Tomorrow's Nuclear Cleanup Today

RMRS

Rocky Flats Environmental Technology Site

Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999

Revision 0

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U/NU

ADMIN RECORD

1/586

Survey Area: 371 Cluster	Survey Area: N/A	Building: N/A
Survey Area Description Characterization Package for B-371 Cluster		

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This document contains pages that have been removed due to classification issues.

Personnel with access to Unclassified Nuclear Information may obtain this information from either the Project Manager, or the Department of Energy, Rocky Flats Field Office, Administrative Record Coordinator.

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Survey Area: 371 Cluster	Survey Area: N/A	Building: N/A

Survey Area Description
Characterization Package for B-371 Cluster

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: N/A
Survey Unit Description Characterization Package for B-371 Cluster		

Characterization Package Summary:

The B-371 cluster consists of Buildings Building 371, 373, 374, 377, 378, 381, 374A, 262, 262A, and Tanks 163-170, 224-228, and T-4A.

The characterization strategy for the B-707 cluster buildings for radiological and non-radiological contaminants is based upon the draft *Reconnaissance Level Characterization Plan*, including the Data Quality Objectives (DQO's) presented there. The DQOs used to implement this strategy are presented below. The DQO process was used to evaluate existing information and data and to determine additional characterization requirements needed to define building hazards (radiological, chemical and safety) per Attachment 9 of RFCA and to initially identify anticipated waste streams. All quality assurance requirements presented in MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol* (DDCP) will be followed.

Existing data on radiological and non-radiological hazards associated with structures in the B-371 cluster are insufficient to address the applicable DQO decision rules. In most cases, radiological surveys were carried out only in certain areas and below 6 feet. Also, data generally address only removable contamination, and do not address fixed contamination throughout the structures. Likewise, limited data exist for non-radiological hazards such as beryllium and asbestos, and no data exist for penetration of RCRA metals or volatile organics into concrete.

Based upon historical and process knowledge, the radiological contaminants of concern for the purposes of surveys and sampling were determined to be uranium, plutonium, and americium. The non-radiological contaminants of concern for the purposes of sampling were determined to be RCRA metals, RCRA volatile organics, beryllium, PCBs, and asbestos. The total surveys and samples to be taken are summarized in Table 1.

Radiological Characterization

Extensive radiological surveys for fixed and removable contamination will be conducted on walls, floors, ceilings, fixed equipment, overhead items (e.g., process lines, conduit, lighting), and above false ceilings. Additionally, because process knowledge and history reveal that contamination was routinely painted over, paint chip samples will be taken at biased locations and analyzed for isotopic contaminants. Sludge from the bottom of the B-373 Cooling Tower will also be collected and analyzed. Radiological measurements and samples will be collected per 3-PRO-165-RSP 07.02, *Contamination Monitoring Requirements*, and 3-PRO-165-RSP-16.03, *Radiological Sampling of Building Media*.

Non-Radiological Characterization

History and process knowledge reveal multiple spills of liquids containing RCRA metals. Additionally, these liquids may have contained detectable levels of RCRA volatile organics such as carbor tetrachloride and perchloroethylene. RCRA volatile organics contained in process lines and tanks will not be characterized as part of reconnaissance level characterization, but will be documented in the Reconnaissance Level Characterization Report (RLCR) based upon historical and process knowledge.

A small number of randomly located concrete floor samples will be analyzed for RCRA metals and RCRA volatile organics. There are multiple permitted RCRA units in B-371 and B-374 that could contain some contamination. These areas will not be sampled under reconnaissance level characterization. They will be addressed during RCRA closure. The administrative records for these units and potential related hazards will be documented in the RLCR

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: N/A

Survey Unit Description

Characterization Package for B-371 Cluster

Biased samples of wood slats and sediment from the B-373 Cooling Tower will be analyzed for RCRA metals due to the potential use of chromium-based fungicide in the unit.

Beryllium was known to be present in solar pond water, and solar pond water was processed in B-374. Beryllium repack operations and site return occured in B-371. A review of the sampling conducted in these facilities by the Chronic Beryllium Disease Prevention Program revealed data gaps. Smear sampling is planned in several areas on horizontal surfaces, fixed equipment, ductwork, overhead items, and above drop ceilings, in order to fill data gaps.

Examination of records of analyses of lead and PCBs in paint revealed data gaps. However, these data are not strictly required for waste characterization, as stated in Environmental / Waste Compliance Guidance No. 27, *Lead Based Paint (LBP) and LBP Debris Disposal*, and Environmental / Waste Compliance Guidance No. 25, *Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*. Furthermore, sampling of building debris *after* demolition is expected to be carried out. Also, because extensive scabbling of floors (e.g., hydrolazing) can reasonably be expected to occur during decontamination and decommissioning of B-371 cluster buildings and structures, it is expected that radiological concerns will supercede those posed by lead or PCBs in determining respiratory protection and other IH&S requirements. Additionally, due to the large number of layers of paint and the extreme variability of paint from area to area, limited sampling will not be sufficient to allow IH&S to rule out the presence of lead and PCB in paint during scabbling operations. Therefore, in the instance of the B-371 cluster, characterization of lead and PCBs in paint is not considered to be cost-effective at the reconnaissance level and will not be conducted.

The buildings contain flourescent light ballasts that contain PCBs. These need not be sampled, as stated in Environmental / Waste Compliance Guidance No. 27, *Management of Fluorescent Light Ballasts*, but must be disposed of during stripout as described in that guidance document.

Examination of asbestos inspection records revealed extensive data gaps. Asbestos inspection and sampling will be conducted in all the buildings in the cluster.

Non-radiological sampling and analyses are as per PRO-563-ACPR, *Asbestos Characterization Procedure*; PRO-536-BCPR, *Beryllium Characterization Procedure*; PRO-488-BLCR, *Bulk Solids and Liquids Characterization Procedure*; and PRO-487-MPCR, *Metals and PCB Characterization Procedure*.

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: N/A

Survey Unit Description
Characterization Package for B-371 Cluster

Sample or Survey Type	Number of Samples or Surveys
Radiological smears (removable contamination)	5278
Radiological surveys (fixed contamination)	5278
Radiological scans (fixed contamination)	2887
Beryllium smears	238
Concrete cores (RCRA metals)	24
Concrete cores (RCRA VOC)	8
Paint chip samples (isotopics)	100
Sludge samples (isotopics)	2
Sludge samples (RCRA metals)	4
Wood chip samples (RCRA metals)	4
Asbestos samples	300

Table 1. Total samples and surveys to be taken for characterization of the B-371 cluster.

Data Quality Objectives:

This section defines the DQOs for reconnaissance level characterization (RLC) of the B-371 cluster buildings and structures.

The Problem

The problem involves characterizing the nature and extent of radiological, chemical, and safety hazards in the B-371 cluster buildings and structures in order to 1) initially evaluate methods of disposition; 2) estimate approximate volumes of sanitary, low-level (LLW), low-level mixed, transuranic (TRU), transuranic-mixed, TSCA, asbestos, and RCRA waste generated during the decommissioning process; and 3) provide input to the design of in-process and pre-demolition (final) survey characterization.

The Decision

The critical decision is estimating the inventories of the different categories of waste generated during decommissioning of the B-371 cluster buildings and structures. Characterization data evaluation will involve assessing if enough validated data exist to adequately describe the nature and extent of contamination or if additional data are necessary.

Inputs to the Decision

The inputs to the decision include the RLC data and information generated from previous characterization activities (e.g., scoping characterization, etc.), as well as the applicable unrestricted release criteria, and transportation and waste management regulations.

RLC data to be collected include:

- radiological surveys of all buildings and structures;
- sampling of paint chips from floors of selected buildings for isotopic analysis;
- core sampling of concrete floors in B-371 for RCRA metals TCLP analysis and total VOC analysis;
- sampling of wood chips and sludge from B-373 Cooling Tower for RCRA metals and isotopics;
- smear sampling for beryllium in selected areas of B-371 and B-374;
- asbestos inspection and sampling.

Decision Boundaries

The decision boundaries include the spatial confines of the survey areas within the B-371 cluster buildings and structures as described in detail in this Characterization Package.

<u>Radionuclides</u>

If process knowledge/history supports the premise that no radioactive contamination is present, the related area and/or volume of material is considered sanitary waste and may be free-released.

If all radiological survey/scan measurements are below the surface contamination thresholds provided in DOE Order 5400.5 (Radiation Protection of the Public and Environment) and the RFETS Radiological Control Manual, the related area or volume of material is considered sanitary waste and may be free-released.

If all radiological sample measurements are below the volume contamination thresholds provided in the No-Rad-Added Verification (NRA) Program, the related volume of material is considered sanitary waste and may be free-released.

If any radiological survey/scan measurement exceeds the surface contamination thresholds provided in DOE Order 5400.5, the related area or volume of material must be remediated or dispositioned as radiological or mixed waste.

If any radiological sample measurement exceeds the volume contamination thresholds provided in the NRA Program, the related volume of material must be remediated or dispositioned as radiological or mixed waste.

If any radiological sample measurement (or disposal unit volume) exceeds 100 nanocuries per gram of transuranic material, the associated volume must be disposed of as transuranic (TRU) waste.

Hazardous Waste

If the waste is mixed with or contains a listed hazardous waste, or if the waste exhibits a characteristic of a hazardous waste, then the waste is considered hazardous waste in accordance with 6 CCR 1007-3, Parts 261 and 268.

Hazardous Substances

If the material/media contain a listed hazardous substance above a decision document action level and/or the CERCLA reportable quantity (40 CFR 302.4), remediate or notify the receiving waste disposal facility of the hazardous substance and the estimated quantity prior to shipment.

Beryllium

If surface concentrations of beryllium are equal to or greater than 0.2 ug/100 cm^2, the material is considered beryllium contaminated per the Occupational Safety and Industrial Hygiene Program Manual, Chapter 28, Chronic Beryllium Disease Prevention Program. If the concentrations are below 0.2 ug/100 cm^2, the material is considered non-beryllium contaminated.

If detectable beryllium contamination can be shown through process knowledge to consist of beryllium powder (P015 under RCRA), then the material is considered RCRA waste and subject to treatment standards under 40 CFR 268.40.

PCBs

Material/media potentially contaminated with PCBs will be categorized per 40 CFR 761. If material meets the definition of PCB Bulk Product Waste, it may be disposed of at a facility that is permitted, licensed, or registered by a State to manage municipal solid waste subject to 40 CFR 258, or non-municipal, non-hazardous waste subject to 40 CFR 257.5 through 257.30. For most bulk product wastes, implementing this strategy precludes the need for PCB characterization prior to or during facility disposition, as long as restrictions outlined in 40 CFR 761.62 regarding their disposal are met. However, notification to the disposal facility is required at least 15 days in advance of shipping wastes to the facility if that disposal facility does not possess a commercial PCB storage or disposal approval.

Management strategy for PCB remediation waste will be determined on a case-by-case basis. If PCB contamination is suspected, or if a PCB spill is discovered that has not been cleaned up, the area will be treated as directed by the most recent versions of 40 CFR 761 through 766, the RFETS Polychlorinated Biphenyls Management Plan (PRO-673-EWQA-1.5), and the WSRIC standards. For each planned cleanup, PCB regulations under TSCA will be evaluated as potentially applicable or relevant and appropriate requirements (ARARs), including the disposal options for PCB remediation waste listed under 40 CFR 761.61.

Asbestos

In accordance with 40 CFR 763 and 5 CCR 1001-10, if any one sample of a sample set representing a homogeneous medium results in a positive detection (i.e., >1% by volume), then material is considered ACM; otherwise the material is considered non-ACM.

Tolerable Limits on Decision Errors

Acceptable false positive and negative errors generally range from 1% to 10%. Other limits may be used, if agreed to by the D&D Projects and Construction Organization, the Project Manager, DOE and the LRA. Decision error does not apply to asbestos sample sets per 40 CFR 763. Results are compared with the action levels on a sample-by-sample basis.

Sampling design error for radiological sampling will be controlled by requiring a minimum number of uniformly distributed (n=30) and biased surveys (n=10) to be performed in each survey area. In addition, surface area size limits are assigned for survey areas based on contamination potential.

Optimization of Plan Design

The following criteria provide potential areas for optimization of the RLCP:

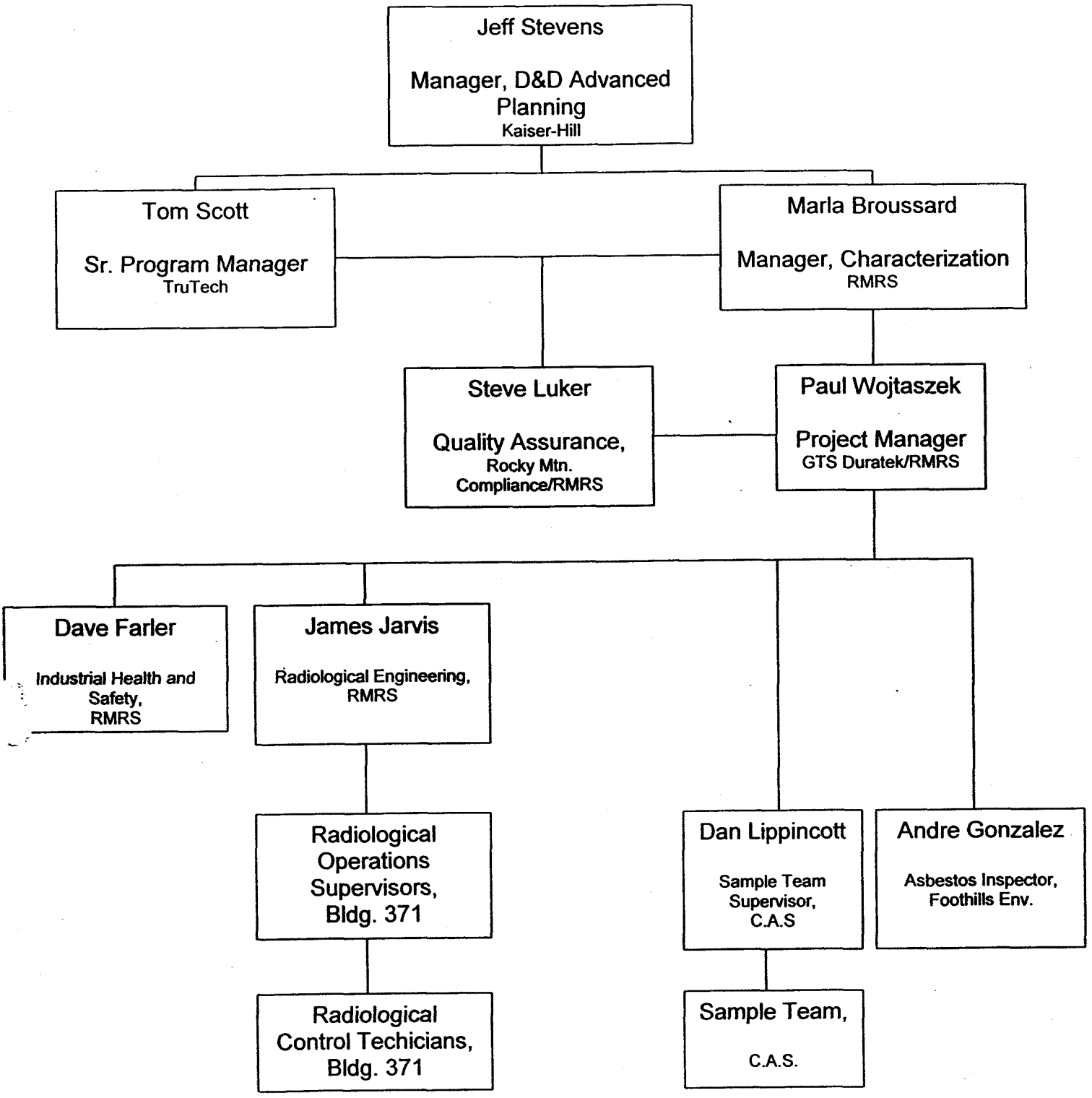
- If additional data (radiological, RCRA, TSCA, and asbestos) are not required to make decisions, then RLC surveys/sampling are not required.
- If RCRA, TSCA or asbestos survey/samples are required for materials, media, equipment and interior and exterior building surfaces, refer to the DDCP, Section 6.0.

If radiological survey/samples are required for materials, media, equipment and interior and exterior building surfaces, then the following requirements apply:

- A minimum number of uniformly distributed and biased measurements (refer to Appendix A) must be collected.
- A minimum number of biased samples must be collected (if surface media or volumetric contamination are suspect.)

Radiological field measurement methods and instrumentation will be performed in accordance with approved RFETS site procedures and this document.

Radiological sampling and preparation for laboratory measurements will be performed in accordance with approved RFETS site procedures and this document.



Organizational Chart

Characterization of B-371 Cluster Buildings

7/488

Non-Radiological Characterization Instruction

Bldg. 371 Cluster

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 371

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos, RCRA Metals, RCRA organics, beryllium**

Special Support Requirements

Ladder, scaffolding, or man-lift. Media samplers to take concrete core samples from floors. IH technicians to take beryllium smear samples. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
James Moore			
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	125 media samples including thermal systems insulation on first and second floor; surfacing materials; and floor tile/mastic. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)
Smear samples for beryllium analysis	**33 total smears (30 samples plus 3 duplicates):** Room 3206: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; Room 3412: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; Room 3541: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces **SEE NOTES 1 AND 2.**	Sampler **SHALL** be an **industrial hygiene representative**; Sampling and analysis **SHALL** be performed according to PRO-536-BCPR, *Beryllium Characterization Procedure.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371

Survey Unit Description
Characterization Package for B-371 Cluster

Bulk concrete samples for RCRA metals and VOA analysis	**19 samples total at 12 locations** (12 TCLP metals samples, 2 TCLP metals duplicates, 4 total VOA samples, and 1 VOA duplicate): 3 bulk samples plus a duplicate at random locations in the sub-basement (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample plus a duplicate also will be analyzed for total VOA ; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. 3 bulk samples at random locations in the basement (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will be also analyzed for total VOA ; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. 3 bulk samples plus a duplicate at random locations on the ground floor (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will also be analyzed for total VOA; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. 3 bulk samples at random locations in the attic (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will also be analyzed for total VOA ; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. **Paint must be scraped off and removed from surface before bulk sample is taken to avoid contamination of concrete sample by components of paint;** **SEE NOTES 1, 2, 3, and 4.**	Sampling and analysis **SHALL** be performed according to PRO-488-BLCR, *Bulk Solids and Liquids Characterization Procedure*; Samples will be analyzed for TCLP metals (RCRA codes D004-D011) pursuant to ASD standards by EPA SW-846 Method 1311, "Toxicity Characteristic Leaching Procedure."

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

NOTE 3: Rebar and utility location must be conducted by building enginering prior to drilling.

NOTE 4: Where locations for sampling are in an area that requires intact concrete and paint covering as part of secondary containment, sample locations will be filled and repainted as per building management instructions and according to building work instructions and procedures.

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ DATE _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Other: _____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

CONCRETE CORE SAMPLING MAPS

AND GRIDS FOR LOCATING RANDOM

SAMPLING LOCATIONS

B-371

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

Random Grid Concrete Coring Locations

If the coordinates given below are inaccessible at the time of sampling, the Project Manager will utilize the attached random number list and grid instructions to determine further random locations.

Square or rectangular grids were overlaid on maps of the sub-basement, basement, ground floor, and mezzanine of B-371.

A random number generator was used to determine sampling coordinates. These were converted to building locations utilizing the building's dimensions. Points which landed on locations obviously inaccessible were discarded.

A total of 12 sample points were generated. If at the time of sampling, any of the points given below are inaccessible, the Project Manager will utilize the grid and random numbers list to generate further points.

Grid 1: Three sample points (plus 1 duplicate)
Consists of the sub-basement of B-371.
Square, 1:1, dimensions 122 feet x 122 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 11 feet 5 inches from the N wall of Room 1103.

x grid distance: 1 unit = 24 feet, 5 inches
y grid distance: 1 unit = 24 feet, 5 inches

Random coordinates from Square 1:1 Random Numbers List:

(5,2) and (3,0) were rejected.

Coordinate 1: (4,3) translates to Room 1216, 3 feet from the S wall and 6 feet from the E wall. One sample for TCLP metals analysis.

Coordinate 2: (1,0) translates to Room 1103, 24 feet from the S wall and 3 feet from the W wall. One sample for TCLP metals analysis, one for total VOA analysis, and one duplicate for total VOA analysis.

Coordinate 3: (4,2) translates to Room 1214, 3 feet from the S wall and 30 feet 5 inches from the E wall. One sample for TCLP metals analysis. The duplicate should be taken next to this sample.

Grid 2: Three sample points
Consists of the basement, with a 3 foot clearance from all walls.
Square, 1:1, dimensions 200 feet x 200 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 3 feet from the N wall of Room 2305.

x grid distance: 1 unit = 40 feet, 0 inches
y grid distance: 1 unit = 40 feet, 0 inches

Random coordinates from Rectangle 1:2 Random Numbers List:

Coordinate 4: (3,5) translates to Room 2310, 3 feet from the S wall, and 71 feet 9.5 inches from the W wall. One sample for TCLP metals analysis.

Coordinate 5: (3,1) translates to Room 2306, 3 feet from the S wall and 43 feet from the W wall. One sample for TCLP metals analysis, and one for total VOA analysis.

Coordinate 6: (4,2) translates to Room 2203, 21 feet 8 inches from the N wall and 3 feet from the E wall. One sample for TCLP metals analysis.

Grid 3: Three sample points (plus a duplicate)
Consists of the ground floor, with a 3 foot clearance from all walls.
Rectangle, 1:3, dimensions 109 feet x 350 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the N wall and 3 feet from the W wall of Room 3339A.

x grid distance: 1 unit = 54 feet, 6 inches
y grid distance: 1 unit = 58 feet, 4 inches

Coordinate 7: (2,0) translates to Room 3301, 6 feet from the N wall, and 3 feet from the W wall. One sample for TCLP metals analysis.

Coordinate 8: (0,2) translates to Room 3541, 3 feet from the N wall, and 6 feet from the W wall. One sample for TCLP metals analysis, and one for total VOA analysis.

Coordinate 9: (2,1) translates to Room 3305, 38 feet from the N wall (3 feet N of the glovebox), and 36 feet from the W wall. One sample for TCLP metals analysis. The duplicate should be taken next to this sample.

Grid 4: Three sample points
Consists of the attic, with a 3 foot clearance from all walls.
Rectangle, 1:2, dimensions 133 feet x 266 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 3 feet from the N wall of Room 4301.

