
   - ____ are broken
   - ____ are leaking
   - ____ have air bubbles (Only for samples requiring no head space)
10. Sample pH appropriate for analysis requested Yes [ ] No [ ] N/A [✓] (Note discrepancies in #13)
    (If acidification necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition)

    RPL ID # of preservative used : _____
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): NA [ ] _____

See other side for additional comments

Sample Custodian: [signature] Date: 2·22·11 @ 10AM TLR

Client Informed on _____ by _____ Person contacted _____

[X] No action necessary; process as is

Project Manager Erika Jordan Date 2-24-11

APPENDIX D

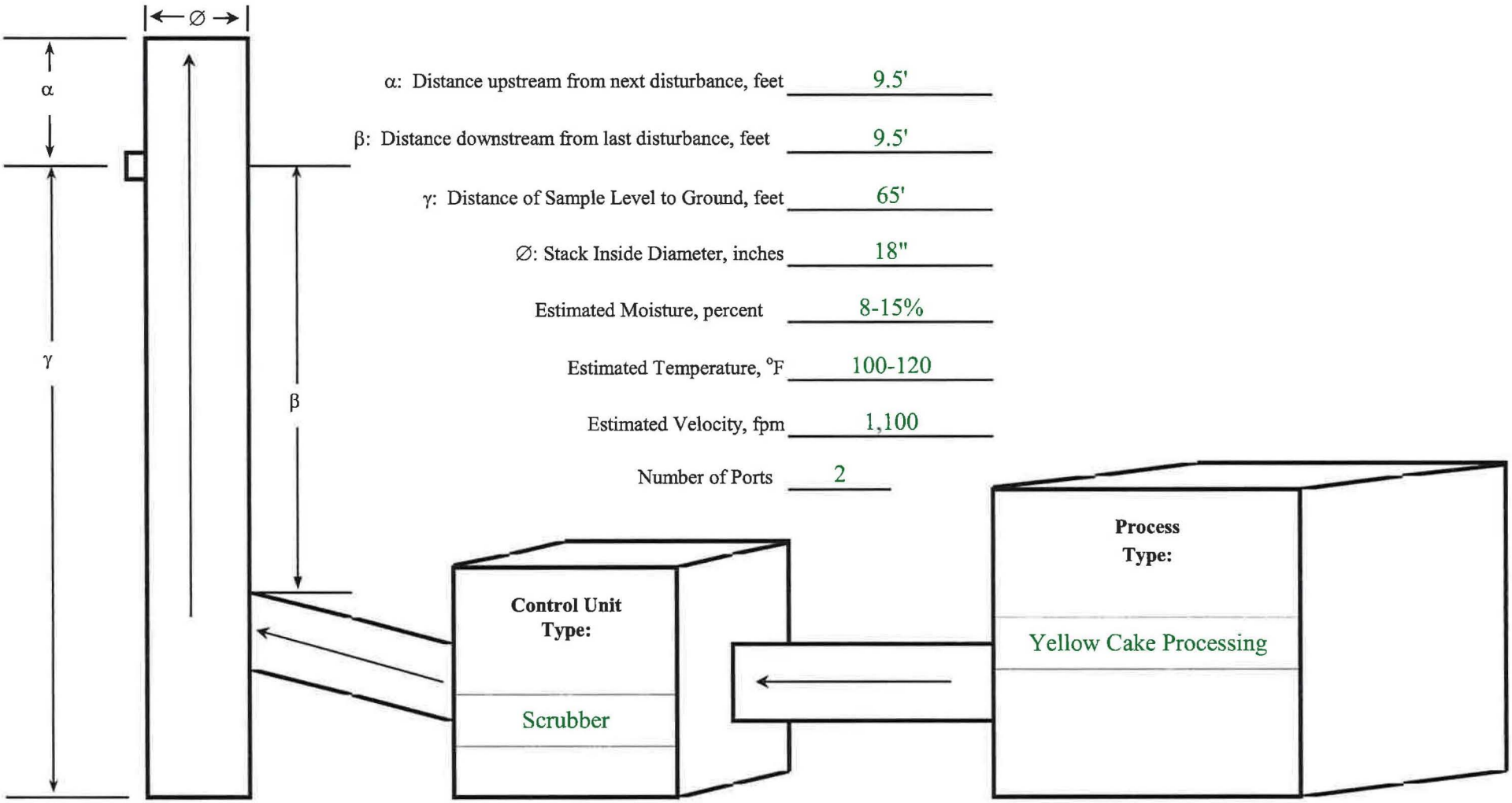
North Yellow Cake Scrubber
Figure 1. Facility Schematic Representation

Yellow Cake Dryer Baghouse
Figure 2. Facility Schematic Representation

Process Data
(Retained by Denison Mines)

Facility: Denison Mines

Stack Identification: North Yellow Cake Scrubber



α: Distance upstream from next disturbance, feet 9.5'

β: Distance downstream from last disturbance, feet 9.5'

γ: Distance of Sample Level to Ground, feet 65'

∅: Stack Inside Diameter, inches 18"

Estimated Moisture, percent 8-15%

Estimated Temperature, °F 100-120

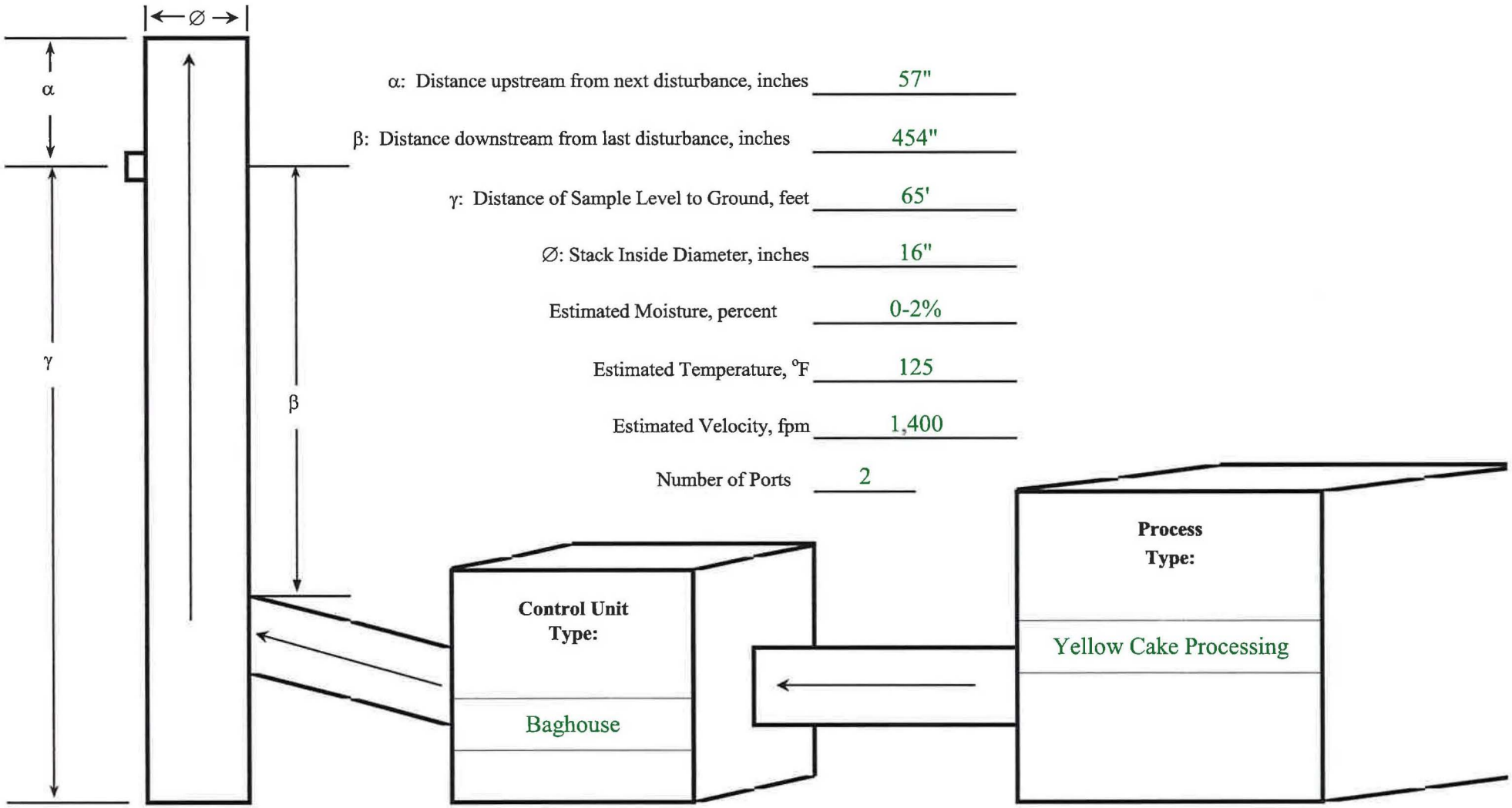
Estimated Velocity, fpm 1,100

Number of Ports 2

Figure 1. Facility Schematic Representation

Facility: Denison Mines

Stack Identification: Baghouse



α: Distance upstream from next disturbance, inches 57"

β: Distance downstream from last disturbance, inches 454"

γ: Distance of Sample Level to Ground, feet 65'

∅: Stack Inside Diameter, inches 16"

Estimated Moisture, percent 0-2%

Estimated Temperature, °F 125

Estimated Velocity, fpm 1,400

Number of Ports 2

Figure 2. Facility Schematic Representation

Denison Mine Process Data

Source: North Yellow Cake	Date: 2/15/11		
	Scrubber Flow GPM		
Time	#1	#2	ΔP
8:00	9.6	14.1	3.7
8:30	9.6	14.1	3.7
9:00	9.4	13.9	3.6
9:30	9.1	13.6	3.6
10:00	9.1	13.6	3.3
10:30	9.2	13.6	3.6
11:00	9.2	13.7	3.6
11:30	9.4	13.8	3.6
12:00	9.5	13.9	3.6
12:30	9.5	14.0	3.6
13:00	9.5	14.1	3.6
13:30	9.6	14.2	3.6
14:00	9.3	14.0	3.6
14:30	9.4	13.7	3.5
15:00	9.3	13.8	3.5
15:30	9.2	13.7	3.6
16:00	9.1	13.5	3.5
16:30	9.1	13.5	3.6

Denison Mines Process Data

Run 2

Source: North Yellow Cake	Date: 2/16/11		
	Scrubber Flow GPM		
Time	#1	#2	ΔP
7:30	9.3	13.8	3.3
8:00	8.9	13.7	3.3
8:30	9.0	13.6	3.3
9:00	8.9	13.2	3.3
9:30	9.3	13.7	3.2
10:00	9.5	14.0	3.2
10:30	9.6	14.0	3.2
11:00	9.7	14.2	3.3
11:30	9.7	14.3	3.3
12:00	9.6	14.1	3.3
12:30	9.5	14.0	3.3
13:00	9.5	14.0	3.3
13:30	9.6	14.1	3.2
14:00	9.6	14.1	3.2
14:30	9.6	14.1	3.2
15:00	9.5	14.1	3.1
15:30	9.6	14.2	3.1
16:00	9.7	14.3	3.2
16:30			

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

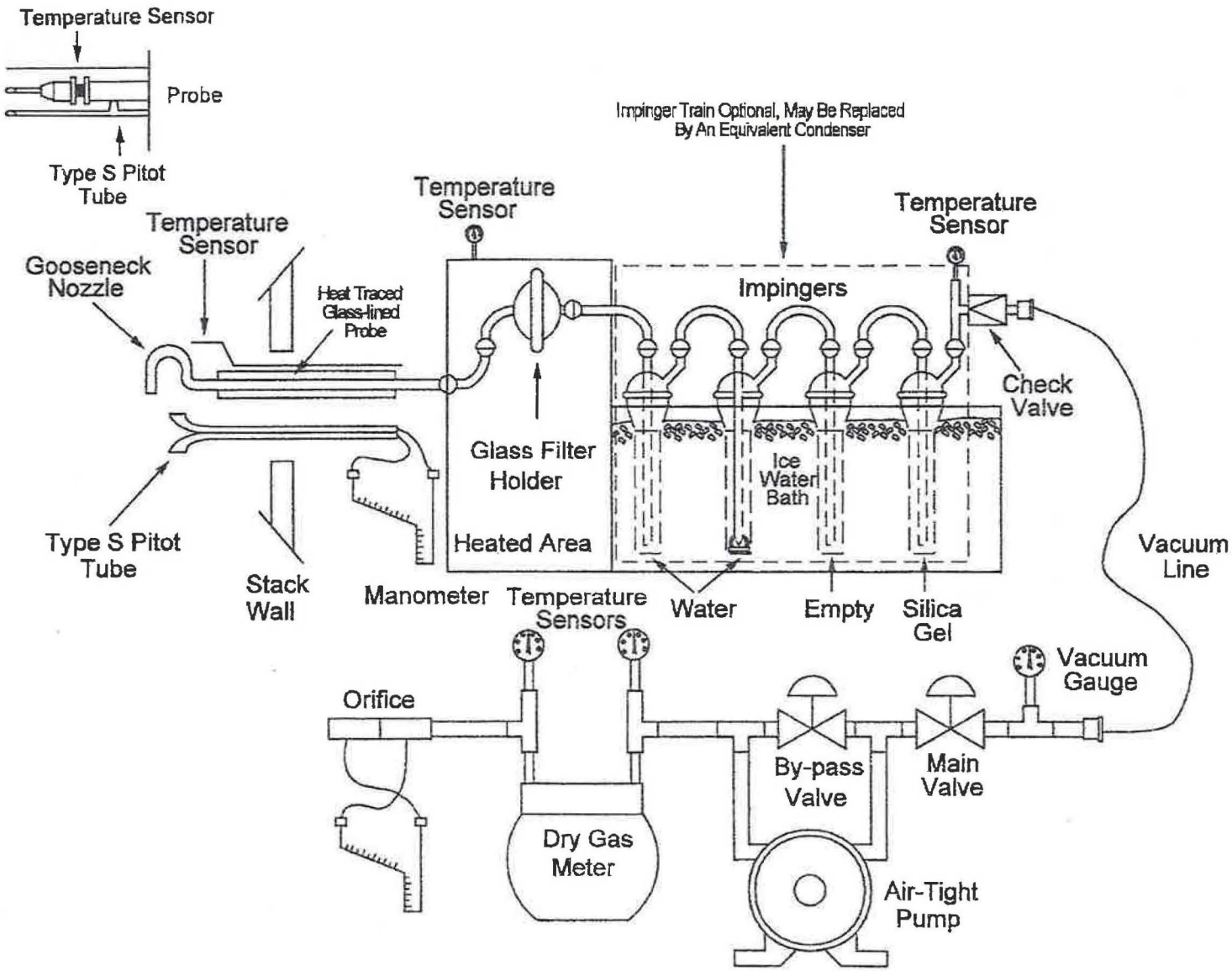


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

Quality - Service - Reliability

2011 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.

DATE: 12/20/2010
METER PART #: Console 5
METER SERIAL #: 68092
CRITICAL ORIFICE SET SERIAL #: 1453S
EQUIPMENT ID #: Console #5

BAROMETRIC PRESSURE (in Hg):	INITIAL	FINAL	AVG (P_{bar})
	25.10	25.10	25.10

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	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	12	155.004	161.521	6.517	74	82	83	89	93	86.75	6.00	2.55	5.320	5.3045	0.997		1.498
	2	0.8137	12	161.521	168.043	6.522	74	83	83	93	96	88.75	6.00	2.55	5.3046	5.3045	1.000		1.493
	3	0.8137	12	168.043	174.568	6.525	74	83	83	96	99	90.25	6.00	2.55	5.2926	5.3045	1.002		1.489
																AVG =	1.000	-0.09	
19	1	0.5317	13	136.700	142.672	5.972	74	81	80	84	86	82.75	8.50	1.11	4.8905	4.9104	1.004		1.532
	2	0.5317	13	142.672	148.297	5.625	74	80	81	86	88	83.75	8.00	1.11	4.5978	4.6215	1.005		1.529
	3	0.5317	13	148.297	153.926	5.629	74	81	82	88	89	85.00	8.00	1.11	4.5905	4.6215	1.007		1.526
																AVG =	1.005	0.47	
12	1	0.3307	13	116.20	125.809	9.609	74	76	78	77	80	77.75	22.00	0.40	7.9255	7.9047	0.997		1.437
	2	0.3307	13	125.809	131.075	5.266	74	78	80	80	81	79.75	12.00	0.40	4.3273	4.3117	0.996		1.432
	3	0.3307	13	131.075	136.357	5.282	74	80	81	81	84	81.50	12.00	0.40	4.3264	4.3117	0.997		1.428
																AVG =	0.997	-0.38	

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 = 1.001

AVERAGE $\Delta H_@$ = 1.485

(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

Reference °F	In °F	Out °F
32	32	32
72	73	73
203	201	202

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

Quality - Service - Reliability

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.

2011 Pre-Calibration

DATE:	12/14/2010	METER SERIAL #:	26144	BAROMETRIC PRESSURE (in Hg):	INITIAL 25.20	FINAL 25.20	AVG (P_{bar}) 25.20	
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	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	13	443.725	449.104	5.379	71	73	79	73	73	74.5	5.00	3.00	4.5153	4.4506	0.986		1.788
	2	0.8137	13	449.104	454.492	5.388	71	79	82	73	73	76.75	5.00	3.00	4.5039	4.4506	0.988		1.780
	3	0.8137	13	454.492	459.885	5.393	71	82	85	73	74	78.5	5.00	3.00	4.4934	4.4506	0.990		1.775
																AVG =	0.988	-0.51	
19	1	0.5317	12	460.802	466.60	5.798	72	78	80	75	75	77.00	8.25	1.20	4.8192	4.7939	0.995		1.662
	2	0.5317	12	466.60	471.872	5.272	72	80	81	75	75	77.75	7.50	1.20	4.3759	4.3581	0.996		1.659
	3	0.5317	12	471.872	477.157	5.285	72	81	81	75	76	78.25	7.50	1.20	4.3826	4.3581	0.994		1.658
																AVG =	0.995	0.19	
12	1	0.3307	12	477.70	482.955	5.255	72	78	79	76	77	77.50	12.00	0.43	4.3540	4.3370	0.996		1.534
	2	0.3307	12	482.955	488.227	5.272	72	79	82	77	78	79.00	12.00	0.43	4.3559	4.3370	0.996		1.530
	3	0.3307	12	488.227	493.613	5.386	72	82	82	78	80	80.50	12.25	0.43	4.4378	4.4273	0.998		1.526
																AVG =	0.996	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 = 0.993

AVERAGE $\Delta H_@$ = 1.657

(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

Reference °F	In °F	Out °F
33	33	34
68	67	67
202	202	202

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.

