

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

Batch No. 8909S076 - E0709 Site Area 2 - 881 Hillside
 Laboratory TMA/Eberline No. of Samples/Matrix 4/Water
 Reviewer Org. TechLaw, Inc.
 Sample Numbers SW045006, SW046006, SW044006, SW036006

Alpha Spectrometric Analyses
Data Assessment Summary

	Iso-U	Iso-Pu	Am ²⁴¹	Comments
1. Holding Times	<u>V</u>	<u>V</u>	<u>V</u>	
2. Initial Calibrations	<u>V</u>	<u>V</u>	<u>V</u>	
3. Blanks	<u>V</u>	<u>V</u>	<u>A</u>	<u>See Action Item 1</u>
4. Lab Replicates	<u>V</u>	<u>V</u>	<u>A</u>	<u>See Action Item 2</u>
5. Lab Control Samples	<u>V</u>	<u>V</u>	<u>V</u>	
6. Resolution	<u>V</u>	<u>V</u>	<u>V</u>	
7. Recovery Factors	<u>V</u>	<u>V</u>	<u>R</u>	<u>See Action Item 3</u>
8. Sample Calculations	<u>V</u>	<u>V</u>	<u>V</u>	<u>See Comment 1</u>
9. Overall Assessment	<u>V</u>	<u>V</u>	<u>R</u>	

V = Data had no problems.
 A = Data acceptable but qualified due to problems.
 R = Data rejected.
 X = Problems, but do not affect data.

Data Quality: Data for iso-Uranium and iso-Plutonium analyses in this batch were reviewed and found to be valid. Data for Americium analysis in this batch were reviewed and found to be rejected. See Action Items and Comments listed below.

"REVIEWED FOR CLASSIFICATION"
 By R. B. Hoffman
 Date 7-11-90

ADMIN RECORD
 REVIEWED FOR CLASSIFICATION/UCNL
 By George H. Sotnick
 Date 6/27/90

Action Items: 1) Blanks: One out of two Americium reagent blanks had a value of .08 pCi/L which exceeded the Minimum Detectable Activity (MDA) of .02 pCi/L; thus all results were flagged JA (estimated).

2) Lab Replicates: One out of two sets of Americium replicates contained a value of 0.52 pCi/L which was outside 3 σ control limits of the weighted mean of 0.22 pCi/L; thus all results were flagged JA (estimated).

3) Chemical Recoveries: The chemical recovery obtained for Americium analysis of the samples in this batch were as follows: SW045006 was 3.4%; SW046006 was 3.2%; SW044006 was 5.9%; and SW036006 was 6.1%; thus all results were flagged R (rejected).

Comments: 1) Sample Calculations: An error was found in the reported result for iso-Uranium analysis of samples SW045006 and SW044006. The correct results are as follows: U²³⁸ for sample SW045006 was 4.4 +/- 1.2 pCi/L; and U²³⁴ for sample SW044006 was 4.7 +/- 1.4 pCi/L.

Note: Data Summary Tables are attached.

