



Rocky Flats Environmental Technology Site

TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

BUILDING 906 CLOSURE PROJECT

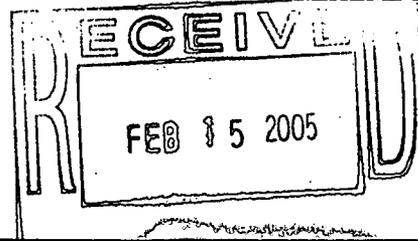
January 21, 2005

REVISION 0

Change Control:

Rev 1. Attachment A, 906 Overview Map revised with corrected map. Changed out 1/31/05.

CLASSIFICATION REVIEW NOT REQUIRED PER
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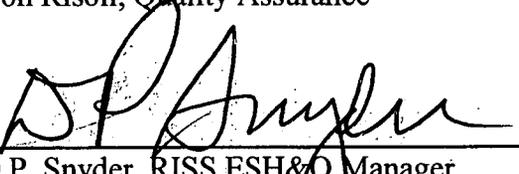
Reviewed by:



Don Risoli, Quality Assurance

Date: 1/24/05

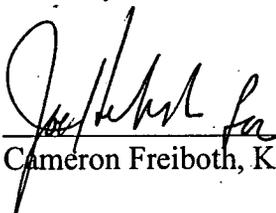
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TABLE OF CONTENTS

ABBREVIATIONS/ACRONYMS	IV
EXECUTIVE SUMMARY	V
1 INTRODUCTION	1
1.1 PURPOSE	1
1.2 SCOPE.....	1
1.3 DATA QUALITY OBJECTIVES	1
2 HISTORICAL SITE ASSESSMENT	2
3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS	2
4 CHEMICAL CHARACTERIZATION AND HAZARDS.....	3
4.1 ASBESTOS	3
4.2 BERYLLIUM (BE).....	4
4.3 RCRA/CERCLA CONSTITUENTS [INCLUDING METALS AND VOLATILE ORGANIC COMPOUNDS (VOCs)].....	4
4.4 POLYCHLORINATED BIPHENYLS (PCBS).....	4
5 PHYSICAL HAZARDS	5
6 DATA QUALITY ASSESSMENT	5
7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES	5
8 FACILITY CLASSIFICATION AND CONCLUSIONS.....	6
9 REFERENCES	7

ATTACHMENTS

- A Facility Location Map
- B Historical Site Assessment Report
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
DCGL _{EMC}	Derived Concentration Guideline Level – elevated measurement comparison
DCGL _w	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
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
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Building 906. Because this facility was an anticipated Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., floors, walls, ceilings and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Reports.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. There are no building materials suspected of containing asbestos. All beryllium sample results were less than $0.1 \mu\text{g}/100\text{cm}^2$. Based upon this RLCR, Building 906 is considered a Type 1 facility and can be demolished. To ensure the facility remains free of contamination and the RLC data remain valid, Level 2 Isolation Controls have been established and the facility posted accordingly.

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Building 906. Because this facility was an anticipated Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facility (i.e., floors, walls, ceilings and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building 906. The location of this facility is shown in Attachment A, *Facility Location Map*. This facility no longer supports the RFETS mission and needs to be removed to reduce Site infrastructure, risks and/or operating costs.

Before the facility can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. 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). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific *Historical Site Assessment Report for the Area 4-Group 2 Facilities*, dated July 2002, Revision 0.

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. A RLC is performed before 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. RLC 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 Building 906. Environmental media beneath and surrounding the facility is not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in 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 Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards. The assessment consisted of facility walkdowns, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. Results of the facility-specific HSA was documented in a facility-specific *Historical Site Assessment Report for the Area 4 - Group 2 Facilities*, Dated July 2002, Revision 0. Refer to Attachment B, *Historical Site Assessment Report*, for a copy of the Building 906 HSAR. In summary, the HSAR identified a low potential for radiological, chemical, beryllium or asbestos hazards.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Building 906 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 in or on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, Radiological Characterization Plans were developed during the planning phases that describe the minimum survey requirements (refer to the RISS Characterization Project files).

Radiological survey package 906005 was developed for the interior of Building 906. The survey package was developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Survey Unit 906005 is a MARSSIM Class 3 area due to the low potential for radiological contamination in Building 906. Total surface activity (TSA), removable surface activity (RSA), 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, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit package is maintained in the RISS Characterization Project files.

Sixty-four (64) TSA measurements (34 random, 28 biased and 2 QC) and sixty-two (62) RSA measurements (34 random and 28 biased) were performed; and a minimum 20% scan of the interior floors and 5% scan of the remaining interior walls and ceiling surfaces of the facility were scanned. The RLC data confirmed that this facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit package is maintained in the RISS Characterization Project files. Level 2 Isolation Control postings are displayed on the building to ensure no radioactive materials are inadvertently introduced.

The exterior radiological surveys for Building 906 were performed as part of the RISS West Side Exterior PDS strategy effort (authorized by Department of Energy letter, 02-DOE-01598, dated December 13th, 2002 and approved by CDPHE letter, RE: *Proposed Deviations From The Pre-Demolition Survey Plan (PDSP)*, dated January 27, 2003; refer to the RISS Characterization Project Files for letter copies). The RISS West Side exterior building radiological surveys and locations can be found in survey unit package EXT-B-001, *RISS West Side Building Exteriors*. Seven (7) biased TSA measurements, seven (7) biased RSA measurements, and a one (1) square meter scan at each TSA/RSA location was performed on the exterior surfaces of Building 906. The RLC data collected in exterior survey unit package EXT-B-001 confirmed that the exterior surfaces of Building 906 do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey map locations for the West-Side Exterior survey unit package EXT-B-001 are maintained in the RISS Characterization Project files.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 906 was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in the facility. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describes sampling requirements, the justification for sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs.

