



# Rocky Flats Environmental Technology Site

## RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

### CLOSURE PROJECT FOR BUILDING 335

REVISION 0

September 6, 2002



CLASSIFICATION REVIEW NOT REQUIRED PER  
EXEMPTION NUMBER CEX-005-02

ADMIN RECORD

IA-A-001110

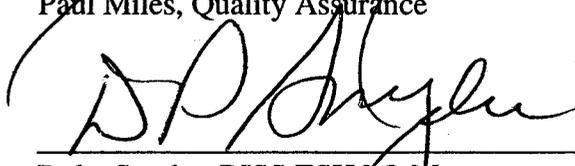
# RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

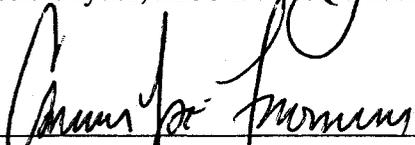
## CLOSURE PROJECT FOR BUILDING 335

REVISION 0

September 6, 2002

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2

## TABLE OF CONTENTS

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

### ATTACHMENTS

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

3

## 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 <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>w</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
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

4

## 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 335 and the training glovebox. Because this facility was anticipated to be a 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 (slabs), walls, ceilings and roofs], and the training glovebox. 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. All bulk samples of building materials suspected of containing friable or non-friable asbestos were < 1% by volume. All beryllium sample results were less than 0.1  $\mu\text{g}/100\text{cm}^2$ . Fluorescent light ballasts may contain PCBs. Any PCB ballasts and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Based upon this RLCR and subject to concurrence by the CDPHE, Building 335 is considered to be a Type 1 facility. To ensure that the facilities remain free of contamination and that RLC data remain valid, isolation controls have been established, and the facilities have been posted accordingly.

## **1 INTRODUCTION**

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Building 335. Because this facility was anticipated to be a Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities [i.e., floors (slabs), walls, ceilings and roofs]. 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 335. The locations of this facility are shown in Attachment A. 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.

### **1.1 Purpose**

The purpose of this report is to communicate and document the results of the PDS effort. PDSs are performed before building demolition to define the final radiological and chemical conditions of a facility. Final 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 final radiological and chemical conditions of Building 335. 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.

6

## 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 (HSAR). Refer to Attachment B for a copy of the Building 335 HSAR. In summary, the HSAR identified no potential for radiological and chemical hazards, except the potential for asbestos containing materials and PCBs in paint and light ballasts.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Building 335 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. 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).

One radiological survey package was developed for the interior and exterior of Building 335, including the training glovebox. The survey package 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), 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.

TSA measurements, RSA measurements, and scan surveys were performed on the interior and exterior of the facility, as well as the interior and exterior of the training glovebox. The PDS data confirmed that the facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Isolation control postings are displayed on the buildings to ensure no radioactive materials are introduced.

## 4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 335 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. Chemical Characterization Packages (refer to RISS Characterization Project files) were developed during the planning phases that describe sampling requirements and the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, Chemical Data Summaries and Sample Maps, for details on sample results and sample locations.

### 4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in the aforementioned buildings 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*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

All bulk samples of building materials suspected of containing friable or non-friable asbestos were < 1% by volume. Asbestos laboratory analysis data and location maps are contained in Attachment D, "Chemical Data Summaries and Sample Maps." Maps that did not contain any sample locations were not included in this report.

### 4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, this building 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 these buildings. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition. Smears were also taken on the training glovebox.

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." Maps that did not contain any sample locations were not included in this report.

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

Based on a review of the HSAR and a facility walkdown, the only RCRA/CERCLA concern in B335 would be the solvent waste material burned as part of the training exercises. These materials would have been contained in the glovebox and consumed during the fire exercise. There is no indication that the facility nor the glovebox is contaminated by RCRA/CERCLA constituents due to the training exercises, therefore, RCRA/CERCLA constituent sampling was not performed in this facility.

8

Sampling for lead in paint in B335 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) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

B335 may contain RCRA regulated materials such as mercury switches and leaded glass. A thorough inspection of the facility will be made, and all regulated materials will be removed, prior to demolition.

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

Based on the HSARs, interviews and facility walkdowns of B335, 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 B335.

Based on the age of B335 (constructed prior to 1980), paints used may contain PCBs, and painted surfaces will need to be disposed of PCB Bulk Product Waste. Painted concrete surfaces can be used as backfill on site in accordance with approval received from EPA in November 2001 (letter from K. Clough, US EPA Region 8, to J. Legare, DOE RFFO, 8EPR-F, Approval of the Risk-Based Approach for Polychlorinated Biphenyls (PCB)-Based Painted Concrete), provided the concrete meets the unrestricted-release criteria outlined in the Concrete Recycling RSOP.

Because B335 may contain fluorescent light ballasts containing PCBs, fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non-PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate non-PCB-containing are assumed to be PCB-containing.

### **5 PHYSICAL HAZARDS**

Physical hazards associated with Building 335 consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. Refer to the Site Safety Analysis Report (PADC-1998-00662), including Volume 2, Facility Safety Analysis, Building 335. A unique hazard to B335 is that the west-end of the building fills in with mud after heavy rainfall. The mud creates a slipping hazard and should be removed, if present, prior to D/D activities. 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.

9

## 6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 335 and the training glovebox, 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.

## 7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 335 will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All wastes can be disposed of as sanitary waste, except asbestos containing material and PCB Bulk Product Waste. There is no radioactive or hazardous waste. Asbestos and PCB ballasts will be managed pursuant to Site asbestos and PCB abatement and waste management procedures.

Waste Volume Estimates and Material Types, Building 335							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
335	2,500	0	600	900	300	0	Metal Glovebox 20 cu ft

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 335 is classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999). The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data, and will be subject to concurrence by the Colorado Department of Public Health and the Environment (CDPHE).

The RLC of B335 and the training glovebox was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. B335 does not contain radiological or hazardous wastes. Any PCB ballasts and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete. Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

To ensure that the Type 1 B335 facility remains free of contamination and that RLC data remain valid, isolation controls have been established, and the facility is posted accordingly.

01

## 9 REFERENCES

- 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."
- 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.
- RFETS, Historical Site Assessment Report for Building 335, February 2002.

12

# ATTACHMENT A

## Facility Location Map

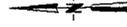
# Building Cluster 335

## Standard Map Features

-  Buildings and other structures
-  Solar Evaporation Ponds (SEPs)
-  Lakes and ponds
-  Streams, ditches, or other drainage features
-  Fences and other barriers
-  Paved roads
-  Dirt roads

### DATA SOURCE BASE FEATURES:

Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL Las Vegas. Digitized from the orthophotographs. 1/95