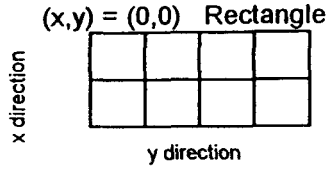
x grid distance: 1 unit = 66 feet, 6 inches
y grid distance: 1 unit = 66 feet, 6 inches

Coordinate 10: (0,3) translates to Room 3551, 3 feet from the N wall, and 58 feet 2 inches from the E wall. One sample for TCLP metals analysis.

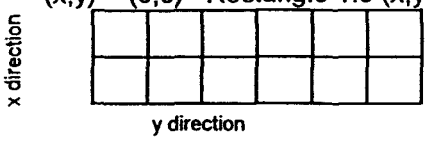
Coordinate 11: (0,1) translates to Room 4301, 3 feet from the N wall, and 66 feet 6 inches from the W wall. One sample for TCLP metals analysis, and one for total VOA analysis.

Coordinate 12: (1,1) translates to Room 4301, 11 feet 7 inches from the S wall of Room 3333, and 66 feet 6 inches from the W wall of Room 4301. One sample for TCLP metals analysis.

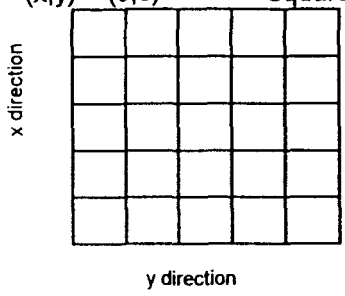
(x,y) = (0,0) Rectangle 1:2 (x:y ratio)



(x,y) = (0,0) Rectangle 1:3 (x,y ratio)



(x,y) = (0,0) Square 1:1



DIRECTIONS

1) Assign (0,0) to the NW corner of the sampling area as described on previous pages.

2a) For Squares: measure x or y distance in sampling area and divide by 5 to attain distance between grid points

2b) For Rectangular areas: measure x distance and divide by 2 to attain distance between grid points

1:2 width to length measure y distance and divide by 4 to attain distance between grid points

1:3 width to length measure y distance and divide by 6 to attain distance between grid points

3) Choose the "Random Number Table" that corresponds with the grid type used.

4) Use the first number pair (x,y coordinates) that can be physically located and sampled.

Note: If a coordinate value is inaccessible, go to the next coordinate value on the table. Continue the sequence until the required quantity of samples is taken.

RANDOM NUMBERS GENERATED FOR D&D NONRAD SAMPLE LOCATIONS

GRID TYPE

Square

coordinate value		
(x)	(y)	
~~5~~	~~2~~	
~~3~~	~~0~~	
4	3	✓
1	0	✓
4	2	✓
3	5	✓
3	1	✓
4	2	✓
4	1	✓
4	0	✓
0	3	✓
2	3	
3	4	
1	3	
5	4	
4	3	
2	3	
0	1	
0	1	
0	5	
1	5	
4	1	
2	2	
3	0	
1	3	
3	5	
4	4	
4	4	
5	0	
2	3	
2	0	
2	1	
0	2	
3	1	
0	5	
4	4	
1	1	
1	5	
4	3	
4	3	
4	4	
3	5	
3	2	
5	0	
2	3	

Rectangle 1:2

coordinate value		
(x)	(y)	
~~0~~	~~0~~	
~~2~~	~~4~~	
1	0	✓
~~1~~	~~3~~	
~~2~~	~~2~~	
~~0~~	~~0~~	
0	1	✓
~~2~~	~~4~~	
1	4	✓
~~0~~	~~3~~	✓
~~0~~	~~1~~	✓
~~1~~	~~1~~	✓
0	2	✓
~~2~~	~~0~~	
0	3	✓
~~0~~	~~3~~	
~~2~~	~~3~~	
~~2~~	~~2~~	
2	4	✓
2	2	✓
~~2~~	~~2~~	
0	0	✓
1	2	✓
0	0	
0	4	
0	1	
0	1	
1	0	
1	1	
2	1	
0	1	
0	2	
0	1	
2	4	
1	3	
1	1	
2	3	
0	4	
1	2	
0	4	
2	1	
0	3	
2	1	
1	4	
0	1	

Rectangle 1:3

coordinate value		
(x)	(y)	
2	0	✓
~~2~~	~~5~~	
0	2	✓
2	1	✓
0	2	
1	0	
2	0	
2	5	
1	5	
1	6	
0	1	
0	6	
1	4	
0	0	
0	6	
1	3	
2	2	
2	3	
1	0	
2	5	
1	0	
2	6	
2	2	
1	5	
1	0	
0	2	
2	4	
2	2	
1	4	
2	1	
0	4	
1	5	
2	0	
1	6	
0	2	
2	2	
0	1	
0	0	
0	5	
1	1	
0	4	
0	0	
1	6	
0	1	
2	6	

Rectangle 1:4

coordinate value	
(x)	(y)
2	1
1	8
2	5
0	1
2	8
1	8
0	6
0	3
2	2
0	4
1	8
0	3
1	2
2	3
0	9
0	1
2	8
0	2
1	4
1	7
0	6
0	3
1	7
1	2
1	2
0	3
0	6
1	6
1	5
2	9
2	7
0	5
0	9
1	0
0	5
2	8
1	2
0	1
2	5
0	4
0	0
2	4
2	2
2	0
1	2

✓ = selected

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas Building 371 Sub-Basement

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas Building 371 / 374 Basements

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas Building 371 / 374 Groundfloor

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas Building 371 Attic / Building 374 Mezzanine

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

BERYLLIUM SMEAR SAMPLING MAPS

B-371

Beryllium Sample Log

NAME _____ LABORATORY _____
EMPLOYEE # _____ DATE OF ANALYSIS _____
DATE _____ SAMPLE PREFIX _____

Sample Sequence Number	Bldg. and Room Number	Description	Random or Judgment	Area sampled (cm^2)	µg/ sample

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Smear Samples for Beryllium Analysis:

Room 3206:

10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces.

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

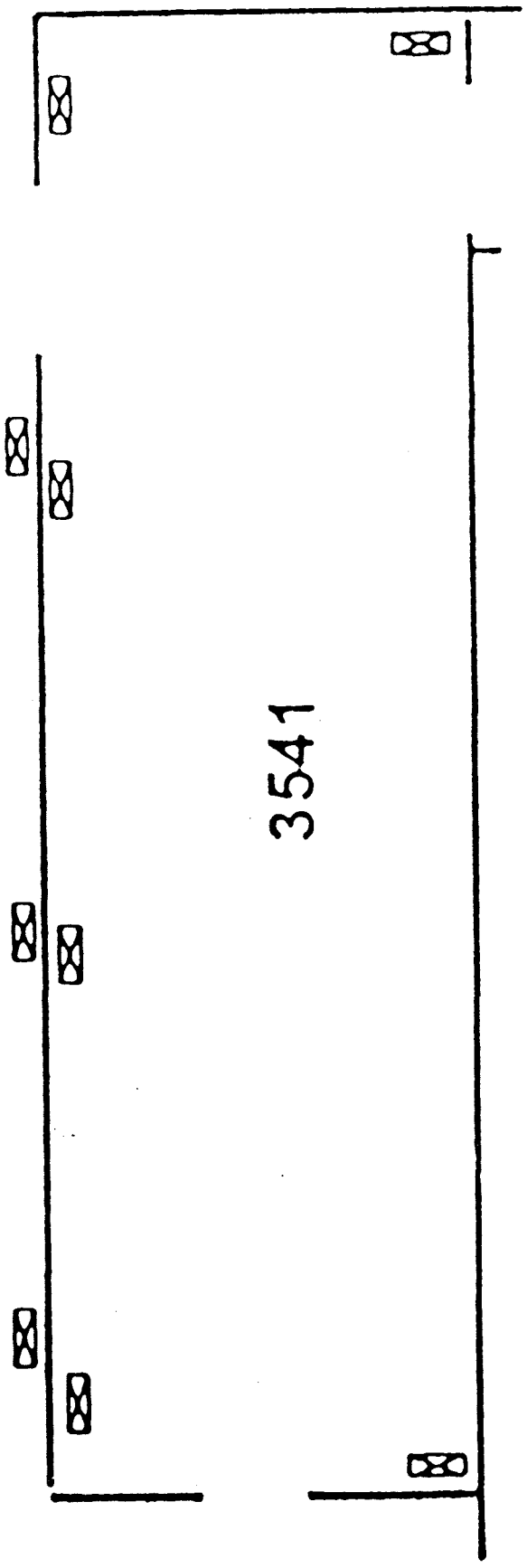
Revision 0

Drawing:

Smear Samples for Beryllium Analysis:

Room 3212:

10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces.



Smear samples for beryllium analysis

Room 3541: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Sampling Performed By

Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371
Survey Unit Description Characterization Package for B-371 Cluster		

Beryllium Sampling Performed By

I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date
I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date
I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date

Beryllium Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Beryllium Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 371

Survey Unit Description
Characterization Package for B-371 Cluster

Concrete Sampling Performed By

Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date

Concrete Sampling Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Concrete Sampling Pre/Post and Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 373 Cooling Tower

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos, RCRA Metals**

Special Support Requirements

Ladder, scaffolding, or man-lift. Media samplers to take wood samples from slats and sludge samples from bottom of blowdown area. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
[redacted]			
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373

Survey Unit Description
Characterization Package for B-371 Cluster

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements

Measurement	Amount & Type	Comments
Media samples for asbestos analysis	20 media samples on thermal systems insulation and surfacing materials. **SEE NOTES 1 AND 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure*; Inspection will determine precise sampling locations based upon accessibility; Sampler SHALL provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)
Bulk wood samples for RCRA metals analysis (Potential for Cr-based fungicide in wood)	3 bulk samples plus 1 duplicate, using either coring tool or chisel; **SEE NOTES 1 AND 2.**	Sampling and analysis **SHALL** be performed according to PRO-488-BLCR, *Bulk Solids and Liquids Characterization Procedure*; Samples will be analyzed for TCLP metals (RCRA codes D004-D011) pursuant to ASD standards by EPA SW-846 Method 1311, "Toxicity Characteristic Leaching Procedure."
Bulk sludge samples for RCRA metals analysis (Potential for Cr-based fungicide in sludge)	3 bulk samples plus 1 duplicate, using scoopula or trowel; *Utilize same RIN numbers and locations as sludge samples for isotopics described in radiological survey instructions section of this Characterization Package*; **SEE NOTES 1 AND 2.**	Sampling and analysis **SHALL** be performed according to PRO-488-BLCR, *Bulk Solids and Liquids Characterization Procedure*; Samples will be analyzed for TCLP metals (RCRA codes D004-D011) pursuant to ASD standards by EPA SW-846 Method 1311, "Toxicity Characteristic Leaching Procedure."

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ DATE _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Other: _____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

METALS SAMPLING LOG SHEET

FOR SLUDGE AND WOOD CHIP

SAMPLING

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Metals Sample Log

SAMPLER _____
EMPLOYEE #_____
DATE _____

Sample Sequence Number	Bldg. and Room Number	(1) Media (2) Dust (3) Sludge (4) Paint	Description (color, type of media: wood, concrete, etc., type of surface: steel, tile, etc., condition of area: wet, presence of debris, etc., difficulties in sample collection)	Mass of sample collected (gm)

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Performed By			
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By			
RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By			
Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373
Survey Unit Description Characterization Package for B-371 Cluster		

Bulk Wood Chip Sampling Performed By

Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date

Bulk Wood Chip Sampling Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Bulk Wood Chip Sampling Pre/Post and Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 373

Survey Unit Description
Characterization Package for B-371 Cluster

Bulk Sludge Sampling Performed By

Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date

Bulk Sludge Sampling Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Bulk Sludge Sampling Pre/Post and Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description
Characterization Package for B-371 Cluster

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 374

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos, RCRA Metals, RCRA organics, beryllium**

Special Support Requirements

Ladder, scaffolding, or man-lift. Media samplers to take paint and concrete core samples from floors. IH technicians to take beryllium smear samples. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	125 media samples including thermal systems insulation on first and second floor; surfacing materials; and floor tile/mastic. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description

Characterization Package for B-371 Cluster

Smear samples for beryllium analysis	**205 total smears (186 samples plus 19 duplicates):** Room 2801: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment Room 2804: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment Room 2805: 7 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment Room 2807: 3 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment Room 2808: 7 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment Room 3801: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment Room 3803: 7 smears plus a duplicate at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears below 6 feet on floors, walls, or fixed equipment Room 3809: 20 smears plus 2 duplicates at accessible locations above 6 feet, including at least 10 above ceiling tiles or on process lines, conduit, or similar surfaces Room 3810: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 5 above ceiling tiles or on process lines, conduit, or similar surfaces 47 of 488 **SEE NOTES 1 AND 2.**	Sampler **SHALL** be an **industrial hygiene representative**; Sampling and analysis **SHALL** be performed according to PRO-536-BCPR, *Beryllium Characterization Procedure.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description

Characterization Package for B-371 Cluster

Smear samples for beryllium analysis (cont'd)	Room 3811, 3812, and 3813: 14 smears total over the three rooms plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment Rooms 4801, 4803, 4804, 4805, and 4806: 14 smears total over the four rooms plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment Room 4802: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment **SEE NOTES 1 AND 2**	

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

Bulk concrete samples for RCRA TCLP metals and total VOA analysis	**13 samples total** (9 TCLP metals, 1 TCLP metals duplicate, 3 total VOA): 3 bulk samples plus a duplicate at random locations in the basement (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will also be analyzed for total VOA; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. 3 bulk samples at random locations on the ground floor in Room 3185 (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will also be analyzed for total VOA; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. 3 bulk samples at random locations on the mezzanine (see *Concrete Core Sampling Maps and Grids for Locating Random Sampling Locations*, attached); all samples will be analyzed for TCLP metals; one sample will also be analyzed for total VOA ; if locations given in the sampling map are inaccessible, replacement coordinates will be generated by the Project Manager using the attached grid and random number list. **Paint must be scraped off and removed from surface before bulk sample is taken to avoid contamination of concrete sample by components of paint;** **SEE NOTES 1, 2, 3, and 4.**	Sampling and analysis **SHALL** be performed according to PRO-488-BLCR, *Bulk Solids and Liquids Characterization Procedure*; Samples will be analyzed for TCLP metals (RCRA codes D004-D011) pursuant to ASD standards by EPA SW-846 Method 1311, "Toxicity Characteristic Leaching Procedure."

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

NOTE 3: Rebar and utility location must be conducted by building enginering prior to drilling.

NOTE 4: Where locations for sampling are in an area that requires intact concrete and paint covering as part of secondary containment, sample locations will be filled and repainted as per building management instructions and according to building work instructions and procedures.

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Type: _____ Linear/sq. ft. _____ Fitting count: _____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Type: _____ Duct Size/app. _____ Sq. ft. _____

Other: _____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

CONCRETE CORE SAMPLING MAPS

AND GRIDS FOR LOCATING RANDOM

SAMPLING LOCATIONS

B-371

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

Random Grid Concrete Coring Locations

If the coordinates given below are inaccessible at the time of sampling, the Project Manager will utilize the attached random number list and grid instructions to determine further random locations.

Square or rectangular grids were overlaid on maps of the basement and mezzanine of B-374. As almost all of the ground floor consists of RCRA units, no grids were applied on that floor, and no sampling conducted.

A random number generator was used to determine sampling coordinates. These were converted to building locations utilizing the building's dimensions. Points which landed on locations obviously inaccessible were discarded.

A total of 6 sample points were generated. If at the time of sampling, any of the points given below are inaccessible, the Project Manager will utilize the grid and random numbers list to generate further points.

Grid 5: Three sample points (plus 1 duplicate)
Grid was overlaid on the NW corner of the basement of B-374, with a 3 foot clearance from N and W walls.
Square, 1:1, dimensions 90 feet x 90 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 11 feet 5 inches from the N wall of Room 2805.

x grid distance: 1 unit = 18 feet, 0 inches
y grid distance: 1 unit = 18 feet, 0 inches

Random coordinates from Square 1:1 Random Numbers List:

> Coordinate 13: (4,1) translates to Room 2801, 30 feet 7 inches from the S wall of Room 2805, and 18 feet from the W wall. One sample for TCLP metals analysis.
>
> Coordinate 14: (4,0) translates to Room 2801, 30 feet 7 inches from the S wall of Room 2805, and 3 feet from the W wall. One sample for TCLP metals analysis, and one for total VOA analysis.
>
> Coordinate 15: (0,3) translates to Room 2805, 3 feet from the N wall and 3 feet from the E wall of Room 2807. One sample for TCLP metals analysis. The duplicate should be taken next to this sample.

Grid 6: Three sample points
Grid was overlaid on the NW corner of Room 3185, and covered only that room, with a 3 foot clearance from N and W walls.
Rectangle, 1:2, dimensions 32 feet x 64 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 3 feet from the N wall of Room 3185.

x grid distance: 1 unit = 16 feet, 0 inches
y grid distance: 1 unit = 16 feet, 0 inches

Random coordinates from Rectangle 1:2 Random Numbers List:

> Coordinate 16: (2,2) translates to Room 3185, 32 feet from the N wall, and 32 feet from the W wall. One sample for TCLP metals analysis.

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Coordinate 17: (0,0) translates to Room 3185, 3 feet from the N wall and 3 feet from the W wall. One sample for TCLP metals analysis.

Coordinate 18: (1,2) translates to Room 3185, 16 feet from the N wall and 32 feet from the W wall. One sample for TCLP metals analysis, and one for total VOA analysis.

Grid 7: Three sample points
Grid was overlaid on the N side of the of the mezzanine, with a 3 foot clearance from N and W walls. Rectangle, 1:2, dimensions 70 feet x 140 feet, where (0,0) is at the NW corner of the grid and is 3 feet from the W wall and 3 feet from the N wall of Room 4802.

x grid distance: 1 unit = 35 feet, 0 inches
y grid distance: 1 unit = 35 feet, 0 inches

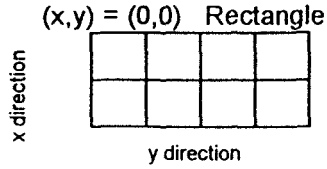
Random coordinates from Rectangle 1:2 Random Numbers List:

Coordinate 19: (0,2) translates to Room 4802, 3 feet from the N wall, and 70 feet from the W wall. One sample for TCLP metals analysis.

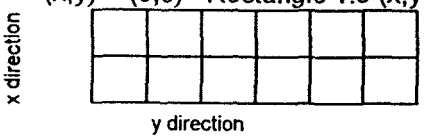
Coordinate 20: (0,3) translates to Room 4802, 3 feet from the N wall and 105 feet from the W wall. One sample for TCLP metals analysis.

Coordinate 21: (2,4) translates to Room 4801, 20 feet from the N wall and 3 feet from the E wall. One sample for TCLP metals analysis, and one for total VOA analysis.

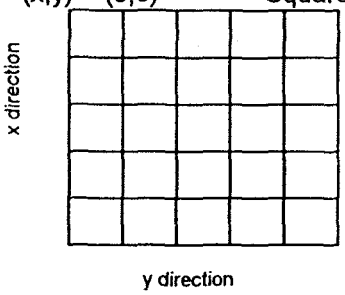
(x,y) = (0,0) Rectangle 1:2 (x:y ratio)



(x,y) = (0,0) Rectangle 1:3 (x,y ratio)



(x,y) = (0,0) Square 1:1



DIRECTIONS

1) Assign (0,0) to the NW corner of the sampling area as described on previous pages.

2a) For Squares: measure x or y distance in sampling area and divide by 5 to attain distance between grid points

2b) For Rectangular areas: measure x distance and divide by 2 to attain distance between grid points

1:2 width to length measure y distance and divide by 4 to attain distance between grid points

1:3 width to length measure y distance and divide by 6 to attain distance between grid points

3) Choose the "Random Number Table" that corresponds with the grid type used.

4) Use the first number pair (x,y coordinates) that can be physically located and sampled.

Note: If a coordinate value is inaccessible, go to the next coordinate value on the table. Continue the sequence until the required quantity of samples is taken.

