



Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

Building 561 Closure Project

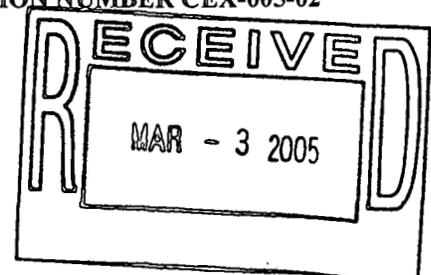
VERSION 0

February 2, 2005

Change Control:

- Rev 1. Added text in Section 3 and Attachment D about interior RSA PDS Data – 2/9/05.
- Rev 1. Added a RSA survey in Attachment B-3, of the LLW areas – 2/9/05.

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



ADMIN RECORD B559-A-000047

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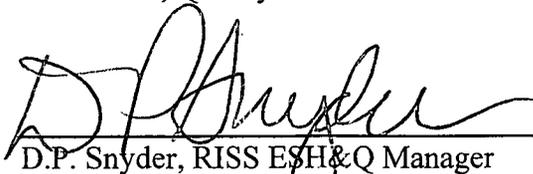
Reviewed by:



Don Risoli, Quality Assurance

Date: 2/3/05

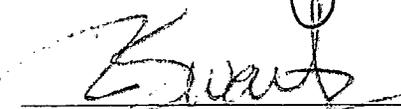
Reviewed by:



D.P. Snyder, RISS ESH&Q Manager

Date: 2/3/05

Approved by:



Mike Swartz
K-H D&D Project Manager

Date: 2-3-05

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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

EXECUTIVE SUMMARY

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 561. 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 interior and exterior floor, walls, ceiling and roof. 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 Rocky Flats Cleanup Agreement (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 (RLCR).

PDS results indicate that radiological contaminants exist in excess of the PDSP (Pre-Demolition Survey Plan) unrestricted release limits. Some surfaces within Building 561 could not be decontaminated below the PDSP radiological unrestricted release limits without compromising the structural integrity of the building, or were too difficult to decontaminate. Therefore, these areas (i.e., the slab underneath filter plenums FP-300, FP-301, FP-302, the filter plenums themselves, the Deluge Tank Pit, the Deluge Tank, the 559-561 Ventilation Tunnel, and the remaining horizontal and vertical ventilation ducting in the 559-561 Ventilation Tunnel and 561 Deluge Pit) will be removed and managed as low level radiological waste (LLW) during demolition.

There is no beryllium or hazardous waste in excess of the PDSP unrestricted release limits. All PCB ballasts 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. Asbestos abatement was conducted in Building 561 prior to the PDS. Friable and non-friable asbestos containing building materials were removed per CDPHE, Regulation No. 8, Part B, *Emission Standards for Asbestos*. There are concrete masonry unit (CMU) cinderblock walls remaining in the building that will be removed and managed as Non-Friable Category 1 Asbestos Containing Materials (ACM) during building demolition. PCBs (polychlorinated biphenyls) in paint meet the unrestricted release criteria of the RSOP for Facility Disposition (specific to 40CFR 761.62c).

Based upon this PDSR, Building 561 can be demolished and the waste managed as sanitary-PCB Bulk Product Waste and transuranic LLW-PCB Bulk Product Waste, as applicable. None of the concrete will be used for on-site backfill. Under-slab utilities and piping systems shall be managed as LLW waste during demolition. To ensure the facility remains free of further contamination and PDS data remain valid, Level 2 Isolation Controls have been established and the areas posted accordingly.

1 INTRODUCTION

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 561. 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 a part of this PDS included the interior and exterior floors, walls, ceiling and roof. 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.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building 561. The location of this facility is shown in Attachment A, *Facility Location Map*. Attachment A also includes LLW Overview Maps of the 559 Cluster. 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 561. 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, Reconnaissance Level Characterization Report, and in-process survey and sample data.

1.1 Purpose

The purpose of this report is to communicate and document the results of the Building 561 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 561. The Ventilation Tunnel between Buildings 559 and 561, and the culvert between Buildings 528 and 561 are within the scope of this PDSR. Environmental media beneath and surrounding the facility is 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), with the exception of the radiological surveys. Refer to section 2.0 of MAN-127-PDSP for these DQOs. The radiological survey Data Quality Objectives (DQOs) were met by following Radiological Safety Practice procedures 3-PRO-165-07.02, *Contamination Monitoring Requirements*, and PRO-267-RSP-09.05, *Radiological Characterization for Surface Contaminated Objects*.

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 561 was performed in FY 2002 as part of the Building 559 Cluster RLCR (refer to *Reconnaissance Level Characterization Report for Buildings 559, 561 and 561*, dated January 25, 2002, Revision 0). Based on the RLC results, Building 561 was classified as a Type 2 facility, therefore, PDS characterization was required before decommissioning of the facility. The HSA, RLC and in-process results were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. The RLCR showed radiological contamination inside Building 561. HSA and RLC documentation are located in the RISS Characterization Project files.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Low Level Waste Discussion

Radiological contamination was identified during the RLC, as well, as during the in-process stripout and decontamination phases in Building 561. Thus, extensive stripout and decontamination was required prior to the PDS. Most of the potentially contaminated equipment and system piping were removed from the building prior to PDS. In some areas, fixed radiological contamination could not be decontaminated below the PDS unrestricted release criteria without compromising the structural integrity of the building, or was too difficult to decontaminate. The radiological contamination was embedded into the cracks and joints such that if the decontamination effort chased the contamination into the cracks and joints, the structural integrity of the walls would be compromised to the point of being unsafe for human occupancy. Therefore, these areas will be removed and managed as LLW during demolition. Also, there were some large pieces of contaminated equipment that were left in-place (i.e., Filter Plenums FP-300, FP-301, FP-302; Plenum Deluge Tank, and the remaining horizontal and vertical ventilation ducting in the 559-561 Ventilation Tunnel and 561 Deluge Pit), that will be removed during demolition and managed as LLW. These surfaces were decontaminated in order to remove as much removable contamination as practical, and then fixatives were applied to immobilize any remaining loose contamination.

The building was then re-surveyed for waste disposal and LLW demolition planning purposes. These LLW areas are the slab under Filter Plenums FP-300, FP-301, FP-302; the Filter Plenums themselves, the Plenum Deluge Pit and Tank, the 559-561 Ventilation Tunnel, and the remaining horizontal and vertical ventilation ducting in the 559-561 Ventilation Tunnel and 561 Deluge Pit.

No loose radiological contamination existed above the unrestricted release criteria after decontamination and fixative application. Appropriate controls will be incorporated into the demolition work packages to control these hazards during demolition. The in-process waste disposal and LLW demolition planning surveys are contained in Attachment B-1, *Pre-Fixative LLW Radiological Survey Forms* and B-2, *Post-Fixative LLW Radiological Survey Forms*. The following table summarizes the highest pre-fixative and post-fixative levels found in the LLW areas:

561 Areas	Pre-Fixative Fixed Point Survey Results (dpm/100cm ² α)	Pre-Fixative Removable Survey Results (dpm/100cm ² α)	Post-Fixative Fixed Point Survey Results (dpm/100cm ² α) (Footnote 3)	Post-Fixative Removable Survey Results (dpm/100cm ² α) (Footnote 4)
Slab under Filter Plenums FP-302 (Footnote 1)	7,873	60	Not Taken	<20
FP-300 Interior	360	<20	Not Taken	Not Taken
FP-301 Interior	1,848	563	Not Taken	<20
FP-302 Interior (Footnote 2)	2,000,000	Not Taken	Not Taken	Not Taken
Filter Plenums FP-300, FP-301, FP-302 Exterior	<94	<20	No fixative was used on exterior	No fixative was used on exterior
559-561 Ventilation Tunnel, Deluge Pit, Culvert to 528	50,000	50,000	Not Taken	<20
Plenum Deluge Tank Interior	<500	<60	No fixative used	No fixative used
Plenum Deluge Tank Exterior	<60	<20	Not Taken	<20
Exterior of remaining Zone 1 and Zone 1A ventilation ducting in the 559-561 Ventilation Tunnel	<500 (Footnote 5)	<500 (Footnote 5)	Not Taken	<20
Interior of remaining Zone 1 and Zone 1A ventilation ducting in the 559-561 Ventilation Tunnel	48,308,341 (Footnotes 6 & 7)	Not Taken	Not Taken	Not Taken

Table Footnotes:

1. The slabs under FP-300, and FP-301 are inaccessible.
2. FP-302 will be removed and shipped as SCO waste as its own package.
3. Post-fixative fixed-point survey results were not necessary or required in most cases.
4. All final post-fixative swipes were <20 dpm/100cm².
5. Survey results taken from SCO Characterization.
6. Result obtained using gamma spectroscopy for SCO Characterization.
7. Equipment that will be managed and disposed of as one intact SCO waste package. The equipment has been sprayed with fixative and tightly sealed closed, no size reduction of this equipment will take place during demolition, therefore, post-fixative surveys are not required.
8. A comprehensive PDS removable survey was performed after fixative was applied in the LLW areas of the facility as a part of Revision 1 of this PDSR. The instruments used for smear analysis had an MDA of 10 dpm/100cm² (50% of the PDSP unrestricted release criteria). Refer to Attachment B-3 for results of this survey. All results showed contamination levels <20 dpm/100cm².

PDS Discussion

Building 561 was characterized for radiological hazards per the PDSP and RSPs. 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 the RLC, 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 561 Radiological Characterization Plan). Based on RLC data, and historical and process knowledge, transuranic activity was the primary isotope of concern, therefore, the 561 PDS was performed to the transuranic PDS unrestricted release criteria.

As discussed above, the LLW areas were surveyed in accordance with RSP requirements. The clean areas of 561 were surveyed in accordance with the PDSP radiological survey unit package process. PDS radiological survey unit packages that were implemented in Building 561 are as follows:

- :
- o 561008 – Building 561 Interior, floors, walls and ceiling (except LLW areas)
- o 561002 – Building Exterior, walls and roof

The Building 561 PDS 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.

In Survey Unit 561008, eight paint (media) samples were collected during in-process stripout on painted surfaces that appeared to be non-factory painted surfaces (e.g., concrete or cinderblock surfaces). Paint samples were not collected in all areas of the Survey Unit because there was either no painted surfaces, or the paint was factory installed paint (e.g., metal roof decking) in these areas. Survey Unit 561012 was a Class 3 area, therefore, no paint samples were required per the PDSP.

PDS radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachment B-3, *PDS Radiological Data Summaries and Survey Maps*. All TSA, RSA and scan survey results in survey units 561008 and 561012 were less than the applicable PDS transuranic DCGL values. As noted on the survey unit maps, portions of the floors and Deluge Tank Pit were not included in the survey unit boundaries and will be managed as LLW. Refer to surveys in Attachments B-1 and B-2 for LLW surveys of these areas. To ensure the facility remains free of further contamination and PDS data remain valid, Level 2-Isolation Controls have been established and the areas posted accordingly.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 561 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/CERCLA constituents. Isolation control postings are displayed at building entrances 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. Prior to the PDS, friable and non-friable asbestos abatement and satisfactory clearance sampling was conducted per CDPHE, Regulation No. 8, Part B, *Emission Standards for Asbestos*. There are CMU cinderblock walls remaining in the building that will be removed and managed as sanitary Non-Friable Category 1 ACM during building demolition. On this basis, no additional asbestos sampling was required or performed as part of this PDS.

4.2 Beryllium (Be)

Biased and random beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition. Forty (40) random swipes and fourteen (14) biased swipes were reported as final PDS beryllium results. All beryllium smear sample results were less than $0.1 \mu\text{g}/100\text{cm}^2$. Beryllium laboratory sample data and location maps are contained in Attachment C, *Beryllium Data Summaries and Sample Maps*.

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

Based on the HSAR, facility walk-downs and a review of RFETS waste management databases, Building 561 functioned as the filter plenum for Building 559. Building 561 was not used to store hazardous waste, and there is no indication of contamination by RCRA/CERCLA constituents in Building 561. On this basis, no RCRA/CERCLA sampling was performed.

Sampling for lead in paint in this facility 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.

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 a review of the HSAR and facility walk-downs, there is no history of PCB use or evidence of PCB contamination in this facility. Building 561 was never used to store PCB waste. On this basis, no PCB sampling was performed. Based on the age of Building 561 (constructed before 1980), paints used are assumed to contain PCBs, and painted surfaces will be managed as PCB Bulk Product Waste. The facility may have contained PCB fluorescent light ballasts, however, all leaking PCB ballasts, and those greater than 9 pounds have been removed from the facility and managed appropriately.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 561 are those common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls. The building has a large Deluge Tank Pit and a Ventilation Tunnel connecting Building 559 and 561. There are no other unique hazards associated with the facility. The facility 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 561, 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 561 will generate sanitary-PCB Bulk Product Waste and transuranic LLW-PCB Bulk Product Waste and will be removed and sent to appropriate offsite sanitary and LLW landfills. Estimated waste volumes are presented below. All ballasts and hazardous waste items have been removed and managed pursuant to Site PCB and waste management procedures. None of the concrete will be used for on-site backfill.

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)
561, including tunnel, pit and culvert	9,000 – Sanitary 10,000 – LLW	0	300 – Sanitary 1,000 – LLW	0	0	Sanitary CMU walls – 100	Sanitary Built-up Roof – 1,100

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 561 is ready for demolition. Some surfaces and equipment within Building 561 could not be decontaminated below the PDSP radiological unrestricted release limits without compromising the structural integrity of the building, or were too difficult to decontaminate. Therefore, these surfaces and equipment will be removed and managed as LLW during demolition (i.e., the slab under Filter Plenums FP-300, FP-301, FP-302, the Filter Plenums themselves, the Plenum Deluge Pit and Tank, the 559-561 Ventilation Tunnel, and the remaining horizontal and vertical ventilation ducting in the 559-561 Ventilation Tunnel and 561 Deluge Pit).

Building 561 does not possess beryllium or chemical contamination in excess of the PDSP unrestricted release limits. All PCB ballasts 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.

Asbestos abatement was conducted in Building 561 prior to the PDS. Friable and non-friable asbestos containing building materials were removed per CDPHE, Regulation No. 8, Part B, Emission Standards for Asbestos. There are concrete masonry unit (CMU) cinderblock walls remaining in the building that will be removed and managed as sanitary Non-Friable Category 1 Asbestos Containing Materials (ACM) during building demolition.

The PDS for Building 561 was performed in accordance with the PDSP and RSP, PDSP DQOs were met, and all data satisfied the PDSP DQA criteria, with the exception of the radiological surveys. The radiological survey Data Quality Objectives (DQOs) were met by following Radiological Safety Practice procedures 3-PRO-165-07.02, *Contamination Monitoring Requirements*, and PRO-267-RSP-09.05, *Radiological Characterization for Surface Contaminated Objects*. 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. None of the concrete will be used for on-site backfill. Under-slab utilities and piping systems shall be managed as LLW during demolition. To ensure Building 561 remains free of further contamination and PDS data remain valid, Level 2 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 Buildings 559, 561 and 561*, dated January 25, 2002, Revision 0

ATTACHMENT A

Facility Location Map
And
LLW Overview Maps

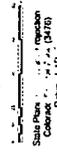
Building 561 Location Map

Map Features

- Buildings Remaining
- 561
- D&D Facility
- Paved Roads
- Dirt Roads
- Railroad Removed
- Railroad Remaining
- Fence Removed
- Fence Remaining
- Streams

Scale 1:1400

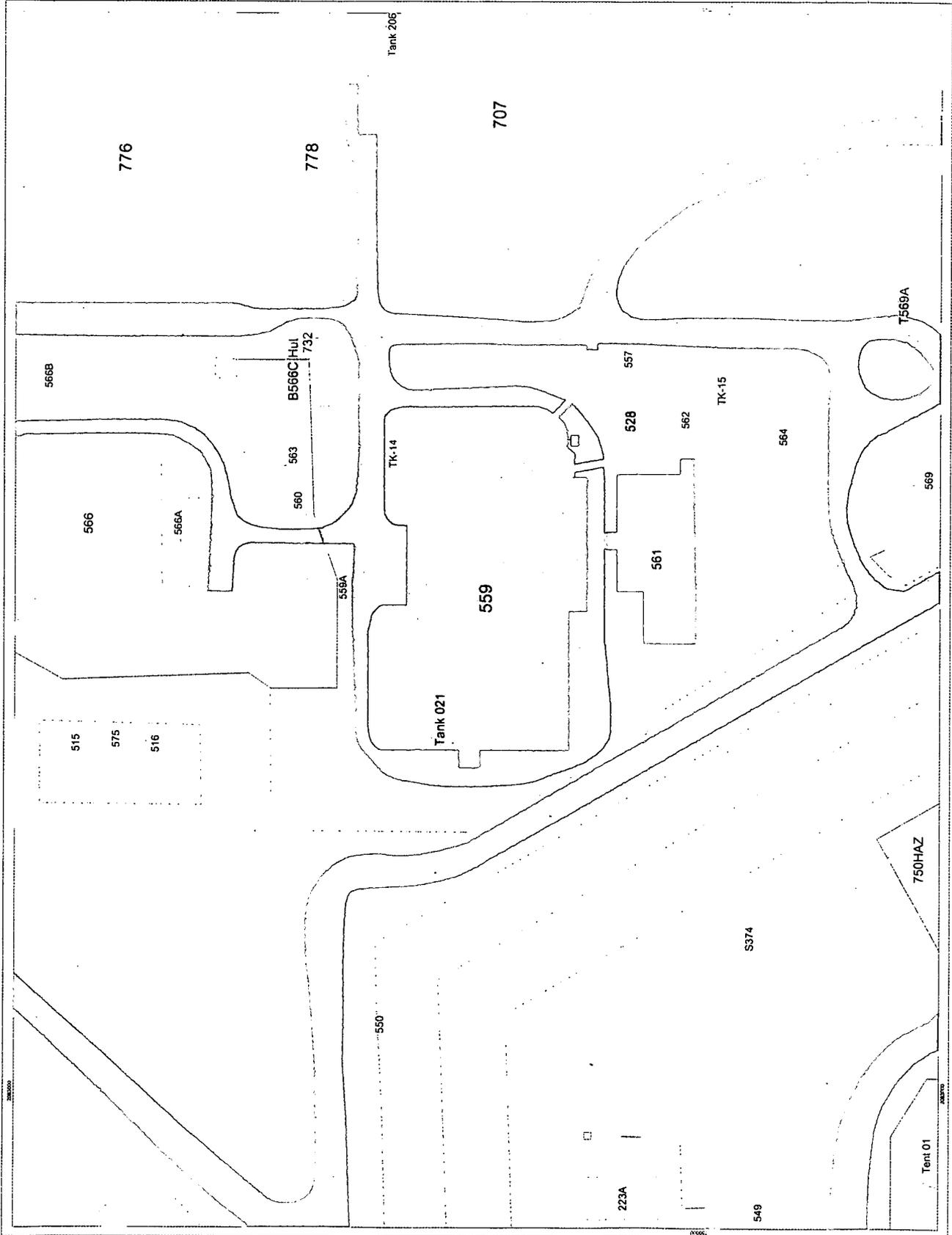
1 inch equals 33 feet



State Plane
 Colorado
 Zone 10N
 Datum: NAD 83

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

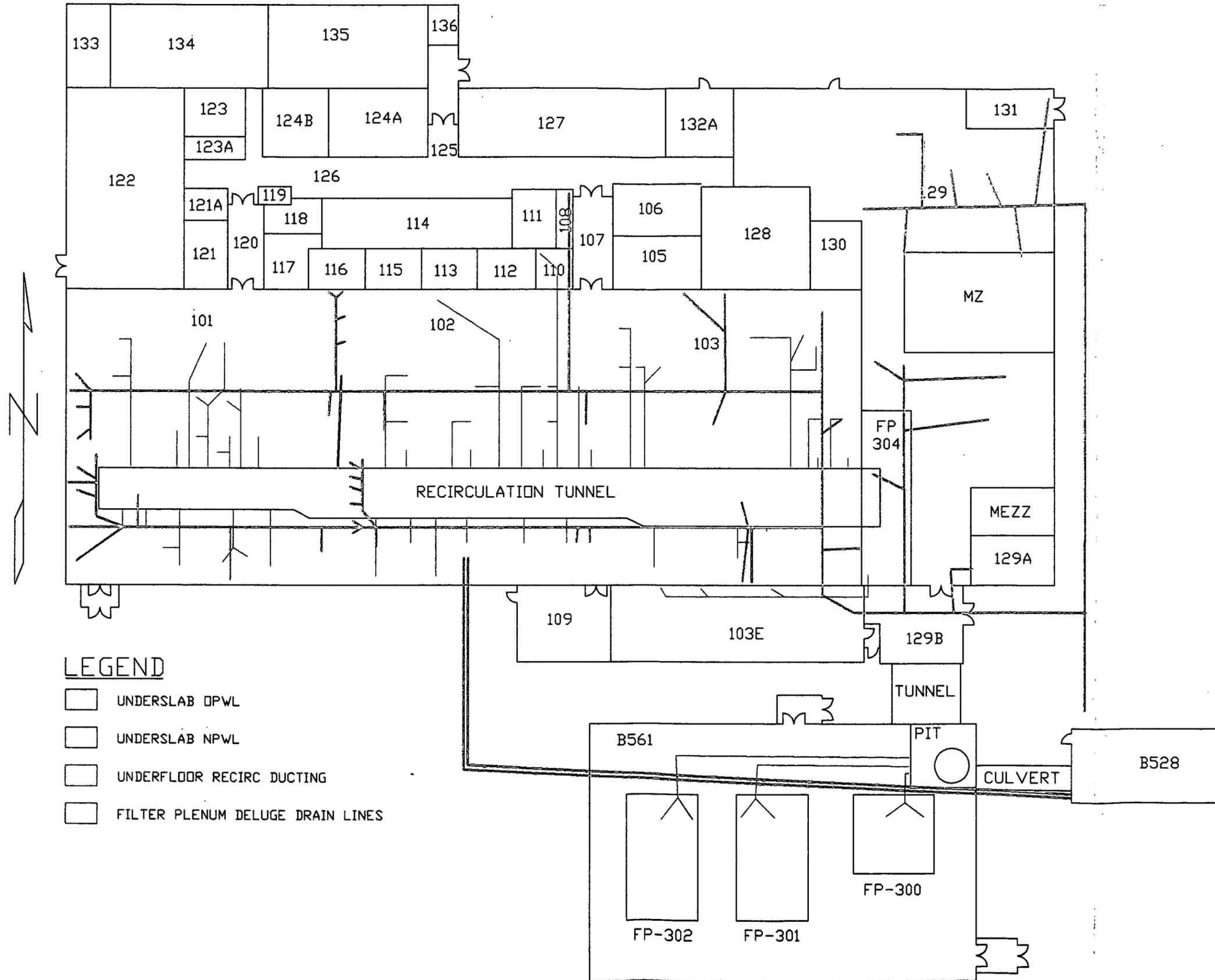
GIS Dept. (April 2007)



BUILDING 559 COMPLEX MAP

UNDER SLAB PIPING AND DUCTING BEING REMOVED AS LLW

FEBRUARY 1, 2005
REVISION 0



LEGEND

- UNDERSLAB DPWL
- UNDERSLAB NPWL
- UNDERFLOOR RECIRC DUCTING
- FILTER PLENUM DELUGE DRAIN LINES

ATTACHMENT B-1

Pre-Fixative LLW Radiological Survey Forms

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						Survey Type: Contamination	
Mfg. <u>N/A</u>	Mfg. <u>Eberline</u>	Mfg. <u>NE Electra</u>	Building: <u>561</u>				
Model <u>N/A</u>	Model <u>SAC-4</u>	Model <u>DP-6</u>	Location: <u>Under 302 Plenum Drains (Pre-Fix)</u>				
Serial # <u>N/A</u>	Serial # <u>859</u>	Serial # <u>1675</u>	Purpose: <u>Characterization</u>				
Cal Due <u>N/A</u>	Cal Due <u>5/18/05</u>	Cal Due <u>5/15/05</u>	RWP #: <u>N/A</u>				
Bkg <u>N/A cpmα</u>	Bkg <u>0.2 cpmα</u>	Bkg <u>5.0 cpmα</u>	Date: <u>1/25/05</u>		Time: <u>10:00</u>		
Efficiency <u>N/A %</u>	Efficiency <u>33.00 %</u>	Efficiency <u>21.80 %</u>	[REDACTED]				
MDA <u>N/A dpmα</u>	MDA <u>20 dpmα</u>	MDA <u>94 dpmα</u>					
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>NE Electra</u>	RCT: <u>NA / NA / NA</u>				
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>DP-6</u>	Print name		Signature		
Serial # <u>N/A</u>	Serial # <u>N/A</u>	Serial # <u>1675</u>	Emp. #				
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>5/15/05</u>					
Bkg <u>N/A cpmβ</u>	Bkg <u>N/A cpmβ</u>	Bkg <u>615.0 cpmβ</u>					
Efficiency <u>N/A %</u>	Efficiency <u>N/A %</u>	Efficiency <u>31.90 %</u>					
MDA <u>N/A dpmβ</u>	MDA <u>N/A dpmβ</u>	MDA <u>745 dpmβ</u>					

PRN/REN #: N/A

Comments: Plenum lifted 8" Surveyed around (4) drains on pad

SURVEY RESULTS

#	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	See Map (LAW)	N/A	N/A	475	N/A	N/A	N/A
2	See Map	N/A	724	N/A			
3	See Map	N/A	950				
4	See Map	57	498				
5	See Map	<20	6787				
6	See Map	<20	3438				
7	See Map	<20	181				
8	See Map	42	204				
9	See Map	<20	249	N/A			
10	See Map (LAW)	N/A	N/A	2443			
11	See Map	N/A	633	N/A			
12	See Map	N/A	1407				
13	See Map	42	4343				
14	See Map	51	3061				
15	See Map	42	7873				
16	See Map	39	1131				
17	See Map	<20	2701				
18	See Map	60	6334				
N/A	N/A	N/A	N/A	∇	∇	∇	∇
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

