Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

Buildings 881F Closure Project

VERSION 0

June 7, 2004

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

RECEIVED
JUL 13 2004

ADMIN RECORD

B881-A-000052

1/94

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VERSION 0

June 7, 2004

Reviewed by: _____ Date: 6/8/04
Don Risoli, Quality Assurance

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ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
$DCGL_{EMC}$	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
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
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
RSA	Removable Surface Activity
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

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EXECUTIVE SUMMARY

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 881F. Because this Type 2 facility will be decommissioned, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) to supplement the Reconnaissance Level Characterization of this Type 2 facility. Building surfaces characterized as part of this PDS included the floors, walls, ceilings, and equipment. Environmental media beneath and surrounding the facility was not within the scope of this PDS and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

This PDS encompassed both radiological and chemical characterization to enable the 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 Report and Reconnaissance Level Characterization Report.

Results indicate that no radiological or chemical contamination exists in excess of the PDSP unrestricted release limits. There was no asbestos containing materials associated with Building 881F. Leaking PCB ballasts (and those greater than 9 pounds), and hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) have been removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. Based on the age of the building, paints are assumed to contain PCBs, and painted surfaces will be managed as PCB Bulk Product Waste.

Based upon this PDSR, Building 881F can be decommissioned and the waste managed as PCB Bulk Product or sanitary waste. Demolition concrete rubble can be used for backfill on-site per the RFCA Recycling Concrete RSOP. To ensure the facility remains free of contamination and PDS data remain valid, Level 1 Isolation Controls have been established and the areas posted accordingly.

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1 INTRODUCTION

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 881F. Because this Type 2 facility will be decommissioned, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) to supplement the Reconnaissance Level Characterization of these Type 2 facilities. Building surfaces characterized as a part of this PDS included floors, walls, ceilings and equipment. Environmental media beneath and surrounding the facilities were not within the scope of this PDS and will be addressed 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 881F. The location of this facility is shown in Attachment A, *Facility Location Map*. This facility no longer supports the RFETS mission and will be decommissioned to reduce Site infrastructure, risks and/or operating costs.

Before this Type 2 facility can be decommissioned, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied; this document presents the PDS results for Building 881F. 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 is built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report and Reconnaissance Level Characterization Report.

1.1 Purpose

The purpose of this report is to communicate and document the results of the Building 881F PDS effort. A PDS is performed prior to 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 881F. The PDS of Building 881 will be performed, documented, and approved in a stand-alone PDSR. Environmental media beneath and surrounding the facilities are not within the scope of this PDSR 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 PDS 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.

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2 HISTORICAL SITE ASSESSMENT

A Facility-specific Historical Site Assessment (HSA) and a Reconnaissance Level Characterization (RLC) was conducted to understand the facility history and related hazards. The HSA consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report, and were used to design the RLC. The RLC for Building 881F was performed in FY 2002 as part of the Building 881 Cluster RLCR (refer to *Reconnaissance Level Characterization Report for the Building 881 Cluster,* dated November 6, 2001, Revision 0). Based on the RLC results, Building 881F is classified as Type 2 facility, therefore, PDS characterization was required before decommissioning of the facilities. The HSA and RLC results were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. HSA and RLC documentation are located in the RISS Characterization Project files.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

3.1 In-Process Strip-out and Decontamination

Radiological contamination was identified during the RLC, as well as, during the in-process stripout and decontamination phase in Building 881F. Thus, stripout and decontamination was required prior to the PDS. All potentially contaminated equipment and system piping were removed from the buildings prior to PDS. After stripout and decontamination was completed, the areas were cleaned up, isolated and re-surveyed prior to turnover to the PDS Team.

3.2 Transuranic Versus and Uranium Activity Areas

Based on the RLC data and historical and process knowledge, transuranic and uranium activity were both identified as a concern inside Building 881F. Therefore, in-process media sampling was performed to determine the transuranic and uranium areas of concern. Biased media samples were collected in the 881F plenum and were isotopically analyzed for transuranic and uranium contamination. Based on the isotopic media sample results, Building 881F was determined not to have transuranic activity greater than the transuranic unrestricted release criteria. Therefore, this building was surveyed and released to the uranium PDS unrestricted release criteria. Refer to Attachment B-1, *Media Sample Results Table and Sample Location Map*, for the "as left" media sample results and the sample locations.

3.3 Building 881F Confirmatory Surveys (Exterior & Interior)

Building 881F exterior was surveyed per PDS requirements as part of the *Reconnaissance Level Characterization Report for the Building 881 Cluster,* dated November 6, 2001, and met PDS unrestricted release levels. An additional confirmatory survey of the Building 881F exterior was performed during the PDS survey, and all results were less than the PDS unrestricted release levels. A confirmatory survey of the Building 881F interior was also performed after the PDS survey, and all results were less than the PDS unrestricted release levels. Refer to Attachment B-2, *881F Confirmatory Surveys, Radiological Data and Survey Maps* for the building exterior and interior confirmatory radiological survey data, survey locations, and radiological maps.

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3.4 PDS Planning and Preparation

Building 881F 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, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files for the Building 881F Radiological Characterization Plan). Individual radiological survey unit packages are maintained in the RISS Characterization Project files.

Two radiological survey unit packages were developed for Buildings 881F: 881P01 and 881P02. Refer to Attachment B-3, *881F Survey Unit Map* for the locations of these survey units. The survey unit packages were 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*. Individual radiological survey unit packages are maintained in the RISS Characterization Project files.

3.5 PDS Survey Results

The table below summarizes the 881F PDS radiological survey data by Survey Unit:

PDS Radiological Summary Survey Table

Survey Unit	Description	MARSSIM Class	Number of TSA Surveys	Number of RSA Surveys	Percent Scanned (alpha)	Survey Unit Class Justification	Survey Results
881P01	881F Interior – walls, floor and ceiling	3	30- 15 random/15 biased, 2 – QC	30 – 15 random/15 biased	10% scan of all accessible surfaces, (minimum of 275 m^2) at biased locations	Area was not expected to contain residual radioactivity, or expected to contain levels of residual radioactivity at a small fraction of the $DCGL_W$.	All surveys and scans were less than the PDS unrestricted release levels.
881P02	881F Inlet Air (Pipe) Chase	1	16 – systematically grid, 2 – QC	16 – systematically grid	100% scan of all surfaces (313 m^2)	Area had, prior to remediation, a potential for radioactive contamination, or known contamination above the $DCGL_W$.	All surveys and scans were less than the PDS unrestricted release levels.

Radiological survey unit data, statistical analysis results, survey locations and radiological scan maps are presented in Attachment B-4, *Radiological Data Summaries and Survey Maps.*

3.6 881F Ventilation Plenum

The ventilation plenum inside 881F was radiologically surveyed and unconditionally released as equipment in accordance with the Waste Release Evaluation (WRE) process. The WRE and radiological survey of the 881F ventilation plenum is presented in Attachment B-5, *881F Ventilation Plenum Radiological Waste Release Evaluation.* The 881F ventilation plenum was surveyed and released to the uranium unrestricted release criteria – refer to the WRE for isotopic results and an explanation of the isotopic results data. Based on the WRE for isotopic results (which were of elevated smear samples collected inside the plenum prior to decontamination) and the PDSP media samples reported in Attachment B-1 (which were collected at elevated locations in the ventilation chase leading into the 881F plenum), the 881F Building, plenum and ventilation chase were released to the uranium unrestricted release criteria

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 881F 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 was developed during the planning phase that describes sampling requirements and the justification for the sample locations and estimated sample numbers. The contaminants of concern were asbestos, beryllium, and RCRA constituents. Refer to Attachment C, *Chemical Summary Data and Sample Maps*, for details on sample results and sample locations. Isolation control postings are displayed on affected structures to ensure no hazardous materials are introduced.

4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted during in-process stripout of the facility. A CDPHE-certified asbestos inspector conducted the inspections 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. Based on the inspection, there was no asbestos containing materials associated with Building 881F. On this basis, no additional asbestos sampling was required or performed as part of this PDS.

4.2 Beryllium (Be)

All of the areas and equipment that contained beryllium contamination were either decontaminated or removed prior to the PDS. The final post-decontamination conditions of these areas as well as the rest of the building are reported in this PDSR. Random and biased beryllium samples were collected in Building 881F as part of this PDSR. Final PDS beryllium smear results were less than the investigative limit of 0.1 $\mu g/100cm^2$. Smear samples were collected on all facility surfaces, including the inside and outside of systems and equipment, in accordance with the PDSP and the *Beryllium Characterization Procedure,* PRO-536-BCPR, Revision 0, September 9, 1999. PDS beryllium sample results and location maps are contained in Attachment C, *"PDSR Beryllium Data Summaries and Sample Maps."*

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

Based on a review of the HSAR, RLCR, interviews, facility walk-downs, and a review of waste storage area inspection forms, there is no indication that Building 881F was contaminated by RCRA/CERLCA constituents. Chemicals may have been used within 881F, but there are no records or visible signs of chemical releases, therefore sampling was not performed or required as part of the PDS.

Sampling for lead in paint in Building 881F 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. There were no high contamination areas identified in Building 881F.

The facility contained some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, and lead-acid batteries. However, these items have been removed and managed in accordance with the Colorado Hazardous Waste Act.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR, RLCR, interviews, and facility walk-downs of Building 881F, no PCB-containing equipment was ever used or stored in the buildings, making the potential for PCB contamination resulting from spills highly unlikely. Therefore, PCB sampling was not performed as part of the PDS.

Based on the age of the facilities (constructed prior to 1980), paints used may contain PCBs, and painted surfaces will need to be disposed of as PCB Bulk Product Waste.

The facilities contained PCB fluorescent light ballasts, however, all ballasts have been checked and leaking PCB ballasts and those weighing more than 9 lbs, have been removed from the facility and managed in accordance with the Colorado Hazardous Waste Act. Non-leaking PCB ballasts of less than 9 lbs. may remain in the facility and will be disposed of off site as PCB Bulk Product Waste.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 881F are those common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls. Building 881F sits directly above (on top of) Building 881 and has a large ventilation chase on the east side leading down into Building 881- heavy equipment operators should be cautious of these situations during demolition. There are no other unique hazards associated with this facility. Building 881F has been relatively well maintained and is in good physical condition, 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 the decommissioning of Building 881F, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments B and C) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs.

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

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

Details of the DQA are provided in Attachment D.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The decommissioning of Building 881F 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 PCB Bulk Product Waste. Leaking PCB ballasts (and those weighing more than 9 pounds) and hazardous waste items have been removed and managed pursuant to Site PCB and waste management procedures. Demolition concrete rubble may be used for backfill on-site per the RFCA Recycling Concrete RSOP.

WASTE TYPES AND VOLUME ESTIMATES							
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)**
881F	300	0	3,500	0	0	0	Built-up Roofing Material – 2,400

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8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 881F is classified as RFCA Type 2 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and is ready for demolition. Building 881F possesses no radiological or chemical contamination in excess of the PDSP unrestricted release limits. There was no asbestos containing materials associated with Building 881F. Leaking PCB ballast (and those weighing more than 9 pounds), and hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) have been removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations.

The PDS for Building 881F was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA. To ensure Building 881F remains free of contamination and that PDS data remain valid, Level 1 Isolation Controls have been established and the facility posted accordingly.

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."*

DOE Order 414.1A, *"Quality Assurance."*

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. 4, July 15, 2002.

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual* (NUREG-1575, EPA 402-R-97-016).

PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 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.*

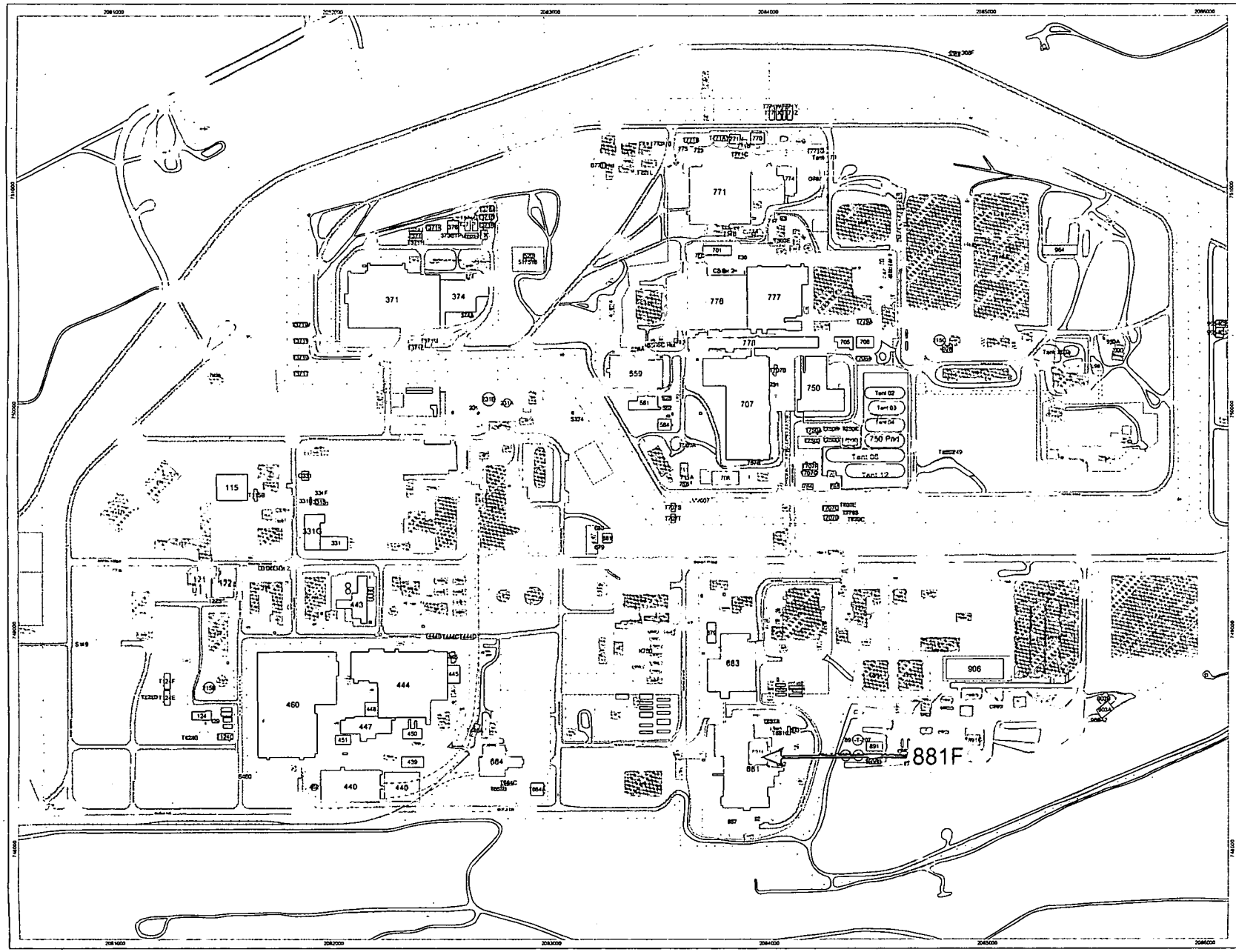
RFETS, *Environmental Waste Compliance* Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.

RFETS, *RFCA RSOP for Recycling Concrete*, September 28, 1999

Reconnaissance Level Characterization Report for the Building 881 Cluster, dated November 6, 2001, Revision 0

ATTACHMENT A

Facility Location Map



Rocky Flats Environmental Technology Site

Building 881F

Map Features

- Buildings Remaining
- D&D Facility
- Paved Roads
- Dirt Roads
- Lakes
- Streams
- Railroad Removed
- Railroad Remaining
- Fence Removed
- Fence Remaining

1:2,294
1 inch equals 190 feet

State Plane Coordinate Projection
Colorado Central Zone (3476)
Datum: NAD27

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

GIS Dept. (303) 966-7707

Prepared By: CH2MHILL

Prepared For: KAISER-HILL

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ATTACHMENT B-1

Media Sample Results Table and Sample Location Map

Building 881F
Paint Sample Results Table

Map Location	MU	Survey Unit	Room	Location Description	Uranium Result (dpm/100cm2)	Transuranic Result (dpm/100cm2)
898	P	881P02	881F Inlet Air Chase	East wall	13.7	0.0
899	P	881P02	881F Inlet Air Chase	Floor	2,850.6	0.0

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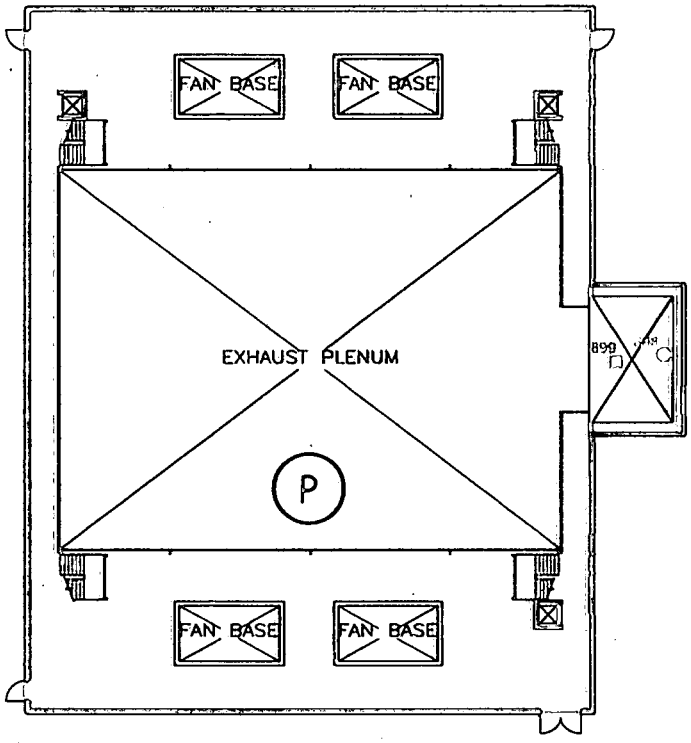
Media Sample Map

N

Building 881F



Uranium Survey Units

Transuranic Survey Units

Wall

Floor

Ceiling

MedSam_881F_8.5x11

ATTACHMENT B-2

881F Confirmatory Surveys, Radiological Data and Survey Map

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1290
Cal Due	9/25/04	Cal Due	N/A	Cal Due	12/1/04
Bkg	0.4 cpmα	Bkg	N/A cpmα	Bkg	2.0 cpmα
Efficiency	35.10 %	Efficiency	N/A %	Efficiency	22.20 %
MDA	18 dpmα	MDA	###### dpmα	MDA	42 dpmα
Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1290
Cal Due	9/25/04	Cal Due	N/A	Cal Due	12/1/04
Bkg	107.7 cpmβ	Bkg	N/A cpmβ	Bkg	842.0 cpmβ
Efficiency	39.10 %	Efficiency	N/A %	Efficiency	30.70 %
MDA	205 dpmβ	MDA	###### dpmβ	MDA	448 dpmβ

Survey Tracking # N/A
Survey Type: Contamination
Building: 881 F
Location: All Areas of 881 F
Purpose: Pre-Demolition Verification Survey
RWP #: N/A
Date: 6/4/04 Time: 1030

[redacted]

RCT: NA / NA / NA
Print name / Signature / Emp. #

COPY

PRN/REN # : N/A
Comments: Nuclides of concern are Uranium and Plutonium. Survey performed to verify contamination levels prior to demolition of 881~~C~~F. Performed swipe of floors, walls, and remaining equipment in 881~~C~~F.
DAP 6/9/04 DAP 6/9/04