Scale = 1 : 12,450  
 1 inch represents approximately 1039 feet



State Plane Coordinate Projection  
 Colorado Central Zone  
 Datum: NAD27

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

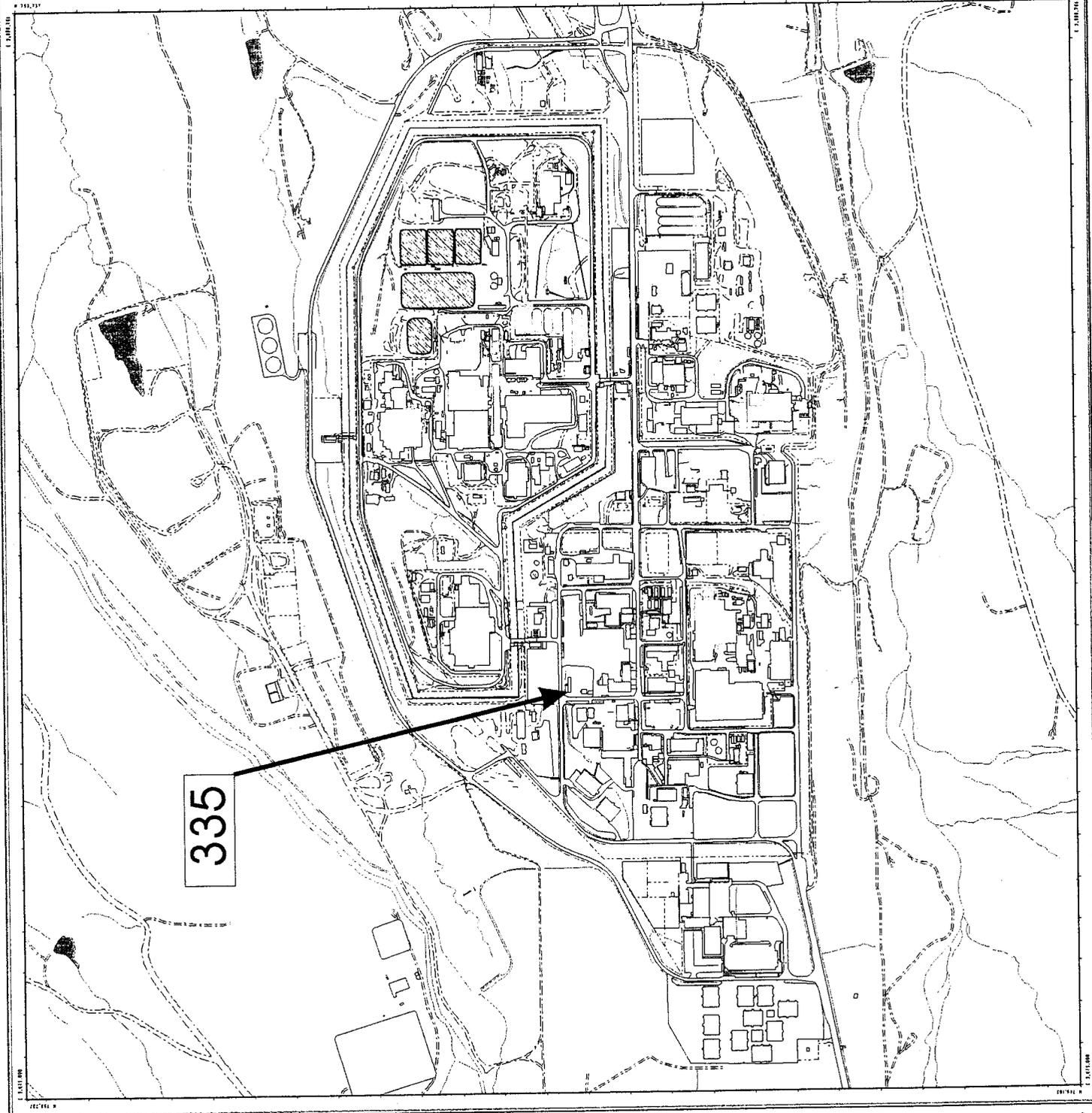
File Dept. 300-008-7107

Prepared by:



MAP ID: FY 2002

September 3, 2002



# ATTACHMENT B

## Historical Site Assessment Report

**D&D KISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

**Facility ID:** Buildings 331, C331, 331F, 331S, 334, T334B, T334D, and 335.

**Anticipated Facility Type (1, 2, or 3):** Buildings 331, C331, 331F, 331S, 334, T334B, T334D, and 335 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 331**

Building 331 is the Fire Station and Vehicle Maintenance Garage. This building is a two-story structure built in 1953 and has a total of 23,540 sq. ft. of floor space. Building 331 has had three additions to its original structure. In 1960 a 400 sq. ft. addition was added to the west of Room 114. In 1967 a 400 sq. ft. tool shed was added to the north side of the 1960 addition. In 1968 a 2,400 sq. ft. addition was added to provide additional office space and off-shift living quarter for the RFETS fireman.

The roof is constructed of concrete panels covered with built up roofing. The walls of the original building are constructed of re-enforced concrete, the 1960 addition is constructed of enforced concrete, the 1967 addition is constructed of corrugated metal walls on a steel from, and the 1968 addition is constructed of cinder blocks. The floors are poured concrete on grade.

Building 331 is serviced by the following utilities; water, sanitary, electric, and steam heat. An overhead sprinkler system and wall-mounted fire extinguishers provide fire protection.

#### **Building C331**

Building C331 is an 800 sq. ft. structure placed into service in 1975. The structure is made up of two cargo containers spaced approximately 20 ft. apart, with a roof supported by the cargo containers. The north and south walls are made of plywood with a man entrance on the south end of the building and a roll-up door on the north end of the building. The east and west walls are the sides of the cargo containers. The roof is constructed of wood covered with asphalt shingles and no insulation. The floor is a concrete slab poured on grade.

Building C331 is serviced by the following utilities: electrical and fire protection is provided by wall mounted fire extinguishers.

#### **Building 331F**

Building 331F is the fuel filling station and was constructed in 1996. Building 331F consists of a 54 sq. ft. light metal frame building designed to house a filling station attendant (currently used to store supplies) and 5 gas station style fuel pumps built on a concrete slab, which acts as a parking area for vehicles being fueled. Building 331F has 5 underground fuel tanks (TK-5A, TK-5B, TK-6A, TK-7A and TK-8A).

Building 331F has the following utilities: electrical and fire protection is provided by wall mounted fire extinguishers.

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

**Building 331S**

Building 331S is made up of 5 cargo containers placed in a row and a wooden open-ended enclosure used for storage on the east side of the cargo containers. The metal enclosure has metal side with wooden support members and a metal roof. This facility is built on an asphalt pad north of Building 331

Building 331S has the following utilities; electric and fire suppression is provided by a wall-mounted fire extinguisher.

**Building 334**

Building 334 is the General Office and Maintenance Shop Facility and was built in 1953. This building has 42,960 sq. ft. of floor space, including the mezzanine. Building 334 has had two additions to the original structure. In 1970 a 6,000 sq. ft addition was added to the east side of the original structure, and in 1985 a 3,200 sq. ft. addition was added to the north side of the 1970 addition.

The roof is constructed of concrete panel covered with built up roofing. The wall of the original building are constructed of re-enforced concrete, the 1970 addition is re-enforced concrete, and the 1985 addition is constructed of cinder blocks. The floors are poured concrete on grade.

Building 334 is serviced by the following utilities; water, sanitary, electric, and steam heat. Fire protection is provided by an overhead sprinkler system and wall-mounted fire extinguishers.

**Building T334B**

Building T334B is a 1960 sq. ft. General Office Trailer purchased in 1984. T334B has corrugated metal siding with a metal roof. T334B has hard walled offices and a large conference area in the center.

Trailer T334B is serviced by the following utilities; electric, fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

**Building T334D**

Building T334D is a 600 sq. ft. General Office Trailer purchased in 1990. T334B has corrugated metal siding with a metal roof. T334B has hard walled offices on both ends and a central work area divided into cubicles.

Trailer T334D is serviced by the following utilities; Electric, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

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

**Building 335**

Building 335 is the fire training building and was constructed in 1969. Building 335 is a 2,160 sq. ft. metal frame building with corrugated metal sides and roof, built on a concrete slab. The west section of the building was added in 1973. Tank 115 is a propane tank located north of the building and is used to provide an ignition source during the fire training exercises. On the north side of Building 335 is an 8 ft. by 15 ft. metal carbon dioxide fire extinguisher filling station constructed on a concrete pad. The carbon dioxide filling station was purchased as a used piece of equipment (likely manufactured in the 1960s) and installed in the early 1980s, and has been out of service since 1995.

Building 335 is serviced by the following utilities: electric water, and fire protection is provided by wall mounted fire extinguishers. The east side of the structure has an overhead sprinkler system, which is used for fire training purposes only.

**Historical Operations**

**Building 331**

Building 331 houses both the site vehicle maintenance garage and the site fire department. This facility was constructed in 1953 and has had several addition, which are documented in the building description section above,

The garage portion of Building 331 houses the vehicle maintenance garage. RFETS vehicles and equipment with small engines are maintained in the Building 331 garage. Occasionally spills of gasoline, oil, and antifreeze occur and are cleaned-up using an absorbent. This absorbed waste is disposed of in accordance with waste operations guidelines. Used antifreeze, oils, and lead-acid batteries are sent off site for re-cycle.

Rooms 113, 114, 115, 116, and 117 were used from 1953 to 1968 as a small metallurgical R & D laboratory, which handled some depleted uranium material. This laboratory was striped out and converted to a storage area and a work area for the garage in 1968. An old sanitary drain, which was covered with a steel plate, has the following label: "Radioactive contamination in sanitary drain, 3-21-77" still remains in Room 114 of the garage area. Building 331 has no process waste lines.

The Fire Department portion of Building 331 is used to house fire equipment and trucks, as well as office space and off-shift living quarters for the RFETS fireman. This facility is used to clean fire response equipment, to perform self-contained breathing apparatus (SCBA) maintenance, and Haz Mat spill control equipment.

The most common spills that the HazMat team responds to are oil, antifreeze, hydraulic fluid, and gasoline and diesel fuel. Spill clean-up material prior to the mid 1980s was staged in hose tower basin (with a french drain) prior to disposal. Spill clean-up material is currently handled on a case-by-case basis at the directions of waste operations personnel. See the Building 331 WISRC for additional Building 331 waste steam descriptions. See the Historical Operation section for Building 331F for a discussion on the history of the filing station originally located south of Building, later moved to the north side of Building 331, and foamed in place in 1996.

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

**Building C331**

Building C331 is constructed with two cargo containers placed about 20 feet apart and a roof connecting the two cargo containers. The cargo containers and the work area between the cargo containers is used to store grounds keeping equipment and supplies such as lawn tractors, weed-whackers, hand tools, and other grounds keeping supplies and equipment.