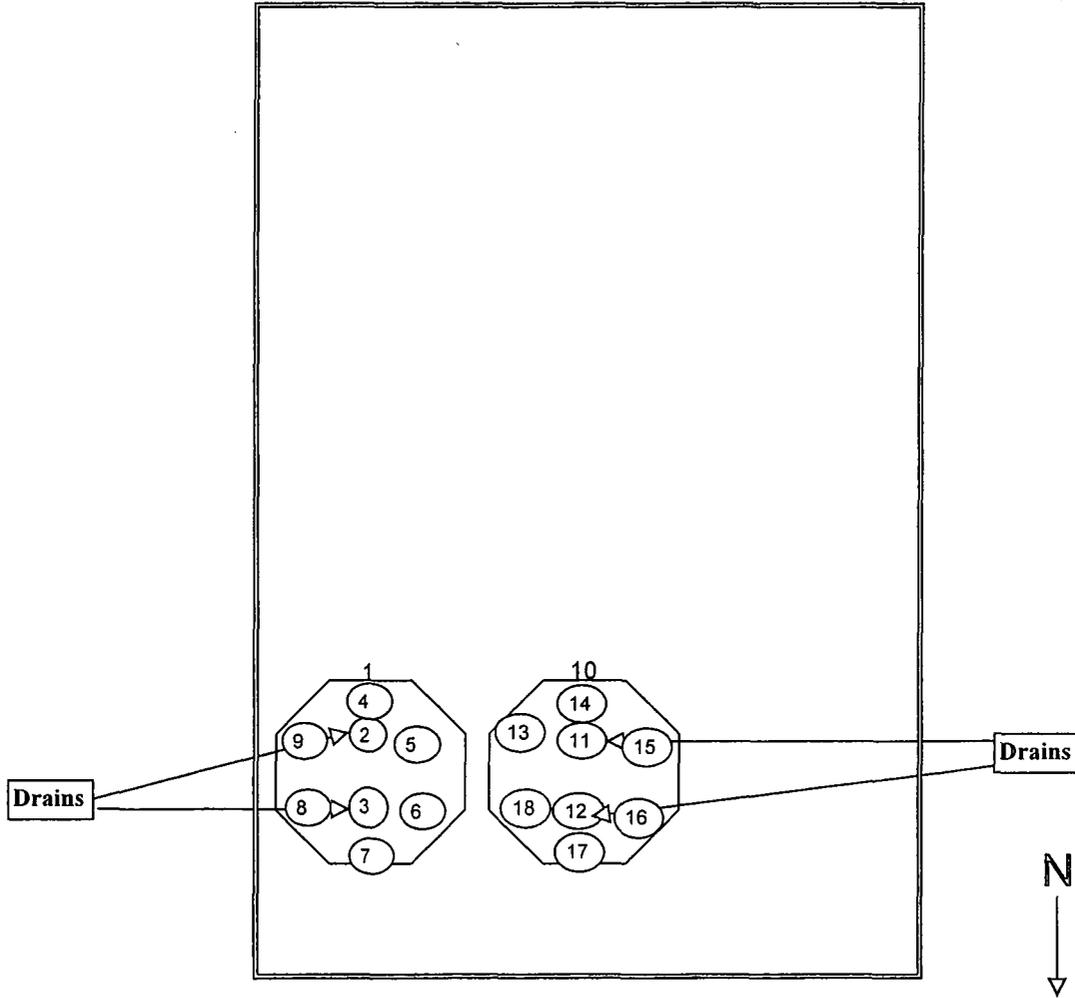
Date Reviewed: 1/25/05 RS Supervision: [REDACTED]

Print Name _____ Signature _____ Emp. # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

302 Plenum Pad



21

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA				Survey Tracking # N/A	
Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	SAC-4	Model	N/A
Serial #	N/A	Serial #	1274	Serial #	1391
Cal Due	N/A	Cal Due	6-7-05	Cal Due	7-11-05
Bkg	N/A cpm α	Bkg	0.4 cpm α	Bkg	0.0 cpm α
Efficiency	N/A %	Efficiency	33.00 %	Efficiency	17 %
MDA	18 dpm α	MDA	20 dpm α	MDA	94 dpm α
Survey Type: Contamination					
Building: 559 / 561					
Location: 300 Plenum (Pre-Fix)					
Purpose: Survey / Characterization					
RWP #: 05-559-5-004					

Mfg.	Ludlum	Mfg.	Eberline	Mfg.	NE Electra
Model	2929	Model	Sac-4	Model	N/A
Serial #	N/A	Serial #	1073	Serial #	1579
Cal Due	N/A	Cal Due	4-1-05	Cal Due	6-16-05
Bkg	N/A cpm β	Bkg	0.4 cpm β	Bkg	3.0 cpm α
Efficiency	N/A %	Efficiency	33.00 %	Efficiency	17 %
MDA	205 dpm β	MDA	20 dpm β	MDA	94 dpm α

Date: 1-15-05 Time: 0800

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

Print name Signature Emp. #

PRN/REN #: N/A

Comments: _____

#	LOCATION	ALPHA		BETA			
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	Floor	<20	<94	N/A	N/A	N/A	N/A
2	Floor	<20	246				
3	Floor	<20	228				
4	Floor	<20	258				
5	Floor	<20	96				
6	Floor	<20	<94				
7	Floor	<20	<94				
8	Floor	<20	96				
9	Floor	<20	<94				
10	Floor	<20	<94				
11	Floor	<20	<94				
12	Floor	<20	<94				
13	Floor	<20	<94				
14	Floor	<20	<94				
15	Floor	<20	<94				
16	Ceiling	<20	<94				
17	Ceiling	<20	<94				
18	Ceiling	<20	96				
19	Ceiling	<20	<94				
20	Ceiling	<20	132	N/A	N/A	N/A	N/A

Date Reviewed: 1/15/05 RS Supervision: _____

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SURVEY RESULTS

#	LOCATION	ALPHA		BETA			
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
21	Ceiling	<20	96	N/A	N/A	N/A	N/A
22	Ceiling	<20	<94				
23	Ceiling	<20	<94				
24	Ceiling	<20	96				
25	Ceiling	<20	<94				
26	Ceiling	<20	<94				
27	Ceiling	<20	<94				
28	Ceiling	<20	<94				
29	Walls	<20	<94				
30	Walls	<20	<94				
31	Walls	<20	<94				
32	Walls	<20	<94				
33	Walls	<20	<94				
34	Walls	<20	<94				
35	Walls	<20	<94				
36	Walls	<20	<94				
37	Walls	<20	<94				
38	Walls	<20	<94				
39	Walls	<20	96				
40	Walls	<20	<94				
41	Walls	<20	<94				
42	Walls	<20	<94				
43	Walls	<20	96				
44	Walls	<20	300				
45	Walls	<20	420				
46	Walls	<20	360				
47	Walls	<20	150				
48	Walls	<20	120				
49	Walls	<20	180				
50	Walls	<20	<94				
51	Walls	<20	<94				
52	Walls	<20	<94				
53	N/A	N/A	N/A				
54							
55							
56							
57							
58							
59							
60							
61							
62							
63							
64							
65							
66							
67	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Radiological Operations
Area or Equipment Drawing Showing Survey Points

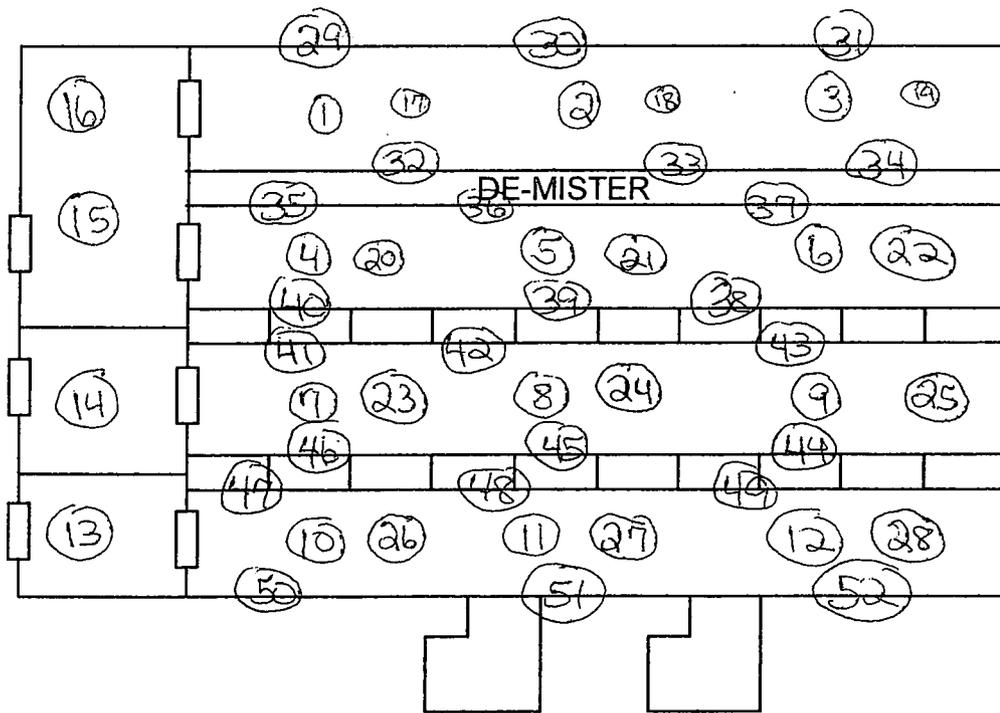
300 PLENUM SURVEY
BUILDING 561

N

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S

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>NE</u>	Mfg. <u>PII</u>	Mfg. <u>Eberline</u>
Model <u>Electra</u>	Model <u>SAC-4</u>	Model <u>SAC-4</u>
Serial# <u>1250</u>	Serial# <u>2216005</u>	Serial# <u>896</u>
Cal Due <u>5-10-05</u>	Cal Due <u>N/A</u>	Cal Due <u>2-16-05</u>
Bkg. <u>2cpm</u>	Bkg. <u>N/A</u>	Bkg. <u>0.2</u>
Efficiency <u>22.5%</u>	Efficiency <u>N/A</u>	Efficiency <u>33%</u>
MDA <u>94 dpm</u>	MDA <u>N/A</u>	MDA <u>20 dpm</u>
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>N/A</u>
Serial# <u>N/A</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>
Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>
Efficiency <u>N/A</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>
MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>

Survey Type: _____	Contamination _____
Building: _____	559
Location: _____	129
Purpose: <u>Characterization of 300 Duct (Pre-Fix)</u>	
RWP #: _____	<u>05-559-5004</u>
Date <u>12-27-04</u>	Time <u>1600</u>
RCT <u>N/A</u>	<u>N/A</u> / <u>N/A</u>
Print name _____	Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: Scan survey performed inside duct. One minute PAT performed in area of highest elevated activity.

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		DIRECT	SWIPE			DIRECT	SWIPE
1	<u>Inside Duct</u>	<u>180</u>	<u>220</u>	19	<u>Inside Duct</u>	<u>294</u>	<u>220</u>
2		<u>N/A</u>	<u>220</u>	20		<u>N/A</u>	<u>220</u>
3		<u>N/A</u>	<u>220</u>	21		<u>N/A</u>	<u>220</u>
4		<u>120</u>	<u>220</u>	22		<u>294</u>	<u>220</u>
5		<u>N/A</u>	<u>220</u>	23		<u>N/A</u>	<u>220</u>
6		<u>N/A</u>	<u>220</u>	24		<u>N/A</u>	<u>220</u>
7		<u>294</u>	<u>220</u>	25		<u>294</u>	<u>220</u>
8		<u>N/A</u>	<u>220</u>	26		<u>N/A</u>	<u>220</u>
9		<u>N/A</u>	<u>220</u>	27		<u>N/A</u>	<u>220</u>
10		<u>294</u>	<u>220</u>	28		<u>294</u>	<u>220</u>
11		<u>N/A</u>	<u>220</u>	29		<u>N/A</u>	<u>220</u>
12		<u>N/A</u>	<u>220</u>	30		<u>N/A</u>	<u>220</u>
13		<u>294</u>	<u>220</u>	31		<u>N/A</u>	<u>220</u>
14		<u>N/A</u>	<u>220</u>	32		<u>220</u>	<u>220</u>
15		<u>N/A</u>	<u>220</u>	33		<u>N/A</u>	<u>220</u>
16		<u>294</u>	<u>220</u>	34		<u>N/A</u>	<u>220</u>
17		<u>N/A</u>	<u>220</u>	35		<u>120</u>	<u>220</u>
18		<u>N/A</u>	<u>220</u>	36		<u>N/A</u>	<u>220</u>

Date Reviewed: 12/27/04 RS Supervision: _____

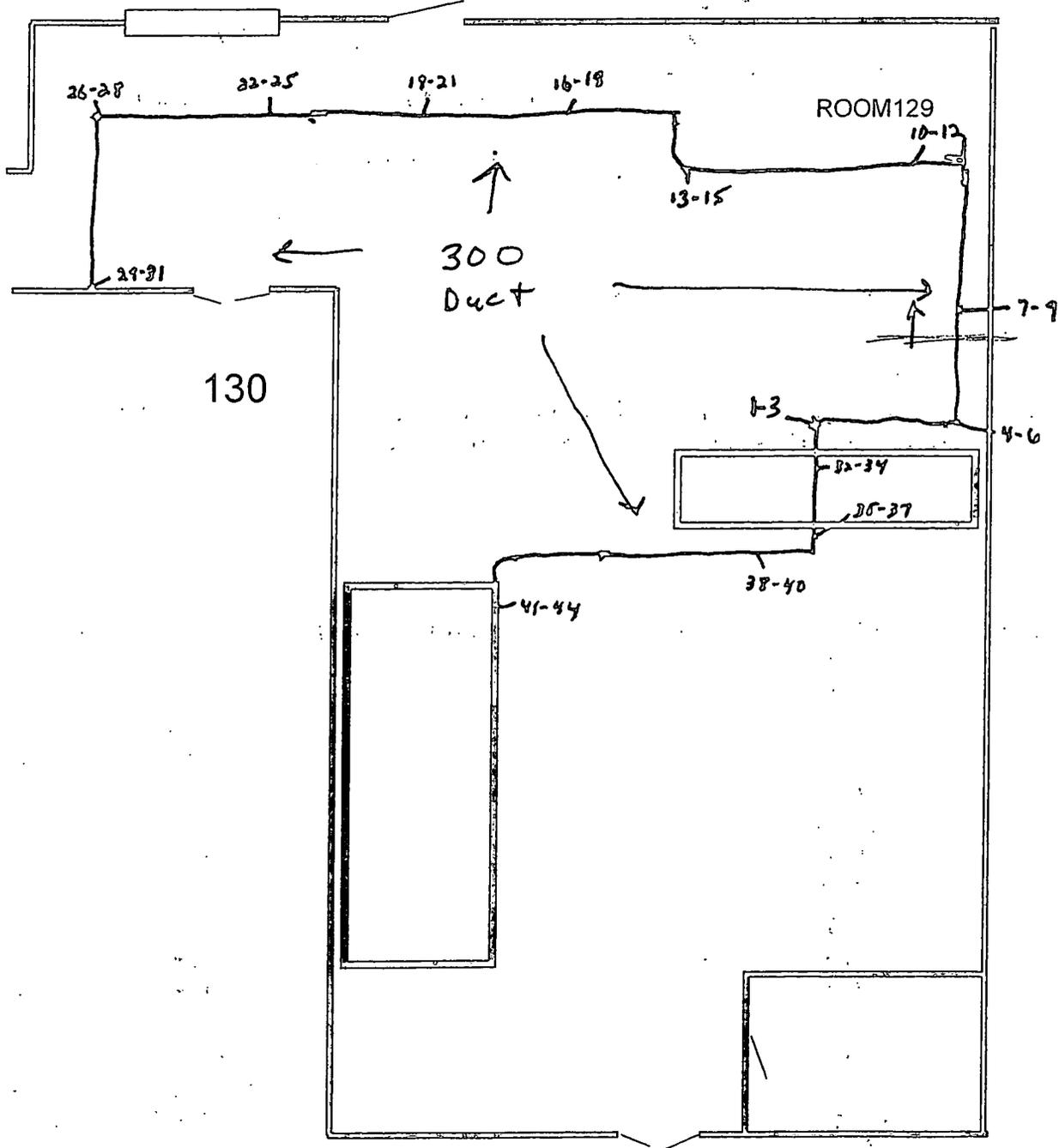
COPY

25

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

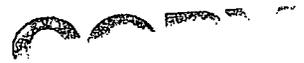


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Contamination Results

Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Removable	Direct			Removable	Direct
37	Inside Duct	420	N/A	67			
38		420	180	68			
39		420	N/A	69			
40		420	N/A	70			
41		420	160	71			
42		420	N/A	72			
43		420	N/A	73			
44		420	N/A	74			
45				75			
46				76			
47				77			A
48				78			
49				79			
50				80			
51				81			
52				82			N
53				83			
54				84			
55				85			
56				86			
57				87			
58				88			
59				89			
60				90			
61				91			
62				92			
63				93			
64				94			
65				95			
66				96			



2527

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>N.E. TECH.</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model <u>ELECTRA</u>	Model <u>N/A</u>	Model <u>N/A</u>
Serial# <u>1840</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>
Cal Due <u>3-13-05</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>
Bkg. <u>3.0CM</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>
Efficiency <u>17%</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>
MDA <u>94 dpm</u>	MDA <u>N/A</u>	MDA <u>N/A</u>
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>N/A</u>
Serial# <u>N/A</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>
Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>
Efficiency <u>∇</u>	Efficiency <u>∇</u>	Efficiency <u>∇</u>
MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>

Survey Type: <u>Contamination</u>
Building: <u>559 / 561</u>
Location: <u>301 PLENUM INTERIOR</u>
Purpose: <u>FINAL SURVEY (Pre-Fix)</u>
RWP #: <u>04-559-5012</u>
Date <u>12-9-04</u> Time <u>1600</u>
RCT <u>N/A</u> / <u>N/A</u> / <u>N/A</u>
Print name <u>N/A</u> Signature <u>N/A</u> Emp. # <u>N/A</u>

PRN/REN #: N/A

Comments: NOTE: FIRST STAGE AIRLOCK LINED WITH PLASTIC

1203

SURVEY RESULTS

Contamination Results (in dpm/100cm²)

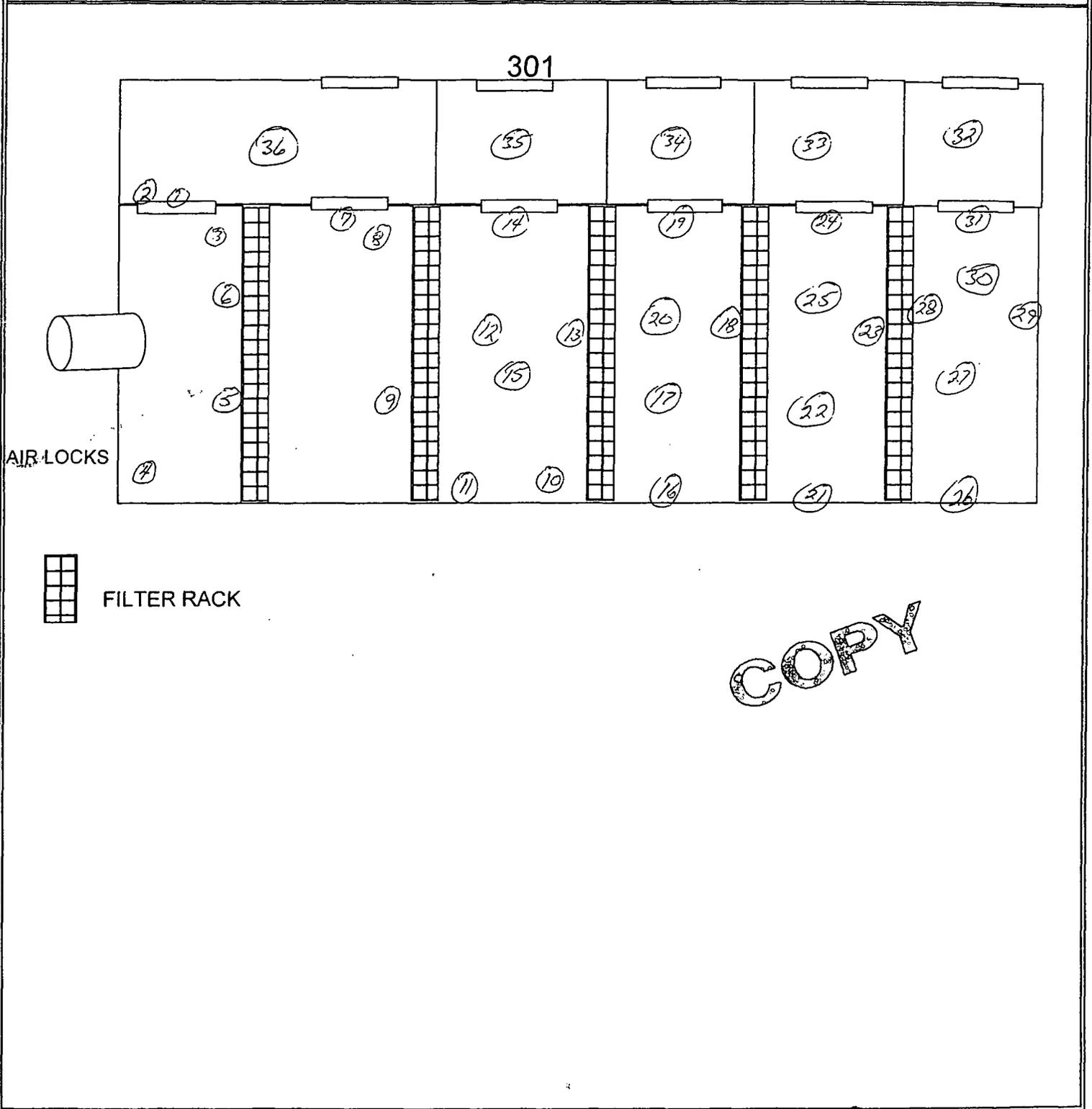
Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Direct	Removable			Direct	Removable
1	DEMISTER PASS THRU	1278	294	19	THIRD STAGE DOOR	294	294
2	DEMISTER DOOR	420	294	20	THIRD STAGE CEILING	294	294
3	DEMISTER DRAIN SCREEN	480	294	21	FORTH STAGE WALL	294	294
4	DEMISTER FLOOR	720	135	22	FORTH STAGE FLOOR	294	294
5	DEMISTER FRAME	1686	292.8	23	FORTH STAGE RACK	294	294
6	DEMISTER FRAME	1464	232.8	24	FORTH STAGE DOOR	294	294
7	FIRST STAGE DOOR	360	202.8	25	FORTH STAGE CEILING	294	294
8	FIRST STAGE DRAIN	405	202.8	26	DOWN FORTH WALL	294	294
9	FIRST STAGE FLOOR	1848	562.8	27	DOWN FORTH FLOOR	294	294
10	SECOND STAGE W. FLOOR	268.2	252	28	DOWN FORTH RACK	294	294
11	SECOND STAGE W. FLOOR	223.8	216	29	DOWN FORTH WALL	294	294
12	SECOND STAGE FLOOR	294	294	30	DOWN FORTH CEILING	294	294
13	SECOND STAGE RACK	294	294	31	DOWN FORTH DOOR	294	294
14	SECOND STAGE DOOR	294	294	32	DOWN FORTH AIRLOCK	294	294
15	SECOND STAGE CEILING	294	294	33	FORTH STAGE AIRLOCK	294	294
16	THIRD STAGE WALL	294	294	34	3RD STAGE AIRLOCK	294	294
17	THIRD STAGE FLOOR	294	294	35	SECOND STAGE AIRLOCK	294	294
18	THIRD STAGE RACK	294	294	36	FIRST STAGE AIRLOCK	294	294

Date Reviewed: 12-10-04 RS Supervision: [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>LUDUM</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model <u>12-1A</u>	Model <u> </u>	Model <u> </u>
Serial# <u>56217</u>	Serial# <u> </u>	Serial# <u> </u>
Cal Due <u>8-25-05</u>	Cal Due <u> </u>	Cal Due <u> </u>
Bkg. <u>2125CPM</u>	Bkg. <u> </u>	Bkg. <u> </u>
Efficiency <u>50%</u>	Efficiency <u> </u>	Efficiency <u> </u>
MDA <u>250dpm</u>	MDA <u>N/A</u>	MDA <u>N/A</u>
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model <u> </u>	Model <u> </u>	Model <u> </u>
Serial# <u> </u>	Serial# <u> </u>	Serial# <u> </u>
Cal Due <u> </u>	Cal Due <u> </u>	Cal Due <u> </u>
Bkg. <u> </u>	Bkg. <u> </u>	Bkg. <u> </u>
Efficiency <u> </u>	Efficiency <u> </u>	Efficiency <u> </u>
MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>

Survey Type: <u>Contamination</u>
Building: <u>559561</u>
Location: <u>PLENUM-302 DEMISTER RACK</u>
Purpose: <u>DECON SURVEY (Pre-Fix)</u>
RWP #: <u>04-559-5033</u>
Date <u>11-9-04</u> Time <u>13:00</u>
RCT <u>N/A</u> / <u>N/A</u> / <u>N/A</u>
Print name _____ Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: SURVEYED AFTER DECON AND PRIOR TO PAINTING FIXATIVE

SURVEY RESULTS

Contamination Results (in dpm/100cm²)

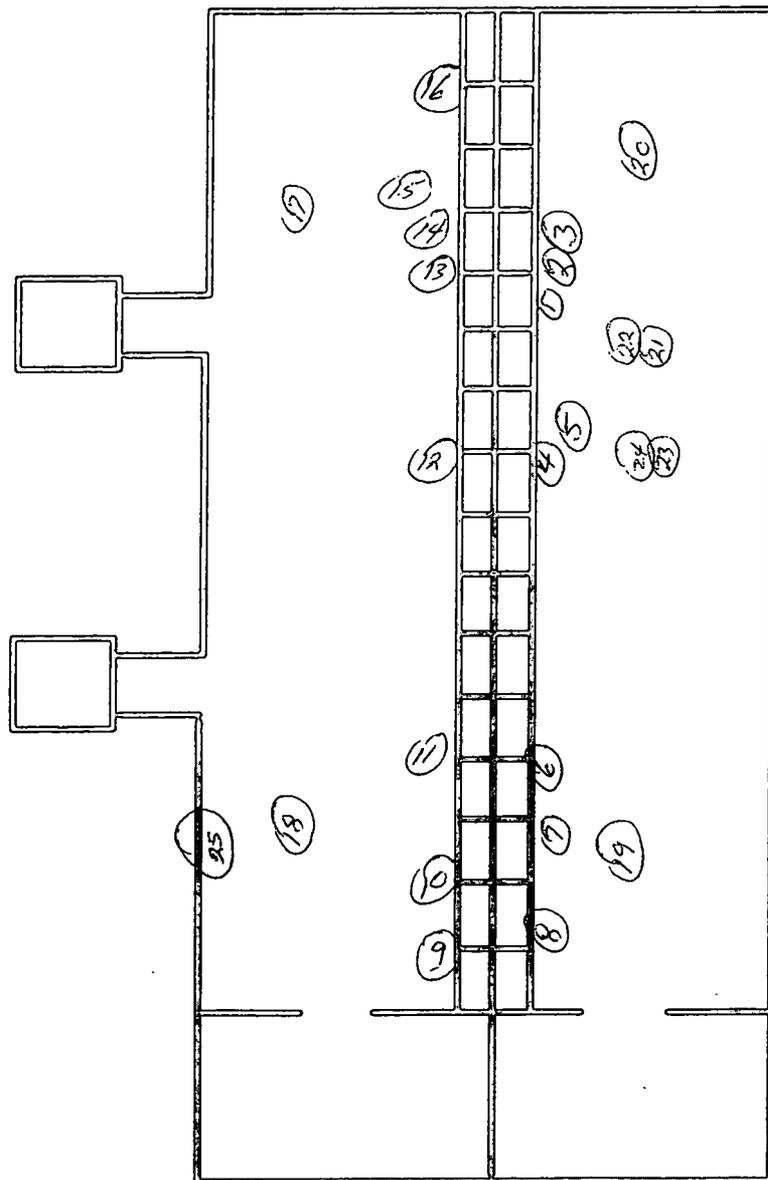
Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Direct	Removable			Direct	Removable
1	TOP RACK S.E.	800K	N/A	19	DRAIN S.W.	1000K	N/A
2	MIDDLE RACK S.E.	400K	N/A	20	DRAIN S.E.	700K	N/A
3	BOTTOM RACK S.E.	200K		21	DELUGE PIPING	400K	
4	TOP RACK CENTER	1000K		22	DELUGE PIPING	1000K	
5	BOTTOM RACK S.CENTER	700K		23	DELUGE PIPING	400K	
6	MIDDLE RACK S.W.	> 20% > 2.8E6		24	DELUGE PIPING	100K	
7	BOTTOM RACK S.W.	1000K		25	FLOOR @ N.W.WALL	1200K	
8	BOTTOM RACK S.W.	700K		26	INSIDE SUPPLY DUCT	> 20% > 2.8E6	
9	TOP RACK N.W.	1,300K		27	DEMISTER DOOR	1,500K	
10	BOTTOM RACK N.W.	700K		28	N/A	N/A	
11	MIDDLE RACK CENTER N.	> 20%		29			
12	MIDDLE RACK CENTER N.	700K		30			
13	MIDDLE RACK N.E.	500K		31			
14	BOTTOM RACK N.E.	300K		32			
15	BOTTOM RACK N.E.	300K		33			
16	TOP RACK N.E.	> 20% > 2.8E6		34			
17	DRAIN N.E.	500K		35			
18	DRAIN N.W.	700K		36			