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1	Floor of 881 F	<18	N/A	<42	N/A	N/A	N/A
2	Inside Wall of 881 F	<18	N/A	N/A	N/A	N/A	N/A
3	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
4	Floor of 881 F	<18	N/A	<42	N/A	N/A	N/A
5	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
6	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
7	Inside Wall of 881 F	<18	N/A	N/A	N/A	N/A	N/A
8	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
9	Floor of 881 F	<18	N/A	<42	N/A	N/A	N/A
10	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
11	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
12	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
13	Floor of 881 F	<18	N/A	N/A	N/A	N/A	N/A
14	Inside Wall of 881 F	<18	N/A	N/A	N/A	N/A	N/A
15	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
16	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
17	Outside Walls of 881 F	<18	N/A	<42	N/A	N/A	N/A
18	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
19	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
20	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A

Date Reviewed: 6/4/04 **RS Supervision** [redacted]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

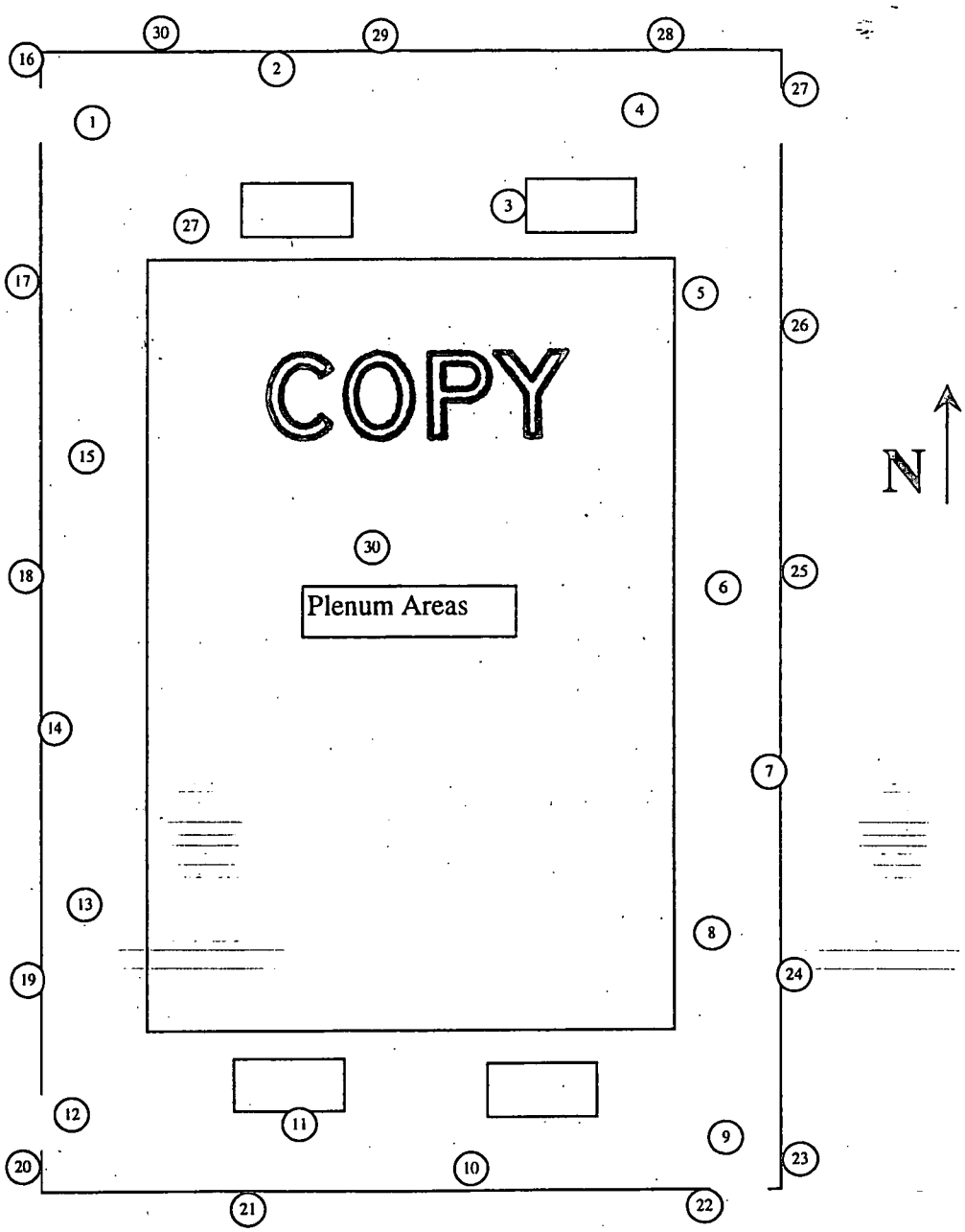
COPY

	LOCATION	ALPHA Swipe	ALPHA Direct	ALPHA Wipe	BETA Swipe	BETA Direct	BETA Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
21	Outside Walls of 881 F	<18	N/A	<42	N/A	N/A	N/A
22	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
23	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
24	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
25	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
26	Outside Walls of 881 F	<18	N/A	<42	N/A	N/A	N/A
27	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
28	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
29	Outside Walls of 881 F	<18	N/A	N/A	N/A	N/A	N/A
30	Outside Walls of 881 F	<18	N/A	<42	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

21

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

881 F Plenum Building

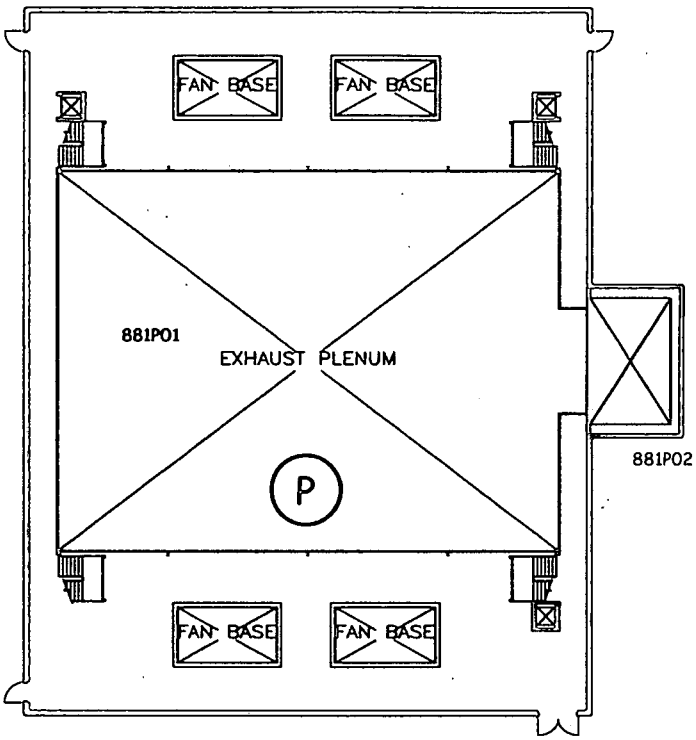


ATTACHMENT B-3

881F Survey Unit Map

Survey Units

Building 881F



Legend:

	Color area indicate the survey unit boundaries
xxxxxx	Six digit characters designate survey unit ID.
xxxxxx	Six digit characters with white backgound designate survey unit ID, walls, ceilings, & columns.

SU_881F_8.5x11

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ATTACHMENT B-4

Radiological Data Summaries and Survey Maps

Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 15 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	50.4 dpm/100cm²
Minimum:	-18.7 dpm/100cm²
Mean:	18.6 dpm/100cm²
Standard Deviation:	15.7
QC Maximum:	48.0 dpm/100cm²
QC Minimum:	43.4 dpm/100cm²
QC Mean:	45.7 dpm/100cm²
Uranium $DCGL_W$:	5,000.0 dpm/100cm²
Uranium $DCGL_{EMC}$:	15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 15

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	9.1 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	2.3 dpm/100cm²
Standard Deviation:	2.6
Uranium $DCGL_W$:	1,000.0

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

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

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Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency Alpha	Instru Efficiency Beta	A-Priori MDA (dpm/100cm²) Alpha	A-Priori MDA (dpm/100cm²) Beta	Survey Type
1	711746	05/22/04	Electra	3109	DP-6	06/08/04	0.217	NA	93.0	NA	T/S
2	702575	05/22/04	Electra	663	DP-6	09/18/04	0.218	NA	93.0	NA	T/S
3	712193	05/22/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	NA	R
4	712193	05/22/04	Electra	1260	DP-6	06/02/04	0.219	NA	93.0	NA	Q/S

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

c

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Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P01PRP-N001	3	6.1	N/A	
881P01PRP-N002	3	0.0	N/A	
881P01PRP-N003	3	0.0	N/A	
881P01PRP-N004	3	0.0	N/A	
881P01PRP-N005	3	0.0	N/A	
881P01PRP-N006	3	6.1	N/A	
881P01PRP-N007	3	3.0	N/A	
881P01PRP-N008	3	0.0	N/A	
881P01PRP-N009	3	3.0	N/A	
881P01PRP-N010	3	3.0	N/A	
881P01PRP-N011	3	0.0	N/A	
881P01PRP-N012	3	0.0	N/A	
881P01PRP-N013	3	0.0	N/A	
881P01PRP-N014	3	6.1	N/A	
881P01PRP-N015	3	3.0	N/A	

Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P01PBP-N016	3	0.0	N/A	
881P01PBP-N017	3	3.0	N/A	
881P01PBP-N018	3	3.0	N/A	
881P01PBP-N019	3	0.0	N/A	
881P01PBP-N020	3	0.0	N/A	
881P01PBP-N021	3	3.0	N/A	
881P01PBP-N022	3	9.1	N/A	
881P01PBP-N023	3	0.0	N/A	
881P01PBP-N024	3	0.0	N/A	
881P01PBP-N025	3	6.1	N/A	
881P01PBP-N026	3	0.0	N/A	
881P01PBP-N027	3	6.1	N/A	
881P01PBP-N028	3	3.0	N/A	
881P01PBP-N029	3	3.0	N/A	
881P01PBP-N030	3	3.0	N/A	

Comments:

Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P01PRP-N001	1	26.2	N/A	
881P01PRP-N002	1	21.6	N/A	
881P01PRP-N003	1	21.6	N/A	
881P01PRP-N004	2	26.0	N/A	
881P01PRP-N005	2	12.2	N/A	
881P01PRP-N006	1	21.6	N/A	
881P01PRP-N007	1	35.4	N/A	
881P01PRP-N008	1	17.0	N/A	
881P01PRP-N009	1	17.0	N/A	
881P01PRP-N010	1	21.6	N/A	
881P01PRP-N011	1	30.8	N/A	
881P01PRP-N012	1	35.4	N/A	
881P01QRP-N012	4	43.4	N/A	
881P01PRP-N013	1	26.2	N/A	
881P01PRP-N014	1	26.2	N/A	
881P01PRP-N015	1	44.6	N/A	
881P01QRP-N015	4	48.0	N/A	

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Survey Area: P	Survey Unit: 881P01	Building: 881

Description: Building 881F, Management Unit P, B881F Interior (Floors, Walls and Ceiling)

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P01PBP-N016	1	13.6	N/A	
881P01PBP-N017	1	-0.3	N/A	
881P01PBP-N018	1	4.4	N/A	
881P01PBP-N019	1	32.0	N/A	
881P01PBP-N020	1	50.4	N/A	
881P01PBP-N021	1	-0.3	N/A	
881P01PBP-N022	2	-18.7	N/A	
881P01PBP-N023	2	36.3	N/A	
881P01PBP-N024	2	-0.4	N/A	
881P01PBP-N025	2	8.8	N/A	
881P01PBP-N026	2	22.6	N/A	
881P01PBP-N027	2	22.6	N/A	
881P01PBP-N028	2	4.2	N/A	
881P01PBP-N029	2	-9.6	N/A	
881P01PBP-N030	2	8.8	N/A	

Comments:

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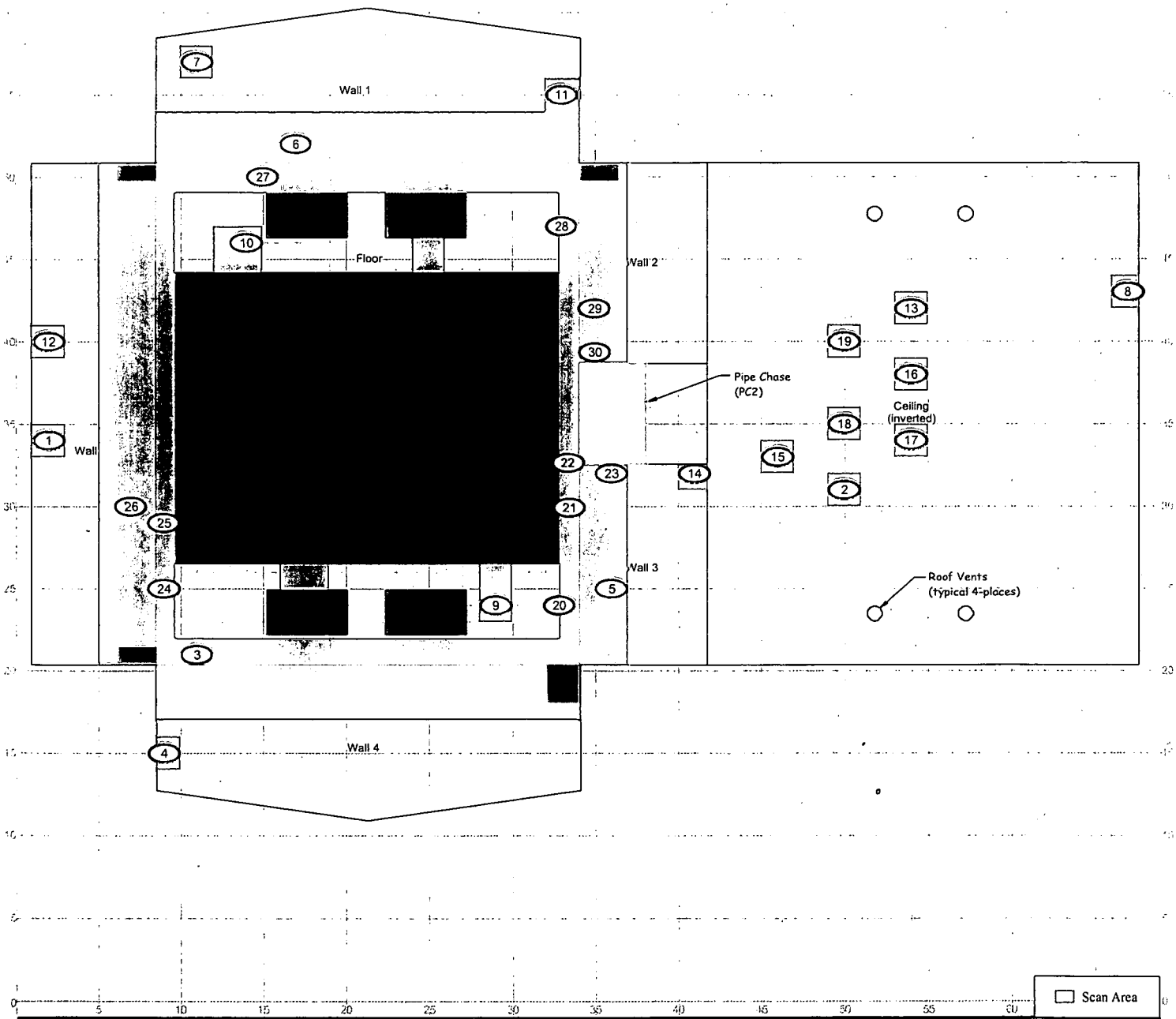
PRE-DEMOLITION SURVEY FOR B881F

Survey Area: P **Survey Unit: 881P01** **Classification: 3**
Building: 881F
Survey Unit Description: Building 881F, Management Unit P, Interior (Floor, Walls and Ceiling)
Total Area: 2,472 sq. m. **Total Floor Area: 370 sq. m.**

Building 881F



SURVEY MAP LEGEND

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

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N

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 4

0 FEET 40
0 METERS 10

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

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: 03-0568/881P01-SC **May 25, 2004**

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Survey Area: P	Survey Unit: 881P02	Building: 881

Description: Building 881, Management Area P, 881F Inlet Air Chase

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 16 | Nbr Biased Measurements Performed: 0 | Nbr QC Performed: 2

Alpha

Maximum:	410.2 dpm/100cm²
Minimum:	23.1 dpm/100cm²
Mean:	123.0 dpm/100cm²
Standard Deviation:	96.7
QC Maximum:	442.7 dpm/100cm²
QC Minimum:	286.7 dpm/100cm²
QC Mean:	364.7 dpm/100cm²
Uranium $DCGL_W$:	5,000.0 dpm/100cm²
Uranium $DCGL_{EMC}$:	15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 16 | Nbr Biased Measurements Performed: 0

Alpha

Maximum:	8.8 dpm/100cm²
Minimum:	-0.3 dpm/100cm²
Mean:	2.4 dpm/100cm²
Standard Deviation:	2.7
Uranium $DCGL_W$:	1,000.0

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.

Survey Area: P	Survey Unit: 881P02	Building: 881

Description: Building 881, Management Area P, 881F Inlet Air Chase

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency Alpha	Instru Efficiency Beta	A-Priori MDA (dpm/100cm²) Alpha	A-Priori MDA (dpm/100cm²) Beta	Survey Type
1	711447	05/25/04	Electra	658	DP-8	06/04/04	0.168	NA	93.0	NA	S
2	712193	05/25/04	Electra	658	DP-8	06/04/04	0.168	NA	93.0	NA	S
3	712193	05/25/04	Electra	3109	DP-6	06/08/04	0.217	NA	93.0	NA	T/S
4	711447	05/25/04	Electra	663	DP-6	09/18/04	0.218	NA	93.0	NA	Q/S
5	712193	05/25/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	NA	R

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

Survey Area: P	Survey Unit: 881P02	Building: 881

Description: Building 881, Management Area P, 881F Inlet Air Chase

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P02PRP-N001	5	5.8	N/A	
881P02PRP-N002	5	-0.3	N/A	
881P02PRP-N003	5	-0.3	N/A	
881P02PRP-N004	5	2.7	N/A	
881P02PRP-N005	5	2.7	N/A	
881P02PRP-N006	5	2.7	N/A	
881P02PRP-N007	5	2.7	N/A	
881P02PRP-N008	5	-0.3	N/A	
881P02PRP-N009	5	-0.3	N/A	
881P02PRP-N010	5	2.7	N/A	
881P02PRP-N011	5	-0.3	N/A	
881P02PRP-N012	5	8.8	N/A	
881P02PRP-N013	5	-0.3	N/A	
881P02PRP-N014	5	2.7	N/A	
881P02PRP-N015	5	2.7	N/A	
881P02PRP-N016	5	5.8	N/A	

Comments:

Survey Area: P	Survey Unit: 881P02	Building: 881

Description: Building 881, Management Area P, 881F Inlet Air Chase

Random/QC Total Surface Activity Data Sheet

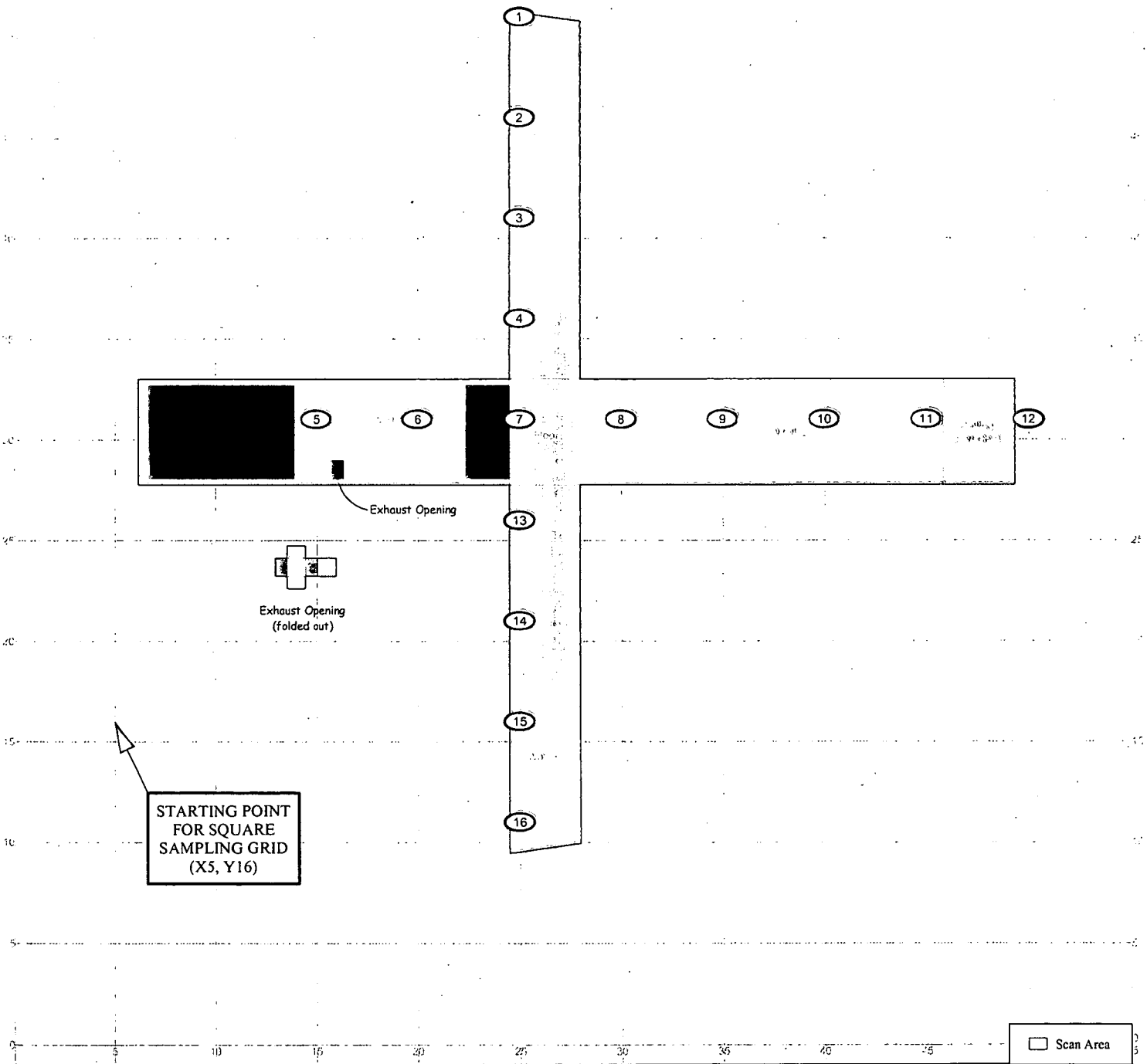
Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
881P02PRP-N001	3	124.5	N/A	
881P02PRP-N002	3	106.0	N/A	
881P02PRP-N003	3	96.8	N/A	
881P02PRP-N004	3	276.5	N/A	
881P02QRP-N004	4	286.7	N/A	
881P02PRP-N005	3	410.2	N/A	
881P02QRP-N005	4	442.7	N/A	
881P02PRP-N006	3	110.6	N/A	
881P02PRP-N007	3	147.5	N/A	
881P02PRP-N008	3	55.3	N/A	
881P02PRP-N009	3	55.3	N/A	
881P02PRP-N010	3	23.1	N/A	
881P02PRP-N011	3	59.9	N/A	
881P02PRP-N012	3	83.0	N/A	
881P02PRP-N013	3	41.5	N/A	
881P02PRP-N014	3	115.2	N/A	
881P02PRP-N015	3	152.1	N/A	
881P02PRP-N016	3	110.6	N/A	

Comments:

PRE-DEMOLITION SURVEY FOR B881

Survey Area: P Survey Unit: 881P02 Classification: 1
Building: 881F
Survey Unit Description: Building 881F Management Unit P, Pipe Chase (PC-2)
Total Area: 313 sq. m. Total Floor Area: 18 sq. m.
Grid Spacing for Survey Points: 5 m. X 5 m.

Pipe Chase (PC-2)



SURVEY MAP LEGEND

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

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N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4

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

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

CH2MHILL Communications Group KAISER-HILL COMPANY

MAP ID: 03-0568/881P02-SC June 01, 2004

ATTACHMENT B-5

881F Ventilation Plenum Radiological Waste Release Evaluation

COPY

☒ Property or ☒ Waste ☐ Sample

RELEASE EVALUATION FORM

Release Evaluation No.: 040101-RISS-01 EXTENDED: YES EXPIRES: 12/31/04

PART I SENDER/CUSTODIAN ACKNOWLEDGEMENT

Description of Property/Waste/Sample To Be Released/Transferred: This REN covers evaluation and release determinations for miscellaneous equipment, materials and/or sanitary waste items from RISS facilities, primarily 400/800 Area Buildings. Equipment materials & items may be new, used, packaged, potentially contaminated, or normally uncontaminated, etc. as noted on the specific Addendum. Typical items include furniture, tools, construction debris, uncontaminated piping, conduit, electrical cabinets, etc., as approved by RE. Items may be new or used, and also may be dispositioned on this REN as either property or waste, depending upon their economic reuse potential & value. The surveys & release criteria will be specified by RE on the Addendum, and tailored to the specific equipment items and its history provided by the Sender.

Current Location: RISS Buildings and areas as noted on Addendum

Destination: As Noted on Addendum

New Recipient/Custodian: As Noted on Addendum

History/Process Knowledge:

The history of the materials, equipment and items will vary. Some may have good history of use, and it may be known that items weren't used inside an RBA/CA/RMMA, etc. Other materials may not have a good history. In each case, the extent & type of surveys and sampling to properly evaluate the items for release will be specified by RE on the Addendum. New/unused items can be released based upon process knowledge & history by RE with no surveys required, provided this is discussed on the Addendum.

Has the specified material ever been in an RMMA/RBA/CA or contacted DOE controlled radioactive materials? **Unknown**

1) By signing below, I certify information provided in Part I of this REN to be true and accurate.

2) By signing below, I agree to comply with the specific requirements noted in Part II of this REN before release of items.

Sender/Custodian: [redacted] Date: 12/10/03

PART II RADIOLOGICAL ENGINEERING

SPECIFIC REQUIREMENTS AND/OR COMMENTS:

The Addendum to this REN shall be completed and include all the required information on those specific item(s) being evaluated for release including Sender, Recipient, survey & sample requirements (as applicable), history of use of the equipment or items, RE discussion of the decision to release, etc. There will be three primary methods for release of items specified by RE.

- Items & materials with a known history of use which have NOT been exposed to DOE radioactive materials will have this documented on the Addendum. Such items can be released based upon process knowledge & history with no surveys required, if approved by RE.
- Items & materials which may have/were likely to have been exposed to DOE radioactive materials must have contamination surveys done as specified by RE on the Addendum. RE shall also discuss required locations of surveys, whether surveys are to be representative or detailed, and if any equipment disassembly is required for the release surveys to be taken.
- Items & materials which may be contaminated in bulk or volume shall have RE specify on the Addendum all necessary sampling which the Sender must obtain to properly evaluate item(s) for potential bulk and volume contamination. After obtaining sampling results, they shall be evaluated by RE per RSP 09.03, *Unrestricted Release of Bulk or Volume Material.*

[redacted] Date: 12/10/03 Ext.: x5551

Radiological Engineer

APPROVAL FOR TRANSFER/SHIPMENT

This approval is for the general approach and methodology for this REN. A fully-qualified Property/Waste Release Radiological Engineer shall make the final approval signature on each Addendum for release of equipment, items and materials, ensuring that all required information and supporting documentation is attached to the Addendum. RE shall retain the original. A copy will be provided to the Sender/Custodian for shipment.

Approved: [redacted] Date: 12/11/03 Ext: 7175/212-4598

COPY

Addendum

To Release Evaluation #: 040101-RISS-01, Page 3A

Date: 5/14/04

Property/Equipment or Waste Description: **Bldg. 881F HVAC equipment & plenum**. Included are 881F plenum shell [floors, walls, overheads], sub doors, airlocks, demister racks, 1st and 2nd Stage filter racks, floor grating, guard rails, fire suppression system, electrical components, "3rd stage" discharge louvers & heat exchangers, plenum exhaust fans, and associated 881F plenum components. This release covers primarily interior & exterior surfaces of the plenum structure and ancillary equipment, but excludes the inlet HVAC air chase entering the plenum Room 144A, and excludes the surrounding 881F Building, released per the PDS process. This release also excludes the plenum drain system piping & valves which were partially inaccessible for surveys, and which will be disposed of as LLW per plenum demolition Task Plans. Released portions of the plenum will undergo size reduction and disposal as sanitary waste.

Origin/Specific History of Above: (State specifically whether items have been or were likely to have been used in an RMMA/RBA/CA/ARA or contacted DOE controlled radioactive materials)

The 881F plenum is a two-stage filter plenum for Bldg. 881 HVAC systems. Interior surfaces came into contact with DOE radioactive materials from Bldg. 881 lab operations & HVAC duct containing legacy contamination for a period of 14 years until recent D&D. Contamination levels encountered during initial characterization were relatively low[1]. All plenum demisters, filters, hazardous components, dust, and debris upstream of the filters were removed during D&D. Interior surfaces were then decontaminated by pressure washing before final equipment release surveys. No contamination was seen downstream of the 2nd stage filters.

Recipient & Destination: (Name, Address, Phone, etc.)

- **BFI Tower Rd or Highway 93 Landfills, or Erie Republic Services Landfill.**

1) By signing below, I certify information provided above to be true and accurate.

Sender/Custodian: [redacted] Emp [redacted] Date: 5/27/04 Phone/Page: (303) 966-8180

RE Comments/Discussion: (Discuss Surveys & Sampling Required, the Basis for Unrestricted Release, any Specific Portions of Wastes or Equipment that must be surveyed for proper release evaluation, as appropriate, etc.)

Representative surveys for both alpha & beta removable & total contamination shall be performed as detailed below. Reviewed/approved copies of these surveys shall be attached to this REN. The items described may be released for demolition as uncontaminated sanitary waste if results are below the Site Radiological Control Manual Table 2-2 limits for Uranium isotopes. IH&S will release the plenum from Beryllium controls separately from this REN, based upon their sampling.

Alpha spectroscopy readings of the pre-decon characterization swipes [See Attachment 1] provided strong qualitative confirmations that the primary radionuclide of interest in the plenum was Uranium (U-234, U-235, U-238). Follow-up isotopic paint samples from the Room 144A plenum chase (contiguous with the 881F plenum), also indicated uranium as the isotope of concern [See Attachment 1]. Interior surfaces of this plenum are in good condition, with minimal degradation seen on the original paint applied at new construction, except for a few localized areas on the 1st level floor.

1 All plenum initial characterization readings that follow are in units of dpm/100 cm² - Maximum alpha swipe was 750; maximum alpha direct was 5000; maximum beta swipe was < 205; maximum beta direct was 8500.

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Attachment 1
to
REN 040101-RISS-01 Addendum

- Oasis Alpha Spectrometer Readings of Bldg. 881F Demister & 1st Stage areas, 1st and 2nd floor [4 pages]
- Canberra Gamma Spectroscopy isotopic analysis of plenum chase paint [E-mail + 8 pages]

COPY

****
***** RFETS B903 ALPHA SPECTROMETER ANALYSIS RESULTS *****
****

Sample ID: 10 MIN SMEAR Type: BLDG 881 1F PLENUM 1ST FLOOR

Batch Id: 0404130c
Acquisition Start: 4/13/04 8:16:21 AM
Analysis Date: 4/13/2004 8:27:22 AM
Detector Name: A 1 2A
Spectrum File: C:\AANALYST\USEDBIFS\0404130c\0.CNF
Acquisition Live Time: 600.0 seconds
Calibrations:
Energy = 2473.399 keV + 1.6029E+000*ch
FWHM = 6.2411E+001 keV
Low Tail = 3.0056E+001 keV
Sample Size: 1.000 100 Cm2

----- ROI DATA -----

Peak No.	Associated Nuclide	ROI Start	ROI End	Energy (keV)	FWHM (keV)
1	Pu+Am	16-	1887	3702.694	1.803
2	Bi-212	1923-	2263	5861.233	1.603
3	PO-214	2567-	3371	6958.240	1.603
4	PO-212	3692-	3915	8658.889	1.603

----- ROI ANALYSIS RESULTS -----

Nuclide	Net Counts +/- %1s	BKG counts	CPM
Pu+Am	2773.514 +/- 1.899	0.486	277.351
Bi-212	5.000 +/- 44.721	0.000	0.500
PO-214	4.931 +/- 45.356	0.069	0.493
PO-212	0.986 +/-101.418	0.014	0.099

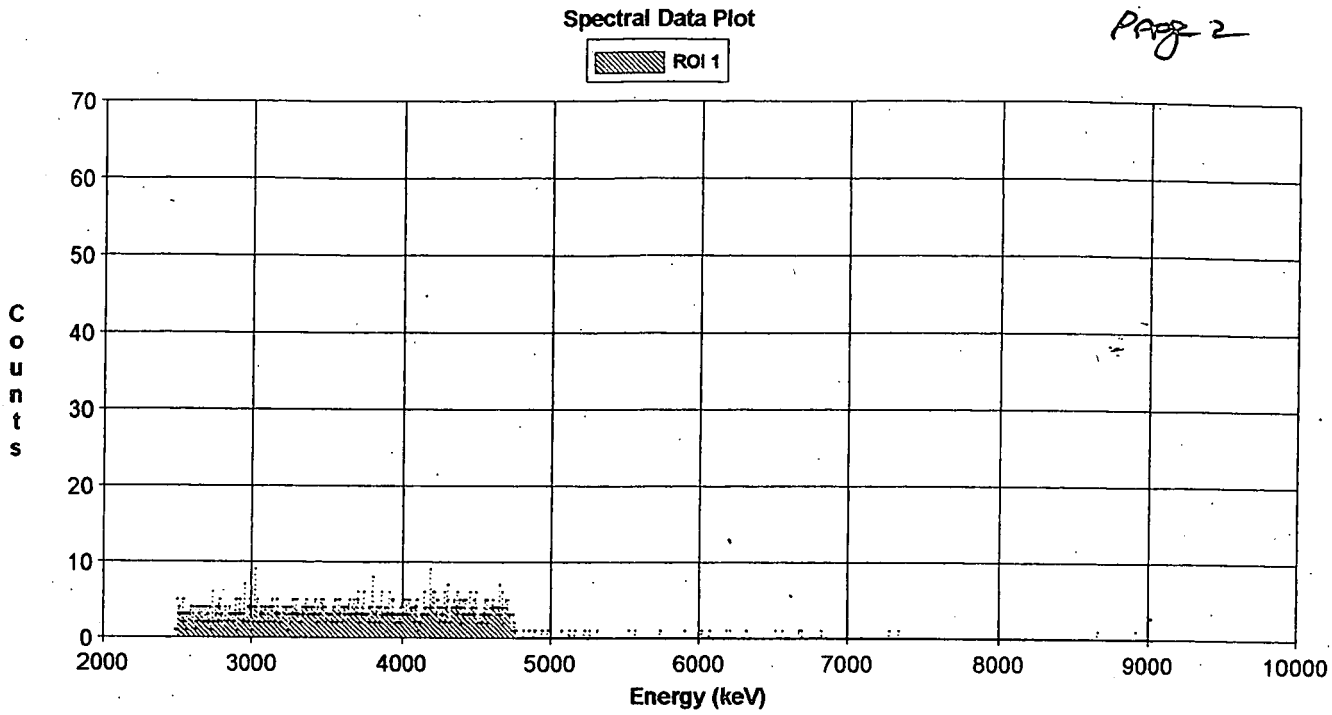
----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	ROI Midpt (keV)	Activity +/- 2s dpm/100 Cm	MDA dpm/100 Cm
Pu+Am	0.996	4000.00*	1.188E+003 +/- 1.287E+002	2.151E+000
Bi-212	1.000	5830.00*	5.950E+000 +/- 5.356E+000	3.225E+000
PO-212	1.000	8572.00*	4.225E-001 +/- 8.582E-001	1.329E+000
PO-214	0.997	7234.00*	2.113E+000 +/- 1.929E+000	1.535E+000

Analysis Reviewed by [redacted]

Approved [redacted]

881F PLENUM
1ST FLOOR
PAGE 2



Datasource: 0.CNF
Live Time: 600 sec
Real Time: 600 sec
Acq. Start: 4/13/2004 8:16:21 AM
Start: 1 : 2475.00 (keV)
Stop: 4096 : 9038.77 (keV)

BASED upon FACILITY HISTORY OF USE, the Alpha SPECTRUM indicates that the Predominant RADIONUCLIDE is URANIUM ISOTOPES of U-234 (~4.7 MeV), U-235 (~4.4/4.6 MeV), U-238 (~4.1/4.2 MeV) and other ALPHA EMITTING daughters.

The PRESENCE of TRACE ACTIVITY FROM Wg Pu Pu-239 (~5.15 MeV) and AM-241 (~5.48 MeV) IS ALSO SEEN to A LIMITED EXTENT.

