



**Rocky Flats Environmental Technology Site**

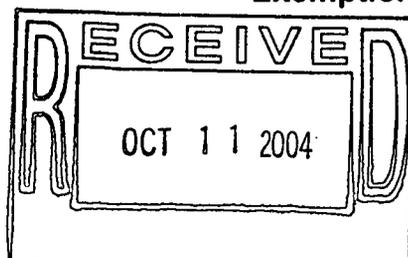
**PRE-DEMOLITION SURVEY REPORT (PDSR)**

**BUILDING 718**

**REVISION 0**

**September 23, 2004**

**Classification Review not required per  
Exemption number CEX-005-02**



**ADMIN RECORD**

**B707-A-000119**

1/26

**PRE-DEMOLITION SURVEY REPORT (PDSR)**

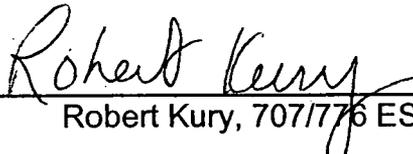
**BUILDING 718**

**REVISION 0**

**September 23, 2004**

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## ATTACHMENTS

- A Survey Unit Overview Map
- B Survey Unit 707004 Radiological Data Summary and Survey Maps
- C Chemical Data Summaries and Sample Maps
- D Data Quality Assessment Details

## ABBREVIATIONS/ACRONYMS

ACM	Asbestos Containing Material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
DCGL <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>LW</sub>	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
PDSR	Pre-demolition survey report
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFPO	Rocky Flats Project Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable Surface Activity
RSOP	RFCA Standard Operating Protocol
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds
WSRIC	Waste Stream and Residue Identification and Characterization

## EXECUTIVE SUMMARY

A Pre-Demolition Survey was performed to define the final radiological and chemical condition of Building 718 in accordance with decommissioning objectives. This building will be surveyed and released under this PDSR. Because B718 is classified as a type 2 structure and will be demolished, the characterization was performed on the interior and exterior surfaces in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Environmental media beneath and surrounding this structure is not within the scope of this PDS and will be addressed by Environmental Restoration.

The PDS encompassed both chemical and radiological characterization. The characterization was based on physical, chemical and radiological hazards identified in the facility-specific *Building 707 Closure Project Decommissioning Operations Plan and the associated Reconnaissance Level Characterization Report*.

Based upon the results of this PDSR, B718 meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan. With CDPHE concurrence, B718 will be demolished and managed as sanitary waste. Under-slab utilities and piping systems shall be managed as radioactive waste, unless additional data collected prior to waste disposition proves otherwise. To ensure that the facility remains below the release levels and PDS data remain valid, Level 2 isolation controls have been established, and the area posted accordingly.

## 1 INTRODUCTION

A pre-demolition survey was performed to define the final radiological and chemical condition of the facility. Building 718 was categorized as a Type 2 facility based on the reconnaissance level characterization surveys performed. Because this structure will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). The results of this survey demonstrate that B718 meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan prior to demolition. Environmental media beneath and surrounding this area was not within the scope of this PDS and will be addressed by Environmental Restoration.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. B718 no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before this structure can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied. This document presents the PDS results of B718. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP).

### 1.1 Purpose

The purpose of this report is to communicate and document the results of the B718 PDS effort. A PDS is performed prior to building demolition to define the pre-demolition radiological and chemical conditions of a facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

### 1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of B718. Environmental media beneath and surrounding the facilities are not within the scope of this PDSR and will be addressed in accordance with the ER RSOP and in compliance with RFCA.

### 1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this PDS were the same DQOs identified in the Section 2.0 of the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to section 2.0 of MAN-127-PDSP for these DQOs.

## 2 HISTORICAL SITE ASSESSMENT

A facility-specific Hazards Characterization Report was conducted to understand the facility history and related hazards. B718 was an auxiliary shed, containing the B711 plenum deluge system. Reconnaissance level characterization surveys were performed on this structure. An issue with naturally occurring radionuclides (Po-210) was discussed in the RLCR. Media samples were obtained on B718 and confirm the existence of Po-210, and the absence of DOE added material above the DOE 5400.5 release criteria.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

B718 was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern (weapons-grade plutonium isotopes). Based upon, historical and process knowledge, in-

process survey data, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan in the form of one (1) survey package was developed during the planning phase that describes the minimum survey requirements (refer to survey package 707004 for the interior and exterior building surfaces). A Survey Unit Overview Map is presented in Attachment A.