RANDOM NUMBERS GENERATED FOR D&D NONRAD SAMPLE LOCATIONS

GRID TYPE

Square

coordinate value		
(x)	(y)	
~~5~~	~~2~~	
~~3~~	~~0~~	
4	3	✓
1	0	✓
4	2	✓
3	5	✓
3	1	✓
4	2	✓
4	1	✓
4	0	✓
0	3	✓
2	3	
3	4	
1	3	
5	4	
4	3	
2	3	
0	1	
0	1	
0	5	
1	5	
4	1	
2	2	
3	0	
1	3	
3	5	
4	4	
4	4	
5	0	
2	3	
2	0	
2	1	
0	2	
3	1	
0	5	
4	4	
1	1	
1	5	
4	3	
4	3	
4	4	
3	5	
3	2	
5	0	
2	3	

Rectangle 1:2

coordinate value		
(x)	(y)	
~~0~~	~~0~~	
~~2~~	~~4~~	
1	0	✓
~~1~~	~~3~~	
~~2~~	~~2~~	
~~0~~	~~0~~	
0	1	✓
~~2~~	~~4~~	
1	4	✓
0	~~3~~	✓
~~0~~	~~1~~	✓
~~1~~	~~1~~	✓
0	2	✓
~~2~~	~~0~~	
0	3	✓
~~0~~	~~3~~	
~~2~~	~~3~~	
~~2~~	~~2~~	
2	4	✓
2	2	✓
~~2~~	~~2~~	
0	0	✓
1	2	✓
0	0	
0	4	
0	1	
0	1	
1	0	
1	1	
2	1	
0	1	
0	2	
0	1	
2	4	
1	3	
1	1	
2	3	
0	4	
1	2	
0	4	
2	1	
0	3	
2	1	
1	4	
0	1	

Rectangle 1:3

coordinate value		
(x)	(y)	
2	0	✓
~~2~~	~~5~~	
0	2	✓
2	1	✓
0	2	
1	0	
2	0	
2	5	
1	5	
1	6	
0	1	
0	6	
1	4	
0	0	
0	6	
1	3	
2	2	
2	3	
1	0	
2	5	
1	0	
2	6	
2	2	
1	5	
1	0	
0	2	
2	4	
2	2	
1	4	
2	1	
0	4	
1	5	
2	0	
1	6	
0	2	
2	2	
0	1	
0	0	
0	5	
1	1	
0	4	
0	0	
1	6	
0	1	
2	6	

Rectangle 1:4

coordinate value	
(x)	(y)
2	1
1	8
2	5
0	1
2	8
1	8
0	6
0	3
2	2
0	4
1	8
0	3
1	2
2	3
0	9
0	1
2	8
0	2
1	4
1	7
0	6
0	3
1	7
1	2
1	2
0	3
0	6
1	6
1	5
2	9
2	7
0	5
0	9
1	0
0	5
2	8
1	2
0	1
2	5
0	4
0	0
2	4
2	2
2	0
1	2

✓ = selected

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas

(Partial Drawing)

Building 374 Basement

This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Radiological Safety:

Drawing Showing Survey Points:

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas

(Partial Drawing)

Building 374 Mezzanine

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

BERYLLIUM SMEAR SAMPLING MAPS

B-371

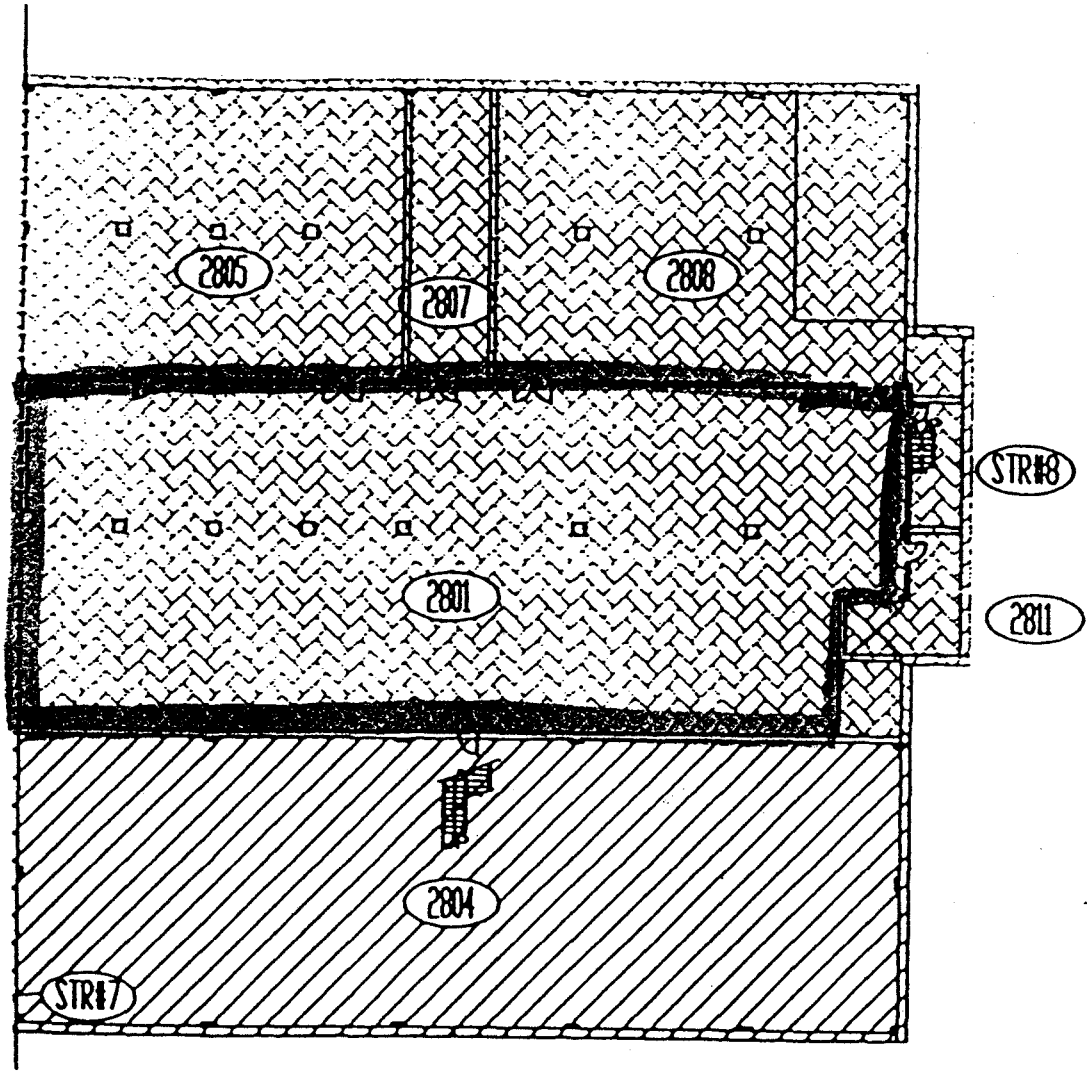
Beryllium Sample Log

NAME _____ LABORATORY _____
EMPLOYEE # _____ DATE OF ANALYSIS _____
DATE _____ SAMPLE PREFIX _____

Sample Sequence Number	Bldg. and Room Number	Description	Random or Judgment	Area sampled (cm^2)	µg/ sample

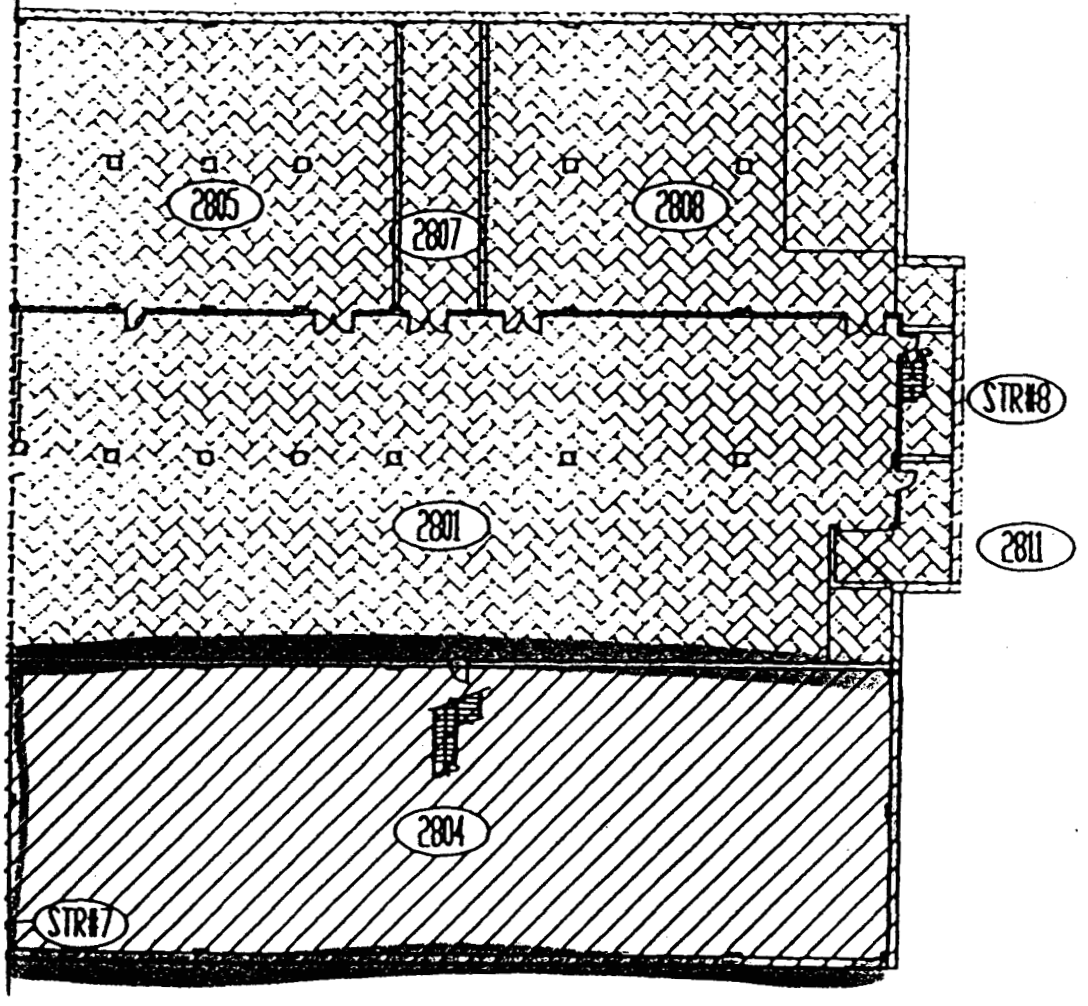
Smear samples for beryllium analysis

Room 2801: 14 smears at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment



Smear samples for beryllium analysis

Room 2804: 14 smears at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment



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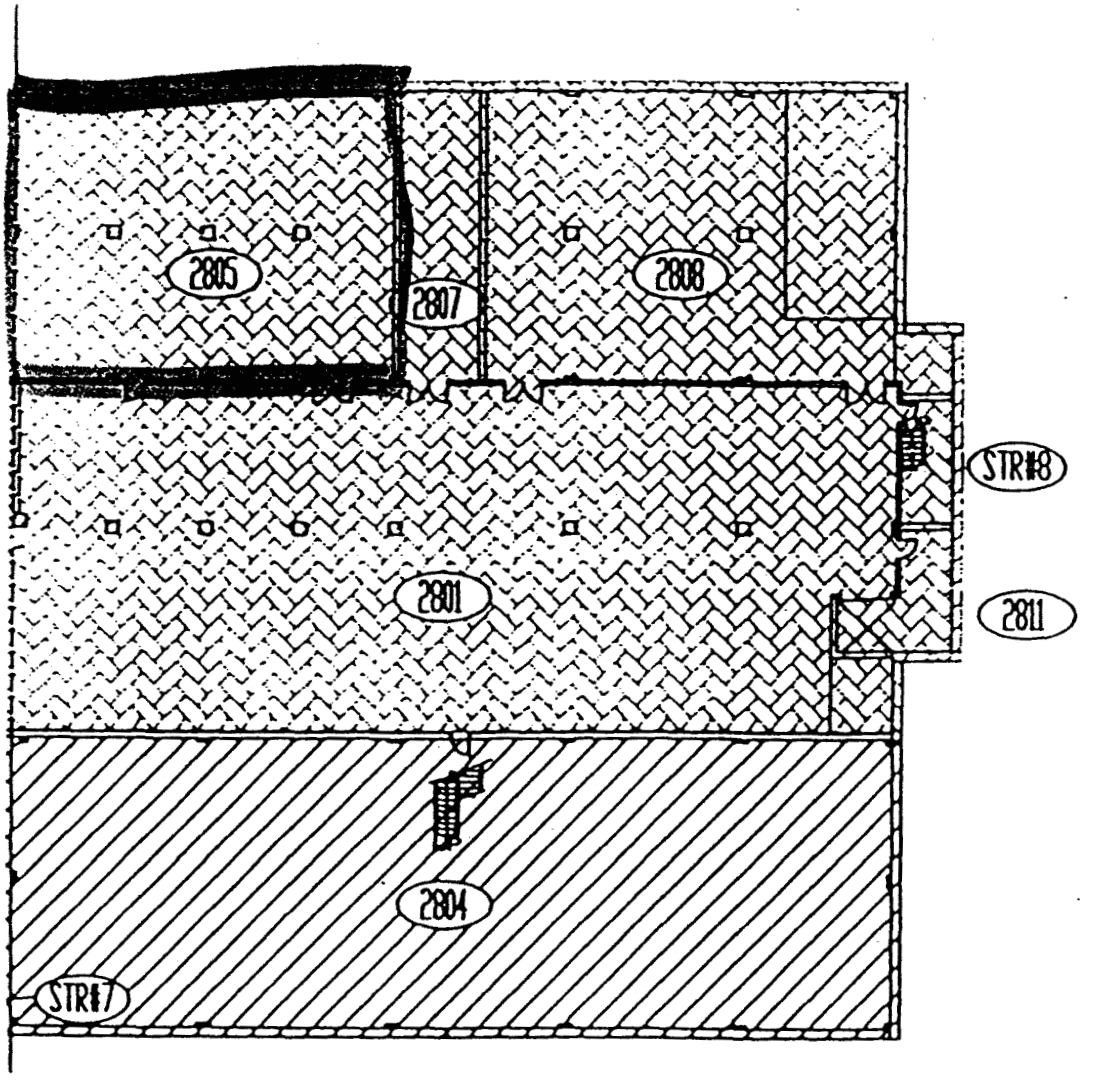
Smear samples for beryllium analysis

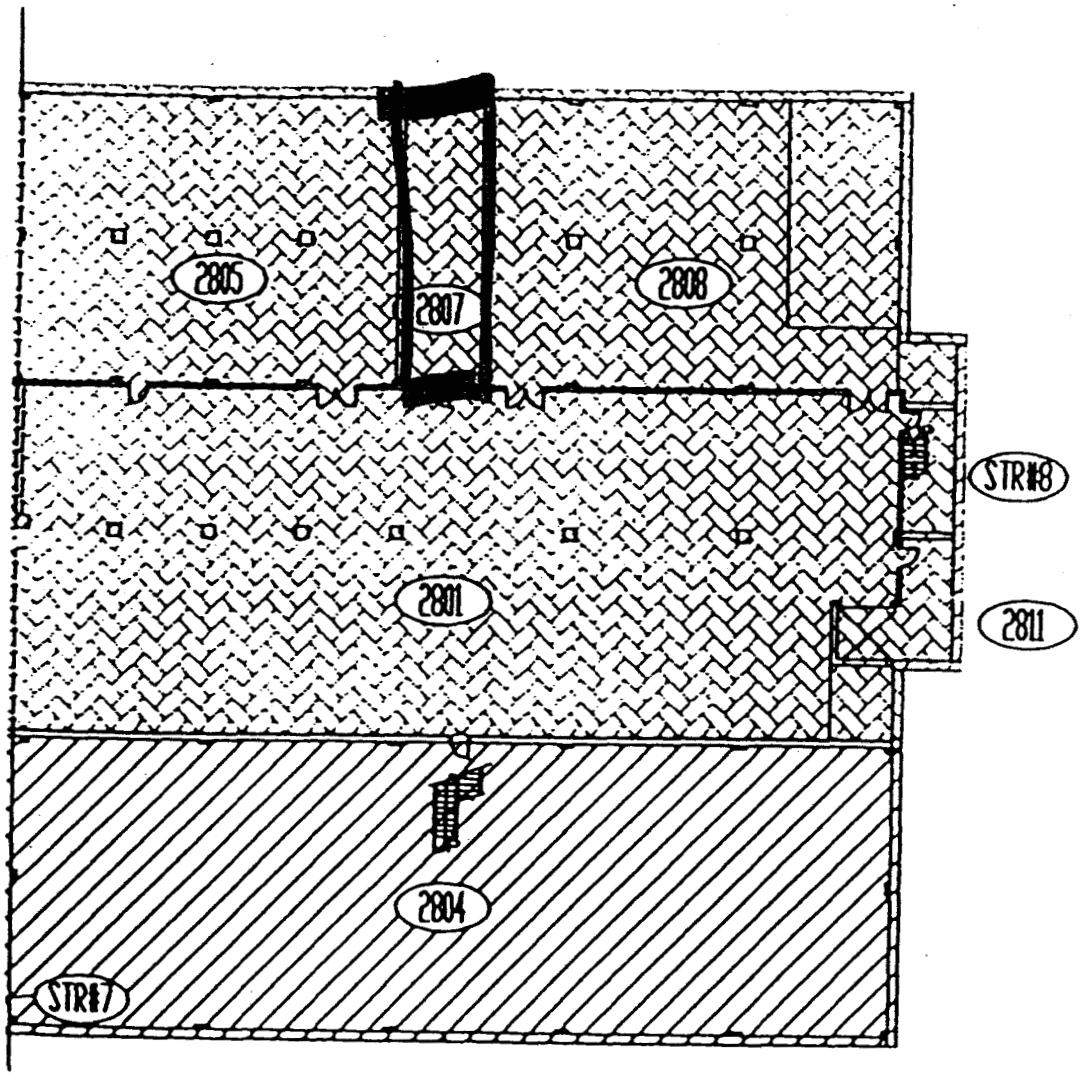
Room 2805: 7 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment



71

Smear samples for beryllium analysis

Room 2807: 3 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment



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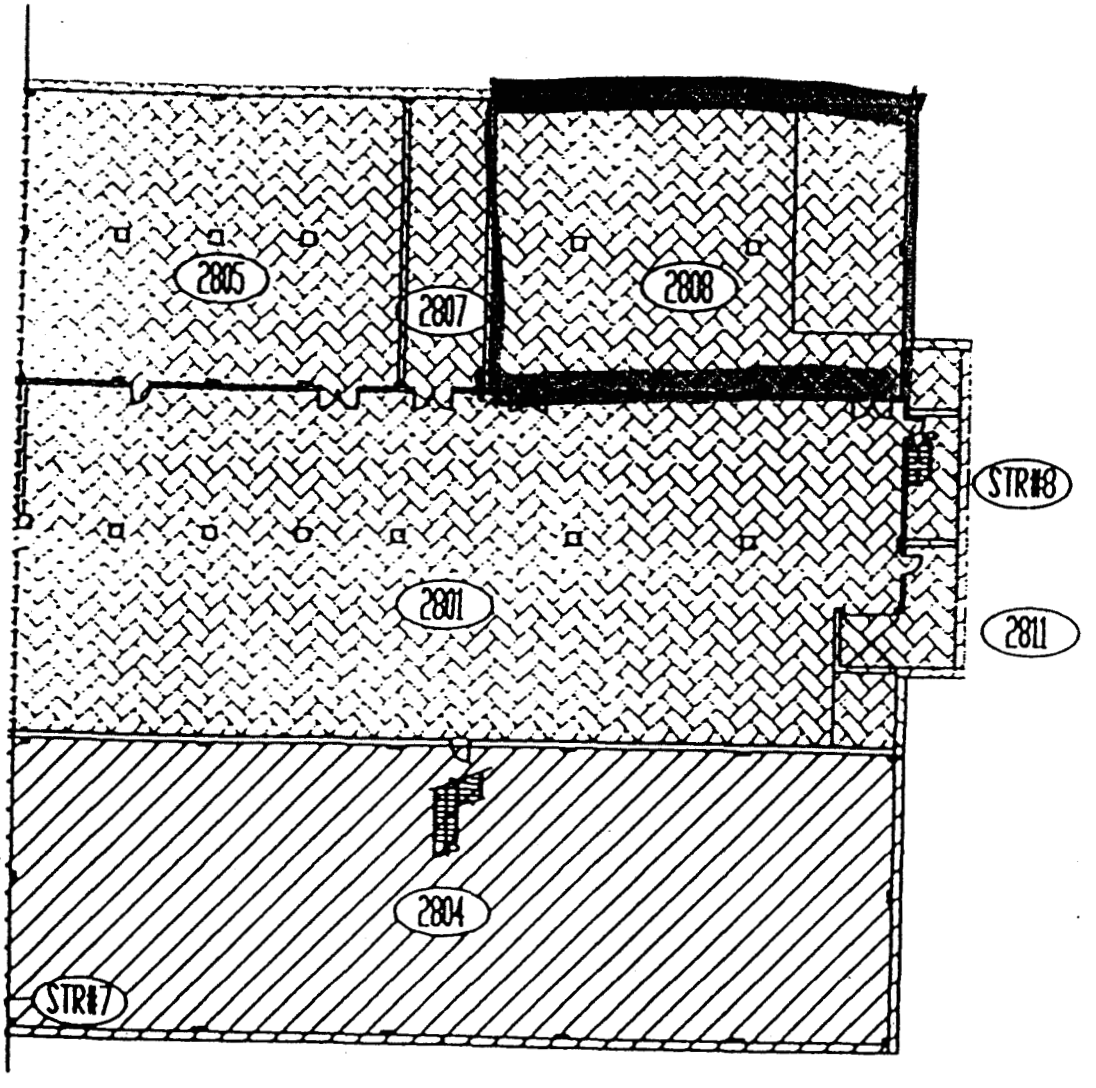
Smear samples for beryllium analysis

Room 2808: 7 smears at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears plus a duplicate below 6 feet on floors, walls , or fixed equipment



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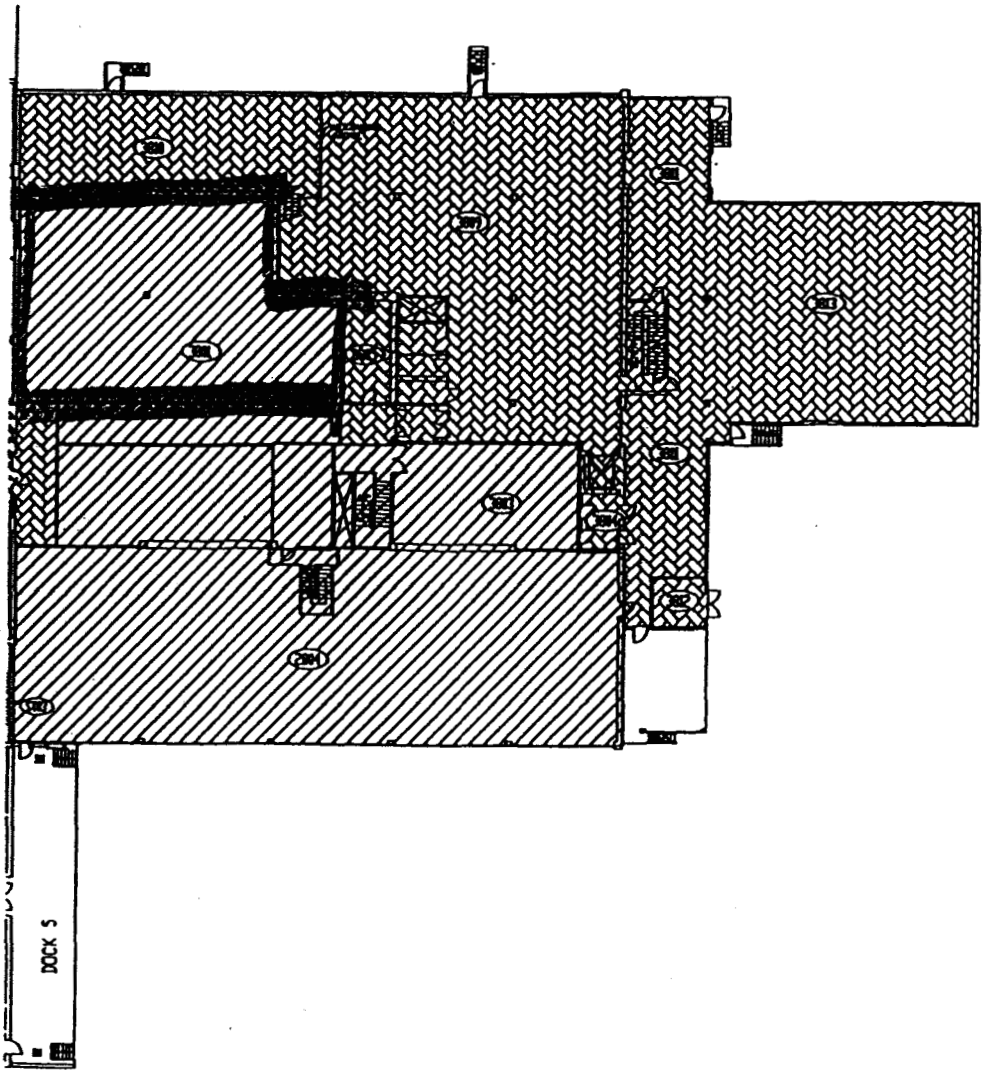
Smear samples for beryllium analysis

