

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

Batch No. 8909S083 - E0734 Site Area 2 - Hillside
 Laboratory TMA/Eberline No. of Samples/Matrix 6/Water
 Reviewer Org. TechLaw, Inc.
 Sample Numbers SW070006, SW069006, SW068006, SW067006, SW066006, SW031006

Data Assessment Summary

Radiometric Analysis
by Gas Proportional Counters
Includes: Total Sr, Total Cs, Ra²²⁸

	Sr	Cs	Ra ²²⁸	Comments
1. Holding Times	<u>V</u>	<u>V</u>	<u>N/A</u>	
2. Initial Calibrations	<u>V</u>	<u>V</u>	<u>N/A</u>	
3. Continuing Calibrations	<u>V</u>	<u>V</u>	<u>N/A</u>	
4. Blanks	<u>V</u>	<u>V</u>	<u>N/A</u>	
5. Lab Replicates	<u>V</u>	<u>V</u>	<u>N/A</u>	
6. Lab Control Samples	<u>V</u>	<u>A</u>	<u>N/A</u>	<u>See Action Item 1.</u>
7. Size of Aliquot	<u>V</u>	<u>V</u>	<u>N/A</u>	
8. Self Absorption-Recovery Factors	<u>R</u>	<u>V</u>	<u>N/A</u>	<u>See Action Item 2; Comment 1.</u>
9. Sample Calculations	<u>V</u>	<u>V</u>	<u>N/A</u>	
10. Overall Assessment	<u>R</u>	<u>A</u>	<u>N/A</u>	

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

Data Quality: Data for total Strontium in the above batch were reviewed and found to be rejected. Data for total Cesium analysis were reviewed and found to be acceptable but qualified due to problems. Acceptable, qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged. (Refer to attached Summary Table)

ADMIN RECORD

REVIEWED FOR CLASSIFICATION/UCNI
 By George H. Sitlock
 Date 6/27/90

"REVIEWED FOR CLASSIFICATION"

1 By R. B. Hoffman

Date 7-1-90

e0734/tri A-DU01-000057

Action Items: 1) Lab Control Samples: The total Cesium results for one of two Lab Control Samples (LCS) fell outside 3 σ . The Cesium results were flagged JA (estimated, acceptable).

2) Self Absorption-Recovery Factors: The chemical recovery for five of the Strontium samples was greater than 110%. The samples affected with respective percent chemical recovery were: SW070006, 150%; SW069006, 160%; SW068006, 140%; SW067006, 120%; SW031006, 150%. The results for these samples were flagged R (rejected).

Comments: 1) Self Absorption-Recovery Factors: The chemical recovery for one of two reagent blanks was 25%.

Note: Data Summary Tables are attached.

Marilyn Ayers
Reviewer Signature

3-22-90
Date

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

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SITE NAME: Area 2 - Hillside

Sample Location	SW070006		SW069006		SW068006		SW067006		SW066006		SW031006		Reagent Blank	
	9/26/89	Water	Reagent Blank	Water										
DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-
Parameter														
Gross Alpha	2													
Gross Beta	4													
Total Strontium	1	.3U	R	.3	.3	R	.1U	.3	R	.1U	.3	R	.4	.3
Total Cesium	1	-.5UJ	A	.7	.7	A	-1UJ	.6	A	-4UJ	.7	A	-.4J	.7
Radium 228	1													
Radium 226	1													
Uranium 234 & 235	400													
Uranium 238	0.6													
Plutonium 239 & 240	0.6													
Americium 241 & 242	0.01													
Radium 226	0.01													
Gamma scan	0.05													
Other Isotopes														

DQ Data Qualifier
V Valid
A Acceptable with qualifications
R Rejected
e0734/rk43

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)

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

**Radiochemical Data Completeness
Checklist for Radiometric Analyses
of Total Sr, Total Cs and Ra²²⁸
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 Initial and Continuing Calibration Data Package
 Yes ID of each detector
 Yes Dates of last self-absorption curve for Sr, Cs and/or Actinium²²⁸
 (or comparable beta energy nuclide like Sr⁸⁹) including: counter
 printouts, reference material certificates, DPMs and carrier weights
 added to the planchet, count duration, and calculations used to
 determine the efficiency
 Yes Dates of the last calibration using a check source including:
 counter printouts, reference material certificates, DPMs
 and count durations
 Yes Dates of last background measurements including:
 counter printouts, count durations, counts obtained
- C. Yes Blanks Data Package
 Yes ID number of each detector blank is counted in
 Yes Analyst initials
 Yes Date, Times of counts
 Yes Number and ID of samples included with the blank
 Yes Type of method blank used, MDA of method
- D. Yes Replicate Sample Data Package
 Yes Detector ID
 Yes Analyst Initials
 Yes Date, Time Analyzed
 Yes Value obtained for sample, replicates, mean values
 Yes Count Durations of samples and backgrounds
 Yes Statistical Analysis of Range, Control Limits
- E. Yes Lab Control Samples Data Package
 Yes Sample ID, Detector ID
 Yes Analyst initials
 Yes Values obtained, true value of sample
 Yes Statistical Analysis of Results

- F. Yes Minimum Detectable Activity
Yes Background Measurements
Yes Detector ID
Yes Date and time of count, counting duration
Yes Mean background CPM over long period
Yes Calculated MDA for isotope of interest
- G. Yes Recovery Factors
Yes Amount of standardized Sr and Cs carrier added to each sample
Yes Information to monitor the chemical yield of Ac²²⁸
- H. Yes Sample Data Package
Yes Printed report of results for sample and reruns
Yes Computer calculations sheet including: Sample IDs, isotopes of interest, counts obtained for samples, background counts obtained, amount of carrier added, sample aliquot, weight counted, collection date, precipitation date for Sr, count date, count duration, background CPMs, detector efficiency, chemical recovery, Y-90 ingrowth factor for Sr, Ac²²⁸ ingrowth factors, and activities obtained for samples, uncertainties, and MDAs