Date Reviewed: 11-9-04 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA				Survey Type: Contamination	
Mfg. <u>LUDLUM</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Building:	<u>561</u>
Model <u>12-1A</u>	Model <u>N/A</u>	Model <u>N/A</u>	Model <u>N/A</u>	Location:	<u>561</u>
Serial# <u>56217</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>	Purpose:	<u>Filter Removal (Pre-Fix)</u>
Cal Due <u>8-25-05</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	RWP #:	<u>04-559-5033</u>
Bkg. <u>125CPM</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Date: <u>11-10-04</u>	Time: <u>13:00</u>
Efficiency <u>50%</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>		
MDA <u>250dpm</u>	MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>		
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>		
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>N/A</u>	Model <u>N/A</u>		
Serial# <u>N/A</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>	Serial# <u>N/A</u>	RCT	<u>N/A</u> / <u>N/A</u> / <u>N/A</u>
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Print name	<u>N/A</u>
Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Bkg. <u>N/A</u>	Signature	<u>N/A</u>
Efficiency <u>N/A</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>	Efficiency <u>N/A</u>	Emp. #	<u>N/A</u>
MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>	MDA <u>N/A</u>		

PRN/REN #: N/A

Comments: FINAL SURVEY PRIOR TO PAINTING FIXATIVE

*NOTE: #15, #16, #17 ARE RESURVEY POINTS FROM PREVIOUS SURVEY #6, #11, #16

SURVEY RESULTS

Contamination Results

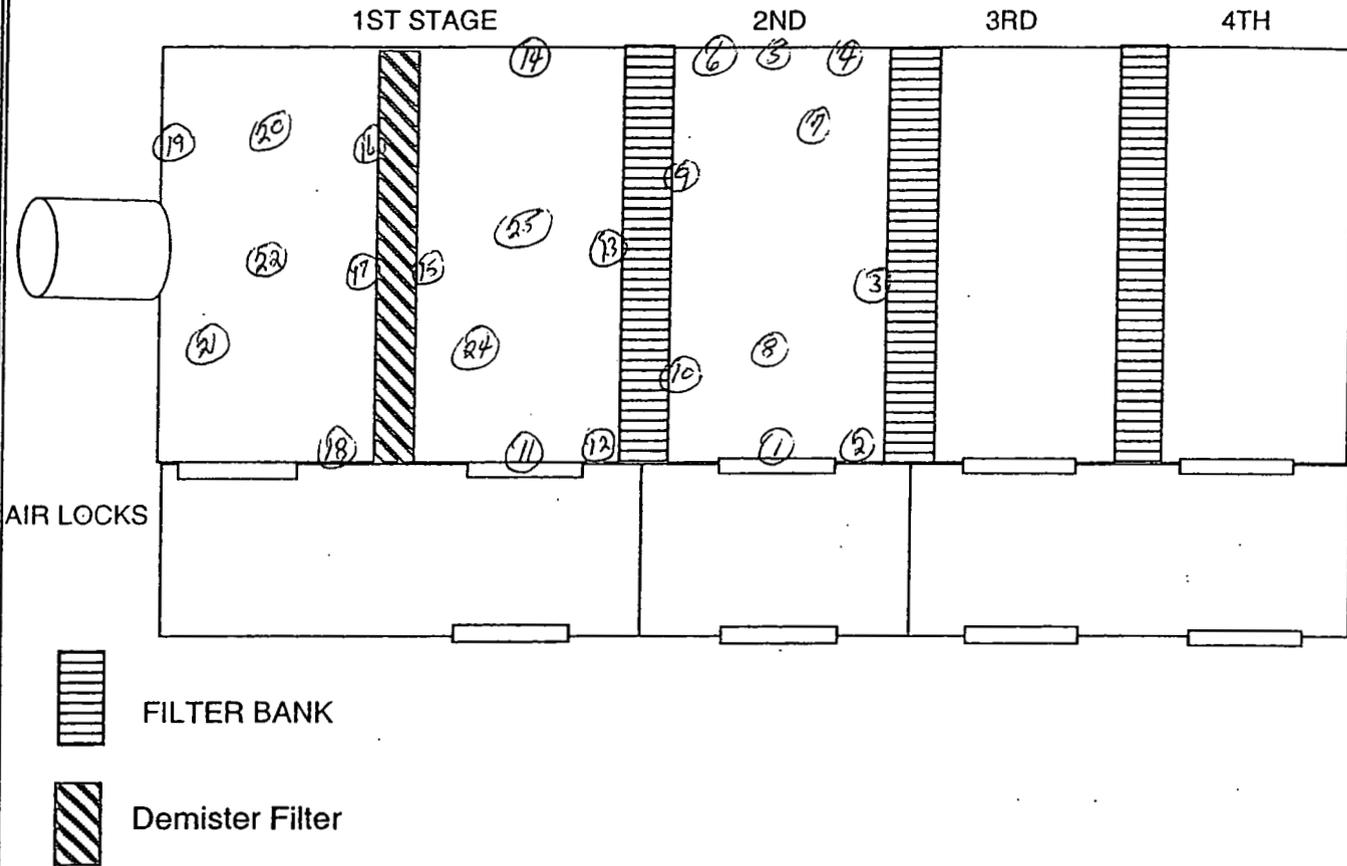
Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		DIRECT	REMOVABLE			DIRECT	REMOVABLE
1	2ND STAGE DOOR	20K	N/A	19	DEMISTER N. WALL	600K	N/A
2	WEST WALL	20K	N/A	20	DEMISTER FLOOR	400K	N/A
3	S. WALL 2ND STAGE	30K	N/A	21	DEMISTER FLOOR	300K	N/A
4	E. WALL 2ND STAGE	6K	N/A	22	DEMISTER CEILING	400K	N/A
5	E. WALL 2ND STAGE	6K	N/A	23	FIRST STAGE FLOOR	200K	N/A
6	E. WALL 2ND STAGE	20K	N/A	24	FIRST STAGE FLOOR	200K	N/A
7	FLOOR 2ND STAGE	70K	N/A	25	FIRST STAGE CEILING	50K	N/A
8	FLOOR 2ND STAGE	6K	N/A	26	N/A	N/A	N/A
9	FILTER RACK 2ND STAGE	50K	N/A	27			
10	FILTER RACK 2ND STAGE	100K	N/A	28			
11	FIRST STAGE DOOR ^{#15}	20 20 ⁶	1-24-05/D	29			
12	FIRST STAGE W. WALL	120K	N/A	30			
13	FIRST STAGE FILTER RACK	200K	N/A	31			
14	FIRST STAGE E. WALL	80K	N/A	32			
* 15	DEMISTER RACK	1,200K	N/A	33			
* 16	DEMISTER RACK	600K	N/A	34			
* 17	DEMISTER RACK	600K	N/A	35			
18	DEMISTER W. WALL	700K	N/A	36	N/A	N/A	N/A

Date Reviewed: 11-11-04 RS Supervision: [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>NE</u>	Mfg. <u>EAELINE</u>	Mfg. <u>EBELINE</u>
Model <u>ELECTRA</u>	Model <u>SAL-4</u>	Model <u>SAL-4</u>
Serial# <u>1589</u>	Serial# <u>859</u>	Serial# <u>1274</u>
Cal Due <u>6-16-05</u>	Cal Due <u>5-18-05</u>	Cal Due <u>6-7-05</u>
Bkg. <u>4.0 c/l</u>	Bkg. <u>0.2 c/l</u>	Bkg. <u>0.3 c/l</u>
Efficiency <u>17%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>
MDA <u>94 d/l</u>	MDA <u>20 d/l</u>	MDA <u>20 d/l</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: <u>Contamination</u>
Building: <u>561</u>
Location: <u>561</u>
Purpose: <u>Characterization Survey (Pre-Fix)</u>
RWP #: <u>05-559-5004</u>
Date <u>1-25-05</u> Time <u>1600</u>
RCT <u>NA</u> / <u>NA</u> / <u>NA</u>
Print name _____ Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: Re Survey of Painted Tops of 300, 301, 302 Plenums

SURVEY RESULTS

Contamination Results (in dpm/100cm²)

Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Direct	Removable			Direct	Removable
1	Top of 300 PL	294	220	19	Top of 301 PL	294	220
2		294	220	20	Top of 301 PL	294	220
3		294	220	21	Top of 302 PL	294	220
4		294	220	22		294	220
5		294	220	23		294	220
6		294	220	24		294	220
7		294	220	25		294	220
8		294	220	26		294	220
9		294	220	27		294	220
10	Top of 300 PL	294	220	28		294	220
11	Top of 301 PL	294	220	29		294	220
12		294	220	30	Top of 302 PL	294	220
13		294	220	31	NA	NA	NA
14		294	220	32			
15		294	220	33			
16		294	220	34			
17		294	220	35			
18	Top of 301 PL	294	220	36	NA	NA	NA

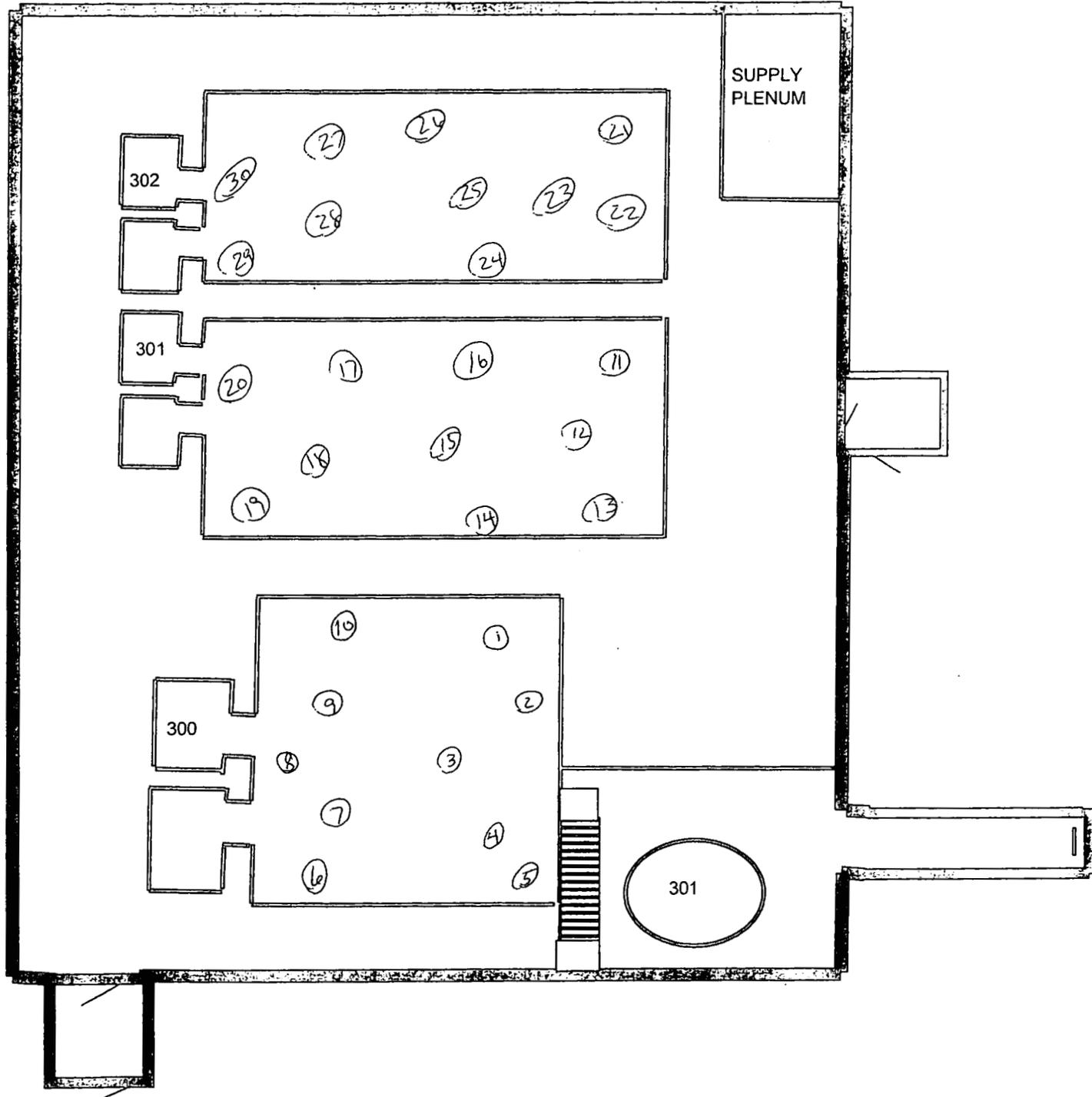
Date Reviewed: 4/26/05 RS Supervision: _____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>NE TECH</u>	Mfg. <u>NA</u>
Model <u>SAC 4</u>	Model <u>ELECTRA</u>	Model
Serial# <u>859</u>	Serial# <u>1273</u>	Serial#
Cal Due <u>5-18-05</u>	Cal Due <u>6-27-05</u>	Cal Due
Bkg. <u>0.2</u>	Bkg. <u>3.0</u>	Bkg.
Efficiency <u>33%</u>	Efficiency <u>17%</u>	Efficiency
MDA <u>20</u>	MDA <u>94</u>	MDA <u>NA</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: <u>Contamination</u>
Building: <u>561</u>
Location: <u>561 / 302 PLENUM</u>
Purpose: <u>PRE PDS (Pre Fix)</u> <i>DAP 2/11/05</i>
RWP #: <u>05-559-5004</u>
Date <u>1-22-05</u> Time <u>1300</u>
RCT <u>NA / NA / NA</u>
Print name _____ Signature _____ Emp. # _____

PRN/REN #: _____
 Comments: _____

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		DIRECT	REMOVABLE			DIRECT	REMOVABLE
1	WEST WALL	< 94	< 20	19	EAST WALL	< 94	< 20
2		< 94	< 20	20		< 94	< 20
3		< 94	< 20	21		< 94	< 20
4		< 94	< 20	22		< 94	< 20
5		< 94	< 20	23		< 94	< 20
6		< 94	< 20	24		< 94	< 20
7		< 94	< 20	25		< 94	< 20
8		< 94	< 20	26		< 94	< 20
9	WEST WALL	< 94	< 20	27		< 94	< 20
10	SOUTH WALL	< 94	< 20	28	EAST WALL	< 94	< 20
11		< 94	< 20	29	NORTH WALL	< 94	< 20
12		< 94	< 20	30		< 94	< 20
13		< 94	< 20	31		< 94	< 20
14		< 94	< 20	32		< 94	< 20
15	SOUTH WALL	< 94	< 20	33	NORTH WALL	< 94	< 20
16	EAST WALL	< 94	< 20	34	NA	NA	NA
17		< 94	< 20	35			
18	EAST WALL	< 94	< 20	36	NA	NA	NA

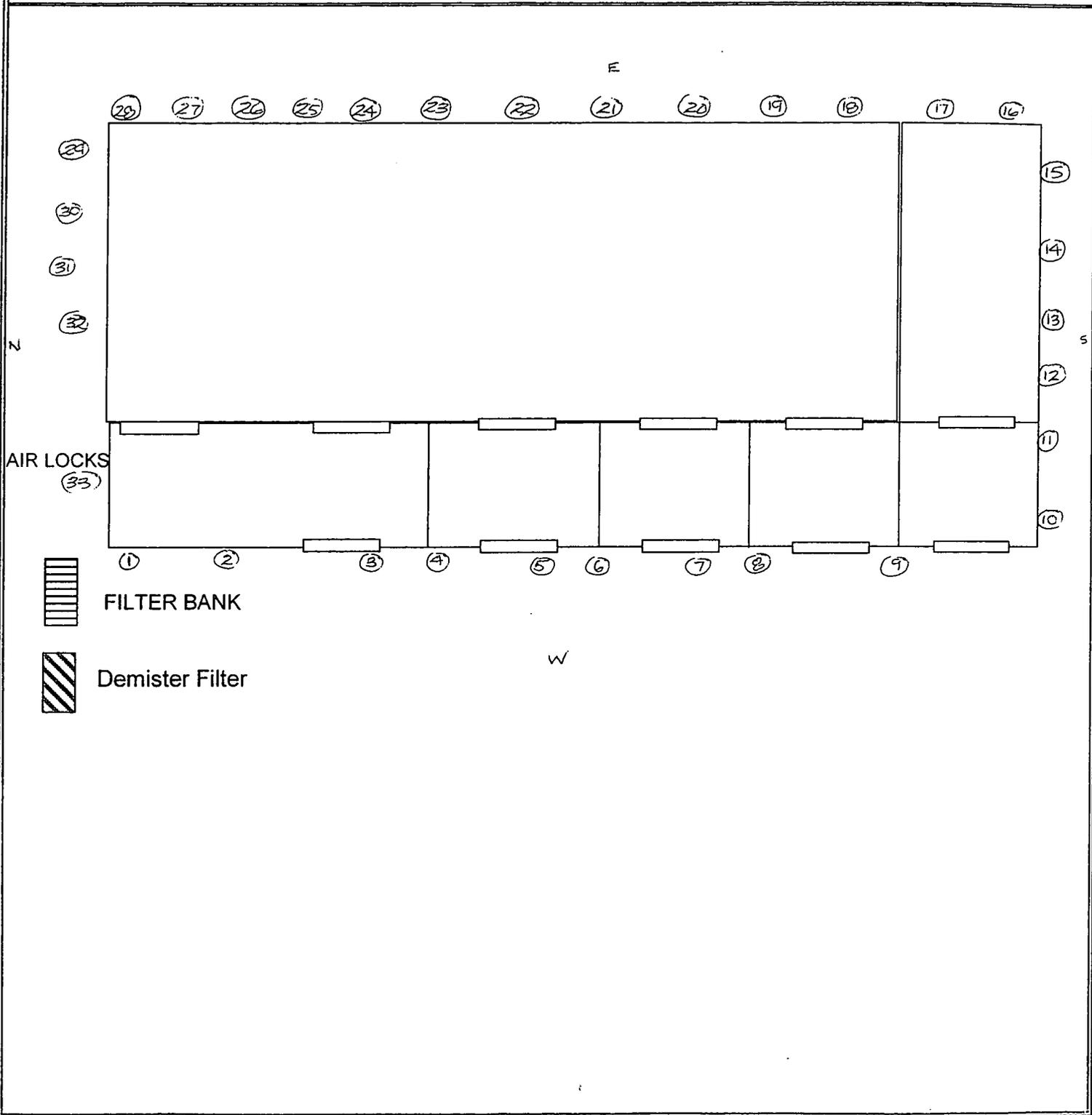
Date Reviewed: 1/24/05 RS Supervision: _____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>NE TECH</u>
Model <u>SAC 4</u>	Model <u>SAC 4</u>	Model <u>ELECTRA</u>
Serial# <u>825</u>	Serial# <u>859</u>	Serial# <u>1675</u>
Cal Due <u>6/3/05</u>	Cal Due <u>5/18/05</u>	Cal Due <u>5/15/05</u>
Bkg. <u>0.6</u>	Bkg. <u>0.3</u>	Bkg. <u>1.0</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>20</u>	MDA <u>20</u>	MDA <u>94</u>
Mfg. <u>NE TECH</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u>ELECTRA</u>	Model <u> </u>	Model <u> </u>
Serial# <u>3171</u>	Serial# <u> </u>	Serial# <u> </u>
Cal Due <u>7/6/05</u>	Cal Due <u> </u>	Cal Due <u> </u>
Bkg. <u>2.0</u>	Bkg. <u> </u>	Bkg. <u> </u>
Efficiency <u>17%</u>	Efficiency <u> </u>	Efficiency <u> </u>
MDA <u>94</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: Contamination
 Building: 561
 Location: 561
 Purpose: DISESTABLISH CA

RWP #: 05-559-5002

Date 1/20/05 Time 1400

PRN/REN #: N/A

Comments: LARGE AREA WIPES TAKEN AT ALL SURVEY POINTS WITH
SURVEY RESULTS < 94 dpm/WIPE

SURVEY RESULTS

Contamination Results (in dpm)

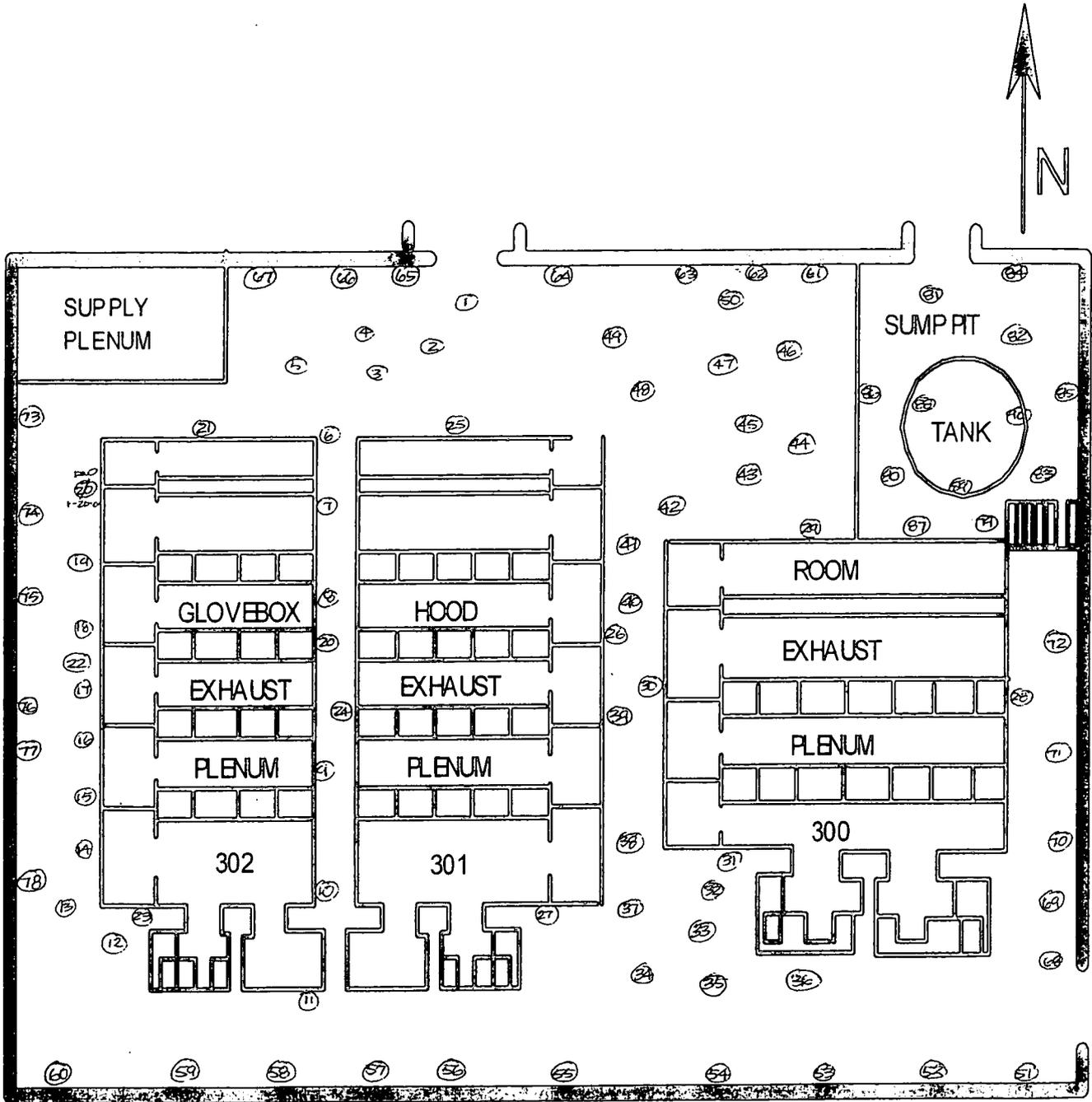
Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	FLOOR	<94	<20	19	FLOOR	<94	<20
2		<94	<20	20	302 PLENUM E. WALL	<94	<20
3		<94	<20	21	302 PLENUM N. WALL	<94	<20
4		<94	<20	22	302 PLENUM W WALL	<94	<20
5		<94	<20	23	302 PLENUM S WALL	<94	<20
6		<94	<20	24	301 PLENUM E WALL	<94	<20
7		<94	<20	25	301 PLENUM N WALL	<94	<20
8		<94	<20	26	301 PLENUM W WALL	<94	<20
9		<94	<20	27	301 PLENUM S WALL	<94	<20
10		<94	<20	28	300 PLENUM E WALL	<94	<20
11		<94	<20	29	300 PLENUM N WALL	<94	<20
12		<94	<20	30	300 PLENUM W WALL	<94	<20
13		<94	<20	31	300 PLENUM S WALL	<94	<20
14		<94	<20	32	FLOOR	NA	<20
15		<94	<20	33			<20
16		<94	<20	34			<20
17	↓	<94	<20	35	↓	↓	<20
18	FLOOR	<94	<20	36			<20

Date Reviewed: 1/20/05 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Contamination Results

Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Removable	Direct			Removable	Direct
37	FLOOR	< 20	NA	67	N. WALL	< 20	NA
38		< 20		68	E. WALL	< 20	
39		< 20		69	↓	< 20	
40		< 20		70		< 20	
41		< 20		71	↓	< 20	
42		< 20		72	E. WALL	< 20	
43		< 20		73	W. WALL	< 20	
44		< 20		74	↓	< 20	
45		< 20		75		< 20	
46		< 20		76	↓	< 20	
47		< 20		77	↓	< 20	
48		< 20		78	W WALL	< 20	
49	↓	< 20		79	FLOOR	< 20	
50	FLOOR	< 20		80	↓	< 20	
51	S. WALL	< 20		81	↓	< 20	
52	<small>FLD 1-20-05</small> S. WALL	< 20		82	↓	< 20	NA
53		< 20		83	FLOOR	< 20	< 94
54		< 20		84	N. WALL	< 20	NA
55		< 20		85	E. WALL	< 20	< 94
56		< 20		86	W WALL	< 20	NA
57		< 20		87	S. WALL	< 20	
58		< 20		88	301 TANK	< 20	
59	↓	< 20		89	↓	< 20	
60	S. WALL	< 20		90	301 TANK	< 20	NA
61	N. WALL	< 20		91	NA	NA	NA
62		< 20		92	↓		
63		< 20		93			
64		< 20		94			
65	↓	< 20		95	↓		
66	N. WALL	< 20	NA	96	NA	NA	NA