Room 3801: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment



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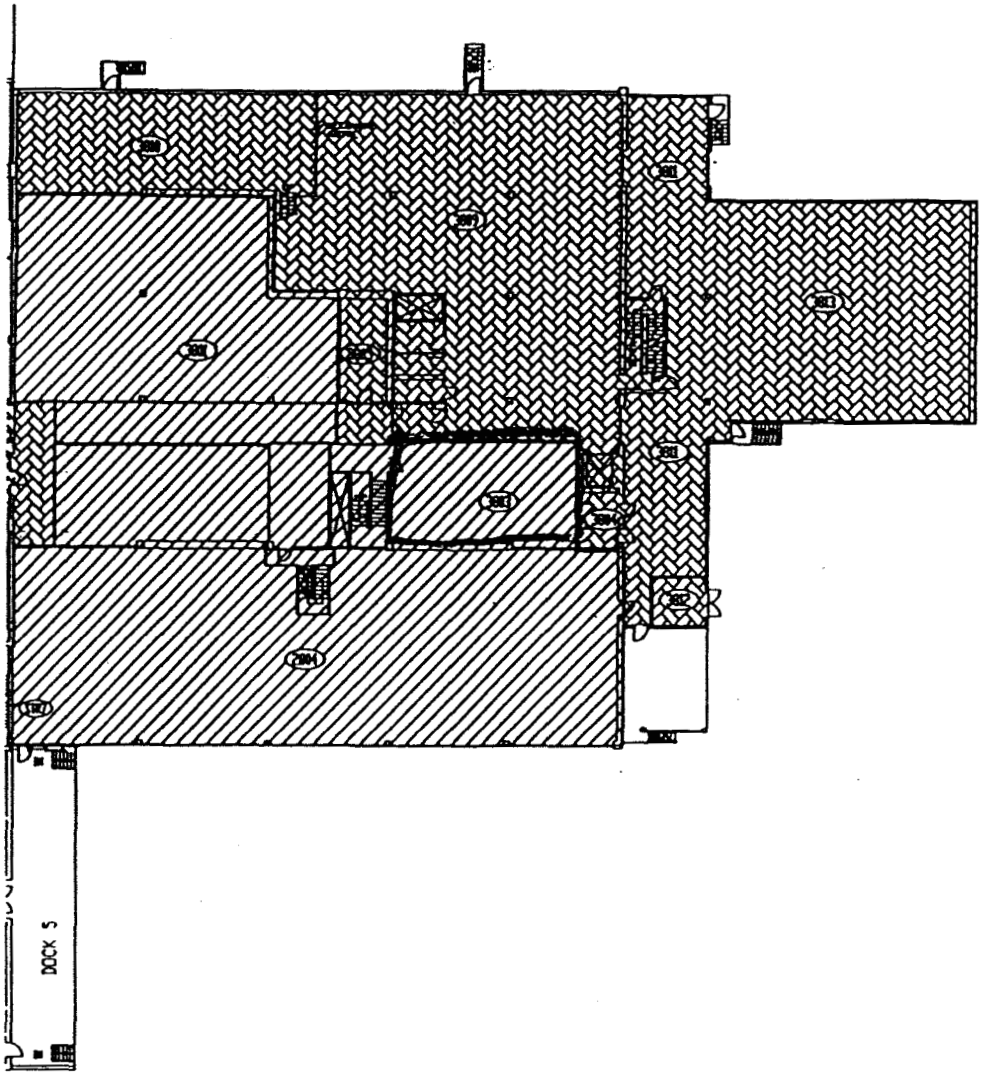
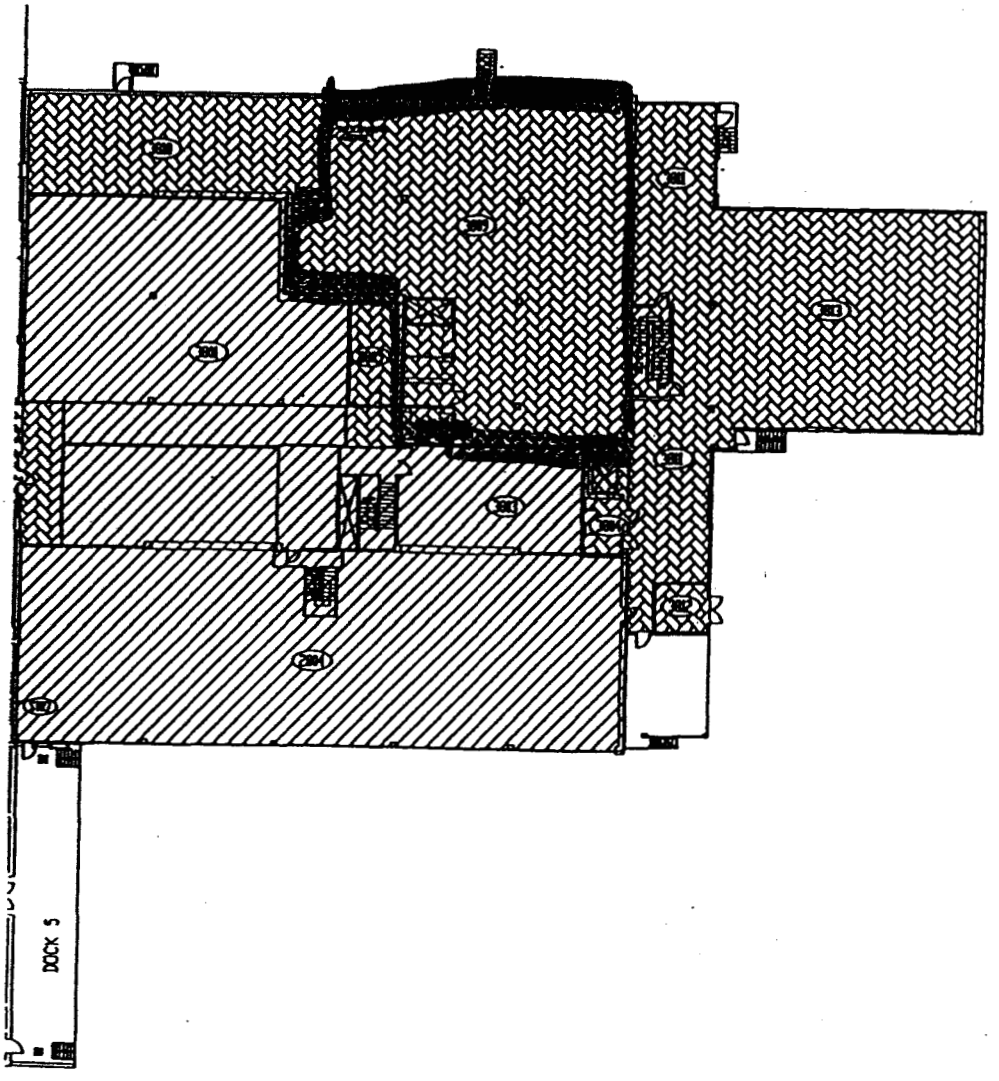
Smear samples for beryllium analysis

Room 3803: 7 smears plus a duplicate at accessible locations above 6 feet, including at least 3 above ceiling tiles or on process lines, conduit, or similar surfaces; 3 smears below 6 feet on floors, walls, or fixed equipment



Smear samples for beryllium analysis

Room 3809: 20 smears plus 2 duplicates at accessible locations above 6 feet, including at least 10 above ceiling tiles or on process lines, conduit, or similar surfaces



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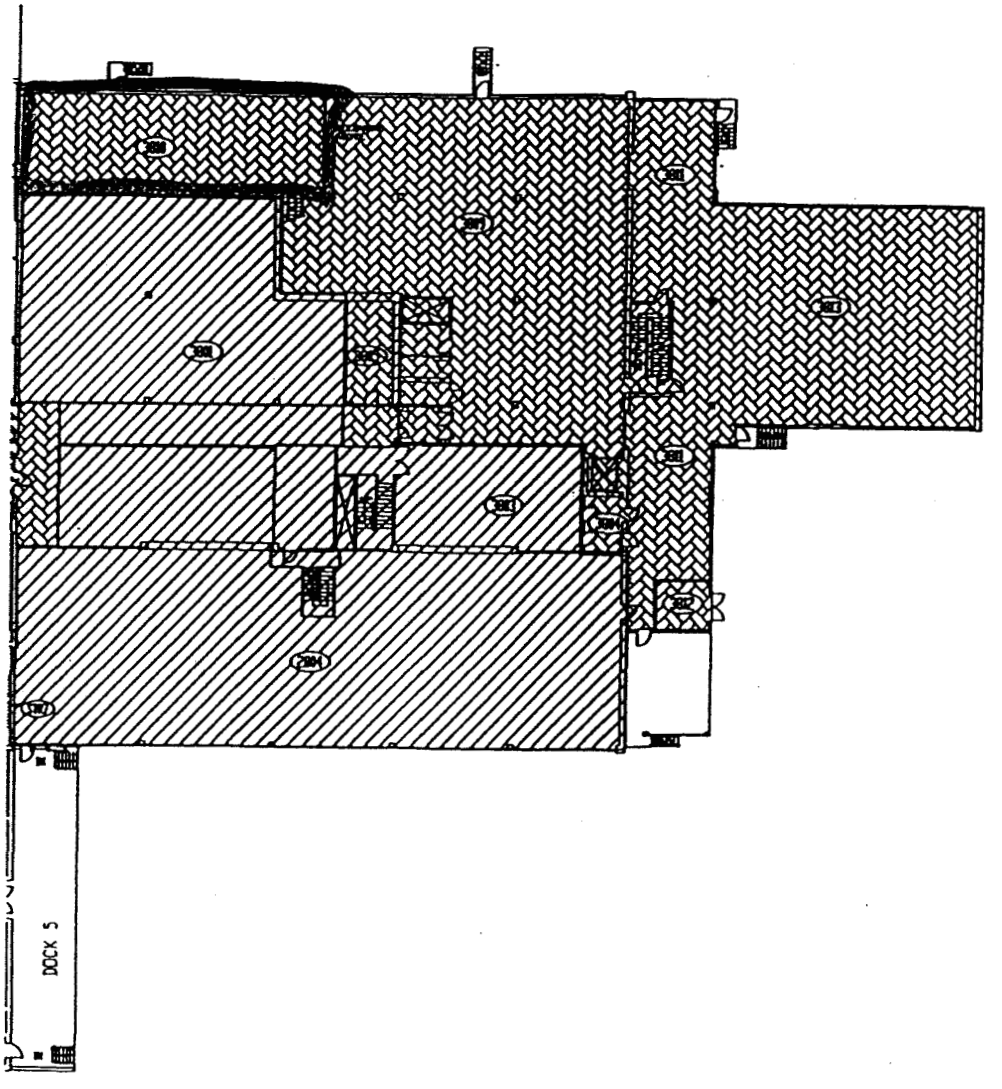
Smear samples for beryllium analysis

Room 3810: 10 smears plus a duplicate at accessible locations above 6 feet, including at least 5 above ceiling tiles or on process lines, conduit, or similar surfaces



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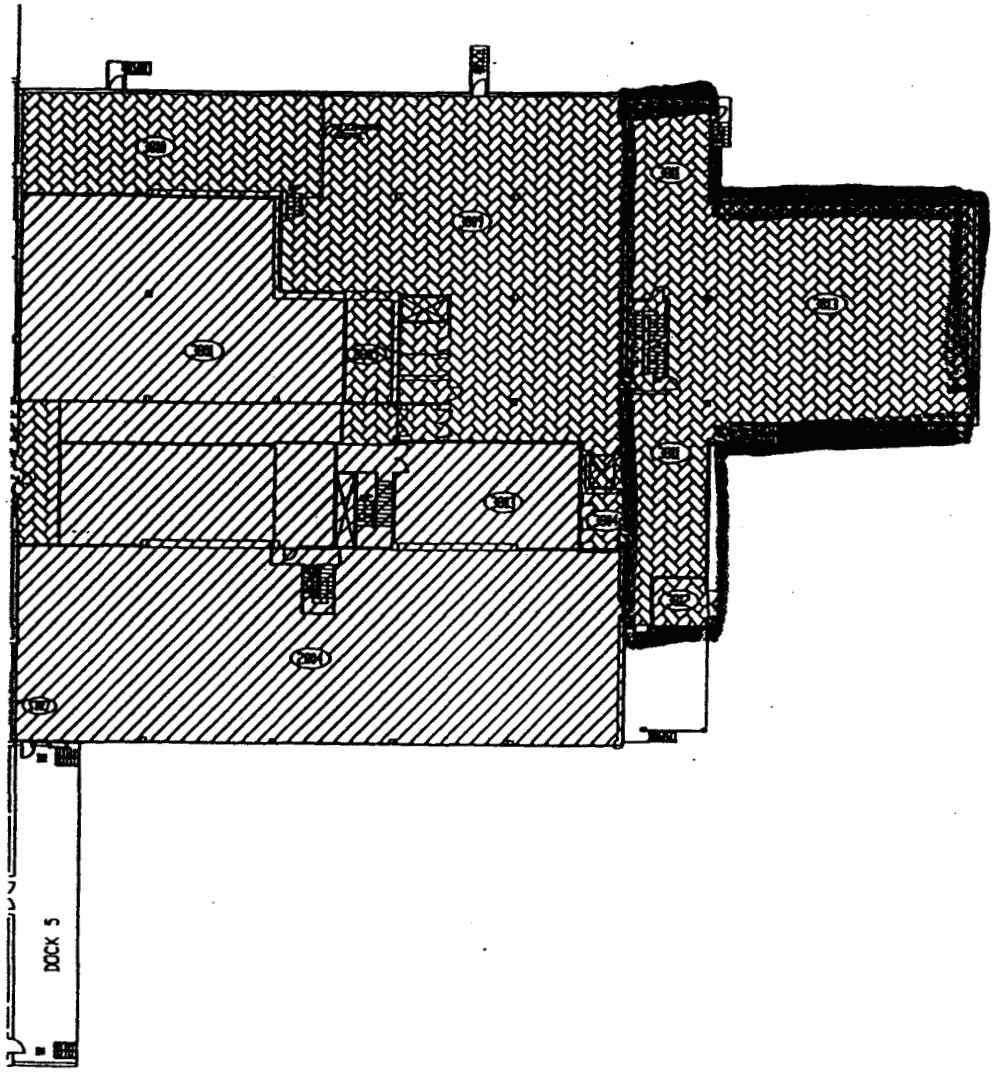
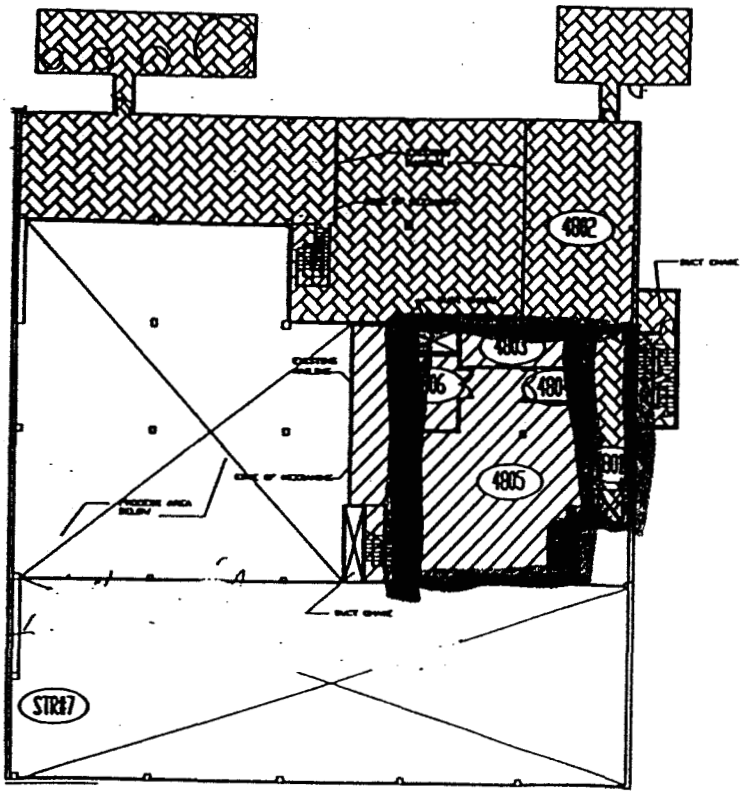
Smear samples for beryllium analysis

Room 3813, 3811, and 3812: 14 smears total over the three rooms plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment



Smear samples for beryllium analysis

Rooms 4801, 4803, 4804, 4805, and 4806: 14 smears total over the four rooms plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment



BUILDING 374 MEZZANINE

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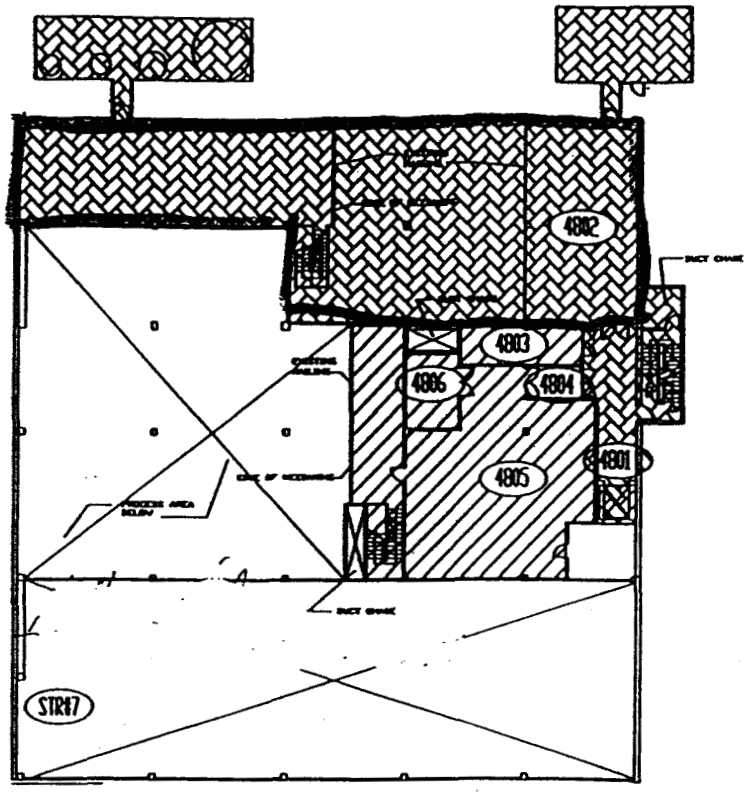
Smear samples for beryllium analysis

Room 4802: 14 smears plus a duplicate at accessible locations above 6 feet, including at least 7 above ceiling tiles or on process lines, conduit, or similar surfaces; 6 smears plus a duplicate below 6 feet on floors, walls, or fixed equipment



BUILDING 374 MEZZANINE

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Performed By			
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By			
RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By			
Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description
Characterization Package for B-371 Cluster

Beryllium Sampling Performed By

I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date
I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date
I.H. Technician Printed Name	Employee #	I.H. Technician Signature	Date

Beryllium Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Beryllium Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374

Survey Unit Description
Characterization Package for B-371 Cluster

Concrete Sampling Performed By

Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date
Sampling Technician Printed Name	Employee #	Sampling Technician Signature	Date

Concrete Sampling Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Concrete Sampling Pre/Post and Sample Release Survey Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A

Survey Unit Description
Characterization Package for B-371 Cluster

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 374A Carpenter's Shop

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos**

Special Support Requirements

Ladder, scaffolding, or man-lift. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	5 media samples. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Other:_____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 374A

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Sampling Performed By

Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	5 media samples. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377
Survey Unit Description Characterization Package for B-371 Cluster		

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 377 Air Compressor Building

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos**

Special Support Requirements

Ladder, scaffolding, or man-lift. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ **DATE** _____

SIGNATURE _____

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Other:_____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 377

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Sampling Performed By			
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By			
RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By			
Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378

Survey Unit Description
Characterization Package for B-371 Cluster

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 378 Waste Collection Pump House

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos**

Special Support Requirements

Ladder, scaffolding, or man-lift. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	5 media samples. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Other:_____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 378
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Performed By			
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By			
RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By			
Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381

Survey Unit Description
Characterization Package for B-371 Cluster

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 381 Fluorine Building

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos**

Special Support Requirements

Ladder, scaffolding, or man-lift. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	15 media samples. **SEE NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

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Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381

Survey Unit Description

Characterization Package for B-371 Cluster

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ DATE _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Other:_____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: 381

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Sampling Performed By

Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

CHARACTERIZATION INSTRUCTION COVER SHEET

Building 371 Cluster Tanks: 163-170, 224-228, and T-4A.

Radiological Contaminants of Concern: **U, Pu**
Non-Radiological Contaminants of Concern: **Asbestos**

Special Support Requirements

Ladder, scaffolding, or man-lift. CDPHE-certified asbestos inspector for inspections and sampling. RCTs to support sampling operations.

Special Safety Precautions

Fall protection is required for work above 6 ft. Respiratory protection at the discretion of IH. Access to roofs, stairs, or elevated structures may require additional approvals from security personnel. Refer to Activity Hazards Analysis and 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements"

Labeling Requirements

Sample containers must be labelled as described in the applicable Characterization Procedure. Obtain pre-printed, uniquely numbered sample labels from ASD or RLC project representative if applicable.

Characterization Instruction Implementation

This survey package is ready for implementation. Adequate detail is provided to allow implementation by the sampling team. DQO's and data evaluation requirements are covered in the *Decontamination and Decommissioning Characterization Protocol*, MAN-077-DDCP.