G.M. ALDRICH 5/1/04
RISS RAD Engineering

****
***** RFETS B903 ALPHA SPECTROMETER ANALYSIS RESULTS *****
****

Sample ID: 10 MIN SMEAR Type: BLDG 881 2FLOOR PLENUM 1st Stage

Batch Id: 0404130f
Acquisition Start: 4/13/04 8:30:30 AM
Analysis Date: 4/13/2004 8:41:19 AM
Detector Name: A 1 1A
Spectrum File: C:\AANALYST\USEDBIFS\0404130f\0.CNF
Acquisition Live Time: 600.0 seconds
Calibrations:
Energy = 2468.593 keV + 1.6055E+000*ch
FWHM = 4.4951E+001 keV
Low Tail = 1.3097E+001 keV
Sample Size: 1.000 100 Cm2

----- ROI DATA -----

Peak No.	Associated Nuclide	ROI Start	ROI End	Energy (keV)	FWHM (keV)
1	Pu+Am	19-	1887	4080.608	1.606
2	Bi-212	1923-	2263	5986.333	1.606
3	PO-214	2566-	3368	7232.233	0.000
4	PO-212	3689-	3911	8569.648	0.000

----- ROI ANALYSIS RESULTS -----

Nuclide	Net Counts +/- %1s	BKG counts	CPM
Pu+Am	215.208 +/- 6.829	0.792	21.521
Bi-212	1.000 +/-100.000	0.000	0.100
PO-214	-0.014 +/-100.000	0.014	-0.001
PO-212	0.000 +/-1000.00	0.000	0.000

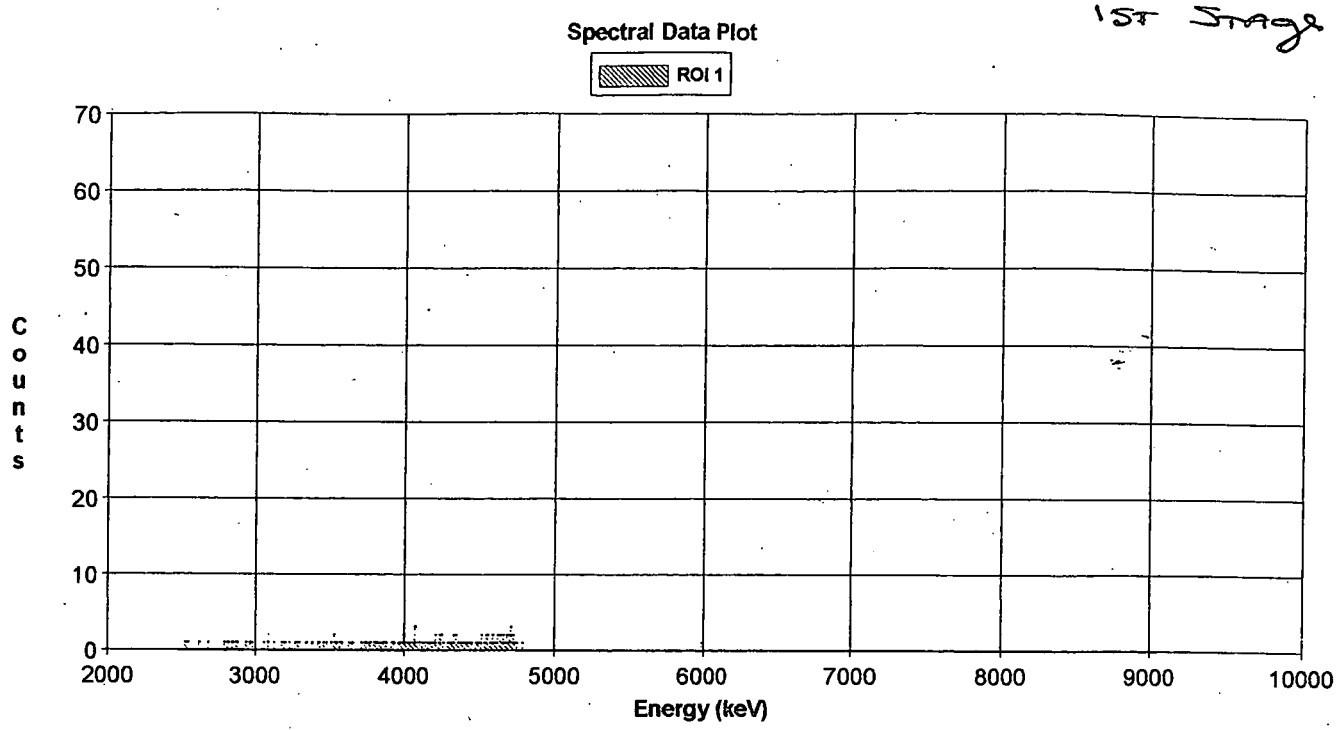
----- NUCLIDE ANALYSIS RESULTS -----

Nuclide Name	Id Conf.	ROI Midpt (keV)	Activity +/- 2s dpm/100 Cm	MDA dpm/100 Cm
Pu+Am	1.000	4000.00*	9.176E+001 +/- 1.561E+001	2.412E+000
Bi-212	0.999	5830.00*	1.184E+000 +/- 2.371E+000	3.209E+000
PO-212	1.000	8572.00*	0.000E+000 +/- 0.000E+000	1.155E+000
PO-214	1.000	7234.00*	-5.922E-003 +/- 1.186E-002	1.322E+000

Analysis [redacted]

Approved [redacted]

Page 2
881 2nd Floor
1st Stage



Datasource: 0.CNF
Live Time: 600 sec
Real Time: 600 sec
Acq. Start: 4/13/2004 8:30:30 AM
Start: 1 : 2470.20 (keV)
Stop: 4096 : 9044.89 (keV)

Aldrich, Gwynn

From: Aldrich, Gwynn
Sent: Monday, May 24, 2004 4:42 PM
To: Worrick, Roger
Cc: Carreras, Edward; Williamson, Brian
Subject: 881F Primary Isotope of Concern

Roger - Thanks for your help on this.

Mr. Gwynn M. Aldrich, gwynn.aldrich@rfets.gov
Bldg. 800 Area, RISS D&D Projects Radiological Engineer
Rocky Flats Environmental Technology Site
10808 Highway 93, Unit B, Golden, Colorado 80403 Office T690S, NE, [Mailstop T.690P]
Site Phone (303) 966-7175 Cell (303) 356-8038 Pager (303) 212-4598 Fax: (303) 966-7999

-----Original Message-----
From: **Worrick, Roger**
Sent: Monday, May 24, 2004 3:55 PM
To: Aldrich, Gwynn
Subject: 881F

Paint samples collected from the inlet air chase to B881F showed no contamination above the release limits for TRU and U. The RIN samples are 04S0264-001.001 and 04S0264-002.001. These sample results, combined with earlier results from the plenum verify that the 881F chase and plenum are free of TRU contamination and will be released to U limits. No further sampling is required.

SEE Accompanying
8 Pages of Canberra
Gamma Spectroscopy
Report —

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CANBERRA

5/26/04

Mr. William Roushey
Contract Technical Representative, Subcontract Number KH001076OZ
Kaiser-Hill Company, L.L.C.
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

Dear Mr. Roushey;

On May 19, 2004, Canberra Mobile Laboratory Services (CMLS) received 10 paint chip samples from 800 Area to be counted as 6 objects, using On-Site Radiological Screening by Gamma Spectrometry, RC10C, Batch No. 0405194606. The RIN for this batch is 04S0264. The samples were requested to be counted as Lab Non-Standard ISOCS samples. A 3 Day Results Only package, containing the items specified in contract No. KH001076OZ dated February 1, 2000 and updated December 11, 2002 has been requested for these samples.

The samples were counted using ISOCS, and had QA/QC appropriate to this type of analysis. Results of the analysis are attached in the batch report narrative.

The samples were counted for 7200 seconds. This count time was sufficient to meet the detection limit requirements of the client.

For your convenience, please find attached a sample cross-reference listing of Project sample identification numbers and the corresponding CMLS laboratory ID designator.

If you have any questions please do not hesitate to call at 303-966-7946.

Sincerely,

Larry Umbaugh
Director, Canberra Analytical Laboratory Services

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COVER PAGE

RC10C, On-Site Radiological Screening by Gamma Spectrometry

Gamma Spectrometry

PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE TO CMLS SAMPLE LABORATORY IDs

BATCH 0405194606
Subcontract KH001076OZ

COC NUMBER	PROJECT SAMPLE ID NUMBER	SITE SAMPLE NUMBER(S)	CMLS SAMPLE ID NUMBER(S)	OBJECT NUMBER(S) CMLS	LINE ITEM CODE(S)
04S0264#001	04S0264-001.001	04S0264-001.001	CMLS-5642	G1900358	RC10C019
04S0264#001	04S0264-002.001	04S0264-002.001	CMLS-5643	G1900362	RC10C019
04S0264#001	04S0264-003.001	04S0264-003.001	CMLS-5644	G1900363	RC10C019
04S0264#001	04S0264-004.001	04S0264-004.001	CMLS-5645	G1900364	RC10C019
04S0264#001	04S0264-005.001	04S0264-005.001	CMLS-5646	G1900365	RC10C019
04S0264#001	04S0264-006.001	04S0264-006.001	CMLS-5647	G1900366	RC10C019

Calibration Package ID: Objects individually modeled using ISOCS.

Comments:

Samples were counted in T130A using BEGe Detector LI014.

Report Prepared By:

Marilyn Umbaugh Date: 5/26/04
Signature

CANBERRA

Certification Statement:

"I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this sample data package and the computer-readable EDD, as applicable, submitted on diskette or by modem, has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature."

Larry Umbaugh — Date: 5/26/04
Signature

Director, Canberra Analytical Laboratory Services
Title

OR

Sean Stanfield — Date: 5/26/04
Signature

Acting Deputy Laboratory Director
Title

CANBERRA

ALPHA GROUP REETS	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	COC: 04S0264#001 04S0264#0012	Page 1 of 2

Sampler(s) WORRICK, ROGER (time/date)	Contact/Requester PODOLSKY, STEWART / WORRICK, ROGER	Telephone No. 7624 / 3357
JIN 04S0264	Sampling Origin 800 AREA	Purchase Order/Charge Code EED11200
Project Title 800 AREA EQUIPMENT PAINT SAMPLES	Logbook No. NA	Ice Chest No. NA Temp.
To (Lab) Canberra Mobile Lab Service	Method of Shipment HAND CARRY	Bill of Lading/Air Bill No. NA
Protocol	Related COC (if any) NA	PIR NA

POSSIBLE SAMPLE HAZARDS/REMARKS
Are acid preserved samples DOT hazardous per 49 CFR Part 1343 Table 1? YES NO
Are other known hazardous subsets present? YES NO
** ** **

SCREENING REQUIRED ☐

SPECIAL INSTRUCTIONS Hold Time
COUNT INDIVIDUALLY -- 2HOUR COUNTS

Data No.	Customer Number	Matrix	Date/Time	Location	Container (size/type)	Sample Analysis (Field-Filtered) LIC (Method Title) [TAT]/(Parameter List)	Preservative/ Packing
04S0264 -001.001	698 144A RISER EAST WALL	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -002.001	699 144A RISER FLOOR	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -003.001	900 144	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -004.001	901 144	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -005.001	902 144	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -006.001	903 144	SOLID	05/10/04 11:00	800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -007.001		SOLID		800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -008.001		SOLID		800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None
04S0264 -009.001		SOLID		800 AREA	1-SAMPLE	RC10C019 (LAB GAMMA LIBRARY SCREEN - NON STD ISOC..) [3dR] (AM241; U235; U238)	None; None

Relinquished By: Date/Time	Received By: Date/Time	Relinquished By: Date/Time	Received By: Date/Time
Relinquished By: Date/Time	Received By: Date/Time	Relinquished By: Date/Time	Received By: Date/Time
Relinquished By: Date/Time	Received By: Date/Time	Relinquished By: Date/Time	Received By: Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., returned to customer, disposed of per lab procedure, used in analytical process) Disposed By

Date/Time COC printed: 05/21/04 10:39 (Version:xcoc_f2.rpt)

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Analysis Results Header 5/24/2004 8:14:37 AM Page 1

```
************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
** C a n b e r r a  M o b i l e  L a b o r a t o r y  S e r v i c e s **
************************************************************************
```

Report Generated On : 5/24/2004 8:14:37 AM

RIN Number : 04S0264
Analytical Batch ID : 0405194606
Line Item Code : RC10C019

Filename: S:\GENIE2K\CAMFILES\LI014(G)\MOD\G1900358.CNF

Sample Number : 04S0264-001.001
Lab Sample Number : CMLS-5642
Sample Receipt Date : 5/19/2004
Sample Volume Received : 1.12E+001 GRAM

Result Identifier : N/A

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 100 - 8192
Peak Area Range (in channels) : 100 - 8192
Identification Energy Tolerance : 1.000 keV

Sample (Final Aliquot Size) : 1.120E+001 GRAM
Sample Quantity Error : 0.000E+000
Systematic Error Applied : 0.000E+000

Sample Taken On : 5/19/2004 11:00:00 AM
Acquisition Started : 5/20/2004 12:07:01 PM

Count Time : 7200.0 seconds
Real Time : 7202.9 seconds
Dead Time : 0.04 %

Energy Calibration Used Done On : 3/5/04
Energy = -0.171 + 0.250*ch + -6.45E-008*ch^2 + 0.00E+000*ch^3

Corrections Applied:
None

Efficiency Calibration Used Done On : 5/24/04
Efficiency Geometry ID : 04S0264-001.001

Analyzed By: Sean Stanfield Date: 5/24/04

Reviewed By: Marilyn Umbaugh Date: 5/24/04

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****
***** Sample and QC Sample Results Summary *****
****

Site Sample ID : 04S0264-001.001

Analytical Batch ID : 0405194606

Sample Type (Result Identifier): G19

Lab Sample Number : CMLS-5642

Geometry ID : 04S0264-001.001

Filename: S:\GENIE2K\CAMFILES\LI014(G)\MOD\G1900358.CNF

Detector Name: 4606

MDA = Curie method as specified in Genie-2000 Customization Tools Manual Appendix B; Basic Algorithms.

Analyte	Activity (pCi/GRAM)	2-Sigma Uncertainty (pCi/GRAM)	MDA (pCi/GRAM)
K-40n	1.66E+001	4.53E+000	6.13E+000
CS-137n	0.00E+000	0.00E+000	4.89E-001
TL-208n	3.97E-001	1.32E-001	3.45E-001
PO-210in	0.00E+000	0.00E+000	4.84E+004
BI-212n	0.00E+000	0.00E+000	7.09E+000
PB-212n	6.26E-001	5.53E-001	9.21E-001
BI-214n	0.00E+000	0.00E+000	1.07E+000
PB-214n	0.00E+000	0.00E+000	8.93E-001
RA-226n	0.00E+000	0.00E+000	5.59E+000
AC-228n	0.00E+000	0.00E+000	1.95E+000
TH-230n	0.00E+000	0.00E+000	2.91E+001
Th-231n	8.81E-001	9.94E-001	1.65E+000
PA-234Mn	0.00E+000	0.00E+000	6.38E+001
PA-234n	0.00E+000	0.00E+000	4.81E-001
U-234n	0.00E+000	0.00E+000	1.03E+002
U-235	8.74E-001	2.19E-001	3.21E-001
U238	0.00E+000	0.00E+000	2.43E+000
AM-241	0.00E+000	0.00E+000	3.14E-001

i - If Po-210 is detected in the spectrum, this peak may be the result of the interaction of Pb-206(n,n') which also produces a prompt gamma at 803 keV.

n - Non-contractual Nuclide

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Analysis Results Header 5/24/2004 8:17:39 AM Page 1