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>Ludlum</u>	Mfg. <u>NE</u>	Mfg. <u>N/A</u>
Model <u>SqL-4</u>	Model <u>Electra</u>	Model
Serial# <u>1130</u>	Serial# <u>2143</u>	Serial#
Cal Due <u>7-3-05</u>	Cal Due <u>7-13-05</u>	Cal Due
Bkg. <u>0.0</u>	Bkg. <u>3cpm</u>	Bkg.
Efficiency <u>33</u>	Efficiency <u>22.3</u>	Efficiency
MDA <u>20 dpm</u>	MDA <u>94dpm</u>	MDA
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>N/A</u>
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency <u>4</u>	Efficiency <u>4</u>	Efficiency <u>4</u>
MDA	MDA	MDA

Survey Type: Contamination

Building: 559

Location: 561-tunnel

Purpose: Characterization survey (Pre-Fix)

RWP #: 05-559-5004

Date 1-24-05 Time 1400

PRN/REN #: N/A

Comments: _____

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description	Alpha		Swipe #	Location/Description	Alpha	
#	(Results in dpm)	Direct	Removable	#	(Results in dpm)	Direct	Removable
1	Floor	294	220	19	floor	294	220
2	Pipe	294	220	20	floor under tank	294	220
3	floor	294	220	21	floor	294	220
4	floor	294	220	22	floor	294	220
5	pipe	294	220	23	wall	294	220
6	floor	294	220	24	floor after de-con	294	220
7	floor under zone 1	294	220	25	floor after de-con	294	220
8	floor under zone 1	294	220	26	floor	294	220
9	floor under zone 1	1400	220	27	floor after de-con	294	220
10	floor under zone 1	1200	220	28	floor	294	220
11	under stairs	1200	220	29	floor	294	220
12	floor	294	220	30	floor	294	220
13	floor	294	220	31	floor before de-con	3,000	3,000
14	floor	294	220	32	floor before de-con	10,000	10,000
15	wall	294	220	33	floor before de-con	50,000	50,000
16	floor under tank	294	220	34		A	
17	floor	294	220	35			
18	floor	294	220	36			

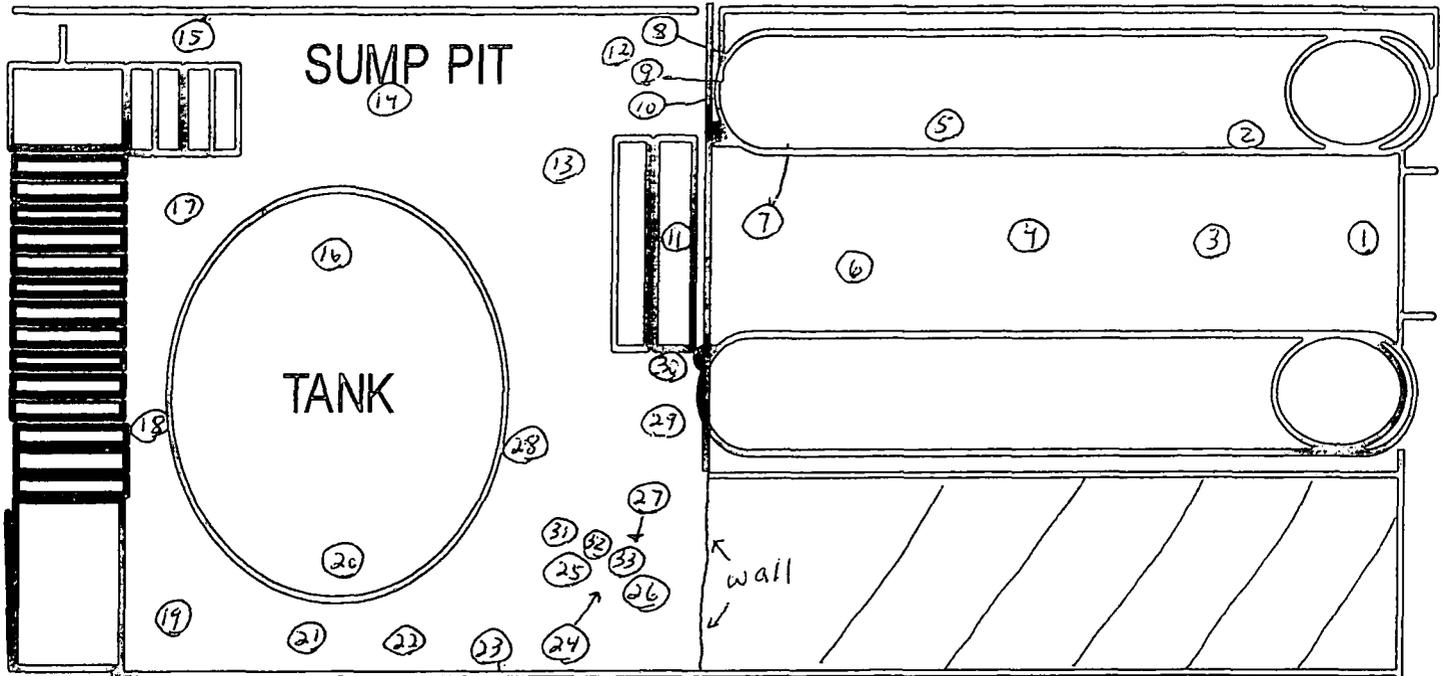
Date Reviewed: 1/24/05 RS Supervision: _____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



/// denotes inaccessible wall

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>NE TECH</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u>ELECTRA</u>	Model	Model	Model
Serial# <u>1250</u>	Serial#	Serial#	Serial#
Cal Due <u>5-10-05</u>	Cal Due	Cal Due	Cal Due
Bkg. <u>7.0</u>	Bkg.	Bkg.	Bkg.
Efficiency <u>17%</u>	Efficiency	Efficiency	Efficiency
MDA <u>94</u>	MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model	Model	Model	Model
Serial#	Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency	Efficiency
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: Contamination

Building: 559/561

Location: ROOM 129 561 TUNNEL

Purpose: PRIOR TO PAINT (Pre-Fix)

RWP #: 05-559-5004

Date 2-1-05 Time 1000

RCT NA / NA / NA

Print name _____ Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: SURVEY PERFORMED PRIOR TO REMOVAL OF LADDER AND PAINTING OF FLOOR AND WALL

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	LADDER RAIL	16K	3K	19	NA	NA	NA
2	DECK PLATE	12K	1K	20			
3	FLOOR	6K	180	21			
4	FLOOR	6K	180	22			
5	LADDER	2K	540	23			
6	↓	2K	540	24			
7	↓	2K	540	25			
8	LADDER	2K	540	26			
9	302 DUCT	42K	2K	27			
10	561 TUNNEL WALL	540	NA	28			
11	561 TUNNEL WALL	540	NA	29			
12	561 TUNNEL FLOOR	540	NA	30			
13	561 TUNNEL FLOOR	540	NA	31			
14	NA	NA	NA	32			
15				33			
16				34			
17				35			
18	NA	NA	NA	36	NA	NA	NA

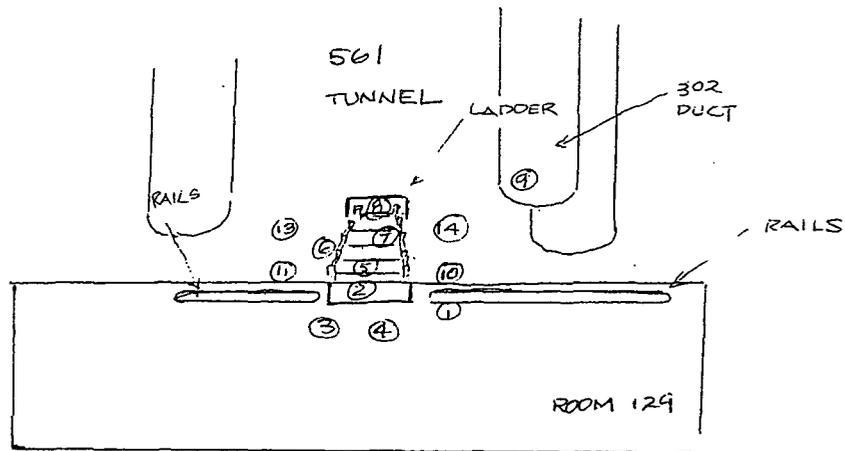
Date Reviewed: 2/1/05 RS Supervision: _____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>N/A</u>	Mfg. <u>NE Electra</u>	Mfg. <u>NA</u>	Survey Type: <u>SCO</u>
Model <u>N/A</u>	Model <u>DP-6</u>	Model <u>NA</u>	Building: <u>561</u>
Serial # <u>N/A</u>	Serial # <u>1589</u>	Serial # <u>NA</u>	Location: <u>T130 Tank</u>
Cal Due <u>N/A</u>	Cal Due <u>6/16/05</u>	Cal Due <u>NA</u>	Purpose: <u>Remove Tank (Pre-Fix) 2/11/05</u>
Bkg <u>N/A cpm</u>	Bkg <u>5 cpm α</u>	Bkg <u>NA cpm α</u>	RWP #: <u>N/A</u>
Eff. <u>N/A %</u>	Eff. <u>21.8 %</u>	Eff. <u>NA %</u>	Date: <u>1/14/05</u> Time: <u>16:00</u>
MDA <u>N/A dpm</u>	MDA <u>60 dpm α</u>	MDA <u>NA dpm α</u>	[Redacted]
Mfg. <u>N/A</u>	Mfg. <u>NE Electra</u>	Mfg. <u>NA</u>	
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>NA</u>	RCT: <u>NA</u> / <u>NA</u> / <u>NA</u>
Serial # <u>N/A</u>	Serial # <u>N/A</u>	Serial # <u>NA</u>	Print name Signature Emp. #
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>NA</u>	
Bkg <u>N/A cpm</u>	Bkg <u>N/A cpm β</u>	Bkg <u>NA cpm β</u>	
Eff. <u>N/A %</u>	Eff. <u>N/A %</u>	Eff. <u>NA %</u>	
MDA <u>N/A dpm</u>	MDA <u>N/A dpm β</u>	MDA <u>NA dpm β</u>	

PRN/REN # : N/A

Comments: 25 survey points for interior of tank. 30 survey points on tank exterior.

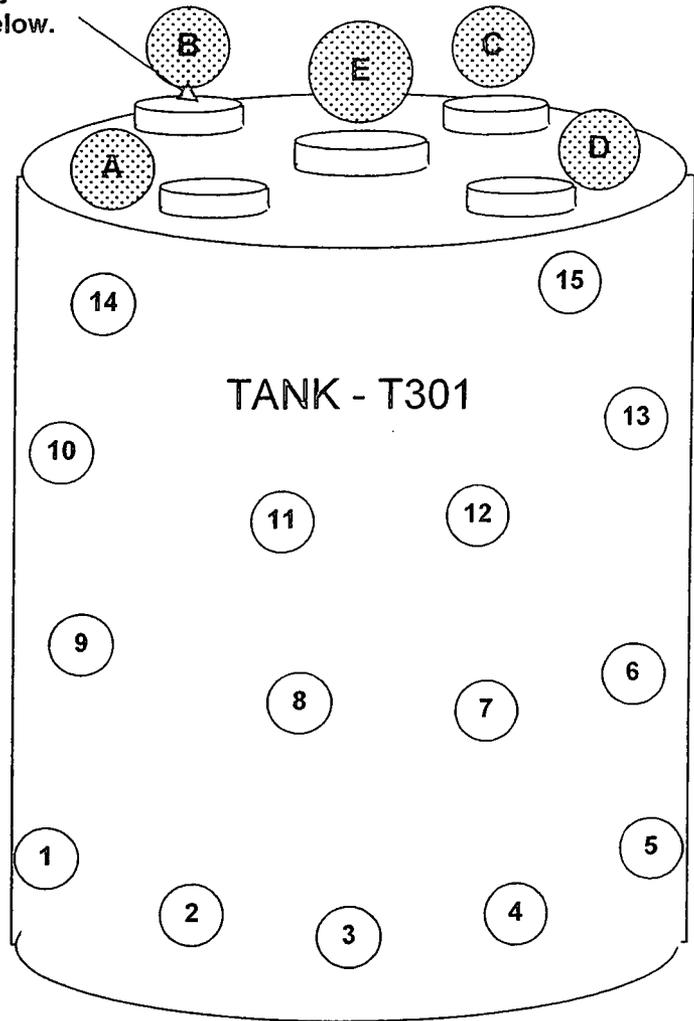
COPY

Swipe #	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
A1 - A5	Interior surfaces of tank - A Port	N/A	<60	N/A	N/A	N/A	N/A
B1 - B5	Interior surfaces of tank - B Port	N/A	<60	N/A	N/A	N/A	N/A
C1 - C5	Interior surfaces of tank - C Port	N/A	<60	N/A	N/A	N/A	N/A
D1 - D5	Interior surfaces of tank - D Port	N/A	<60	N/A	N/A	N/A	N/A
E1 - E5	Interior surfaces of tank - E Port	N/A	<60	N/A	N/A	N/A	N/A
1-30	Exterior of Tank T-130	N/A	<60	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	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: 1/18/05 RS Supervision: [Redacted]

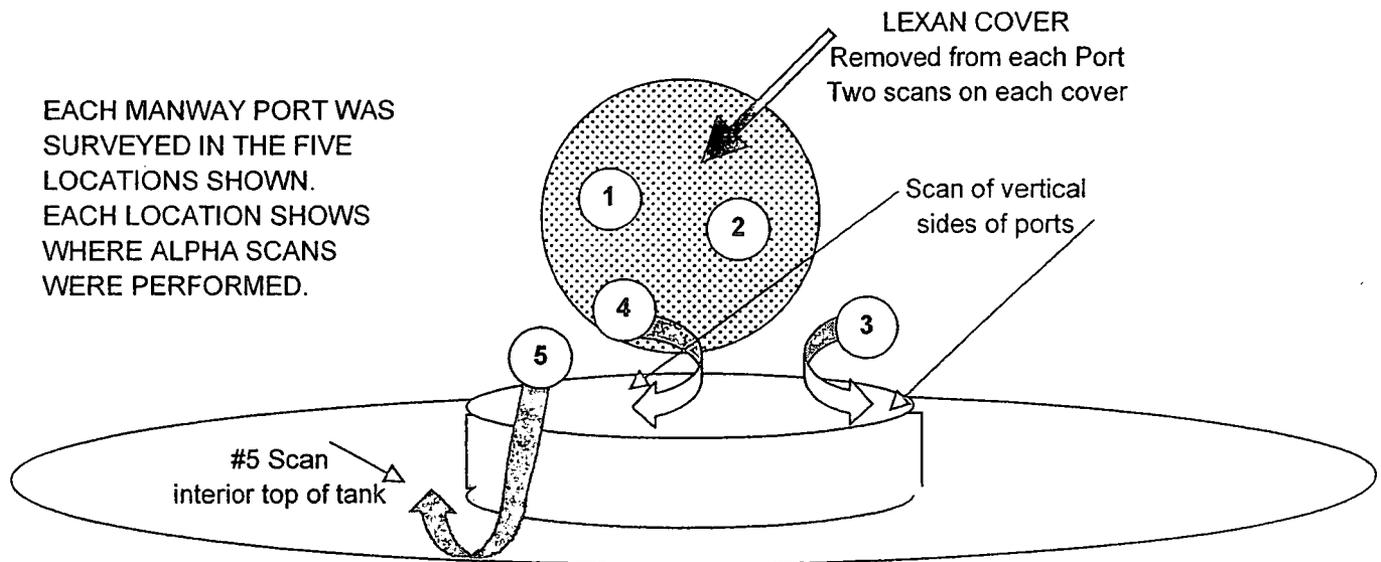
45

Each port (A - E) surveyed as shown in diagram below.



SWIPES #16 thru 30
Were taken on back side of tank, in same locations as #1 thru 15

EACH MANWAY PORT WAS SURVEYED IN THE FIVE LOCATIONS SHOWN. EACH LOCATION SHOWS WHERE ALPHA SCANS WERE PERFORMED.



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY, INC.

COPY

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>WDLUM</u>	Mfg. <u>NA</u>
Model <u>SAC4</u>	Model <u>12-1A</u>	Model <u>NA</u>
Serial# <u>1044</u>	Serial# <u>95782</u>	Serial# <u>NA</u>
Cal Due <u>5-17-05</u>	Cal Due <u>6-8-05</u>	Cal Due <u>NA</u>
Bkg. <u>0.0</u>	Bkg. <u><100</u>	Bkg. <u>NA</u>
Efficiency <u>33%</u>	Efficiency <u>50%</u>	Efficiency <u>✓</u>
MDA <u>20</u>	MDA <u>500</u>	MDA <u>NA</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u>NA</u>	Model <u>NA</u>	Model <u>NA</u>
Serial# <u>NA</u>	Serial# <u>NA</u>	Serial# <u>NA</u>
Cal Due <u>NA</u>	Cal Due <u>NA</u>	Cal Due <u>NA</u>
Bkg. <u>NA</u>	Bkg. <u>NA</u>	Bkg. <u>NA</u>
Efficiency <u>✓</u>	Efficiency <u>✓</u>	Efficiency <u>✓</u>
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: <u>Contamination</u>
Building: <u>561</u>
Location: <u>561</u>
Purpose: <u>SCO Survey 301 Tank</u>
RWP #: <u>05-559-5004</u>
Date <u>1-12-05</u> Time <u>1630</u>
RCT <u>NA / NA / NA</u>
Print name _____ Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: SURVEY TAKEN OF PORT OPENINGS & COVERS

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	PORT OPENING	<500	<20	19	NA	NA	NA
2	↓	<500	<20	20	↓	↓	↓
3		<500	<20	21			
4		<500	<20	22			
5		<500	<20	23			
6		<500	<20	24			
7		<500	<20	25			
8		<500	<20	26			
9		<500	<20	27			
10		<500	<20	28			
11		<500	<20	29			
12	NA	NA	NA	30	↓	↓	↓
13	NA	NA	NA	31			
14	NA	NA	NA	32			
15	NA	NA	NA	33			
16	NA	NA	NA	34			
17	NA	NA	NA	35			
18	NA	NA	NA	36			

Date Reviewed: 1/13/05 RS Supervisor _____

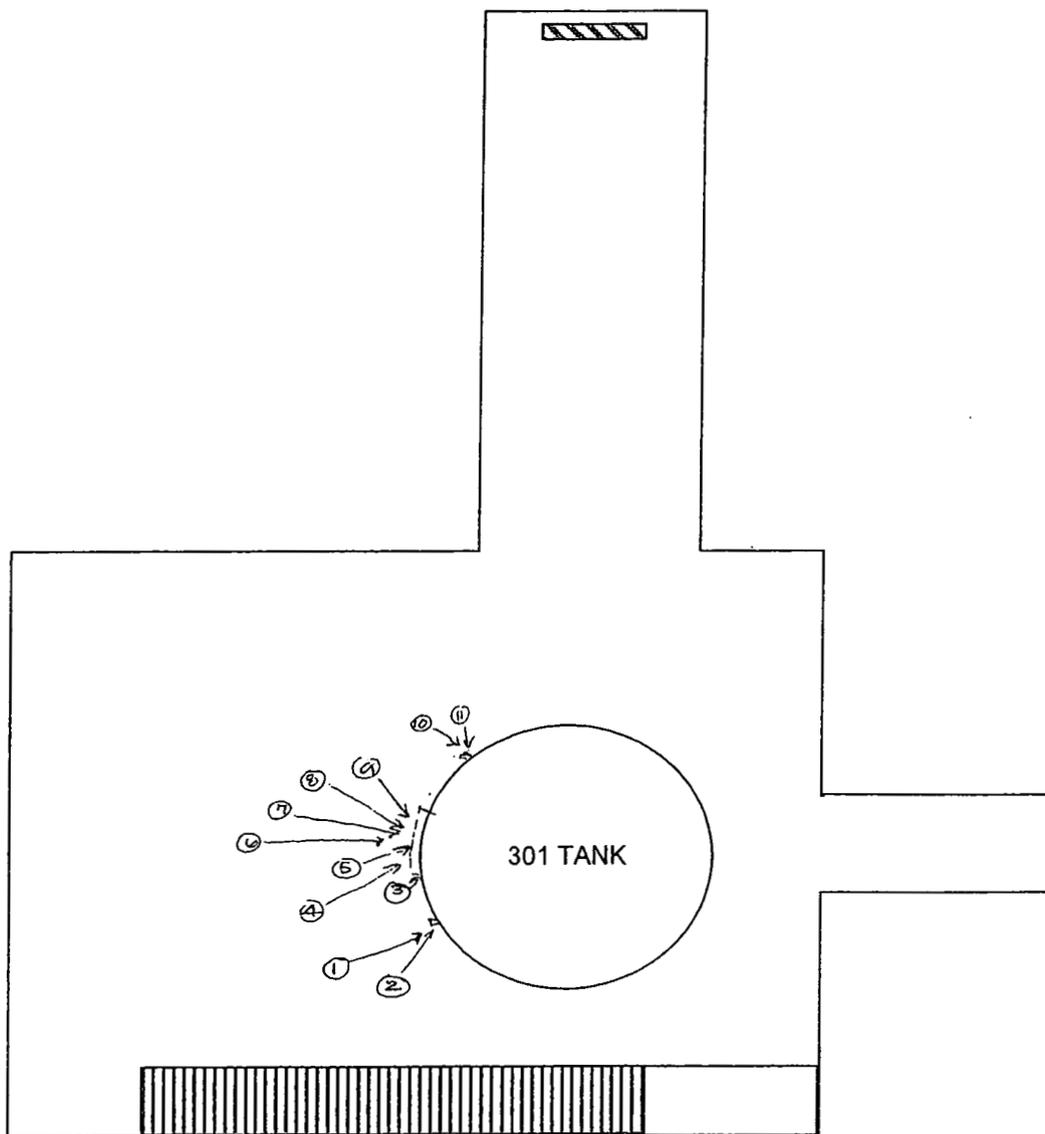
47

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

 Ladder



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>NE TECH</u>
Model <u>SAC 4</u>	Model <u>SAC 4</u>	Model <u>ELECTRA</u>
Serial# <u>825</u>	Serial# <u>859</u>	Serial# <u>1675</u>
Cal Due <u>6/3/05</u>	Cal Due <u>5/18/05</u>	Cal Due <u>5/15/05</u>
Bkg. <u>0.6</u>	Bkg. <u>0.3</u>	Bkg. <u>1.0</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>20</u>	MDA <u>20</u>	MDA <u>94</u>
Mfg. <u>NETECH</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u>ELECTRA</u>	Model	Model
Serial# <u>3171</u>	Serial#	Serial#
Cal Due <u>7/6/05</u>	Cal Due	Cal Due
Bkg. <u>2.0</u>	Bkg.	Bkg.
Efficiency <u>17%</u>	Efficiency	Efficiency
MDA <u>94</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type:	Contamination
Building:	561
Location:	561
Purpose:	DISESTABLISH CA
RWP #:	<u>05-559-5002</u>
Date <u>1/20/05</u>	Time <u>1400</u>

PRN/REN #: N/A

Comments: LARGE AREA WIPES TAKEN AT ALL SURVEY POINTS WITH SURVEY RESULTS < 94 dpm/WIPE

SURVEY RESULTS

Contamination Results (in dpm)

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	FLOOR	<94	<20	19	FLOOR	<94	<20
2		<94	<20	20	302 PLENUM E. WALL	<94	<20
3		<94	<20	21	302 PLENUM N. WALL	<94	<20
4		<94	<20	22	302 PLENUM W WALL	<94	<20
5		<94	<20	23	302 PLENUM S WALL	<94	<20
6		<94	<20	24	301 PLENUM E WALL	<94	<20
7		<94	<20	25	301 PLENUM N WALL	<94	<20
8		<94	<20	26	301 PLENUM W WALL	<94	<20
9		<94	<20	27	301 PLENUM S WALL	<94	<20
10		<94	<20	28	300 PLENUM E WALL	<94	<20
11		<94	<20	29	300 PLENUM N WALL	<94	<20
12		<94	<20	30	300 PLENUM W WALL	<94	<20
13		<94	<20	31	300 PLENUM S WALL	<94	<20
14		<94	<20	32	FLOOR	NA	<20
15		<94	<20	33			<20
16		<94	<20	34			<20
17	↓	<94	<20	35	↓	↓	<20
18	FLOOR	<94	<20	36	FLOOR	NA	<20

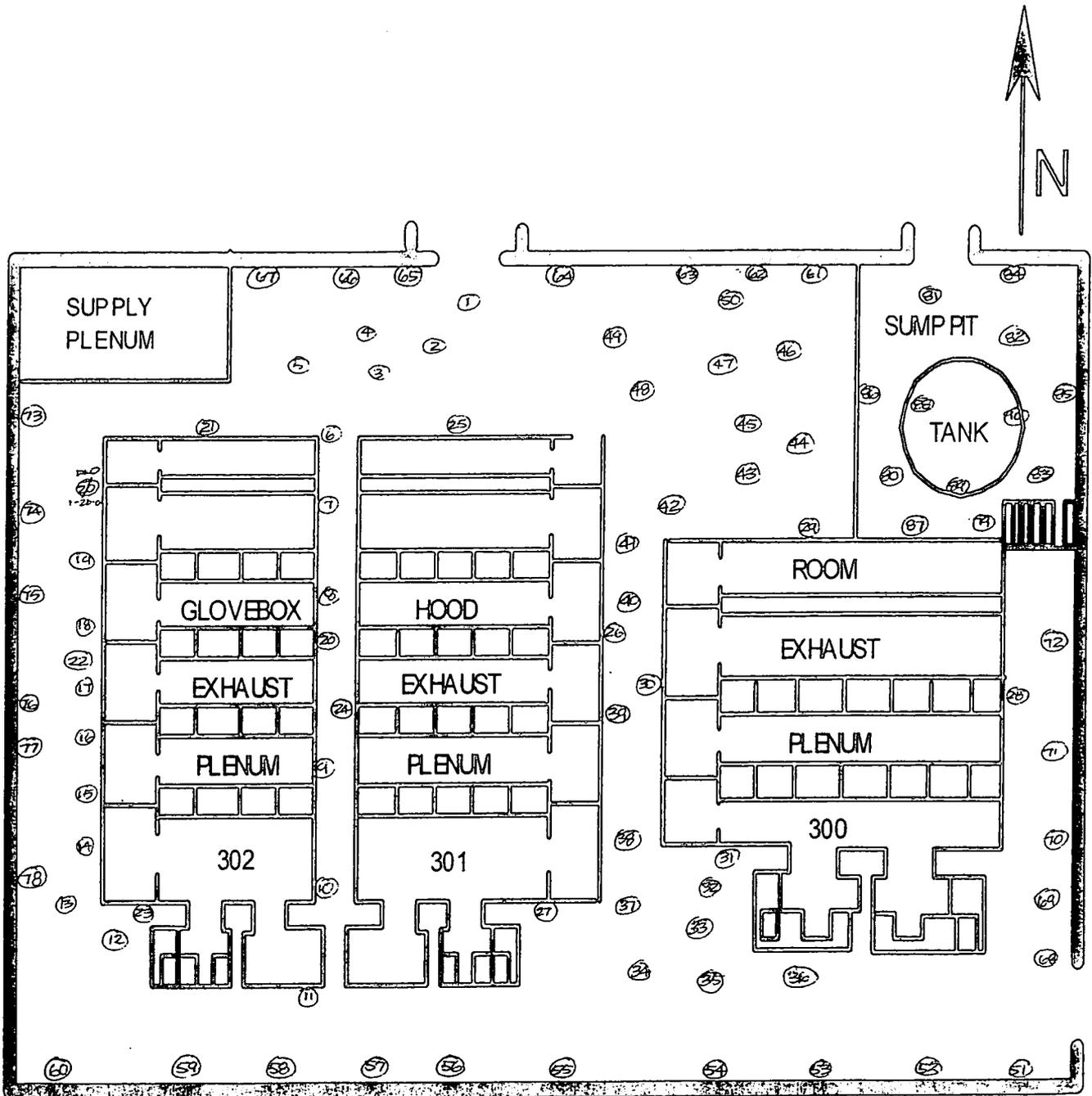
Date Reviewed: 1/20/05 RS Supervision: [REDACTED]