4.1 Asbestos

A comprehensive asbestos inspection was conducted to determine the presence of friable and non-friable asbestos containing building material. The characterization was conducted in accordance with the PDSP. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. A visual inspection was completed and no building materials were identified that had the potential to contain asbestos. Building 906 is a sheet metal building with fiberglass insulation on the ceiling and walls. The floor is bare concrete. The only potential TSI present was on the process water line, and it was determined by visual inspection that the insulation was fibrous glass insulation both on the straight runs and the elbows and joints. On this basis, no asbestos sampling was performed as part of this RLC.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, Building 906 was an anticipated Type 1 facility. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in this building. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Ten (10) biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium smear sample results were less than $0.1 \mu\text{g}/100\text{cm}^2$. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

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

Based on a review of the HSAR, facility records, and a facility walk-down, Building 906 was used as a TRU Mixed Waste storage area and is in the process of RCRA closure. The building has been submitted for administrative "clean closure" based on availability of a complete operating record that demonstrates the absence of potential contamination. On this basis, RCRA/CERCLA constituent sampling was not performed in Building 906 as part of the RLC.

Sampling for lead in paint in Building 906 was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) waste, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal. There were no high contamination areas in 906.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSARs, interviews and facility walk-downs of Building 906, no PCB-containing equipment was ever present in the building making the potential for PCB contamination resulting from spills highly unlikely. Therefore, PCB sampling was not performed in Building 906 as part of the RLC. Based on the age of Building 906 (constructed after 1980), paints used do not contain PCBs. Additionally, there are no suspected PCB light ballasts in this facility. However, all light ballasts will be inspected and if leaking or large (greater than 9lbs) PCB ballasts are discovered, they will be removed and managed accordingly.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 906 consist of those common in standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. 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.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 906, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

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 provided in Attachment E, *Data Quality Assessment Detail*.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 906 will generate sanitary waste. Estimated waste volumes are presented below. All waste can be disposed of as sanitary waste. There is no radioactive or hazardous waste.

Waste Volume Estimates and Material Types – Building 906							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
906	13,000	0	3,000	3,500	0	0	N/A

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 906 is classified as a RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and can be demolished. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC/PDS data.

The RLC of Building 906 was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Building 906 did not contain radiological or hazardous waste. Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

To ensure this Type 1 facility remains free of contamination and the RLC data remain valid, Level 2 Isolation Controls have been established and the facility posted accordingly.