Based on hazards characterization data and historical and process knowledge, as documented in Technical Basis Document 00168 "*Building 707/778 Technical Justification For Types of Radiological Surveys Performed*", transuranic isotopes are the primary contaminants of concern in the Building 707 Cluster. Therefore, the PDS was performed to the transuranic PDS unrestricted release criteria. Individual radiological survey unit packages are maintained in the Building 707/776/777 Characterization Project files.

The B718 survey unit package (707004) was developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), media samples, and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachments B, C, and D, *Radiological Data Summary and Survey Maps*.

#### **B718 (Survey Unit 707004)**

The interior and exterior surfaces of B718 were classified as a Class 3 survey unit. The classification was based on the minimal potential for contamination due to process history. No contamination in excess of the unrestricted release limits was anticipated. A total of 15 random TSA and RSA measurements for the survey unit were collected. Surface scan surveys of >5% of the accessible floor, wall, ceiling and roof surfaces were also performed.

TSA, RSA and scan surveys were performed. With the exception of the elevated activity resulting from Po-210, all TSA, RSA, and scan survey results in survey unit 707004 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 707004 are presented in Attachment B, C, and D.

## **4 CHEMICAL CHARACTERIZATION AND HAZARDS**

Based on a thorough review of historical and process knowledge, visual inspections, and personnel interviews, no additional chemical hazard sampling requirements were identified.

### **4.1 Asbestos**

No asbestos-containing materials are present in these areas. Asbestos abatement was successfully completed.

### **4.2 Beryllium (Be)**

B718 was not on the KH list of historical areas with potential beryllium contamination as referenced in the site Occupational Safety & Industrial Hygiene Program Manual, Chapter 28. Therefore, limited biased beryllium smear samples were collected in accordance with the *Beryllium Characterization Procedure*, PRO-536-BCPR, Revision 0, September 9, 1999. The samples were collected on horizontal surfaces from floor to ceiling. All samples were below the analytical detection limit of 0.1ug/100 cm<sup>2</sup>. PDS beryllium laboratory sample data and location maps are contained in Attachment C, *Chemical Data Summaries and Sample Maps*.

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### **4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]**

Based upon facility walkdowns and historical process knowledge (WSRIC/WEMS), Building 718 did not contain hazardous waste storage units. A visual inspection of the building by 707 Environmental Compliance personnel verified that all hazardous wastes and chemicals have been removed, including gas cylinders, light bulbs and tubes, capacitors, and cooling tower chemicals that were previously stored in the building. The structure is not painted so lead-based paint is not an issue. As a result of these observations it has been determined that no sampling for RCRA/CERCLA constituents is required.

### **4.4 Polychlorinated Biphenyls (PCBs)**

Based on historical knowledge, personnel interviews, and 707 Environmental Compliance Personnel walk-downs, B718 never used/transferred free flowing/exposed PCB's. At one time the facility contained PCB ballasts in the fluorescent light fixtures, however, all of these have been removed, resulting in no impact on demolition activities in B718.

### **4.4 Freon**

There were never any freon containing devices or equipment in B718.

### **4.5 Concrete**

The concrete generated from the demolition of B718 will not be used for onsite recycling in accordance with the Concrete Recycling RSOP.

### **4.6 Physical hazards**

Physical hazards associated with B718 consist of that common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls. There are no other unique hazards associated with the facility. The facility has been relatively well maintained and is in good physical condition, and therefore, does not present hazards associated with building deterioration.

Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

## **5 DATA QUALITY ASSESSMENT**

Data used in making management decisions for decommissioning of B718 and consequent waste management is of adequate quality to support the decisions documented in this report. The data presented in this report (Attachment B, C, and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ◆ the *number* of samples and surveys;
- ◆ the *types* of samples and surveys;
- ◆ the sampling/survey process as implemented "in the field"; and
- ◆ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are presented in Attachment D. The DQA Checklists are provided in the individual survey unit packages (located in the Building 707 Characterization Files).

The Minimum Detectable Activity (MDA) for each PDS instrument was determined *a priori* based on typical parameters (background, efficiency, and count time). A list of radiological field instrumentation and associated sensitivities is presented in Table 1.