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Contamination Results

Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		Removable	Direct			Removable	Direct
37	FLOOR	< 20	NA	67	N. WALL	< 20	NA
38		< 20		68	E. WALL	< 20	
39		< 20		69	↓	< 20	
40		< 20		70		< 20	
41		< 20		71	↓	< 20	
42		< 20		72	E. WALL	< 20	
43		< 20		73	W. WALL	< 20	
44		< 20		74	↓	< 20	
45		< 20		75		< 20	
46		< 20		76	↓	< 20	
47		< 20		77	↓	< 20	
48		< 20		78	W WALL	< 20	
49	↓	< 20		79	FLOOR	< 20	
50	FLOOR	< 20		80	↓	< 20	
51	S. WALL	< 20		81	↓	< 20	
52	<small>PAID 1-20-05</small> S. WALL	< 20		82	↓	< 20	NA
53	↓	< 20		83	FLOOR	< 20	< 94
54		< 20		84	N. WALL	< 20	NA
55		< 20		85	E. WALL	< 20	< 94
56		< 20		86	W WALL	< 20	NA
57		< 20		87	S. WALL	< 20	
58		< 20		88	301 TANK	< 20	
59	↓	< 20		89	↓	< 20	
60	S. WALL	< 20		90	301 TANK	< 20	NA
61	N. WALL	< 20		91	NA	NA	NA
62		< 20		92	↓		
63		< 20		93			
64		< 20		94			
65	↓	< 20		95	↓		
66	N. WALL	< 20	NA	96	NA	NA	NA

39.51

05/01/02

ver A

Equivalent to Appendix 6

Page 1 of 1

CHARACTERIZATION UNIT SUMMARY

Survey Characterization Unit Nbr: XXXXXXXXXX

Ventilation System ductwork and associated system components

CONTAMINATION SUMMARY SHEET

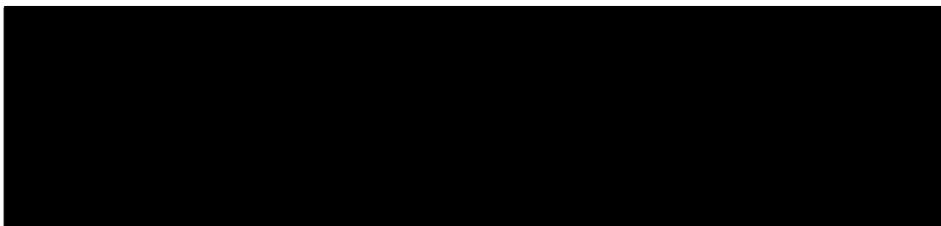
Accessible Surfaces dpm/100cm2	Maximum	Mean	Median (Plan A)	Standard Deviation (Plan A)	UCL95 / UTL
Removable Alpha	500	500	500	0	500
Fixed Alpha	500	500	500	0	500

Inaccessible Surfaces dpm/100cm2	Maximum	Mean	Median (Plan A)	Standard Deviation (Plan A)	UCL95 / UTL
Total Alpha	48,308,341	13,731,742	11,632,704	10,154,294	16,591,868

Values listed in Appendix 5&6 of this SCO unit were obtained using a combination of field survey instruments performed by RCTs and in situ gamma spectroscopy data collected by Eberline technicians. Gamma spectroscopy data was converted to SCO compliant data using Site approved RSP-17.01 calculation Number 04-RISS-0010 - on file at RISS Radiological Safety Manager's office.

SCO Type: SCO-II

This waste has been approved for packaging.



08/13/2004

Date

08/16/2004

Date

ATTACHMENT B-2

Post-Fixative LLW Radiological Survey Forms

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						Survey Type: Contamination	
Mfg. <u>N/A</u>	Mfg. <u>Eberline</u>	Mfg. <u>NE Electra</u>	Building: <u>561</u>				
Model <u>N/A</u>	Model <u>SAC-4</u>	Model <u>DP-6</u>	Location: <u>Under 302 Plenum Drains</u>				
Serial # <u>N/A</u>	Serial # <u>804</u>	Serial # <u>1250</u>	Purpose: <u>Characterization (Post-Fix)</u>				
Cal Due <u>N/A</u>	Cal Due <u>3/7/05</u>	Cal Due <u>5/10/05</u>	RWP #: <u>N/A</u>				
Bkg <u>N/A cpmα</u>	Bkg <u>0.4 cpmα</u>	Bkg <u>7.0 cpmα</u>	Date: <u>1/31/05</u>		Time: <u>09:15</u>		
Efficiency <u>N/A %</u>	Efficiency <u>33.00 %</u>	Efficiency <u>22.00 %</u>					
MDA <u>N/A dpmα</u>	MDA <u>20 dpmα</u>	MDA <u>94 dpmα</u>					
Mfg. <u>N/A</u>	Mfg. <u>N/A</u>	Mfg. <u>NE Electra</u>					
Model <u>N/A</u>	Model <u>N/A</u>	Model <u>DP-6</u>					
Serial # <u>N/A</u>	Serial # <u>N/A</u>	Serial # <u>1250</u>					
Cal Due <u>N/A</u>	Cal Due <u>N/A</u>	Cal Due <u>5/10/05</u>	RCT: <u>NA / NA / NA</u>				
Bkg <u>N/A cpmβ</u>	Bkg <u>N/A cpmβ</u>	Bkg <u>527.0 cpmβ</u>	Print name		Signature		
Efficiency <u>N/A %</u>	Efficiency <u>N/A %</u>	Efficiency <u>32.50 %</u>	Emp. #				
MDA <u>N/A dpmβ</u>	MDA <u>N/A dpmβ</u>	MDA <u>745 dpmβ</u>					

PRN/REN #: N/A

Comments: Plenum lifted 8" Surveyed around (4) drains on pad

SURVEY RESULTS

#	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	See Map (LAW)	N/A	N/A	<94	N/A	N/A	N/A
2	See Map	N/A	<94	N/A			
3	See Map	N/A	<94				
4	See Map	<20	<94				
5	See Map	<20	<94				
6	See Map	<20	<94				
7	See Map	<20	<94				
8	See Map	<20	<94				
9	See Map	<20	<94	N/A			
10	See Map (LAW)	N/A	N/A	340			
11	See Map	N/A	<94	N/A			
12	See Map	N/A	<94				
13	See Map	<20	495				
14	See Map	<20	264				
15	See Map	<20	341				
16	See Map	<20	<94				
17	See Map	31	<94				
18	See Map	45	1863				
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: 2/1/05 RS Supervision: [REDACTED]

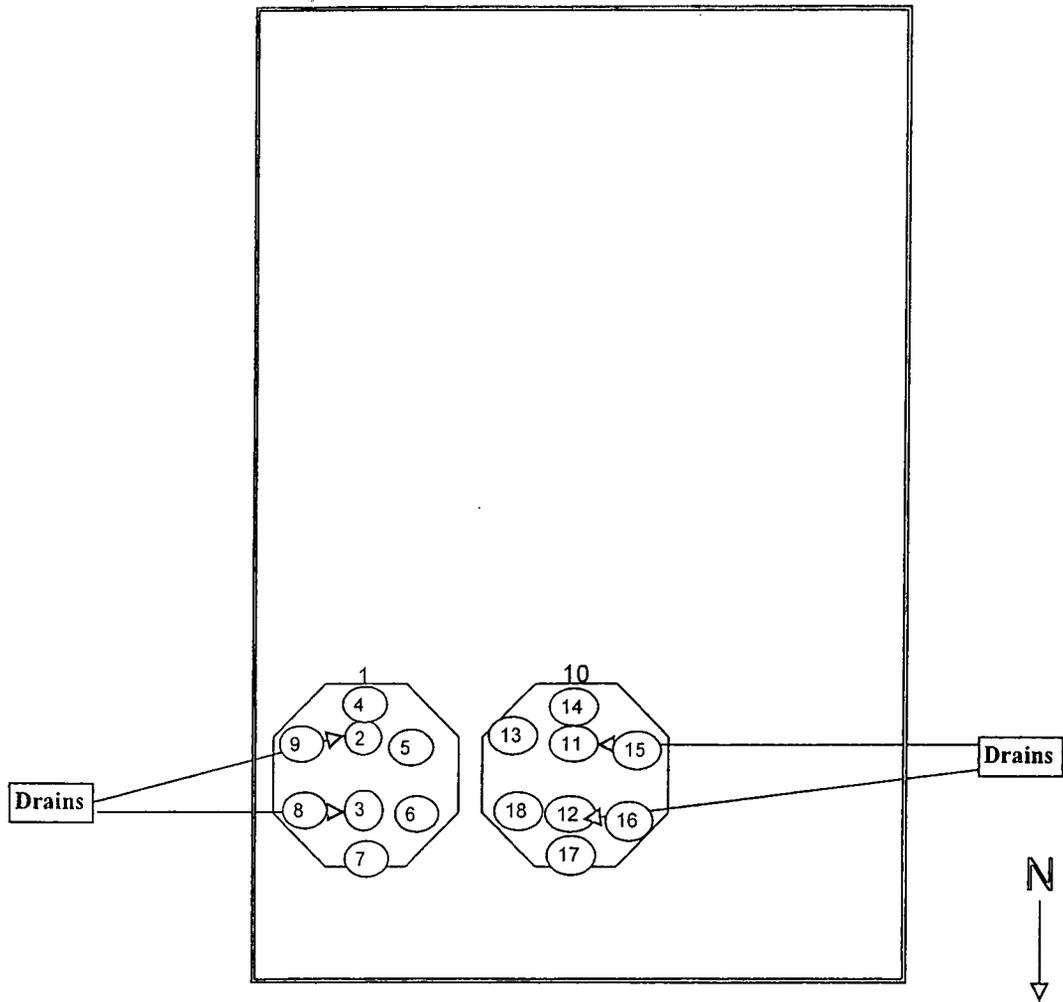
see followup survey dated 2/1/05
re 2/4/05

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

302 Plenum Pad

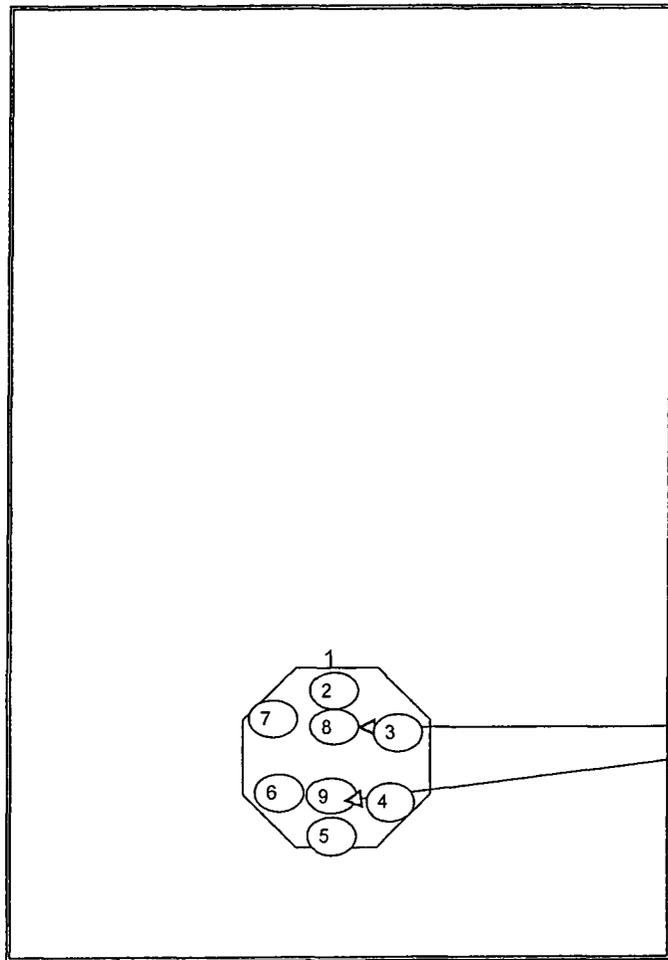


48 55

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Drawing Showing Survey Points

302 Plenum Pad



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. EBELLWE	Mfg. EBELLWE	Mfg. NA
Model SAC-4	Model SAC-4	Model
Serial# 859	Serial# 1274	Serial#
Cal Due 5-18-05	Cal Due 6-7-05	Cal Due
Bkg. 0.2c/l	Bkg. 0.3c/l	Bkg.
Efficiency 330%	Efficiency 330%	Efficiency
MDA 20d/l	MDA 20d/l	MDA NA
Mfg. NA	Mfg. NA	Mfg. NA
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA NA	MDA NA	MDA NA

Survey Type: Contamination
Building: 561
Location: 361 301 PL
Purpose: RE SURVEY (Post-Fix)
RWP #: 05-559-5004
Date 1-25-05 Time 1600
RCT NA / NA / NA
Print name Signature Emp. #

PRN/REN #: N/A

Comments: RE Survey of inside of 301 PL

SURVEY RESULTS

Contamination Results (in dpm/100cm2)

Swipe #	Location/Description (Results in dpm/100cm2)	Alpha		Swipe #	Location/Description (Results in dpm/100cm2)	Alpha	
		Direct	Removable			Direct	Removable
1	Demister PAX Thr	NA	<20	19	Third Stage Deck	NA	<20
2	Demister Door		<20	20	Third Stage Ceiling		<20
3	Demister DRAIN Screen		<20	21	Fourth Stage Wall		<20
4	Demister Floor		<20	22	Fourth Stage Floor		<20
5	Demister Frame		<20	23	Fourth Stage Rack		<20
6	Demister Filame		<20	24	Fourth Stage Door		<20
7	First Stage Door		<20	25	Fourth Stage Ceiling		<20
8	First Stage Drain		<20	26	Down fourth Wall		<20
9	First Stage Floor		<20	27	Down fourth floor		<20
10	Second Stage w/floor		<20	28	Down fourth Rack		<20
11	Second Stage w/floor		<20	29	Down fourth wall		<20
12	Second Stage Floor		<20	30	Down fourth Ceiling		<20
13	Second Stage Rack		<20	31	Down fourth Door		<20
14	Second Stage Door		<20	32	Down fourth Airlock		<20
15	Second Stage Ceiling		<20	33	Fourth Stage Airlock		<20
16	Third Stage wall		<20	34	Third Stage Airlock		<20
17	Third Stage Floor		<20	35	Second Stage Airlock		<20
18	Third Stage Rack	NA	<20	36	First Stage Airlock	NA	<20

Date Reviewed: 1/26/05 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	N/A	Mfg.	N/A
Model	SAC-4	Model	N/A	Model	N/A
Serial#	859	Serial#	N/A	Serial#	N/A
Cal Due	5/18/05	Cal Due	N/A	Cal Due	N/A
Bkg.	0.5	Bkg.	N/A	Bkg.	N/A
Efficiency	33%	Efficiency	N/A	Efficiency	N/A
MDA	20 dpm	MDA	N/A	MDA	N/A
Mfg.	N/A	Mfg.	N/A	Mfg.	N/A
Model	N/A	Model	N/A	Model	N/A
Serial#	N/A	Serial#	N/A	Serial#	N/A
Cal Due	N/A	Cal Due	N/A	Cal Due	N/A
Bkg.	N/A	Bkg.	N/A	Bkg.	N/A
Efficiency	N/A	Efficiency	N/A	Efficiency	N/A
MDA	N/A	MDA	N/A	MDA	N/A

Survey Type: Contamination

Building: 561

Location: 561 Tunnel

Purpose: Contamination Survey (Post-Fix)

RWP #: 05/559/5004

Date: 1/26/05 Time: 8:10

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

Print name: _____ Signature: _____ Emp. #: _____

PRN/REN #: N/A

Comments: Post paint contamination survey of 561 tunnel and 301 tank area

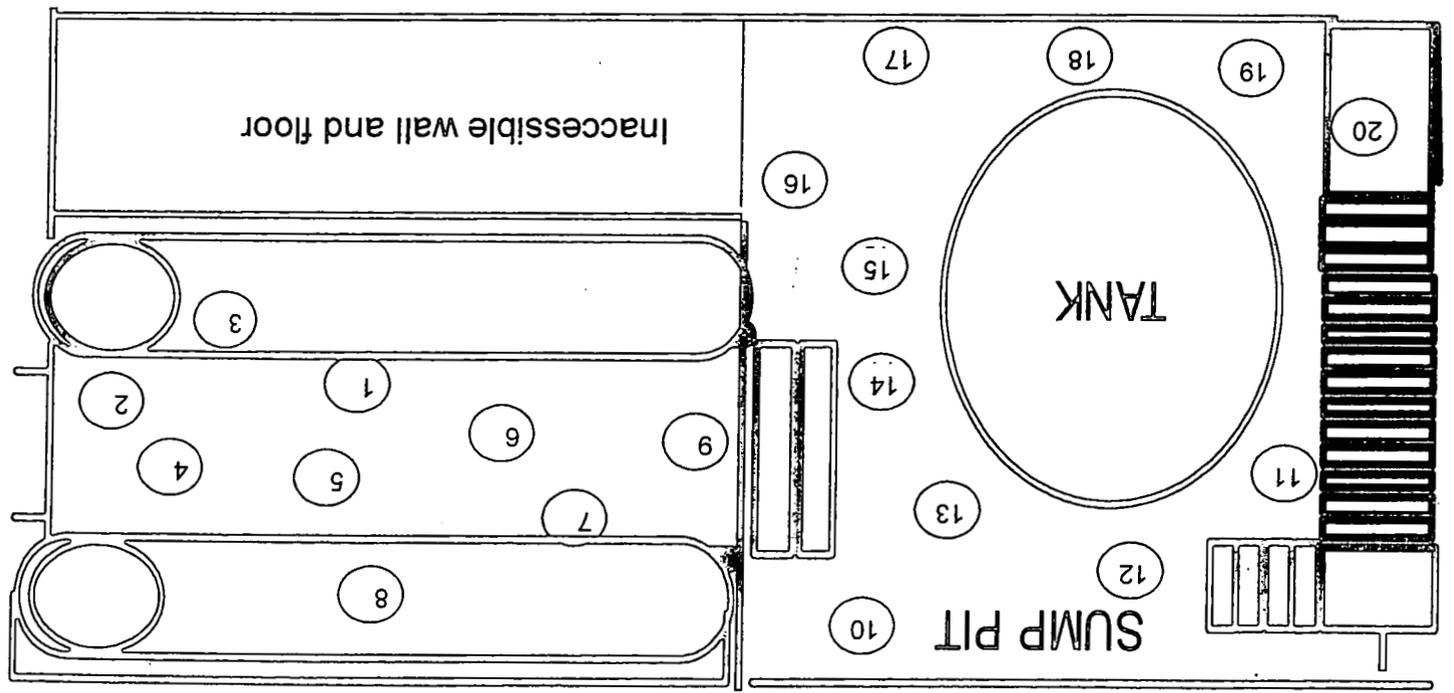
SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	See Map	N/A	<20	19	See Map	N/A	<20
2	See Map		<20	20	See Map		<20
3	See Map		<20	21	N/A		N/A
4	See Map		<20	22			
5	See Map		<20	23			
6	See Map		<20	24			
7	See Map		<20	25			
8	See Map		<20	26			
9	See Map		<20	27			
10	See Map		<20	28			
11	See Map		<20	29			
12	See Map		<20	30			
13	See Map		<20	31			
14	See Map		<20	32			
15	See Map		<20	33			
16	See Map		<20	34			
17	See Map	▽	<20	35	▽	▽	▽
18	See Map	N/A	<20	36	N/A	N/A	N/A

Date Reviewed: 1/26/05 RS Supervision: _____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
RADIOLOGICAL SAFETY
 Drawing Showing Survey Points

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						Survey Tracking # N/A		
Mfg. Eberline	Mfg. NE Electra	Mfg. NE Electra					Survey Type: Contamination	
Model Sac 4	Model DP-6	Model DP-6					Building: 561 to 528	
Serial # 924	Serial # N/A	Serial # 3127					Location: tank pit area culvert pipe (deluge tank)	
Cal Due 2/4/05	Cal Due N/A	Cal Due 2/16/05					Purpose: Characterization (Post-Fix)	
Bkg 0.3 cpm α	Bkg N/A cpm α	Bkg 6.0 cpm α					RWP #: N/A	
Efficiency 33.00 %	Efficiency N/A %	Efficiency 20.50 %					Date: 1/29/05 Time: 1030	
MDA 20 dpm α	MDA ##### dpm α	MDA 69 dpm α					<div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> Print name _____ Signature _____ Emp. # _____	
Mfg. N/A	Mfg. NE Electra	Mfg. NE Electra					RCT: N/A / N/A / N/A Print name _____ Signature _____ Emp. # _____	
Model N/A	Model DP-6	Model DP-6						
Serial # N/A	Serial # N/A	Serial # 3127						
Cal Due N/A	Cal Due N/A	Cal Due 2/16/05						
Bkg N/A cpm β	Bkg N/A cpm β	Bkg 687.0 cpm β						
Efficiency N/A %	Efficiency N/A %	Efficiency 22.00 %						
MDA N/A dpm β	MDA 745 dpm β	MDA 745 dpm β						

PRN/REN #: N/A

Comments: Nuclide of concern is Plutonium. Survey performed to characterize contamination levels in a culvert pipe running to the east out of the 561 tank pit. Performed direct-readings, wipes, and swipes of floor, ceiling and walls of the culvert and of a pile of dirt at the east end of culvert. Beta efficiency listed reflects correction for Depleted Uranium (DU), calibrated efficiency for Electra # 3127 is 31.6%.

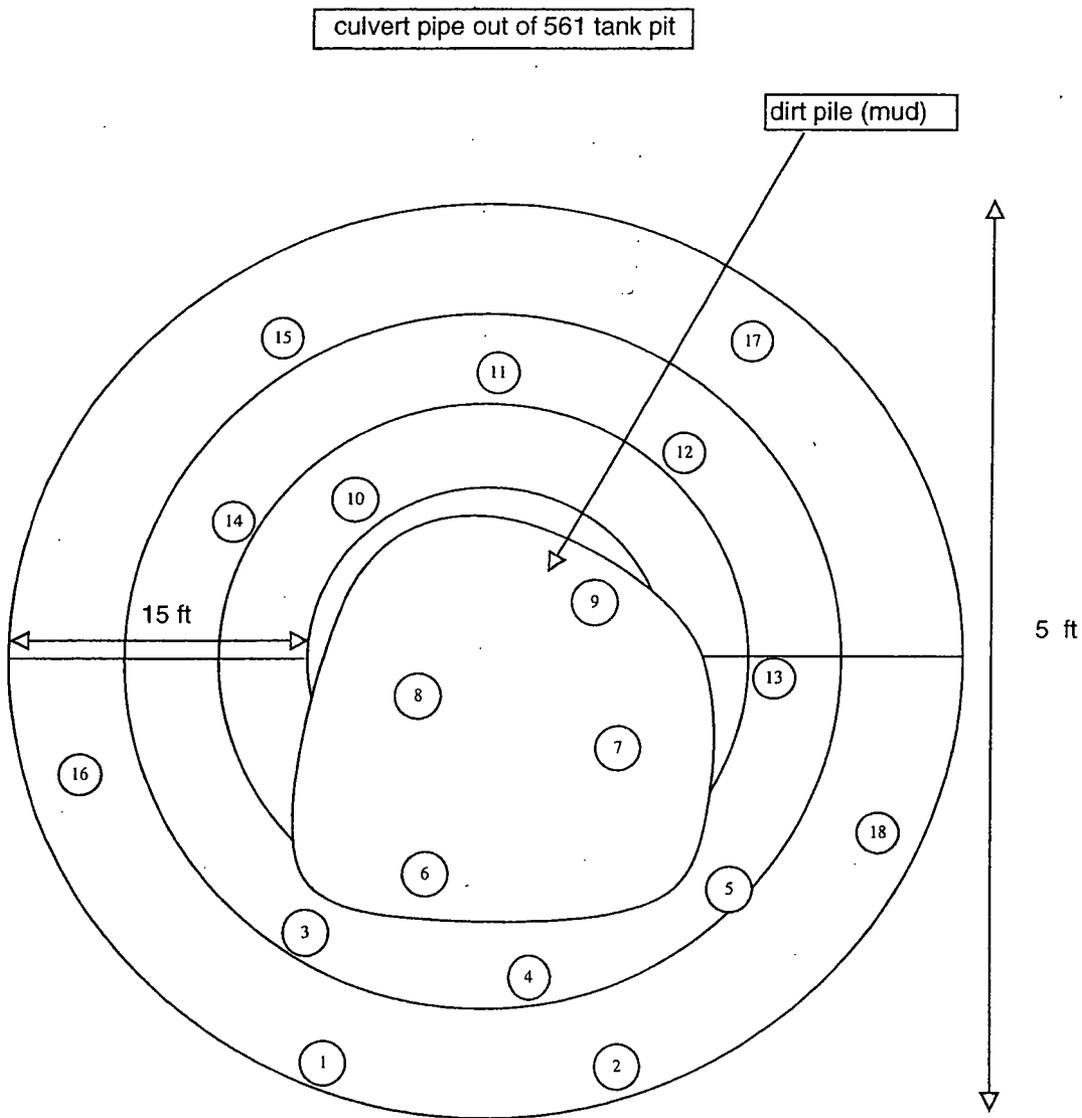
Survey Results

#	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	Floor of culvert	<20	<69	<69	N/A	N/A	N/A
2	Floor of culvert	<20	<69	<69	N/A	N/A	N/A
3	Floor of culvert	<20	<69	<69	N/A	N/A	N/A
4	Floor of culvert	<20	<69	<69	N/A	N/A	N/A
5	Floor of culvert	<20	<69	<69	N/A	N/A	N/A
6	Dirt pile in culvert	<20	<69	<69	N/A	N/A	N/A
7	Dirt pile in culvert	<20	<69	<69	N/A	N/A	N/A
8	Dirt pile in culvert	<20	<69	<69	N/A	N/A	N/A
9	Dirt pile in culvert	<20	<69	<69	N/A	N/A	N/A
10	Walls of culvert	<20	<69	<69	N/A	N/A	N/A
11	Ceiling of culvert	<20	<69	<69	N/A	N/A	N/A
12	Ceiling of culvert	<20	<69	<69	N/A	N/A	N/A
13	Walls of culvert	<20	<69	<69	N/A	N/A	N/A
14	Walls of culvert	<20	<69	<69	N/A	N/A	N/A
15	Ceiling of culvert	<20	<69	<69	N/A	N/A	N/A
16	Walls of culvert	<20	<69	<69	N/A	N/A	N/A
17	Ceiling of culvert	<20	<69	<69	N/A	N/A	N/A
18	Walls of culvert	<20	<69	<69	N/A	N/A	N/A
N/A	N/A	N/A	N/A	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: 1/29/05 RS Supervision