Facility Denison NYC Baghouse

DATE: 2/16/2011
METER PART #: Console 5
METER SERIAL #: 554840
CRITICAL ORIFICE SET SERIAL #: 1453S
EQUIPMENT ID #: Console #5

BAROMETRIC PRESSURE (in Hg):	INITIAL	FINAL	AVG (P_{bar})
	25.45	25.45	25.45

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 (%)	$\Delta H_@$
19	1	0.5317	15	269.70	274.838	5.138	72	54	59	54	64	57.75	7.75	1.20	4.4733	4.5481	1.017		1.706
	2	0.5317	15	274.838	280.035	5.197	72	59	64	64	73	65	7.75	1.20	4.4621	4.5481	1.019		1.683
	3	0.5317	15	280.035	285.285	5.250	72	64	69	73	78	71	7.75	1.20	4.4566	4.5481	1.021		1.664
																AVG =	1.019	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																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 = 1.019

AVERAGE $\Delta H_@$ = 1.684

(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

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

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.

Denison NYC Scrubber

DATE: 2/18/2011
METER PART #: Console 6
METER SERIAL #: 26144
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.45 | FINAL 25.45 | AVG (P_{bar}) 25.45
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 (%)	$\Delta H_@$
19	1	0.5317	15	161.753	166.777	5.024	67	42	47	55	63	51.75	7.50	1.20	4.4253	4.4222	0.999		1.710
	2	0.5317	15	166.777	171.877	5.10	67	47	56	63	75	60.25	7.50	1.20	4.4188	4.4222	1.001		1.682
	3	0.5317	15	171.877	177.040	5.163	67	56	64	75	81	69	7.50	1.20	4.3994	4.4222	1.005		1.654
																AVG =	1.002	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																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 = **1.002**

AVERAGE $\Delta H_@$ = **1.682**

(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

Reference °F	In °F	Out °F
33	34	34
67	66	66
121	120	120

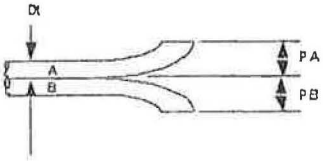
Post test Console #6

Type S Pitot Tube Inspection Data

Date: 12-9-10

Pitot Tube Identification: 9-18

Technician: K. McNamara



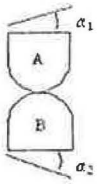
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

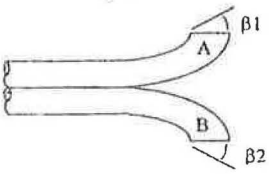
P_A = .450 in.

P_B = .450 in.



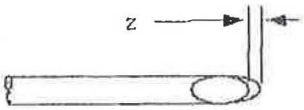
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 2 °

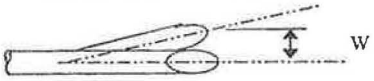


$\beta_1 < 5°$ β_1 = 1 °

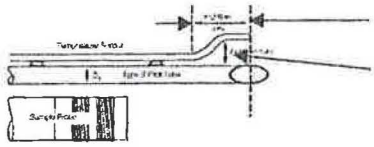
$\beta_2 < 5°$ β_2 = 0 °



Z ≤ 0.125 in. Z = .002 in.

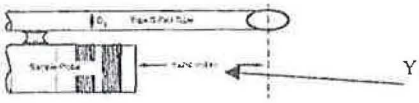


W ≤ 0.03125 in. W = .002 in.



W > 3 inches W = 6 1/2 in.

Z > 3/4 inch Z = 7/8 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

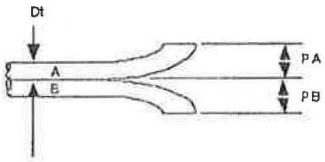
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	70	70	0
	Continuity	→	→	yes
	Heat Check 248	→	Yes	248
Stack	AIR	70	70	0
	ICE WATER	30	30	1
	BOIL WATER	204	203	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12-9-10

Pitot Tube Identification: 27-G

Technician: K. McNamara



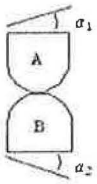
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

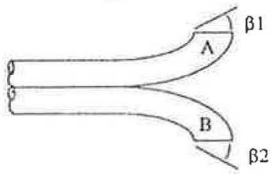
P_A = .443 in.

P_B = .443 in.



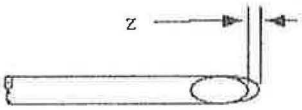
$\alpha_1 < 10°$ α_1 = 2 °

$\alpha_2 < 10°$ α_2 = 1 °

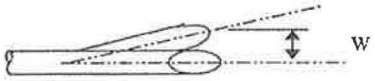


$\beta_1 < 5°$ β_1 = 1 °

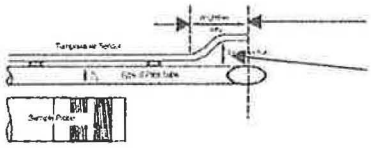
$\beta_2 < 5°$ β_2 = 0 °



$Z \le 0.125$ in. Z = .002 in.

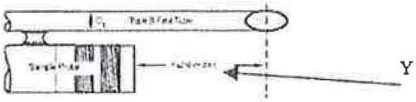


$W \le 0.03125$ in. W = .003 in.



W > 3 inches W = 3 in.

Z > 3/4 inch Z = 1 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:

	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	70	69	1
	Continuity	→	↑	YES
	Heat Check 248	→	Yes	280
Stack	AIR	70	69	1
	ICE WATER	33	33	0
	BOIL WATER	205	205	0
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 12/29/10 Calibrator: Mike McNamara Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temp. Diff. or Result (°F), P/F
A	Oven	Water	34	34	0
		Water	203	203	0
	Probe Out	Water	34	33	1
		Water	203	204	-1
	Impinger Out	Water	34	36	-2
		Water	203	203	0
B	Oven	Water	32	34	-2
		Water	203	204	-1
	Probe Out	Water	32	33	-1
		Water	202	204	-2
	Impinger Out	Water	31	31	0
		Water	203	205	-2
C	Oven	Water	34	36	-2
		Water	204	205	-1
	Probe Out	Water	34	36	-2
		Water	203	205	-2
	Impinger Out	Water	34	36	-2
		Water	203	201	2
D	Oven	Water	33	33	0
		Water	203	203	0
	Probe Out	Water	33	33	0
		Water	202	203	-1
	Impinger Out	Water	33	33	0
		Water	203	201	2
E	Oven	Water	33	34	-1
		Water	203	203	0
	Probe Out	Water	33	34	-1
		Water	203	204	-1
	Impinger Out	Water	33	33	0
		Water	203	204	-1
F	Oven	Water	33	33	0
		Water	203	202	1
	Probe Out	Water	33	33	0
		Water	203	201	2
	Impinger Out	Water	33	34	-1
		Water	203	201	2
	Impinger Out G	Water	33	34	-1
		Water	203	202	1
	Impinger Out H	Water	33	35	-2
		Water	203	202	1
	Impinger Out I	Water	33	33	0
		Water	203	204	-1
	Impinger Out J	Water	33	33	0
		Water	203	204	-1

APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

SECOND QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
DENISON MINES CORPORATION
NORTH YELLOW CAKE SCRUBBER
YELLOW CAKE DRYER BAGHOUSE
GRIZZLY BAGHOUSE

BLANDING, UTAH

May 24-27

by:

TETCO
391 East 620 South
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Prepared for:

Denison Mines Corporation
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

July 18, 2011

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.

Dean Kitchen

Reviewer: Dean Kitchen

Date: 7-18-11

Joseph Kitchen

Reviewer: Joseph Kitchen

Date: 7-18-11

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INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the North Yellow Cake Scrubber, Yellow Cake Dryer Baghouse, and Grizzly Baghouse exhausts in terms of Curies per dry standard cubic foot (Ci/dscf).

These tests were for U-Nat and Th-230 on the Grizzly Baghouse and U-Nat, Th-230, Ra-226, and Pb-210 on the North Yellow Cake Scrubber and Yellow Cake Dryer Baghouse.

Test Location and Type of Process

Denison Mines (USA) Corporation is located about 5 miles south of Blanding, Utah. Uranium ore is processed into yellow cake, which is shipped to other facilities for additional processing. There are two yellow cake dryers with individual scrubbers. Both dryer enclosures discharge into the Dryer Baghouse. The Packaging enclosure also discharges into the Dryer Baghouse. The North Yellow Cake (NYC) dryer was the only operating dryer at the time of the test. The South Yellow Cake Dryer is currently not operational. The Grizzly Baghouse serve as the main dust control device for the raw ore unloading and conveying to the processing building.

Stack schematics are shown as Figures 1 though 3 in Appendix D.

Test Dates

One run was completed on the Grizzly Baghouse May 24, 2011.

One test run was completed on the NYC Dryer May 25 2011 and one run on the 26th.

One run was completed on the Dryer Baghouse May 27, 2011.

Pollutants Tested and Methods Applied

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

Test run filters and front wash residues were sent to Test America located in Richland, Washington for radionuclide analysis.

Test Participants

Test Facility	Ryan Palmer	
State Agency	None	
TETCO	Paul Kitchen Mike McNamara	Joseph Kitchen

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-VII in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	North Yellow Cake Scrubber		Yellow Cake Dryer Baghouse		Grizzly Baghouse	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	498.4	3.310E+07	243.5	2.969E+07	0.277	2.158E+04
2	436.7	2.738E+07				
AVE	**467.5**	**3.024E+07**	**243.5**	**2.969E+07**	**0.277**	**2.158E+04**

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Scrubber water flow, pressure drop readings (Δp) were recorded and are found in Appendix D. The Dryer Baghouse pressure drop readings (Δp) were recorded and are found on the test run sheets. Production data will be submitted by Denison Mines.

Description of Collected Samples

The test filters for the North Yellow Cake Scrubber were heavily covered with a white or pinkish white colored particulate. The front washes were clear in appearance.

The test filters for the Yellow Cake Dryer Baghouse were lightly colored with a tan colored particulate. The front wash was clear in appearance.

The test filters for the Grizzly Baghouse were had no visible particulate. The front wash was clear in appearance.

Discussion of Errors or Irregularities

None

Percent Isokinetic Sampling

Each of the tests were isokinetic within the ±10% of 100% criterion specified in the Federal Register. They also meet the Utah State Department of Environmental Quality, Division of Air Quality specification of isokinetic sampling point by point. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	North Yellow Cake Scrubber	Yellow Cake Dryer Baghouse	Grizzly Baghouse
1	99	99	100
2	100		

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber water flow, pressure and baghouse Δp readings were recorded and are found on the test run sheets or in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Denison Mines.

SAMPLING AND ANALYSIS PROCEDURES

Sampling Port Location

The inside diameter of the North Yellow Cake Scrubber stack is 18.0 inches. The two, four-inch diameter sample port are located 6.3 diameters (9.5 feet) downstream from the last disturbance and 6.3 diameters (9.5 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Yellow Cake Dryer Baghouse stack is 16.0 inches. The two, four-inch diameter sample ports are located 28.38 diameters (454 inches) downstream from the last disturbance and 3.56 diameters (57 inches) upstream from the next disturbance. The sample port locations are depicted in Figure 2 in Appendix D.

The inside diameter of the Grizzly Baghouse stack is 18.75 inches. There are two, three-inch diameter sample ports located 2.56 diameters (48 inches) downstream from the last disturbance and 1.31 diameters (24.5 inches) upstream from the next disturbance. The sample port locations are depicted in Figure 3 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 is marked and identified with a wrapping of glass tape and numbered. These points are determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance (inches) from Inside Wall		
	NYC Scrubber	Dryer Baghouse	Grizzly Baghouse
1	0.58	0.70	0.50
2	1.89	2.34	1.26
3	3.49	4.74	2.21
4	5.81	11.26	3.32
5	12.19	13.66	4.69
6	14.51	15.30	6.68
7	16.11		12.08
8	17.42		14.06
9			15.43
10			16.54
11			17.48
12			18.25

Sampling Train Description

To determine the actual emission rates for this stack, 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 and particulate.

The stack analyzers used to conduct Methods 1-5/114 are constructed to meet the specifications outlined in the CFR. The temperature sensors are K-type thermocouples. Heater, vacuum and pitot line connections have been designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 4 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 set-up, 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*.

APPENDIX

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
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APPENDIX A

Table IV Complete Results, North Yellow Cake Scrubber
Table V Complete Results, Yellow Cake Dryer Baghouse
Table VI Complete Results, Grizzly Baghouse

Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
DENISON MINES CORPORATION, BLANDING, UTAH
NORTH YELLOWCAKE SCRUBBER EXHAUST

Symbol	Description	Dimensions	Run #1	Run #2	
Date			5/25/11	5/26/11	
Filter #			5786	5770	
Begin	Time Test Began		8:15	8:08	
End	Time Test Ended		16:27	20:27	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.50	24.35	
ΔH	Orifice Pressure Drop	In. H_2O	0.820	0.770	
Y	Meter Calibration Y Factor	dimensionless	1.001	1.001	
Vm	Volume Gas Sampled--Meter Conditions	cf	301.880	288.884	
T_m	Avg Meter Temperature	°F	100.6	101.4	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.2375	0.2255	
Wt_{wc}	Weight Water Collected	Grams	719.0	737.2	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.3795	0.3795	
CO_2	Volume % Carbon Dioxide	Percent	2.80	3.80	
O_2	Volume % Oxygen	Percent	16.40	16.60	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	80.80	79.60	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	233.627	221.853	
Vw	Volume Water Vapor	scf	33.901	34.759	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.127	0.135	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.114	0.114	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.114	0.114	
X_d	Fraction of Dry Gas	Fraction	0.886	0.886	
M_d	Molecular Wt. Dry Gas	lb/lbmol	29.10	29.27	
M_s	Molecular Wt. Stack Gas	lb/lbmol	27.84	27.98	
%I	Percent Isokinetic	Percent	98.9	99.5	**AVG**
T_s	Avg Stack Temperature	°F	112.4	112.3	**112.4**
A_s	Stack Cross Sectional Area	Sq. Ft.	1.767	1.767	
P_G	Stack Static Pressure	In. H_2O	-0.065	-0.065	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.43	24.28	
P_s	Stack Pressure	In. Hg. Abs	24.425	24.275	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.11E+03	1.04E+03	**1.08E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.66E+03	1.58E+03	**1.62E+03**
V_s	Velocity of Stack Gas	fpm	9.39E+02	8.92E+02	**9.15E+02**
Curies	Radionuclides per sample	pCi	116431.6	96883.3	
Crad	Concentration of Radionuclides	pCi/dscf	498.366	436.700	**467.533**
ERrad	Emission Rate of Radionuclides	pCi/hr	3.310E+07	2.738E+07	**3.024E+07**

* If the measured moisture content is greater than the saturated moisture level (supersaturated), the saturated moisture value will be used in all calculations (40 CFR 60, Method 4, Section 12.1.7).

TABLE V
COMPLETE RESULTS, PM
DENISON MINES CORPORATION
YELLOW CAKE DRYER BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		5/27/11
Filter #			5769
Begin	Time Test Began		7:17
End	Time Test Ended		9:20
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.35
ΔH	Orifice Pressure Drop	In. H_2O	1.312
Y	Meter Calibration Y Factor	dimensionless	1.004
Vm	Volume Gas Sampled--Meter Conditions	cf	88.585
T_m	Avg Meter Temperature	°F	84.3
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5033
Wt_{wc}	Weight Water Collected	Grams	26.3
T_t	Duration of Test	Minutes	120
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.2740
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	70.493
Vw	Volume Water Vapor	scf	1.240
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.017
X_d	Fraction of Dry Gas	Fraction	0.983
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.65
%I	Percent Isokinetic	Percent	98.6
T_s	Avg Stack Temperature	°F	105.4
A_s	Stack Cross Sectional Area	Sq. Ft.	1.396
P_G	Stack Static Pressure	In. H_2O	-0.18
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.28
P_s	Stack Pressure	In. Hg. Abs	24.267
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	2.03E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	2.73E+03
V_s	Velocity of Stack Gas	fpm	1.96E+03
Curies	Radionuclides per sample	pCi	17164.8
Crad	Concentration of Radionuclides	pCi/dscf	243.4970
ERrad	Emission Rate of Radionuclides	pCi/hr	2.969E+07

TABLE VI
COMPLETE RESULTS, PM
DENISON MINES CORPORATION
GRIZZLY BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		5/24/11
Filter #			5785
Begin	Time Test Began		7:53
End	Time Test Ended		15:58
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.20
ΔH	Orifice Pressure Drop	In. H_2O	0.863
Y	Meter Calibration Y Factor	dimensionless	1.001
Vm	Volume Gas Sampled--Meter Conditions	cf	310.106
T_m	Avg Meter Temperature	°F	88.7
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.2257
Wt_{wc}	Weight Water Collected	Grams	50.7
T_t	Duration of Test	Minutes	480
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.3700
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	242.234
Vw	Volume Water Vapor	scf	2.391
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.010
X_d	Fraction of Dry Gas	Fraction	0.990
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.73
%I	Percent Isokinetic	Percent	99.9
T_s	Avg Stack Temperature	°F	71.1
A_s	Stack Cross Sectional Area	Sq. Ft.	1.917
P_G	Stack Static Pressure	In. H_2O	-0.03
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.17
P_s	Stack Pressure	In. Hg. Abs	24.168
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.30E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.63E+03
V_s	Velocity of Stack Gas	fpm	8.51E+02
Curies	Radionuclides per sample	pCi	67.2
Crad	Concentration of Radionuclides	pCi/dscf	0.2774
ERrad	Emission Rate of Radionuclides	pCi/hr	2.158E+04

M5 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_B = concentration of particulate matter, back half (gr/dscf,lb/dscf, etc.)