[redacted]	[redacted]		
Preparer Printed Name	Employee #	Preparer Signature	Date
Quality Assurance Reviewer Printed Name	Employee #	Quality Assurance Reviewer Signature	Date

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY INSTRUCTIONS

Minimum Survey & Sample Measurement Requirements		
Measurement	**Amount & Type**	**Comments**
Media samples for asbestos analysis	Sampling at discretion of asbestos inspector. SEE **NOTES 1 and 2.**	Sampler **SHALL** be a **CDPHE Certified Asbestos Inspector;** Sampling and analysis **SHALL** be performed according to PRO-563-ACPR, *Asbestos Characterization Procedure;* Sampler **SHALL** provide a map or sketch of precise sample locations and media (i.e., show pipes, ducts, etc)

NOTE 1: Due to ongoing operations within the buildings and constantly changing accessibility to different locations, precise sampling locations will be determined during pre-evolutionary briefing and walkdown, immediately prior to sample collection. Locations at which sampling would cause an unacceptable risk of spread of contamination **SHALL** be excluded and reasons noted in the sampling log. In order that sampling locations may be unequivocally located after sample analysis, sampling locations **SHALL** be documented on sample maps as well as the appropriate logs as required by the applicable characterization procedure, **AND** the sample location **SHALL** be physically marked either with a sticker or other durable marking containing the RIN, event, and bottle numbers (or if an IH sample, the IH sample number) of the sample.

NOTE 2: A Property / Waste Release Evaluation (P/WRE) is required for all analytical samples to be transported offsite for analysis. However, the instructions for RCTs and Radiological Operations Foreman in the following sections may be waived if it is deemed by Radiological Engineering (Arlan Moore) that no assay is required due to building history and process knowledge, per 3-PRO-141-RSP 09.01, *Unrestricted Release of Property, Material, Equipment, and Waste.*

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks

Survey Unit Description

Characterization Package for B-371 Cluster

Tank Descriptions

262: No. 2 Diesel Fuel Storage Tank (Abandoned March, 1999)

262A: Diesel Storage Tank

Tank 163, 164: 100,000 gallon product water tanks, north of B-374

Tank 165: Cement silo, west of B-377

Tank 166: Liquid argon storage tank, north of B-374

Tank 167: Nitric acid storage tank 450-611, north of B-774

Tank 168: Potassium hydroxide storage tank 450-609, north of B-774

Tank 169: Sodium hydroxide tank 450-611, north of B-774

Tank 170: Liquid nitrogen storage tank, north of B-374

Tank 224: First effect vapor body tank, T-802, NaOH, pH 12.0, north of B-374

Tank 225: Second effect vapor body tank, T-803, NaOH, pH 13.0, north of B-374

Tank 226: Third effect vapor body tank, T-804, NaOH, pH 14.0, north of B-374

Tank 227: Fourth effect vapor body tank, T-805, NaOH, pH 14.0, north of B-374

Tank 228: Spray dryer tank, north of B-374

Tank T-4A: No. 2 diesel storage tank, northwest of B-371, door 20, replacement for UST 4/ Tank 171

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

ASBESTOS SAMPLING DATA SHEET

AND

ACM INVENTORY WORKSHEET

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Sampling Data Sheet

Job # _____ Name _____ Date _____

General Description of building/area: _____

Sample Number	Sample Description and Location

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

Asbestos Containing Material Inventory Worksheet

Building Number _____ Room Number _____ Date _____

Pipe insulation:

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Type: _____ Linear/sq. ft._____ Fitting count:_____

Duct insulation:

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Type: _____ Duct Size/app. _____ Sq. ft._____

Other:_____

_____

SURFACE INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

MISCELLANEOUS INVENTORY:

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

Location: _____ Description: _____ Sq. ft. _____

PREPARED BY _____ **DATE** _____

SIGNATURE _____

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks
Survey Unit Description Characterization Package for B-371 Cluster		

SAMPLING AND SURVEY

SIGNATURE SHEETS

Survey Area: 371 Cluster	Survey Unit: N/A	Building: Tanks

Survey Unit Description
Characterization Package for B-371 Cluster

Asbestos Sampling Performed By

Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date
Certified Asbestos Inspector Printed Name	Employee #	Certified Asbestos Inspector Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Performed By

RCT Printed Name	Employee #	RCT Signature	Date
RCT Printed Name	Employee #	RCT Signature	Date

Asbestos Sample Pre/Post and Sample Release Surveys Reviewed By

Rad Ops Supervisor Printed Name	Employee #	Rad Ops Supervisor Signature	Date

This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Building 371 Basement Floor Plan

Drawing No.: 30371-2-M

December 1, 1987

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Building 371 Sub-Basement Floor Plan

Drawing No.: 30371-1-E

December 1, 1987

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This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas Building 371 / 374 Groundfloor

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas:

Attic / Mezzanine Floor Plan

Drawing No.: D 30371-4-M

December 1, 1987

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This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Building 374 – Mezzanine / Building 374 - Basement

Drawing No.: Unknown

May 8, 1998

This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas:

Building 371 / 374 Groundfloor

Drawing No.: Unknown

May 20, 1999

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This page has been left blank due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

RADCON Posting Areas:

Building 374: Basement and Mezzanine

Drawing No.: Unknown

May 8, 1998

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		Building: 371/374	
Survey Area: A		Survey Unit: N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: A	**Survey Unit:** N/A	**Area (m^2):** 497

Survey Unit Description: ROOMS 1115, 1113, CA OF ROOM 1103, AND CA OF ROOM 1210 IN SUB-BASEMENT OF BUILDING 371. THIS SURVEY AREA IS POSTED AS A CA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
70	58	40	5	0	95

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A

Survey Unit Description: ROOMS 1115, 1113, CA OF ROOM 1103. AND CA OF ROOM 1210 IN SUB-BASEMENT OF BUILDING 371. THIS SURVEY AREA IS POSTED AS A CA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A

Survey Unit Description: ROOMS 1115, 1113, CA OF ROOM 1103, AND CA OF ROOM 1210 IN SUB-BASEMENT OF BUILDING 371. THIS SURVEY AREA IS POSTED AS A CA.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **70** unbiased survey points uniformly distributed within the rooms - 42 in room 1115, 12 in room 1103 (CA), 8 in room 1113, 8 in stairwell #4. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment/HCAs (where accessible) - Locations near waste drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **33** biased surveys (16 in room 1115, 11 in room 1103 CA, 3 in room 1113, 3 in stairwell #4), divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **40** biased survey points on equipment with one or more samples from: - Survey points on/around tanks/pumps/piping in NE corner of room 1115 and room 1103 (CA) - Internall contamination labeled equipment along N wall of room 1115. - Survey points on gloveboxes in room 1115 and 1103 (CA) - Control panels in room 1113 - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A
Survey Unit Description: ROOMS 1115, 1113, CA OF ROOM 1103, AND CA OF ROOM 1210 IN SUB-BASEMENT OF BUILDING 371. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 95 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 5 biased paint samples taken as follows: - 1 sample near criticality drain West of glovebox 62 in room 1115 - 1 sample beneath a tank in each of rooms 1115 and 1103 (CA) – (2 samples total) - 1 sample beneath glovebox 2402 or 2403 - 1 sample near criticality drain collection point West of major GB line 21 in room 1115	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A

Survey Unit Description: ROOMS 1115, 1113, CA OF ROOM 1103, AND CA OF ROOM 1210 IN SUB-BASEMENT OF BUILDING 371. THIS SURVEY AREA IS POSTED AS A CA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: A	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.____	Mfg.____	Mfg.____
Model ____	Model ____	Model ____
Serial # ____	Serial # ____	Serial # ____
Cal Due ____	Cal Due ____	Cal Due ____
Bkg. ____	Bkg. ____	Bkg. ____
Efficiency ____	Efficiency ____	Efficiency ____
MDA ____	MDA ____	MDA ____
Mfg.____	Mfg.____	Mfg.____
Model ____	Model ____	Model ____
Serial # ____	Serial # ____	Serial # ____
Cal Due ____	Cal Due ____	Cal Due ____
Bkg. ____	Bkg. ____	Bkg. ____
Efficiency ____	Efficiency ____	Efficiency ____
MDA ____	MDA ____	MDA ____

Survey Type: Contamination
Building: ____
Location: **Survey Area -** ____
Purpose: **Reconnaissance Level Characterization**

RWP #: ____

Date: ____ Time: ____

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

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

PRL # : ____
Comments: ____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
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17.					42.				
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24.					49.				
25.					50.				

Date Reviewed: ____ **RS Supervision:** ____ / ____ / ____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Radiological Safety:

Drawing Showing Survey Points

Rooms 1107, 1109, 1113, 1115

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
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25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing:

Radiological Safety:

Drawing Showing Survey Points

Room 1103, Vault 1101

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing: Radiological Safety

Survey Points: Room 1210, Vault

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: B		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: B	**Survey Unit:** N/A	**Area (m^2):** 775

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 1103, 1101, 1111, 1006, 1005, 1004, 1003, STAIRWELL #5, 1216, 1210, 1208, 1121, 1121A, 1124, 1123, 1204, 1202, 1214, AND STAIRWELL #1.THIS SURVEY AREA IS POSTED AS AN RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
130	60	40	4	0	150

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 1103, 1101, 1111, 1006, 1005, 1004, 1003, STAIRWELL #5, 1216, 1210, 1208, 1121, 1121A, 1124, 1123, 1204, 1202, 1214, AND STAIRWELL #1.THIS SURVEY AREA IS POSTED AS AN RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 1103, 1101, 1111, 1006, 1005, 1004, 1003, STAIRWELL #5, 1216, 1210, 1208, 1121, 1121A, 1124, 1123, 1204, 1202, 1214, AND STAIRWELL #1.THIS SURVEY AREA IS POSTED AS AN RBA.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **130** unbiased survey points uniformly distributed within the rooms - 11 per room in process/support type rooms (1103, 1111, 1210, 1214, 1216) - 5 per room/corridor/stairwell/storage vault (all other stairwells, rooms, corridors in the survey area NOT listed above) **20** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment/HCAs (where accessible) - Locations near waste drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **40** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **40** biased survey points on equipment with survey points: - On/around tanks/pumps/piping in room 1103 (RBA) and 1210 - On exposed piping/equipment in decon rooms - On gloveboxes in room 1111 - On equipment which has visible leaks or contained spills beneath them - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A
Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 1103, 1101, 1111, 1006, 1005, 1004, 1003, STAIRWELL #5, 1216, 1210, 1208, 1121, 1121A, 1124, 1123, 1204, 1202, 1214, AND STAIRWELL #1.THIS SURVEY AREA IS POSTED AS AN RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** **150 1 m^2** surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 4 biased paint samples taken as follows: - 1 sample from vault 1101 - 1 sample beneath a glovebox in room 1111 - 1 sample from room 1210 - 1 sample from room 1214	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 1103, 1101, 1111, 1006, 1005, 1004, 1003, STAIRWELL #5, 1216, 1210, 1208, 1121, 1121A, 1124, 1123, 1204, 1202, 1214, AND STAIRWELL #1.THIS SURVEY AREA IS POSTED AS AN RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: B	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
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24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Drawing: Radiological Safety

Survey Points: Rooms 1107 and 1111

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

156

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 1004, 1005, 1006, 1214, 1216, and 1218

157

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building:
Location: Survey Area -
Purpose: Reconnaissance Level Characterization

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
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Date Reviewed: RS Supervision: / /
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Room 1210

159

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.____	Mfg.____	Mfg.____
Model ____	Model ____	Model ____
Serial # ____	Serial # ____	Serial # ____
Cal Due ____	Cal Due ____	Cal Due ____
Bkg. ____	Bkg. ____	Bkg. ____
Efficiency ____	Efficiency ____	Efficiency ____
MDA ____	MDA ____	MDA ____
Mfg.____	Mfg.____	Mfg.____
Model ____	Model ____	Model ____
Serial # ____	Serial # ____	Serial # ____
Cal Due ____	Cal Due ____	Cal Due ____
Bkg. ____	Bkg. ____	Bkg. ____
Efficiency ____	Efficiency ____	Efficiency ____
MDA ____	MDA ____	MDA ____

Survey Type: Contamination
Building: ____
Location: Survey Area - ____
Purpose: Reconnaissance Level Characterization

RWP #: ____

Date: ____ Time: ____

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

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

PRL # : ____
Comments: ____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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Date Reviewed: ____ RS Supervision: ____ / ____ / ____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Main Floor Rooms: 1101 and 1208

Mezzanine Upstairs Rooms: 1101 and 1208

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building:
Location: Survey Area -
Purpose: Reconnaissance Level Characterization

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Room 1103

163

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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19.					44.				
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21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 1202 and 1204

165

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: Contamination
Building: _____
Location: Survey Area - _____
Purpose: Reconnaissance Level Characterization

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 1003, 1113, 1121, 1121A, 1123, and 1124

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: C		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: C	**Survey Unit:** N/A	**Area (m^2):** 1857

Survey Unit Description: ROOMS/CORRIDORS AT SOUTH END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2202, 2011, 2202A, 2202B, 2202C, 2205, AND STAIRWELL #3.THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF THE PLENUMS, WHICH ARE HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
49	70	50	5	0	79

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT SOUTH END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2202, 2011, 2202A, 2202B, 2202C, 2205, AND STAIRWELL #3.THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF THE PLENUMS, WHICH ARE HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT SOUTH END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2202, 2011, 2202A, 2202B, 2202C, 2205, AND STAIRWELL #3.THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF THE PLENUMS, WHICH ARE HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 49 <u>unbiased</u> survey points uniformly distributed within - the corridors and areas around:the plenums - stairwell #3 and adjacent areas - rooms 2202A, 2202B, 2202C (5 per room) 30 <u>biased</u> survey points with emphasis on the following types of locations: - Points adjacent to internally contaminated equipment/HCAs/plenums (where accessible) - Locations near drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 40 <u>biased</u> surveys, divided between wall and ceiling when possible, with focus on following areas: - Walls/ceilings behind/above process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** 50 <u>biased</u> survey points on equipment with survey points: - On/around plenums/plenum doors (on top of plenums where accessible), and plenum motors/and associated equipment - On exposed piping/equipment labeled as internally contaminated - On equipment which has visible leaks or contained spills beneath them - At selected room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT SOUTH END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2202, 2011, 2202A, 2202B, 2202C, 2205, AND STAIRWELL #3.THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF THE PLENUMS, WHICH ARE HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 79 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 5 biased paint samples taken as follows: - 1 sample from one of rooms 2202A, B, or C. - 3 samples near plenum entrances/doors. - 1 sample from main walkway/corridor.	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT SOUTH END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2202, 2011, 2202A, 2202B, 2202C, 2205, AND STAIRWELL #3.THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF THE PLENUMS, WHICH ARE HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: C	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 2202A, 2202B, and 2202C

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 2009, 2011, and 2202

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: D		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: D	**Survey Unit:** N/A	**Area (m^2):** 1607

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 2012, 2203, 2201, 2207, 2223, 2213, 2217, 2010 (CORRIDOR), 1216, STAIRWELL #5, 2221, 2225, 2009 (CORRIDOR). THIS SURVEY AREA IS POSTED AS AN RBA WITH THE EXCEPTION OF A SMALL CA IN ROOMS 2223/2217, WHICH WILL BE INCLUDED IN SURVEY AREA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
87	70	40	3	0	112

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 2012, 2203, 2201, 2207, 2223, 2213, 2217, 2010 (CORRIDOR), 1216, STAIRWELL #5, 2221, 2225, 2009 (CORRIDOR). THIS SURVEY AREA IS POSTED AS AN RBA WITH THE EXCEPTION OF A SMALL CA IN ROOMS 2223/2217, WHICH WILL BE INCLUDED IN SURVEY AREA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 2012, 2203, 2201, 2207, 2223, 2213, 2217, 2010 (CORRIDOR), 1216, STAIRWELL #5, 2221, 2225, 2009 (CORRIDOR). THIS SURVEY AREA IS POSTED AS AN RBA WITH THE EXCEPTION OF A SMALL CA IN ROOMS 2223/2217, WHICH WILL BE INCLUDED IN SURVEY AREA.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 87 unbiased survey points uniformly distributed within the rooms - 5 survey points per corridor in 2012, 2009 - 7 per room in rooms 2203, 2201, 2207, 2223, 2213, 2217, 2010, 1216, 2221, 2225, STAIRWELL #5. 25 biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment/HCAs/tanks (where accessible) - Locations near waste drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 45 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** 40 biased survey points on equipment with survey points: - On/around tanks/pumps/piping in rooms 2223, 2217. - I/O stations to stacker-retriever - Plenum related equipment - On equipment which has visible leaks or contained spills beneath them - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A
Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 2012, 2203, 2201, 2207, 2223, 2213, 2217, 2010 (CORRIDOR), 1216, STAIRWELL #5, 2221, 2225, 2009 (CORRIDOR). THIS SURVEY AREA IS POSTED AS AN RBA WITH THE EXCEPTION OF A SMALL CA IN ROOMS 2223/2217, WHICH WILL BE INCLUDED IN SURVEY AREA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** **112** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **3** biased paint samples taken as follows: - 1 sample from room 2207 near contaminated compressor/equip - 1 sample near contaminated tanks in room 2223 - 1 sample near contaminated equipment (tanks/piping/pumps) in room 2217	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS INCLUDING: 2012, 2203, 2201, 2207, 2223, 2213, 2217, 2010 (CORRIDOR), 1216, STAIRWELL #5, 2221, 2225, 2009 (CORRIDOR). THIS SURVEY AREA IS POSTED AS AN RBA WITH THE EXCEPTION OF A SMALL CA IN ROOMS 2223/2217, WHICH WILL BE INCLUDED IN SURVEY AREA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: D	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
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Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Rooms 2009, 2011, 2212, 2202, 2202A, 2202B, 2202C, 2203, 2207, 2213, 2216, 2217, 2221, and 2223

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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17.					42.				
18.					43.				
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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety:

Drawing Showing Survey Points

Room 2225

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Room 2203

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

10/#6 Located within Room 2203, above Plenum

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 2207 and 2223

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Print Name Signature Emp. #

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

10/#7 Located within Room 2223

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

e Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

200

177 /USA

This page has been removed due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 2213 and 2217

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
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12.					37.				
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16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

202

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: E		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: E	**Survey Unit:** N/A	**Area (m^2):** 674

Survey Unit Description: ROOMS INCLUDING: 2307, 2325, AND STAIRWELL #4 THIS SURVEY AREA IS POSTED AS A CA.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
91	103	45	5	0	116

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A

Survey Unit Description: ROOMS INCLUDING: 2307, 2325, AND STAIRWELL #4 THIS SURVEY AREA IS POSTED AS A CA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A
Survey Unit Description: ROOMS INCLUDING: 2307, 2325, AND STAIRWELL #4 THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 91 unbiased survey points uniformly distributed within the rooms - 3 survey points per wall in 2325 and 2307 (48 total) - 15 survey points per floor in 2325 and 2307 (30 total) - 5 survey points on floor of stairwell #4 - 2 survey points per wall in stairwell #4 (8 points total) 25 biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment/HCAs/tanks (where accessible) - Locations near waste drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 78 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - 3 per wall/3 per ceiling in 2307 and 2325 - 3 per wall/2 per ceiling in stairwell #4 - Walls behind process lines - Stained or discolored areas pipe or other penetrations **EQUIPMENT:** 45 biased survey points on equipment with survey points: - On/around tanks/pumps/piping in rooms 2307, 2325. - I/O stations/bag-out ports - On equipment which has visible leaks or contained spills beneath them - At room exhaust ducts - On top of overhead piping (if permitted)	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A
Survey Unit Description: ROOMS INCLUDING: 2307, 2325, AND STAIRWELL #4 THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** **116** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 5 biased paint samples taken as follows: - 1 sample near contaminated tanks in room 2307 - 1 sample in room 2325 - 1 sample near beneath glovebox in room 2325 - 1 sample at each perimeter of rooms 2307 and 2325 (2 total)	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A

Survey Unit Description: ROOMS INCLUDING: 2307, 2325, AND STAIRWELL #4 THIS SURVEY AREA IS POSTED AS A CA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: E	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Room 2307

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
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23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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1/100

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Room 2325

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
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25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Stairwell No. _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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23.					48.				
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25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: F		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

120

191 /488

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: F	**Survey Unit:** N/A	**Area (m^2):** 1413

Survey Unit Description: ROOMS/CORRIDORS AT NORTHWEST END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2305, 2301, 2309, 2303, STAIRWELL #2, 2304, 2306, 2018, STAIRWELL #1, AND CORRIDOR 2014. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
87	73	40	4	0	73

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT NORTHWEST END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2305, 2301, 2309, 2303, STAIRWELL #2, 2304, 2306, 2018, STAIRWELL #1, AND CORRIDOR 2014. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]			
		RESS Radiological Engineer Signature	Date
		N/A	N/A
		REFS Manager Signature	Date
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT NORTHWEST END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2305, 2301, 2309, 2303, STAIRWELL #2, 2304, 2306, 2018, STAIRWELL #1, AND CORRIDOR 2014. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 87 unbiased survey points uniformly distributed within - The corridors, walkways, and areas around the plenums - Corridor 2014 (5 points total) - Stairwells #1 and #2 and rooms 2303, 2018, 2305, 2309 (4 survey points per room/area) - Room 2301 and 2306 (2 per wall/7 per floor per room). - Room 2304 (1 per wall/2 per floor) 30 biased survey points with emphasis on the following types of locations: - Points adjacent to internally contaminated equipment/HCAs/plenums (where accessible) - Locations near drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** 43 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Stairwells #1 and #2 and rooms 2303, 2018, 2305, 2309 (3 survey points per room/area) - Room 2301 and 2306 (10 survey points per room) - Room 2304 (2 survey points per room) - Corridor 2014 (3 survey points in corridor) - Walls/ceilings behind/above process lines - Stained or discolored areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT NORTHWEST END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2305, 2301, 2309, 2303, STAIRWELL #2, 2304, 2306, 2018, STAIRWELL #1, AND CORRIDOR 2014. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** **40** biased survey points on equipment with survey points: - On/around plenums/plenum doors (on top of plenums where accessible), and plenum motors/and associated equipment - On exposed piping/equipment labeled as internally contaminated - On equipment which has visible leaks or contained spills beneath them - At selected room exhaust ducts - On top of overhead piping (where locations are accessible) Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **73** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **4** biased paint samples taken as follows: - 1 sample from one of rooms 2301 or 2306 - 2 samples near plenum entrances/doors. - 1 sample from stairwell #1 or stairwell #2	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS AT NORTHWEST END OF BUILDING 371 BASEMENT, INCLUDING ROOMS: 2305, 2301, 2309, 2303, STAIRWELL #2, 2304, 2306, 2018, STAIRWELL #1, AND CORRIDOR 2014. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For each media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* prior to media sampling.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: F	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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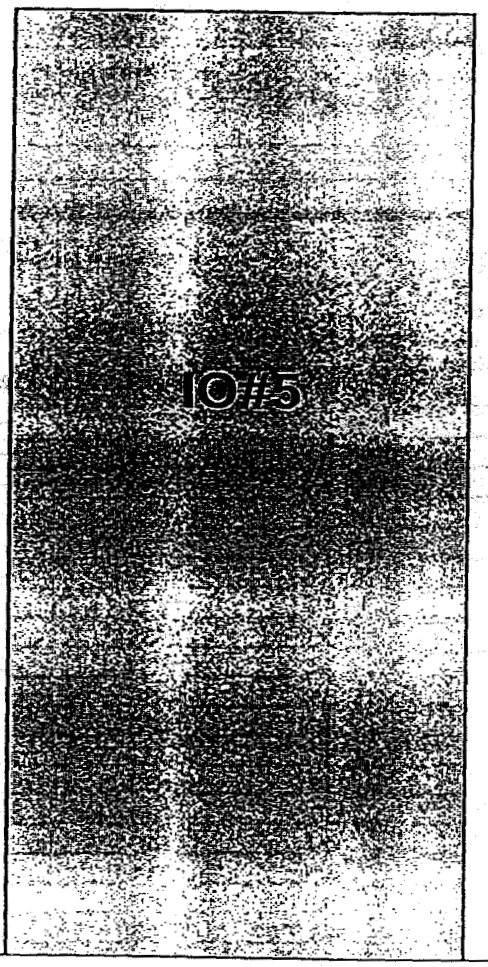
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