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA				Survey Type:	Contamination
Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Building: <u>559/561</u>	
Model <u>SAC4</u>	Model <u>SAC4</u>	Model <u>SAC4</u>	Model <u>SAC4</u>	Location: <u>ROOM 129</u>	<u>561 TUNNEL</u>
Serial# <u>1073</u>	Serial# <u>1274</u>	Serial# <u>1044</u>	Serial# <u>1044</u>	Purpose: <u>POST PAINT/POST REMOVAL</u>	
Cal Due <u>4-1-05</u>	Cal Due <u>6-7-05</u>	Cal Due <u>5-17-05</u>	Cal Due <u>5-17-05</u>	RWP #: <u>05-559-500A</u>	
Bkg. <u>0.5</u>	Bkg. <u>0.2</u>	Bkg. <u>0.3</u>	Bkg. <u>0.3</u>	Date <u>2-1-05</u>	Time <u>0900</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>		
MDA <u>20</u>	MDA <u>20</u>	MDA <u>20</u>	MDA <u>20</u>		
Mfg. <u>NE TECH</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>	RCT <u>NA</u>	<u>NA</u> / <u>NA</u>
Model <u>ELECTRA</u>	Model	Model	Model	Print name	Signature Emp. #
Serial# <u>3247</u>	Serial#	Serial#	Serial#		
Cal Due <u>4-21-05</u>	Cal Due	Cal Due	Cal Due		
Bkg. <u>4.0</u>	Bkg.	Bkg.	Bkg.		
Efficiency <u>17%</u>	Efficiency	Efficiency	Efficiency		
MDA <u>94</u>	MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>		

PRN/REN #: N/A

Comments: SURVEY TAKEN AFTER REMOVAL OF LADDER, RAILS, DECK PLATE AND PAINTING OF ROOM 129 FLOOR, 561 TUNNEL FLOOR / WALL

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	302 DUCT	NA	<20	19	561 TUNNEL WALL	NA	<20
2	129 FLOOR		<20	20	561 TUNNEL WALL		<20
3			<20	21	NA		NA
4			<20	22			
5			<20	23			
6			<20	24			
7			<20	25			
8			<20	26			
9	129 FLOOR		<20	27			
10	561 TUNNEL FLOOR		<20	28			
11			<20	29			
12			<20	30			
13			<20	31			
14	561 TUNNEL FLOOR		<20	32			
15	561 TUNNEL WALL		<20	33			
16			<20	34			
17			<20	35			
18	561 TUNNEL WALL	NA	<20	36	NA	NA	NA

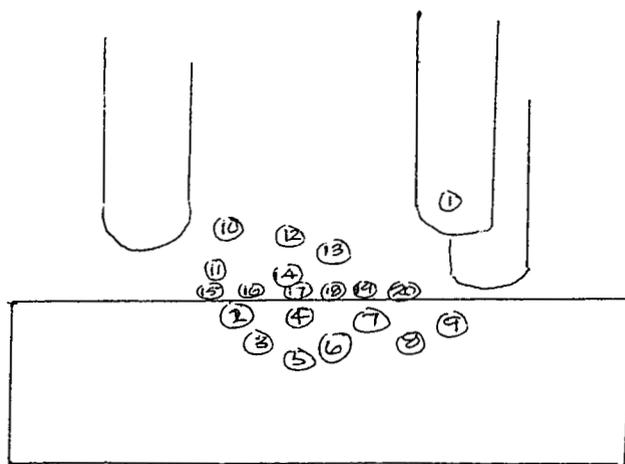
Date Reviewed: 2/1/05 RS Supervision: [REDACTED]

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



65

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>
Model <u>SAC 4</u>	Model <u>SAC 4</u>	Model <u>SAC 4</u>
Serial# <u>1044</u>	Serial# <u>1274</u>	Serial# <u>1073</u>
Cal Due <u>5-17-05</u>	Cal Due <u>6-7-05</u>	Cal Due <u>4-1-05</u>
Bkg. <u>0.3</u>	Bkg. <u>0.2</u>	Bkg. <u>0.5</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>
MDA <u>20</u>	MDA <u>20</u>	MDA <u>20</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u> </u>	Model <u> </u>	Model <u> </u>
Serial# <u> </u>	Serial# <u> </u>	Serial# <u> </u>
Cal Due <u> </u>	Cal Due <u> </u>	Cal Due <u> </u>
Bkg. <u> </u>	Bkg. <u> </u>	Bkg. <u> </u>
Efficiency <u> </u>	Efficiency <u> </u>	Efficiency <u> </u>
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type:	Contamination
Building:	561
Location:	561 / TUNNEL
Purpose:	POST PAINT
RWP #:	05-559-5004
Date	2-1-05
Time	1300
RCT	NA / NA / NA
Print name	Signature Emp. #

PRN/REN #: N/A

Comments: SURVEY TAKEN AFTER PAINTING 301, 302 & 300 DUCT

SURVEY RESULTS

Contamination Results

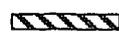
Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	301 DUCT	NA	NA < 20	19	NA	NA	NA
2	301 DUCT		< 20	20			
3	302 DUCT		< 20	21			
4	301 DUCT		< 20	22			
5	302 DUCT		< 20	23			
6	301 DUCT		< 20	24			
7	302 DUCT		< 20	25			
8	302 DUCT		< 20	26			
9	301 DUCT		< 20	27			
10	300 DUCT		< 20	28			
11	300 DUCT		< 20	29			
12	300 DUCT		< 20	30			
13	300 DUCT		< 20	31			
14	300 DUCT		< 20	32			
15	300 DUCT		< 20	33			
16	NA		NA	34			
17	↓	↓	↓	35	↓	↓	↓
18	NA	NA	NA	36	NA	NA	NA

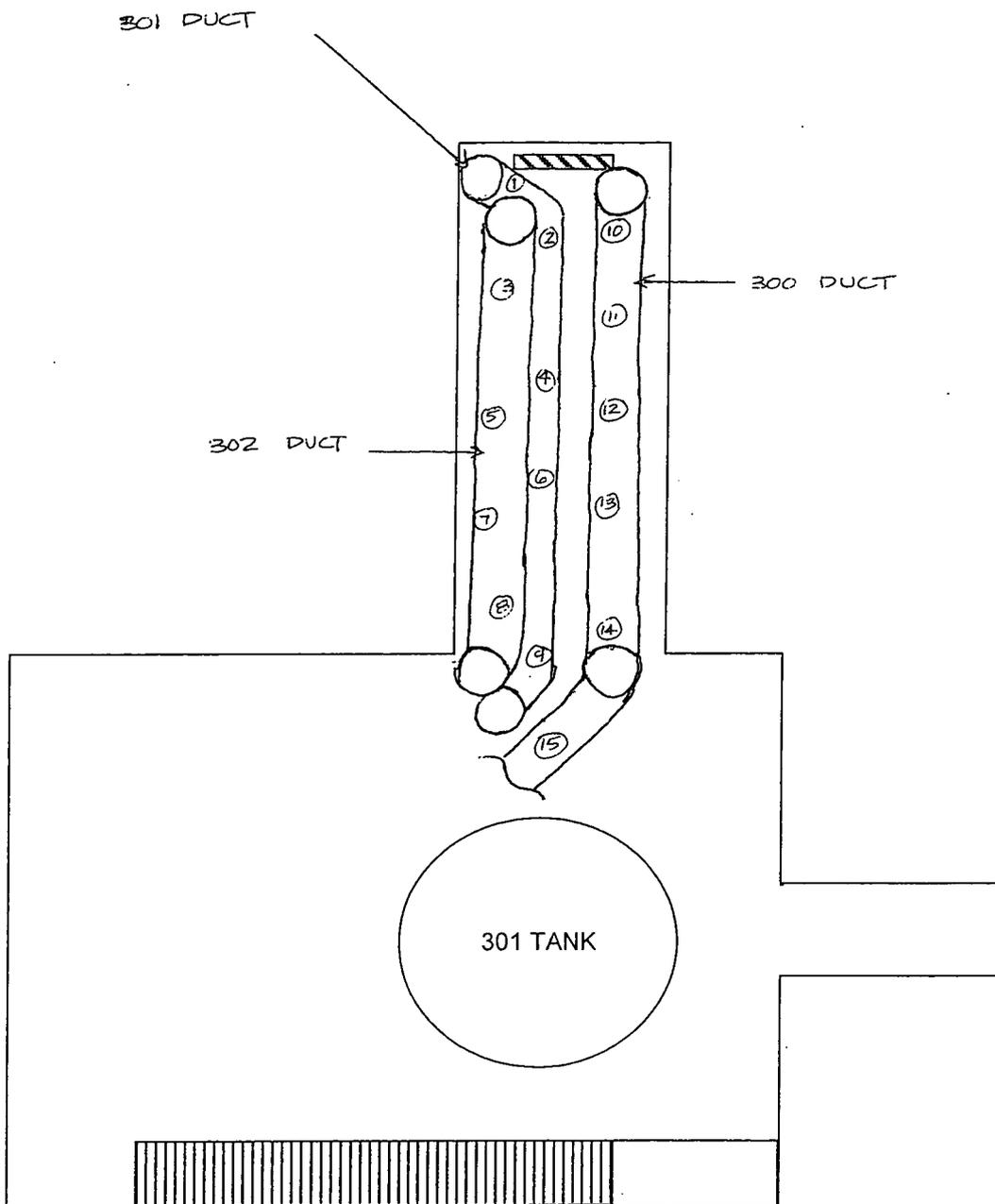
Date Reviewed: 2/1/05 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

 Ladder



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>	Mfg. <u>EBERLINE</u>
Model <u>SAC4</u>	Model <u>SAC4</u>	Model <u>SAC4</u>
Serial# <u>1044</u>	Serial# <u>1274</u>	Serial# <u>1073</u>
Cal Due <u>5-17-05</u>	Cal Due <u>6-7-05</u>	Cal Due <u>4-1-05</u>
Bkg. <u>0.3</u>	Bkg. <u>0.2</u>	Bkg. <u>0.5</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>
MDA <u>20</u>	MDA <u>20</u>	MDA <u>20</u>
Mfg. <u>NA</u>	Mfg. <u>NA</u>	Mfg. <u>NA</u>
Model <u> </u>	Model <u> </u>	Model <u> </u>
Serial# <u> </u>	Serial# <u> </u>	Serial# <u> </u>
Cal Due <u> </u>	Cal Due <u> </u>	Cal Due <u> </u>
Bkg. <u> </u>	Bkg. <u> </u>	Bkg. <u> </u>
Efficiency <u> </u>	Efficiency <u> </u>	Efficiency <u> </u>
MDA <u>NA</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type: _____	Contamination _____
Building: _____	559
Location: <u>ROOM 129</u>	
Purpose: <u>POST PAINT</u>	
RWP #: <u>05-559-5004</u>	
Date <u>2-1-05</u>	Time <u>1300</u>
RCT ([REDACTED])	
RCT <u>NA</u> / <u>NA</u> / <u>NA</u>	
Print name _____	Signature _____ Emp. # _____

PRN/REN #: N/A

Comments: SURVEY TAKEN AFTER PAINTING 301, 302, 300 & SUPPLY DUCT

SURVEY RESULTS

Contamination Results

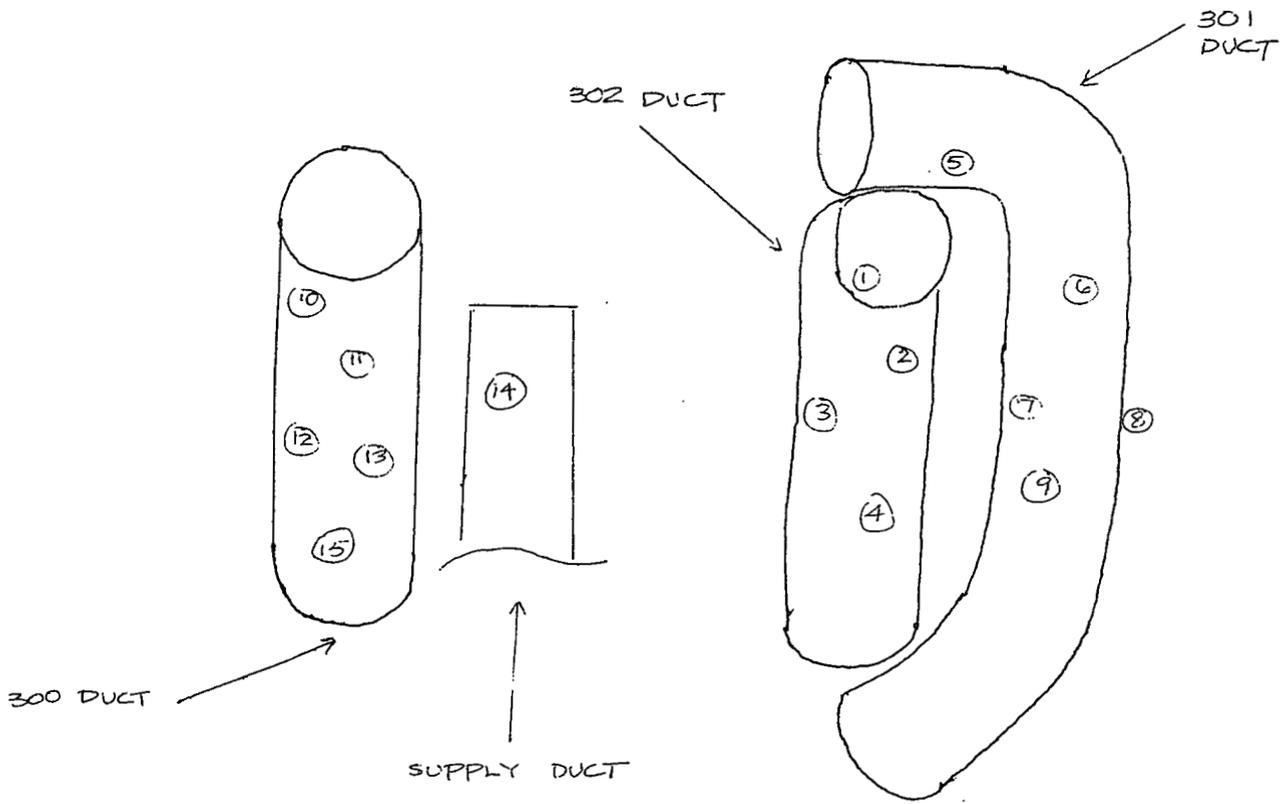
Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	302 DUCT	NA	<20	19	NA	NA	NA
2	↓		<20	20			
3	↓		<20	21			
4	302 DUCT		<20	22			
5	301 DUCT		<20	23			
6	↓		<20	24			
7	↓		<20	25			
8	↓		<20	26			
9	301 DUCT		<20	27			
10	300 DUCT		<20	28			
11	↓		<20	29			
12	↓		<20	30			
13	300 DUCT		<20	31			
14	SUPPLY DUCT		<20	32			
15	300 DUCT		<20	33			
16	NA		<20	34			
17	↓		<20	35			
18	NA	NA	<20	36	NA	NA	NA

Date Reviewed: 2/1/05 RS Supervision [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ATTACHMENT B-3

PDS Radiological Data Summaries and Survey Maps

Survey Area: 4

Survey Unit: 561008

Building: 561

Description: Building 561 Interior (Floor, Walls and Ceiling), except LLW areas

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15
Nbr Random Measurements Performed: 15

Nbr Biased Measurements Required: 0
Nbr Biased Measurements Performed: 0

Nbr QC Required: 2
Nbr QC Performed: 2

Alpha

Maximum: 36.9 dpm/100cm²
Minimum: -6.7 dpm/100cm²
Mean: 9.6 dpm/100cm²
Standard Deviation: 12.0
QC Maximum: 21.2 dpm/100cm²
QC Minimum: 17.9 dpm/100cm²
QC Mean: 19.5 dpm/100cm²
Transuranic DCGL_w: 100.0 dpm/100cm²
Transuranic DCGL_{EMC}: 300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15
Nbr Random Measurements Performed: 15

Nbr Biased Measurements Required: 0
Nbr Biased Measurements Performed: 0

Alpha

Maximum: 5.2 dpm/100cm²
Minimum: -0.9 dpm/100cm²
Mean: 0.4 dpm/100cm²
Standard Deviation: 1.9
Transuranic DCGL_w: 20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 8
Nbr Random Collected: 8

Nbr Biased Required: 0
Nbr Biased Collected: 0

Uranium

Maximum: 1,229 dpm/100cm²
Minimum: 33 dpm/100cm²
Mean: 340 dpm/100cm²
Standard Deviation: 593
Uranium DCGL_w: 5,000 dpm/100cm²
Uranium DCGL_{EMC}: 15,000 dpm/100cm²

Transuranic

Maximum: 31 dpm/100cm²
Minimum: 0 dpm/100cm²
Mean: 8 dpm/100cm²
Standard Deviation: 16
Transuranic DCGL_w: 100 dpm/100cm²
Transuranic DCGL_{EMC}: 300 dpm/100cm²

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: 4

Survey Unit: 561008

Building: 561

Description: Building 561 Interior (Floor, Walls and Ceiling), except LLW areas

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	01/22/05	Electra	255	AP-6	04/05/05	0.170	NA	48.0	NA	S
2	712467	01/22/05	Electra	282	AP-6	04/04/05	0.162	NA	48.0	NA	S
3	700831	01/22/05	Electra	667	DP-6	05/04/05	0.216	NA	48.0	NA	S
4	712193	01/23/05	Electra	1235	DP-6	03/16/05	0.215	NA	48.0	NA	Q/S
5	711447	01/23/05	Electra	675	AP-6	05/03/05	0.187	NA	48.0	NA	S
6	712467	01/23/05	Electra	279	AP-6	04/13/05	0.180	NA	48.0	NA	S
7	700831	01/23/05	Electra	667	DP-6	05/04/05	0.216	NA	48.0	NA	T/S
8	702058	01/23/05	Electra	1235	DP-6	03/16/05	0.215	NA	48.0	NA	S
9	701418	01/23/05	Electra	282	AP-6	04/04/05	0.162	NA	48.0	NA	S
10	700831	01/23/05	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R

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

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Survey Area: 4

Survey Unit: 561008

Building: 561

Description: Building 561 Interior (Floor, Walls and Ceiling), except LLW areas

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561008PRP-N001	10	-0.9	N/A	
561008PRP-N002	10	0.6	N/A	
561008PRP-N003	10	5.2	N/A	
561008PRP-N004	10	-0.9	N/A	
561008PRP-N005	10	-0.9	N/A	
561008PRP-N006	10	0.6	N/A	
561008PRP-N007	10	2.1	N/A	
561008PRP-N008	10	-0.9	N/A	
561008PRP-N009	10	0.6	N/A	
561008PRP-N010	10	-0.9	N/A	
561008PRP-N011	10	-0.9	N/A	
561008PRP-N012	10	3.6	N/A	
561008PRP-N013	10	-0.9	N/A	
561008PRP-N014	10	0.6	N/A	
561008PRP-N015	10	-0.9	N/A	

Comments:

Survey Area: 4

Survey Unit: 561008

Building: 561

Description: Building 561 Interior (Floor, Walls and Ceiling), except LLW areas

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561008PRP-N001	7	-6.7	N/A	
561008PRP-N002	7	15.1	N/A	
561008PRP-N003	7	1.2	N/A	
561008PRP-N004	7	36.9	N/A	
561008PRP-N005	7	7.2	N/A	
561008PRP-N006	7	10.5	N/A	
561008PRP-N007	7	1.2	N/A	
561008QRP-N008	4	17.9	N/A	
561008PRP-N008	7	27.6	N/A	
561008PRP-N009	7	10.5	N/A	
561008PRP-N010	7	9.1	N/A	
561008PRP-N011	7	-2.0	N/A	
561008QRP-N012	4	21.2	N/A	
561008PRP-N012	7	19.7	N/A	
561008PRP-N013	7	9.1	N/A	
561008PRP-N014	7	11.9	N/A	
561008PRP-N015	7	-6.7	N/A	

Comments: Location 4 moved from pit floor to nearby wall because the pit is being managed as LLW.

Survey Area: 4

Survey Unit: 561008

Building: 561

Description: Building 561 Interior (Floor, Walls and Ceiling), except LLW areas

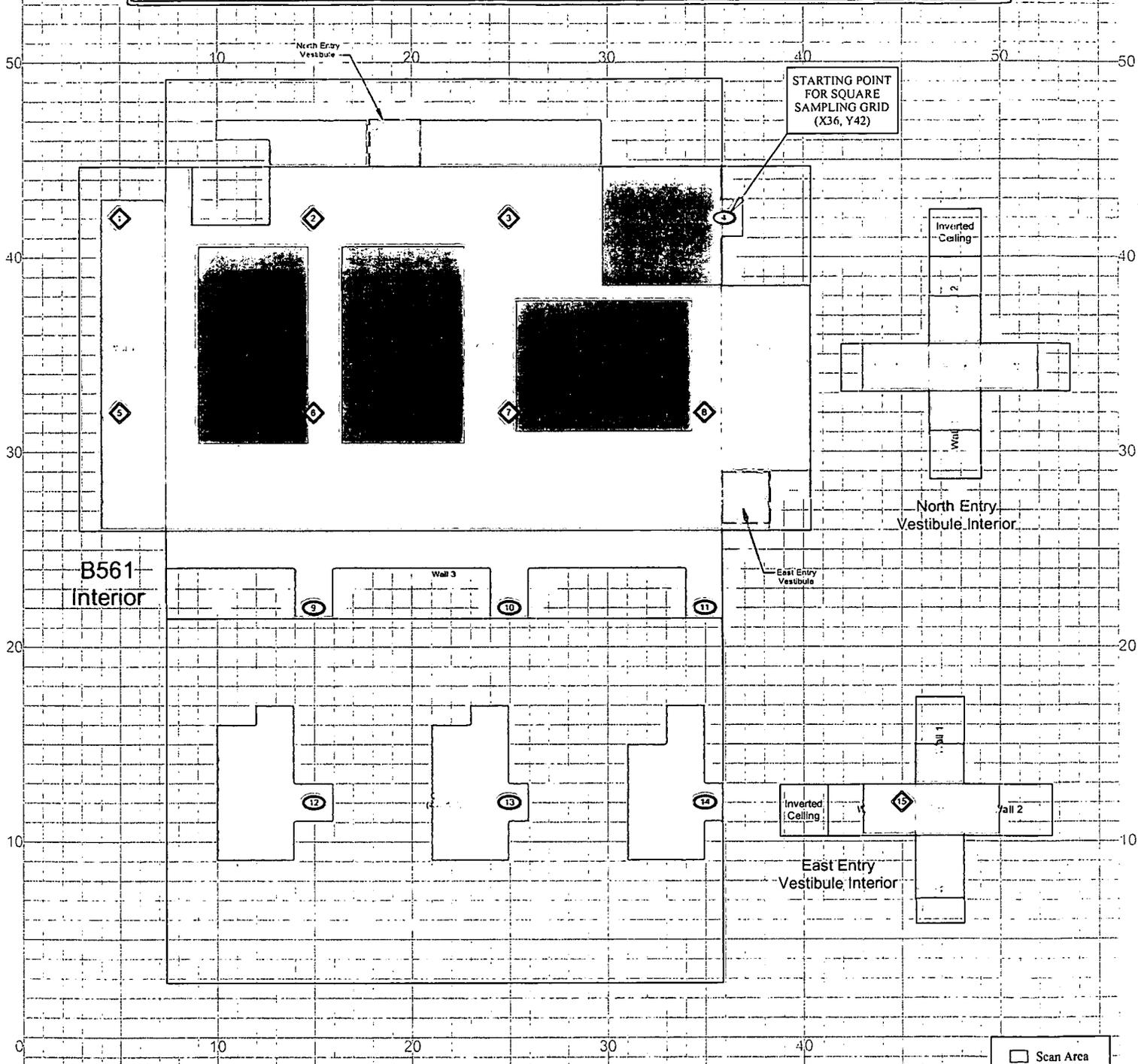
Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in ²)	Sample Nuclide (dpm/100cm ²)	Sample Nuclide MDA (dpm/100cm ²)	Sample Total (dpm/100cm ²)
04S0409-013.001 13 Building 561 Interior locations 1 and 2	U234	40.0000	30.7000	21.10	26.3	1,104	848	Uranium 1,229 Transuranic 0
	U235	3.2600	0.1720			90	5	
	U238	1.2400	0.9740			34	27	
	Pu239/240	0.0000	0.9432			0	26	
	Am241	0.0000	0.1310			0	4	
04S0409-014.001 14 Building 561 Interior locations 3 and 5	U234	0.0000	45.5000	23.90	26.3	0	1,423	Uranium 37 Transuranic 0
	U235	0.1790	0.1180			6	4	
	U238	0.9950	0.9850			31	31	
	Pu239/240	0.0000	1.1088			0	35	
	Am241	0.0000	0.1540			0	5	
04S0409-015.001 15 Building 561 Interior locations 6 and 7	U234	0.0000	48.3000	23.20	26.3	0	1,466	Uranium 60 Transuranic 31
	U235	0.3870	0.1720			12	5	
	U238	1.5800	1.0000			48	30	
	Pu239/240	0.8856	0.8784			27	27	
	Am241	0.1230	0.1220			4	4	
04S0409-016.001 16 Building 561 Interior locations 8 and 15	U234	0.0000	57.9000	18.70	26.3	0	1,417	Uranium 33 Transuranic 0
	U235	0.3790	0.1820			9	5	
	U238	0.9830	1.2600			24	31	
	Pu239/240	0.0000	1.2456			0	31	
	Am241	0.0000	0.1730			0	4	

Comments: 1. Media samples were collected during in-process sampling several months prior to PDS. 2. Media locations 9 through 14 fell on factory original painted surfaces and were therefore not required to be sampled. 3. Media location 4 was collected in the pit which is being managed as LLW, there the results of the sample are not reported. 4. Pre and Post TSA & RSA measurements were not collected during in-process sampling. However, TSA & RSA measurements were collected in the general area of these sample locations during PDS.