**Table 1**  
**PDS Radiological Field Instrumentation**  
**& Minimum Detectable Activities**

Model	Measurement Type	MDA (dpm/100 cm <sup>2</sup> )
NE Electra DP6	TSA	48
NE Electra AP6	Scan	300
Eberline SAC-4	Removable (Smears)	10
Bartlett FSM	Scan	300

## 6 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of B718 will generate a variety of wastes. All waste identified previously can be disposed of as sanitary waste.

## 7 FACILITY CLASSIFICATION AND CONCLUSIONS

Based upon the results of this PDSR, B718 meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan and is ready for demolition. The PDS for B718 was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Environmental media beneath and surrounding the facilities will be addressed at a future date in accordance with the ER RSOP.

A facility walkdown and historical review indicates that no RCRA/CERCLA constituents exist on B718 structural surfaces by KH. Any potentially PCB-containing fluorescent light ballast and hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) were previously removed from the building, therefore, do not impact demolition activities.

Radiological contamination in excess of the PDSP Table 7-1 limits does not exist in B718.

Based upon this PDSR, B718 can be demolished, the debris managed as sanitary waste. Under-slab utilities and piping systems shall be managed as radioactive waste, unless additional data collected prior to waste disposition proves otherwise. To ensure that the facility remains below the release levels and that PDS data remain valid, Level 2 isolation controls have been established, and the area posted accordingly.

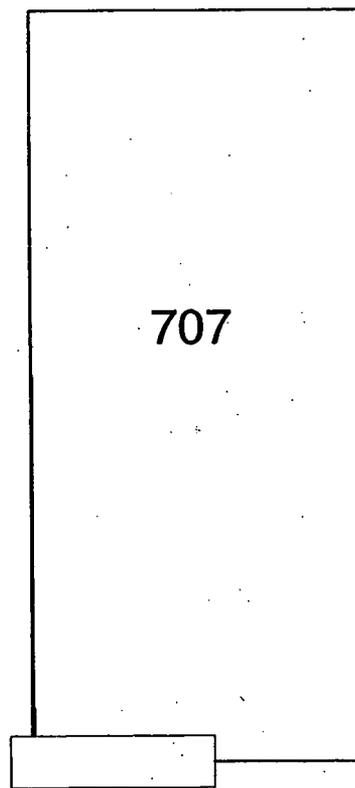
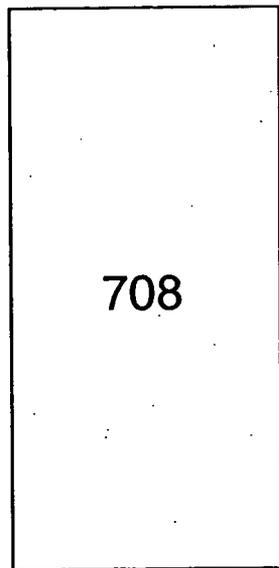
## 8 REFERENCES

- Building 707 Closure Project Decommissioning Operations Plan*, Revision 0, December 21, 2000
- DOE/RFFO, CDPHE, EPA, 1996. *Rocky Flats Cleanup Agreement (RFCA)*, July 19, 1996.
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*
- DOE Order 414.1A, *Quality Assurance*
- K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev. 4, July 15, 2002.
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.
- MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual* (NUREG-1575, EPA 402-R-97-016).
- PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev. 1, May 22, 2001.
- PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 2, March 10, 2003.
- PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.
- PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-563-ACPR, *Asbestos Characterization Procedure*, Revision 0, August 24, 1999.
- PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999.
- RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*.
- RFETS, RFCA RSOP for Recycling Concrete, September 28, 1999