**Building 331F**

Building 331F is the new filling station and is used to fill RFETS vehicle with fuel (diesel and gas). Building 331F consists of a small metal frame building designed to house a filling station attendant (currently used to store supplies), and 5 gas station style fuel pumps located on a concrete slab, which acts as a parking area for vehicles being fueled. Building 331F has 5 underground fuel tanks (TK-5A, TK-5B, TK-6A, TK-7A and TK-8A).

Building 331F was constructed to replace the old filling station that was located just north of Building 331. The old filling station was removed when the new station was constructed in 1996. The old filling station tanks were cleaned and foamed in place in 1996. The tank number for the old filling station are Tanks 101, 102, 103, 104.

The original filling station (constructed in 1953) was located south of Building 331. In the late 1950s the original filling station was moved to the north side of Building 331 and is referred to as the old filling station (documented above). The tanks were believed to have been excavated and moved to the new location north of Building 331 in the late 1950s. There is no documentation indicating that the original tanks are still in place on the north side of Building 331.

**Building 331S**

Building 331S is made up of 4 cargo containers placed in a row and a metal open-ended enclosure that stores used tires, new drummed product (mostly oils), and some non-regulated used absorbent containing spilled liquids (diesel and oils). Liquid drums are placed on a secondary containment pallet. The material stored here is not RCRA regulated. The cargo containers are used to store spare parts and tires for the maintenance of the RFETS fleet of equipment by Building 331 personnel.

**Building 334**

Building 334 is the primary RFETS maintenance facility. This building has both offices and shops to support maintenance activities at RFETS. These activities include electrical, carpentry, sheet metal work, pipe fitting, HVAC, glass shop, machining, welding and an instrument shop (a.k.a. Standards Lab). Wastes such as used oils, hydraulic fluids, and coolants are put in appropriate waste containers then processed through waste operations group for disposition. In the 1960s, several pieces of equipment, from Building 444 and 881, were installed in the Buildings 334 machine shop. When this equipment was removed in the 1980s, radiological contamination was found in and under some of this machinery in the machine shop. See the Building 334 WISRC for additional Building 334 waste stream descriptions. On a few occasions in the 1960s, uranium parts were escorted to building 334 for some specialty machine work. Offer this work was performed the machines were cleaned and the area surveyed.

19

**D&D KISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

**Trailer T334B**

Trailer T334B is a general office trailer used by the RFETS Roads and Ground Department. Prior to becoming the general office trailer for Roads and Grounds personnel in 1999, the trailer was used as a general office trailer for PU&D. This trailer has historically always been used as a general office support trailer since it came on site in 1984.

**Trailer T334D**

Trailer T334D is a general office trailer used to house fire department support personnel. This trailer has historically always been used as a general office trailer since it came on site in 1990.

**Building 335**

Building 335 is used for fire training exercises and fire extinguisher maintenance activities. The building is partitioned in the center. The east portion of the building is used for fire training purposes and is lined with wallboard. Several times a year, fires were started in the east side of the building to study fire behavior and to provide training in the extinguishing of fires. This practice stopped in the 1980s. The walls and ceiling are covered with smoke residue from the training exercises. Source material used in the training exercises were actual waste streams from Building 444 and other facilities in the 400 area. The wastes included oils, solvents, pyrophoric metals, and on occasions, depleted uranium.

The west side of the building was used to re-charge and maintain fire extinguisher for RFETS. These fire extinguishers were located in all areas of the plant. On several occasions in the 1980s, fire extinguishers in the building for maintenance were found to be radiologically contaminated. Chemicals used to fill fire extinguishers include carbon dioxide, halon, nitrogen, momo-ammonium phosphate, and sodium chloride. See the Building 335 WISRC for additional Building 335 waste stream descriptions

**Current Operational Status**

Buildings 331, C331, 331F, 331S 334, and 335 are all currently operational. Building 335 is in the process of having the equipment stripped out to begin D&D activities

**Contaminants of Concern**

**Asbestos**

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

The IH group in Trailer T130B has an Asbestos Inspection Plan and Operations Maintenance Plan for Buildings 331 and 334, that summarized some general historical asbestos data. The Trailer Asbestos Management Program Baseline summarized some general T334B and T334D historical asbestos data.

The remaining facilities in the HSA have no known comprehensive asbestos surveys.

20

**D&D KISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

**Beryllium (Be)**

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

The only building addressed in this HSA on the List of known Be areas is Building 331 (Rooms 114 and 117), which is listed because of its historical use as a metallurgical laboratory involving some beryllium operations. In the past, the fire Department side of Building 331 has, on occasion, had a positive hit for beryllium on fire fighting equipment, which has entered beryllium areas. When beryllium contamination was detected on equipment, the equipment was always cleaned. The fire department side of Building 331 is not known to have any current Beryllium contamination problems.

*Summarize any recent Be sampling results:*

No recent Be samples collected on any of these facilities.

**Lead**

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

Lead in paint and lead in electrical equipment may be a concern for some of the facilities in this HSA due to the age of construction. Lead shielding was not known to have been used in any of these facilities.

See the section below for RCRA/CERCLA constituents for lead in waste stream references related to these buildings.

**RCRA/CERCLA Constituents**

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

Building 331, C331, and 334 have had occasional small spills from gasoline, diesel, oils, hydraulic fluids and antifreeze. These spills were normally cleaned using an absorbent and the used absorbent properly disposed of. Used oils and antifreezes are re-cycled. The fire department hose tower (Building 331) was used until the late 1980s to temporarily store absorbed spill response waste. The tanks for the old filling station have been cleaned and foamed in place in 1996. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

Building 331 housed RCRA Unit 2, which was closed in 1996 in accordance with the RCRA Closure Plan for B331. No other buildings addressed in this HSA is associated with Permitted RCRA Units.

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

Small volume spills of gasoline, Diesel, oil, hydraulic fluids, and antifreeze occurred in many of these facilities and are discussed in the "Process History" section above. Additional, RCRA/CERCLA release information is documented in the IHSS, PAC, and UBC section below.

*Describe methods in which spills were mitigated, if any:*

Spills were normally absorbed and disposed of in accordance with RFETS requirements.

21

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
February, 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 these facilities, there may be a concern with PCBs in paint, light ballasts, and electrical equipment. PCBs were not known to have been regularly handled in any of these facilities.

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

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

*Describe methods in which spills were mitigated, if any:*

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

22

**D&D KISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

**Radiological Contaminants**

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

None of the buildings in this HSA are currently radiologically posted. In the early history of Building 331, a small R&D metallurgical laboratory was operated in the garage portion of the building. In the late 1950s, a truck being worked on in the garage was found to have contamination on the bed of the truck (cross contamination from hauling contaminated drums). No building contamination was identified. In the past, the fire Department side of Building 331 has, on occasion, found radiological contamination on fire fighting equipment, which has entered contaminated areas. When contamination was detected it was always cleaned.

During fire training exercises in Building 335, actual waste steams from Building 444 were frequently used as fuel for these training fires. Some of this waste contained depleted uranium.

Building 334 has not housed any radiological processes, but has had equipment installed in the machine shop from Building 444 and 881. Some hot spots of uranium were detected on the equipment and under the equipment during equipment removal in the 1980s. On a few occasions in the 1960s, uranium parts were escorted to building 334 for some specialty machine work. After this work was performed the machines were cleaned and the area surveyed. Building 334 is not radiologically posted.

Building C331, 331F, 331S, T334B, and T334D have no history of radiological contamination. See individual building histories above for a more detailed description of historical operations.

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

Building 331 has several contaminated sanitary drains in the old metallurgical laboratory rooms.

*Describe methods in which spills were mitigated, if any:*

No known spills.

*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 depleted uranium. Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in the 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.

23

**D&D KISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

**Environmental Restoration Concerns**

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

Building 331 is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 300-134 -S "Reactive Metal Disposal Site South", Active.
- 2) IHSS 300-703 "Building 331 north Area", NFA approved in 1992, CDPHE approved as proposed in 2001.
- 3) IHSS 300-710 "Gasoline spill North of Building 331, NFA approved 1992, CDPHE approved as proposed in 2001.
- 4) IHSS 300-711 "Nickel-Cadmium Battery Acid Spill Outside of Building 373" Proposed NFA HRR Quarterly update January 1994.
- 5) IHSS 300-713 "Caustic Spill North of Building 331", " Proposed NFA HRR Quarterly update April, 1994.
- 6) UBC-331 – A portion of Building 331 has a UBC under the old metallurgical lab.

Building 334 is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 300-709 "Transformer Leak – 334-1", Proposed NFA in 1996 (currently under review with regulatory agencies).
- 2) IHSS 300-156.1 "Building 371 Parking Lot", NFA approved in 2001.

Building 335 is associated with or located near the following IHSSs, PACs, and UBCs;

- 1) IHSS 300-134-N "Lithium Metal Distraction Site", Active.
- 2) IHSS 300-128 "Oil Burning Pit No. 1", Active.
- 3) IHSS 300-171 "Solvent Burning Ground", Active.