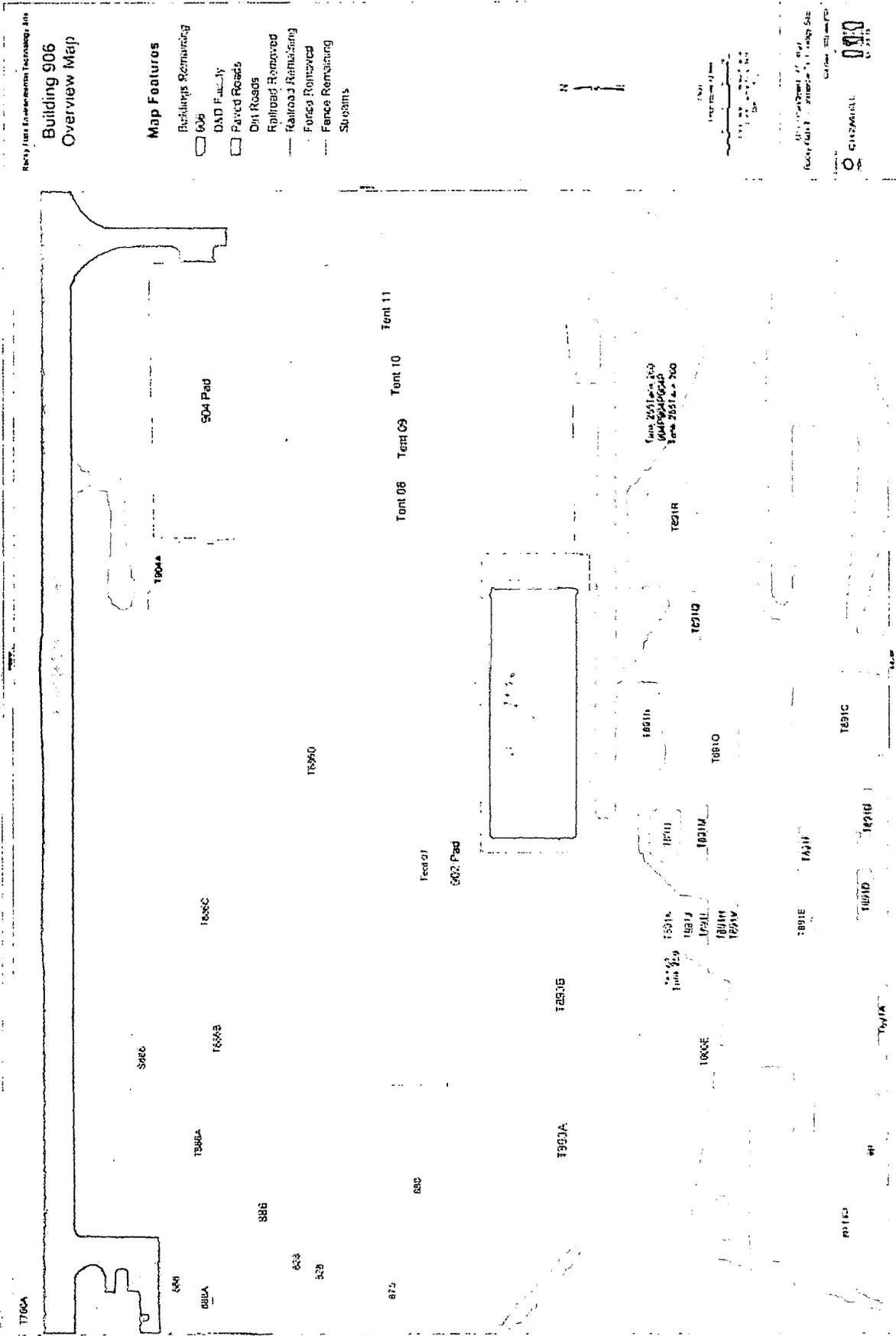
9 REFERENCES

- DOE/RFEO, CDPHE, EPA, 1996. Rocky Flats Cleanup Agreement (RFCA), July 19, 1996.
- DOE Order 5400.5, "Radiation Protection of the Public and the Environment."
- EPA, 1994. "The Data Quality Objective Process," EPA QA/G-4.
- 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. 3, 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, December 1997 (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. 1, May 22, 2001.
- 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, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.
- RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999.
- Historical Site Assessment Report for the Area 4 - Group 2 Facilities*, dated July 2002, Revision 0.

ATTACHMENT A

Facility Location Map

Page Change Control # 10



ATTACHMENT B

Historical Site Assessment Report

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

Facility ID: (Area 4 – Group 2) - Buildings 556, 566A, 569, 570, T760A, 790, and 906.

Anticipated Facility Type (1, 2, or 3): Buildings 556, 566A are anticipated Type 2 facilities. Buildings 569, 570, T760A, 790 and 906 are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 566 and 566A

Building 566 and 566A are a single structure divided in to a 13,700 sq. ft. Site Alarm Maintenance and Respirator Repair Facility and the 4000 sq. ft. filter plenum designated Buildings 566 and 566A. Building 566A is basically the administrative portion of the 566 building. Both facilities were constructed in the 1991. The walls are reinforces concrete, the roof is constructed with a metal sheet, lightweight concrete, insulation and a synthetic membrane to seal the roof. The floor is pored concrete.

Building 566 and 566A have the following utilities: electric, plant water, plant sanitary, process waste line (lock and tagged-out) and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection.

Building 569

Building 569, also known as the Crate Counting Facility, is a 7620 sq. ft. single-story building constructed in 1987. Building 569 is a prefabricated modular building constructed on a concrete slab. The walls are constructed of metal siding mounted on a steel frame. The roof is an insulated metal roof mounted to a steel frame.

Building 569 has the following utilities; electric, plant water, plant sanitary, plant stream and fire protection is provided by wall-mounted fire extinguishers.

Building 570

Building 570 is the filter plenum for the Crate Counting Facility and is a 683 sq. ft. building constructed in 1987. Building 570 is a concrete building with 12-in thick reinforced concrete walls and a concrete floor. The roof is constructed with insulated sheet metal supported by steel joists.

Building 570 has the following utilities; electric, plant water, plant stream, and a plenum deluge system and wall-mounted fire extinguishers provide fire protection.

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Historical Site Assessment Report
July, 2002 Rev. 0**

Trailer T760A

Trailer T760A is a 500 square foot shower trailer. This trailer was placed into service in 1990 and is located south of the 750 Pad. T760A has aluminum siding and aluminum skirting. Each entry has wooden steps leading to the entry doors. The interior is configured with a separate men and woman's shower, toilet and locker room facility. The interior walls are wallboard and the floors are vinyl tiles. There is a propane gas tank located west of the trailer.

Trailer T760A has the following utilities: electric, propane gas, plant water, plant sanitary, and fire protection is provided by wall mounted fire extinguishers. The water and gas systems have been shut off.

Building 790

Building 790 is a 6,768-sq. ft. single-story concrete building constructed in 1991. The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area. The irradiation cells and control room are constructed of 2-foot-thick concrete walls. The instrument calibration support and office areas are constructed of masonry blocks and steel reinforcement. The floors are poured in place concrete. The roof is constructed with insulated sheet metal supported by steel joists.

Building 790 has the following utilities; electric, plant water, plant sanitary, natural gas, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

Building 906

Building 906 is a 25,000 square foot TRU waste storage facility. Building 906 was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-grades to comply with the TRU waste storage requirements. Building 906 is a steel frame building constructed on a concrete pad. The walls and roof are insulated aluminum mounted on the steel frame.

Building 906 has the following utilities; electric, fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

Historical Operations

Building 566 and 566A

Buildings 556 and 566A were originally constructed to be the site laundry facility. Laundry operations only lasted for about 2 years, and the facility was never approved to handle the highly contaminated laundry. Building 566 has always housed Respirator Cleaning and Repair operations. In 1999, the Alarms Maintenance Servicing Center moved into the 566 building.

Alarm maintenance involves cleaning equipment, replaces faulty components, and testing and inspecting equipment. The Respirator Cleaning and Repairs Facility contains a respirator washer, laundry carts, radioactivity monitoring equipment detergent, bleach and water are used in the respirator washing process. Wastewater drains into two storage tanks located in the Building 566 pit and is then pumped to the sanitary drain. Building 566 has a process waste line which had been locked-out. Respirators and Alarm equipment are surveyed for radioactivity prior to being transported to Building 566.