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)

ΔP = stack flow pressure differential (inches H_2O)

D_s = diameter of the stack (feet)

D_n = nozzle diameter (inches)

EA = percent excess air

ER_B = emission rate of back half particulate (lb/hr)

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_s = stack temperature (^oF)

T_{std} = absolute temperature at standard conditions (528^oR)

Tt = see θ

M5 Nomenclature

u_m = mean molecular speed (cm/s)

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_{wc} = 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)

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

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

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

$$C_B = M_B \cdot 0.01543 / Vm_{std}$$

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

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

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

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

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

$$ER_B = C_B \cdot Q_s \cdot 0.00857$$

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

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

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

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

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

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

$$Q_a = V_s \cdot A_s$$

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

$$Q_W = Q_s / X_d$$

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

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

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

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

APPENDIX B

North Yellow Cake Scrubber

Preliminary Velocity Traverse and Sampling Point Location Data
Field Data Sheet

Yellow Cake Dryer Baghouse

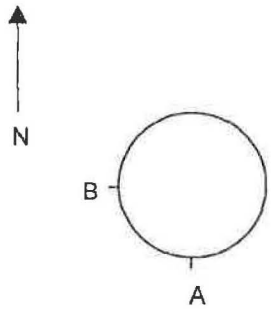
Preliminary Velocity Traverse and Sampling Point Location Data
Field Field Data

Grizzly Baghouse

Preliminary Velocity Traverse and Sampling Point Location Data
Field Field Data

North Yellow Cake Dryer Scrubber

Prelim 8 pts blank



Stack Dia. 18 Reference: 0

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' Downstream from last disturbance

Facility Denison Mines

Stack Identification North Yellow Cake Scrubber

Date May 25, 2011

Barometric Pressure

Pb_m 24.50 in Hg Pb_p 24.43 in Hg

Static Pressure (P_G) -.065 in H_2O

Estimated Moisture (Bw_s) _____ %

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	3.2	0.58	0.58						
2	10.5	1.89	1.89		111 .041				
3	19.4	3.49	3.49		111 .053				
4	32.3	5.81	5.81		111 .062				
5	67.7	12.19	12.19		110 .066				
6	80.6	14.51	14.51		110 .064				
7	89.5	16.11	16.11		110 .060				
8	96.8	17.42	17.42						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

114 Field Data Sheet

Filter 5784 TETCO Sample Box B

Page 1 of 2 Run # 1

Plant: Denison Mines

Date: May 25, 2011

Location: North Yellowcake Dryer Scrubber

Operator: M. McNamara

N

B

A

Stack Diameter 18" Port Reference 0 0"

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' 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	In
B 1	08:15	0	602.037	.048	.68	.68	2	112	275	271	271	64	63	63
1		15	610.422	.053	.75	.75	2	113	271	275	275	64	68	71
2		30	619.244	.053	.75	.75	3	113	258	275	275	64	74	81
2		45	628.173	.052	.73	.73	4	112	269	271	271	60	80	88
3		60	637.062	.054	.77	.77	4	116	247	272	272	58	84	92
3		75	646.525	.055	.78	.78	5	118	236	266	266	59	89	98
4		90	655.410	.056	.80	.80	5	119	246	265	265	60	91	100
4		105	664.734	.070	1.00	1.00	7	119	252	267	267	59	93	103
5		120	675.104	.064	.92	.92	7	118	250	261	261	61	95	106
5		135	685.162	.066	.95	.95	8	118	274	270	270	62	97	108
6		150	695.349	.063	.91	.91	10	115	275	275	275	61	99	110
6		165	705.384	.061	.88	.88	10	115	272	273	273	55	100	110
7		180	715.212	.056	.81	.81	11	114	265	274	274	56	100	110
7		195	724.667	.056	.81	.81	11	115	270	274	274	59	100	110
8		210	734.152	.056	.81	.81	12	113	270	274	274	61	100	109
8		225	743.915	.055	.80	.80	13	115	254	274	274	62	99	108
	12:15	240	~~753.087~~											
			753.087											
Total			~~151.950~~	3.8280	13.150		1845						2999	
Average			151.050	.2392	.8767		115.3						93.7	

Assumed Moisture 4-13 %

Probe 27 G Cp 0.84

Nozzle Calibration

.379 .380 .379 .380

Avg D_n .3795 inches

Gas Bag E-05

Console 5

Y-Factor 1.001

$\Delta H_@$ 1.486 in H_2O

Barometric Pressures

Pb_m 24.50 in Hg

Pb_p 24.43 in Hg

P_g -.065 in H_2O

Leak Check	Pre	Post
ft³/min	0.002	0.002
vac in Hg	20.5	5.0

Pitot Rate		
in H_2O	0.00	0.010
	.25	.25

Water Collected _____ g

Time Sampled _____ min

Review _____

K = @T_m

K = @T_m

Additional (Extra) Leak Check Information

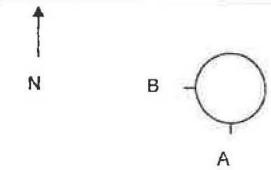
	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

114 Field Data Sheet

TETCO
Filter 5786 Sample Box B

Plant: Denison Mines
Date: 5/25/11

Location: North Yellowcake Dryer Scrubber
Operator: Mr. McNamara



Stack Diameter 18" Port Reference 0.0"
Ports are 9.5' Upstream from next disturbance
Ports are 9.5' 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	In
A 1	12:27	240	753.801	.042	.61	.61	2	114	231	251	251	65	96	99
1		255	762.045	.051	.174	.174	3	114	250	254	254	61	97	103
2		270	770.659	.052	.175	.175	3	115	265	265	265	59	99	107
2		285	779.980	.052	.174	.174	4	114	260	264	264	62	99	108
3		300	788.906	.051	.173	.173	5	113	255	264	264	60	98	107
3		315	797.870	.051	.175	.175	5	108	271	272	272	61	99	108
4		330	806.819	.054	.177	.177	6	115	275	275	275	62	102	110
4		345	816.063	.064	.92	.92	7	113	268	273	273	63	102	111
5		360	825.969	.065	.96	.96	9	110	244	270	270	63	102	113
5		375	836.091	.065	.96	.96	9	106	264	272	272	62	102	112
6		390	846.235	.060	.90	.90	10	107	264	271	271	64	105	114
6		405	856.147	.061	.91	.91	10	105	269	271	271	64	108	117
7		420	866.063	.056	.84	.84	10	105	229	262	262	61	109	118
7		435	875.709	.056	.84	.84	11	105	245	268	268	61	111	120
8		450	885.368	.056	.84	.84	11	104	255	271	271	62	112	120
8		465	895.073	.056	.84	.84	12	105	261	270	270	64	112	120
	16:27	480	904.631											
Total			151.050 150.830 301.880 ✓	√7.6003		13.150 13.100 26.250		1845 1753 3598					6439	
Average				√.2375 ✓				112.4 ✓					100.6 ✓	

Assumed Moisture 4-13 %
Probe 276 Cp 0.84
Nozzle Calibration
.379 .380 .379 .380
Avg D_n .3795 inches
Gas Bag E-05
Console 5
Y-Factor 1.001
$\Delta H_@$ 1.486 in H_2O

Barometric Pressures
Pb_m 24.50 in Hg
Pb_p 24.43 in Hg
P_G -.065 in H_2O

Leak Check	Pre	Post
ft³/min	0.005	0002
vac in Hg	20.5	5.0
Pitot Rate	0.0	0.0
In H_2O	0.25	0.25

Water Collected 719.0 g
Time Sampled 480 min
Review [illegible]

K = @T_m
K = @T_m

Additional (Extra) Leak Check Information .8203 ✓

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

114 Field Data Sheet

Filter 5770 TETCO Sample Box B

Page 1 of 2 Run # 2

Plant: Denison Mines

Date: May 26, 2011

Location: North Yellowcake Dryer Scrubber

Operator: Paul R. Kitchen

N

B

A

Stack Diameter 18" Port Reference 0 0"

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' 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	In
B 1	8:08	0	905.247	.040	.57	.57	2.0	112	236	233	233	63	67	66
1		15	912.940	.040	.57	.57	2.0	113	268	245	244	60	71	73
2		30	920.669	.042	.60	.60	3.0	113	261	262	262	64	77	83
2		45	928.588	.045	.64	.64	4.0	113	256	258	259	60	83	90
3		60	936.841	.045	.66	.66	5.0	114	259	250	250	62	86	95
3		75	945.245	.045	.65	.65	5.0	115	239	256	256	64	90	100
4		90	953.597	.055	.80	.80	7.0	115	246	252	252	65	92	102
4		105	962.793	.055	.80	.80	8.0	116	269	248	248	61	94	104
5		120	971.975	.058	.84	.84	8.0	114	269	241	240	62	95	106
5		135	981.489	.058	.84	.84	8.0	114	262	256	255	62	96	107
6		150	991.036	.057	.84	.84	10.0	113	266	258	258	63	98	108
6		165	1000.512	.060	.88	.88	12.0	111	269	250	251	65	99	110
7		180	1010.350	.052	.78	.78	12.0	110	250	252	252	62	100	111
7	*	195	1019.530	.058	.87	.87	11.0	89	254	255	255	62	100	111
8		210	1029.094	.051	.77	.77	12.0	106	227	240	240	66	91	94
8		225	1038.146	.043	.65	.65	12.0	107	228	245	245	66	97	104
		240	1046.608											
Total			141.361	3.5778		16.760		1775					3000	
Average				.2236		.735		110.9					93.8	

Assumed Moisture 4-13 %

Probe 27Cr Cp 0.84

Nozzle Calibration

.379 .380 .379 .380

Avg D_n .3795 inches

Gas Bag E-05

Console 5

Y-Factor 1.001

$\Delta H_@$ 1.486 in H_2O

Barometric Pressures

Pb_m 24.35 in Hg

Pb_p 24.28 in Hg

P_g -.065 in H_2O

Leak Check	Pre	Post
ft³/min	0.004	0.002
vac in Hg	20.5	5.0
Pitot Rate	0.00	0.00
In H_2O	.25	.25

Water Collected _____ g

Time Sampled _____ min

Review _____

K = @T_m

K = @T_s

Additional (Extra) Leak Check Information

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

* Shut down 11:24
Dryers shut down
RESTART Time
15:00
~~Temp~~

114 Field Data Sheet

Filter 5771 TETCO Sample Box B

 Run # 2

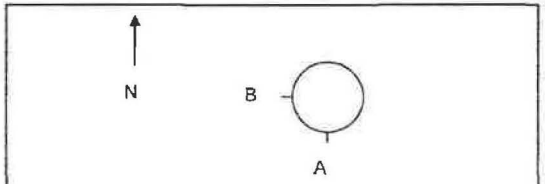
Plant: Denison Mines

Date: MAY 26, 2011

Location: North Yellowcake Dryer Scrubber

Operator: MIKE MENAMARA

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
A 1	16:27	240	51.149	.05	.75	.75	3.0	114	248	270	269	67	99	99
1		255	60.264	.055	.83	.83	4.0	113	258	269	264	66	101	106
2		270	69.736	.055	.83	.83	4.0	113	247	260	262	65	105	113
2		285	79.284	.055	.83	.83	4.0	114	251	269	268	65	106	116
3		300	88.828	.047	.72	.72	4.0	115	240	253	240	66	107	118
3		315	97.790	.057	.87	.87	5.0	115	240	241	240	64	107	117
4		330	107.442	.055	.84	.84	5.0	116	242	264	248	64	107	118
4		345	116.928	.055	.84	.84	5.0	115	263	268	263	63	106	118
5		360	126.434	.045	.69	.69	4.0	114	236	250	240	63	106	117
5		375	135.076	.12	1.83	1.83	9.0	112	250	264	251	60	105	115
6		390	148.297	.045	.69	.69	7.0	113	234	248	237	60	105	121
6		405	157.078	.045	.69	.69	7.0	112	253	261	247	60	105	116
7		420	165.740	.040	.61	.61	7.0	113	262	270	258	61	104	114
7		435	173.945	.041	.63	.63	7.0	112	259	260	260	62	103	112
8		450	182.234	.041	.63	.63	7.0	112	249	258	246	63	102	111
8		465	190.615	.040	.61	.61	7.0	114	271	262	252	63	102	111
	20:27	480	198.672											
Total			288.884 ✓	√ 3.6395		12.89		1817					3492	
Average				√ .2255 ✓		.770 ✓		112.3 ✓					101.4 ✓	



Stack Diameter 18" Port Reference 0.0"

Ports are 9.5' Upstream from next disturbance

Ports are 9.5' Downstream from last disturbance

Assumed Moisture 4-13 %

Probe 276 Cp 0.84

Nozzle Calibration

.379 .380 .379 .380

Avg D_n .3795 inches

Gas Bag 605

Console 5

Y-Factor 1.001

$\Delta H_@$ 1.486 in H_2O

Barometric Pressures

Pb_m 24.35 in Hg

Pb_p 24.23 in Hg

P_G -.65 in H_2O

Leak Check	Pre	Post
ft³/min	0.005	0.004
vac in Hg	20.0	10.0
Pitot Rate	0.00	0.00
In H_2O	.25	.25

Water Collected 737.2 g

Time Sampled 480 min

Review PRK

K = @T_m

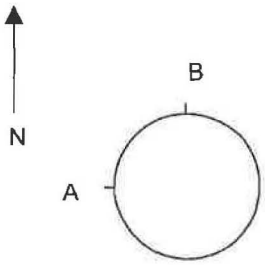
K = @T_m

Additional (Extra) Leak Check Information

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

Yellow Cake Dryer Baghouse

Prelim 6 pts blank



Stack Dia 16 Reference: 0

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

Facility Denison Mines

Stack Identification North Yellow Cake Dryer Baghouse

Date 5/26/11

Barometric Pressure

Pb_m 24.35 in Hg Pb_p 24.28 in Hg

Static Pressure (P_G) ~~24.30~~ mean in H_2O -.18

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground _____ feet

Comments:

8:56

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	B-C	D	E	F
1	4.4	0.70	0.70						
2	14.6	2.34	2.34		73 .01	110 .19			
3	29.6	4.74	4.74						
4	70.4	11.26	11.26		77 .01	111 .27			
5	85.4	13.66	13.66						
6	95.6	15.30	15.30		83 .01	112 .27			

Averages:

T_S 111 ∠ Flow _____

ΔP .12433 √ΔP _____

KEY => T_S ∠ Flow ΔP

.021

114 Field Data Sheet

Filter 5769 TETCO Sample Box F

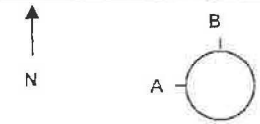
Page 1 of 1 Run # 1

Plant: Denison Mines

Date: 5/27/11

Location: North Yellowcake Dryer Baghouse

Operator: M. McNamara



Stack Diameter 16" Port Reference 0.0"

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

Assumed Moisture 1 %

Probe 186 Cp 0.84

Nozzle Calibration

.275 .273 .274 .274

Avg D_n .2740 inches

Gas Bag Ambient Air

Console 3

Y-Factor 1.004

$\Delta H_@$ 1.649 in H_2O

Barometric Pressures

Pb_m 24.35 in Hg

Pb_p 24.28 in Hg

P_G -.18 in H_2O

Leak Check:	Pre	Post
ft^3/min	0.004	0.002
vac in Hg	20.0	8.0
Pitot Rate	0.0	0.0
In H_2O	9.0	9.0

Water Collected 263 g

Time Sampled _____ 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 (°) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
start 7:17 1	7:17	0	39.334	.21	1.07	1.07	2	101	270	270	270	67	72	71
2		10	46.262	.21	1.07	1.07	3	102	272	270	270	56	73	75
3		20	53.180	.21	1.07	1.07	3	103	275	275	275	56	76	77
4		30	059.459	.28	1.45	1.45	4	104	272	270	270	57	80	82
5		40	67.100	.27	1.40	1.40	4	104	270	275	275	58	83	86
6		50	74.698	.27	1.39	1.39	4	106	263	275	275	58	84	87
A 1	8:20	60	82.278	.24	1.24	1.24	4	106	275	270	270	60	85	86
2		70	89.542	.26	1.35	1.35	4	106	270	273	273	55	86	88
3		80	96.999	.26	1.35	1.35	4	107	263	271	271	57	88	90
4		90	104.558	.29	1.50	1.50	4	107	264	267	267	57	90	92
5		100	112.409	.27	1.40	1.40	4	109	263	250	250	58	91	93
6		110	120.121	.28	1.45	1.45	4	110	251	251	251	59	92	95
	9:20	120	127.919											

Total	88.585	6.0401	15.740	1265	2022
Average		.5033	1.312	105.4	84.25

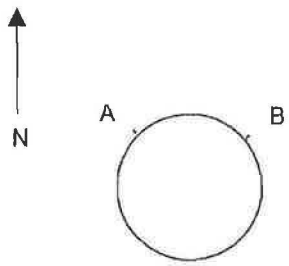
Comments.

Time	Baghouse ΔP	Time	Baghouse ΔP
7:21	4.7		
7:50	4.6		
8:23	4.6		
8:54	4.2		

8 Barrels

Grizzly Baghouse

Prelim 12 pts blank



Stack Dia. 18.75 Reference: 3.0

Ports are 24.5" Upstream from next disturbance

Ports are 48" Downstream from last disturbance

Facility Denison Mines

Stack Identification Grizzly Baghouse

Date May 24, 2011

Barometric Pressure

Pb_m 24.20 in Hg Pb_p 24.17 in Hg

Static Pressure (P_G) -.03 in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground 30 feet

Comments:

Must use 36" probe or longer to keep box outside handrail

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	2.1	0.50	3.50						
2	6.7	1.26	4.26		64 .045				
3	11.8	2.21	5.21						
4	17.7	3.32	6.32		64 .048				
5	25.0	4.69	7.69						
6	35.6	6.68	9.68		64 .05				
7	64.4	12.08	15.08						
8	75.0	14.06	17.06		64 .055				
9	82.3	15.43	18.43						
10	88.2	16.54	19.54		64 .052				
11	93.2	17.48	20.48						
12	97.9	18.25	21.25						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

114 Field Data Sheet

TETCO

Filter 5785 Sample Box F

Page 1 of 1 Run # 1

Plant: Denison Mines

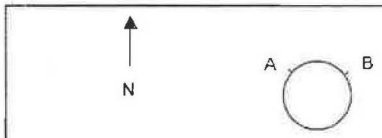
Date: May 24, 2011

Location: Grizzly Baghouse

Operator: Paul R Kitchen

Traverse Point	Time Clock	Time Min (0)	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
B 1	7:53	0	291.138	.050	.82	.82	4.0	65	247	266	240	50	67	67
2		20	303.524	.048	.79	.79	4.0	66	260	270	253	48	72	77
3		40	315.807	.048	.80	.80	4.0	67	269	260	240	50	77	85
4		60	328.210	.050	.84	.84	4.0	68	242	267	244	53	79	88
5		80	340.873	.050	.84	.84	4.0	70	246	269	248	60	81	89
6		100	353.558	.053	.89	.89	4.0	73	240	255	250	57	82	91
7		120	366.626	.053	.89	.89	4.0	73	240	254	235	57	83	93
8		140	379.694	.055	.92	.92	4.0	74	256	260	236	59	85	94
9		160	393.088	.050	.85	.85	4.0	72	240	245	230	58	86	95
10		180	405.968	.053	.90	.90	4.0	76	256	261	240	60	87	96
11		200	419.240	.050	.85	.85	4.0	73	254	258	232	60	91	100
12		220	432.162	.050	.85	.85	4.0	73	242	253	230	60	91	100
A 1	11:58	240	445.114	.045	.77	.77	3.0	77	271	254	230	63	88	93
2		260	457.389	.048	.82	.82	4.0	74	250	256	231	52	89	94
3		280	470.043	.048	.82	.82	4.0	67	247	249	229	50	92	98
4		300	482.756	.058	.99	.99	4.0	71	271	269	246	50	91	98
5		320	496.596	.055	.94	.94	4.0	79	267	265	238	53	88	96
6		340	510.098	.055	.94	.94	4.0	73	232	248	230	53	88	96
7		360	523.611	.053	.90	.90	4.0	70	232	232	228	53	87	95
8		380	536.807	.048	.82	.82	4.0	67	240	246	231	53	90	97
9		400	549.505	.048	.82	.82	4.0	67	250	250	233	53	87	95
10		420	562.121	.053	.90	.90	4.0	68	263	263	240	53	85	92
11		440	575.205	.053	.90	.90	4.0	71	269	258	235	53	88	95
12		460	588.486	.050	.85	.85	4.0	72	258	243	229	57	86	94
	15:58	480	601.244											
Total			310.106 ✓	5.4176		20.71		1706					4258	
Average				✓ .2257 ✓		.863 ✓		71.1 ✓					88.7 ✓	