Building 331F and 331S are on the edge of the border of IHSS 300-134-S "Reactive Metal Disposal Site South". Buildings C331, T334B, and T334D are not directly referenced in 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):*

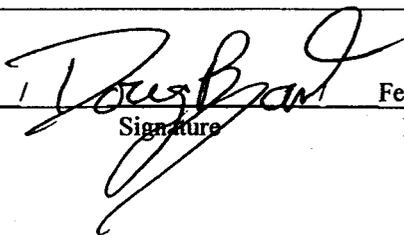
Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. Building 331, 334, and 335 WSRICs, (Building C331, 331F, T334B, and T334D do not have WSRICs). In addition, a facility walkdown and interviews were performed.

**DOD MISS Facility Characterization  
Historical Site Assessment Report  
February, 2002 Rev. 0**

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)
<b>Building 331</b>	44,500	0	2,800	0	900	TBD	Built-up Roofing 3,600 cu ft
<b>Building C331</b>	250	150	None	None	None	TBD	cargo containers are excluded from estimate
<b>Building 331F</b>	900	None	100	40	None	TBD	None
<b>Building 331S</b>	None	50	None	100	None	TBD	Asphalt 400, cargo containers are excluded from estimate
<b>Building 334</b>	85,500	0	5,900	0	1,800	TBD	Built-up Roofing 6,800 cu ft
<b>Trailer T334B</b>	None	400	500	800	1,000	TBD	None
<b>Trailer T334D</b>	None	275	250	350	450	TBD	None
<b>Building 335</b>	2500	None	600	900	300	TBD	None
<b>Further Actions</b> <i>Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):</i>							
Begin the RLC/PDS process.							
<b>Note:</b> This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.							

Prepared By:

Doug Bryant  
Name



Signature

February 2002  
Date

25

# ATTACHMENT C

## Radiological Data Summaries and Survey Maps

**SURVEY UNIT B335-A-001  
RADIOLOGICAL DATA SUMMARY - PDS**

**Survey Unit Description: B335 (Interior & Exterior)**

**B335-A-001**  
**PDS Data Summary**

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	28		28		
	<b>Number Required</b>		<b>Number Obtained</b>		
MIN	-14.0	dpm/100 cm <sup>2</sup>	MIN	-0.3	dpm/100 cm <sup>2</sup>
MAX	63.7	dpm/100 cm <sup>2</sup>	MAX	2.9	dpm/100 cm <sup>2</sup>
MEAN	14.9	dpm/100 cm <sup>2</sup>	MEAN	0.4	dpm/100 cm <sup>2</sup>
STD DEV	19.4	dpm/100 cm <sup>2</sup>	STD DEV	1.0	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

28

**SURVEY UNIT B335-A-001  
TSA - DATA SUMMARY**

<b>Manufacturer:</b>	NE Tech	NE Tech	NE Tech	N.E. Tech	N.E. Tech
<b>Model:</b>	DP-6	DP-6	DP-6	AP-6	DP-6
<b>Instrument ID#:</b>	1	2	3	8	9
<b>Serial #:</b>	1366	1250	1379	137	396
<b>Cal Due Date:</b>	2/1/03	10/10/02	11/20/02	1/22/03	1/12/03
<b>Analysis Date:</b>	8/13/02	8/13/02	8/13/02	8/28/02	8/28/02
<b>Alpha Eff. (c/d):</b>	0.204	0.213	0.173	0.190	0.234
<b>Alpha Bkgd (cpm)</b>	2.7	0.7	0.7	3.0	4.0
<b>Sample Time (min)</b>	1.5	1.5	1.5	1.5	1.5
<b>LAB Time (min)</b>	1.5	1.5	1.5	1.5	1.5
<b>MDC (dpm/100cm<sup>2</sup>)</b>	48.0	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1</sup>
1	1	7.3	35.8	8.0	39.2	18.5
2	1	3.3	16.2	2.7	13.2	-1.1
3	2	8.7	40.8	0.7	3.3	23.6
4	3	13.7	79.2	4.7	27.2	61.9
5	2	6.7	31.5	2.0	9.4	14.2
6	1	10.7	52.5	4.0	19.6	35.2
7	2	6.0	28.2	3.4	16.0	10.9
8	1	4.0	19.6	0.0	0.0	2.3
9	1	6.7	32.8	1.3	6.4	15.6
10	2	10.0	46.9	2.0	9.4	29.7
11	3	7.3	42.2	7.3	42.2	24.9
12	3	8.0	46.2	6.0	34.7	29.0
13	2	3.3	15.5	1.3	6.1	-1.8
14	1	4.7	23.0	3.3	16.2	5.8
15	2	3.3	15.5	4.0	18.8	-1.8
16	1	6.0	29.4	3.3	16.2	12.2
17	2	4.0	18.8	0.7	3.3	1.5
18	3	5.3	30.6	5.3	30.6	13.4
19	3	4.7	27.2	6.7	38.7	9.9
20	2	4.0	18.8	4.0	18.8	1.5
21	3	4.0	23.1	2.0	11.6	5.9
22	1	4.0	19.6	2.7	13.2	2.3
23	1	3.3	16.2	4.0	19.6	-1.1
24	2	0.7	3.3	0.7	3.3	-14.0
25	2	4.0	18.8	2.0	9.4	1.5
26	2	4.0	18.8	0.7	3.3	1.5
27	3	12.0	69.4	3.3	19.1	52.1
28	3	14.0	80.9	6.0	34.7	63.7

1 - Average LAB used to subtract from Gross Sample Activity

17.3	Sample LAB Average
MIN	-14.0
MAX	63.7
MEAN	14.9
SD	19.4
Transuranic DCGL <sub>w</sub>	100

**QC Measurements**

22 QC	2	2.7	12.7	2.1	9.9	2.8
5 QC	1	4.0	19.6	2.0	9.8	9.8

1 - Average QC LAB used to subtract from Gross Sample Activity

9.8	QC LAB Average
Transuranic DCGL <sub>w</sub>	100

29

**SURVEY UNIT B335-A-001  
RSC - DATA SUMMARY**

<b>Manufacturer:</b>	Eberline	Eberline	Eberline	Eberline
<b>Model:</b>	SAC-4	SAC-4	SAC-4	SAC-4
<b>Instrument ID#:</b>	1	2	3	4
<b>Serial #:</b>	824	851	963	966
<b>Cal Due Date:</b>	10/1/02	10/29/02	1/3/03	11/6/02
<b>Analysis Date:</b>	8/13/02	8/13/02	8/13/02	8/13/02
<b>Alpha Eff. (c/d):</b>	0.33	0.33	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.1	0.2	0.0	0.1
<b>Sample Time (min)</b>	2	2	2	2
<b>Bkgd Time (min)</b>	10	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	7.0	8.0	4.5	7.0