PRE-DEMOLITION SURVEY FOR BUILDING 561

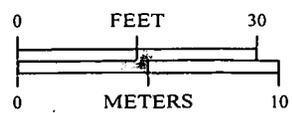
Survey Area: 4 Survey Unit: 561008 Classification: 2
 Building: 561
 Survey Unit Description: B561 Interior Floors, Walls, & Ceilings, Except LLW Areas
 Total Area: 1,607 sq. m. Floor Area: 546 sq. m.
 Grid Spacing for Survey Points: 10m X 10m



SURVEY MAP LEGEND

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

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1-9

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

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

MAP ID: 03-JS1561008_SC Jan. 31, 2005

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 10

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 10

Nbr QC Performed: 2

Alpha

Maximum: 89.2 dpm/100cm²

Minimum: 14.6 dpm/100cm²

Mean: 58.2 dpm/100cm²

Standard Deviation: 21.2

QC Maximum: 55.3 dpm/100cm²

QC Minimum: 49.0 dpm/100cm²

QC Mean: 52.2 dpm/100cm²

Transuranic DCGL_w: 100.0 dpm/100cm²

Transuranic DCGL_{EMC}: 300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 10

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 10

Alpha

Maximum: 3.6 dpm/100cm²

Minimum: -0.9 dpm/100cm²

Mean: 0.4 dpm/100cm²

Standard Deviation: 1.4

Transuranic DCGL_w: 20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

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

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	511390	01/27/05	Electra	3254	DP-6	07/04/05	0.225	NA	48.0	NA	T/S
2	712193	01/27/05	Electra	1271	DP-6	07/25/05	0.203	NA	48.0	NA	T/S
3	712193	01/27/05	Electra	255	AP-6	04/05/05	0.170	NA	48.0	NA	S
4	712193	01/29/05	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
5	712193	01/29/05	Electra	3127	DP-6	02/16/05	0.205	NA	48.0	NA	I/Q/S

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

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561012PRP-N001	4	0.6	N/A	
561012PRP-N002	4	-0.9	N/A	
561012PRP-N003	4	3.6	N/A	
561012PRP-N004	4	-0.9	N/A	
561012PRP-N005	4	-0.9	N/A	
561012PRP-N006	4	-0.9	N/A	
561012PRP-N007	4	0.6	N/A	
561012PRP-N008	4	-0.9	N/A	
561012PRP-N009	4	0.6	N/A	
561012PRP-N010	4	0.6	N/A	
561012PRP-N011	4	2.1	N/A	
561012PRP-N012	4	-0.9	N/A	
561012PRP-N013	4	0.6	N/A	
561012PRP-N014	4	-0.9	N/A	
561012PRP-N015	4	0.6	N/A	

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561012PBP-N016	4	0.6	N/A	
561012PBP-N017	4	2.1	N/A	
561012PBP-N018	4	-0.9	N/A	
561012PBP-N019	4	3.6	N/A	
561012PBP-N020	4	2.1	N/A	
561012PBP-N021	4	-0.9	N/A	
561012PBP-N022	4	-0.9	N/A	
561012PBP-N023	4	0.6	N/A	
561012PBP-N024	4	0.6	N/A	
561012PBP-N025	4	-0.9	N/A	

Comments:

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561012PRP-N001	2	66.5	N/A	
561012PRP-N002	2	89.1	N/A	
561012PRP-N003	2	53.2	N/A	
561012PRP-N004	1	28.6	N/A	
561012PRP-N005	1	80.6	N/A	
561012PRP-N006	2	51.7	N/A	
561012PRP-N007	1	58.4	N/A	
561012PRP-N008	1	45.1	N/A	
561012PRP-N009	2	67.9	N/A	
561012QRP-N009	5	49.0	N/A	
561012PRP-N010	1	82.0	N/A	
561012PRP-N011	2	67.9	N/A	
561012QRP-N011	5	55.3	N/A	
561012PRP-N012	1	58.4	N/A	
561012PRP-N013	2	54.6	N/A	
561012PRP-N014	2	61.5	N/A	
561012PRP-N015	2	58.1	N/A	

Survey Area: 4

Survey Unit: 561012

Building: 561

Description: Building 561 Exterior (Walls and Roof)

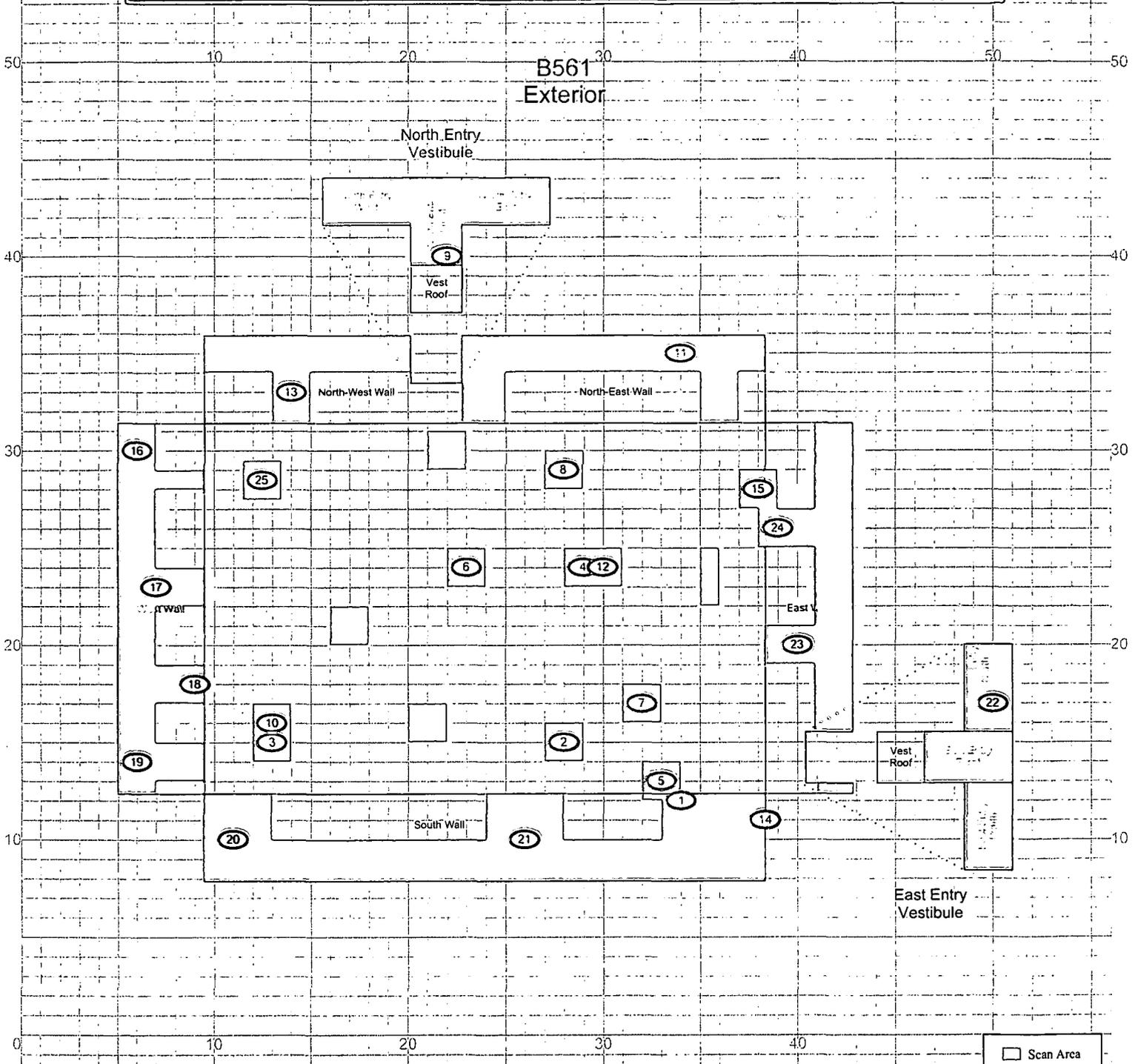
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
561012IBP-N016	5	18.0	N/A	
561012IBP-N017	5	14.6	N/A	
561012PBP-N018	2	84.5	N/A	
561012PBP-N019	1	71.4	N/A	
561012PBP-N020	1	44.7	N/A	
561012PBP-N021	2	48.0	N/A	
561012PBP-N022	1	23.8	N/A	
561012PBP-N023	1	89.2	N/A	
561012PBP-N024	2	81.0	N/A	
561012PBP-N025	1	56.7	N/A	

Comments: The initial Sample Net activity for locations 16 and 17 was 118.9 dpm/100cm² each. These locations were sealed, allowed to decay and re-surveyed. Re-survey results are reported.

PRE-DEMOLITION SURVEY FOR BUILDING 561

Survey Area: 4 Survey Unit: 561012 Classification: 3
 Building: 561
 Survey Unit Description: Building 561 Exterior (Walls & Roof)
 Total Area: 1,037 sq. m. "Floor" (Roof) Area: 550 sq. m.

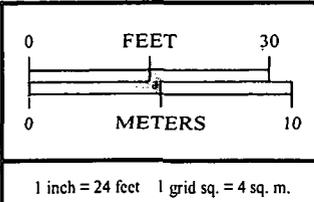


SURVEY MAP LEGEND

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

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1, 2, 3, 5



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-JSIA45591561012_SC Feb. 1, 2005

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	eberline	Mfg.	eberline	Mfg.	eberline
Model	SAC4	Model	SAC4	Model	SAC4
Serial#	1044	Serial#	1274	Serial#	1073
Cal Due	5/17/05	Cal Due	6/7/05	Cal Due	4/1/05
Bkg.	0.4	Bkg.	0.3	Bkg.	0.6 cpm
Efficiency	33%	Efficiency	33%	Efficiency	33%
MDA	10 dpm	MDA	10 dpm	MDA	10 dpm
Mfg.	NA	Mfg.	NA	Mfg.	NA
Model		Model		Model	
Serial#		Serial#		Serial#	
Cal Due		Cal Due		Cal Due	
Bkg.		Bkg.		Bkg.	
Efficiency	∇	Efficiency	∇	Efficiency	∇
MDA	NA	MDA	NA	MDA	NA

Survey Type: Contamination

Building: 561

Location: 561 PLENUM 301, 302, 300

Purpose: Contamination

RWP #: 05-559-5004

Date 2-9-05 Time 1300

RC [REDACTED]

RCT N/A /

Print name _____ Signature _____ Emp. # _____

PRN/REN #: NA

Comments: _____

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		DIRECT	REMOVABLE			DIRECT	REMOVABLE
1	Exterior wall	N/A	<10	19	Exterior wall	N/A	<10
2	Exterior wall		<10	20	Exterior wall		<10
3	Exterior wall		<10	21	Under Plenum Drains		<10
4	Exterior wall		<10	22	Under Plenum Drains		<10
5	Exterior wall		<10	23	Under Plenum Drains		<10
6	Exterior wall		<10	24	Under Plenum Drains		<10
7	Exterior wall		<10	25	Under Plenum Drains		<10
8	Exterior wall		<10	26	Airlock Floor		<10
9	Exterior wall		<10	27	Airlock Floor		<10
10	Exterior wall		<10	28	Airlock Floor		<10
11	Exterior wall		<10	29	Airlock Floor		<10
12	Exterior wall		<10	30	Airlock Wall		<10
13	Exterior wall		<10	31	Airlock Wall		<10
14	Exterior wall		<10	32	Airlock Wall		<10
15	Exterior wall		<10	33	Airlock Wall		<10
16	Exterior wall		<10	34	Airlock Wall		<10
17	Exterior wall	∇	<10	35	Airlock Wall	∇	<10
18	Exterior wall	N/A	<10	36	Floor	N/A	<10

Date Reviewed: 2/10/05 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Contamination Results

Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha		Swipe #	Location/Description (Results in dpm/100cm ²)	Alpha	
		DIRECT	REMOVABLE			DIRECT	REMOVABLE
37	Floor	N/A	<10	67	Ceiling	N/A	<10
38	Floor		<10	68	Ceiling		<10
39	Floor		<10	69	Ceiling		<10
40	Floor		<10	70	Ceiling		<10
41	Filter Racks		<10	71	Walls		<10
42	Filter Racks		<10	72	Walls		<10
43	Filter Racks		<10	73	Walls		<10
44	Filter Racks		<10	74	Walls		<10
45	Filter Racks		<10	75	Walls		<10
46	Filter Racks		<10	76	Airlock Wall		<10
47	Filter Racks		<10	77	Airlock Wall		<10
48	Filter Racks		<10	78	Airlock Floor		<10
49	Filter Racks		<10	79	Airlock Floor		<10
50	Filter Racks		<10	80	Exterior Surface		<10
51	Filter Racks		<10	81	Exterior Surface		<10
52	Filter Racks		<10	82	Exterior Surface		<10
53	Filter Racks		<10	83	Floor		<10
54	Filter Racks		<10	84	Floor		<10
55	Filter Racks		<10	85	Floor		<10
56	Filter Racks		<10	86	Ceiling		<10
57	Filter Racks		<10	87	Ceiling		<10
58	Filter Racks		<10	88	Ceiling		<10
59	Filter Racks		<10	89	Filter Racks		<10
60	Filter Racks		<10	90	Filter Racks		<10
61	Filter Racks		<10	91	Filter Racks		<10
62	Exterior Surface		<10	92	Filter Racks		<10
63	Exterior Surface		<10	93	Filter Racks		<10
64	Exterior Surface		<10	94	Walls		<10
65	Exterior Surface	▽	<10	95	Walls	▽	<10
66	Exterior Surface	N/A	<10	96	Walls	N/A	<10

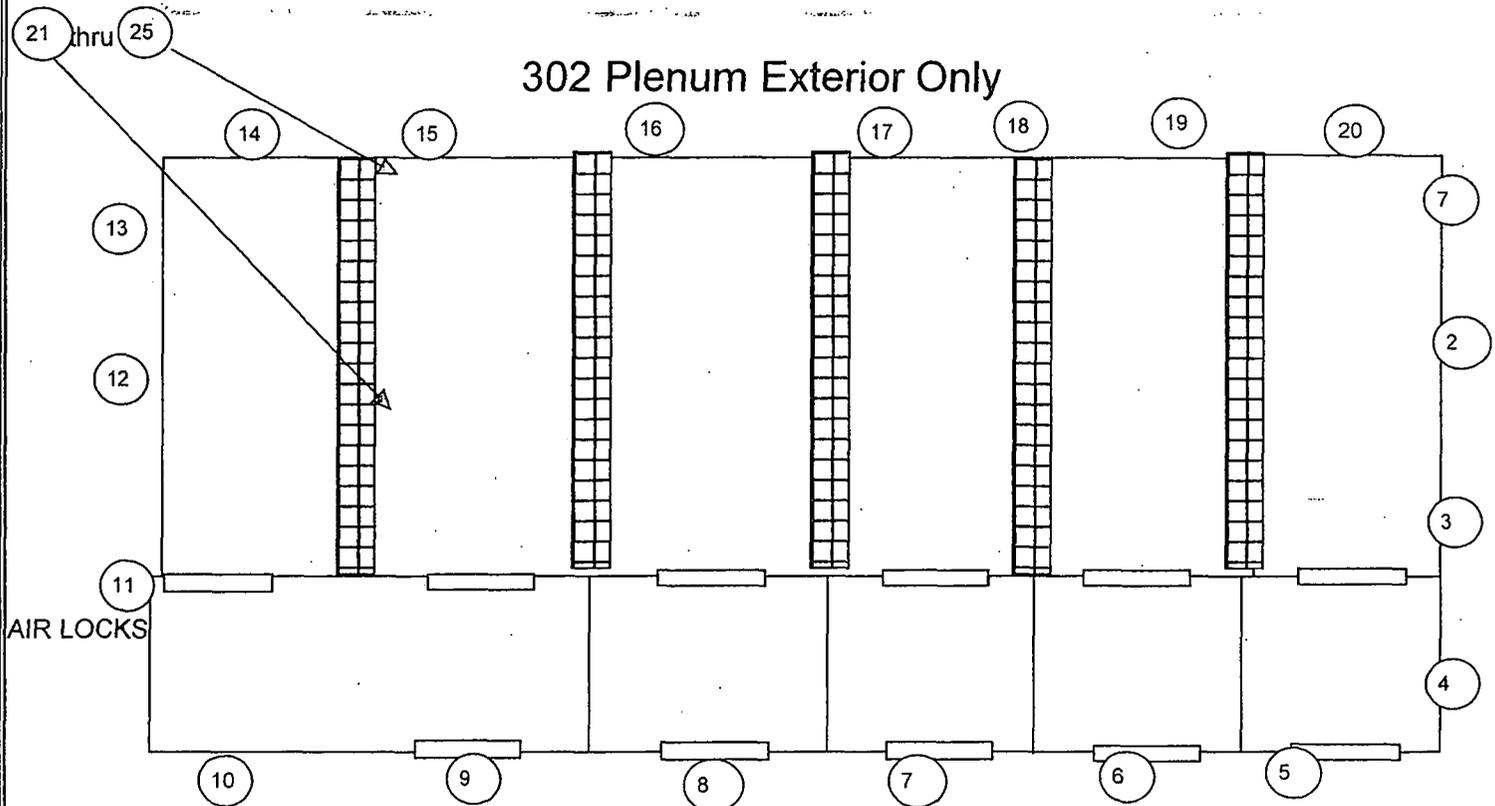
3-PRO-164-RSP-07.01 (effective 7/12/01)

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

302 Plenum Exterior Only

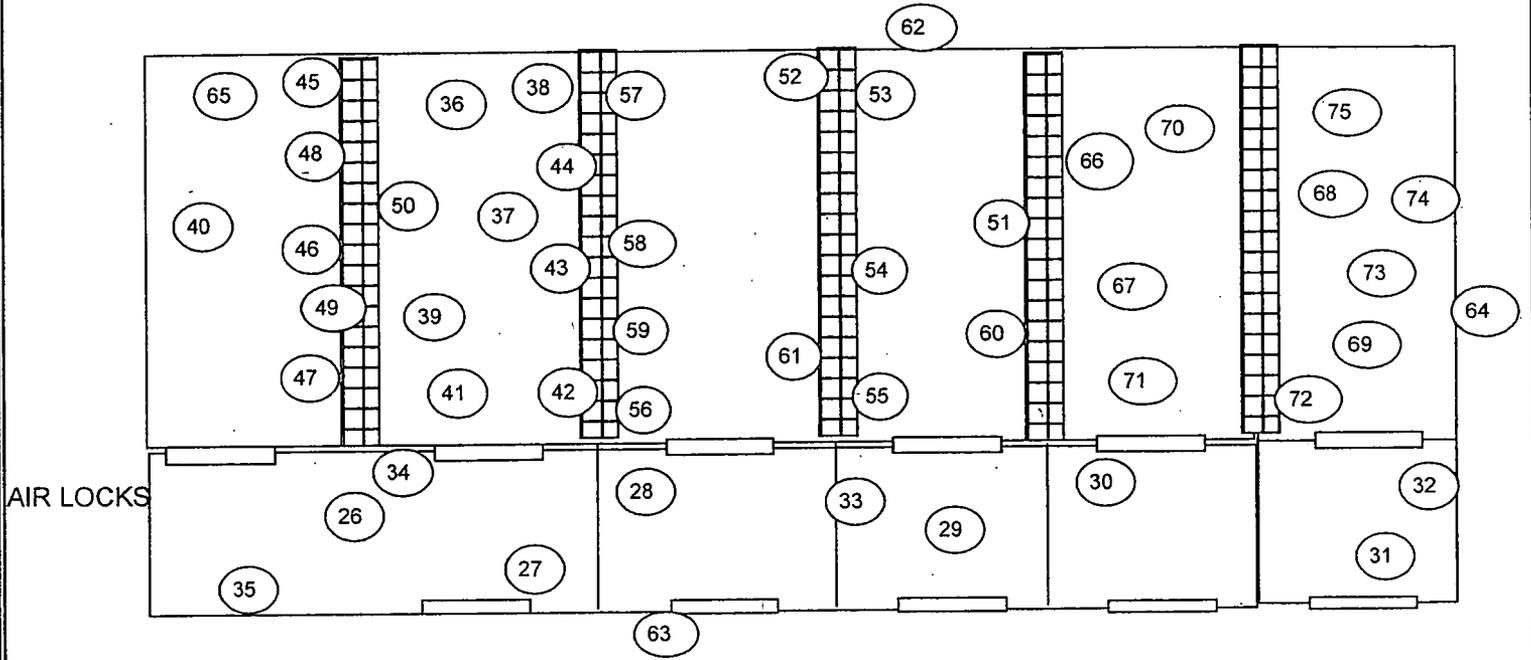


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

301 Plenum



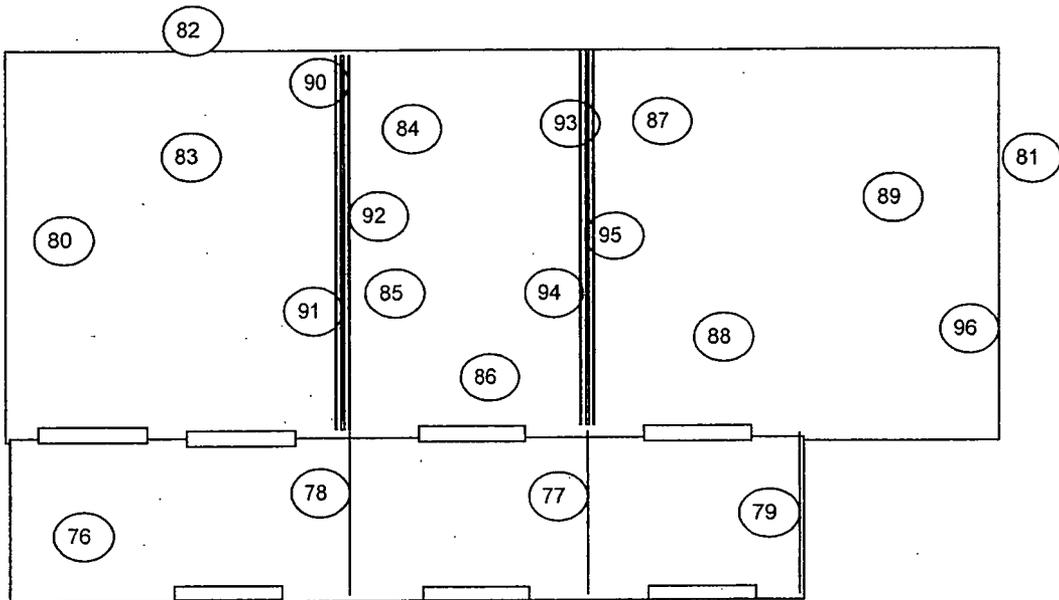
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

300 Plenum

AIR LOCKS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Ludlum	Mfg.	Ludlum	Mfg.	N/A
Model	SAC-4	Model	SAC-4	Model	N/A
Serial#	1044	Serial#	1274	Serial#	N/A
Cal Due	5/19/05	Cal Due	6/7/05	Cal Due	N/A
Bkg.	0.4	Bkg.	0.3	Bkg.	N/A
Efficiency	33%	Efficiency	33%	Efficiency	N/A
MDA	10 dpm	MDA	10 dpm	MDA	N/A
Mfg.	Ludlum	Mfg.	N/A	Mfg.	N/A
Model	SAC-4	Model	N/A	Model	N/A
Serial#	1073	Serial#	N/A	Serial#	N/A
Cal Due	4/1/05	Cal Due	N/A	Cal Due	N/A
Bkg.	0.6	Bkg.	N/A	Bkg.	N/A
Efficiency	33%	Efficiency	N/A	Efficiency	N/A
MDA	10 dpm	MDA	N/A	MDA	N/A

Survey Type: Contamination
 Building: 561
 Location: 561 Tunnel
 Purpose: Contamination Survey
 RWP #: 05/559/5004
 Date: ~~1/26/05~~ ^{2/9/05} Time: 8:10
 RCT: N/A / N/A / N/A
 Print name: _____ Signature: _____ Emp. #: _____

PRN/REN #: N/A
 Comments: Post paint contamination survey of 561 tunnel and 301 tank area

SURVEY RESULTS

Contamination Results

Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
1	North Wall	N/A	<10	19	East Wall	N/A	<10
2	North Wall		<10	20	East Wall		<10
3	North Wall		<10	21	East Wall Tunnel		<10
4	North Wall		<10	22	East Wall Tunnel		<10
5	North Wall		<10	23	East Wall Tunnel		<10
6	West Tunnel Wall		<10	24	East Wall Tunnel		<10
7	West Tunnel Wall		<10	25	Floor		<10
8	West Tunnel Wall		<10	26	Floor		<10
9	West Tunnel Wall		<10	27	Floor		<10
10	West Wall		<10	28	Floor		<10
11	West Wall		<10	29	Floor		<10
12	West Wall		<10	30	Floor		<10
13	West Wall		<10	31	Floor		<10
14	South Wall		<10	32	Floor		<10
15	South Wall		<10	33	Floor		<10
16	South Wall		<10	34	Floor		<10
17	East Wall	∇	<10	35	Floor	∇	<10
18	East Wall	N/A	<10	36	Floor	N/A	<10

Date Reviewed: 2/10/05 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Contamination Results

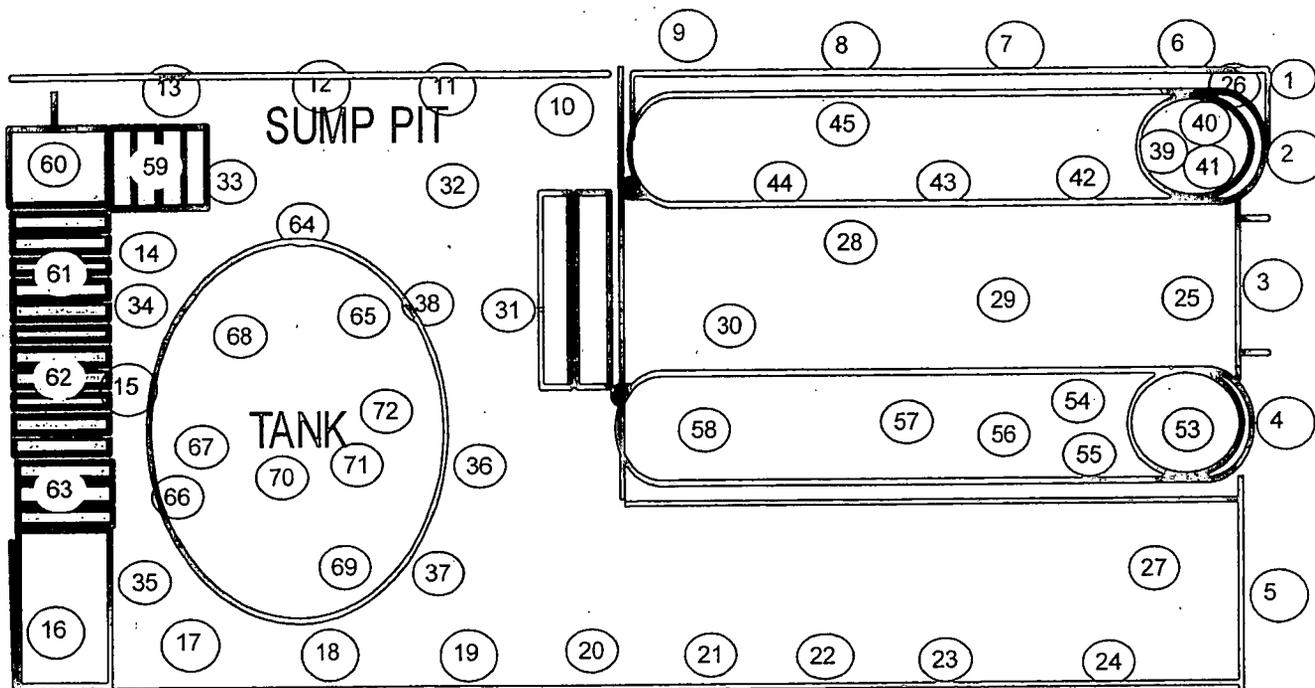
Swipe #	Location/Description (Results in dpm)	Alpha		Swipe #	Location/Description (Results in dpm)	Alpha	
		Direct	Removable			Direct	Removable
37	Floor	N/A	<10	67	Side of 301 Tank	N/A	<10
38	Floor		<10	68	Side of 301 Tank		<10
39	Vertical 302 Duct		<10	69	Side of 301 Tank		<10
40	Vertical 302 Duct		<10	70	Top of 301 Tank		<10
41	Vertical 302 Duct		<10	71	Top of 301 Tank		<10
42	302 Horizontal Duct		<10	72	Top of 301 Tank		<10
43	302 Horizontal Duct		<10	73	Inside of Culvert 561/528		<10
44	302 Horizontal Duct		<10	74	Inside of Culvert 561/528		<10
45	302 Horizontal Duct		<10	75	Inside of Culvert 561/528		<10
46	301 Vertical Duct		<10	76	Inside of Culvert 561/528		<10
47	301 Vertical Duct		<10	77	N/A		N/A
48	301 Vertical Duct		<10	78			
49	301 Horizontal Duct		<10	79			
50	301 Horizontal Duct		<10	80			
51	301 Horizontal Duct		<10	81			
52	301 Horizontal Duct		<10	82			
53	300 Vertical Duct		<10	83			
54	300 Vertical Duct		<10	84			
55	300 Vertical Duct		<10	85			
56	300 Horizontal Duct		<10	86			
57	300 Horizontal Duct		<10	87			
58	300 Horizontal Duct		<10	88			
59	Stairs		<10	89			
60	Stairs		<10	90			
61	Stairs		<10	91			
62	Stairs		<10	92			
63	Stairs		<10	93			
64	Bottom 301 Tank		<10	94			
65	Bottom 301 Tank	▽	<10	95	▽	▽	▽
66	Side of 301 Tank	N/A	<10	96	N/A	N/A	N/A