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*********************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
**  C a n b e r r a  M o b i l e  L a b o r a t o r y  S e r v i c e s **
*********************************************************************
```

Report Generated On : 5/24/2004 8:17:39 AM

RIN Number : 04S0264
Analytical Batch ID : 0405194606
Line Item Code : RC10C019

Filename: S:\GENIE2K\CAMFILES\LI014(G)\MOD\G1900362.CNF

Sample Number : 04S0264-002.001
Lab Sample Number : CMLS-5643
Sample Receipt Date : 5/19/2004
Sample Volume Received : 8.00E+000 GRAM

Result Identifier : N/A

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 100 - 8192
Peak Area Range (in channels) : 100 - 8192
Identification Energy Tolerance : 1.000 keV

Sample (Final Aliquot Size) : 8.000E+000 GRAM
Sample Quantity Error : 0.000E+000
Systematic Error Applied : 0.000E+000

Sample Taken On : 5/19/2004 11:00:00 AM
Acquisition Started : 5/21/2004 9:19:37 AM

Count Time : 7200.0 seconds
Real Time : 7202.8 seconds
Dead Time : 0.04 %

Energy Calibration Used Done On : 3/5/04
Energy = -0.171 + 0.250*ch + -6.45E-008*ch^2 + 0.00E+000*ch^3

Corrections Applied:
None

Efficiency Calibration Used Done On : 5/24/04
Efficiency Geometry ID : 04S0264-002.001

Analyzed By: Sean Stanfield Date: 5/24/04

Reviewed By: Marilyn Umbaugh Date: 5/24/04

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CANBERRA

Sample and QC Sample Results Summary 5/24/04 8:17:40 AM Page 2

****
***** Sample and QC Sample Results Summary *****
****

Site Sample ID : 04S0264-002.001

Analytical Batch ID : 0405194606

Sample Type (Result Identifier): G19

Lab Sample Number : CMLS-5643

Geometry ID : 04S0264-002.001

Filename: S:\GENIE2K\CAMFILES\LI014(G)\MOD\G1900362.CNF

Detector Name: 4606

MDA = Curie method as specified in Genie-2000 Customization Tools Manual Appendix B; Basic Algorithms.

Analyte	Activity (pCi/GRAM)	2-Sigma Uncertainty (pCi/GRAM)	MDA (pCi/GRAM)
K-40n	2.71E+001	5.51E+000	6.31E+000
CS-137n	0.00E+000	0.00E+000	6.62E-001
TL-208n	0.00E+000	0.00E+000	6.06E-001
PO-210in	0.00E+000	0.00E+000	5.74E+004
BI-212n	0.00E+000	0.00E+000	8.44E+000
PB-212n	0.00E+000	0.00E+000	7.48E-001
BI-214n	8.39E-001	4.71E-001	7.76E-001
PB-214n	0.00E+000	0.00E+000	1.13E+000
RA-226n	0.00E+000	0.00E+000	8.05E+000
AC-228n	0.00E+000	0.00E+000	2.57E+000
TH-230n	0.00E+000	0.00E+000	3.59E+001
Th-231n	0.00E+000	0.00E+000	2.48E+000
PA-234Mn	0.00E+000	0.00E+000	7.63E+001
PA-234n	0.00E+000	0.00E+000	6.40E-001
U-234n	0.00E+000	0.00E+000	1.29E+002
U-235	0.00E+000	0.00E+000	4.58E-001
U238	0.00E+000	0.00E+000	2.85E+000
AM-241	0.00E+000	0.00E+000	3.63E-001

i - If Po-210 is detected in the spectrum, this peak may be the result of the interaction of Pb-206(n,n') which also produces a prompt gamma at 803 keV.

n - Non-contractual Nuclide

Attachment 2
to
REN 040101-RISS-01 Addendum

- Surveys of Plenum Interior & Exterior surfaces, taken post-demister & filter removals and after decon washdowns and wipedowns.
- All surveys met unrestricted release limits for uranium removable & fixed alpha and beta contamination.
- Survey numbers are individually referenced in the REN narrative for various plenum surfaces and structures.

COPY

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1363
Cal Due	9/25/04	Cal Due	N/A	Cal Due	10/13/04
Bkg	0.2 cpmα	Bkg	N/A cpmα	Bkg	7.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	23.10 %
MDA	18 dpmα	MDA	20 dpmα	MDA	65 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1363
Cal Due	9/25/04	Cal Due	N/A	Cal Due	10/13/04
Bkg	117.1 cpmβ	Bkg	N/A cpmβ	Bkg	849.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	30.60 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	452 dpmβ

Survey Tracking # 880-04-S 2247
Survey Type: Contamination
Building: 881
Location: F Plenum O/Side surfaces of Plenum
Purpose: Job coverage / 880-3D
RWP #: 04-880-0001
Date: 5/14/04 Time: 0800-1600

[redacted]

	Print name	Signature	Emp. #
RCT:	N/A	N/A	N/A

PRN/REN # 040101-RISS-01
Comments: Nuclides of concern are Uranium and Plutonium. Survey performed as job coverage and for F Plenum Decon

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1	roof	<18	<65	N/A	<205	<452	N/A
2	roof	<18	<65	N/A	<205	<452	N/A
3	roof	<18	<65	N/A	<205	<452	N/A
4	roof	<18	<65	N/A	<205	<452	N/A
5	east side	<18	<65	N/A	<205	<452	N/A
6	east side	<18	<65	N/A	<205	<452	N/A
7	east side	<18	<65	N/A	<205	<452	N/A
8	east side	<18	<65	N/A	<205	<452	N/A
9	east side	<18	<65	N/A	<205	<452	N/A
10	east side	<18	<65	N/A	<205	<452	N/A
11	east side	<18	<65	N/A	<205	<452	N/A
12	east side	<18	<65	N/A	<205	<452	N/A
13	east side	<18	<65	N/A	<205	<452	N/A
14	east side	<18	<65	N/A	<205	<452	N/A
15	west side	<18	<65	N/A	<205	<452	N/A
16	west side	<18	<65	N/A	<205	<452	N/A
17	west side	<18	<65	N/A	<205	<452	N/A
18	west side	<18	<65	N/A	<205	<452	N/A
19	west side	<18	<65	N/A	<205	<452	N/A

Date Reviewed: 5/14/04 RS Supervisi [redacted]

Print Name Signature Emp. #

881F PLENUM EXTERIOR

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
20	North side Painted Electrical Unistrut	<18	<65	N/A	<205	<452	N/A
21	North side	<18	<65	N/A	<205	<452	N/A
22	North sideUnpainted Electrical Cabinets	<18	<65	N/A	<205	<452	N/A
23	North side	<18	<65	N/A	<205	<452	N/A
24	North side Unpainted Electrical Unistrut	<18	<65	N/A	<205	<452	N/A
25	North side	<18	<65	N/A	<205	<452	N/A
26	North side	<18	<65	N/A	<205	<452	N/A
27	North side	<18	<65	N/A	<205	<452	N/A
28	North side	<18	<65	N/A	<205	<452	N/A
29	North side	<18	<65	N/A	<205	<452	N/A
30	North side	<18	<65	N/A	<205	<452	N/A
31	North side	<18	<65	N/A	<205	<452	N/A
32	South side	<18	<65	N/A	<205	<452	N/A
33	South side	<18	<65	N/A	<205	<452	N/A
34	South side	<18	<65	N/A	<205	<452	N/A
35	South side	<18	<65	N/A	<205	<452	N/A
36	South side	<18	<65	N/A	<205	<452	N/A
37	South side	<18	<65	N/A	<205	<452	N/A
38	South side	<18	<65	N/A	<205	<452	N/A
39	South side	<18	<65	N/A	<205	<452	N/A
40	South side	<18	<65	N/A	<205	<452	N/A
41	South side	<18	<65	N/A	<205	<452	N/A
42	South side	<18	<65	N/A	<205	<452	N/A
43-50	Glycol system pipes	<18	<65	N/A	<205	<452	N/A
51-60	Fire system pipes	<18	<65	N/A	<205	<452	N/A
61-70	Brathing air lines	<18	<65	N/A	<205	<452	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

REN 04-01-01-2155-01 881 F PLENUM EXTERIOR

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1383
Cal Due	9/25/04	Cal Due	N/A	Cal Due	10/19/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	5.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	20.20 %
MDA	18 dpmα	MDA	20 dpmα	MDA	65 dpmα

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1383
Cal Due	9/25/04	Cal Due	N/A	Cal Due	10/19/04
Bkg	106.9 cpmβ	Bkg	N/A cpmβ	Bkg	1022.0 cpmβ
38.4	39.10 %	Efficiency	25.00 %	Efficiency	33.20 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	456 dpmβ

Survey Tracking # 880-04-S 880-04-S22261

Survey Type: Contamination

Building: 881F

Location: Fans 1,2,3 and 4

Purpose: Characterization / Release

RWP #: 04-880-0001 AC 5-14-04

Date: 5/14/04 **Time:** ~~2100~~ 1100

[redacted]

RCT: N/A / N/A / N/A

Print name / Signature / Emp. #

PRN/REN #: Ø4 Ø1Ø1 - R155 - Ø1

Comments: Nuclides of concern are Uranium. Survey performed as characterization of Plenum fans, if survey results meet requirements survey will also serve as a release survey. Fans not surveyed 100% due to inaccessible areas and parts that cannot be reached or surveyed for direct.

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1	Fan EF-4 outside	<18	<65	N/A	<205	<456	N/A
2	Fan EF-4 outside	<18	<65	N/A	<205	<456	N/A
3	Fan EF-4 outside	<18	<65	N/A	<205	<456	N/A
4	Fan EF-3 outside	<18	<65	N/A	<205	<456	N/A
5	Fan EF-3 outside	<18	<65	N/A	<205	<456	N/A
6	Fan EF-3 outside	<18	<65	N/A	<205	<456	N/A
7	Fan EF-2 outside	<18	<65	N/A	<205	<456	N/A
8	Fan EF-2 outside	<18	<65	N/A	<205	<456	N/A
9	Fan EF-1 outside	<18	<65	N/A	<205	<456	N/A
10	Fan EF-1 outside	<18	<65	N/A	<205	<456	N/A
11	Fan EF-4 inside	<18	<65	N/A	<205	<456	N/A
12	Fan EF-4 inside	<18	<65	N/A	<205	<456	N/A
13	Fan EF-4 inside	<18	<65	N/A	<205	<456	N/A
14	Fan EF-4 inside	<18	<65	N/A	<205	<456	N/A
15	Fan EF-3 inside	<18	<65	N/A	<205	<456	N/A
16	Fan EF-3 inside	<18	<65	N/A	<205	<456	N/A
17	Fan EF-3 inside	<18	<65	N/A	<205	<456	N/A
18	Fan EF-3 inside	<18	<65	N/A	<205	<456	N/A
19	Fan EF-2 inside	<18	<65	N/A	<205	<456	N/A
20	Fan EF-2 inside	[redacted]					

Date Reviewed: 5/14/04 **RS Supervision:** [redacted]

880-04-Ø2261

5/14/04-1100

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
21	Fan EF-2 inside	<18	<64	N/A	<205	<456	N/A
22	Fan EF-2 inside	<18	<64	N/A	<205	<456	N/A
23	Fan EF-1 inside	<18	<64	N/A	<205	<456	N/A
24	Fan EF-1 inside	<18	<64	N/A	<205	<456	N/A
25	Fan EF-1 inside	<18	<64	N/A	<205	<456	N/A
26	Fan EF-1 inside	<18	<64	N/A	<205	<456	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

REV Ø4Ø1Ø1-R155-Ø1

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	6.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	23.10 %
MDA	18 dpmα	MDA	20 dpmα	MDA	61 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	112.6 cpmβ	Bkg	N/A cpmβ	Bkg	765.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	30.60 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	429 dpmβ

Survey Tracking # 880-04-S 2289
Survey Type: Contamination
Building: 881-F
Location: F O/S plenum
Purpose: Job coverage / 880-3D / 880-5W

RWP #: 04-880-0001

Date: 5/20/04 Time: 0800-1530

RC[redacted]

	Print name	Signature	Emp. #
RCT:	NA	NA	NA

PRN/REN # : N/A

Comments: Nuclides of concern are Uranium and Plutonium. Survey performed as job coverage for mechanical D&D in F plenum. Also performed as as daily survey of SOP/RBA.

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1-10	SOP/RBA	<18	N/A	N/A	<205	N/A	N/A
3-4	LOAD-OUT RBA 1ST FLOOR 1ST STAGE	<18	N/A	N/A	<205	N/A	N/A
5-10	AIR LOCK FLOORS	<18	N/A	N/A	<205	N/A	N/A
11-25	GENERAL AREA FLOORS AND WALLS	<18	N/A	N/A	<205	N/A	N/A
26-28	PLENUM ROOF	<18	N/A	N/A	<205	N/A	N/A
29-32	GLYCOL, AIR, AND FIRE PIPES	<18	N/A	N/A	<205	N/A	N/A
33-50	STAIRS, STRUCTURAL MEMBERS, FAN PARTS	<18	<61	N/A	<205	<429	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Date Reviewed: 5/24/04 **RS Supervision:** [redacted]

COPY

60

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	7.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	23.10 %
MDA	18 dpmα	MDA	20 dpmα	MDA	65 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	111.5 cpmβ	Bkg	N/A cpmβ	Bkg	767.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	30.60 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	430 dpmβ

Survey Tracking # 880-04-S 2242

Survey Type: Contamination

Building: 881

Location: F Plenum South Side

Purpose: Job coverage / 3D

RWP #: 04-880-0001

Date: 5/11/04 Time: 0800-1100

R [redacted]

RCT: N/A / N/A / N/A

Print name Signature Emp. #

PRN/REN #: 040101-RISS-01

Comments: Nuclides of concern are Uranium and Plutonium. Survey performed as characterization and depost survey of F Plenum 3rd stage areas.

SURVEY RESULTS

	LOCATION	ALPHA Swipe	ALPHA Direct	ALPHA Wipe	BETA Swipe	BETA Direct	BETA Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1-10	3rd Floor	<18	<65	<65	<205	<430.	<430
11-15	2nd Floor	<18	<65	<65	<205	<430	<430
16-25	1st Floor	<18	<65	<65	<205	<430.	<430
26-32	3rd Floor Air Lock	<18	<65	<65	<205	<430	<430
3340	2nd Floor Air Lock	<18	<65	<65	<205	<430.	<430
41-50	1st Floor Air Lock	<18	<65	<65	<205	<430	<430
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Date Reviewed: 5/11/04 **RS Supervisior** [redacted]

Print Name Signature Emp. #

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COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	7.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	23.10 %
MDA	18 dpmα	MDA	20 dpmα	MDA	65 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1376
Cal Due	9/25/04	Cal Due	N/A	Cal Due	9/18/04
Bkg	111.5 cpmβ	Bkg	N/A cpmβ	Bkg	767.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	30.60 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	430 dpmβ

Survey Tracking # 880-04-S 2243
Survey Type: Contamination
Building: 881
Location: F Plenum North Side
Purpose: Job coverage / 3D

RWP #: 04-880-0001

Date: 5/11/04 Time: 0800-1100

[redacted]

Print name	Signature	Emp. #
RCT: N/A	/ N/A	/ N/A
Print name	Signature	Emp. #

PRN/REN # 040101-RISS-01
Comments: Nuclides of concern are Uranium and Plutonium. Survey performed as characterization and depost survey of F Plenum 3rd stage areas.

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1-10	3rd Floor	<18	<65	<65	<205	<430.	<430
11-15	2nd Floor	<18	<65	<65	<205	<430	<430