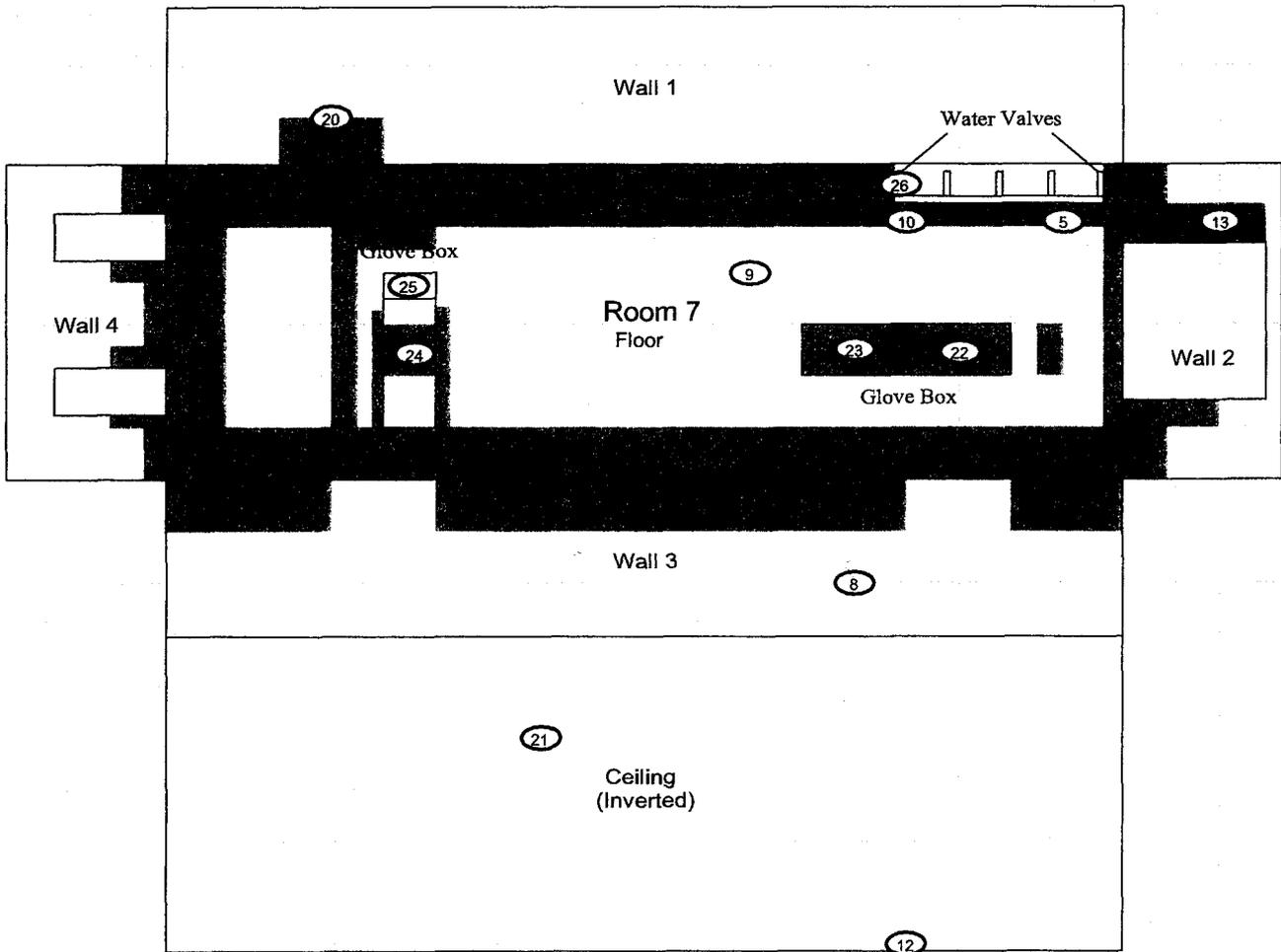
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm <sup>2</sup> )
1	1	2.0	2.9
2	2	1.0	1.2
3	3	1.0	1.2
4	4	1.0	1.4
5	1	0.0	-0.2
6	2	0.0	-0.3
7	3	0.0	-0.3
8	4	0.0	-0.2
9	1	0.0	-0.2
10	2	1.0	1.2
11	3	0.0	-0.3
12	4	0.0	-0.2
13	1	1.0	1.4
14	2	1.0	1.2
15	3	0.0	-0.3
16	4	0.0	-0.2
17	1	1.0	1.4
18	2	0.0	-0.3
19	3	0.0	-0.3
20	4	0.0	-0.2
21	1	0.0	-0.2
22	2	0.0	-0.3
23	3	0.0	-0.3
24	4	0.0	-0.2
25	1	1.0	1.4
26	2	0.0	-0.3
27	3	0.0	-0.3
28	4	2.0	2.9
		<b>MIN</b>	-0.3
		<b>MAX</b>	2.9
		<b>MEAN</b>	0.4
		<b>SD</b>	1.0
		<b>Transuranic DCGL<sub>w</sub></b>	20

30

**PRE-DEMOLITION SURVEY FOR BUILDING 335**

Survey Area: A      Survey Unit: B335-A-001      Classification: 3  
 Building: 335  
 Survey Unit Description: Interior & Exterior      Total Roof Area: 200 sq. m.  
 Total Area: 1171 sq. m.      Total Floor Area: 200 sq. m.

## Building 335 Interior



 Scan Area

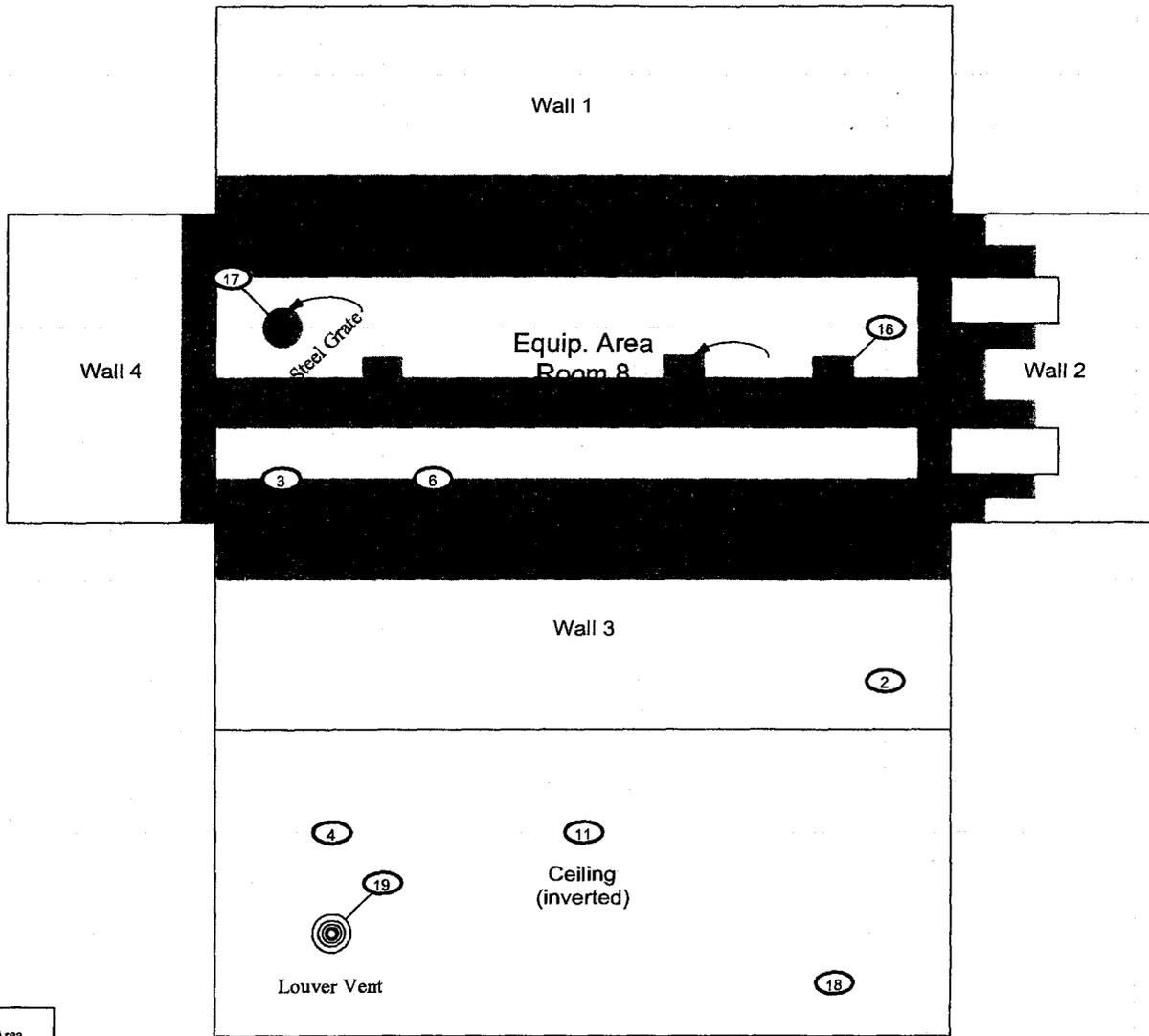
<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li> Smear &amp; TSA Location</li> <li> Smear, TSA &amp; Sample Location</li> <li> Open/Inaccessible Area</li> <li> Area in Another Survey Unit</li> </ul>	<p><small>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</small></p>	<p align="center"><b>N</b> ↑</p>	<p align="center">0      FEET      15 0      METERS      5</p> <p align="center">1 inch = 12 feet    1 grid sq. = 1 sq. m.</p>	<p align="center">U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707      Prepared for: </p> <p align="center"><b>DynCorp</b> THE ART OF TECHNOLOGY</p> <p>MAP ID: 02-0341/335-1-SC      August 5, 2002</p>
<p><b>Scan Survey Information</b> Survey Instrument ID #(s): <u>1, 8, 9</u> RCT ID #(s): <u>1, 2, 4</u></p>				

31

**Pre-DEMOLITION SURVEY FOR BUILDING 335**

Survey Area: A      Survey Unit: B335-A-001      Classification: 3  
 Building: 335  
 Survey Unit Description: Interior & Exterior      Total Roof Area: 200 sq. m.  
 Total Area: 1171 sq. m.      Total Floor Area: 200 sq. m.