ATTACHMENT A  
Survey Unit Overview Map

# 708/718 Overview

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ATTACHMENT B

Survey Unit 707004  
Radiological Data Summary and Survey Map

**RADIOLOGICAL CLOSEOUT SURVEY FOR THE 707 CLUSTER**

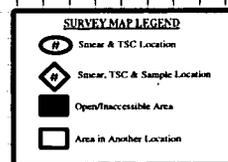
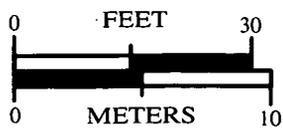
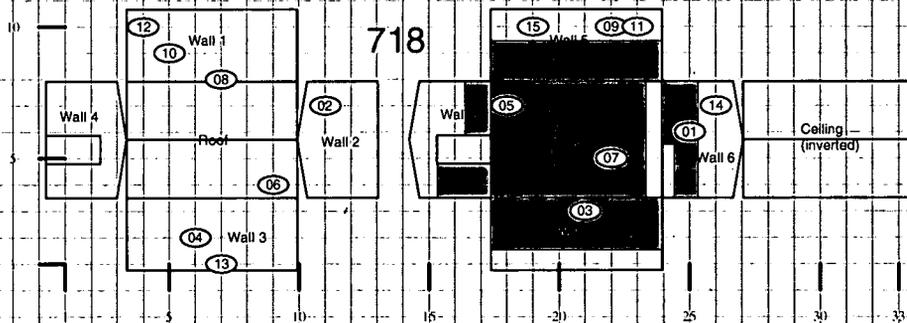
Survey Area: A      Survey Unit: 707004      Classification: 3

Building: 718

Survey Unit Description: Interior/Exterior

Total Floor Area: 29 sq. m      Total Area: 211 sq. m      Random Start Grid Size: N/A

**SURVEY UNIT 707004 - MAP 1 OF 1**



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Survey Area: A

Survey Unit: 707004

Building: 707

Description: B718 interior and exterior

## Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### Alpha

Maximum:	83.8 dpm/100cm <sup>2</sup>
Minimum:	-9.9 dpm/100cm <sup>2</sup>
Mean:	19.7 dpm/100cm <sup>2</sup>
Standard Deviation:	26.3
QC Maximum:	26.2 dpm/100cm <sup>2</sup>
QC Minimum:	26.2 dpm/100cm <sup>2</sup>
QC Mean:	26.2 dpm/100cm <sup>2</sup>
Transuranic DCGL <sub>w</sub> :	100.0 dpm/100cm <sup>2</sup>
Transuranic DCGL <sub>EMC</sub> :	300.0 dpm/100cm <sup>2</sup>

### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### Alpha

Maximum:	12.0 dpm/100cm <sup>2</sup>
Minimum:	0.0 dpm/100cm <sup>2</sup>
Mean:	3.0 dpm/100cm <sup>2</sup>
Standard Deviation:	3.9
Transuranic DCGL <sub>w</sub> :	20.0 dpm/100cm <sup>2</sup>

### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

*Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.*

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Survey Area: A

Survey Unit: 707004

Building: 707

Description: B718 interior and exterior

### Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm <sup>2</sup> )		Survey Type
							Alpha	Beta	Alpha	Beta	
1	513185	09/22/04	Electra	3972	DP-6	02/04/05	0.224	NA	48.0	NA	T
2	514510	09/22/04	Electra	1384	DP-6	01/16/05	0.216	NA	48.0	NA	Q
3	513185	09/22/04	SAC-4	1469	NA	11/27/04	0.333	NA	10.0	NA	R
4	510198	09/23/04	Electra	4413	DP-6	03/09/05	0.208	NA	48.0	NA	T/I

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: A

Survey Unit: 707004

Building: 707

Description: B718 interior and exterior

### Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm <sup>2</sup> )	Net Beta (dpm/100cm <sup>2</sup> )	
707004PRP-N001	3	0.0	N/A	
707004PRP-N002	3	1.5	N/A	
707004PRP-N003	3	12.0	N/A	
707004PRP-N004	3	0.0	N/A	
707004PRP-N005	3	1.5	N/A	
707004PRP-N006	3	4.5	N/A	
707004PRP-N007	3	9.0	N/A	
707004PRP-N008	3	0.0	N/A	
707004PRP-N009	3	1.5	N/A	
707004PRP-N010	3	0.0	N/A	
707004PRP-N011	3	3.0	N/A	
707004PRP-N012	3	0.0	N/A	
707004PRP-N013	3	0.0	N/A	
707004PRP-N014	3	3.0	N/A	
707004PRP-N015	3	9.0	N/A	

Comments:

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Survey Area: A

Survey Unit: 707004

Building: 707

Description: B718 interior and exterior

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm <sup>2</sup> )	Net Beta (dpm/100cm <sup>2</sup> )	
707004PRP-N001	1	13.7	N/A	
707004QRP-N001	2	26.2	N/A	
707004IRP-N002	4	30.3	N/A	
707004PRP-N003	1	-9.9	N/A	
707004PRP-N004	1	19.5	N/A	
707004PRP-N005	1	16.8	N/A	
707004QRP-N005	2	26.2	N/A	
707004PRP-N006	4	83.8	N/A	
707004PRP-N007	1	-1.0	N/A	
707004PRP-N008	1	1.7	N/A	
707004PRP-N009	1	1.7	N/A	
707004PRP-N010	1	58.4	N/A	
707004PRP-N011	1	7.9	N/A	
707004PRP-N012	1	55.2	N/A	
707004PRP-N013	1	1.7	N/A	
707004PRP-N014	1	7.9	N/A	
707004PRP-N015	1	7.9	N/A	

Comments: 29% of the total surface area was scanned. All values <300 dpm/100 cm<sup>2</sup>.