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



301 Vertical Pipe

561 Culvert to 528

301 Horizontal Pipe

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ATTACHMENT C

Beryllium Data Summaries and Sample Maps

**Building 561 (including Tunnel and Culvert)
Beryllium Sample Results Table**

Sample Map Location #	Floor	Room	RIN	Sample Number	Sample Location	Result (ug/100 cm2)
1	1st	561	05Z0854	561-01192005-214-001	Pre-Fixative, South Ceiling, Random	<0.1
2	1st	561	05Z0854	561-01192005-214-002	Pre-Fixative, East Wall, Random	<0.1
3	1st	561	05Z0854	561-01192005-214-003	Pre-Fixative, North Wall, Random	<0.1
4	1st	561	05Z0854	561-01192005-214-004	Pre-Fixative, West Floor, Random	<0.1
5	1st	561	05Z0854	561-01192005-214-005	Pre-Fixative, East Wall, Random	<0.1
6	1st	561	05Z0854	561-01192005-214-006	Pre-Fixative, North Wall, Random	<0.1
7	1st	561	05Z0854	561-01192005-214-007	Pre-Fixative, Top of 305 Plenum, North, Random	<0.1
8	1st	561	05Z0854	561-01192005-214-008	Pre-Fixative, South West Wall, Random	<0.1
9	1st	561	05Z0854	561-01192005-214-009	Pre-Fixative, North Floor, Random	<0.1
10	1st	561	05Z0854	561-01192005-214-010	Pre-Fixative, North Floor, Random	<0.1
11	1st	561	05Z0854	561-01192005-214-011	Pre-Fixative, West Ceiling, Random	<0.1
12	1st	561	05Z0854	561-01192005-214-012	Pre-Fixative, East Ceiling, Random	<0.1
13	1st	561	05Z0854	561-01192005-214-013	Pre-Fixative, East Wall, Random	<0.1
14	1st	561	05Z0854	561-01192005-214-014	Pre-Fixative, North Wall, Random	<0.1
15	1st	561	05Z0854	561-01192005-214-015	Pre-Fixative, West Ceiling, Random	<0.1
16	1st	561	05Z0854	561-01192005-214-016	Pre-Fixative, West Floor, Random	<0.1
17	1st	561	05Z0854	561-01192005-214-017	Pre-Fixative, North Floor, Random	<0.1
18	1st	561	05Z0854	561-01192005-214-018	Pre-Fixative, South Wall, Random	<0.1
19	1st	561	05Z0854	561-01192005-214-019	Pre-Fixative, Southeast Floor, Random	<0.1
20	1st	561	05Z0854	561-01192005-214-020	Pre-Fixative, West Ceiling, Random	<0.1
21	1st	561	05Z0854	561-01192005-214-021	Pre-Fixative, South Wall, Random	<0.1
22	1st	561	05Z0854	561-01192005-214-022	Pre-Fixative, 300 Plenum South Floor, Random	<0.1
23	1st	561	05Z0854	561-01192005-214-023	Pre-Fixative, Top of East Air Intake, Random	<0.1
24	1st	561	05Z0854	561-01192005-214-024	Pre-Fixative, South Ceiling, Random	<0.1
25	1st	561	05Z0854	561-01192005-214-025	Pre-Fixative, South Wall, Random	<0.1
26	1st	561	05Z0854	561-01192005-214-026	Pre-Fixative, South Ceiling, Random	<0.1
27	1st	561	05Z0854	561-01192005-214-027	Pre-Fixative, Top of 305 Plenum, Random	<0.1
28	1st	561	05Z0854	561-01192005-214-028	Pre-Fixative, Ceiling, Random	<0.1
29	1st	561	05Z0854	561-01192005-214-029	Pre-Fixative, South Wall, Random	<0.1
30	1st	561	05Z0854	561-01192005-214-030	Pre-Fixative, East Wall, Random	<0.1
31	1st	561	05Z0854	561-01192005-214-031	Pre-Fixative, South Wall East Entry Vestibule, Random	<0.1
32	1st	561	05Z0854	561-01192005-214-032	Pre-Fixative, East Wall, Random	<0.1
38	1st	561	05Z0854	561-01192005-214-038	Pre-Fixative, 300 Filter Plenum, Second Stage, South, Biased	<0.1
39	1st	561	05Z0854	561-01192005-214-039	Pre-Fixative, 300 Filter Plenum, 1st Stage, West, Biased	<0.1
40	1st	561	05Z0854	561-01192005-214-040	Pre-Fixative, 300 Filter Plenum, 1st Stage, North, Biased	<0.1
41	1st	561	05Z0854	561-01192005-214-041	Pre-Fixative, 301 Plenum, 1st Stage, North, Biased	<0.1
42	1st	561	05Z0854	561-01192005-214-042	Pre-Fixative, 301 Plenum, 2nd Stage, Central, Biased	<0.1
43	1st	561	05Z0854	561-01192005-214-043	Pre-Fixative, 301 Plenum, 3rd Stage, Central, Biased	<0.1
44	1st	561	05Z0854	561-01192005-214-044	Pre-Fixative, 301 Plenum, 4th Stage, South, Biased	<0.1
45	1st	561	05Z0854	561-01192005-214-045	Pre-Fixative, Pre-Fixative, Top of 302 Plenum, East, Biased	<0.1
46	1st	561	05Z0854	561-01192005-214-046	Pre-Fixative, Inside 305 Plenum, South, Biased	<0.1
56	1st	561	05Z0854	561-01192005-214-056	Pre-Fixative, Top of 300 Duct, Biased	<0.1

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**Building 561 (including Tunnel and Culvert)
Beryllium Sample Results Table**

57	1st	561	05Z0854	561-01192005-214-057	Pre-Fixative, Top of 300 Plenum, West, Biased	<0.1
1	Culvert	561	05Z0854	561-01192005-214-053	Pre-Fixative, 528 Culvert Floor, West, Random	<0.1
2	Culvert	561	05Z0854	561-01192005-214-054	Pre-Fixative, 528 Culvert Floor, East, Random	<0.1
35	Pit	561	05Z0854	561-01192005-214-035	Pre-Fixative, Inside 300 Duct, 528 Leg, 561 Pit, East, Biased	<0.1
55	Pit	561	05Z0854	561-01192005-214-055	Pre-Fixative, 561 Pit, Floor, West, Random	<0.1
1	Tunnel	561	05Z0854	561-01192005-214-047	Pre-Fixative, South West Floor, 561 Tunnel, Random	<0.1
2	Tunnel	561	05Z0854	561-01192005-214-049	Pre-Fixative, Center Ceiling, 561 Tunnel, Random	<0.1
3	Tunnel	561	05Z0854	561-01192005-214-051	Pre-Fixative, South Wall, 561 Tunnel, Random	<0.1
4	Tunnel	561	05Z0854	561-01192005-214-048	Pre-Fixative, East Ceiling, 561 Tunnel, Random	<0.1
5	Tunnel	561	05Z0854	561-01192005-214-050	Pre-Fixative, South Wall, 561 Tunnel, Random	<0.1
33	Tunnel	561	05Z0854	561-01192005-214-033	Pre-Fixative, Inside 300 Duct, Pit South End, 559/561 Tunnel Entrance, Biased	<0.1
34	Tunnel	561	05Z0854	561-01192005-214-034	Pre-Fixative, Inside 300 Duct, Pit North End, 559/561 Tunnel Entrance, Biased	<0.1
52	Tunnel	561	05Z0854	561-01192005-214-052	Pre-Fixative, Sump, 561 Tunnel, Center, Biased	<0.1

Footnotes:

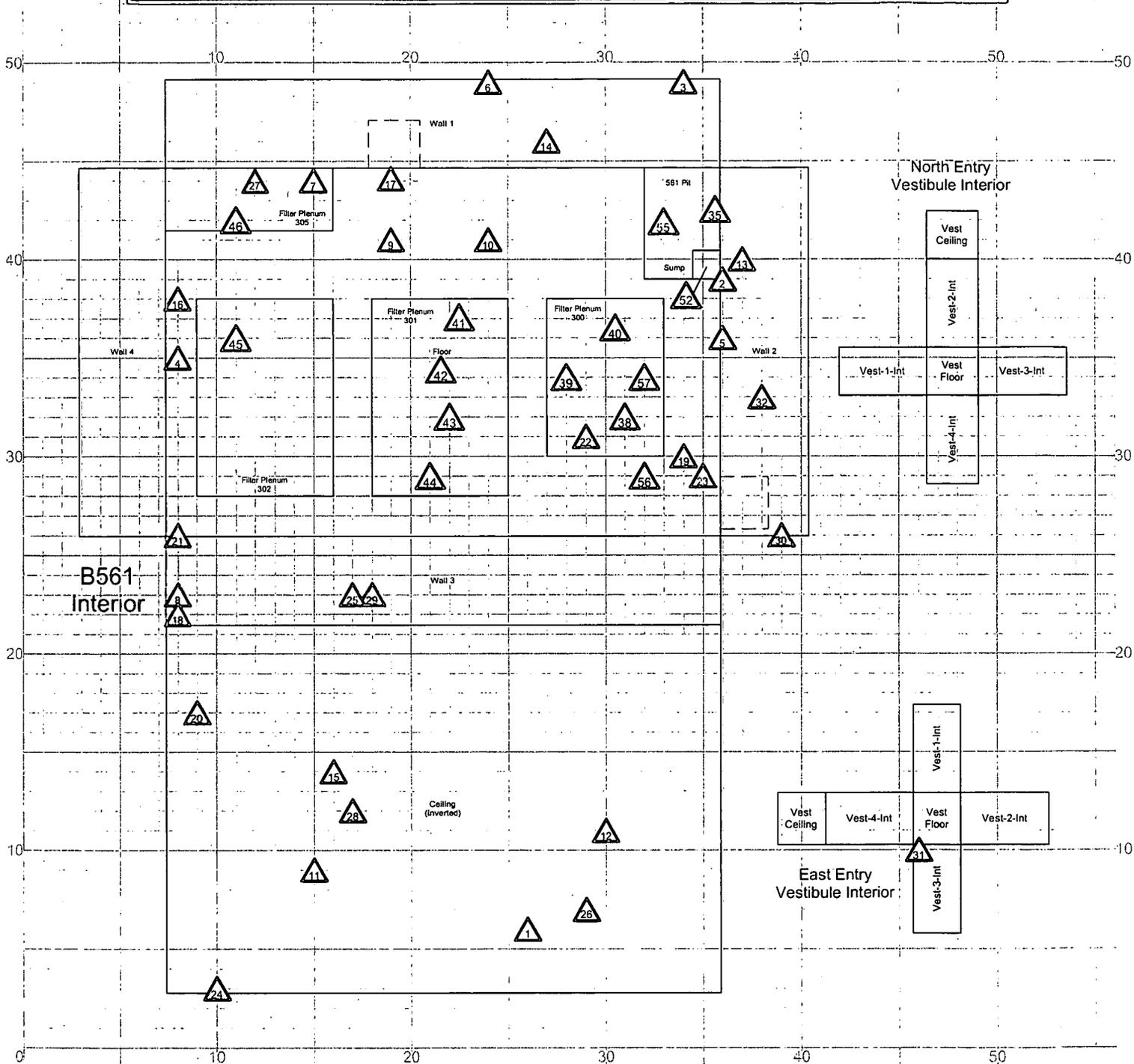
- (1) Samples from the 528 Culvert and 561 Tunnel are included on this page of the PDS Report .
- (2) Gaps in the sample numbering sequence are acceptable.
- (3) Sample numbers 561-01192005-214-036 and 561-01192005-214-037 (sample locations 76 and 77 respectively) are located on the 559 beryllium map.

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CHEMICAL SAMPLE MAP

Building 561
Beryllium

PAGE 1 OF 3



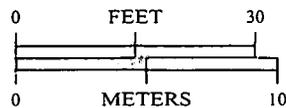
SURVEY MAP LEGEND

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

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- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 24 feet 1 grid sq. = 4 sq. m.

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

Prepared by: GIS Dept. 303-966-7707

Prepared for:



CH2MHILL
Communications Group



MAP ID: 03-JS/561_BE

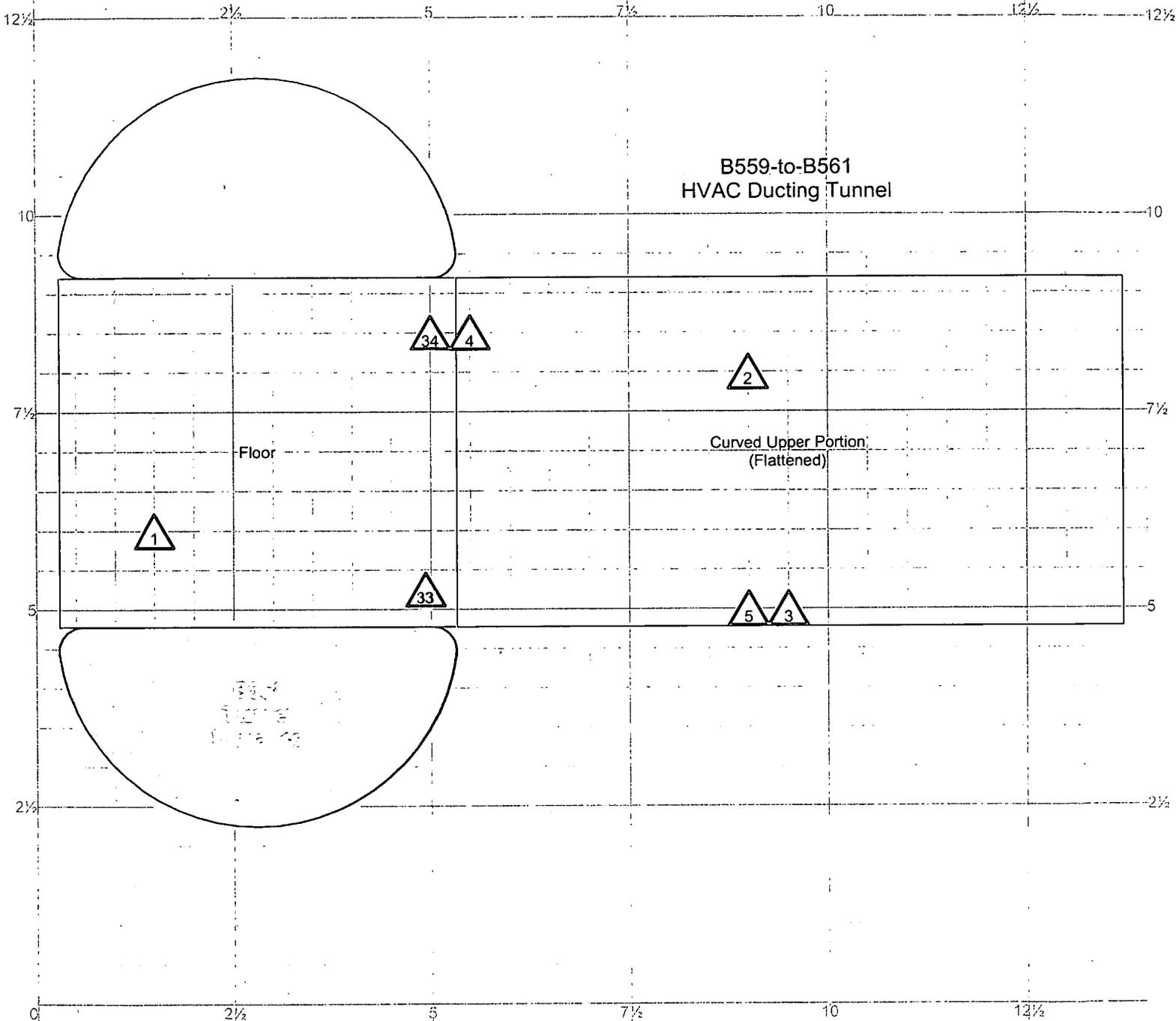
August 20, 2003

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CHEMICAL SAMPLE MAP

**HVAC Tunnel Between B559 and B561
Beryllium**

PAGE 2 OF 3



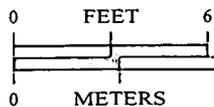
SURVEY MAP LEGEND

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

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Open/Inaccessible Area



1 inch = 6 feet 1 grid sq. = .25 sq. m.

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Prepared for:



MAP ID: 03-JS\559Tun_BE

Jan. 25, 2005

U.S. Department of Energy
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 Prepared for: CH2M HILL
 Communications Group
 Jan. 25, 2005

MAP ID: 03-JS1528CUL_BE

1 inch = 6 feet 1 gnd sq. = .25 sq. m.

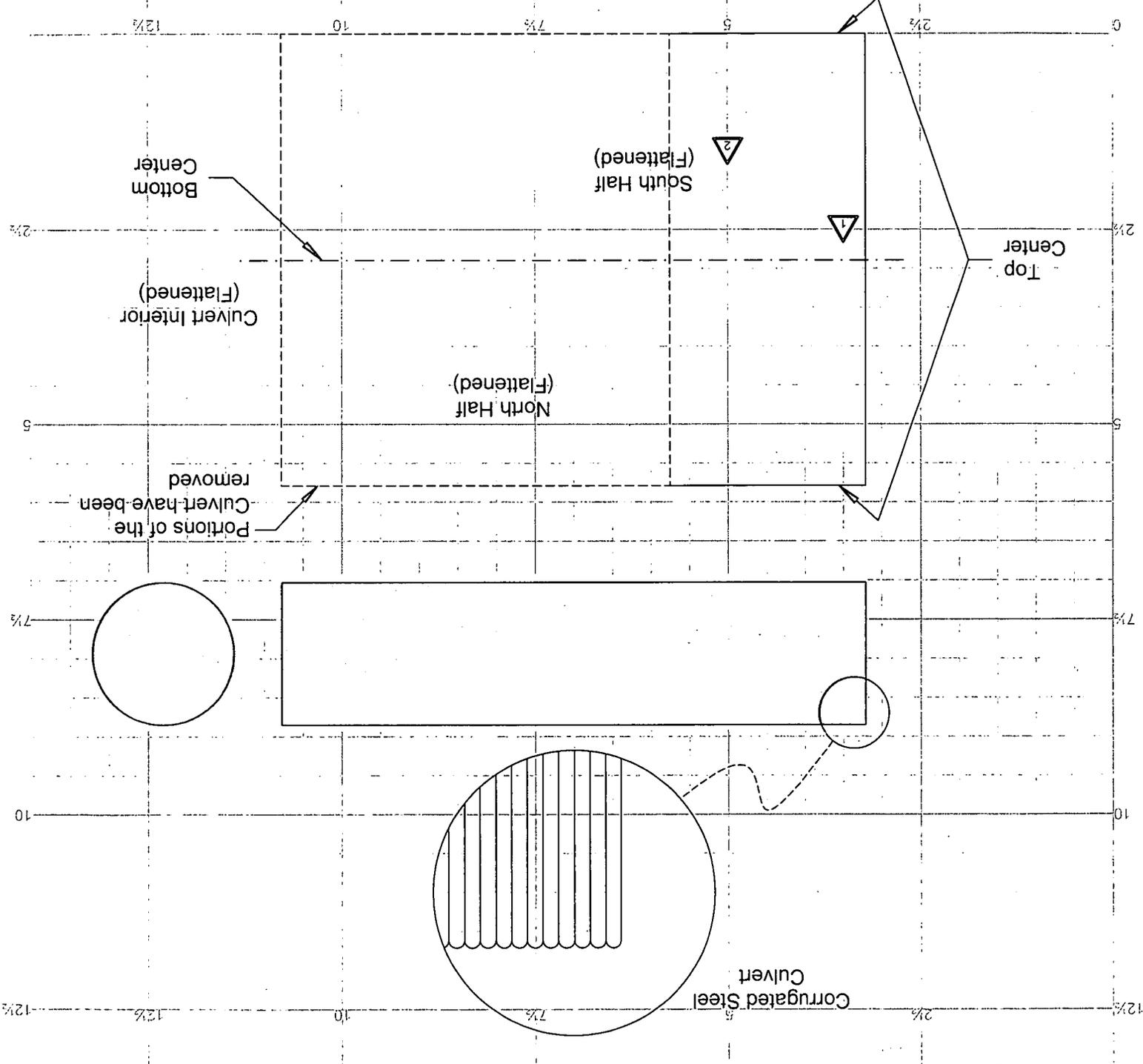
SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCA/ERCLA Sample Location
- PB Sample Location
- Area in Another Survey Unit
- Open/Inaccessible Area

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0 6 FEET
 0 2 METERS

N ↓



CHEMICAL SAMPLE MAP
 Culvert Between B528 and B561
 Beryllium

PAGE 3 OF 3

ATTACHMENT D

Data Quality Assurance 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. The clean area radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. LLW area radiological data is organized by pre and post fixative attachments. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Beta/gamma survey designs were not implemented for Building 561 based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Survey results for the Building 561 interior were evaluated against, and were less than the transuranic DCGLs (i.e., $< 20 \text{ dpm}/100\text{cm}^2$ removable surface activity, $< 100 \text{ dpm}/100\text{cm}^2$ average total surface activity, and no hot spots within 1 m^2 over $300 \text{ dpm}/100\text{cm}^2$). Survey results for the Building 561 exterior were also evaluated against, and were less than the transuranic DCGLs.

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 ($100 \text{ dpm}/100\text{cm}^2$) and the Uranium DCGL_w ($5,000 \text{ dpm}/100\text{cm}^2$) unrestricted release limits. Media results were converted to $\text{dpm}/100\text{cm}^2$ using the Media Conversion Table, evaluated against the transuranic and uranium DCGL limits, and are the values reported in the Radiological TSA Data Summary in support of the unrestricted release decision process. On this basis, all radiological results were less than the unrestricted release limits, except the slab under Filter Plenums FP-300, FP-301, FP-302, the Filter Plenums themselves, the Plenum Deluge Pit and Tank, the 559-561 Ventilation Tunnel, and the remaining horizontal and vertical ventilation ducting in the 559-561 Ventilation Tunnel and 561 Deluge Pit. These areas will be managed and disposed of as LLW-PCB Bulk Product Waste. Refer to Section 3 and Attachment D for further discussion.

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, except for the following anomalous condition:

- * Initial net activity at locations 16 and 17 ($118.9 \text{ dpm}/100 \text{ cm}^2$) in survey unit 561012 was identified that was greater than the transuranic DCGL ($100 \text{ dpm}/100\text{cm}^2$). The areas were sealed, allowed to decay, and resurveyed. All re-survey results were less than the transuranic DCGL and are the values reported in the TSA Data Summary. No further investigation is required.
- * A comprehensive PDS removable survey was performed after fixative was applied in the LLW areas of the facility as a part of Revision 1 of this PDSR. The instruments used for smear analysis had an MDA of $10 \text{ dpm}/100\text{cm}^2$ (50% of the PDSP unrestricted release criteria). Refer to Attachment B-3 for results of this survey. All results showed contamination levels $<20 \text{ dpm}/100\text{cm}^2$.

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM and RSP guidance. 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 Building 561 demolition debris will be managed as LLW-PCB Bulk Product waste.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of further contamination into Building 561. On this basis, Building 561 is ready for demolition.

Table D-1 V&V of Radiological Results - Buildings 561

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 561008 (interior) and 561012 (exterior)	Statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	Qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	Units of measure	dpm/100cm ²	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys Usable results vs. unusable	>95% >95%	NA	See Table D-3 for details.
SENSITIVITY	Detection limits	(Transuranic) TSA: ≤50 dpm/100cm ² RSA: ≤10 dpm/100cm ²	all PDS measures	PDS MDAs ≤ 50% DCGL _w

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Table D-2 V&V of Beryllium Results - Building 561

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		COMMENTS
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB --->	Johns Manville Littleton, Colorado	
		RIN ---->	RIN05Z0854	
QUALITY REQUIREMENTS		Measure	Frequency	All final beryllium PDS results were below unrestricted release levels.
ACCURACY	Calibrations		≥1	
	Initial	Linear calibration	≥1	
	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	>95%	NA	
	Usable results vs. unusable	>95%		
SENSITIVITY	Detection limits	MDL of 0.00084 ug/swipe	all measures	

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Table D-3 Data Completeness Summary – Building 561

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 561, including Building 559 to Building 561 HVAC Tunnel, and Building 528 to Building 561 Culvert (interior)	50 samples (39 random/11 biased)	54 samples (40 random/14 biased)	No Beryllium contamination found at any location, all results below associated action levels	10CFR850; OSHA ID-125G RIN05Z0854 No results above the action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²).
Radiological	Survey Area 4 Survey Unit: 561008 Building 561 – Floors, Walls and Ceiling, except LLW areas (Interior)	15 α TSA (15 systematic) 15 α RSA (15 systematic) 8 media samples 2 QC TSA 25% floor scan, 10% scan of remaining surfaces	15 α TSA (15 systematic) 15 α RSA (15 systematic) 8 media samples 2 QC TSA 25% floor scan, 10% scan of remaining surfaces	No contamination at any location; all values below unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 4 Survey Unit: 561012 Building 561 – Walls and Roof (Exterior)	25 α TSA (15 random/10 biased) 25 α RSA (15 random/10 biased) 2 QC TSA 25% scan	25 α TSA (15 random/10 biased) 25 α RSA (15 random/10 biased) 2 QC TSA 25% scan	No contamination at any location; all values below unrestricted release levels	Transuranic DCGLs used. Initial net activity at locations 16 and 17 (118.9 dpm/100 cm ²) was identified that was greater than the transuranic DCGL (100 dpm/100cm ²). The areas were sealed, allowed to decay, and resurveyed. All re-survey results were less than the transuranic DCGL and are the values reported in the TSA Data Summary. No further investigation is required.
Radiological	561 Interior – LLW Areas	172 α RSA	172 α RSA	No contamination at any location; all values below unrestricted release levels	Transuranic DCGLs used.