Richard Thurman
Reviewer Signature

4/16/90
Date

**Radiochemical Data Completeness
Checklist for Alpha Spectrometric Analyses
of Soil and Water**

- A. Yes Case Narrative
Yes Abnormalities explained
Yes Matrix Problems explained
Yes Instrument problems explained
Yes Improper collection, storage, preservation, container explained
Yes Hold times were met, explained if not met
- B. Yes Efficiency, Background, and Calibrations Data Package
Yes ID of each Detector
Yes Dates of last efficiency check including: spectra and/or channel by channel printout, certificates and DPMs of check sources; counts obtained; count durations; and channels selected for ROIs
Yes Proper channel numbers of isotopes of interest, based on calibration data of Pu, Am, and U standards
Yes Total memory (channels per detector)
Yes Energy range of the alpha detection system (KeV)
Yes Gain (KeV/channel) of the alpha detection system
Yes Dates of last background spectra including: spectra and/or channel by channel printout; count durations; counts obtained; and channels selected for ROIs
- C. Yes Reagent Blanks Data Package
Yes ID of each detector used
Yes Analyst initials
Yes Date reagent blanks were analyzed
Yes ID of samples analyzed with the reagent blanks
Yes Type of method blank used, MDA of method
Yes Volume of aliquot for reagent blanks
- D. Yes Replicate Sample Data Package
Yes ID of each detector used
Yes Analyst Initials
Yes Date sample and replicates were analyzed
Yes Sample IDs, values obtained for sample and replicates
Yes Count Durations of sample and replicates
Yes Volume of aliquot for sample and replicates
Yes Calculated uncertainties and MDAs
- E. Yes Lab Control Samples (LCSs) Data Package
Yes ID of each detector used
Yes Analyst initials
Yes Date LCSs were analyzed
Yes ID of LLCs and HLCSs
Yes Values obtained for LCSs with uncertainty and MDA
Yes True value of LCSs with uncertainty
Yes ID of samples analyzed with the LCSs

- F. Yes Resolution
Yes System gain (in KeV/Channel)
Yes FWHM (in channels)
Yes Counts in peak channel for HLCS
- G. Yes Internal Recovery Factors
Yes Efficiency factor provided for each detector used
Yes ID of each detector used
Yes Net counts obtained for each isotopic tracer used
Yes Count duration
Yes DPM value of each isotopic tracer
Yes Calculated Chemical Recovery
- H. Yes Sample Data Package
Yes Printed report of results for samples and reruns
Yes Computer calculations sheet including: sample IDs, detector IDs, isotopes of interest, counts obtained for samples, background counts obtained, isotopic tracer counts obtained, count durations, DPMs of tracer used, aliquots of sample and tracer, detector efficiency, chemical recovery, activities obtained for samples, uncertainties, and MDAs
- I. Yes Minimum Detectable Activity
Yes Background Measurements including: counts and count durations of samples and backgrounds taken during the same weekly time period
Yes Date of analysis
Yes Background CPM
Yes MDA calculated for each isotopic analysis for the sample

**RADIOCHEMICAL ANALYSIS
ANALYTICAL RESULTS (pCi/L)**

TABLE #: 8909S076 - E0709
SITE NAME: Area 2 - 881 Hillside

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Sample Location	Sample Number	Sample Date	Matrix	DL	DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ
	SW045006	9/22/89	Water														
	SW046006	9/22/89	Water														
	SW044006	9/22/89	Water														
	SW036006	9/22/89	Water														
Parameter	DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	
Gross Alpha	2																
Gross Beta	4																
Total Strontium	1																
Total Cesium	1																
Radium 228	1																
Tritium	400																
Uranium 234 & 235	0.6	4.8	1.2	V	5.5	1.4	V	4.7	1.4	V	8.0	1.6	V				
Uranium 235	0.6	0.1 U	0.4	V	0.3	0.3	V	.1 U	0.3	V	0.6	0.5	V				
Uranium 238	0.6	4.4	1.2	V	3.2	1.1	V	4.2	1.3	V	27	2.9	V				
Plutonium 239 & 240	0.01	.01 U	.01	V	.01	.01	V	0.0 U	.01	V	.01	.01	V				
Americium 241 & 242	0.01	.20	.07	R	.04	.05	R	.30	.06	R	.15	.04	R				
Radium 226	0.05																
Gamma scan																	
Other Isotopes																	

U Indicates the parameter was not detected above the Instrument Quantitation Limit
 J Quantitation is approximate due to limitations identified during the quality control review
 * Value is rejected due to other contractual criteria examined during the quality control review
 ** Value is rejected due to blank contamination identified during the quality control review
 DL Detection Limit in Picocuries per Liter (pCi/L)

DQ Data Qualifier
 V Valid
 A Acceptable with qualifications
 R Rejected

aspoc709/Lrk49

**EG&G ER Program
Rocky Flats Plant**