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ATTACHMENT C

Chemical Data Summaries and Sample Maps

# Industrial Hygiene Information System

## Surface Sample Report

IHSR\_SURFACE\_SAMPLE

Date: 09/15/2004

Page: 1 of 2

I: 04C0356

Sample Number/Type:	708-03192004-31-901	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY BELOW EM-5			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-902	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY TOP OF DIESEL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-903	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY TOP OF ELEC PANEL WEST WALL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-904	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY NW ROLLUP DOOR			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-905	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY TOP OF ELEC MOTOR 331-163-036			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-906	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY NORTH WALL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-907	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY WEST WALL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-908	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY EAST WALL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-909	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY SOUTH WALL			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-910	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY TOP OF PAD			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-911	WIPE	Hygienist:	DAVID FARLER
Location Info:	FINAL SURVEY CENTER OF ROOM			
Room No:	100			
	Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)		
	Concentration:	< 0.1000 _ UG/100CM2		
Sample Number/Type:	708-03192004-31-912	WIPE	Hygienist:	DAVID FARLER

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# Industrial Hygiene Information System

## Surface Sample Report

IHISR\_SURFACE\_SAMPLE

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: 04C0356

Sample Number/Type: 708-03192004-31-912 WIPE Hygienist: DAVID FARLER  
Location Info: FINAL SURVEY LEDGE NORTH WALL  
Room No: 100  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG/100CM2

Sample Number/Type: 708-03192004-31-913 WIPE Hygienist: DAVID FARLER  
Location Info: FINAL SURVEY TOP OF 6 " WATER LINE  
Room No: 100  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG/100CM2

Sample Number/Type: 708-03192004-31-914 WIPE Hygienist: DAVID FARLER  
Location Info: FINAL SURVEY UPPER LEDGE WEST WALL  
Room No: 100  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG/100CM2

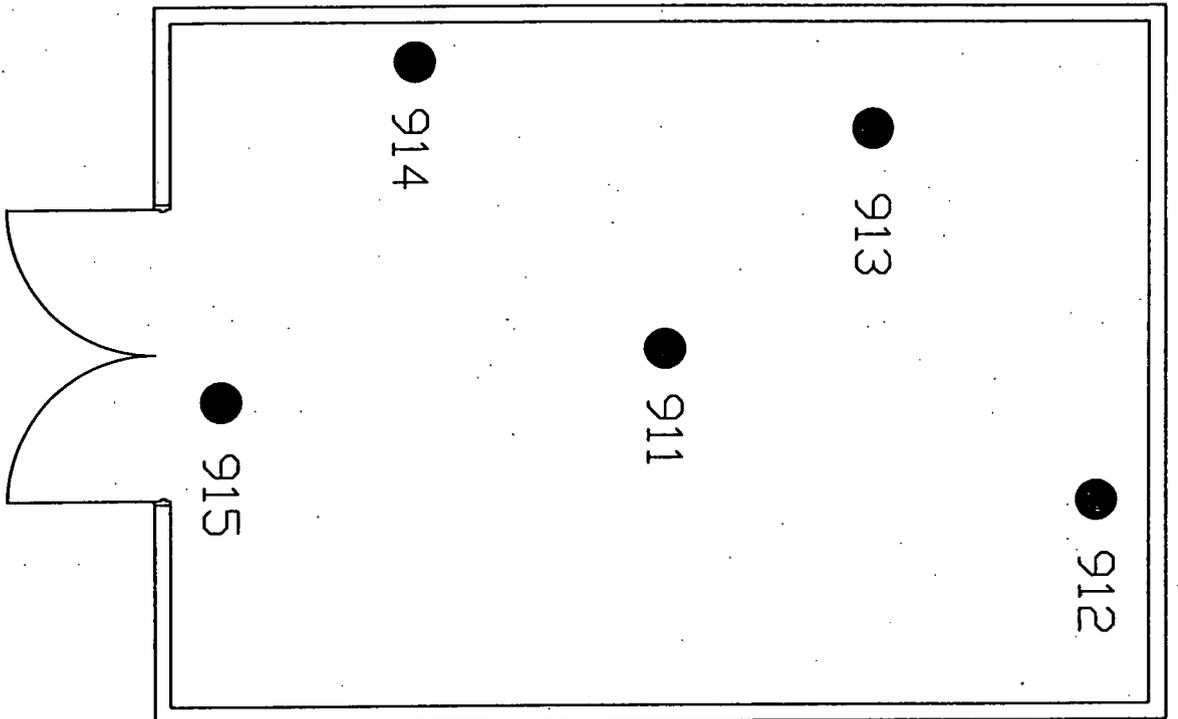
Sample Number/Type: 708-03192004-31-915 WIPE Hygienist: DAVID FARLER  
Location Info: FINAL SURVEY DOORWAY  
Room No: 100  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG/100CM2