16-25	1st Floor	<18	<65	<65	<205	<430.	<430
26-32	3rd Floor Air Lock	<18	<65	<65	<205	<430	<430
3340	2nd Floor Air Lock	<18	<65	<65	<205	<430.	<430
41-50	1st Floor Air Lock	<18	<65	<65	<205	<430	<430
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Date Reviewed: 5/11/04 **RS Supervision:** [redacted]

62

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	N/A
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	N/A
Bkg	0.6 cpmα	Bkg	5.0 cpmα	Bkg	N/A cpmα
Efficiency	35.10 %	Efficiency	22.10 %	Efficiency	N/A %
MDA	18 dpmα	MDA	59 dpmα	MDA	N/A dpmα
Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	N/A
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	N/A
Bkg	93.5 cpmβ	Bkg	741.0 cpmβ	Bkg	N/A cpmβ
Efficiency	39.10 %	Efficiency	29.90 %	Efficiency	N/A %
MDA	205 dpmβ	MDA	432 dpmβ	MDA	N/A dpmβ

Survey Tracking # 880-04-S 2295
Survey Type: Contamination
Building: 881F
Location: Plenum Building 1st Floor
Purpose: Characterization / Release

RWP #: 04-880-0001 **COPY**

Date: 5/22/04 Time: 1500

[redacted]

RCT: N/A / N/A / N/A
Print name / Signature / Emp. #

PRN/REN # : 040101-RISS-~~04~~ 01 AA 5/24/04

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 1st floor inside the Plenum Building. Entry was made into the Demister Area and the 1st Stage of the Plenum. The 33 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. A 25% scan of the 1st stage filter racks and demister filter racks was performed. The results of the 25% scan are documented, but the specific locations are not, as these were performed at random locations. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1	Demister Filter Racks	<18	**891**	N/A	<205	<432	N/A
2	Demister Filter Racks	<18	**936**	N/A	<205	<432	N/A
3	Demister Filter Racks	<18	**211**	N/A	<205	<432	N/A
4	Demister Filter Racks	**36**	**1126**	N/A	<205	<432	N/A
5	Demister Filter Racks	**59**	**1538**	N/A	<205	<432	N/A
6	Demister Filter Racks	<18	**1398**	N/A	<205	<432	N/A
7	Demister Filter Racks	<18	**511**	N/A	<205	<432	N/A
8	Demister Filter Racks	<18	**927**	N/A	<205	<432	N/A
9	Demister Filter Racks	<18	**1018**	N/A	<205	<432	N/A
10	Demister Filter Racks	<18	**1624**	N/A	<205	<432	N/A
11	1st Stage Filter Racks	<18	<59	N/A	<205	<432	N/A
12	1st Stage Filter Racks	**36**	**163**	N/A	<205	<432	N/A
13	1st Stage Filter Racks	<18	<59	N/A	<205	<432	N/A
14	1st Stage Filter Racks	<18	<59	N/A	<205	<432	N/A
15	1st Stage Filter Racks	<18	**223**	N/A	<205	<432	N/A
16	1st Stage Filter Racks	<18	**226**	N/A	<205	<432	N/A
17	1st Stage Filter Racks	<18	**652**	N/A	<205	<432	N/A
18	1st Stage Filter Racks	<18	**294**	N/A	<205	<432	N/A
19	1st Stage Filter Racks	**36**	**266**	N/A	<205	<432	N/A
20	1st Stage Filter Racks	<18	**145**	N/A	<205	<432	N/A

Date Reviewed: 5-23-04 **RS Supervision:** [redacted]

5/22/04-1500 REN 04B1 01- R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
21	Handrail Post	33	**118**	N/A	<205	<432	N/A
22	Wall	<18	<59	N/A	<205	<432	N/A
23	Sub Door	<18	<59	N/A	<205	<432	N/A
24	Sub Door	34	**72**	N/A	<205	<432	N/A
25	Hinged Door	<18	**118**	N/A	<205	<432	N/A
26	Handrail	<18	<59	N/A	<205	<432	N/A
27	Fire Sprinkler Piping	<18	**253**	N/A	<205	<432	N/A
28	Steel Wall	<18	**145**	N/A	<205	<432	N/A
29	Steel Post	<18	**176**	N/A	<205	<432	N/A
30	Hinged Door	<18	<59	N/A	<205	<432	N/A
31	Fire Sprinkler Piping	<18	**118**	N/A	<205	<432	N/A
32	Sub Door	<18	**113**	N/A	<205	<432	N/A
33	Sub Door	<18	**285**	N/A	<205	<432	N/A
N/A	25% Scan of 1st Stage Filter Racks (North End)	N/A	**<59 - 520**	N/A	N/A	<432	N/A
N/A	25% Scan of Demister Racks (North End)	N/A	**200-2000**	N/A	N/A	<432	N/A
N/A	25% Scan of Demister Racks (South End)	N/A	**270-2000**	N/A	N/A	<432	N/A
N/A	25% Scan of 1st Stage Filter Racks (South End)	N/A	**<59 - 700**	N/A	N/A	<432	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COPY

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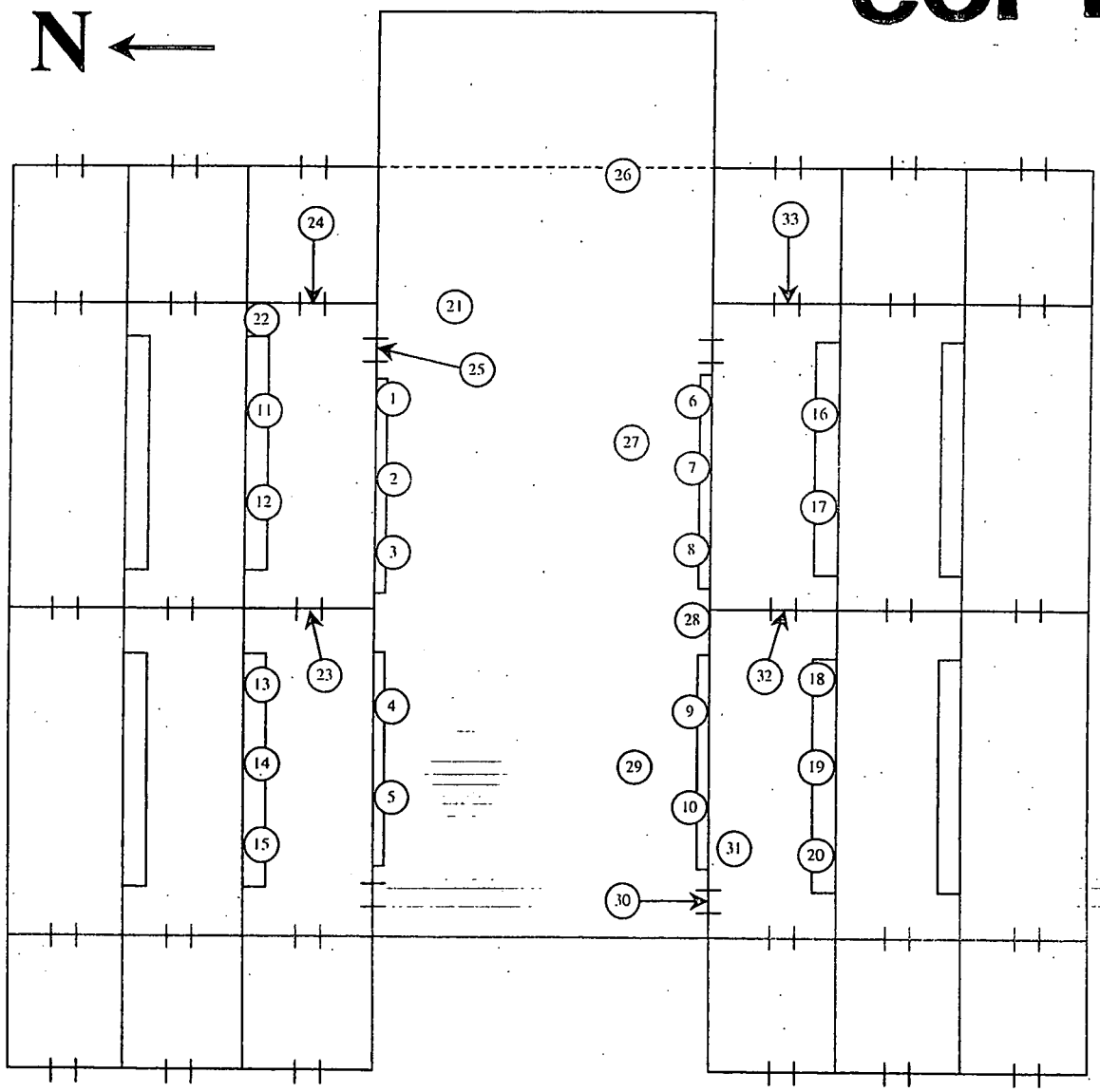
880-04-5-2295
5/22/04-1500 REN 040101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

1st Floor of Plenum Building

COPY



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	1432
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/04
Bkg	0.6 cpmα	Bkg	5.0 cpmα	Bkg	6.0 cpmα
Efficiency	35.10 %	Efficiency	22.10 %	Efficiency	21.00 %
MDA	18 dpmα	MDA	59 dpmα	MDA	67 dpmα

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	143
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/0
Bkg	93.5 cpmβ	Bkg	741.0 cpmβ	Bkg	685.0 cp
Efficiency	39.10 %	Efficiency	29.90 %	Efficiency	29.50
MDA	205 dpmβ	MDA	432 dpmβ	MDA	422 dpmβ

[redacted]

Survey Tracking # 880-04-S 2298
Survey Type: Contamination
Building: 881F
Location: Plenum Building 1st Floor
Purpose: Characterization / Release

RWP #: 04-880-0001

COPY

Date: 5/22/04 **Time:** 1600

PRN/REN # : 040101-RISS-04 ~~04~~ 5/24/04

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 1st floor inside the Plenum Building. Entry was made into the Demister Area and the 1st Stage of the Plenum. The 32 direct readings taken on the floor inside these areas were 90 second PATs taken at elevated areas determined from the 25% direct scan that was performed on the floor. The results of the 25% scan are documented, but the specific locations are not, as these were performed at random locations. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1	1st Stage Area Floor	<18	**550**	<59	<205	<432	<432
2	1st Stage Area Floor	<18	**432**	<59	<205	<432	<432
3	1st Stage Area Floor	<18	**631**	<59	<205	<432	<432
4	1st Stage Area Floor	<18	**311**	<59	<205	<432	<432
5	1st Stage Area Floor	<18	**532**	<59	<205	<432	<432
6	1st Stage Area Floor	<18	**433**	<59	<205	<432	<432
7	1st Stage Area Floor	<18	**392**	<59	<205	<432	<432
8	1st Stage Area Floor	<18	**905**	<59	<205	<432	<432
9	Demister Area Floor	<18	**149**	<59	<205	<432	<432
10	Demister Area Floor	<18	**802**	<59	<205	<432	<432
11	Demister Area Floor	<18	**644**	<59	<205	<432	<432
12	Demister Area Floor	<18	**977**	<59	<205	<432	<432
13	Demister Area Floor	<18	**932**	<59	<205	<432	<432
14	Demister Area Floor	<18	**869**	<59	<205	<432	<432
15	Demister Area Floor	<18	**1838**	<59	<205	<432	<432
16	Demister Area Floor	<18	**477**	<67	<205	<422	<422
17	Demister Area Floor	<18	**649**	<67	<205	<422	<422
18	Demister Area Floor	<18	**1158**	<67	<205	<422	<422
19	Demister Area Floor	<18	**1288**	<67	<205	<422	<422
20	Demister Area Floor	<18	**995**	<67	<205	<422	<422

Date Reviewed: 5-23-04 **RS Supervision** [redacted]

880-04-5-2298
5/22/04 - 1600

REN 04 01 01 - R155 - 01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
21	Demister Area Floor	<18	**1099**	<67	<205	<422	<422
22	Demister Area Floor	<18	**887**	<67	<205	<422	<422
23	Demister Area Floor	<18	**144**	<67	<205	<422	<422
24	Demister Area Floor	<18	**716**	<67	<205	<422	<422
25	1st Stage Area Floor	<18	**135**	<67	<205	<422	<422
26	1st Stage Area Floor	<18	**311**	<67	<205	<422	<422
27	1st Stage Area Floor	<18	**126**	<67	<205	<422	<422
28	1st Stage Area Floor	<18	**239**	<67	<205	<422	<422
29	1st Stage Area Floor	<18	**153**	<67	<205	<422	<422
30	1st Stage Area Floor	<18	**86**	<67	<205	<422	<422
31	1st Stage Area Floor	<18	**198**	<67	<205	<422	<422
32	1st Stage Area Floor	<18	**324**	<67	<205	<422	<422
N/A	25% Scan of 1st Stage Area Floor (North End)	N/A	**300 - 1000**	N/A	N/A	<432	N/A
N/A	25% Scan of Demister Area Floor (North End)	N/A	**150 - 1900**	N/A	N/A	<432	N/A
N/A	25% Scan of Demister Area Floor (South End)	N/A	**140 - 1300**	N/A	N/A	<422	N/A
N/A	25% Scan of 1st Stage Area Floor (South End)	N/A	**86 - 360**	N/A	N/A	<422	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COPY

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880-04-X-2298

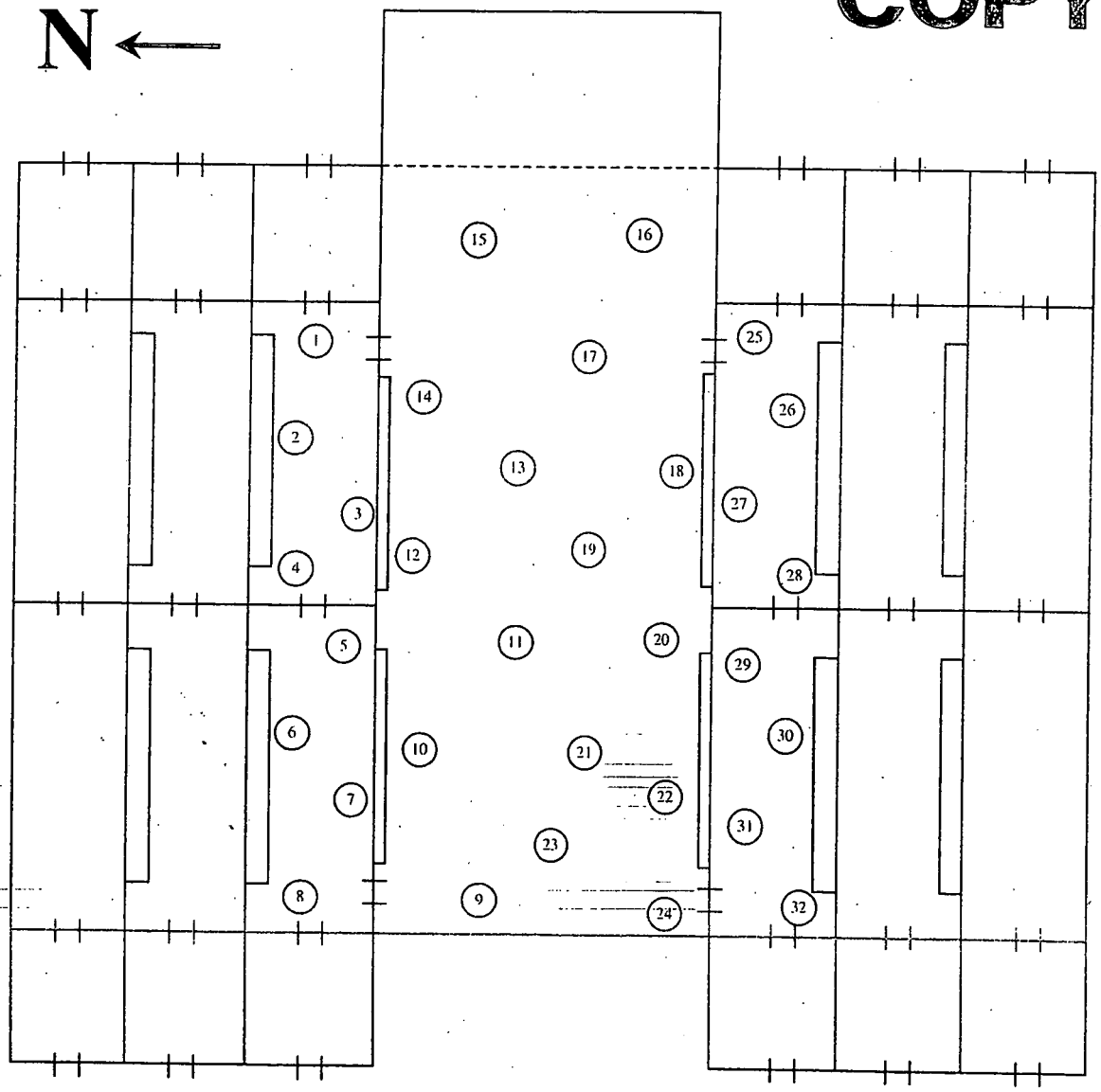
5/22/04 - 1600 REN 040101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

1st Floor of Plenum Building

COPY



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1432
Cal Due	9/25/04	Cal Due	N/A	Cal Due	8/5/04
Bkg	0.6 cpmα	Bkg	N/A cpmα	Bkg	6.0 cpmα
Efficiency	35.10 %	Efficiency	N/A %	Efficiency	22.20 %
MDA	18 dpmα	MDA	N/A dpmα	MDA	64 dpmα
Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1432
Cal Due	9/25/04	Cal Due	N/A	Cal Due	8/5/04
Bkg	107.0 cpmβ	Bkg	N/A cpmβ	Bkg	727.0 cpmβ
Efficiency	39.10 %	Efficiency	N/A %	Efficiency	31.10 %
MDA	205 dpmβ	MDA	N/A dpmβ	MDA	412 dpmβ

Survey Tracking # 880-04-S 2283
Survey Type: Contamination
Building: 881F
Location: Plenum Building 2nd Floor
Purpose: Characterization / Release

RWP #: 04-880-0001 COPY

Date: 5/21/04 Time: 1530

[redacted]

RCT: N/A / N/A / N/A
Print name / Signature / Emp. #

PRN/REN # 040101-RISS-04 #1 SA 5/24/04

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 2nd floor inside the Plenum Building. Entry was made into the Demister Area and the 1st Stage of the Plenum. The 46 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. A 25% scan of the 1st stage filter racks and demister filter racks was performed. The results of the 25% scan are documented, but the specific locations are not, as these were performed at random locations. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1	1st Stage Filter Racks	<18	**281**	<64	<205	<412	<412
2	1st Stage Filter Racks	<18	**442**	<64	<205	<412	<412
3	1st Stage Filter Racks	<18	**212**	<64	<205	<412	<412
4	1st Stage Filter Racks	<18	**342**	<64	<205	<412	<412
5	1st Stage Filter Racks	<18	**117**	<64	<205	<412	<412
6	1st Stage Filter Racks	<18	**144**	<64	<205	<412	<412
7	1st Stage Filter Racks	<18	**113**	<64	<205	<412	<412
8	1st Stage Filter Racks	<18	**189**	<64	<205	<412	<412
9	Demister Filter Racks	<18	**982**	<64	<205	<412	<412
10	Demister Filter Racks	<18	**2302**	<64	<205	<412	<412
11	Demister Filter Racks	<18	**1401**	<64	<205	<412	<412
12	Demister Filter Racks	<18	**856**	<64	<205	<412	<412
13	Demister Filter Racks	<18	**1068**	<64	<205	<412	<412
14	Demister Filter Racks	<18	**572**	<64	<205	<412	<412
15	Demister Filter Racks	<18	**910**	<64	<205	<412	<412
16	Demister Filter Racks	<18	**473**	<64	<205	<412	<412
17	Demister Filter Racks	<18	**686**	<64	<205	<412	<412
18	Demister Filter Racks	<18	**1063**	<64	<205	<412	<412
19	Demister Filter Racks	<18	**559**	<64	<205	<412	<412
20	Demister Filter Racks	<18	**689**	<64	<205	<412	<412

Date Reviewed: 5-23-04 **RS Supervision:** [redacted]

Y909

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5/24/04 -1530 REN 04 0101- R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
21	Demister Filter Racks	<18	**599**	<64	<205	<412	<412
22	Demister Filter Racks	<18	**982**	<64	<205	<412	<412
23	Demister Filter Racks	<18	**455**	<64	<205	<412	<412
24	Demister Filter Racks	<18	**689**	<64	<205	<412	<412
25	1st Stage Filter Racks	<18	**185**	<64	<205	<412	<412
26	1st Stage Filter Racks	<18	**101**	<64	<205	<412	<412
27	1st Stage Filter Racks	<18	**117**	<64	<205	<412	<412
28	1st Stage Filter Racks	<18	**216**	<64	<205	<412	<412
29	1st Stage Filter Racks	<18	**221**	<64	<205	<412	<412
30	1st Stage Filter Racks	<18	**162**	<64	<205	<412	<412
31	1st Stage Filter Racks	<18	**126**	<64	<205	<412	<412
32	1st Stage Filter Racks	<18	**212**	<64	<205	<412	<412
33	Sub Door	**54**	<64	<64	<205	<412	<412
34	Fire Protection Piping	<18	**162**	<64	<205	<412	<412
35	Floor Grating	<18	**126**	<64	<205	<412	<412
36	4" x 4" Steel Beams	<18	**338**	<64	<205	<412	<412
37	Steel Wall	**72**	**117**	<64	<205	<412	<412
38	Handrail	**50**	**243**	<64	<205	<412	<412
39	Handrail	<18	**766**	<64	<205	<412	<412
40	Floor Grating	<18	**252**	<64	<205	<412	<412
41	Fire Protection Piping	<18	**428**	<64	<205	<412	<412
42	Hinged Door	<18	**81**	<64	<205	<412	<412
43	Fire Protection Piping	<18	**387**	<64	<205	<412	<412
44	4" x 4" Steel Beams	<18	**117**	<64	<205	<412	<412
45	Floor Grating	<18	**144**	<64	<205	<412	<412
46	Sub Door	<18	<64	<64	<205	<412	<412
N/A	25% Scan of 1st Stage Filter Racks (North End)	N/A	**144 - 2342**	N/A	N/A	<412	N/A
N/A	25% Scan of Demister Racks (North End)	N/A	**270 - 2748**	N/A	N/A	<412	N/A
N/A	25% Scan of Demister Racks (South End)	N/A	**360 - 1892**	N/A	N/A	<412	N/A
N/A	25% Scan of 1st Stage Filter Racks (South End)	N/A	**180 - 1261**	N/A	N/A	<412	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COPY

70

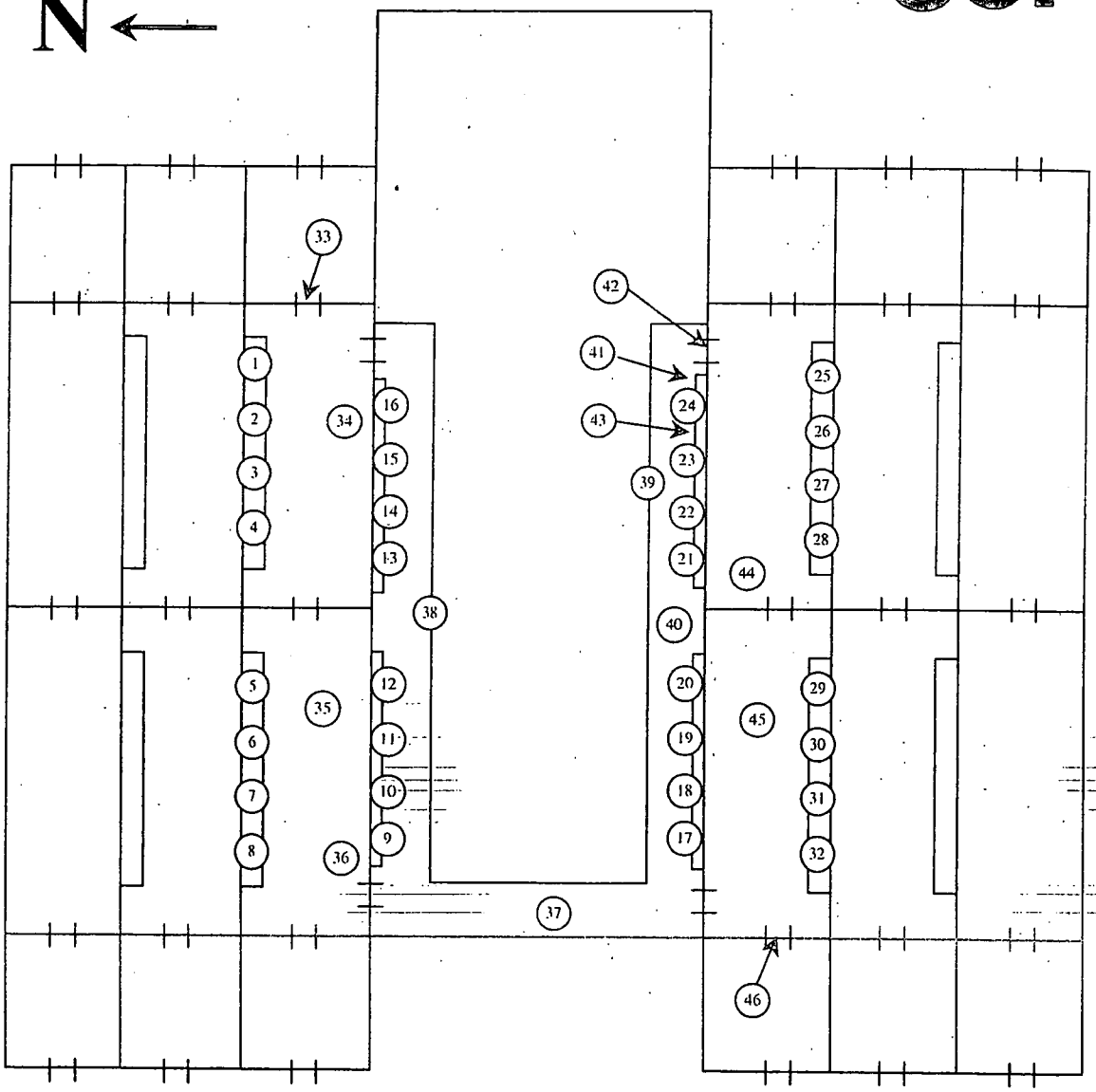
880-04-5-2283
5/21/04-1530 REN 040101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

2nd Floor of Plenum Building

COPY



71

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	2136
Cal Due	9/25/04	Cal Due	N/A	Cal Due	8/2/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	7.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	22.10 %