Comments



Stack Diameter 18.75" Port Reference 3.0"

Ports are 24.5" Upstream from next disturbance

Ports are 48" Downstream from last disturbance

Assumed Moisture 1 %

Probe 51G-3 Cp 0.84

Nozzle Calibration

.370 .370 .370 .370

Avg D_n .3700 inches

Gas Bag Ambient Air

Console 5

Y-Factor 1.001

$\Delta H_@$ 1.486 in H_2O

Barometric Pressures

Pb_m 24.20 in Hg

Pb_p 24.17 in Hg

P_g -.03 in H_2O

Leak Check	Pre	Post
ft³/min	0.003	0.001
vac in Hg	21.0	6.0

Pitot Rate	0.00	0.00
In H_2O	.25	.25

Water Collected 50.7 g

Time Sampled 480 min

Review PRK

K = @T_m

K = @T_m

APPENDIX C

North Yellow Cake Scrubber
- Sample Recovery
- Gas Analysis Data (ORSAT)

Yellow Cake Dryer Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Grizzly Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Chain of Custody

Lab Analysis

North Yellow Cake Dryer Scrubber

METHOD 5

Facility: Denison Mine

Date:

Stack Identification: NYC Scrubber

IMPINGERS

Run: 1

Sample Box: B/J over

Filter 5784 5786

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
Final (g)	872.2	882.3	753.9	725.1	609.0	947.2
Initial (g)	560.3	610.1	697.9	711.2	603.1	887.5
Net (g)	311.9	272.2	55.4	13.9	5.9	59.7

Total (g) 719.0

IMPINGERS

Run: 2

Sample Box: B/J

5770 5771

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
Final (g)	952.4	973.7	735.0	618.5	612.8	951.2
Initial (g)	566.2	720.0	699.1	611.7	611.8	897.6
Net (g)	386.2	253.7	35.9	6.8	1.0	53.6

Total (g) 737.2

IMPINGERS

Run:

Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
Final (g)						
Initial (g)						
Net (g)						

Total (g)

IMPINGERS

Run:

Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	—	100	100	—	Silica Gel
Final (g)						
Initial (g)						
Net (g)						

Total (g)

Plant Denison Mines

Location North Yellow Cake Scrubber

Analytical Method ORSAT

Date 5/25/11
Test No. 1
Gas Bag No. E-05
Ambient Temp 85
Operator PRK

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	2.8	2.8	2.8	2.8	2.8	2.8	2.8
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	19.2	16.4	19.2	16.4	19.2	16.4	16.4
N_2 (Net is 100 Minus Actual O_2 Reading).		80.8		80.8		80.8	80.8

Date 5/26/11
Test No. 2
Gas Bag No. E-05
Ambient Temp 78
Operator MSM

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	3.8	3.8	3.8	3.8	3.8	3.8	3.8
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.4	16.6	20.4	16.6	20.4	16.6	16.6
N_2 (Net is 100 Minus Actual O_2 Reading).		79.6		79.6		79.6	79.6

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).							

CO is not measured, as it has the same molecular weight as N_2

Yellow Cake Dryer Baghouse

Dryer Baghouse

Facility: Denison Mines

Date: 5/27/11

Stack Identification: Yellow Cake Dryer Baghouse

IMPINGERS

Run: 1

Sample Box: F

Filter Number: 5769

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	SG		
Final (g)	704.0	634.6	614.5	943.2		
Initial (g)	707.6	628.6	613.1	920.7		
Net (g)	-3.6	6.0	1.4	22.5		

Total (g) 26.3

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) _____

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) _____

Grizzly Baghouse

NYC Baghouse M5

Facility: Denison Mines

Date:

Stack Identification: Grizzly

IMPINGERS

Filter 5785

Run: 1

Sample Box: F/FF

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	—	Silica Gel		
	1	2	3	4	5	6
Final (g)	685.5	645.1	614.6	990.6		
Initial (g)	707.0	628.1	609.1	940.9		
Net (g)	-21.5	17.0	5.5	49.7		

Total (g) 50.7

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

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

Total (g) _____

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Tetco	Project Manager: Dean Kitchen	Date: 5/31/2011	Chain of Custody Number:
Address: 391 East 620 South	Telephone Number (Area Code)/Fax Number: 801-492-9106	Lab Number:	Page _____ of _____
City: American Fork; State: Ut; Zip Code: 84003	Site Contact: Scott Christensen,Ryan Palmer	Lab Contact:	
Project Name and Location (State): Denison Mine 2011 2nd Quarter	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sod.	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	U-Nat	TH-230	Ra-226	Lead-210	Special Instructions/ Conditions of Receipt
5785 R1 Grizzly filter and beaker	5/24/11	8:00	X										X	X			
5784, 5786 R1 NYC filters and beaker	5/25/11	8:00	X										X	X	X	X	
5770, 5771 R2 NYC filters and beaker	5/26/11	8:00	X										X	X	X	X	
5769 Baghouse Filter and beaker	5/27/11	8:00	X										X	X	X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

1. Relinquished By: [signature]	Date: 6/01/11	Time: 13:00	1. Received By	Date	Time
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Analytical Data Package Prepared For

Denison Mines (USA) Corp.

Denison Mine 2011 2nd Quarter

Radiochemical Analysis By

TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code:

Data Package Contains 19 ***Pages***

Report No.: 47442

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
43264		5769 BAGHOUSE FILTER & BEAKER	J1F080456-4	MJ3XW1AA	9MJ3XW10	1161154
		5769 BAGHOUSE FILTER & BEAKER	J1F080456-4	MJ3XW1AE	9MJ3XW10	1161156
		5769 BAGHOUSE FILTER & BEAKER	J1F080456-4	MJ3XW1AC	9MJ3XW10	1161158
		5769 BAGHOUSE FILTER & BEAKER	J1F080456-4	MJ3XW1AD	9MJ3XW10	1161160
		5770, 5771 R2 NYC FILTERS & BE	J1F080456-3	MJ3XQ1AA	9MJ3XQ10	1161154
		5770, 5771 R2 NYC FILTERS & BE	J1F080456-3	MJ3XQ1AE	9MJ3XQ10	1161156
		5770, 5771 R2 NYC FILTERS & BE	J1F080456-3	MJ3XQ1AC	9MJ3XQ10	1161158
		5770, 5771 R2 NYC FILTERS & BE	J1F080456-3	MJ3XQ1AD	9MJ3XQ10	1161160
		5784, 5786 R1 NYC FILTERS & BE	J1F080456-2	MJ3XM1AA	9MJ3XM10	1161154
		5784, 5786 R1 NYC FILTERS & BE	J1F080456-2	MJ3XM1AE	9MJ3XM10	1161156
		5784, 5786 R1 NYC FILTERS & BE	J1F080456-2	MJ3XM1AC	9MJ3XM10	1161158
		5784, 5786 R1 NYC FILTERS & BE	J1F080456-2	MJ3XM1AD	9MJ3XM10	1161160
		5785 R1 GRIZZLY FILTER & BEAKE	J1F080456-1	MJ3XF1AA	9MJ3XF10	1161154
		5785 R1 GRIZZLY FILTER & BEAKE	J1F080456-1	MJ3XF1AC	9MJ3XF10	1161156

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

July 15, 2011

Denison Mines (USA) Corp
1050 17th Street, Suite 950
Denver, CO 80265

Attention: Dean Kitchen

Date Received at Lab	:	June 3, 2011
Project Name	:	Denison Mine 2011 1st Quarter
Sample Type	:	Four (4) Stack Filter Samples
SDG Number	:	43264

CASE NARRATIVE

I. Introduction

On June 3, 2011, four stack filter samples were received at TestAmerica's Richland laboratory for radiochemical analysis. Upon receipt, the samples were assigned the TestAmerica identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Numbers J1F080456.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analysis requested was:

Alpha Spectroscopy
Thorium-228, -230, -232 by method RL-ALP-001
Uranium-234, -235, -238 by method RL-ALP-004
Gamma Spectroscopy
Pb-210 by method RL-GA-001
Alpha Scintillation
Radium-226 by method RL-RA-001

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Alpha Spectroscopy

Thorium-228, 230, 232

The achieved MDA of the samples exceeds the detection limit. However, in most cases, the activity of the samples exceeds the MDA and detection limit. The data is reported. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Uranium-234, 235, 238

The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. The sample activity exceeds the MDA and detection limit for three of the four samples. Data is accepted. Except as noted, the LCS, batch blank, sample and sample duplicate results are within acceptance limits.

Gamma Spectroscopy

Pb-210

The achieved MDA of the samples exceeds the detection limit due insufficient sample volume. The LCS recovery yield is just above acceptance limits. There is no sample volume remaining for re-analysis. Data is reported. Except as noted, the LCS, batch blank, sample and sample duplicate results are within acceptance limits.

Alpha Scintillation

Radium-226

The achieved MDA exceeds the detection limit due to sample volume available for analysis. Sample activity exceeds MDA and detection limit for all of the samples. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

I certify that this Certificate of Analysis is in compliance with the SOW and/or NELAC, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Erika Jordan
Customer Service Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c – Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, ***u_c the combined uncertainty.*** The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 15-Jul-11

TestAmerica

Ordered by Method, Batch No., Client Sample ID.

Report No. : 47442 **SDG No:** 43264

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RER2
1161154	**RICHRC5011**								
	5769 BAGHOUSE FILTER & BEAKER								
	MJ3XW1AA	TH-228	1.68E-07 +- 4.9E-08		UCI/SA	108%	1.84E-08		
		TH-230	3.87E-05 +- 6.0E-06		UCI/SA	108%	1.78E-08	3.00E-15	
		TH-232	4.02E-07 +- 8.8E-08		UCI/SA	108%	1.78E-08		
	5770, 5771 R2 NYC FILTERS & BE								
	MJ3XQ1AA	TH-228	6.59E-08 +- 3.5E-08		UCI/SA	69%	2.85E-08		
		TH-230	1.31E-05 +- 2.1E-06		UCI/SA	69%	2.76E-08	3.00E-15	
		TH-232	1.35E-07 +- 5.0E-08		UCI/SA	69%	2.76E-08		
	5784, 5786 R1 NYC FILTERS & BE								
	MJ3XM1AA	TH-228	4.14E-08 +- 2.8E-08		UCI/SA	68%	2.77E-08		
		TH-230	1.15E-05 +- 1.9E-06		UCI/SA	68%	2.68E-08	3.00E-15	
		TH-232	1.46E-07 +- 5.3E-08		UCI/SA	68%	2.68E-08		
	5785 R1 GRIZZLY FILTER & BEAKE								
	MJ3XF1AA	TH-228	3.06E-09 +- 2.2E-08	U	UCI/SA	64%	4.31E-08		
		TH-230	6.85E-07 +- 1.4E-07		UCI/SA	64%	3.18E-08	3.00E-15	
		TH-232	5.61E-08 +- 2.8E-08		UCI/SA	64%	2.17E-08		
1161156	**FFSR**								
	5769 BAGHOUSE FILTER & BEAKER								
	MJ3XW1AE	U-234	8.56E-03 +- 2.0E-03		UCI/SA	91%	3.73E-05	9.00E-15	
		U-235	2.44E-04 +- 9.7E-05		UCI/SA	91%	3.16E-05	9.00E-15	
		U-238	8.32E-03 +- 1.9E-03		UCI/SA	91%	4.53E-05	9.00E-15	
	5770, 5771 R2 NYC FILTERS & BE								
	MJ3XQ1AE	U-234	4.75E-02 +- 1.0E-02		UCI/SA	83%	1.40E-04	9.00E-15	
		U-235	2.42E-03 +- 7.1E-04		UCI/SA	83%	9.99E-05	9.00E-15	
		U-238	4.69E-02 +- 9.9E-03		UCI/SA	83%	1.45E-04	9.00E-15	
	5784, 5786 R1 NYC FILTERS & BE								
	MJ3XM1AE	U-234	5.65E-02 +- 1.3E-02		UCI/SA	76%	2.21E-04	9.00E-15	
		U-235	3.37E-03 +- 9.7E-04		UCI/SA	76%	1.46E-04	9.00E-15	
		U-238	5.65E-02 +- 1.3E-02		UCI/SA	76%	2.44E-04	9.00E-15	
	5785 R1 GRIZZLY FILTER & BEAKE								
	MJ3XF1AC	U-234	3.32E-05 +- 3.8E-05	U	UCI/SA	107%	6.71E-05	9.00E-15	
		U-235	1.41E-05 +- 2.7E-05	U	UCI/SA	107%	5.72E-05	9.00E-15	
		U-238	1.92E-05 +- 3.6E-05	U	UCI/SA	107%	7.68E-05	9.00E-15	
1161160	**RICHRC5011**								

TestAmerica

rptSTLRchSaSummary2 V5.2.15 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Sample Results Summary

Date: 15-Jul-11

TestAmerica

Ordered by Method, Batch No., Client Sample ID.

Report No. : 47442 **SDG No:** 43264

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RER2
1161160	**RICHRC5011**								
	5769 BAGHOUSE FILTER & BEAKER								
	MJ3XW1AD	Pb-210	1.66E-06 +- 4.8E-07		UCI/SA	69%	5.89E-07	6.00E-14	
	5770, 5771 R2 NYC FILTERS & BE								
	MJ3XQ1AD	Pb-210	4.99E-05 +- 8.4E-06		UCI/SA	79%	5.15E-07	6.00E-14	
	5784, 5786 R1 NYC FILTERS & BE								
	MJ3XM1AD	Pb-210	4.98E-05 +- 8.4E-06		UCI/SA	83%	4.59E-07	6.00E-14	
1161158	**RL-RA-001**								
	5769 BAGHOUSE FILTER & BEAKER								
	MJ3XW1AC	RA-226	3.91E-07 +- 8.9E-08			100%	2.70E-08	9.00E-14	
	5770, 5771 R2 NYC FILTERS & BE								
	MJ3XQ1AC	RA-226	3.01E-07 +- 7.9E-08			77%	6.78E-08	9.00E-14	
	5784, 5786 R1 NYC FILTERS & BE								
	MJ3XM1AC	RA-226	2.78E-07 +- 7.2E-08			69%	4.78E-08	9.00E-14	

No. of Results: 30

TestAmerica **RER2** - **Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.**

rptSTLRchSaSum mary2 V5.2.15 A2002

QC Results Summary

Date: 15-Jul-11

TestAmerica

Ordered by Method, Batch No, QC Type,.

Report No. : 47442 **SDG No.:** 43264

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
RICHRC5011								
1161154 BLANK QC,								
MJ56F1AA	TH-228	7.05E-09 +- 1.2E-08	U	UCI/SA	86%			2.18E-08
	TH-230	6.58E-08 +- 2.8E-08		UCI/SA	86%			2.11E-08
	TH-232	2.72E-08 +- 1.7E-08		UCI/SA	86%			1.67E-08
1161154 LCS,								
MJ56F1AC	TH-230	1.97E-06 +- 3.4E-07	J	UCI/SA	60%	86%	-0.1	2.66E-08
FFSR								
1161156 BLANK QC,								
MJ56H1AA	U-234	0.00E+00 +- 5.0E-08	U	UCI/SA	93%			1.17E-07
	U-235	-4.87E-09 +- 5.0E-08	U	UCI/SA	93%			1.17E-07
	U-238	9.73E-08 +- 9.9E-08	U	UCI/SA	93%			1.17E-07
1161156 LCS,								
MJ56H1AC	U-234	3.37E-06 +- 7.9E-07		UCI/SA	89%	93%	-0.1	1.21E-07
	U-238	3.88E-06 +- 8.7E-07		UCI/SA	89%	102%	0.0	1.21E-07
RICHRC5011								
1161160 BLANK QC,								
MJ56M1AA	Pb-210	3.04E-07 +- 3.2E-07	U	UCI/SA	76%			5.48E-07
1161160 LCS,								
MJ56M2AC	Pb-210	1.15E-05 +- 2.0E-06		UCI/SA	79%	127%	0.3	4.63E-07
RL-RA-001								
1161158 BLANK QC,								
MJ56J1AA	RA-226	1.32E-08 +- 2.8E-08	U		83%			4.74E-08
1161158 LCS,								
MJ56J1AC	RA-226	9.07E-06 +- 2.1E-06	J		100%	91%	-0.1	4.18E-08

No. of Results: 13

TestAmerica

rptSTLRchQcSummary V5.2.15 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica | **SDG:** 43264 | **Collection Date:** 5/27/2011 8:00:00 AM

Lot-Sample No.: J1F080456-4 | **Report No. :** 47442 | **Received Date:** 6/3/2011 11:00:00 AM

Client Sample ID: 5769 BAGHOUSE FILTER & BEAKER | **COC No. :** | **Matrix:** AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1161154	RICHRC5011			**Work Order:** MJ3XW1AA		**Report DB ID:** 9MJ3XW10						
TH-228	**1.68E-07**		4.2E-08	4.9E-08	1.84E-08	UCI/SA	108%	*(9.1)*	6/27/11 10:47 p	1.0	0.99001	ALP175
						5.82E-09		*(6.8)*		Sample	Sample	
TH-230	**3.87E-05**		6.1E-07	6.0E-06	1.78E-08	UCI/SA	108%	*(2169.7)*	6/27/11 10:47 p	1.0	0.99001	ALP175
						5.64E-09	3.00E-15	*(12.8)*		Sample	Sample	
TH-232	**4.02E-07**		6.3E-08	8.8E-08	1.78E-08	UCI/SA	108%	*(22.6)*	6/27/11 10:47 p	1.0	0.99001	ALP175
						5.64E-09		*(9.1)*		Sample	Sample	
Batch: 1161156	FFSR			**Work Order:** MJ3XW1AE		**Report DB ID:** 9MJ3XW10						
U-234	**8.56E-03**		4.8E-04	2.0E-03	3.73E-05	UCI/SA	91%	*(229.6)*	6/16/11 06:37 p	1.0	0.00103	ALP7
						9.71E-06	9.00E-15	*(8.8)*		Sample	Sample	
U-235	**2.44E-04**		8.0E-05	9.7E-05	3.16E-05	UCI/SA	91%	*(7.7)*	6/16/11 06:37 p	1.0	0.00103	ALP7
						6.87E-06	9.00E-15	*(5.)*		Sample	Sample	
U-238	**8.32E-03**		4.7E-04	1.9E-03	4.53E-05	UCI/SA	91%	*(183.4)*	6/16/11 06:37 p	1.0	0.00103	ALP7
						1.37E-05	9.00E-15	*(8.8)*		Sample	Sample	
							Ratio U-234/238 = 1.0					
Batch: 1161158	RL-RA-001			**Work Order:** MJ3XW1AC		**Report DB ID:** 9MJ3XW10						
RA-226	**3.91E-07**		4.0E-08	8.9E-08	2.70E-08		100%	*(14.5)*	7/7/11 05:32 p	1.0	0.99	ASCJMB
						1.23E-08	9.00E-14	*(8.8)*		Sample	Sample	
Batch: 1161160	RICHRC5011			**Work Order:** MJ3XW1AD		**Report DB ID:** 9MJ3XW10						
Pb-210	**1.66E-06**		3.9E-07	4.8E-07	5.89E-07	UCI/SA	69%	*(2.8)*	7/7/11 06:38 a	1.0	0.99001	GPC31D
						2.87E-07	6.00E-14	*(6.9)*		Sample	Sample	