## Building 335 Interior



■ Scan Area

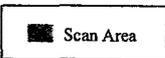
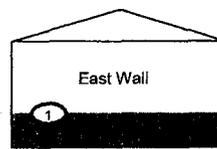
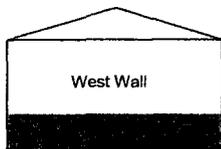
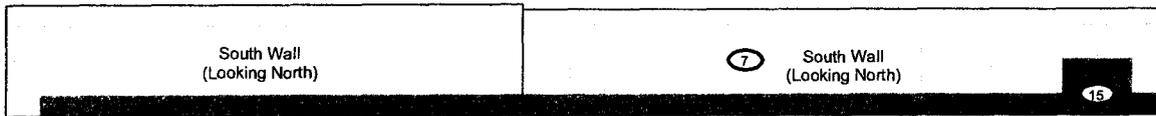
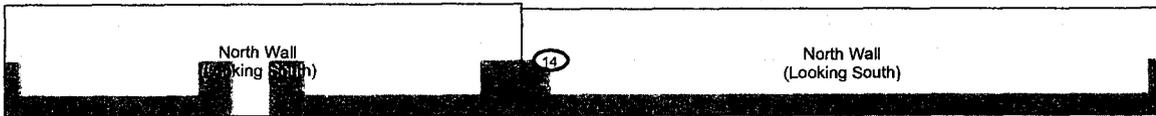
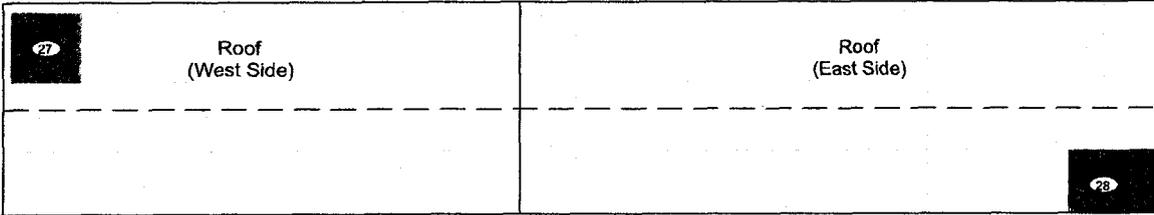
<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li>⊙ Smear &amp; TSA Location</li> <li>⊠ Smear, TSA &amp; Sample Location</li> <li>■ Open/Inaccessible Area</li> <li>□ Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p align="center"><b>N</b></p> <p align="center">↑</p>	<p align="center">0      FEET      15</p> <p align="center">0      METERS      5</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p>	
				<p><b>Scan Survey Information</b></p> <p>Survey Instrument ID #(s): <u>1, 8, 9</u></p> <p>RCT ID #(s): <u>1, 2, 4</u></p>	<p>Prepared by: GIS Dept. 303-966-7707</p> <p><b>DynCorp</b> THE ART OF TECHNOLOGY</p> <p>MAP ID: 02-0341/335-2-SC</p>

32

**PRE-DEMOLITION SURVEY FOR BUILDING 335**

Survey Area: A      Survey Unit: B335-A-001      Classification: 3  
 Building: 335  
 Survey Unit Description: Interior & Exterior      Total Roof Area: 200 sq. m.  
 Total Area: 1171 sq. m.      Total Floor Area: 200 sq. m.

**Building 335  
 Exterior**



<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li> Smear &amp; TSA Location</li> <li> Smear, TSA &amp; Sample Location</li> <li> Open/Inaccessible Area</li> <li> Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p><b>N</b> ↑</p>	<p>0      FEET      25</p> <p>0      METERS      8</p> <p>1 inch = 18 feet    1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy                  Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707      Prepared for:</p> <p><b>DynCorp</b>                  THE ART OF TECHNOLOGY</p> <p>MAP ID: 02-0341/335-3-SC      August 5, 2002</p>

33

# ATTACHMENT D

## Chemical Data Summaries and Sample Maps

### Asbestos Data Summary

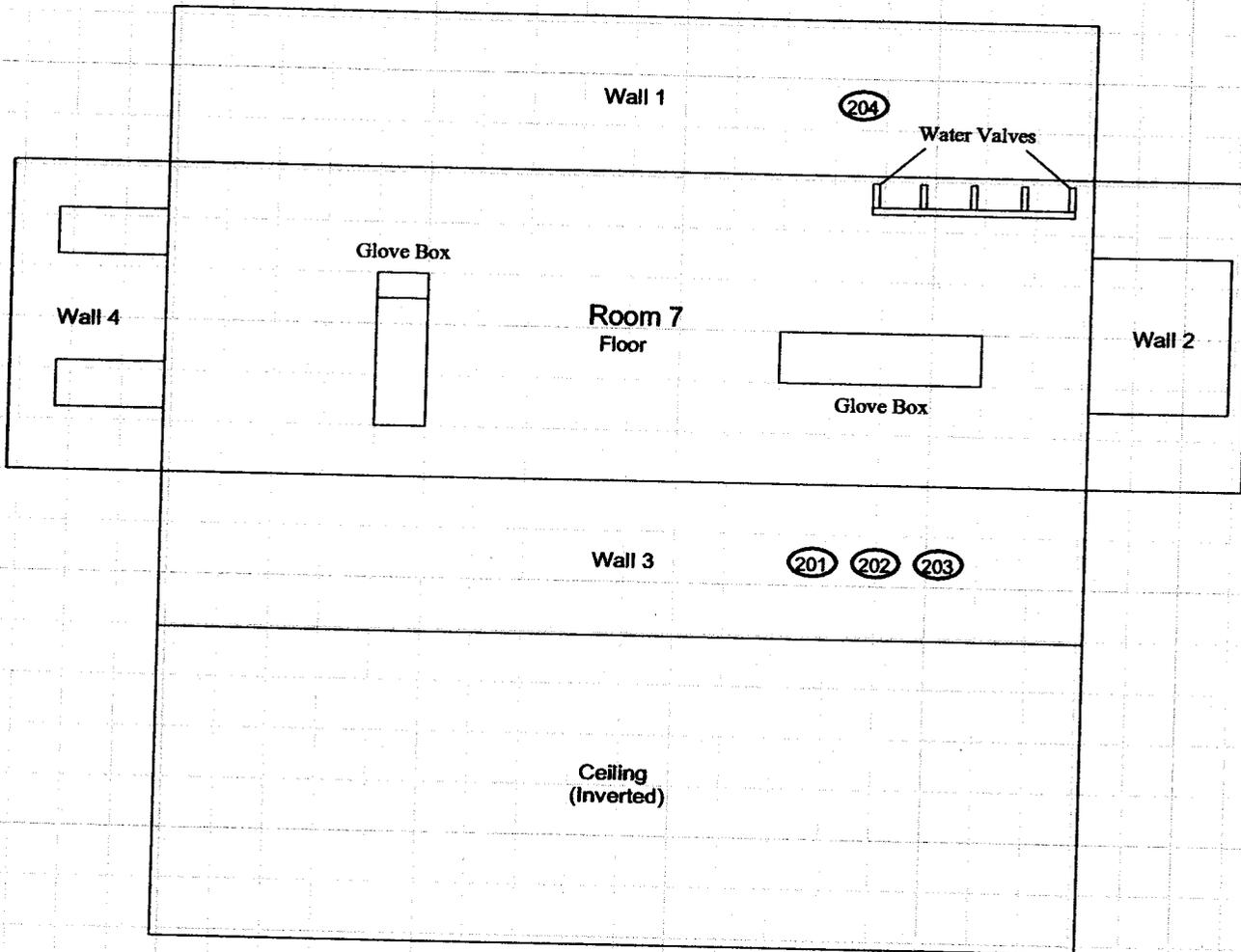
Sample Number	Map Survey Point Location	Material Sampled & Location	Analytical Results
335-08132002-315-201	201	<b>Building 335</b>	
335-08132002-315-202	202	Room 7 - Tan window glazing with multi-colored paint, south interior wall	None Detected
335-08132002-315-203	203	Room 7 - Tan and white drywall only, south wall	None Detected
		Room 7 - Tan window glazing with multi-colored paint, south interior wall	Trace of Chrysotile, 0.25% by Point Count
335-08132002-315-204	204	Room 7 - Tan and white drywall only, north wall	None Detected
335-08132002-315-205	205	Tan rubbery caulking, south exterior wall	None Detected
335-08132002-315-206	206	Blue/white paint with white fibrous material, south exterior wall	None Detected

# CHEMICAL SAMPLE MAP

Building: 335

PAGE 1 OF 3

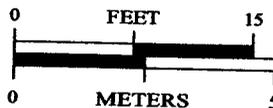
## Building 335 Interior Room 7



### 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 = 12 feet 1 grid sq. = 1 sq. m.

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Prepared for:

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MAP ID: 02-0341/335-1-ASB

August 14, 2002

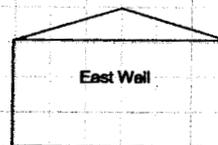
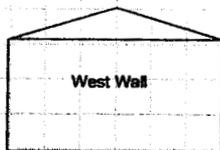
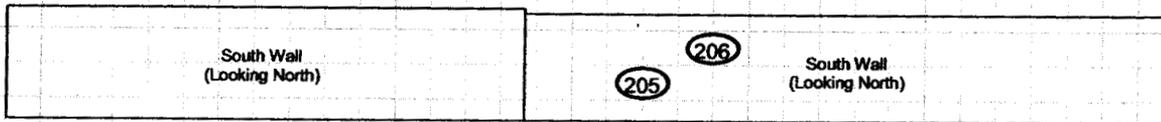
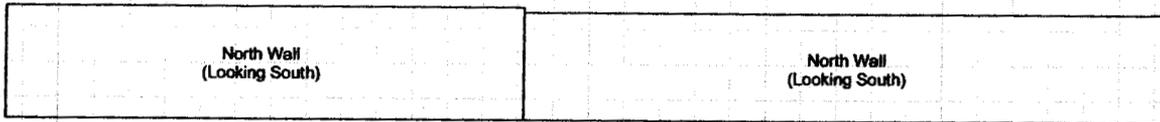
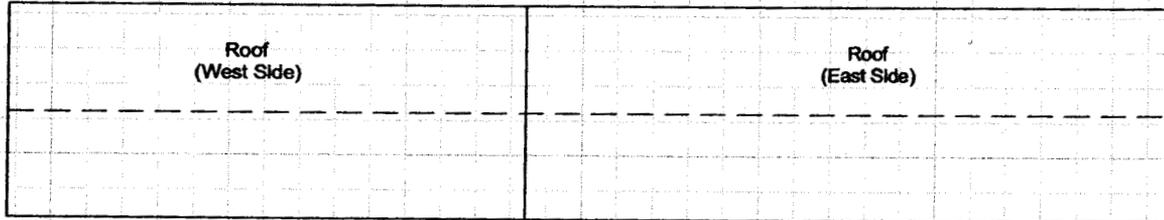
36

# CHEMICAL SAMPLE MAP

**Building: 335**

PAGE 3 OF 3

## Building 335 Exterior

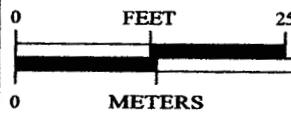


### **SURVEY MAP LEGEND**

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

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- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 18 feet 1 grid sq. = 1 sq. m.

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MAP ID: 02-0341/335-3-ASB

August 14, 2002

17

### Beryllium Data Summary

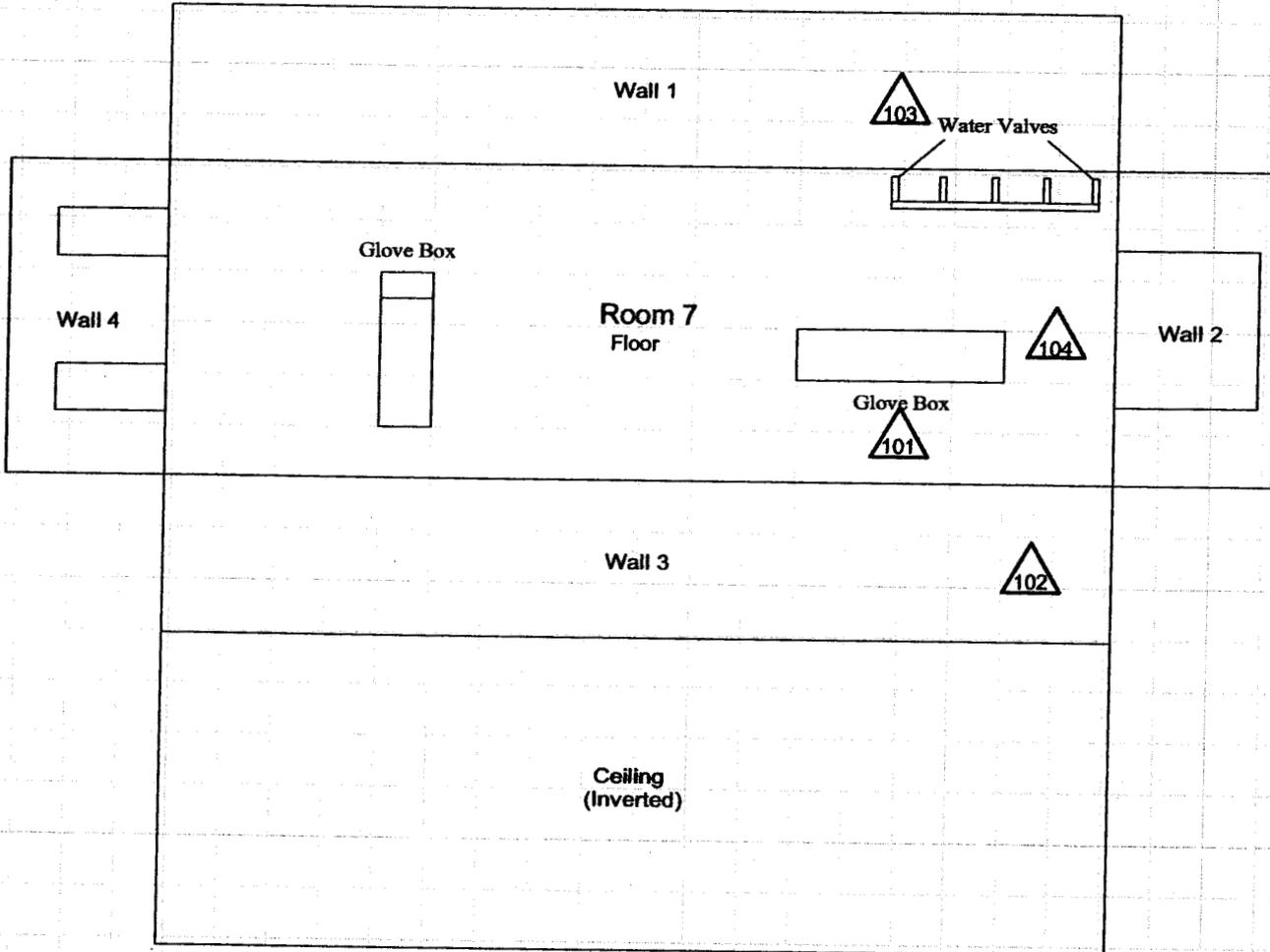
Sample Number	Map Survey Point Location	Sample Location	Result ( $\mu\text{g}/100 \text{ cm}^2$ )
335-08132002-315-101	101	<b>Building 335</b>	
335-08132002-315-102	102	Room 7 - Concrete floor by glove box	< 0.1
335-08132002-315-103	103	Room 7 - Top of electrical box, south wall	< 0.1
335-08132002-315-104	104	Room 7 - Top of window sill, north wall	< 0.1
335-08132002-315-105	105	Room 7 - Interior of floor drain	< 0.1
		Room 8 - Top of electrical transformer, north wall	< 0.1

# CHEMICAL SAMPLE MAP

Building: 335

PAGE 1 OF 3

## Building 335 Interior Room 7

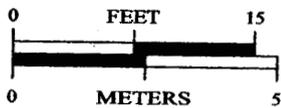


### SURVEY MAP LEGEND

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

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- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 12 feet 1 grid sq. = 1 sq. m.