MDA	18 dpmα	MDA	20 dpmα	MDA	68 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	2136
Cal Due	9/25/04	Cal Due	N/A	Cal Due	8/2/04
Bkg	112.6 cpmβ	Bkg	N/A cpmβ	Bkg	806.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	29.90 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	451 dpmβ

Survey Tracking # 880-04-S2275
Survey Type: Contamination
Building: 881F
Location: Plenum Building 3rd Floor
Purpose: Characterization / Release

RWP #: 04-880-0001

COPY

Date: 5/20/04 / [illegible] / 1500

RCT: [redacted]
Print name / Signature / Emp. #

RCT: N/A / N/A / N/A
Print name / Signature / Emp. #

PRN/REN # 040101-RISS-01

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 3rd floor inside the Plenum Building. Entry was made into the Demister Area and the 1st Stage of the Plenum. The 46 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. A 25% scan of the 1st stage filter racks and demister filter racks was performed. The results of the 25% scan are documented, but the specific locations are not, as these were performed at random locations. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

		ALPHA			BETA		
	LOCATION	Swipe	Direct	Wipe	Swipe	Direct	Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
2	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
3	1st Stage Filter Racks	<18	**105**	N/A	<205	<451	N/A
4	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
5	1st Stage Filter Racks	**36**	**223**	N/A	<205	<451	N/A
6	1st Stage Filter Racks	<18	**83**	N/A	<205	<451	N/A
7	1st Stage Filter Racks	<18	**103**	N/A	<205	<451	N/A
8	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
9	Demister Filter Racks	<18	**670**	N/A	<205	<451	N/A
10	Demister Filter Racks	<18	**602**	N/A	<205	<451	N/A
11	Demister Filter Racks	<18	**266**	N/A	<205	<451	N/A
12	Demister Filter Racks	<18	**401**	N/A	<205	<451	N/A
13	Demister Filter Racks	<18	**271**	N/A	<205	<451	N/A
14	Demister Filter Racks	<18	**290**	N/A	<205	<451	N/A
15	Demister Filter Racks	<18	**729**	N/A	<205	<451	N/A
16	Demister Filter Racks	<18	**99**	N/A	<205	<451	N/A
17	Demister Filter Racks	<18	**683**	N/A	<205	<451	N/A
18	Demister Filter Racks	<18	**701**	N/A	<205	<451	N/A
19	Demister Filter Racks	<18	**554**	N/A	<205	<451	N/A
20	Demister Filter Racks	<18	**683**	N/A	<205	<451	N/A

Date Reviewed: 5-21-04 **RS Supervision:** [redacted]

1903

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880-04-S2275
5/20/04-1500 REN 04-0101-RISS-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
21	Demister Filter Racks	<18	**115**	N/A	<205	<451	N/A
22	Demister Filter Racks	<18	**645**	N/A	<205	<451	N/A
23	Demister Filter Racks	<18	**683**	N/A	<205	<451	N/A
24	Demister Filter Racks	<18	**701**	N/A	<205	<451	N/A
25	1st Stage Filter Racks	<18	**100**	N/A	<205	<451	N/A
26	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
27	1st Stage Filter Racks	**21**	**471**	N/A	<205	<451	N/A
28	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
29	1st Stage Filter Racks	<18	**78**	N/A	<205	<451	N/A
30	1st Stage Filter Racks	<18	**105**	N/A	<205	<451	N/A
31	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
32	1st Stage Filter Racks	<18	<68	N/A	<205	<451	N/A
33	Sub Door	<18	<68	N/A	<205	<451	N/A
34	1st Stage Area Deck Grate	<18	**123**	N/A	<205	<451	N/A
35	Sub Door	**39**	<68	N/A	<205	<451	N/A
36	1st Stage Area Deck Grate	<18	**136**	N/A	<205	<451	N/A
37	Demister Area Deck Grate	<18	**223**	N/A	<205	<451	N/A
38	Demister Area Deck Grate	<18	**216**	N/A	<205	<451	N/A
39	Handrail	**36**	**162**	N/A	<205	<451	N/A
40	Handrail	**54**	**225**	N/A	<205	<451	N/A
41	Demister Area Deck Grate	<18	**196**	N/A	<205	<451	N/A
42	Hinged Door	<18	**81**	N/A	<205	<451	N/A
43	Sub Door	<18	<68	N/A	<205	<451	N/A
44	1st Stage Deck Grate	<18	<68	N/A	<205	<451	N/A
45	1st Stage Deck Grate	<18	**116**	N/A	<205	<451	N/A
46	Sub Door	<18	<68	N/A	<205	<451	N/A
N/A	25% Scan of 1st Stage Filter Racks (North End)	N/A	**180 - 360**	N/A	N/A	N/A	N/A
N/A	25% Scan of Demister Filter Racks (North End)	N/A	**500 - 1500**	N/A	N/A	N/A	N/A
N/A	25% Scan of Demister Filter Racks (South End)	N/A	**450 - 1400**	N/A	N/A	N/A	N/A
N/A	25% Scan of 1st Stage Filter Racks (South End)	N/A	**150 - 330**	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COPY

880-04-B2275
5/20/04-1500

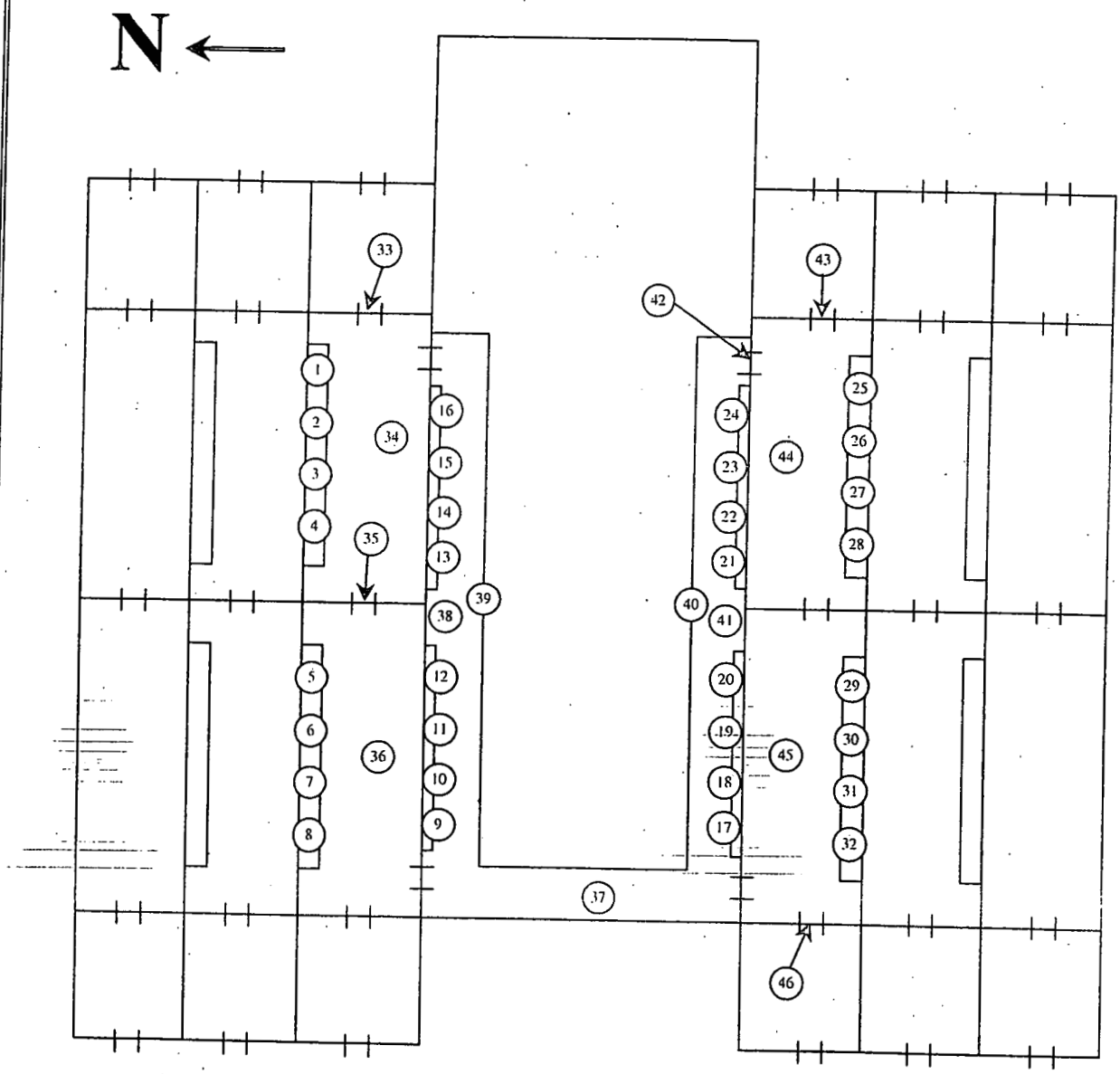
RGN 04-0101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

3rd Floor of Plenum Building

COPY



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1432
Cal Due	9/25/04.	Cal Due	N/A	Cal Due	8/5/04
Bkg	0.5 cpmα	Bkg	N/A cpmα	Bkg	4.0 cpmα
Efficiency	35.10 %	Efficiency	33.00 %	Efficiency	21.00 %
MDA	18 dpmα	MDA	20 dpmα	MDA	57 dpmα
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929.	Model	BC-4	Model	DP-6
Serial #	147742	Serial #	N/A	Serial #	1432
Cal Due	9/25/04	Cal Due	N/A	Cal Due	8/5/04
Bkg	118.1 cpmβ	Bkg	N/A cpmβ	Bkg	693.0 cpmβ
Efficiency	39.10 %	Efficiency	25.00 %	Efficiency	29.50 %
MDA	205 dpmβ	MDA	200 dpmβ	MDA	424 dpmβ

Survey Tracking # 880-04-S2331
Survey Type: Contamination
Building: 881F
Location: Plenum Building 1st Floor/misc. Areas
Purpose: Characterization / Release

RWP #: 04-880-0001

Date: 5/25/04 Time: 1400

[redacted]

RCT: N/A / N/A / N/A
Print name Signature Emp. #

PRN/REN # 040101-RISS-01

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 1st floor inside the Plenum Building. Entry was made into the Demister Area and the 2nd Stage of the Plenum. The 70 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1-10	2nd Stage Filter Racks	<18	<57	N/A	<205	<424	N/A
11	Floor	**51**	**481**	N/A	<205	<424	N/A
12	Floor	**88**	**362**	N/A	<205	<424	N/A
13	Floor	**31**	**605**	N/A	<205	<424	N/A
14	Floor	**37**	**324**	N/A	<205	<424	N/A
15	Floor	**34**	**286**	N/A	<205	<424	N/A
16	Floor	**28**	**305**	N/A	<205	<424	N/A
17	Floor	<18	**486**	N/A	<205	<424	N/A
18	Floor	<18	**967**	N/A	<205	<424	N/A
19	Floor	<18	**314**	N/A	<205	<424	N/A
20	Floor	<18	**324**	N/A	<205	<424	N/A
21	Floor Drain	**88**	**410**	N/A	<205	<424	N/A
22	Floor Drain	**71**	**181**	N/A	<205	<424	N/A
23	Sub Door	<18	<57	N/A	<205	<424	N/A
24	Sub Door	<18	<57	N/A	<205	<424	N/A
25	Sub Door	<18	<57	N/A	<205	<424	N/A
26	Steel Wall	<18	<57	N/A	<205	<424	N/A
27	Steel Wall	<18	<57	N/A	<205	<424	N/A
28	Steel Wall	<18	<57	N/A	<205	<424	N/A
29	Electrical Box	<18	<57	N/A	<205	<424	N/A

Date Reviewed: 5/25/04 **RS Supervision** [redacted]

25

880-04-52331
5/25/04 - 1400 REN 040101-RISS-01

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
30	Conduit	<18	<57	N/A	<205	<424	N/A
31-40	2nd Stage Filter Racks	<18	<57	N/A	<205	<424	N/A
41	Floor	28	405	N/A	<205	<424	N/A
42	Floor	34	876	N/A	<205	<424	N/A
43	Floor	37	1057	N/A	<205	<424	N/A
44	Floor	48	338	N/A	<205	<424	N/A
45	Floor	<18	362	N/A	<205	<424	N/A
46	Floor	<18	371	N/A	<205	<424	N/A
47	Floor	54	443	N/A	<205	<424	N/A
48	Floor	81	514	N/A	<205	<424	N/A
49	Floor	51	476	N/A	<205	<424	N/A
50	Floor	<18	514	N/A	<205	<424	N/A
51	Floor Drain	68	343	N/A	<205	<424	N/A
52	Floor Drain	60	300	N/A	<205	<424	N/A
53	Floor Drain	74	390	N/A	<205	<424	N/A
54	Sub Door	<18	<57	N/A	<205	<424	N/A
55	Sub Door	<18	<57	N/A	<205	<424	N/A
56	Sub Door	<18	<57	N/A	<205	<424	N/A
57	Steel Door	<18	<57	N/A	<205	<424	N/A
58	Steel Door	<18	<57	N/A	<205	<424	N/A
59	Steel Door	<18	<57	N/A	<205	<424	N/A
60	Misc Steel Parts	<18	<57	N/A	<205	<424	N/A
61	Wall	<18	152	N/A	<205	<424	N/A
62	Wall	<18	243	N/A	<205	<424	N/A
63	Wall	<18	148	N/A	<205	<424	N/A
64	Wall	<18	457	N/A	<205	<424	N/A
65	Wall	<18	157	N/A	<205	<424	N/A
66	Wall	<18	195	N/A	<205	<424	N/A
67	Wall	<18	124	N/A	<205	<424	N/A
68	Wall	<18	138	N/A	<205	<424	N/A
69-70	Outside Drain Valve & Pipe #42	<18	<57	N/A	<205	<424	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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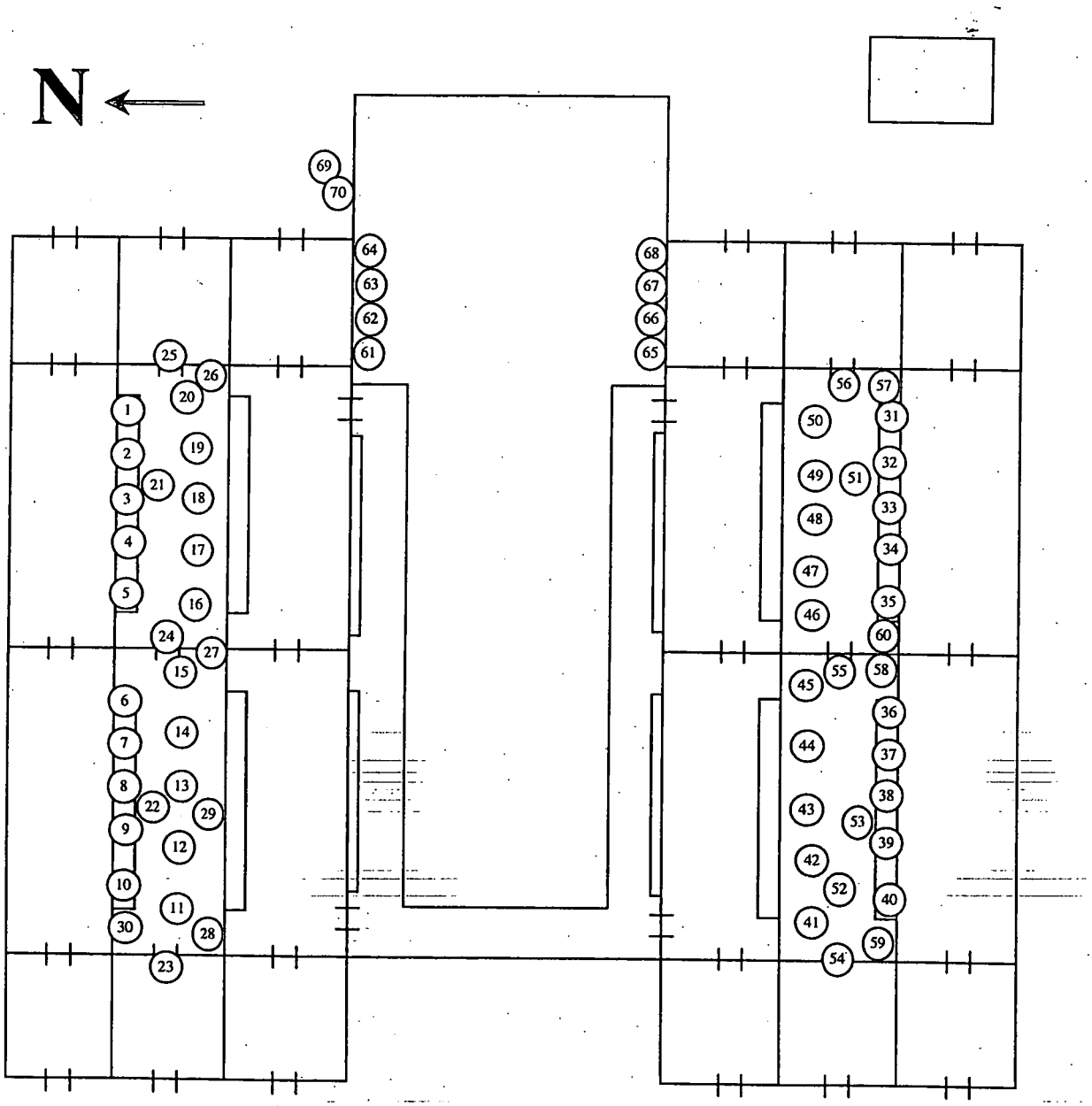
880-04-Ø2331

5/25/04-1400 REN Ø4Ø1Ø1-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

1st Floor of Plenum Building



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	1432
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/04
Bkg	0.6 cpmα	Bkg	6.0 cpmα	Bkg	1.0 cpmα
Efficiency	35.10 %	Efficiency	22.10 %	Efficiency	21.00 %
MDA	18 dpmα	MDA	64 dpmα	MDA	35 dpmα

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	1432
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/04
Bkg	109.6 cpmβ	Bkg	833.0 cpmβ	Bkg	741.0 cpmβ
Efficiency	39.10 %	Efficiency	29.90 %	Efficiency	29.50 %
MDA	205 dpmβ	MDA	458 dpmβ	MDA	438 dpmβ

Survey Tracking # 880-04-S 2301
Survey Type: Contamination
Building: 881F
Location: Plenum Building 2nd Floor
Purpose: Characterization / Release

RWP #: 04-880-0001

Date: 5/23/04 **Time:** 1500

[redacted]

PRN/REN #: 040101-RISS-04

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 2nd floor inside the Plenum Building. Entry was made into the 2nd Stage of the Plenum. The 30 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

	LOCATION	ALPHA Swipe	ALPHA Direct	ALPHA Wipe	BETA Swipe	BETA Direct	BETA Wipe
#		dpm/100cm2	dpm/100cm2	dpm/wipe	dpm/100cm2	dpm/100cm2	dpm/wipe
1	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
2	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
3	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
4	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
5	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
6	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
7	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
8	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
9	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
10	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
11	Sub Door	<18	<64	<64	<205	<458	<458
12	Sub Door	<18	<64	<64	<205	<458	<458
13	Sub Door	<18	<64	<64	<205	<458	<458
14	2nd Stage Deck Grate	<18	<64	<64	<205	<458	<458
15	2nd Stage Deck Grate	<18	<64	<64	<205	<458	<458
16	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
17	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
18	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
19	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
20	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
21	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
22	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438

Date Reviewed: 5/24/04 **RS Supervision** [redacted]

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880 - 04 - S23 01
5/23/04 - 1500 REN 040101 - RISS-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
23	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
24	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
25	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
26	Sub Door	<18	<35	<35	<205	<438	<438
27	2nd Stage Deck Grate	<18	<35	<35	<205	<438	<438
28	Sub Door	<18	<35	<35	<205	<438	<438
29	2nd Stage Deck Grate	<18	<35	<35	<205	<438	<438
30	Sub Door	<18	<35	<35	<205	<438	<438
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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880-04-S23Ø1

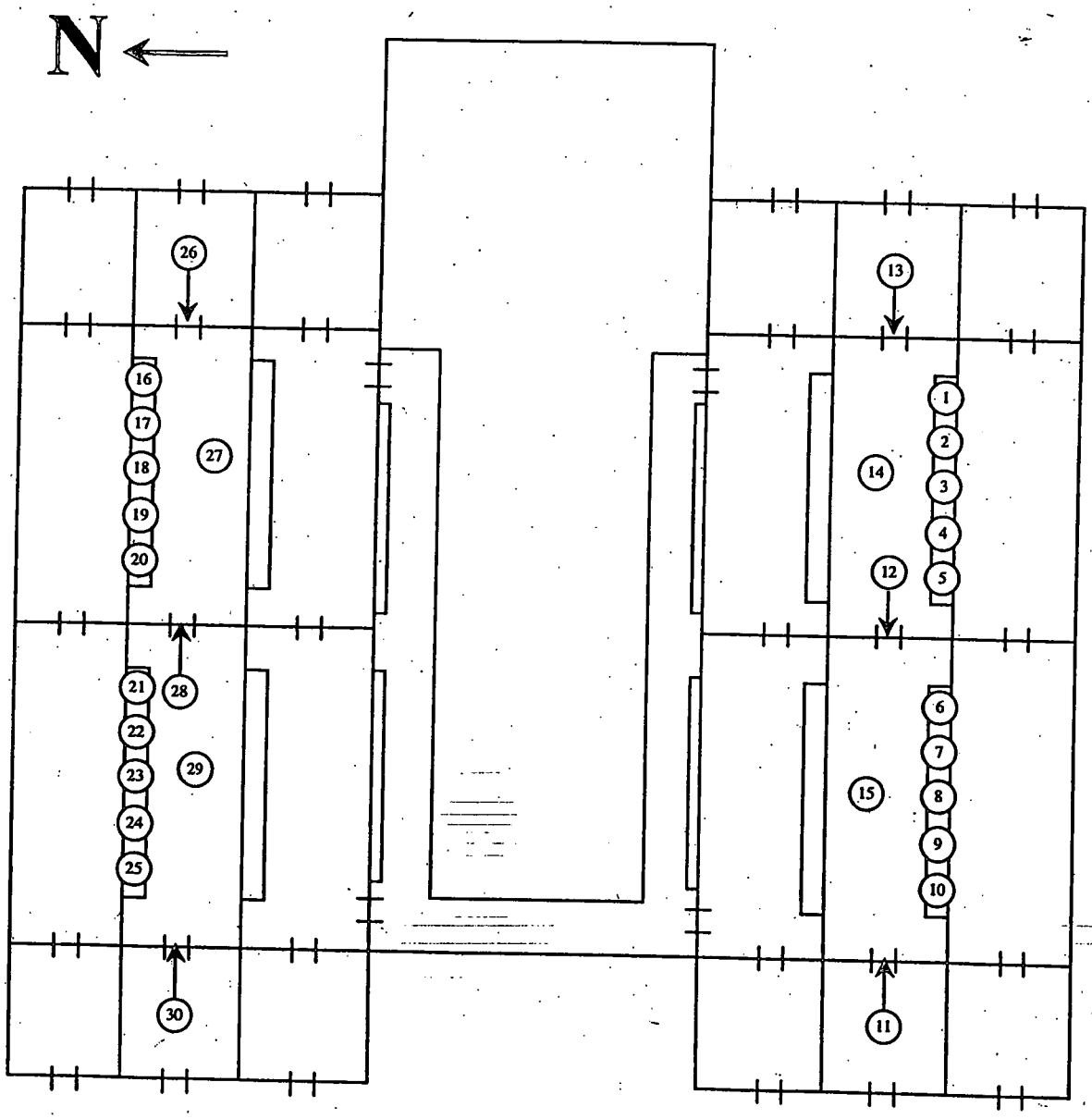
5/23/04 - 1500

REN 040101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

2nd Floor of Plenum Building



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	1432
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/04
Bkg	0.6 cpmα	Bkg	6.0 cpmα	Bkg	1.0 cpmα
Efficiency	35.10 %	Efficiency	22.10 %	Efficiency	21.00 %
MDA	18 dpmα	MDA	64 dpmα	MDA	35 dpmα

Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra
Model	2929	Model	DP-6	Model	DP-6
Serial #	147742	Serial #	2136	Serial #	1432
Cal Due	9/25/04	Cal Due	8/2/04	Cal Due	8/5/04
Bkg	109.6 cpmβ	Bkg	833.0 cpmβ	Bkg	741.0 cpmβ
Efficiency	39.10 %	Efficiency	29.90 %	Efficiency	29.50 %
MDA	205 dpmβ	MDA	458 dpmβ	MDA	438 dpmβ

Survey Tracking # 880-04-S 2305

Survey Type: Contamination

Building: 881F

Location: Plenum Building 3rd Floor

Purpose: Characterization / Release

RWP #: 04-880-0001

Date: 5/23/04 Time: 0900

[redacted]

Print name Signature Emp. #

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PRN/REN # 040101-RISS-01

Comments: Nuclides of concern are Uranium. Survey performed as characterization of the 3rd floor inside the Plenum Building. Entry was made into the 2nd Stage of the Plenum. The 30 direct readings taken inside these areas were 90 second PATs taken at areas with elevated readings. Survey will serve as a release survey if the survey results meet the requirements of Table 2-2 of RCM for release.

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
1	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
2	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
3	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