In the late 1990s, the B566 ventilation air filter plenum was surveyed and no radiological contamination was found. The radiological posting were removed from the plenum. In the late 1990s, the washers and dryers were removed and the waste trench under the washers was surveyed. Only very low levels of contamination were found and the trench was decontaminated (using power washer).

Building 569

Building 569 contains radioactivity assay equipment and temporary waste storage operations. Building 569 is also RCRA Unit 59. Containers of low-level, low-level mixed, transuranic and transuranic mixed waste are received from throughout the plant and assayed using a passive-active counter. Containers are assayed prior being accepted into Building 569. Containers whose contents meet the package criteria are transported to Buildings 664, 440, or 906 for storage pending off-site shipment. Those containers not meeting the package criteria, or which exhibit physical damage or improper packing are identified for repackaging. No unpacking or repackaging is performed in Building 569.

Building 570

Building 570 was built as the Building 569 air plenum, but has never been activated and has never housed any radiological or hazardous operation.

Trailer T760A

T760A was used as a shower trailer for workers at the 904 Pad and the pondcrete operation on the 750 Pad. The trailer had no radiological or hazardous operations. Routine radiological surveys show no evidence of contamination.

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

Building 790

Building 790 was designed to perform radiometric calibrations. Specifically, it is used to expose thermoluminescent dosimeters (TLD) and calibrate site health physics instrumentation. The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area. This facility uses and stores sealed sources and X-ray generating equipment.

Cell A is a hexagonal shaped two-story, low neutron-scatter-design silo that houses the Pneumatic Source Transfer System (PSTS) for neutron flux calibration of TLDs and radiation survey equipment. Cell B contains an X-ray generating system for the calibration of portable radiation measurement instruments and to irradiate TLDs. Cell C contains high-level gamma irradiators, which are used for gamma irradiation of TLDs and instruments. No hazardous chemicals are stored in Building 790, other than general cleaning supplies and small quantities (less than 1 pint) of alcohol and acetone to clean some instrument parts.

Sources stored in Building 790 include, but are not limited to Pu, Am, Sr-90, Cf, Cs, Co-60, Ba, and Pm.

Building 906

Building 906, also referred to as Central Waste Storage, is RCRA Unit 14 and was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-graded to comply with the TRU waste storage requirements. Building 906 is currently permitted to store LLW, TRU, Mixed Waste, and TSCA waste, but primarily stores TRU waste. Building 906 has had no spills and there is no evidence of any building contamination. Some areas of the Building 906 have elevated dose rates caused by the TRU waste stored in the building.

Current Operational Status

Building 556 is operational as the site's Alarm Maintenance Center and the Respirators Cleaning and Repair Facility. Building 566A (air plenum for Building 566) is not operational. Building 569 is the Crate Counting Facility and is operational. Building 570 (the air plenum for Building 569) is not operational. Trailer T760A is a shower trailer and is not operational. Building 790 is currently operational as the site's Radiation Calibration Laboratory. Building 906 is currently operational as a TRU waste storage area.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos:

None of the buildings in this HSA have an asbestos posting. Building 569 is posted as being asbestos free. The posting references Document # JAF-010-90. The other facilities in this HSA have not had a comprehensive asbestos survey.

19

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations:

None of the buildings addressed in this HSA are on the List of known Be Areas. Respirators, which have been released from Beryllium areas are cleaned and repaired in Building 566. There is no history of beryllium building contamination associated with this activity.

Summarize any recent Be sampling results:

Contact the IH group for any recent Be sample results.

Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):

Given the age of the facilities addressed in this HSA, lead in paint should not be a concern. Building 790 and 569 have some lead shielding in the assay equipment.

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

Describe any potential, likely, or known spill locations (and sources, if any):

None.

Describe methods in which spills were mitigated, if any:

None.

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):

Due to the age of the facilities addressed in this HSA, there should not be a concern with PCBs in paint. PCBs were not known to have been handled in any of these facilities.

Describe any potential, likely, or known spill locations (and sources, if any):

No PCB spills occurred in any of the facilities addressed in this HSA.

Describe methods in which spills were mitigated, if any:

No PCB spills occurred in any of the facilities addressed in this HSA.

Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations:

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):

None

Describe methods in which spills were mitigated, if any:

None.

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):

The primary Isotope of concern includes, but is not limited to uranium and plutonium. Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in this HSA.

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):

See section below for information on IHSSs PACs, and UBCs.

**D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0**

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):

Building 566 and 566A are associated with or located near the following IHSSs, PACs, and UBCs;

- 1) PAC 700-150.2 "Radioactive site west of Building 771 and 776 ", Active.
- 2) PAC 700-1102 "776-4", This IHSS was proposed NFA in 1997 and again in 2001. This NFA has not been approved and is currently under negotiation.

Building 567 and 570 are associated with or located near the following IHSSs, PACs, and UBCs;

- 1) PAC 700-150.5 "Radioactive site west of Building 707 ", Proposed NFA in 1998.

Buildings 790, 906, and Trailer T760A are not associated with or located near any IHSSs, PACs, and UBCs;

Additional Information

Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):

None

References

Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. The Building WSRIC for those Buildings with a WSRIC. In addition, a facility walkdowns and interviews were performed.