ROOM 2306



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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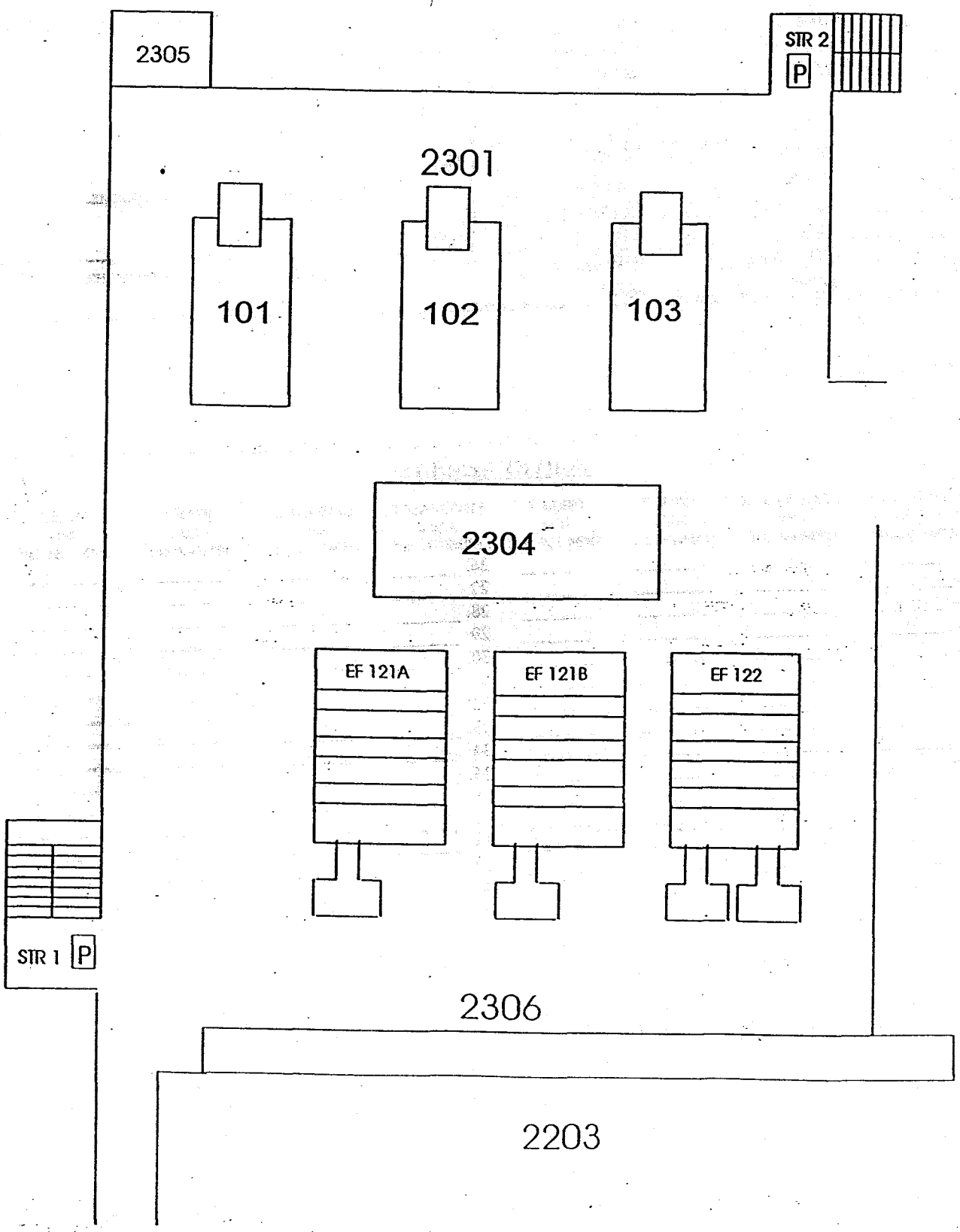
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BE SURE TO POST BOTH AREAS



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
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17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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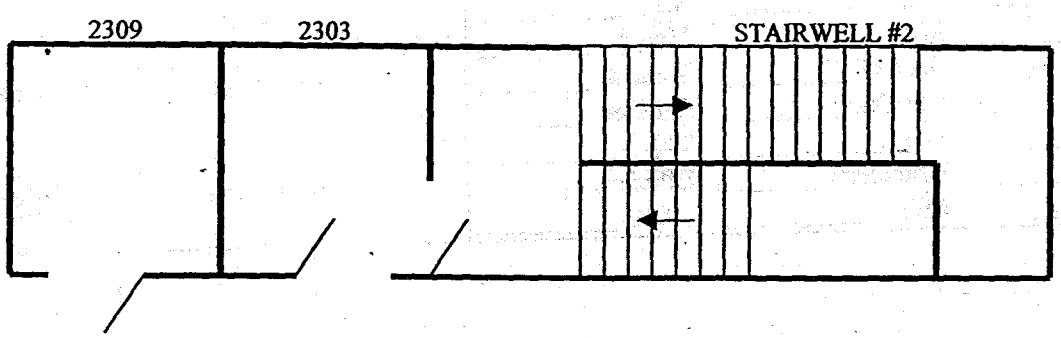
201 /1/98

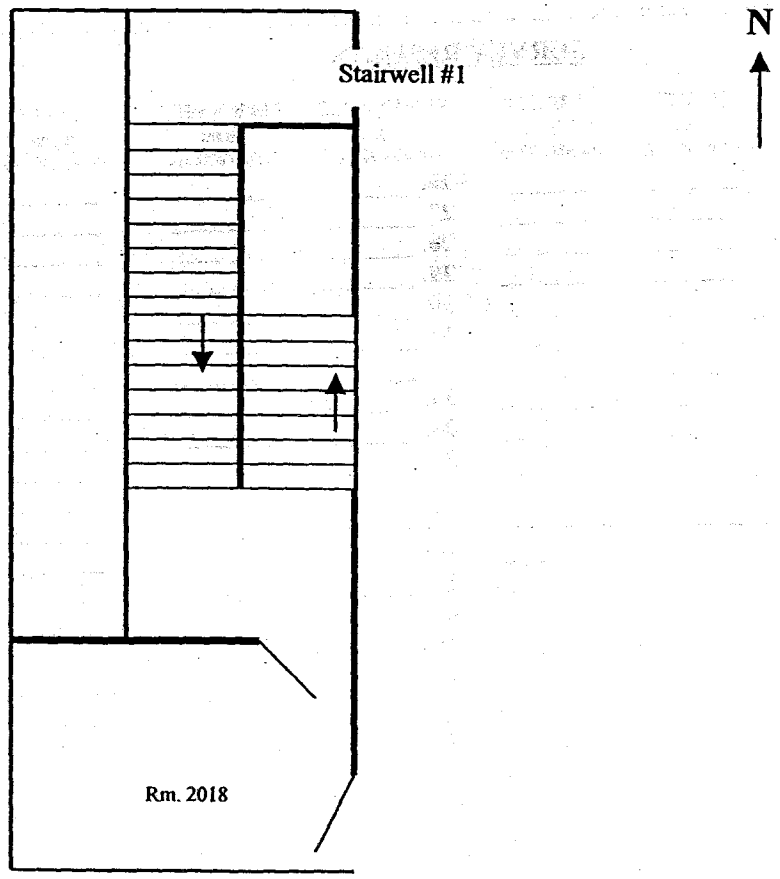
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 371 Basement





ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
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9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

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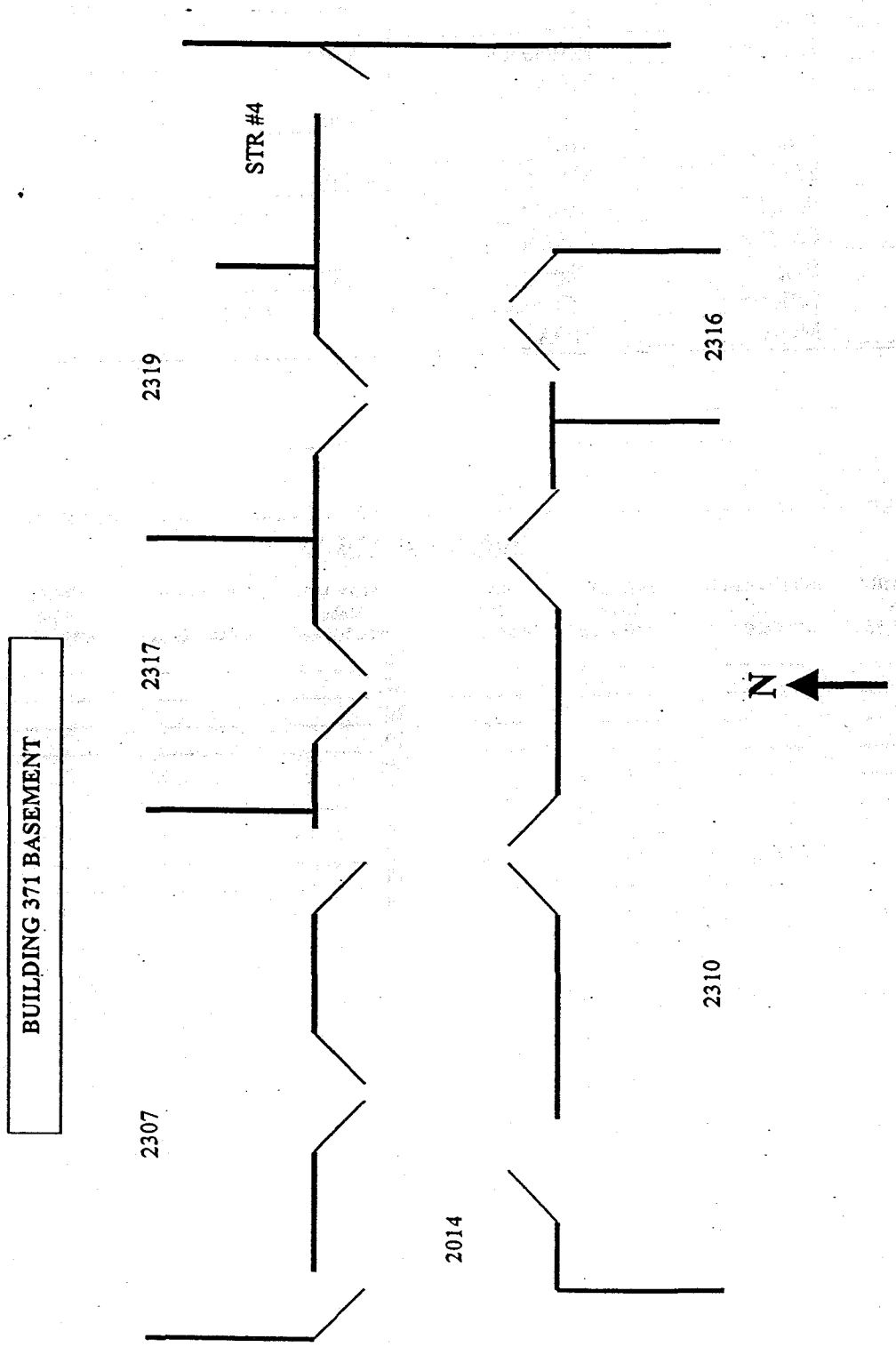
262 / 1088

@RAH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: G		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: G	**Survey Unit:** N/A	**Area (m^2):** 962

Survey Unit Description: ROOMS/CORRIDORS IN BUILDING 371 BASEMENT, INCLUDING ROOMS: 2310, 2316, 2321, 2016, CORRIDOR 2015, AND A PORTION OF CORRIDOR 2009. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
90	90	40	3	0	110

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS IN BUILDING 371 BASEMENT, INCLUDING ROOMS: 2310, 2316, 2321, 2016, CORRIDOR 2015, AND A PORTION OF CORRIDOR 2009. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]		
	RESS Radiological Engineer Signature	Date
	N/A	N/A
	REFS Manager Signature	Date
	RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS IN BUILDING 371 BASEMENT, INCLUDING ROOMS: 2310, 2316, 2321, 2016, CORRIDOR 2015, AND A PORTION OF CORRIDOR 2009. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **90** unbiased survey points uniformly distributed within - Rooms 2310 (5 per wall/10 per floor) - Room 2016, 2316, 2015, 2009, 2321 (3 per wall/4 per floor) **20** biased survey points with emphasis on the following types of locations: - Points adjacent to internally contaminated equipment/HCAs/plenums/IO Stations #3, #4 (where accessible) - Locations near drum storage areas - Locations near criticality drains - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** **70** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Rooms 2310 (3 per wall/6 per floor) - Room 2016, 2316, 2015, 2009, 2321 (2 per wall/2 per floor) - Walls/ceilings behind/above process lines - Stained or discolored areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A
Survey Unit Description: ROOMS/CORRIDORS IN BUILDING 371 BASEMENT, INCLUDING ROOMS: 2310, 2316, 2321, 2016, CORRIDOR 2015, AND A PORTION OF CORRIDOR 2009. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** **40** biased survey points on equipment with survey points: - On/around plenums/plenum doors (on top of plenums where accessible), and plenum motors/and associated equipment - On/around I/O stations in room 2310 - On exposed piping/equipment labeled as internally contaminated - On equipment which has visible leaks or contained spills beneath them - At selected room exhaust ducts - On top of overhead piping (where locations are accessible) Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **110** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 3 biased paint samples taken as follows: - 1 sample from room 2310 - 1 sample from corridor 2015 - 1 sample from room 2321	**SEE NOTE 5** **Media samples from some areas may not be obtainable due to floor configuration/coating. Skip those sampling areas for which sampling is not feasible.
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A

Survey Unit Description: ROOMS/CORRIDORS IN BUILDING 371 BASEMENT, INCLUDING ROOMS: 2310, 2316, 2321, 2016, CORRIDOR 2015, AND A PORTION OF CORRIDOR 2009. THIS SURVEY AREA IS POSTED AS AN RBA (WITH THE EXCEPTION OF PLENUMS, WHICH ARE INTERNALLY POSTED AS HCA'S/ARA'S/CA'S AND WILL NOT BE SURVEYED.)

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: G	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]	
	RCT Supervisor Signature	Date
	Project RE Signature	Date
	RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
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16.					41.				
17.					42.				
18.					43.				
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22.					47.				
23.					48.				
24.					49.				
25.					50.				

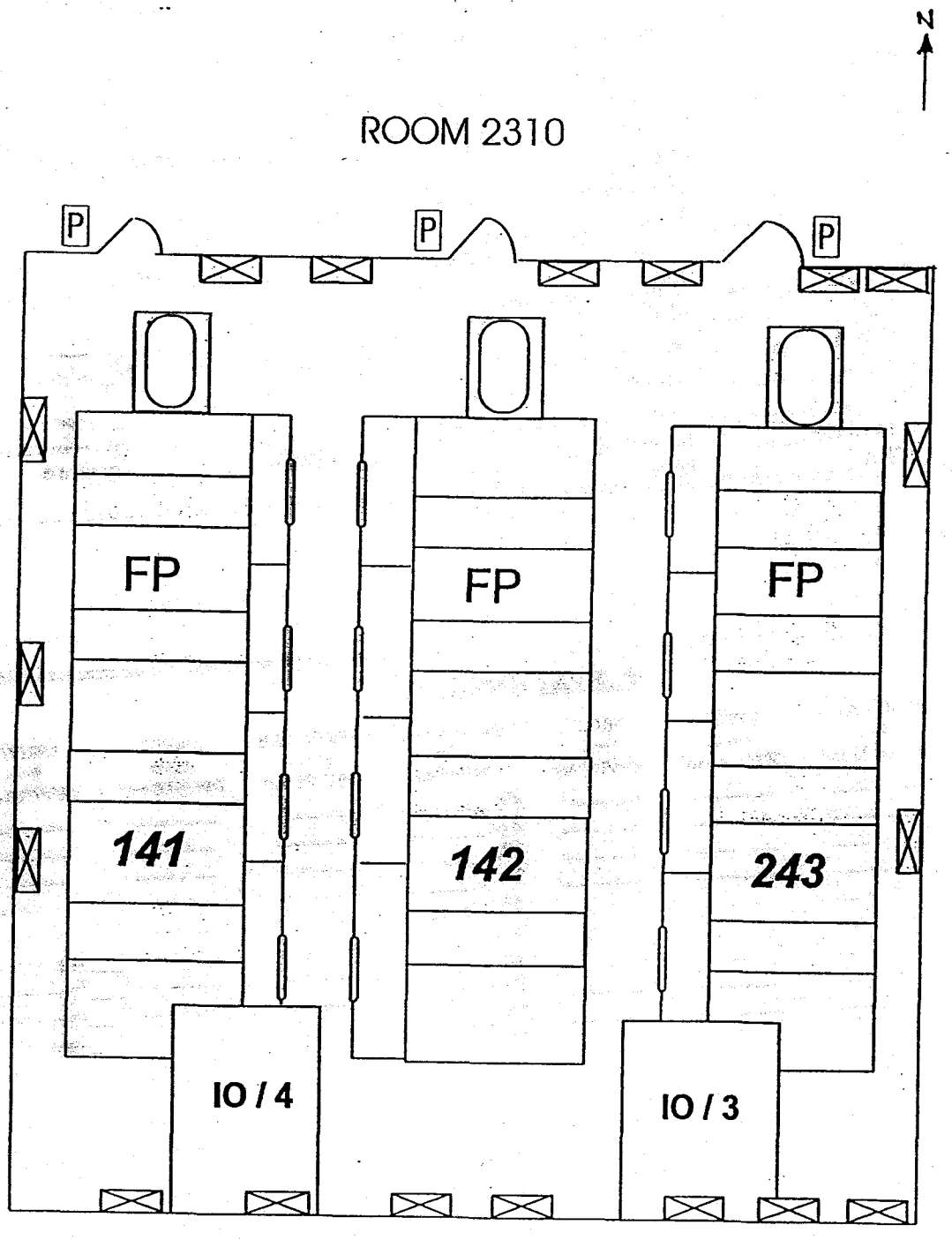
.te Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

246

212 /1158

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
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16.					41.				
17.					42.				
18.					43.				
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23.					48.				
24.					49.				
25.					50.				

ate Reviewed: _____ RS Supervision: _____ / _____
Print Name Signature Emp. #

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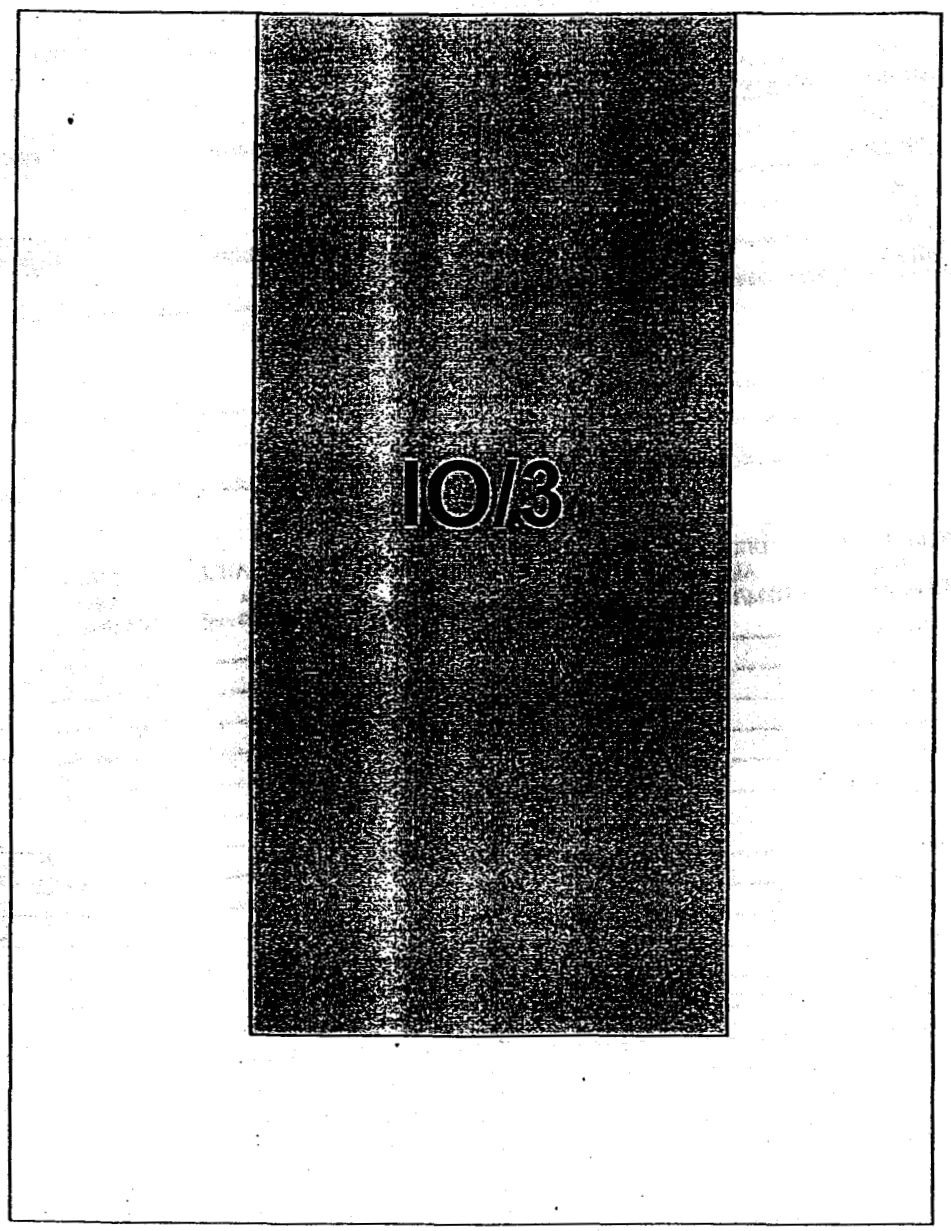
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

IO/#3 LOCATED WITHIN ROOM 2310



N

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
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25.					50.				