4	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
5	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
6	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
7	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
8	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
9	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
10	2nd Stage Filter Racks	<18	<64	<64	<205	<458	<458
11	Sub Door	<18	<64	<64	<205	<458	<458
12	Sub Door	<18	<64	<64	<205	<458	<458
13	Sub Door	<18	<64	<64	<205	<458	<458
14	2nd Stage Deck Grate	<18	<64	<64	<205	<458	<458
15	2nd Stage Deck Grate	<18	<64	<64	<205	<458	<458
16	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
17	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
18	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
19	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
20	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
21	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
22	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438

Date Reviewed: 5-23-04 RS Supervision [redacted]

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080-04-52305

5/28/04 - 0900 REN 040101-R155-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA Swipe dpm/100cm2	ALPHA Direct dpm/100cm2	ALPHA Wipe dpm/wipe	BETA Swipe dpm/100cm2	BETA Direct dpm/100cm2	BETA Wipe dpm/wipe
23	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
24	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
25	2nd Stage Filter Racks	<18	<35	<35	<205	<438	<438
26	Sub Door	<18	<35	<35	<205	<438	<438
27	2nd Stage Deck Grate	<18	<35	<35	<205	<438	<438
28	Sub Door	<18	<35	<35	<205	<438	<438
29	2nd Stage Deck Grate	<18	<35	<35	<205	<438	<438
30	Sub Door	<18	<35	<35	<205	<438	<438
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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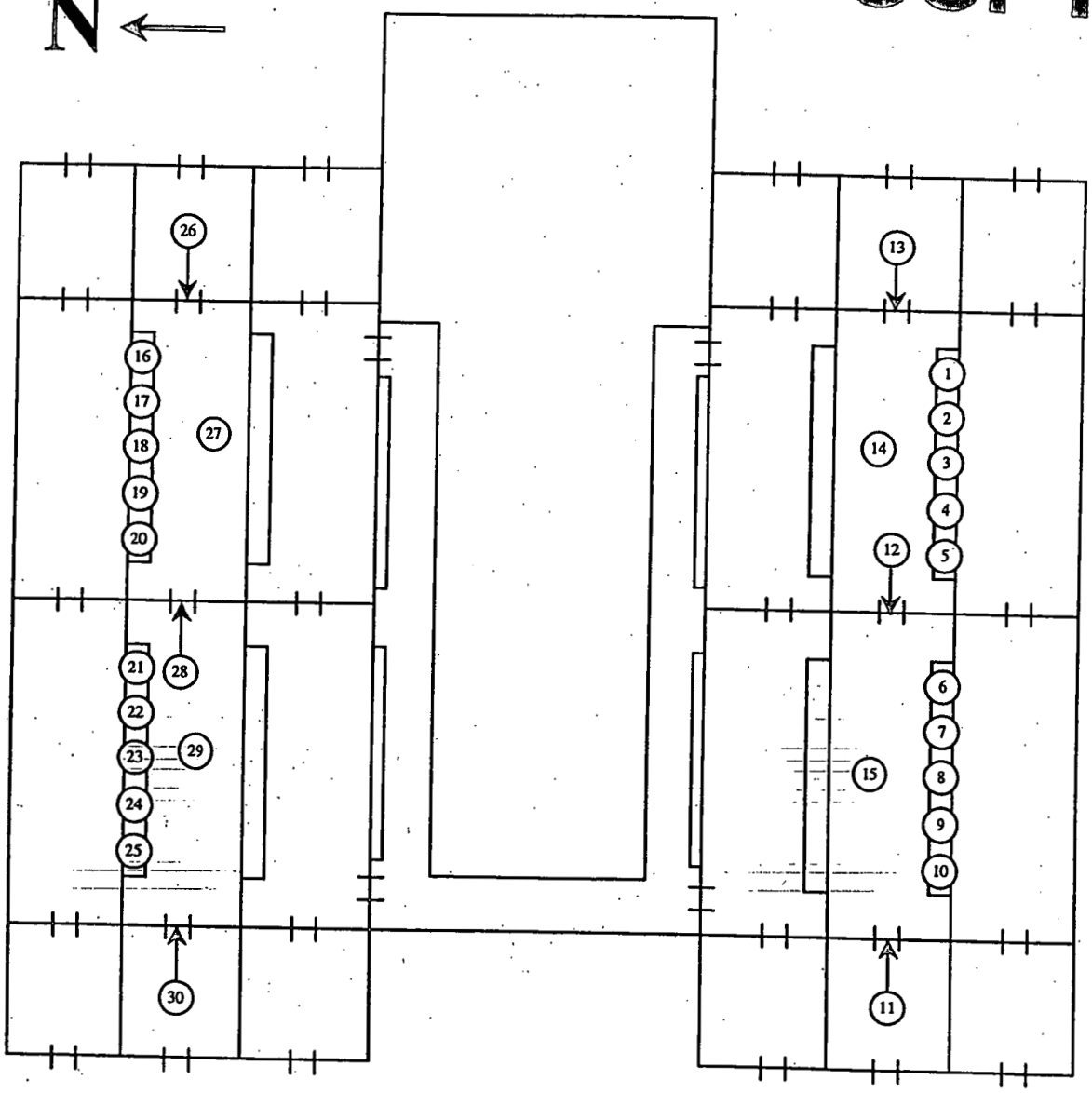
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

3rd Floor of Plenum Building

COPY



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ATTACHMENT C

Chemical Data Summaries and Sample Maps

ATTACHMENT C-1

PDSR Beryllium Data Summaries and Sample Maps

Table C-1 Beryllium Data Summary

Sample Map Location #	Room	RIN	Sample Number	Sample Location	Result (ug/100 cm2)
71	Plenum	04D0725	881-05122004-500-071	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
72	Plenum	04D0725	881-05122004-500-072	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
73	Plenum	04D0725	881-05122004-500-073	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
74	Plenum	04D0725	881-05122004-500-074	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
75	Plenum	04D0725	881-05122004-500-075	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
76	Plenum	04D0725	881-05122004-500-076	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
77	Plenum	04D0725	881-05122004-500-077	Plenum interior, 1st Floor, on equipment, biased	< 0.1
78	Plenum	04D0725	881-05122004-500-078	Plenum interior, 1st Floor, on equipment, biased	< 0.1
79	Plenum	04D0725	881-05122004-500-079	Plenum interior, 1st Floor, on equipment, biased	< 0.1
80	Plenum	04D0725	881-05122004-500-080	Plenum interior, 1st Floor, on equipment, biased	< 0.1
81	Plenum	04D0725	881-05122004-500-081	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
82	Plenum	04D0725	881-05122004-500-082	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
83	Plenum	04D0725	881-05122004-500-083	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
84	Plenum	04D0725	881-05122004-500-084	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
85	Plenum	04D0725	881-05122004-500-085	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
86	Plenum	04D0725	881-05122004-500-086	Plenum interior, 3rd Floor, on equipment, biased	< 0.1
87	Plenum	04D0725	881-05122004-500-087	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
88	Plenum	04D0725	881-05122004-500-088	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
89	Plenum	04D0725	881-05122004-500-089	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
90	Plenum	04D0725	881-05122004-500-090	Plenum interior, 2nd Floor, on equipment, biased	< 0.1
91	Plenum	04D0725	881-05122004-500-091	Plenum interior, 1st Floor, on equipment, biased	< 0.1
92	Plenum	04D0725	881-05122004-500-092	Plenum interior, 1st Floor, on equipment, biased	< 0.1
93	Plenum	04D0725	881-05122004-500-093	Plenum interior, 1st Floor, on equipment, biased	< 0.1
94	Plenum	04D0725	881-05122004-500-094	Plenum interior, 1st Floor, on equipment, biased	< 0.1
102	Plenum	04Z1866	881F-05202004-313-102	On ledge in chase, random	< 0.1
103	Plenum	04Z1866	881F-05202004-313-103	On ledge, random	< 0.1
104	Plenum	04Z1866	881F-05202004-313-104	On chase wall, random	< 0.1
105	Plenum	04Z1866	881F-05202004-313-105	On floor, random	< 0.1
106	Plenum	04Z1866	881F-05202004-313-106	On floor, random	< 0.1
107	Plenum	04Z1866	881F-05202004-313-107	On floor, random	< 0.1
108	Plenum	04Z1866	881F-05202004-313-108	On floor, random	< 0.1
109	Plenum	04Z1866	881F-05202004-313-109	On floor, random	< 0.1
110	Plenum	04Z1866	881F-05202004-313-110	On floor, random	< 0.1
111	Plenum	04Z1866	881F-05202004-313-111	On floor, random	< 0.1
112	Plenum	04Z1866	881F-05202004-313-112	On floor, random	< 0.1
115	Plenum	04D0798	881F-05222004-313-115	On floor, random	< 0.1
116	Plenum	04D0798	881F-05222004-313-116	On floor, random	< 0.1
117	Plenum	04D0798	881F-05222004-313-117	On floor, random	< 0.1
118	Plenum	04D0798	881F-05222004-313-118	On floor, random	< 0.1
119	Plenum	04D0798	881F-05222004-313-119	On floor, random	< 0.1
120	Main	04D0798	881F-05222004-313-120	On floor, random	< 0.1
121	Main	04D0798	881F-05222004-313-121	On floor, random	< 0.1
122	Main	04D0798	881F-05222004-313-122	On floor, random	< 0.1
123	Main	04D0798	881F-05222004-313-123	On floor, random	< 0.1
124	Main	04D0798	881F-05222004-313-124	On fan, random	< 0.1
125	Main	04D0798	881F-05222004-313-125	On fan, random	< 0.1
126	Main	04D0798	881F-05222004-313-126	On equipment, random	< 0.1
127	Main	04D0798	881F-05222004-313-127	On stairway, random	< 0.1
128	Main	04D0798	881F-05222004-313-128	On stairway, random	< 0.1
129	Main	04D0798	881F-05222004-313-129	On equipment, random	< 0.1
130	Main	04D0798	881F-05222004-313-130	On floor, random	< 0.1
131	Main	04D0798	881F-05222004-313-131	On fan, random	< 0.1
132	Main	04D0798	881F-05222004-313-132	On fan, random	< 0.1
133	Main	04D0798	881F-05222004-313-133	On floor, random	< 0.1
134	Main	04D0798	881F-05222004-313-134	On floor, random	< 0.1
135	Main	04D0798	881F-05222004-313-135	On stairway, random	< 0.1

Footnotes:

(1): Only the final "as left" condition sample results are reported in the above table. Any areas requiring decontamination were cleaned, resurveyed and reported above.

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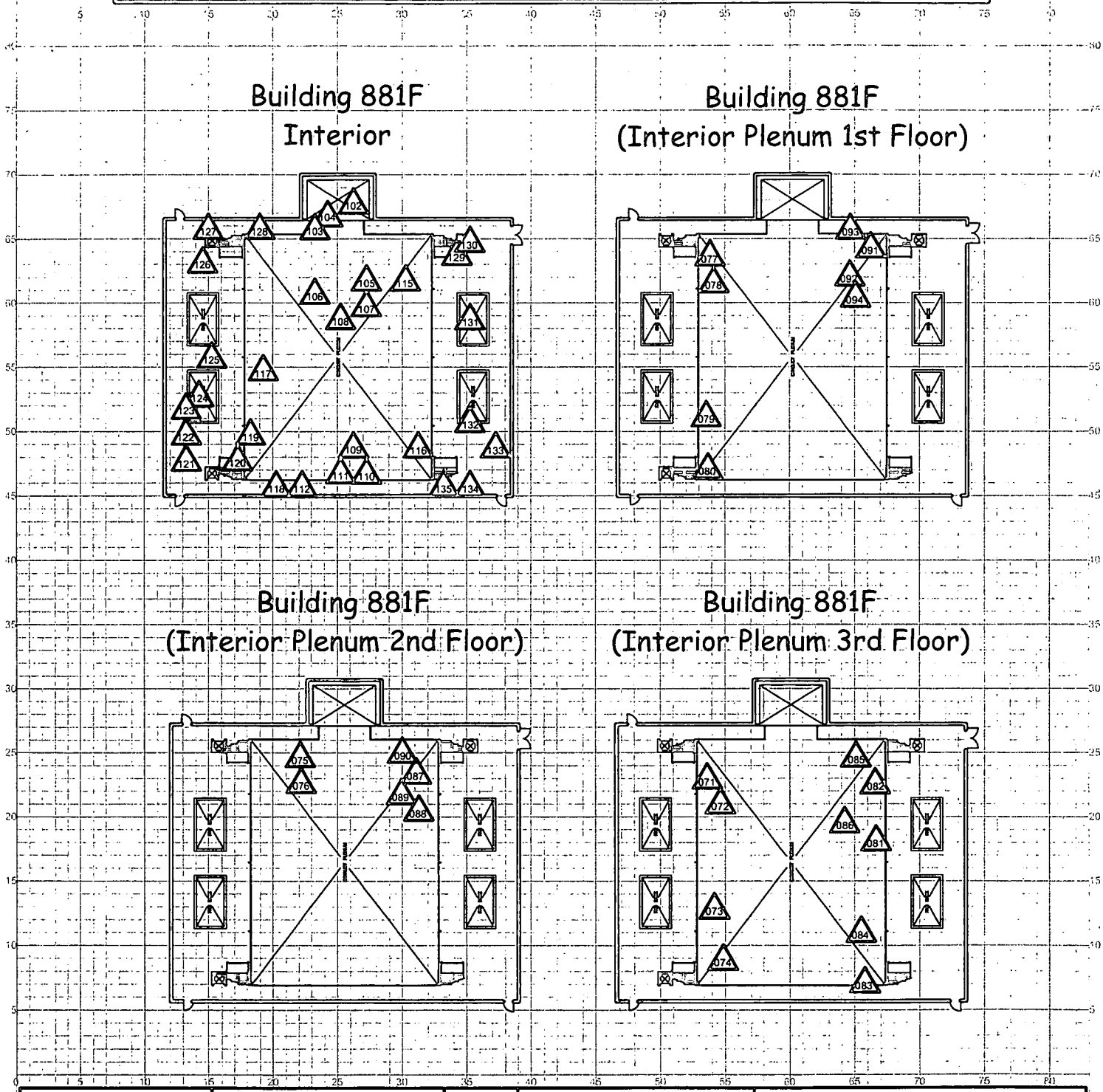
CHEMICAL SAMPLE MAP for 881F

Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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N

0 FEET 45

0 METERS 15

1 inch = 36 feet 1 grid sq. = 1 sq. m.

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: 03-0568/881F-BE-Plen

June 1, 2003

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ATTACHMENT D

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION (V&V) 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 D-1 and beryllium in Table D-2. A data completeness summary for all results is given in Table D-3.

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

Survey designs were implemented for Building 881F based on the uranium limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits. Media samples were taken and analyzed by ISOCS Canberra gamma spectroscopy. Transuranic isotope activity and Uranium and/or other naturally occurring isotope activity were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2) and the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits. Media results were converted to dpm/100cm^2 using the Media Conversion Table, evaluated against the transuranic and uranium DCGL limits, and are the values reported in Attachment B-1 in support of the unrestricted release decision process. On this basis, all results were less than the applicable PDSP unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design for each survey unit performed per PDS requirements was optimized by checking actual measurement results acquired during pre-demolition surveys against the 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.

DQA 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. There were no anomalous conditions with the data.

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 PDSP DCGL unrestricted release levels confirming a Type 2 facility classification. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSPs, survey units were properly designed and bounded, and instrument performance and calibration was within acceptable limits. All results meet the applicable 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 1 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into Building 881F. On this basis, Building 881F meets the PDSP unrestricted release criteria with the confidences stated herein.

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Table D-1 V&V of Radiological Results - Building 881F

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 Units 881P01 & 81P02	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 D-4 for details.
SENSITIVITY	Detection limits	TSA: ≤2,500 dpm/100cm^2 RA: ≤500 dpm/100cm^2	all measures	PDS MDAs ≤ 50% $DCGL_w$

Table D-2 V&V of Beryllium Results - Building 881F

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville, Littleton, Colorado	
		RIN ---->	RIN04D0725 RIN04Z1866 RIN04D0798	
QUALITY REQUIREMENTS		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	Linear calibration	≥1	No qualifications significant enough to change project decisions, i.e. classification of Type 2 Facilities confirmed; all final PDS 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	LCSD	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 Usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	Detection limits	MDL of .00084 ug /swipe	all measures	

Table D-3 Data Completeness Summary – Building 881F

ANALYTE	Building/Area/ Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 881F (interior)	32 random (interior)	32 random (interior)	No Be contamination found at any location, all results below associated action levels	10CFR850; OSHA ID-125G RIN04Z1866 – sample locations #102 through #112 RIN04D0798 – sample locations #115 through #135 All results were below the action level (0.2 ug/100cm^2) and investigative level (0.1 ug/100cm^2).
Beryllium	Building 881F (interior plenum 1st floor)	0 samples	8 biased (interior)	No Be contamination found at any location, all results below associated action levels	10CFR850; OSHA ID-125G RIN04D0725 – sample locations #77 through #80 and sample locations #91 through #94 All results were below the action level (0.2 ug/100cm^2) and investigative level (0.1 ug/100cm^2).
Beryllium	Building 881F (interior plenum 2nd floor)	0 samples	6 biased (interior)	No Be contamination found at any location, all results below associated action levels	10CFR850; OSHA ID-125G RIN04D0725 – sample locations #75 and #76 and sample locations #87 through #90 All results were below the action level (0.2 ug/100cm^2) and investigative level (0.1 ug/100cm^2).
Beryllium	Building 881F (interior plenum 3rd floor)	0 samples	10 biased (interior)	No Be contamination found at any location, all results below associated action levels	10CFR850; OSHA ID-125G RIN04D0725 – sample locations #71 through #74 and sample locations #81 through #86 All results were below the action level (0.2 ug/100cm^2) and investigative level (0.1 ug/100cm^2).

Table D-3 Data Completeness Summary – Building 881F

ANALYTE	Building/Area/ Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area P Survey Unit: 881P01 Building 881F (MU-P) – Interior (walls, floor and ceiling)	30 α TSA (15 random/15 biased) 30 α RSA (15 random/15 biased) 2 QC TSA 10% scan	30 α TSA (15 random/15 biased) 30 α RSA (15 random/15 biased) 2 QC TSA 10% scan	No contamination at any location; all values below unrestricted release levels	Uranium DCGLs used.
Radiological	Survey Area P Survey Unit: 881P02 Building 881F (MU-P) – Inlet Air (Pipe) Chase	16 α TSA (systematic) 16 α RSA (systematic) 2 QC TSA 100% scan	16 α TSA (systematic) 16 α RSA (systematic) 2 QC TSA 100% scan	No contamination at any location; all values below unrestricted release levels	Uranium DCGLs used.