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 566	8500	0	19800	3600	2100	TBD	N/A
Building 566A	2800	0	1150	900	0	TBD	N/A
Building 569	4000	0	1100	2000	1000	TBD	N/A
Building 570	3900	0	700	200	0	TBD	N/A
Trailer T760A	None	200	300	350	450	TBD	N/A
Building 790	24,000	0	1900	800	1200	TBD	N/A
Building 906	13,000	0	3000	3500	0	TBD	N/A

Further Actions

Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):

Begin the RLC/PDS process.

22

ATTACHMENT C

Radiological Data Summaries and Survey Maps

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 34

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 34

Nbr Biased Measurements Performed: 28

Nbr QC Performed: 2

Alpha

Maximum: 82.7 dpm/100cm²

Minimum: -11.6 dpm/100cm²

Mean: 22.5 dpm/100cm²

Standard Deviation: 21.5

QC Maximum: 63.0 dpm/100cm²

QC Minimum: 55.3 dpm/100cm²

QC Mean: 59.1 dpm/100cm²

Transuranic DCGL_w: 100.0 dpm/100cm²

Transuranic DCGL_{EMC}: 300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 34

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 34

Nbr Biased Measurements Performed: 28

Alpha

Maximum: 4.2 dpm/100cm²

Minimum: -0.6 dpm/100cm²

Mean: 0.3 dpm/100cm²

Standard Deviation: 1.1

Transuranic DCGL_w: 20.0 dpm/100cm²

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.

25

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

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 ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	01/19/05	Electra	677	AP-6	01/23/05	0.194	NA	48.0	NA	S
2	712467	01/19/05	Electra	1235	DP-6	03/16/05	0.215	NA	48.0	NA	T/S
3	712193	01/19/05	Electra	3102	DP-6	06/16/05	0.220	NA	48.0	NA	Q/S
4	511390	01/19/05	Electra	1379	DP-6	05/09/05	0.219	NA	48.0	NA	T/S
5	712467	01/20/05	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
6	712467	01/20/05	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

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

26

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building:906 (Interior)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PRP-N001	5	-0.6	N/A	
906005PRP-N002	6	-0.3	N/A	
906005PRP-N003	5	0.9	N/A	
906005PRP-N004	6	-0.3	N/A	
906005PRP-N005	5	-0.6	N/A	
906005PRP-N006	6	-0.3	N/A	
906005PRP-N007	5	0.9	N/A	
906005PRP-N008	6	-0.3	N/A	
906005PRP-N009	5	0.9	N/A	
906005PRP-N010	6	-0.3	N/A	
906005PRP-N011	5	0.9	N/A	
906005PRP-N012	6	-0.3	N/A	
906005PRP-N013	5	-0.6	N/A	
906005PRP-N014	6	-0.3	N/A	
906005PRP-N015	5	-0.6	N/A	
906005PRP-N016	6	-0.3	N/A	
906005PRP-N017	5	0.9	N/A	
906005PRP-N018	6	2.7	N/A	
906005PRP-N019	5	0.9	N/A	
906005PRP-N020	6	-0.3	N/A	
906005PRP-N021	5	-0.6	N/A	
906005PRP-N022	6	-0.3	N/A	
906005PRP-N023	5	-0.6	N/A	
906005PRP-N024	6	-0.3	N/A	
906005PRP-N025	5	-0.6	N/A	
906005PRP-N026	6	-0.3	N/A	
906005PRP-N027	5	-0.6	N/A	
906005PRP-N028	6	-0.3	N/A	
906005PRP-N029	5	0.9	N/A	

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)
906005PRP-N030	6	-0.3	N/A
906005PRP-N031	5	-0.6	N/A
906005PRP-N032	6	1.2	N/A
906005PRP-N033	5	0.9	N/A
906005PRP-N034	6	-0.3	N/A

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)
906005PBP-N035	5	-0.6	N/A
906005PBP-N036	5	-0.6	N/A
906005PBP-N037	6	4.2	N/A
906005PBP-N038	5	0.9	N/A
906005PBP-N039	6	-0.3	N/A
906005PBP-N040	5	0.9	N/A
906005PBP-N041	6	1.2	N/A
906005PBP-N042	5	-0.6	N/A
906005PBP-N043	6	-0.3	N/A
906005PBP-N044	5	-0.6	N/A
906005PBP-N045	6	-0.3	N/A
906005PBP-N046	5	0.9	N/A
906005PBP-N047	6	1.2	N/A
906005PBP-N048	5	0.9	N/A
906005PBP-N049	6	1.2	N/A
906005PBP-N050	5	0.9	N/A
906005PBP-N051	6	2.7	N/A
906005PBP-N052	5	-0.6	N/A
906005PBP-N053	6	1.2	N/A

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PBP-N054	5	-0.6	N/A	
906005PBP-N055	5	2.4	N/A	
906005PBP-N056	6	1.2	N/A	
906005PBP-N057	5	0.9	N/A	
906005PBP-N058	6	-0.3	N/A	
906005PBP-N059	5	-0.6	N/A	
906005PBP-N060	6	1.2	N/A	
906005PBP-N061	5	0.9	N/A	
906005PBP-N062	6	2.7	N/A	

Comments:

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PRP-N001	4	43.0	N/A	
906005PRP-N002	4	49.4	N/A	
906005PRP-N003	4	55.3	N/A	
906005PRP-N004	2	4.3	N/A	
906005PRP-N005	4	46.2	N/A	
906005PRP-N006	2	7.1	N/A	
906005PRP-N007	4	-7.3	N/A	
906005QRP-N008	3	55.3	N/A	
906005PRP-N008	4	79.5	N/A	
906005PRP-N009	4	18.8	N/A	
906005PRP-N010	2	-11.6	N/A	
906005PRP-N011	4	55.3	N/A	
906005PRP-N012	4	52.1	N/A	
906005PRP-N013	4	27.9	N/A	
906005PRP-N014	4	22.0	N/A	
906005PRP-N015	4	22.0	N/A	
906005PRP-N016	2	1.0	N/A	
906005PRP-N017	2	-5.0	N/A	
906005QRP-N018	3	63.0	N/A	
906005PRP-N018	4	70.4	N/A	
906005PRP-N019	2	38.2	N/A	
906005PRP-N020	2	10.3	N/A	
906005PRP-N021	4	31.1	N/A	
906005PRP-N022	4	24.7	N/A	
906005PRP-N023	2	16.4	N/A	
906005PRP-N024	4	82.7	N/A	
906005PRP-N025	2	-5.0	N/A	

30

Survey Area: 4**Survey Unit:** 906005**Building:** 906**Description:** Building 906 (Interior)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PRP-N026	4	-2.7	N/A	
906005PRP-N027	2	25.7	N/A	
906005PRP-N028	2	13.6	N/A	
906005PRP-N029	4	15.6	N/A	
906005PRP-N030	2	10.3	N/A	
906005PRP-N031	2	13.6	N/A	
906005PRP-N032	4	0.5	N/A	
906005PRP-N033	4	27.9	N/A	
906005PRP-N034	4	3.7	N/A	

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PBP-N035	4	17.3	N/A	
906005PBP-N036	4	29.7	N/A	
906005PBP-N037	4	8.2	N/A	
906005PBP-N038	4	8.2	N/A	
906005PBP-N039	2	64.5	N/A	
906005PBP-N040	2	12.0	N/A	
906005PBP-N041	2	30.6	N/A	
906005PBP-N042	2	39.9	N/A	
906005PBP-N043	2	21.3	N/A	
906005PBP-N044	2	49.2	N/A	
906005PBP-N045	2	42.7	N/A	
906005PBP-N046	2	36.6	N/A	
906005PBP-N047	2	12.0	N/A	
906005PBP-N048	2	30.6	N/A	

Survey Area: 4

Survey Unit: 906005

Building: 906

Description: Building 906 (Interior)

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
906005PBP-N049	4	14.1	N/A	
906005PBP-N050	4	20.5	N/A	
906005PBP-N051	4	23.3	N/A	
906005PBP-N052	4	23.3	N/A	
906005PBP-N053	4	11.4	N/A	
906005PBP-N054	2	21.3	N/A	
906005PBP-N055	4	0.4	N/A	
906005PBP-N056	4	-6.9	N/A	
906005PBP-N057	4	8.2	N/A	
906005PBP-N058	4	5.0	N/A	
906005PBP-N059	4	8.2	N/A	
906005PBP-N060	4	2.3	N/A	
906005PBP-N061	4	0.4	N/A	
906005PBP-N062	4	26.5	N/A	

Comments:

32

RLC SURVEY FOR B906

Survey Area: 4 Survey Unit: 906005 Classification: 3
 Building: 906
 Survey Unit Description: Building 906 (Interior)
 Total Area: 5,845 sq. m. Total Floor Area: 2,258 sq. m.

PAGE 1 OF 2



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1 - 4

N

FEET
 0 40

METERS
 0 10
 1 inch = 30 feet 1 grid sq. = 1 sq. m.

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 Rocky Flats Environmental Technology Site
 Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL
 Communications Group