ıte Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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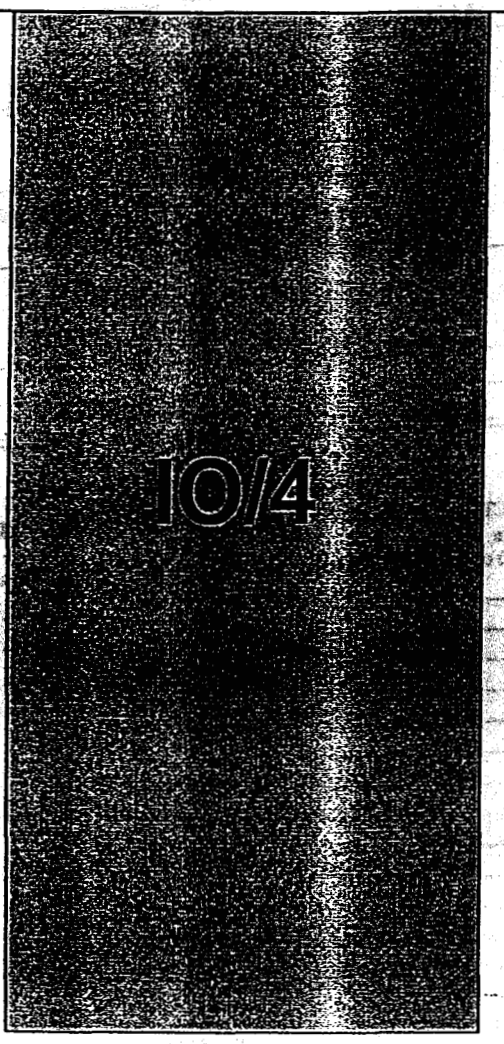
214/488

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

IO/#4 LOCATED WITHIN ROOM 2310



N

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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ate Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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Rev. 05/98

215/488

@RAH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: H		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: H	**Survey Unit:** N/A	**Area (m^2):** 1861

Survey Unit Description: NON-RADIOLOGICAL ROOMS/OFFICES AT EAST END OF BUILDING 371 BASEMENT. ALSO INCLUDED IN THIS SURVEY AREA ARE ROOMS 1001, 1002, ELEVATOR #1, STAIRWELL #6 IN THE SUB-BASEMENT. THIS SURVEY AREA IS NOT POSTED AS A RADIOLOGICAL AREA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
138	70	30	2	0	148

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/OFFICES AT EAST END OF BUILDING 371 BASEMENT. ALSO INCLUDED IN THIS SURVEY AREA ARE ROOMS 1001, 1002, ELEVATOR #1, STAIRWELL #6 IN THE SUB-BASEMENT. THIS SURVEY AREA IS NOT POSTED AS A RADIOLOGICAL AREA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A
Survey Unit Description: NON-RADIOLOGICAL ROOMS/OFFICES AT EAST END OF BUILDING 371 BASEMENT. ALSO INCLUDED IN THIS SURVEY AREA ARE ROOMS 1001, 1002, ELEVATOR #1, STAIRWELL #6 IN THE SUB-BASEMENT. THIS SURVEY AREA IS NOT POSTED AS A RADIOLOGICAL AREA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 138 unbiased survey points uniformly distributed within - Larger rooms: 2101, 2103, 2107, 2102, 2124, 2128 (1 per wall/3 per floor) - All other rooms/stairwells (~48) in survey area (1 on one wall/1 per floor) 10 biased survey points with emphasis on the following types of locations: - Locations near tanks/areas of historical spills - Locations near drum storage areas and drum transport routes (elevators/corridors) - Locations near criticality drains - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** 60 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Larger rooms: 2101, 2103, 2107, 2102, 2124, 2128 (1 survey point on one wall/1 per ceiling) - All other rooms/stairwells (~48) in survey area (1 per ceiling) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A
Survey Unit Description: NON-RADIOLOGICAL ROOMS/OFFICES AT EAST END OF BUILDING 371 BASEMENT. ALSO INCLUDED IN THIS SURVEY AREA ARE ROOMS 1001, 1002, ELEVATOR #1, STAIRWELL #6 IN THE SUB-BASEMENT. THIS SURVEY AREA IS NOT POSTED AS A RADIOLOGICAL AREA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** **30** biased survey points on equipment with survey points: - Tanks/tank related equipment - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in 5 different rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools) - At selected room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **148** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **2** biased paint samples taken as follows: - 1 sample from room 2103 - 1 sample from room 2101	**SEE NOTE 5** **Media samples from some areas may not be obtainable due to floor configuration/coating. Skip those sampling areas for which sampling is not feasible.
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/OFFICES AT EAST END OF BUILDING 371 BASEMENT. ALSO INCLUDED IN THIS SURVEY AREA ARE ROOMS 1001, 1002, ELEVATOR #1, STAIRWELL #6 IN THE SUB-BASEMENT. THIS SURVEY AREA IS NOT POSTED AS A RADIOLOGICAL AREA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: H	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]	
RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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This page has been removed due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 2101, 2102, 2103, 2104, 2106, 2107, 2107A, 2107B, 2107C, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2128, 2130, 2132, 2134, 2136, and 2138

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: I		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: I	**Survey Unit:** N/A	**Area (m^2):** 869

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3305, 3323, 3321, 3335, 3327, 3329, 3331, 3206, AND 3204. THE ROOMS IN THIS SURVEY AREA IS POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3303, 3202, 3204A, 3339A, 3325, 3333, 3343A DUE TO POSTING AS HCA/ARA)

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
105	107	30	4	0	130

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3305, 3323, 3321, 3335, 3327, 3329, 3331, 3206, AND 3204. THE ROOMS IN THIS SURVEY AREA IS POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3303, 3202, 3204A, 3339A, 3325, 3333, 3343A DUE TO POSTING AS HCA/ARA)

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3305, 3323, 3321, 3335, 3327, 3329, 3331, 3206, AND 3204. THE ROOMS IN THIS SURVEY AREA IS POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3303, 3202, 3204A, 3339A, 3325, 3333, 3343A DUE TO POSTING AS HCA/ARA)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **105** unbiased survey points uniformly distributed within - Rooms: 3323, 3321, 3335, 3305, 3206, 3204 (12 per room) - Rooms: 3327, 3329, 3331 (11 per room) **25** biased survey points with emphasis on the following types of locations: - Locations near gloveboxes/bag-out ports/areas of contained contamination - Locations near areas of historical spills - Locations near drum storage areas and drum transport routes (elevators/corridors) - Locations near criticality drains - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** **82** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Rooms: 3323, 3321, 3335, 3305, 3206, 3204 (9 per room) - Rooms: 3327, 3329, 3331 (6 per room) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3305, 3323, 3321, 3335, 3327, 3329, 3331, 3206, AND 3204. THE ROOMS IN THIS SURVEY AREA IS POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3303, 3202, 3204A, 3339A, 3325, 3333, 3343A DUE TO POSTING AS HCA/ARA)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** **30** biased survey points on equipment with survey points: - Gloveboxes/B-boxes/IO stations - Survey points on top of overhead piping (where locations are accessible through reach tools) - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **130** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **4** biased paint samples taken as follows: - 1 sample from room 3305 beneath glovebox line - 1 sample from room 3305 near criticality drain - 1 sample from room 3206 - 1 sample from one of rooms 3327, 3329, or 3331	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3305, 3323, 3321, 3335, 3327, 3329, 3331, 3206, AND 3204. THE ROOMS IN THIS SURVEY AREA IS POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3303, 3202, 3204A, 3339A, 3325, 3333, 3343A DUE TO POSTING AS HCA/ARA)

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: I	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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This page has been removed due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3321, 3323, 3325, 3327, 3329, 3331, 3333, 3335, 3337, and 3341

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3325, 3327, 3329, 3331, 3333, 3335, and 3337

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3301, 3303 (Vault 6), 3305, and 3315

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3202, 3204, 3206, and 3208

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: J		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: J	**Survey Unit:** N/A	**Area (m^2):** 603

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557, AND 3567B. THE ROOMS IN THIS SURVEY AREA ARE POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3559, 3575A, 3561A, 3563, 3549, 3551, 3553, 3547, 3555, 3565A, 3569A, 3573, 3571, 3517, 3531, 3529, 3523, 3025, AND 3521 DUE TO POSTING AS HCA/ARA)

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
101	110	35	5	0	126

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557, AND 3567B. THE ROOMS IN THIS SURVEY AREA ARE POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3559, 3575A, 3561A, 3563, 3549, 3551, 3553, 3547, 3555, 3565A, 3569A, 3573, 3571, 3517, 3531, 3529, 3523, 3025, AND 3521 DUE TO POSTING AS HCA/ARA)

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557, AND 3567B. THE ROOMS IN THIS SURVEY AREA ARE POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3559, 3575A, 3561A, 3563, 3549, 3551, 3553, 3547, 3555, 3565A, 3569A, 3573, 3571, 3517, 3531, 3529, 3523, 3025, AND 3521 DUE TO POSTING AS HCA/ARA)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **101** unbiased survey points uniformly distributed within - Rooms: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557 (12 per room) - Room 3567B: (5 per room) **25** biased survey points with emphasis on the following types of locations: - Locations near gloveboxes/bag-out ports/areas of contained contamination - Locations near areas of historical spills - Locations near drum storage areas and drum transport routes (elevators/corridors) - Locations near criticality drains - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** **85** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Rooms: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557 (9 survey points per room) - Room 3567B: (3 survey points) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557, AND 3567B. THE ROOMS IN THIS SURVEY AREA ARE POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3559, 3575A, 3561A, 3563, 3549, 3551, 3553, 3547, 3555, 3565A, 3569A, 3573, 3571, 3517, 3531, 3529, 3523, 3025, AND 3521 DUE TO POSTING AS HCA/ARA)

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** 35 biased survey points on equipment with survey points: - Gloveboxes/B-boxes/IO stations - Tanks/pumps/piping associated with tanks - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** 126 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 5 biased paint samples taken as follows: - 1 sample from each of rooms 3412, 3511, and 3515 beneath glovebox line(s)/process areas - 1 sample from room 3602 - 1 sample from one of rooms 3557, 3543, 3545, or 3567A	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A

Survey Unit Description: PROCESS AREAS/ROOMS ON THE MAIN FLOOR OF BUILDING 371. ROOMS INCLUDED IN THIS SURVEY AREA ARE: 3412, 3602, 3511, 3515, 3567A, 3545, 3543, 3557, AND 3567B. THE ROOMS IN THIS SURVEY AREA ARE POSTED AS A CONTAMINATION AREA. (AREAS EXCLUDED ARE ROOMS 3559, 3575A, 3561A, 3563, 3549, 3551, 3553, 3547, 3555, 3565A, 3569A, 3573, 3571, 3517, 3531, 3529, 3523, 3025, AND 3521 DUE TO POSTING AS HCA/ARA)

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: J	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		RCT Supervisor Signature	Date
		Project RE Signature	Date
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
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15.					40.				
16.					41.				
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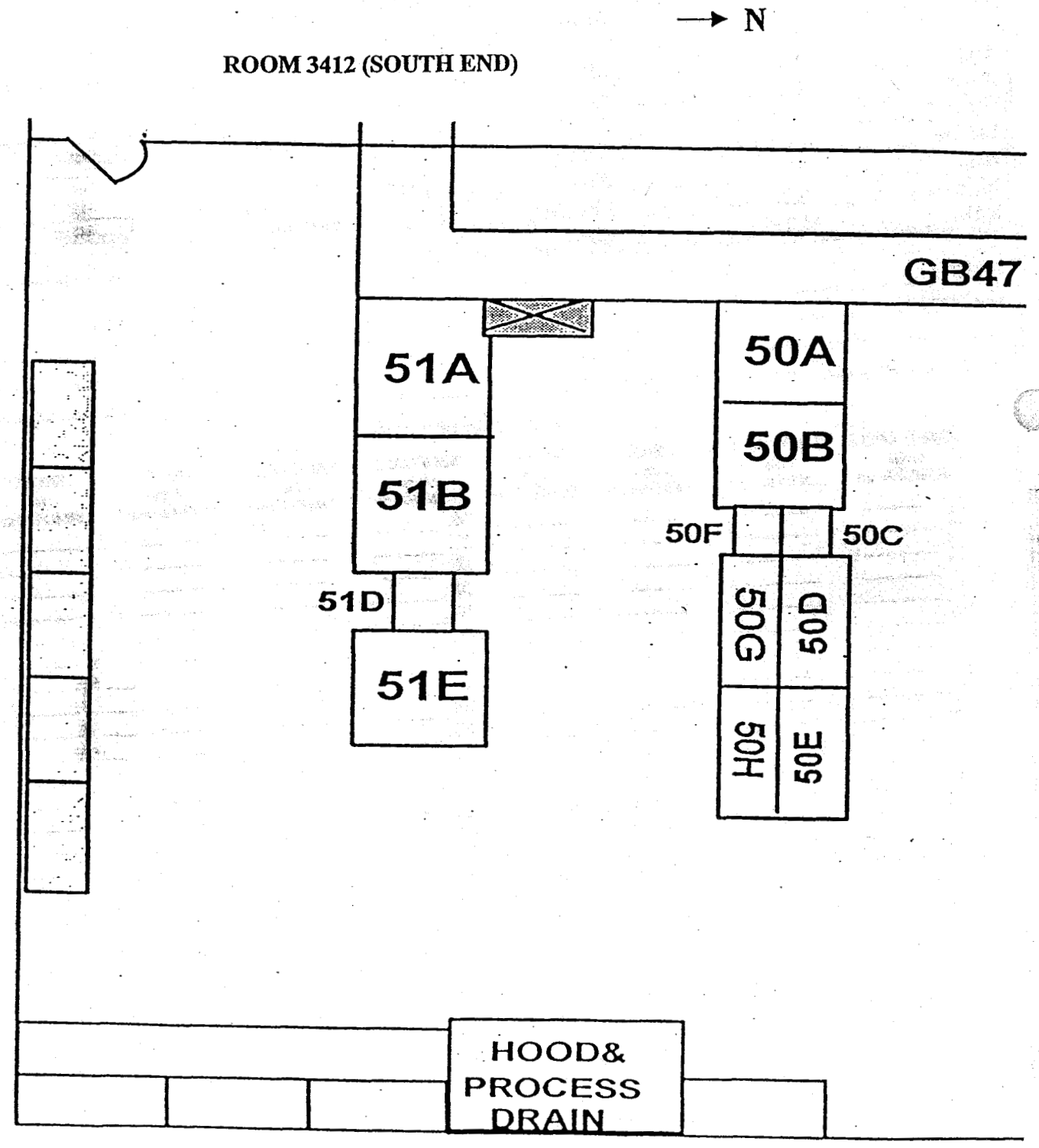
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

.te Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
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14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
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21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

ıte Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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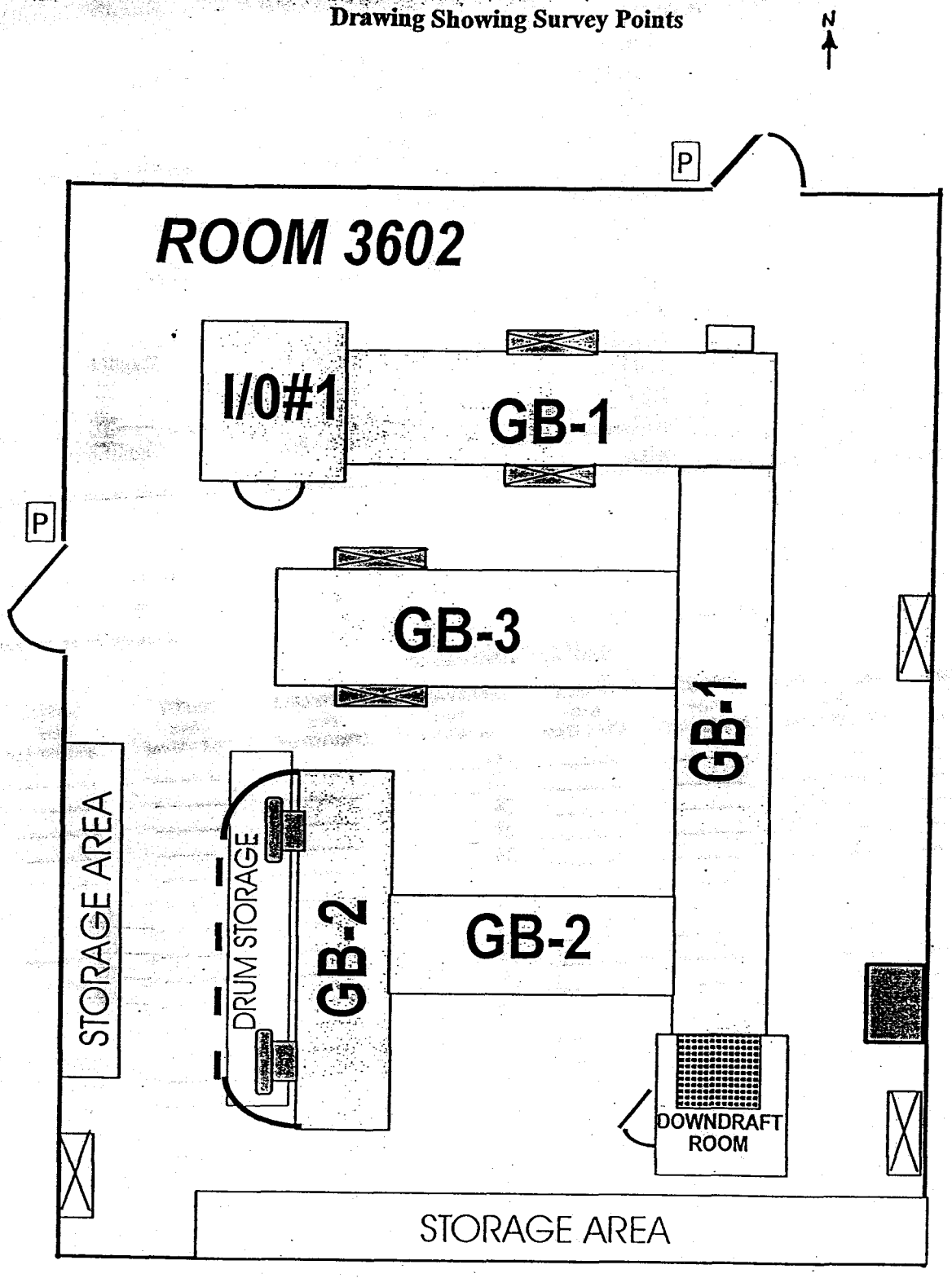
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