TestAmerica
rptSTLRchSample
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name:	**TestAmerica**	**SDG:**	43264	**Collection Date:**	5/27/2011 8:00:00 AM
Lot-Sample No.:	**J1F080456-4**	**Report No. :**	47442	**Received Date:**	6/3/2011 11:00:00 AM
Client Sample ID:	**5769 BAGHOUSE FILTER & BEAKER**	**COC No. :**		**Matrix:**	AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica | **SDG:** 43264 | **Collection Date:** 5/26/2011 8:00:00 AM

Lot-Sample No.: J1F080456-3 | **Report No. :** 47442 | **Received Date:** 6/3/2011 11:00:00 AM

Client Sample ID: 5770, 5771 R2 NYC FILTERS & BE | **COC No. :** | **Matrix:** AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1161154	RICHRC5011			**Work Order:** MJ3XQ1AA		**Report DB ID:** 9MJ3XQ10						
TH-228	**6.59E-08**		3.3E-08	3.5E-08	2.85E-08	UCI/SA	69%	*(2.3)*	6/27/11 10:47 p	1.0	0.98995	ALP174
						9.02E-09		*(3.8)*		Sample	Sample	
TH-230	**1.31E-05**		4.4E-07	2.1E-06	2.76E-08	UCI/SA	69%	*(472.4)*	6/27/11 10:47 p	1.0	0.98995	ALP174
						8.73E-09	3.00E-15	*(12.4)*		Sample	Sample	
TH-232	**1.35E-07**		4.6E-08	5.0E-08	2.76E-08	UCI/SA	69%	*(4.9)*	6/27/11 10:47 p	1.0	0.98995	ALP174
						8.73E-09		*(5.4)*		Sample	Sample	
Batch: 1161156	FFSR			**Work Order:** MJ3XQ1AE		**Report DB ID:** 9MJ3XQ10						
U-234	**4.75E-02**		2.2E-03	1.0E-02	1.40E-04	UCI/SA	83%	*(338.8)*	6/16/11 05:21 p	1.0	0.00101	ALP5
						3.40E-05	9.00E-15	*(9.5)*		Sample	Sample	
U-235	**2.42E-03**		5.1E-04	7.1E-04	9.99E-05	UCI/SA	83%	*(24.3)*	6/16/11 05:21 p	1.0	0.00101	ALP5
						1.39E-05	9.00E-15	*(6.8)*		Sample	Sample	
U-238	**4.69E-02**		2.2E-03	9.9E-03	1.45E-04	UCI/SA	83%	*(322.7)*	6/16/11 05:21 p	1.0	0.00101	ALP5
						3.67E-05	9.00E-15	*(9.5)*		Sample	Sample	
							Ratio U-234/238 = 1.0					
Batch: 1161158	RL-RA-001			**Work Order:** MJ3XQ1AC		**Report DB ID:** 9MJ3XQ10						
RA-226	**3.01E-07**		5.4E-08	7.9E-08	6.78E-08		77%	*(4.4)*	7/7/11 05:31 p	1.0	0.99	ASC2HA
						3.24E-08	9.00E-14	*(7.6)*		Sample	Sample	
Batch: 1161160	RICHRC5011			**Work Order:** MJ3XQ1AD		**Report DB ID:** 9MJ3XQ10						
Pb-210	**4.99E-05**		1.0E-06	8.4E-06	5.15E-07	UCI/SA	79%	*(96.9)*	7/7/11 06:38 a	1.0	0.98995	GPC31C
						2.51E-07	6.00E-14	*(11.9)*		Sample	Sample	

TestAmerica
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V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name:	TestAmerica	**SDG:**	43264	**Collection Date:**	5/26/2011 8:00:00 AM
Lot-Sample No.:	J1F080456-3	**Report No. :**	47442	**Received Date:**	6/3/2011 11:00:00 AM
Client Sample ID:	5770, 5771 R2 NYC FILTERS & BE	**COC No. :**		**Matrix:**	AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica | **SDG:** 43264 | **Collection Date:** 5/25/2011 8:00:00 AM

Lot-Sample No.: J1F080456-2 | **Report No. :** 47442 | **Received Date:** 6/3/2011 11:00:00 AM

Client Sample ID: 5784, 5786 R1 NYC FILTERS & BE | **COC No. :** | **Matrix:** AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1161154	RICHRC5011			**Work Order:** MJ3XM1AA		**Report DB ID:** 9MJ3XM10						
TH-228	**4.14E-08**		2.7E-08	2.8E-08	2.77E-08	UCI/SA	68%	*(1.5)*	6/27/11 10:47 p	1.0	0.99003	ALP173
						8.76E-09		*(3.)*		Sample	Sample	
TH-230	**1.15E-05**		4.1E-07	1.9E-06	2.68E-08	UCI/SA	68%	*(428.3)*	6/27/11 10:47 p	1.0	0.99003	ALP173
						8.48E-09	3.00E-15	*(12.4)*		Sample	Sample	
TH-232	**1.46E-07**		4.7E-08	5.3E-08	2.68E-08	UCI/SA	68%	*(5.4)*	6/27/11 10:47 p	1.0	0.99003	ALP173
						8.48E-09		*(5.6)*		Sample	Sample	
Batch: 1161156	FFSR			**Work Order:** MJ3XM1AE		**Report DB ID:** 9MJ3XM10						
U-234	**5.65E-02**		2.6E-03	1.3E-02	2.21E-04	UCI/SA	76%	*(256.3)*	6/16/11 05:21 p	1.0	0.00104	ALP4
						6.91E-05	9.00E-15	*(9.)*		Sample	Sample	
U-235	**3.37E-03**		6.4E-04	9.7E-04	1.46E-04	UCI/SA	76%	*(23.1)*	6/16/11 05:21 p	1.0	0.00104	ALP4
						3.17E-05	9.00E-15	*(6.9)*		Sample	Sample	
U-238	**5.65E-02**		2.6E-03	1.3E-02	2.44E-04	UCI/SA	76%	*(231.8)*	6/16/11 05:21 p	1.0	0.00104	ALP4
						8.08E-05	9.00E-15	*(9.)*		Sample	Sample	
							Ratio U-234/238 = 1.0					
Batch: 1161158	RL-RA-001			**Work Order:** MJ3XM1AC		**Report DB ID:** 9MJ3XM10						
RA-226	**2.78E-07**		4.6E-08	7.2E-08	4.78E-08		69%	*(5.8)*	7/7/11 05:34 p	1.0	0.99	ASC1MB
						2.22E-08	9.00E-14	*(7.8)*		Sample	Sample	
Batch: 1161160	RICHRC5011			**Work Order:** MJ3XM1AD		**Report DB ID:** 9MJ3XM10						
Pb-210	**4.98E-05**		1.0E-06	8.4E-06	4.59E-07	UCI/SA	83%	*(108.6)*	7/7/11 06:38 a	1.0	0.99003	GPC31B
						2.23E-07	6.00E-14	*(11.9)*		Sample	Sample	

TestAmerica
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V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name:	**TestAmerica**	**SDG:**	43264	**Collection Date:**	5/25/2011 8:00:00 AM
Lot-Sample No.:	**J1F080456-2**	**Report No. :**	47442	**Received Date:**	6/3/2011 11:00:00 AM
Client Sample ID:	**5784, 5786 R1 NYC FILTERS & BE**	**COC No. :**		**Matrix:**	AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica | **SDG:** 43264 | **Collection Date:** 5/24/2011 8:00:00 AM

Lot-Sample No.: J1F080456-1 | **Report No. :** 47442 | **Received Date:** 6/3/2011 11:00:00 AM

Client Sample ID: 5785 R1 GRIZZLY FILTER & BEAKE | **COC No. :** | **Matrix:** AIR FILTER

Denison Mine 2011 2nd Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1161154	RICHRC5011			**Work Order:** MJ3XF1AA		**Report DB ID:** 9MJ3XF10						
TH-228	**3.06E-09**	U	2.2E-08	2.2E-08	4.31E-08	UCI/SA	64%	*0.07*	6/27/11 10:47 p	1.0	0.98932	ALP171
						1.74E-08		*0.28*		Sample	Sample	
TH-230	**6.85E-07**		9.1E-08	1.4E-07	3.18E-08	UCI/SA	64%	*(21.6)*	6/27/11 10:47 p	1.0	0.98932	ALP171
						1.19E-08	3.00E-15	*(9.8)*		Sample	Sample	
TH-232	**5.61E-08**		2.7E-08	2.8E-08	2.17E-08	UCI/SA	64%	*(2.6)*	6/27/11 10:47 p	1.0	0.98932	ALP171
						6.87E-09		*(4.)*		Sample	Sample	
Batch: 1161156	FFSR			**Work Order:** MJ3XF1AC		**Report DB ID:** 9MJ3XF10						
U-234	**3.32E-05**	U	3.7E-05	3.8E-05	6.71E-05	UCI/SA	107%	*0.5*	6/16/11 06:36 p	1.0	0.00095	ALP3
						2.49E-05	9.00E-15	*(1.8)*		Sample	Sample	
U-235	**1.41E-05**	U	2.7E-05	2.7E-05	5.72E-05	UCI/SA	107%	*0.25*	6/16/11 06:36 p	1.0	0.00095	ALP3
						2.00E-05	9.00E-15	*(1.)*		Sample	Sample	
U-238	**1.92E-05**	U	3.6E-05	3.6E-05	7.68E-05	UCI/SA	107%	*0.25*	6/16/11 06:36 p	1.0	0.00095	ALP3
						2.97E-05	9.00E-15	*(1.1)*		Sample	Sample	

Ratio U-234/238 = 1.7

No. of Results: 6 **Comments:**

TestAmerica
rptSTLRchSample
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U|< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica

Matrix: AIR

SDG: 43264

Report No. : 47442

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1161160	RICHRC5011			**Work Order:**	MJ56M1AA	**Report DB ID:**	MJ56M1AB					
Pb-210	3.04E-07	U	3.2E-07	3.2E-07	5.48E-07	UCI/SA	76%	0.56	7/7/11 06:38 a	1.0	1.0	GPC32A
					2.67E-07	6.00E-14		(1.9)		Sample	Sample	
Batch: 1161158	RL-RA-001			**Work Order:**	MJ56J1AA	**Report DB ID:**	MJ56J1AB					
RA-226	1.32E-08	U	2.8E-08	2.8E-08	4.74E-08		83%	0.28	7/7/11 05:31 p	1.0	1.0	ASCKMF
					2.23E-08	9.00E-14		0.94		Sample	Sample	
Batch: 1161156	FFSR			**Work Order:**	MJ56H1AA	**Report DB ID:**	MJ56H1AB					
U-234	0.00E+00	U	0.0E+00	5.0E-08	1.17E-07	UCI/SA	93%	0.	6/16/11 06:38 p	1.0	0.25	ALP9
					2.53E-08	9.00E-15		0.		Sample	Sample	
U-235	-4.87E-09	U	5.0E-08	5.0E-08	1.17E-07	UCI/SA	93%	-0.04	6/16/11 06:38 p	1.0	0.25	ALP9
					2.53E-08	9.00E-15		-0.2		Sample	Sample	
U-238	9.73E-08	U	9.8E-08	9.9E-08	1.17E-07	UCI/SA	93%	0.84	6/16/11 06:38 p	1.0	0.25	ALP9
					2.53E-08	9.00E-15		(2.)		Sample	Sample	
Batch: 1161154	RICHRC5011			**Work Order:**	MJ56F1AA	**Report DB ID:**	MJ56F1AB					
TH-228	7.05E-09	U	1.2E-08	1.2E-08	2.18E-08	UCI/SA	86%	0.32	6/27/11 10:47 p	1.0	1.0	ALP176
					7.73E-09			(1.1)		Sample	Sample	
TH-230	6.58E-08		2.6E-08	2.8E-08	2.11E-08	UCI/SA	86%	(3.1)	6/27/11 10:47 p	1.0	1.0	ALP176
					7.47E-09	3.00E-15		(4.7)		Sample	Sample	
TH-232	2.72E-08		1.7E-08	1.7E-08	1.67E-08	UCI/SA	86%	(1.6)	6/27/11 10:47 p	1.0	1.0	ALP176
					5.28E-09			(3.1)		Sample	Sample	

No. of Results: 8 **Comments:**

TestAmerica
rptSTLRchBlank
V5.2.15 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 15-Jul-11

Lab Name: TestAmerica

Matrix: AIR

SDG: 43264

Report No. : 47442

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1161160	RICHRC5011			**Work Order:**	MJ56M2AC		**Report DB ID:**	MJ56M2CS					
Pb-210	1.15E-05		5.4E-07	2.0E-06	4.63E-07	UCI/SA	79%	9.07E-06	1.52E-07	127%	7/8/11 07:51 a	1.0	GPC31B
							Rec Limits:	20	115	0.3		Sample	
Batch: 1161158	RL-RA-001			**Work Order:**	MJ56J1AC		**Report DB ID:**	MJ56J1CS					
RA-226	9.07E-06		1.7E-07	2.1E-06	4.18E-08		100%	9.95E-06	1.01E-07	91%	7/7/11 05:32 p	1.0	ASCPMD
							Rec Limits:	70	130	-0.1		Sample	
Batch: 1161156	FFSR			**Work Order:**	MJ56H1AC		**Report DB ID:**	MJ56H1CS					
U-234	3.37E-06		5.8E-07	7.9E-07	1.21E-07	UCI/SA	89%	3.64E-06	1.13E-07	93%	6/16/11 06:38 p	0.27	ALP10
							Rec Limits:	70	130	-0.1		Sample	
U-238	3.88E-06		6.3E-07	8.7E-07	1.21E-07	UCI/SA	89%	3.81E-06	1.18E-07	102%	6/16/11 06:38 p	0.27	ALP10
							Rec Limits:	70	130	0.0		Sample	
Batch: 1161154	RICHRC5011			**Work Order:**	MJ56F1AC		**Report DB ID:**	MJ56F1CS					
TH-230	1.97E-06		1.5E-07	3.4E-07	2.66E-08	UCI/SA	60%	2.28E-06	4.63E-08	86%	6/27/11 10:47 p	1.0	ALP177
							Rec Limits:	70	130	-0.1		Sample	

No. of Results: 5 **Comments:**

TestAmerica **Bias** **- (Result/Expected)-1 as defined by ANSI N13.30.**

rptSTLRchLcs
V5.2.15 A2002

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Tetco	Project Manager: Dean Kitchen	Date: 5/31/2011	Chain of Custody Number:
Address: 391 East 620 South	Telephone Number (Area Code)/Fax Number: 801-492-9106	Lab Number:	Page _____ of _____
City: American Fork; State: Ut; Zip Code: 84003	Site Contact: Scott Christensen, Ryan Palmer	Lab Contact:	
Project Name and Location (State): Denison Mine 2011 2nd Quarter	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	U-Nat	TH-230	Ra-226	Lead-210	Special Instructions/ Conditions of Receipt
5785 R1 Grizzly filter and beaker	5/24/11	8:00	X										X	X			MJ3XF
5784, 5786 R1 NYC filters and beaker	5/25/11	8:00	X										X	X	X	X	MJ3XM
5770, 5771 R2 NYC filters and beaker	5/26/11	8:00	X										X	X	X	X	MJ3XQ
5769 Baghouse Filter and beaker	5/27/11	8:00	X										X	X	X	X	MJ3XW

Quote # 82397
SDG # 43264
LOT # J1F080456
Report: 7/6/11
W 6/8/11 AA DEN

J1F080456

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Doug St	6/01/11	1300	1. Received By: Common Kranpa	6-3-11	1100
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 6/3/11 @ 1100 GM Screen Result (out) 16 (in) 2 Initials HC

Client: Denison SDG #: 43264 NA [ ] SAF #: NA [ ]

Work Order Number: J1F080456 Chain of Custody # _____

Shipping Container ID: _____ NA HC Air Bill # _____ NA HC

Item 1 through 5 for shipping container only. Initial appropriate response.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal HC
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal HC
3. Chain of Custody record present? Yes HC No [ ]
4. Cooler temperature: _____ NA HC 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry HC

Item 6 through 10 for samples. Initial appropriate response.