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MAP ID: 02-0341/335-1-BE

August 14, 2002

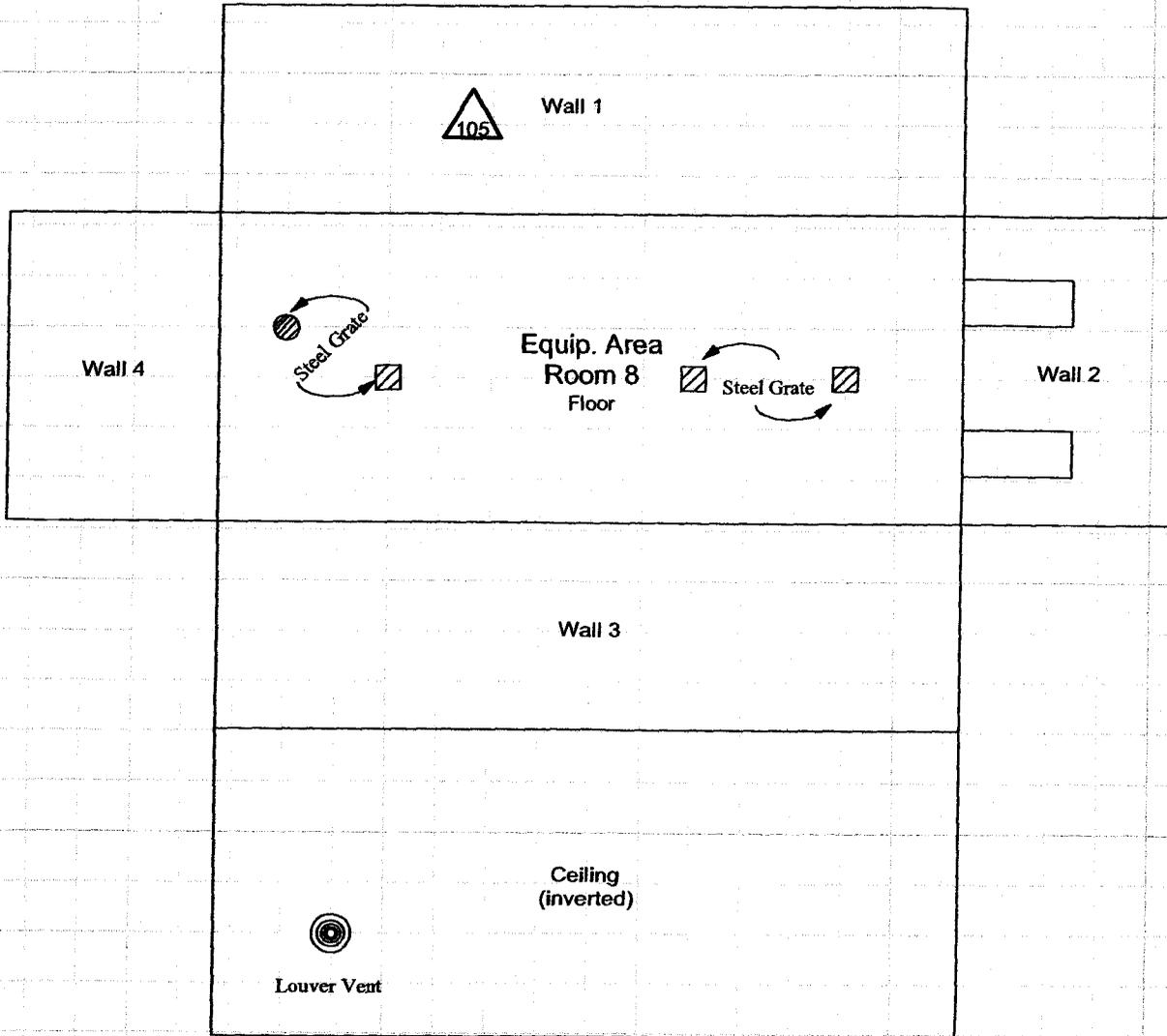
19

# CHEMICAL SAMPLE MAP

Building: 335

PAGE 2 OF 3

## Building 335 Interior Room 8



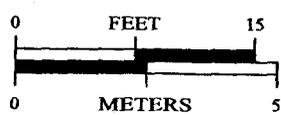
### SURVEY MAP LEGEND

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

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-  Open/inaccessible Area
-  Area in Another Survey Unit



1 inch = 12 feet 1 grid sq. = 1 sq. m.

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MAP ID: 02-0341/335-2-BE      August 14, 2002

FO

# 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 asbestos and 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, asbestos in E-2, and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

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 335 based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Stated differently, based on the well-established suite of actinides historically used at the RFETS, all of these actinides would emit alpha radiation in exceedance of the applicable transuranic DCGLs before other DCGLs would be exceeded for their respective Uranium species – Technical Basis Document 00162, Rev. 0, *Technical Justification for Types of Surveys Performed During Reconnaissance Level Characterization Surveys and Pre-Demolition Surveys in RISS Facilities*, corroborates the use of this approach.

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.

**Table E-1 V&V of Radiological Surveys For Building 335**

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		COMMENTS
QUALITY REQUIREMENTS	Parameters	Measure	frequency	
ACCURACY	initial calibrations	90% < x < 110%	≥ 1	Multi-point calibration through the measurement range encountered in the field; programmatic records. Performed daily/within range.
	daily source checks	80% < x < 120%	≥ 1/day	
	local area background: Field	typically < 10 dpm	≥ 1/day	
PRECISION	field duplicate measurements for TSA	≥ 5% of real survey points	≥ 10% of reals	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.) N/A
	MARSSIM methodology (Survey Unit B335-A-001) Survey Maps	statistical and biased	NA	N/A
REPRESENTATIVENESS	Controlling Documents (Characterization Pkg; RSPs)	NA	NA	Random w/ statistical confidence.
COMPARABILITY	units of measure	qualitative	NA	Random and biased measurement locations controlled/mapped to ± 1m.
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable detection limits	dpm/100cm <sup>2</sup>	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. Use of standardized engineering units in the reporting of measurement results.
SENSITIVITY		> 95%	NA	See Table E-4 for details.
		> 95%	NA	
		TSA: ≤ 50 dpm/100cm <sup>2</sup> RA: ≤ 10 dpm/100cm <sup>2</sup>	all measures	MDAs ≤ 1/2 DCGL <sub>w</sub> per MARSSIM guidelines.

**Table E-2 V&V Of Chemical Results-Asbestos For Building 335**

V&V CRITERIA, CHEMICAL ANALYSES ASBESTOS		METHOD: EPA 600/R-93/116		DATA PACKAGE	
QUALITY REQUIREMENT		LAB ---->	Reservoirs Environmental, Inc	RIN ---->	02D1458
ACCURACY	Calibrations: Initial/continuing	Measure below detectable amounts	Frequency ≥1		
PRECISION	Actual Number Sampled LCSD Lab duplicates	all below detectable amounts	≥6 samples		
REPRESENTATIVENESS	COC	Qualitative	NA		Semi-quantitative, per (microscopic) visual estimation.
COMPARABILITY	Hold times/preservation	Qualitative	NA		Semi-quantitative, per (microscopic) visual estimation.
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA		Chain-of-Custody intact: completed paperwork, containers w/ custody seals.
COMPLETENESS	Measurement Units	Qualitative	NA		N/A
	Plan vs. Actual samples Usable results vs. unusable	% by bulk volume	NA		See original Chemical Characterization Package (planning document); for field/sampling procedures (located in project process, and data reduction of the planning, sampling/analysis measurement results.
SENSITIVITY	Detection limits	Qualitative <1% by volume	NA		Use of standardized engineering units in the reporting of measurement results.
			all measures		See Table E-4; final number of samples at Certified Inspector's discretion.
					N/A

**Table E-3 V&V Of Chemical Results-Beryllium For Building 335**

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville, Littleton, Co. 02D1437
<b>QUALITY REQUIREMENTS</b>			
<b>ACCURACY</b>	Calibrations	Measure	Frequency
	Initial	linear calibration	≥1
	Continuing	80%<-%R<120%	≥1
	LCS/MS	80%<-%R<120%	≥1
	Blanks - lab & field	<MDL	≥1
<b>PRECISION</b>	interference check std (ICP)	NA	NA
	LCSD	80%<-%R<120%	≥1
	field duplicate	(RPD<20%)	≥1
<b>REPRESENTATIVENESS</b>	COC	all results < RL	≥1
	hold times/preservation	Qualitative	NA
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA
<b>COMPARABILITY</b>	measurement units	Qualitative	NA
	Plan vs. Actual samples	ug/100cm <sup>2</sup>	NA
<b>COMPLETENESS</b>	usable results vs. unusable	>95%	NA
	detection limits	>95%	NA
		MDL of 0.012 ug/100cm <sup>2</sup>	all measures
		<b>COMMENTS</b>	
		No qualifications significant enough to change project decisions, i.e., classification of Type 1 facility confirmed. All results were below associated action levels.	

15

**Table E-4 Data Completeness Summary For Building 335**

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.)
Asbestos	B335	6 biased	6 biased	All results < 1% by volume	40 CFR 763.86; 5 CCR 1001-10; EPA 600/R-93/116 RIN02D1458
Beryllium	B335 (interior)	5 biased (interior)	5 biased (interior)	No elevated contamination found at any location	OSHA ID-125G - RIN02D1457 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ).
Radiological	Survey Area A Survey Unit: B335-A-001 B335 (interior and exterior)	28 TSAs (15 random/13 biased) & 28 Smears (15 random/13 biased) 2 QC TSA 10% scan interior 5% scan exterior	28 TSAs (15 random/13 biased) & 28 Smears (15 random/13 biased) 2 QC TSA 10% scan interior 5% scan exterior	No elevated contamination at any location; all values below PDS unrestricted release levels	No results above transuranic DCGL <sub>w</sub> or DCGL <sub>EMC</sub> action level (20 dpm/100cm <sup>2</sup> removable, 100 dpm/100cm <sup>2</sup> average, and 300 dpm/100cm <sup>2</sup> maximum).

16

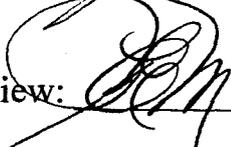
## B335 Type 1 RLCR Review

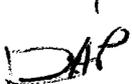
Please initial and date below once you have reviewed and are satisfied with the attached report. Duke Snyder will be the only ESH&Q signature that goes on the cover page for this report. Please return to Duane Parsons after you have reviewed the report. Please **keep the reviews moving** since there is only a couple of days scheduled for all of the reviews. Make sure you have accounted for all your samples in the tables and on the maps. Thank you.

IH Review:  David Babbs

EC Review:  Matt Francis

RE Review:  Roger Worrick

QA Review:  9/7/02 Paul Miles

FCC Review:  9/9/02 Duane Parsons