Sample Number/Type: 708-03192004-31-916 BLANK Hygienist: DAVID FARLER  
Location Info:  
Room No:  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG

Sample Number/Type: 708-03192004-31-917 BLANK Hygienist: DAVID FARLER  
Location Info:  
Room No:  
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)  
Concentration: < 0.1000 \_ UG

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Approval by the Department of Energy prior to public release is required.



BLDG 718 FLOOR PLAN

Be sample point locations

● : Be sample point 708-03192004-31-XXX

ATTACHMENT D  
Data Quality Assessment

## DATA QUALITY ASSESSMENT (DQA)

### Verification & VALIDATION of Results

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. A Data Quality Checklist was completed as required in PRO-478-RSP-16.04 *Radiological Survey/Sample Data Quality Analysis For Final Status Survey*. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium).

DQA criteria and results are provided in a tabular format for each set of surveys or chemical analyses performed; the radiological survey assessment is provided in Table D-1, and the beryllium assessment in D-2. A data completeness summary for all results is given in Table D-3.

All relevant Quality records supporting this report are maintained in the B707 Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic DCGLw (100 dpm/100cm<sup>2</sup>).

### Summary

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties.

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels, except as noted above. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits.

**Table D-1 V&V of Radiological Surveys – B718**

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	Measure	Frequency	COMMENTS
ACCURACY	Initial calibrations	80%<x<120%	≥1	Calibration using Alpha Group procedure and approved technicians.
	Daily source checks	80%<x<120%	≥1/day	Performed daily/within range.
	Local area background: Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges
PRECISION	Field duplicate measurements for TSA	≥5% of real survey points	≥100% packages	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 707003	Statistical	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	Qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	Units of measure	dpm/100cm <sup>2</sup>	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys Usable results vs. unusable	>95% >95%	NA	See Table E-4 for details.
SENSITIVITY	Detection limits	TSA: ≤50 dpm/100cm <sup>2</sup> RA: ≤10 dpm/100cm <sup>2</sup>	all measures	MDAs ≤ ½ DCGL <sub>w</sub> per MARSSIM guidelines.

**Table D-2 V&V of Beryllium Results – B718**

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville Corp. Denver, Co.	
		RIN ---->	04C0356	
QUALITY REQUIREMENTS		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i.e., classification of Type 2 facilities confirmed. All results were below associated action levels.
		Continuing	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks – lab & field	<MDL	≥1	
	Interference check std (ICP)	NA	NA	
PRECISION	Laboratory Control Sample Duplicate	80%<%R<120% (RPD<20%)	≥1	
	Field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	Hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	Measurement units	ug/100cm <sup>2</sup>	NA	
COMPLETENESS	Plan vs. Actual samples Usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	Detection limits	MDL of 0.10ug/100cm <sup>2</sup>	All measures	

**Table D-3 Data Completeness Summary – B718**

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Survey Area: A Survey Unit: 707004 Interior and exterior	5 Random swipe samples on floor, walls, & components	5 Random swipe samples on floor, walls, & components	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 04C0356 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ). See attached map for sample locations.
Radiological	Survey Area: A Survey Unit: 707004 Interior and exterior	15 α TSA (15 – Random/Systematic) and 15α Smears (15 – Random/Systematic) 2 QC TSA 5% scan of all accessible surfaces	15 α RSA(15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 11.9% scan of all accessible surfaces	No elevated contamination at any location from DOE added nuclides; all values below PDS unrestricted release levels	Transuranic DCGLs  No results above action level

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