6. Number of samples in shipping container (Each sample may contain multiple bottles): 4 @ 1 beaker and 1 Gallon
7. Sample holding times exceeded? NA [ ] Yes [ ] No HC
8. Samples have:
   - ____ tape
   - ____ custody seals
   - ____ hazard labels
   - HC appropriate sample labels
9. Samples:
   - HC are in good condition
   - ____ are broken
   - ____ are leaking
   - ____ have air bubbles (Only for samples requiring no head space)
10. Sample pH appropriate for analysis requested Yes [ ] No [ ] N/A HC (Note discrepancies in #13)
    (If acidification necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition)

    RPL ID # of preservative used : _____
11. Sample Location, Sample Collector Listed? * Yes HC No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No HC
13. Description of anomalies (include sample numbers): NA [ ] _____

See other side for additional comments

Sample Custodian Heather Cornett Date: 6/3/11

Client Informed on _____ by _____ Person contacted _____

[X] No action necessary; process as is

Project Manager Erika Good Date 6/9/11

LS-023, Rev. 12, 10/10

APPENDIX D

North Yellow Cake Scrubber
Figure 1. Facility Schematic Representation

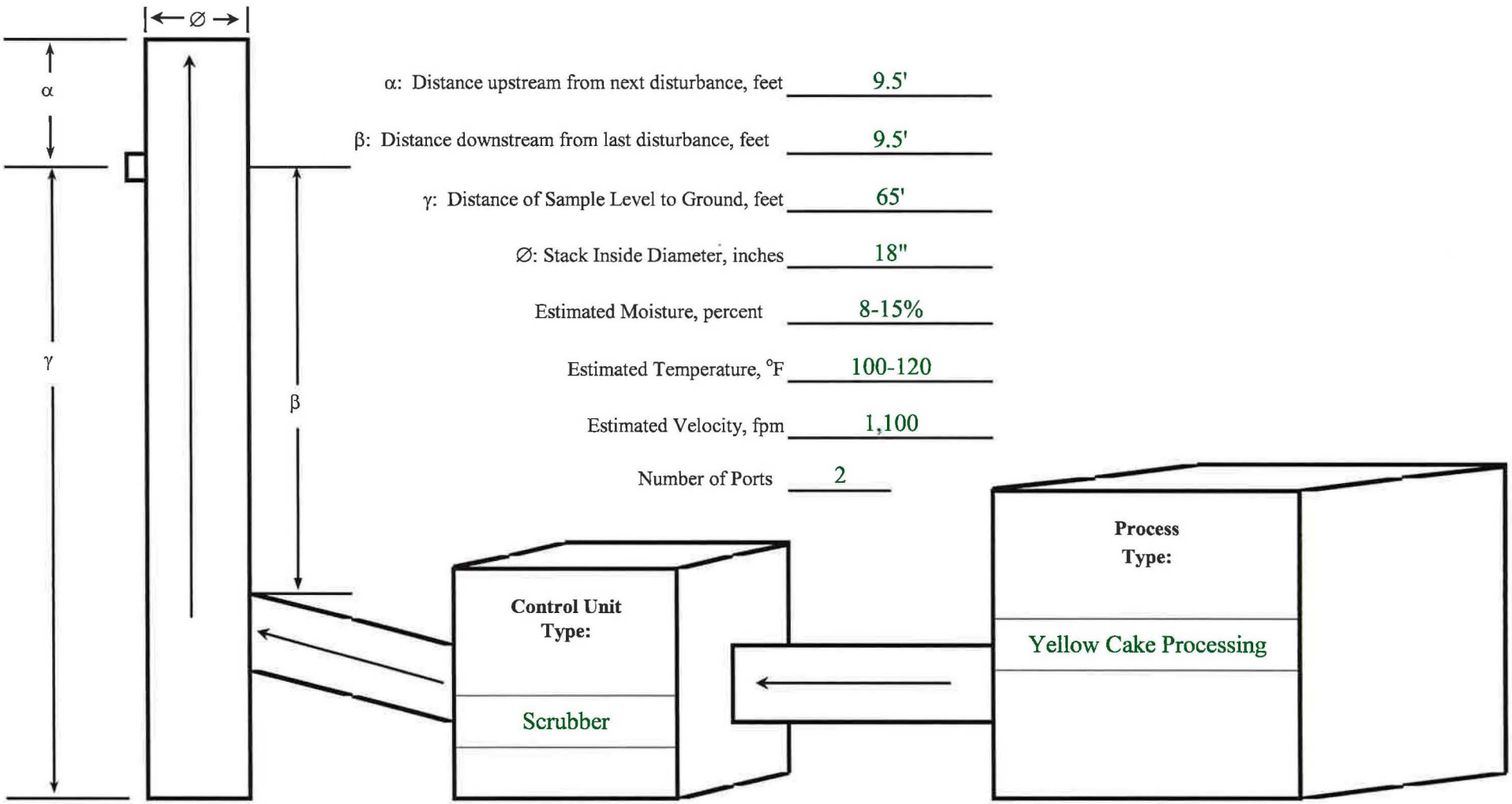
Yellow Cake Dryer Baghouse
Figure 2. Facility Schematic Representation

Grizzly Baghouse
Figure 3. Facility Schematic Representation

Production and Control Equipment Data
North Yellow Cake (Scrubber Flow Rate(s)
Yellow Cake Dryer Baghouse (8 barrels filled during test)
Grizzly (tph of material and belt speed)

Facility: Denison Mines

Stack Identification: North Yellow Cake Scrubber



α: Distance upstream from next disturbance, feet 9.5'

β: Distance downstream from last disturbance, feet 9.5'

γ: Distance of Sample Level to Ground, feet 65'

∅: Stack Inside Diameter, inches 18"

Estimated Moisture, percent 8-15%

Estimated Temperature, °F 100-120

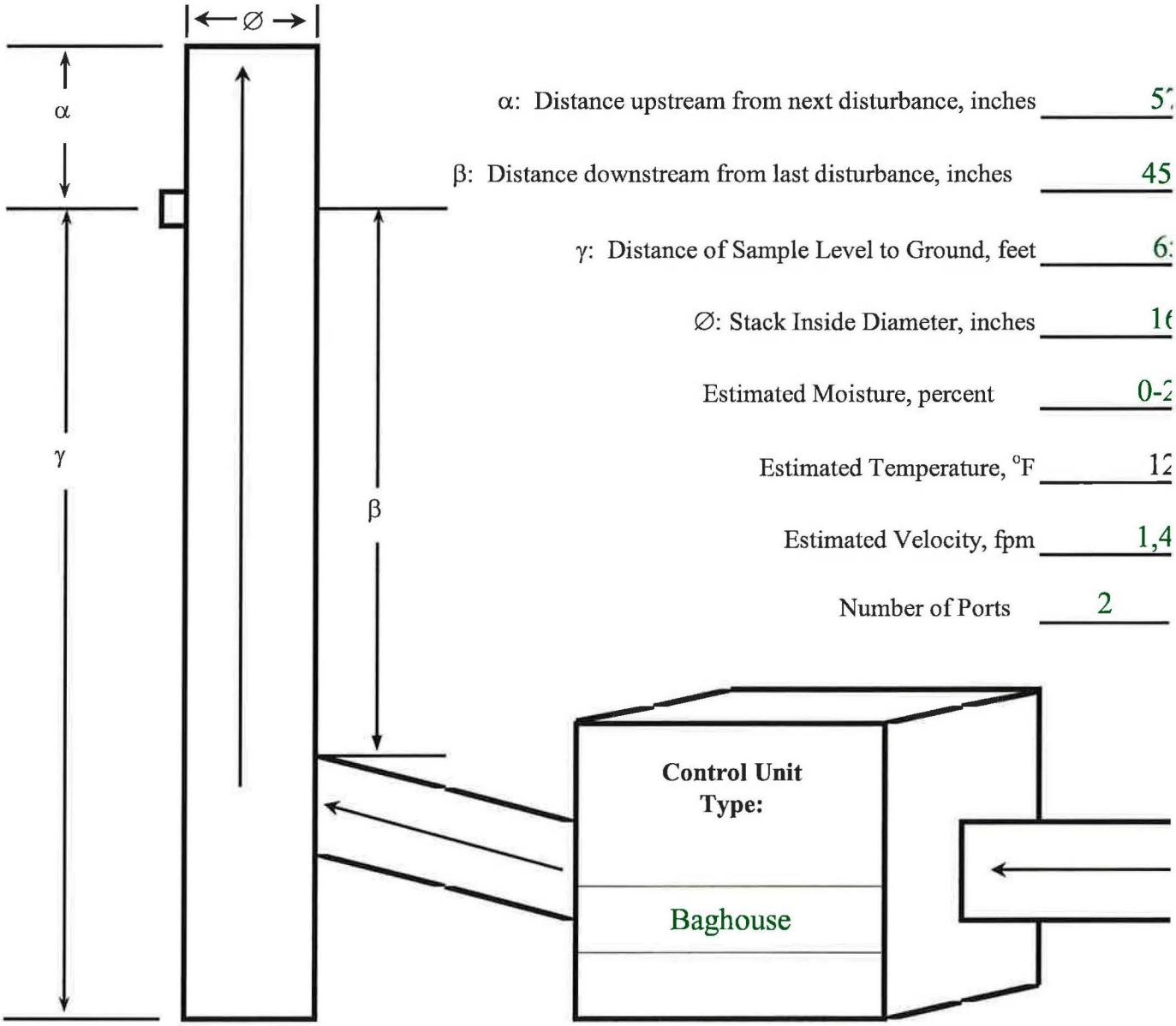
Estimated Velocity, fpm 1,100

Number of Ports 2

Figure 1. Facility Schematic Representation

Facility: Denison Mines

Stack Identification: Yellow Cake Dryer Baghouse



α: Distance upstream from next disturbance, inches 5

β: Distance downstream from last disturbance, inches 45

γ: Distance of Sample Level to Ground, feet 6

∅: Stack Inside Diameter, inches 1

Estimated Moisture, percent 0-

Estimated Temperature, °F 1

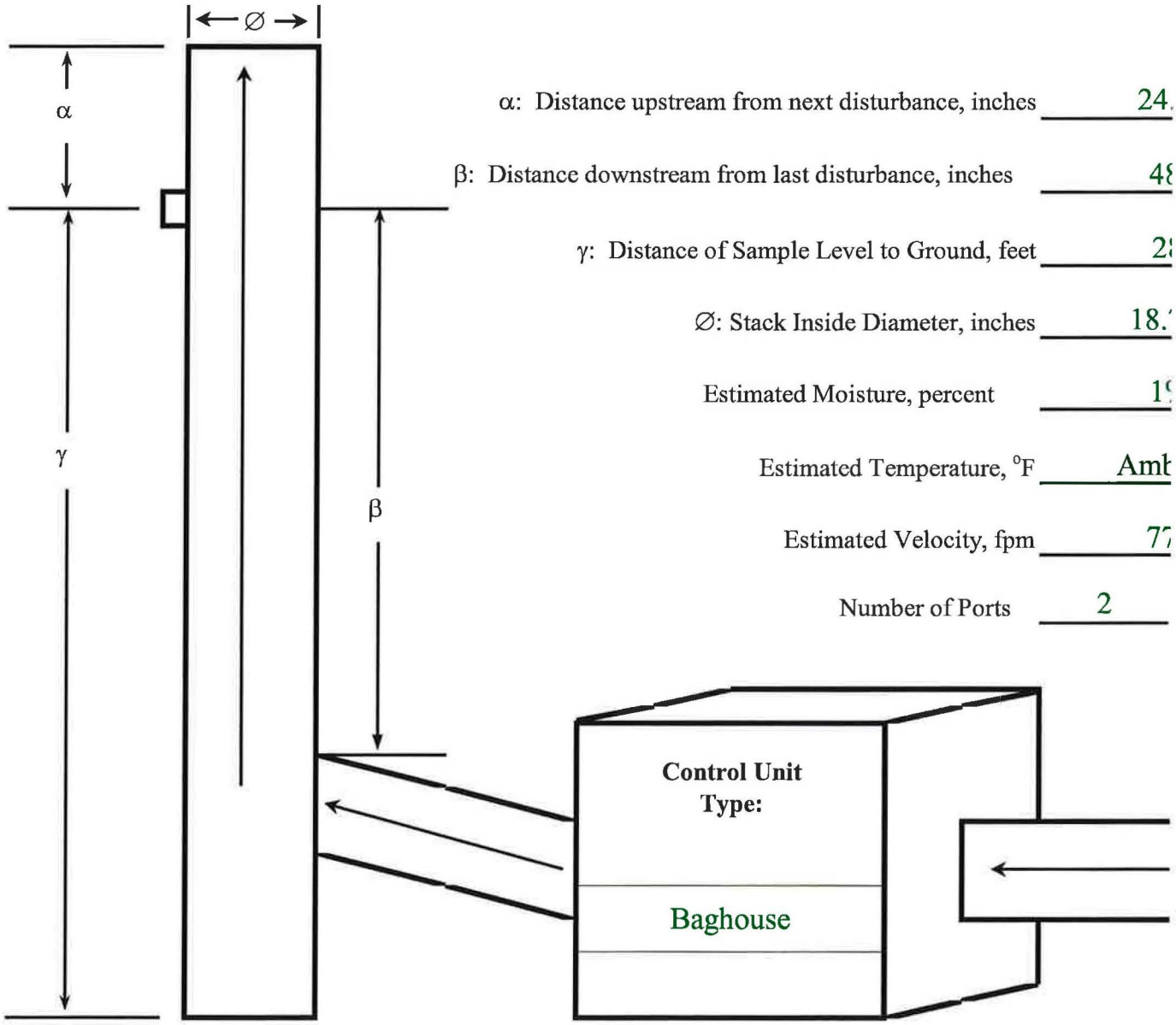
Estimated Velocity, fpm 1,4

Number of Ports 2

Figure 2. Facility Schematic Representati

Facility: Denison Mines

Stack Identification: Grizzly Baghouse



α: Distance upstream from next disturbance, inches 24.

β: Distance downstream from last disturbance, inches 48

γ: Distance of Sample Level to Ground, feet 2

∅: Stack Inside Diameter, inches 18.

Estimated Moisture, percent 1

Estimated Temperature, °F Amb

Estimated Velocity, fpm 7

Number of Ports 2

Figure 3. Facility Schematic Representati

Denison Mine Process Data

Source: North Yellow Cake		Date: 5/25/11	
	Scrubber Flow GPM		
Time	#1	#2	ΔP
8:15	9.9	12.0	3.0
8:45	9.8	11.9	3.0
9:20	8.8	10.7	3.0
9:50	9.3	11.2	3.0
10:20	9.6	11.0	3.0
10:50	9.8	12.0	3.0
11:20	10.0	12.0	3.0
11:50	10.1	12.2	3.0
12:30	10.1	12.2	3.0
13:00	9.7	11.7	3.0
13:30	10.1	12.2	3.0
14:00	10.1	12.2	3.0
14:30	9.9	12.0	3.0
15:00	9.8	11.9	3.0
15:30	9.9	12.1	3.1
~~16:00~~ 16:00	9.3	11.2	3.0

Denison Mines Process Data

Source: North Yellow Cake		Date: May 26, 2011	
	Scrubber Flow GPM		
Time	#1	#2	ΔP
8:05	10.1	12.2	2.9
8:35	10.0	12.1	2.9
9:05	10.0	12.1	2.9
9:35	9.6	11.5	2.9
10:05	9.6	11.7	2.9
10:35	9.9	12.1	2.9
11:05	9.7	11.7	2.9
Shut	Down		
15:05	8.7	10.3	3.0
15:35	8.7	10.3	3.1
16:30	9.3	11.0	2.9
17:00	9.6	13.0	3.0
17:30	9.1	12.2	2.9
18:30	9.7	13.0	3.0
18:00	9.6	12.2	2.9
19:00	9.8	13.2	3.0
19:30	9.7	13.0	2.9
20:00	9.8	13.2	3.0
20:37	9.7	13.1	2.9

Denison Mines Process Data

Source: Grizzly Baghouse		Date: May 24, 2011	
Time	Tons	TPH	FPM
7:50	178995	155	109.3
8:23	179045	130	109.6
8:50	179090	135	109.6
9:20	179145	330	109.6
9:50	179200	115	109.7
10:20	179240	105	109.7
10:50	179280	45	109.5
11:20	179325	100	109.8
11.50	179375	60	109.6
12:20	179425	120	109.5
12:50	179470	40	109.7
13:20	179500	75	109.4
13:50	179550	140	109.5
14:20	179590	55	109.6
14:50	179625	60	109.6
15:20	179675	80	109.7
15:50	179730	140	109.7

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 4 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

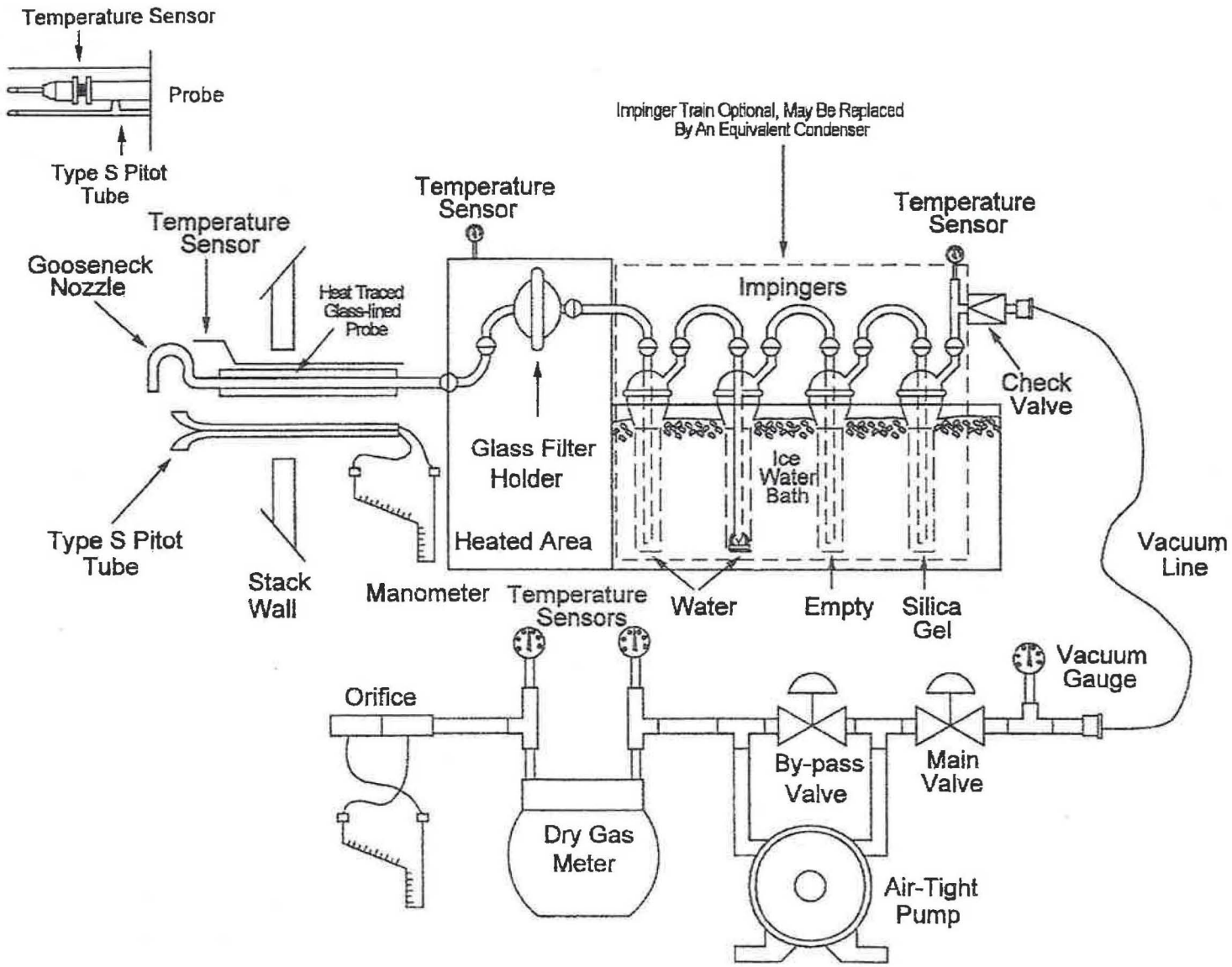


Figure 4 Schematic of Method 5/114 Sampling Train

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.