KAISER HILL

MAP ID: 03-0189/B906-INT-1_SC Jan. 20, 2005

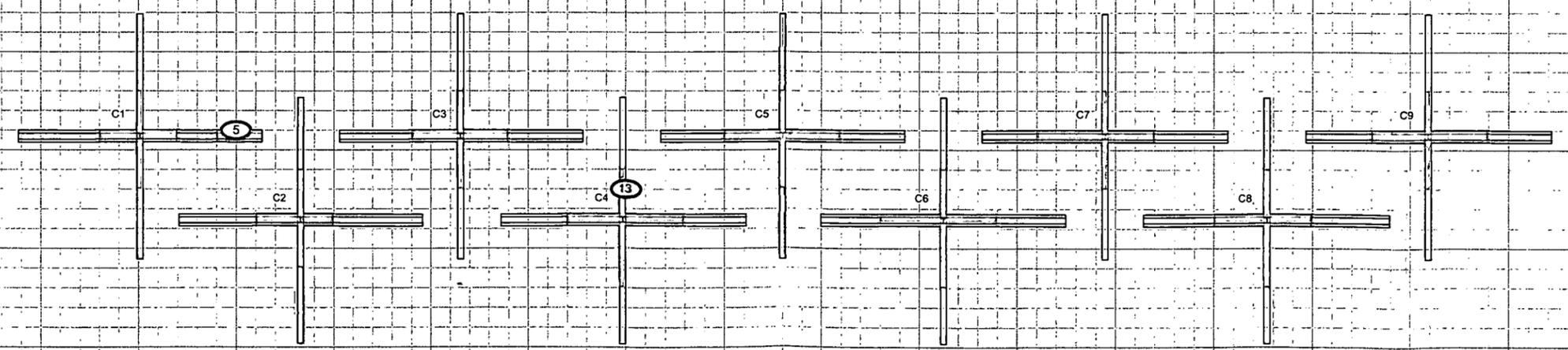
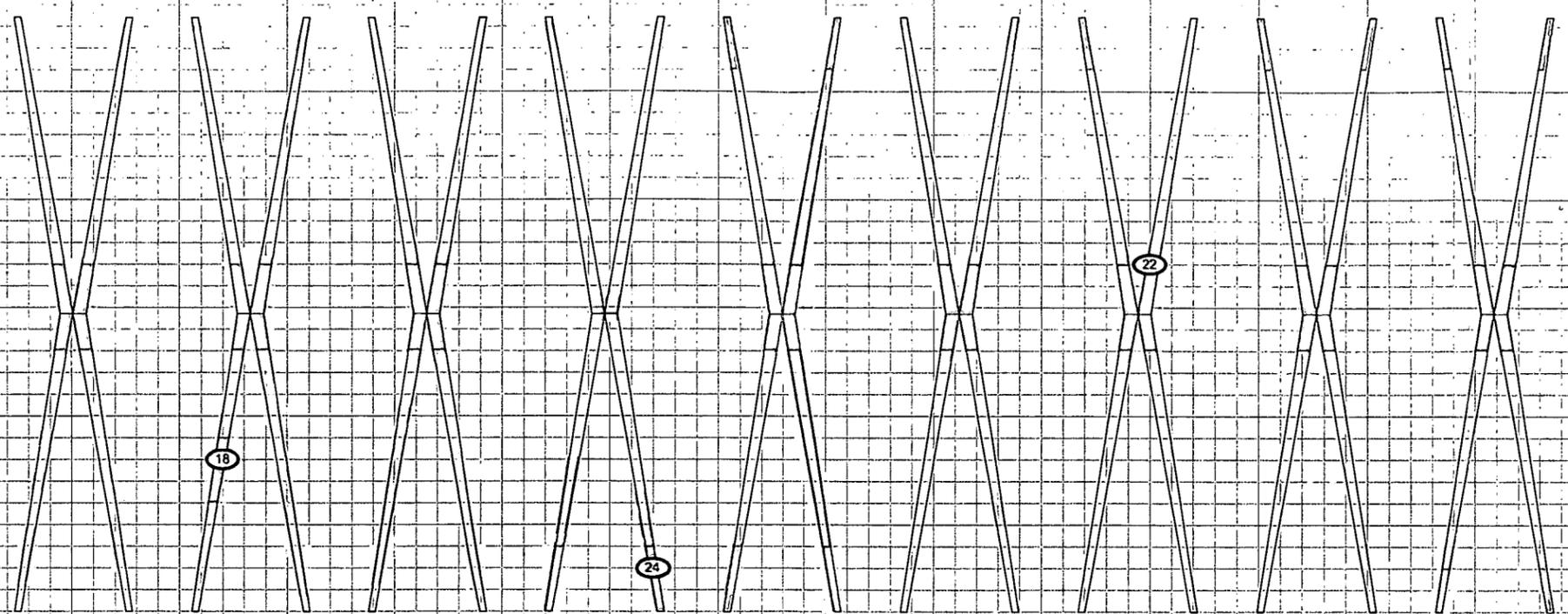
RLC SURVEY FOR B906

Survey Area: 4 Survey Unit: 906005 Classification: 3
 Building: 906
 Survey Unit Description: Building 906 (Interior)
 Total Area: 5,845 sq. m. Total Floor Area: 2,258 sq. m.

PAGE 2 OF 2

Ceiling Support Beams

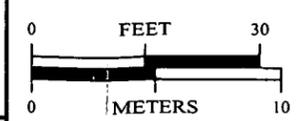
Beam 1 Beam 2 Beam 3 Beam 4 Beam 5 Beam 6 Beam 7 Beam 8 Beam 9



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1 - 4

Scan Area

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 Communications Group
 KAISER HILL
 MAP ID: 03-0189/B906-INT-2_SC Jan 20, 2005