Quality - Service - Reliability

Facility **New Calibration 2011**

DATE: 12/15/2010 | METER SERIAL #: 1522588 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.30, FINAL 25.30, AVG (P_{bar}) 25.3

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 (%)	$\Delta H_@$
30	1	0.8137	13	896.006	901.301	5.295	74	74	76	70	70	72.5	5.00	2.90	4.4778	4.4556	0.995		1.737
	2	0.8137	13	901.301	906.609	5.308	74	76	79	70	72	74.25	5.00	2.90	4.4741	4.4556	0.996		1.731
	3	0.8137	13	906.609	911.936	5.327	74	79	80	72	73	76.00	5.00	2.90	4.4754	4.4556	0.996		1.726
																AVG =	0.996	-0.89	
19	1	0.5317	13	912.40	917.596	5.196	74	79	80	75	82	79.00	7.50	1.20	4.3198	4.3672	1.011		1.655
	2	0.5317	13	917.596	922.809	5.213	74	80	82	74	77	78.25	7.50	1.20	4.340	4.3672	1.006		1.657
	3	0.5317	13	922.809	928.018	5.209	74	82	83	77	78	80.00	7.50	1.20	4.3226	4.3672	1.010		1.652
																AVG =	1.009	0.48	
12	1	0.3307	13	928.304	933.524	5.220	74	82	83	78	79	80.50	12.00	0.44	4.3182	4.3460	1.006		1.561
	2	0.3307	13	933.524	938.841	5.317	74	81	83	79	80	80.75	12.25	0.44	4.3964	4.4366	1.009		1.560
	3	0.3307	13	938.841	944.055	5.214	74	83	84	80	80	81.75	12.00	0.44	4.3032	4.3460	1.010		1.557
																AVG =	1.009	0.41	

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 = 1.004

AVERAGE $\Delta H_@$ = 1.649

(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

Reference °F	In °F	Out °F
34	34	35
67	67	67
202	202	204

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.

Quality - Service - Reliability

2011 Pre-Calibration

DATE: 12/20/2010
METER PART #: Console 5
METER SERIAL #: 68092
CRITICAL ORIFICE SET SERIAL #: 1453S
EQUIPMENT ID #: Console #5

BAROMETRIC PRESSURE (in Hg):	INITIAL	FINAL	AVG (P_{bar})
	25.10	25.10	25.10

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	155.004	161.521	6.517	74	82	83	89	93	86.75	6.00	2.55	5.320	5.3045	0.997		1.498
	2	0.8137	12	161.521	168.043	6.522	74	83	83	93	96	88.75	6.00	2.55	5.3046	5.3045	1.000		1.493
	3	0.8137	12	168.043	174.568	6.525	74	83	83	96	99	90.25	6.00	2.55	5.2926	5.3045	1.002		1.489
																AVG =	1.000	-0.09	
19	1	0.5317	13	136.700	142.672	5.972	74	81	80	84	86	82.75	8.50	1.11	4.8905	4.9104	1.004		1.532
	2	0.5317	13	142.672	148.297	5.625	74	80	81	86	88	83.75	8.00	1.11	4.5978	4.6215	1.005		1.529
	3	0.5317	13	148.297	153.926	5.629	74	81	82	88	89	85.00	8.00	1.11	4.5905	4.6215	1.007		1.526
																AVG =	1.005	0.47	
12	1	0.3307	13	116.20	125.809	9.609	74	76	78	77	80	77.75	22.00	0.40	7.9255	7.9047	0.997		1.437
	2	0.3307	13	125.809	131.075	5.266	74	78	80	80	81	79.75	12.00	0.40	4.3273	4.3117	0.996		1.432
	3	0.3307	13	131.075	136.357	5.282	74	80	81	81	84	81.50	12.00	0.40	4.3264	4.3117	0.997		1.428
																AVG =	0.997	-0.38	

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 = **1.001**

AVERAGE $\Delta H_@$ = **1.485**

(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

Reference °F	In °F	Out °F
32	32	32
72	73	73
203	201	202

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.

Facility **DENNISON MINES**

DATE: 6/6/2011
METER PART #: Console 3
METER SERIAL #: 1522588
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.20 | FINAL 25.20 | AVG (P_{bar}) 25.20
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	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 (%)	$\Delta H_@$
19	1	0.5317	13	53.103	62.654	9.551	68	67	72	72	75	71.50	14.00	1.10	8.0184	8.1582	1.017		1.530
	2	0.5317	13	62.654	71.213	8.559	69	72	75	75	80	75.50	12.50	1.10	7.1319	7.2841	1.021		1.518
	3	0.5317	13	71.213	78.444	7.231	69	75	78	80	83	79.00	10.50	1.10	5.9862	6.1187	1.022		1.508
																AVG =	1.020	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																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 = **1.020**

AVERAGE $\Delta H_@$ = **1.519**

(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

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

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.

Facility **Denison Mines**

							INITIAL	FINAL	AVG (P_{bar})
DATE:	6/2/2011	METER SERIAL #:		BAROMETRIC PRESSURE (in Hg):	25.30	25.30	25.30
METER PART #:	Console 5	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #5		

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	12	205.301	210.825	5.525	70	67	70	70	75	70.50	10.00	0.67	4.6598	4.6588	1.000		1.464
	2	0.4238	12	210.825	217.220	6.394	70	70	73	75	78	74.00	11.50	0.67	5.3573	5.3576	1.000		1.455
	3	0.4238	12	217.220	222.801	5.581	70	73	75	78	81	76.75	10.00	0.67	4.6522	4.6588	1.001		1.447
																AVG =	1.000	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																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 = 1.000

AVERAGE $\Delta H_@$ = 1.456

(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)

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

(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) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

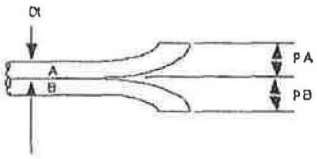
= DGM calibration factor

Type S Pitot Tube Inspection Data

Date: 12-9-10

Pitot Tube Identification: 09-18

Technician: K. McNamara



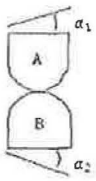
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

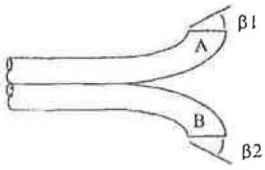
P_A= .450 in.

P_B= .450 in.



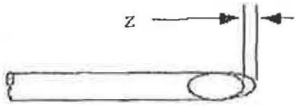
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 2 °

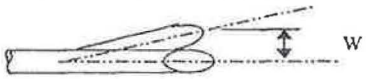


$\beta_1 < 5°$ β_1 = 1 °

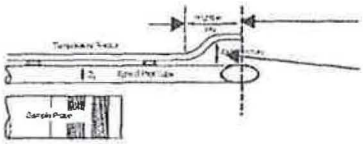
$\beta_2 < 5°$ β_2 = Ø °



$Z \le 0.125$ in. Z = .003 in.

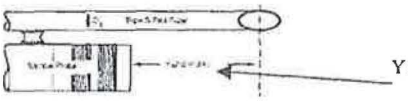


$W \le 0.03125$ in. W = .002 in.



W > 3 inches W = 6 1/2 in.

Z > 3/4 inch Z = 7/8 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: _____

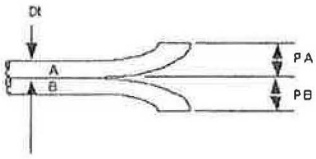
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	70	70	0
	Continuity	→	→	yes
	Heat Check 248	→	Yes	240
Stack	AIR	70	70	0
	ICE WATER	30	30	1
	BOIL WATER	204	203	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12-9-10

Pitot Tube Identification: 27-G

Technician: K. McNamara



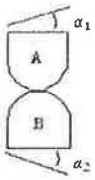
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

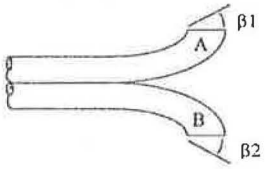
P_A = .443 in.

P_B = .443 in.



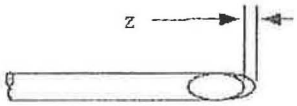
$\alpha_1 < 10°$ α_1 = 2 °

$\alpha_2 < 10°$ α_2 = 1 °

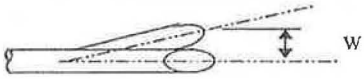


$\beta_1 < 5°$ β_1 = 1 °

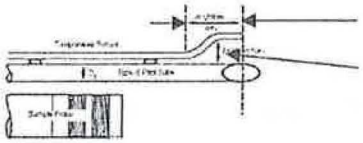
$\beta_2 < 5°$ β_2 = 0 °



Z ≤ 0.125 in. Z = .002 in.

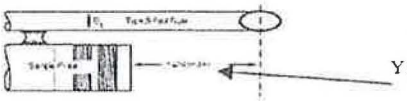


W ≤ 0.03125 in. W = .003 in.



W > 3 inches W = 3 in.

Z > 3/4 inch Z = 1 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:

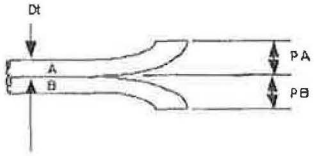
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	70	69	1
	Continuity	→	→	Yes
	Heat Check 248	→	Yes	280
Stack	AIR	70	69	1
	ICE WATER	33	33	0
	BOIL WATER	205	205	0
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12-20-10

Pitot Tube Identification: 51-4-3

Technician: K. McNamara



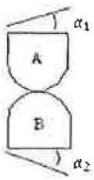
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

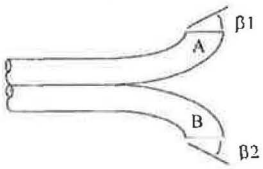
P_A = .448 in.

P_B = .448 in.



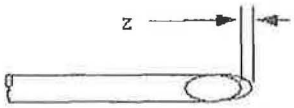
$\alpha_1 < 10°$ α_1 = 2 °

$\alpha_2 < 10°$ α_2 = 3 °

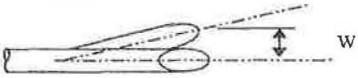


$\beta_1 < 5°$ β_1 = 0 °

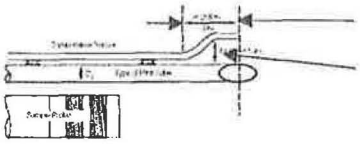
$\beta_2 < 5°$ β_2 = 2 °



Z ≤ 0 125 in. Z = .055 in.

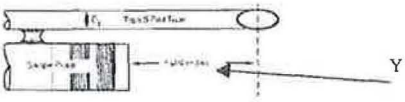


W ≤ 0 03125 in W = .016 in.



W > 3 inches W = 6 1/2 in.

Z > 3/4 inch Z = 1 1/2 in.



Y ≥ 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: _____

	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	68	68	0
	Continuity	—	—	Yes
	Heat Check 248	—	Yes	250
Stack	AIR	68	68	0
	ICE WATER	32	32	0
	BOIL WATER	204	204	0
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 12/29/10 Calibrator: Mike McNamara Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temp. Diff. or Result (°F), P/F
A	Oven	Water	34	34	0
		Water	203	203	0
	Probe Out	Water	34	33	1
		Water	203	204	-1
	Impinger Out	Water	34	36	-2
		Water	203	203	0
B	Oven	Water	32	34	-2
		Water	203	204	-1
	Probe Out	Water	32	33	-1
		Water	202	204	-2
	Impinger Out	Water	31	31	0
		Water	203	205	-2
C	Oven	Water	34	36	-2
		Water	204	205	-1
	Probe Out	Water	34	36	-2
		Water	203	205	-2
	Impinger Out	Water	34	36	-2
		Water	203	201	2
D	Oven	Water	33	33	0
		Water	203	203	0
	Probe Out	Water	33	33	0
		Water	202	203	-1
	Impinger Out	Water	33	33	0
		Water	203	201	2
E	Oven	Water	33	34	-1
		Water	203	203	0
	Probe Out	Water	33	34	-1
		Water	203	204	-1
	Impinger Out	Water	33	33	0
		Water	203	204	-1
F	Oven	Water	33	33	0
		Water	203	202	1
	Probe Out	Water	33	33	0
		Water	203	201	2
	Impinger Out	Water	33	34	-1
		Water	203	201	2
	Impinger Out G	Water	33	34	-1
		Water	203	202	1
	Impinger Out H	Water	33	35	-2
		Water	203	202	1
	Impinger Out I	Water	33	33	0
		Water	203	204	-1
	Impinger Out J	Water	33	33	0
		Water	203	204	-1

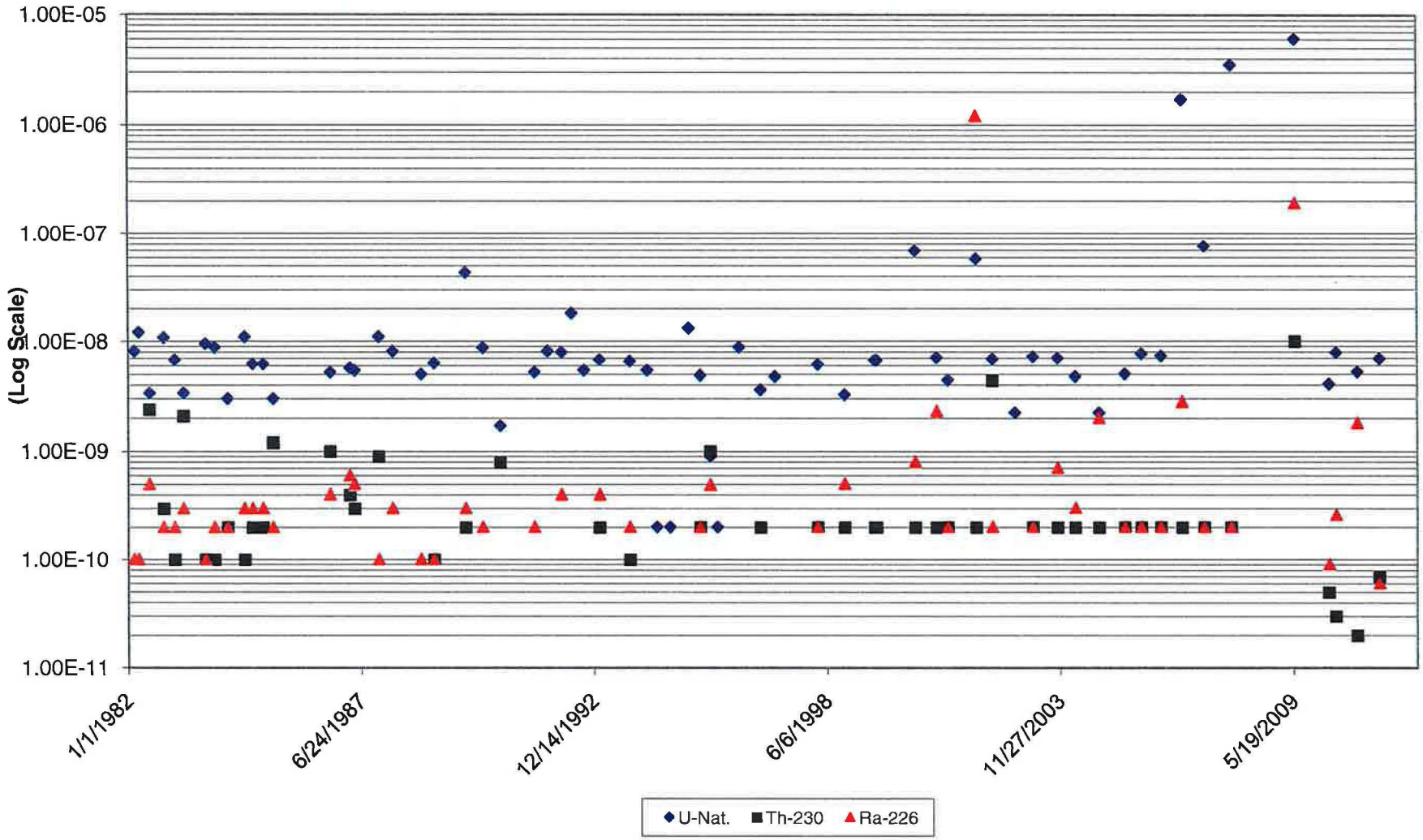
APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

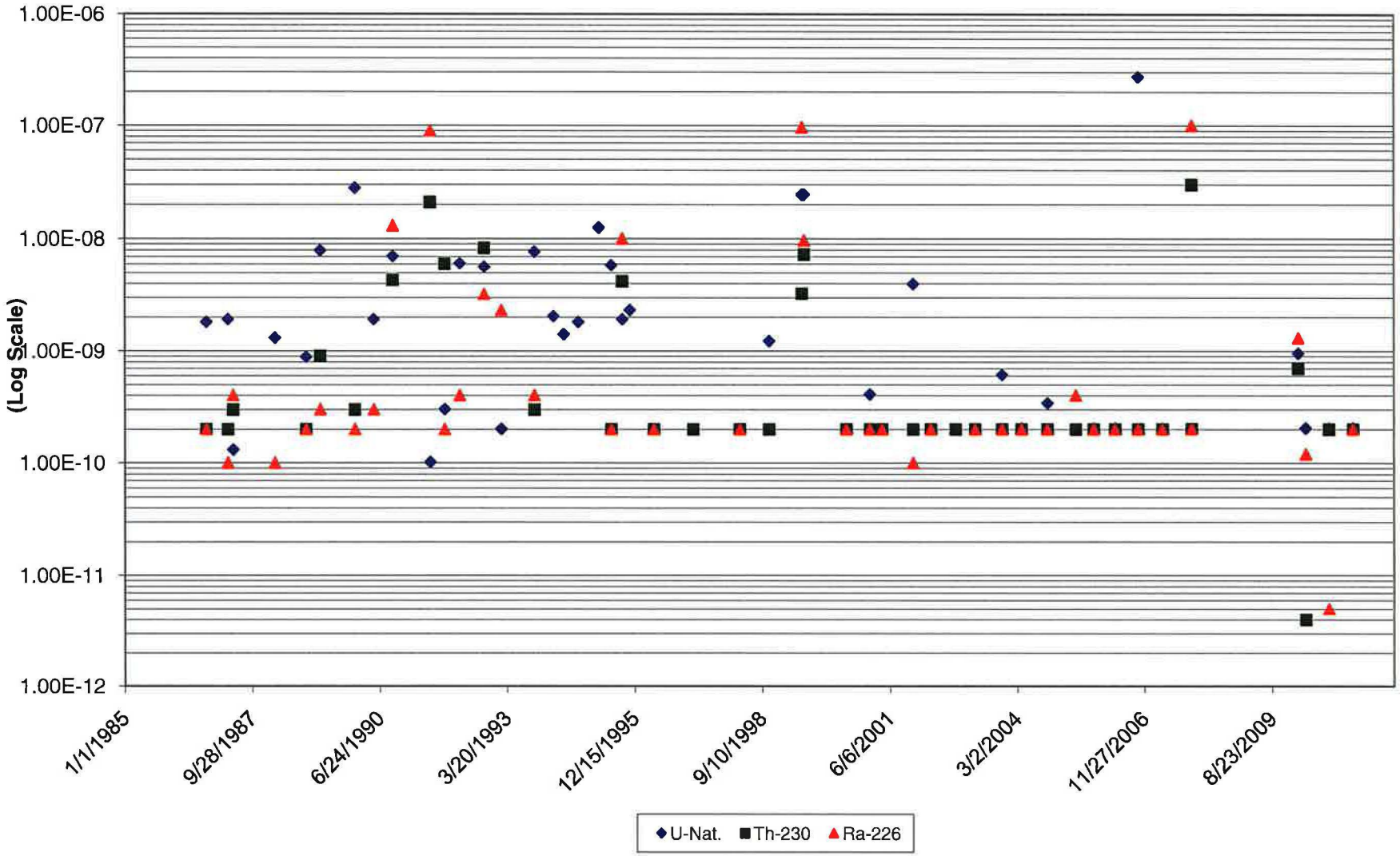
ATTACHMENT H

SURFACE WATER GRAPHS AND FIELD DATA SHEETS

Cottonwood Creek Dissolved Radionuclide Concentrations
(uCi/ml)



Cottonwood Creek Suspended Radionuclide Concentrations (uCi/ml)



ANALYTICAL SUMMARY REPORT

March 25, 2011

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

Workorder No.: C11030344

Project Name: 1st Quarter Surface Water 2011

Energy Laboratories, Inc. Casper WY received the following 2 samples for Denison Mines USA Corp on 3/11/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C11030344-001	Cottonwood	03/09/11 11:05	03/11/11	Aqueous	Solids, Total Dissolved Solids, Total Suspended
C11030344-002	Temp Blank	03/09/11 0:00	03/11/11	Aqueous	Temperature

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

Stephanie D Waldrop
Reporting Supervisor

Digitally signed by
Stephanie Waldrop
Date: 2011.03.25 10:04:52 -06:00

CLIENT: Denison Mines USA Corp
Project: 1st Quarter Surface Water 2011
Sample Delivery Group: C11030344

Report Date: 03/25/11

CASE NARRATIVE

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

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

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

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

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

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

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

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

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

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: Denison Mines USA Corp
Project: 1st Quarter Surface Water 2011
Lab ID: C11030344-001
Client Sample ID: Cottonwood

Report Date: 03/25/11
Collection Date: 03/09/11 11:05
DateReceived: 03/11/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	425	mg/L		10		A2540 C	03/11/11 15:45 / lr
Solids, Total Suspended TSS @ 105 C	7	mg/L		4		A2540 D	03/11/11 16:40 / lmc

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

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter Surface Water 2011
Lab ID: C11030344-002
Client Sample ID: Temp Blank

Report Date: 03/25/11
Collection Date: 03/09/11
DateReceived: 03/11/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Temperature	2.0	°C				E170.1	03/11/11 09:00 / kbh

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter Surface Water 2011

Report Date: 03/25/11
Work Order: C11030344

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: 110311_1_SLDS-TDS-W	
Sample ID: MBLK1_110311		Method Blank				Run: BAL-1_110311A			03/11/11 15:40	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	4						
Sample ID: LCS1_110311		Laboratory Control Sample				Run: BAL-1_110311A			03/11/11 15:40	
Solids, Total Dissolved TDS @ 180 C		984	mg/L	10	98	90	110			
Sample ID: C11030313-002AMS		Sample Matrix Spike				Run: BAL-1_110311A			03/11/11 15:44	
Solids, Total Dissolved TDS @ 180 C		2590	mg/L	10	102	90	110			
Sample ID: C11030344-001ADUP		Sample Duplicate				Run: BAL-1_110311A			03/11/11 15:46	
Solids, Total Dissolved TDS @ 180 C		410	mg/L	10				3.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: 1st Quarter Surface Water 2011

Report Date: 03/25/11
Work Order: C11030344

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D										Batch: R143577
Sample ID: MBLK1_		Method Blank				Run: BAL-1_110311B				03/11/11 16:40
Solids, Total Suspended TSS @ 105 C		ND	mg/L	6						
Sample ID: LCS1_		Laboratory Control Sample				Run: BAL-1_110311B				03/11/11 16:40
Solids, Total Suspended TSS @ 105 C		150	mg/L	12	75	60	110			
Sample ID: C11030372-003ADUP		Sample Duplicate				Run: BAL-1_110311B				03/11/11 16:42
Solids, Total Suspended TSS @ 105 C		ND	mg/L	4.0					10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

C11030344

Denison Mines USA Corp

Login completed by: Edith McPike

Reviewed by: BL2000\kschroeder

Reviewed Date: 3/15/2011

Date Received: 3/11/2011

Received by: ha

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on 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?	Yes ☑	No ☐	
Container/Temp Blank temperature:	2.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
Denison Mines	1ST Quarter Surface Water	State: UT	Yes ☑ No ☐
Report Mail Address: PO BOX 809 Blanding UT 84511	**Contact Name:** Ryan Palmer	**Phone/Fax:** 435 678 2221	**Email:**
			Sampler: (Please Print) Ryan Palmer
Invoice Address: Same	**Invoice Contact & Phone:** Same	**Purchase Order:**	**Quote/Bottle Order:**

Special Report/Formats:

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

ANALYSIS REQUESTED

Standard Turnaround (TAT) — RUSH

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

Comments:

Shipped by: Fed Ex
Cooler ID(s): Client
Receipt Temp 20 °C
On Ice: (Y) N
Custody Seal: On Bottle Y N; On Cooler (Y) N
Intact (Y) N
Signature Match (Y) N

#	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	TDS	TSS								SEE ATTACHED
1	Cottonwood	3-9-2011	1105	1-W	X	X								
2	~~Trip Blank~~ TBA													
3	Temp Blank													
4														
5														
6														
7														
8														
9														
10														

LABORATORY USE ONLY: 1103034

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Tanner Holliday	3-10-2011 1030	Tanner Holliday			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time: 3-11-11 900	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

June 23, 2011

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

Workorder No.: C11050696 Quote ID: C1640 - POC Wells

Project Name: Semi-Annual Surface Water 2011

Energy Laboratories, Inc. Casper WY received the following 2 samples for Denison Mines USA Corp on 5/20/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C11050696-001	Cottonwood Creek	05/18/11 8:30	05/20/11	Aqueous	Metals by ICP/ICPMS, Dissolved Sample Filtering Uranium, Suspended Digestion, Total Metals Gross Alpha minus Rn222 and Uranium Radium 226, Dissolved Radium 226, Suspended Thorium, Isotopic Thorium, Suspended Isotopic Solids, Total Dissolved Solids, Total Suspended
C11050696-002	Temp Blank	05/18/11 0:00	05/20/11	Aqueous	Temperature

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

Stephanie D Waldrop
Reporting Supervisor

Digitally signed by
Stephanie Waldrop
Date: 2011.06.23 14:38:43 -06:00

CLIENT: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011
Sample Delivery Group: C11050696

Report Date: 06/23/11

CASE NARRATIVE

TH230 ANALYSIS
USNRC Regulatory Guide 4.14 provides guidance on Minimum Detectable Concentrations (MDC) that should be achieved in samples for this radionuclide. The sample-specific MDC for this sample could not be achieved due to significant matrix interferences, restricting the volume of sample to be used in the analysis. Please consult with your local regulatory agency prior to using these results for compliance purposes.

RA226 ANALYSIS
USNRC Regulatory Guide 4.14 provides guidance on Minimum Detectable Concentrations (MDC) that should be achieved in samples for this radionuclide. The sample-specific MDC for this sample could not be achieved due to significant matrix interferences, restricting the volume of sample to be used in the analysis. Please consult with your local regulatory agency prior to using these results for compliance purposes.

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

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

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

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

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

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

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

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

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

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: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011
Lab ID: C11050696-001
Client Sample ID: Cottonwood Creek

Report Date: 06/23/11
Collection Date: 05/18/11 08:30
DateReceived: 05/20/11
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	463	mg/L		10		A2540 C	05/20/11 14:19 / lmc
Solids, Total Suspended TSS @ 105 C	ND	mg/L	D	6		A2540 D	05/20/11 15:00 / lmc
METALS - DISSOLVED							
Uranium	10.2	ug/L		0.3		E200.8	06/22/11 13:02 / sml
METALS - SUSPENDED							
Uranium	ND	ug/L		0.30		E200.8	05/31/11 18:21 / sml
RADIONUCLIDES - DISSOLVED							
Gross Alpha minus Rn & U	0.2	pCi/L	U			E900.1	06/16/11 11:13 / ep
Gross Alpha minus Rn & U Precision (±)	0.2	pCi/L				E900.1	06/16/11 11:13 / ep
Gross Alpha minus Rn & U MDC	0.3	pCi/L				E900.1	06/16/11 11:13 / ep
Radium 226	0.06	pCi/L	U			E903.0	05/31/11 12:05 / trs
Radium 226 precision (±)	0.13	pCi/L				E903.0	05/31/11 12:05 / trs
Radium 226 MDC	0.21	pCi/L				E903.0	05/31/11 12:05 / trs
Thorium 230	0.07	pCi/L	U			E908.0	06/14/11 08:49 / dmf
Thorium 230 precision (±)	0.1	pCi/L				E908.0	06/14/11 08:49 / dmf
Thorium 230 MDC	0.2	pCi/L				E908.0	06/14/11 08:49 / dmf
RADIONUCLIDES - SUSPENDED							
Radium 226	-0.2	pCi/L	U			E903.0	05/31/11 17:25 / trs
Radium 226 precision (±)	0.18	pCi/L				E903.0	05/31/11 17:25 / trs
Radium 226 MDC	0.45	pCi/L				E903.0	05/31/11 17:25 / trs
Thorium 230	0.2	pCi/L	U			E908.0	06/09/11 11:02 / dmf
Thorium 230 precision (±)	0.2	pCi/L				E908.0	06/09/11 11:02 / dmf
Thorium 230 MDC	0.3	pCi/L				E908.0	06/09/11 11:02 / dmf

- See Case Narrative regarding Ra226 analysis.
- See Case Narrative regarding Th230 analysis.

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011
Lab ID: C11050696-002
Client Sample ID: Temp Blank

Report Date: 06/23/11
Collection Date: 05/18/11
DateReceived: 05/20/11
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Temperature	4.0	°C				E170.1	05/20/11 08:50 / kbh

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011

Report Date: 06/23/11
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: R146206
Sample ID: MBLK1_		Method Blank				Run: BAL-1_110520B				05/20/11 14:14
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	4						
Sample ID: LCS1_		Laboratory Control Sample				Run: BAL-1_110520B				05/20/11 14:14
Solids, Total Dissolved TDS @ 180 C		1010	mg/L	10	101	90	110			
Sample ID: C11050660-002ADUP		Sample Duplicate				Run: BAL-1_110520B				05/20/11 14:12
Solids, Total Dissolved TDS @ 180 C		1750	mg/L	10				0.1	10	
Sample ID: C11050712-001BMS		Sample Matrix Spike				Run: BAL-1_110520B				05/20/11 14:22
Solids, Total Dissolved TDS @ 180 C		2430	mg/L	10	100	90	110			

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: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011

Report Date: 06/23/11
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D										Batch: R146133
Sample ID: MBLK1_		Method Blank				Run: BAL-1_110520A				05/20/11 14:59
Solids, Total Suspended TSS @ 105 C		ND	mg/L	2						
Sample ID: LCS1_		Laboratory Control Sample				Run: BAL-1_110520A				05/20/11 14:59
Solids, Total Suspended TSS @ 105 C		144	mg/L	12	72	60	110			
Sample ID: C11050687-001ADUP		Sample Duplicate				Run: BAL-1_110520A				05/20/11 15:00
Solids, Total Suspended TSS @ 105 C		184	mg/L	24				0.0	10	

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: Denison Mines USA Corp
Project: Semi-Annual Surface Water 2011

Report Date: 06/23/11
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R147252
Sample ID: LRB		Method Blank				Run: ICPMS2-C_110622A				06/22/11 11:41
Uranium		5E-05	mg/L	1E-05						
Sample ID: LFB		Laboratory Fortified Blank				Run: ICPMS2-C_110622A				06/22/11 11:44
Uranium		0.0524	mg/L	0.00030	105	85	115			
Sample ID: C11050696-001BMS4		Sample Matrix Spike				Run: ICPMS2-C_110622A				06/22/11 13:05
Uranium		0.0636	mg/L	0.00030	107	70	130			
Sample ID: C11050696-001BMSD		Sample Matrix Spike Duplicate				Run: ICPMS2-C_110622A				06/22/11 13:07
Uranium		0.0701	mg/L	0.00030	120	70	130	9.7	20	
Method: E200.8										Batch: 29928
Sample ID: MB-29928		Method Blank				Run: ICPMS4-C_110531A				05/31/11 18:16
Uranium		ND	mg/L	7E-05						
Sample ID: LCS2-29928		Laboratory Control Sample				Run: ICPMS4-C_110531A				05/31/11 18:18
Uranium		0.102	mg/L	0.00030	102	85	115			
Sample ID: C11050675-001HMS		Sample Matrix Spike				Run: ICPMS4-C_110531A				05/31/11 18:29
Uranium		0.00500	mg/L	0.00030	105	70	130			
Sample ID: C11050675-001HMSD		Sample Matrix Spike Duplicate				Run: ICPMS4-C_110531A				05/31/11 18:30
Uranium		0.00514	mg/L	0.00030	109	70	130	2.9	20	

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: Denison Mines USA Corp
Report Date: 06/23/11
Project: Semi-Annual Surface Water 2011
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-0440
Sample ID: MB-GA-0440	3	Method Blank				Run: G542M_110613A				06/15/11 16:01
Gross Alpha minus Rn & U		0.1	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.5	pCi/L							
Gross Alpha minus Rn & U MDC		0.8	pCi/L							
Sample ID: LCS-GA-0440		Laboratory Control Sample				Run: G542M_110613A				06/15/11 16:01
Gross Alpha minus Rn & U		22.6	pCi/L		106	70	130			
Sample ID: C11050582-010CMS		Sample Matrix Spike				Run: G542M_110613A				06/16/11 11:13
Gross Alpha minus Rn & U		44.8	pCi/L		95	70	130			
Sample ID: C11050582-010CMSD		Sample Matrix Spike Duplicate				Run: G542M_110613A				06/16/11 11:13
Gross Alpha minus Rn & U		44.3	pCi/L		94	70	130	1.1	26	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Denison Mines USA Corp
Report Date: 06/23/11
Project: Semi-Annual Surface Water 2011
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-5375
Sample ID: C11050640-003EMS		Sample Matrix Spike				Run: BERTHOLD 770-1_110520A			05/31/11 10:32	
Radium 226		13	pCi/L		103	70	130			
Sample ID: C11050640-003EMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-1_110520A			05/31/11 10:32	
Radium 226		13	pCi/L		106	70	130	3.1	24.6	
Sample ID: MB-RA226-5375	3	Method Blank				Run: BERTHOLD 770-1_110520A			05/31/11 12:05	
Radium 226		-0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Sample ID: LCS-RA226-5375		Laboratory Control Sample				Run: BERTHOLD 770-1_110520A			05/31/11 12:05	
Radium 226		7.5	pCi/L		119	85	115			S
- LCS response is outside of the acceptance range for this analysis. Since the MB, MS, and MSD are acceptable the batch is approved.										
Method: E903.0										Batch: RA226-5384
Sample ID: C11050675-001HDUP	3	Sample Duplicate				Run: BERTHOLD 770-2_110525A			05/31/11 17:25	
Radium 226		-0.041	pCi/L					150	379.3	U
Radium 226 precision (±)		0.047	pCi/L							
Radium 226 MDC		0.11	pCi/L							
Sample ID: C11050696-001DMS		Sample Matrix Spike				Run: BERTHOLD 770-2_110525A			05/31/11 17:25	
Radium 226		20	pCi/L		98	70	130			
Sample ID: LCS-29928		Laboratory Control Sample				Run: BERTHOLD 770-2_110525A			05/31/11 17:25	
Radium 226		12	pCi/L		102	85	115			
Sample ID: MB-29928	3	Method Blank				Run: BERTHOLD 770-2_110525A			05/31/11 17:25	
Radium 226		-0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.3	pCi/L							

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: Denison Mines USA Corp
Report Date: 06/23/11
Project: Semi-Annual Surface Water 2011
Work Order: C11050696

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 29928
Sample ID: C11050675-002HMS		Sample Matrix Spike				Run: EGG-ORTEC_110607A				06/09/11 11:02
Thorium 230		7.9	pCi/L		91	70	130			
Sample ID: C11050675-002HMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_110607A				06/09/11 11:02
Thorium 230		8.5	pCi/L		100	70	130	7.9	37.7	
Sample ID: LCS-29928		Laboratory Control Sample				Run: EGG-ORTEC_110607A				06/09/11 11:02
Thorium 230		8.5	pCi/L		87	70	130			
Sample ID: MB-29928	3	Method Blank				Run: EGG-ORTEC_110607A				06/09/11 11:02
Thorium 230		0.04	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-1403
Sample ID: LCS-RA-TH-ISO-1403		Laboratory Control Sample				Run: EGG-ORTEC_110610A				06/14/11 08:49
Thorium 230		6.0	pCi/L		102	70	130			
Sample ID: C11060153-012DMS		Sample Matrix Spike				Run: EGG-ORTEC_110610A				06/14/11 13:20
Thorium 230		12	pCi/L		94	70	130			
Sample ID: C11060153-012DMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_110610A				06/14/11 13:20
Thorium 230		15	pCi/L		115	70	130	19	38.9	
Sample ID: MB-RA-TH-ISO-1403	3	Method Blank				Run: EGG-ORTEC_110610A				06/14/11 13:20
Thorium 230		-0.02	pCi/L							U
Thorium 230 precision (±)		0.09	pCi/L							
Thorium 230 MDC		0.2	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

Workorder Receipt Checklist

Denison Mines USA Corp

C11050696

Login completed by: Edith McPike
Reviewed by: BL2000\kschroeder
Reviewed Date: 5/20/2011

Date Received: 5/20/2011
Received by: em
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on 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?	Yes ☑	No ☐	
Container/Temp Blank temperature:	4.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Sample split, filtered, and preserved as necessary for dissolved and suspended analysis.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
Denison Mines	Semi Annual Surface Water 2011	State: UT	Yes ☑ No ☐
Report Mail Address: PO BOX 809 Blanding UT 84511	Contact Name: Ryan Palmer Phone/Fax: 435 678 2221	Email:	Sampler: (Please Print) Tanner Holliday
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order:

Special Report/Formats:

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

ANALYSIS REQUESTED

Standard Turnaround (TAT) → RUSH

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

Comments:

Shipped by: FedEx
Cooler ID(s): Client
Receipt Temp: 4 °C
On Ice: (Y) N
Custody Seal: On Bottle (Y) N; On Cooler Y N; Intact Y N; Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	TDS	TSS	Gross Alpha	Suspended/dissolved U-NAT	Sus/diss Ra 226	Sus/diss TH 230				SEE ATTACHED
1	Cottonwood Creek	5/18/11	0830	1-W	x	x	x	x	x	x				
2	Temp Blank													
3														
4														
5														
6														
7														
8														
9														
10														

LABORATORY USE ONLY 1105069

Custody Record MUST be Signed

Relinquished by (print): Tanner Holliday Date/Time: 5/19/2011 1030 Signature: Tanner Holliday
Relinquished by (print): Date/Time: Signature:
Received by (print): Date/Time: Signature:
Received by (print): Date/Time: Signature:
Received by Laboratory: L. McAfee Date/Time: 5/20/11 9:50 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ATTACHMENT I

SOIL SAMPLE GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC

Soil samples are collected during the third quarter. This Attachment has been deliberately left blank.