34

ATTACHMENT D

Chemical Data Summaries and Sample Maps

Beryllium Data Summary

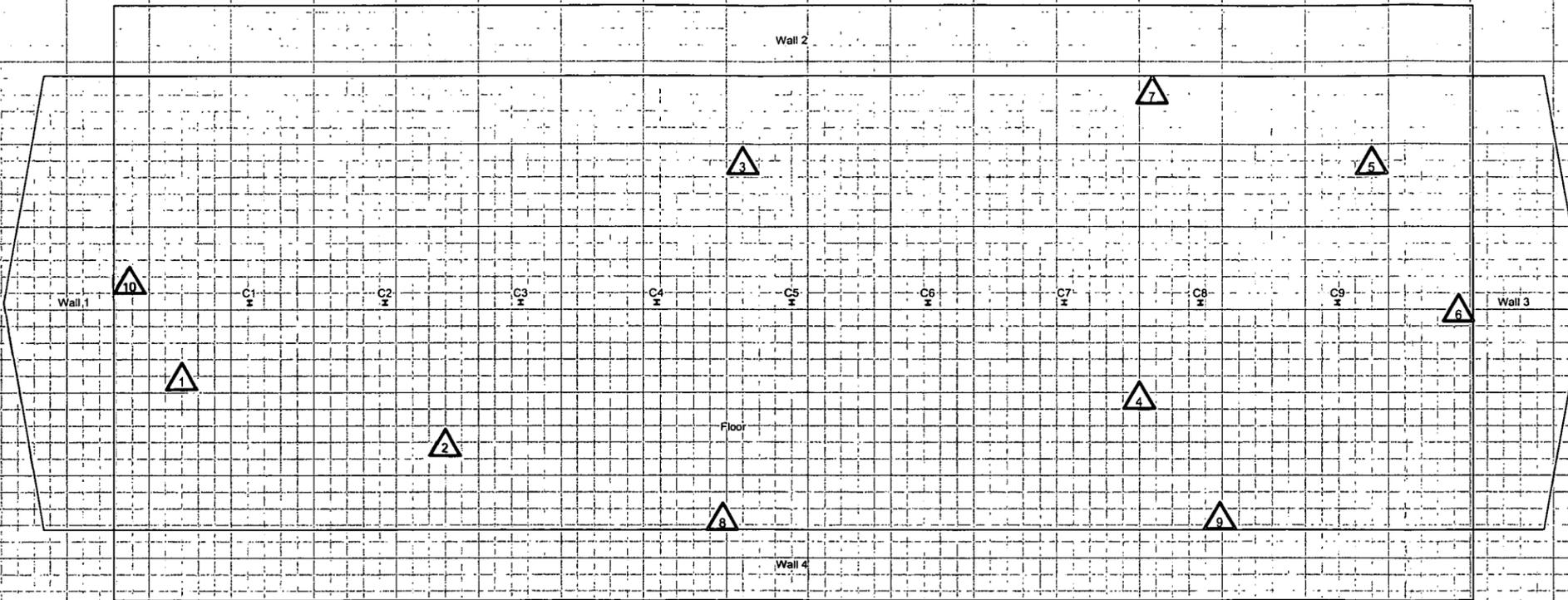
Sample Number	Map Survey Point Location	Sample Location	Result ($\mu\text{g}/100\text{cm}^2$)
Building 906 - RIN 05D0453			
906-01182005-00-001	1	Floor	< 0.1
906-01182005-00-002	2	Floor	< 0.1
906-01182005-00-003	3	Floor	< 0.1
906-01182005-00-004	4	Floor	< 0.1
906-01182005-00-005	5	Floor	< 0.1
906-01182005-00-006	6	Top of East Rollup Door	< 0.1
906-01182005-00-007	7	Inside Exhaust Duct	< 0.1
906-01182005-00-008	8	Inside Exhaust Duct	< 0.1
906-01182005-00-009	9	On top of Exhaust Duct	< 0.1
906-01182005-00-010	10	Top of West Rollup Door	< 0.1

34

CHEMICAL SAMPLE MAP

Building 906
Beryllium

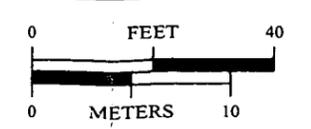
PAGE 1 OF 1



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location

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1 inch = 30 feet 1 grid sq. = 1 sq. m.

- Open/Inaccessible Area
- Area in Another Survey Unit

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL
Communications Group

KAISER HILL

MAP ID: 03-0189/B906-1-BE Jan. 19, 2005

37

ATTACHMENT E

Data Quality Assessment (DQA) Detail

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. 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 suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1 and beryllium in E-2. A data completeness summary for all results is given in Table E-3.

All relevant Quality records supporting this report are maintained in the RISS 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.

Beta/gamma survey designs were not implemented for Building 906 based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. 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 DCGL_w (100 dpm/100cm²) and the Uranium DCGL_w (5,000 dpm/100cm²) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

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 certainties.

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels. 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 thereby ensuring accuracy criteria. All results meet the PDS unrestricted release criteria.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facility. On this basis, Building 906 meets the unrestricted release criteria with the confidences stated herein and can be demolished.

Table E-1 V&V of Radiological - Building 906

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	Measure	frequency	COMMENTS
ACCURACY	initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	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 (i.e., no elevated anomalies.)
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Unit 906005 (interior) and EXT-B-001 (exterior).	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased 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 ²	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-3 for details.
SENSITIVITY	detection limits	TSA: ≤50 dpm/100cm ² RA: ≤10 dpm/100cm ²	all measures	MDAs ≤ 50% DCGL _w per MARSSIM guidelines (RLC performed to PDS requirements).

Table E-2 V&V of Beryllium - Building 906

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		COMMENTS
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville Corp. Littleton, Co.	
	QUALITY REQUIREMENTS		RIN ----> RIN 05D0453	
		Measure	Frequency	
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i.e., classification of a Type 1 facility confirmed. All results were below associated action levels.
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	LCS/D	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 ²	NA	
COMPLETENESS	Plan vs. Actual samples	>95%	NA	
	usable results vs. unusable	>95%		
SENSITIVITY	detection limits	MDL of 0.00084 ug/100cm ²	all measures	

Table E-3 Data Completeness Summary - Building 906

ANALYTE	Building/Area/ Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 906 (interior)	10 biased (interior)	10 biased (interior)	No beryllium contamination found, all results are below associated action levels	OSHA ID-125G RIN 05D0453 No results above action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²).
Radiological	Survey Area 4 Survey Unit: 906005 Building 906 (interior)	54 α TSA (34 random/20 biased) and 54 α Smears (34 random/20 biased) 2 QC TSA 20% scan on the floor; 5% scan of the remaining interior walls and ceiling surfaces	62 α TSA (34 random/28 biased) and 62 α Smears (34 random/28 biased) 2 QC TSA 20% scan on the floor; 5% scan of the remaining interior walls and ceiling surfaces	No contamination found at any location; all values below PDS unrestricted release limits	Transuranic DCGLs used.