29B

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

ate Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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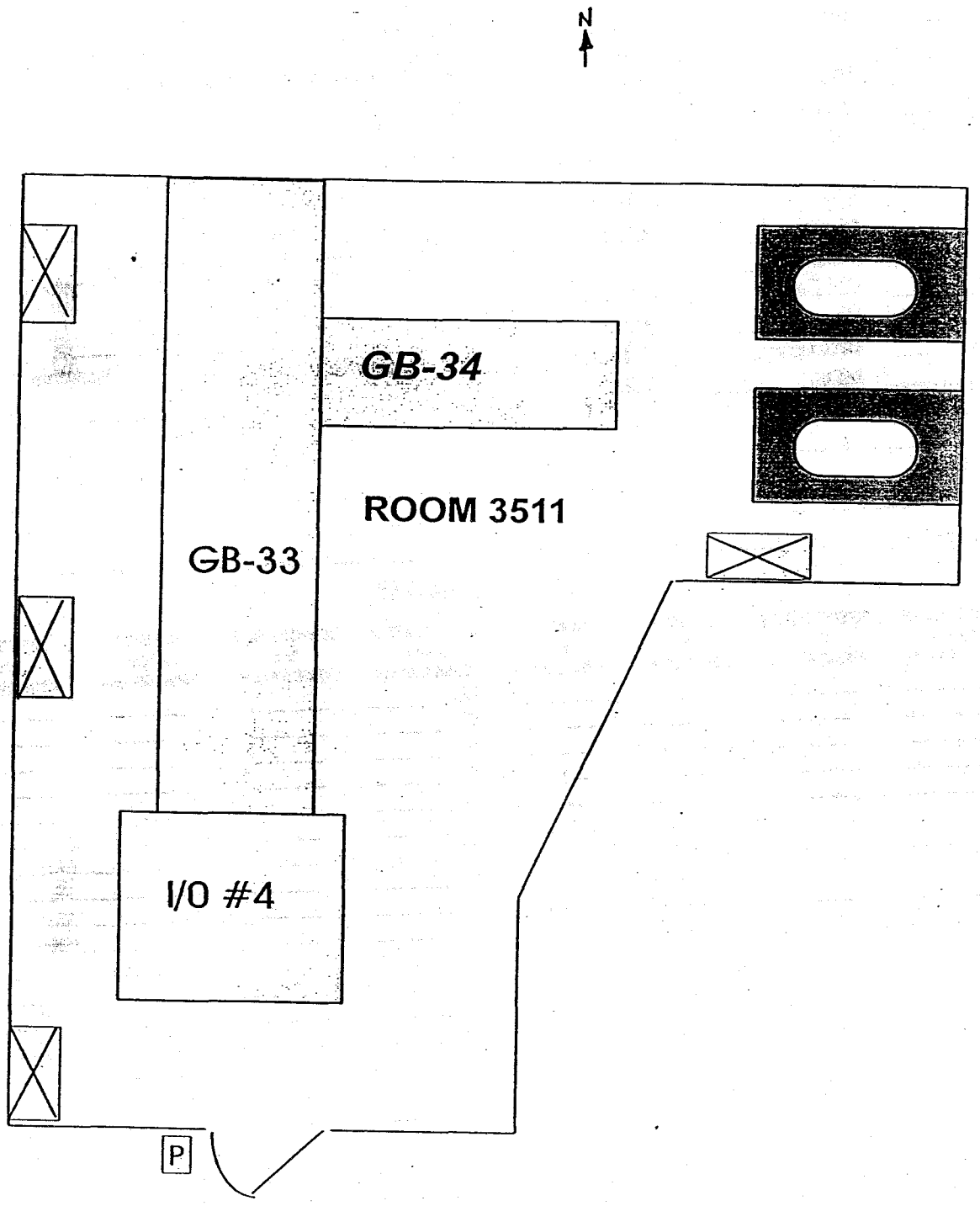
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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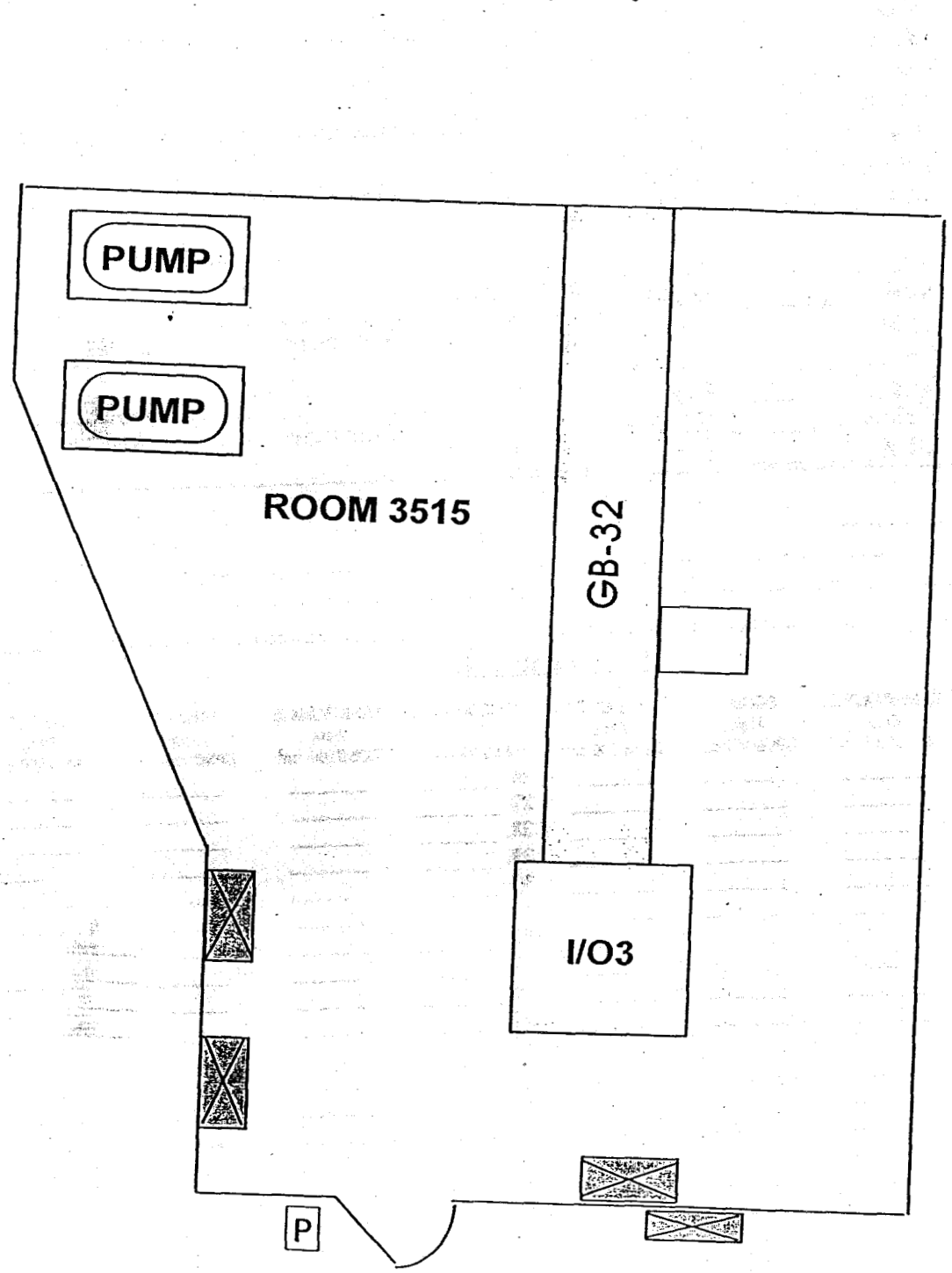
ıte Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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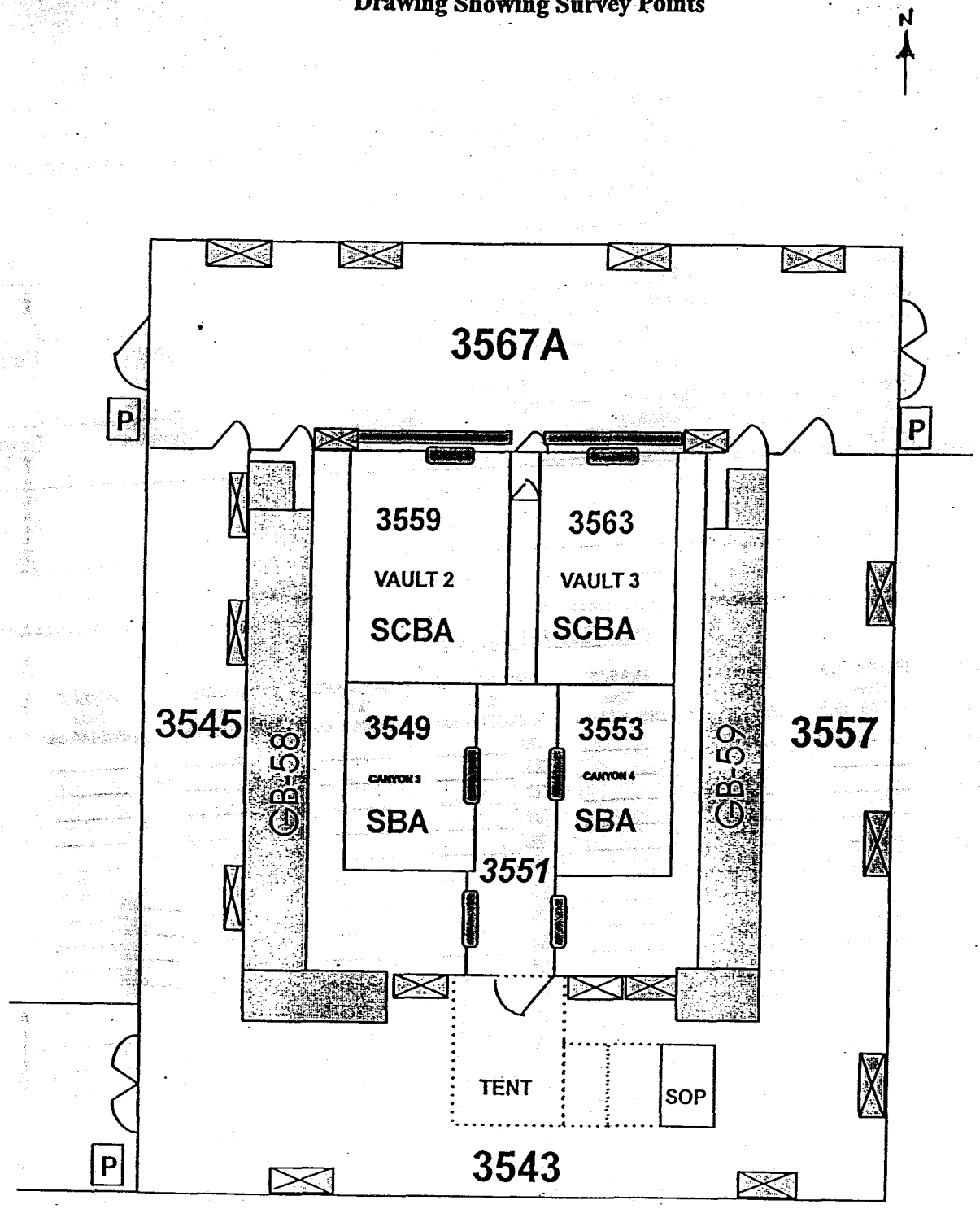
te Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
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ıte Reviewed: RS Supervision: / /
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: K		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: K	**Survey Unit:** N/A	**Area (m^2):** 1790

Survey Unit Description:. ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3341, 3035, 3031A, 3034/3404A, 3033; ROOMS 3337, 3037, 3537A, STAIRWELL #2, 3541, 3036, 3501, 3315, 3301, STAIRWELL #1, 3030, 3208, 3406, 3404, 3404B, 3402, 3408, STAIRWELL #3, 3436, 3412, 3513, AND 3420. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS. EXCLUDED FROM THIS SURVEY AREA IS THE CA OF ROOM 3412.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
145	109	45	7	0	170

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3341, 3035, 3031A, 3034/3404A, 3033; ROOMS 3337, 3037, 3537A, STAIRWELL #2, 3541, 3036, 3501, 3315, 3301, STAIRWELL #1, 3030, 3208, 3406, 3404, 3404B, 3402, 3408, STAIRWELL #3, 3436, 3412, 3513, AND 3420. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS. EXCLUDED FROM THIS SURVEY AREA IS THE CA OF ROOM 3412.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

[redacted]

[redacted]

RESS Radiological Engineer Signature	[redacted]
N/A	
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3341, 3035, 3031A, 3034/3404A, 3033; ROOMS 3337, 3037, 3537A, STAIRWELL #2, 3541, 3036, 3501, 3315, 3301, STAIRWELL #1, 3030, 3208, 3406, 3404, 3404B, 3402, 3408, STAIRWELL #3, 3436, 3412, 3513, AND 3420. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS. EXCLUDED FROM THIS SURVEY AREA IS THE CA OF ROOM 3412.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **145** unbiased survey points uniformly distributed within - STAIRWELL #1, 3301, 3406, 3404, 3404B, 3402, STAIRWELL #3, 3436, 3030, 3037, STAIRWELL #2, 3537A (3 points per room/area/stairwell) - Corridors 3035, 3036, 3341, 3034, 3404A (4 per corridor) - Corridor 3031A (6 points in this corridor) - Rooms 3408, 3412, 3420, 3501, 3315 (11 survey points per room) - Rooms 3208, 3513, 3337, 3541, (7 survey points per room) **25** biased survey points with emphasis on the following types of locations: - Locations near gloveboxes/bag-out ports/areas of contained contamination/criticality drains/historical spills - Locations near drum storage areas and drum transport routes (elevators/corridors) - Other areas of potential concern based on RCT/RE judgement/experience **CEILINGS/WALLS > 2 meters:** **84** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - STAIRWELL #1, 3301, 3406, 3404, 3404B, 3402, STAIRWELL #3, 3436, 3030, 3037, STAIRWELL #2, 3537A (2 survey points per room/area/stairwell) - Corridors 3035, 3036, 3341, 3034, 3404A (2 points per corridor) - Corridor 3031A (3 points per corridor) - Rooms 3408, 3412, 3420, 3501, 3315 (5 survey points per room)	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3341, 3035, 3031A, 3034/3404A, 3033; ROOMS 3337, 3037, 3537A, STAIRWELL #2, 3541, 3036, 3501, 3315, 3301, STAIRWELL #1, 3030, 3208, 3406, 3404, 3404B, 3402, 3408, STAIRWELL #3, 3436, 3412, 3513, AND 3420. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS. EXCLUDED FROM THIS SURVEY AREA IS THE CA OF ROOM 3412.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**CEILINGS/WALLS > 2 meters (continued):** - Rooms 3208, 3513, 3337, 3541, (3 survey points per room) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations **EQUIPMENT:** **45** biased survey points on equipment with survey points: - Gloveboxes/B-boxes/IO stations - Tanks/pumps/piping associated with tanks - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **170** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 7 biased paint samples taken as follows: - 1 sample from each of rooms 3412, and 3420 beneath or near glovebox line(s) or near process areas - 1 sample from room 3513 - 1 sample from each of rooms 3337, 3541, 3501, and 3408.	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3341, 3035, 3031A, 3034/3404A, 3033; ROOMS 3337, 3037, 3537A, STAIRWELL #2, 3541, 3036, 3501, 3315, 3301, STAIRWELL #1, 3030, 3208, 3406, 3404, 3404B, 3402, 3408, STAIRWELL #3, 3436, 3412, 3513, AND 3420. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS. EXCLUDED FROM THIS SURVEY AREA IS THE CA OF ROOM 3412.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For each media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* prior to media sampling.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: K	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

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		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Print Name Signature Emp. #

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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3321, 3323, 3325, 3327, 3329, 3331, 3333, 3335, 3337, and 3341

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:

Building:

Location:

Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :

Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms 3325, 3327, 3329, 3331, 3333, and 3337

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Date Reviewed: RS Supervision: / /
Print Name Signature Emp. #

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Rev. 05/98

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RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Level 1: Rooms 3331, 3327, and 3337
Level 2: Room 3337
Level 3: Room 3337

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
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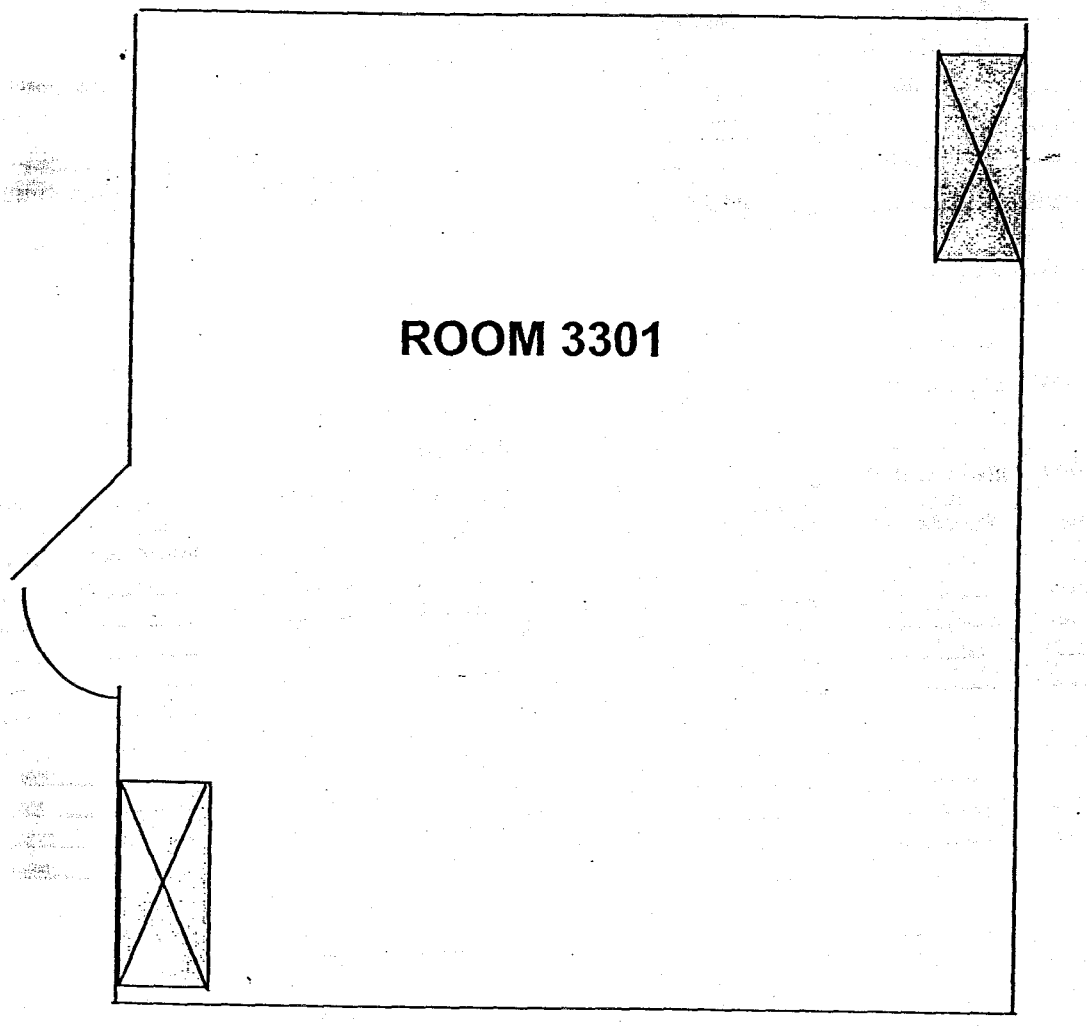
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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Print Name Signature Emp. #

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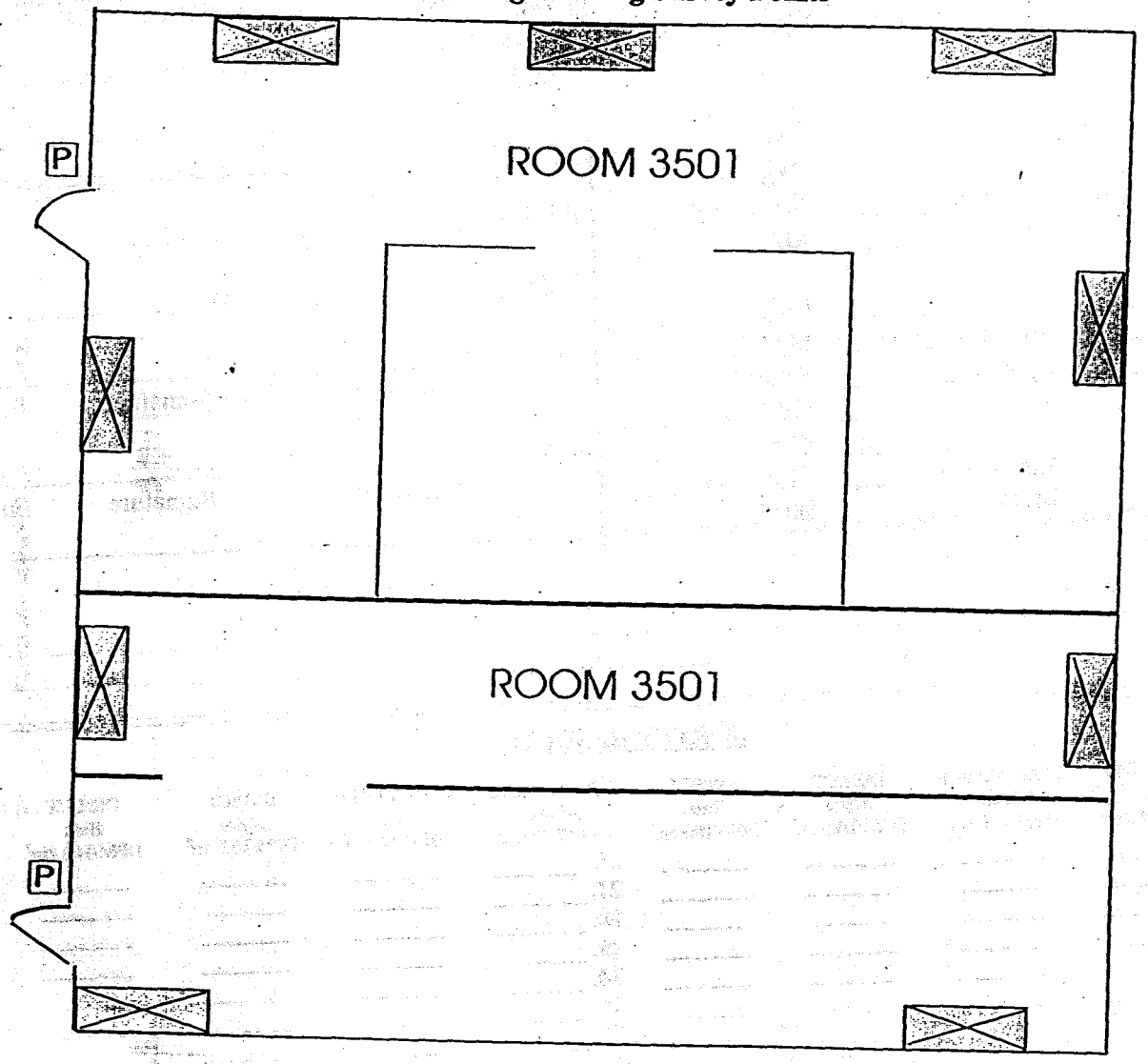
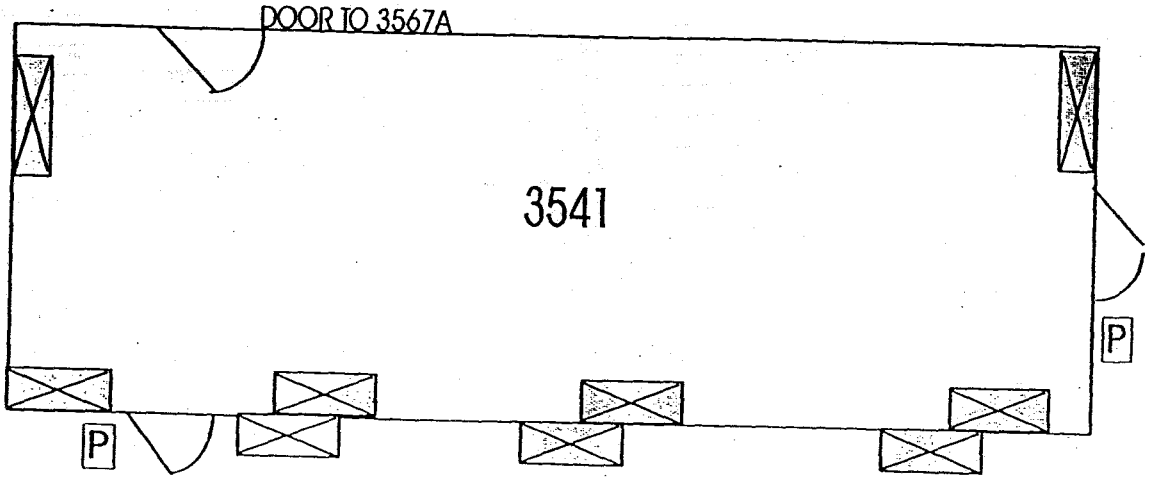
RADIOLOGICAL SAFETY

Drawing Showing Survey Points





ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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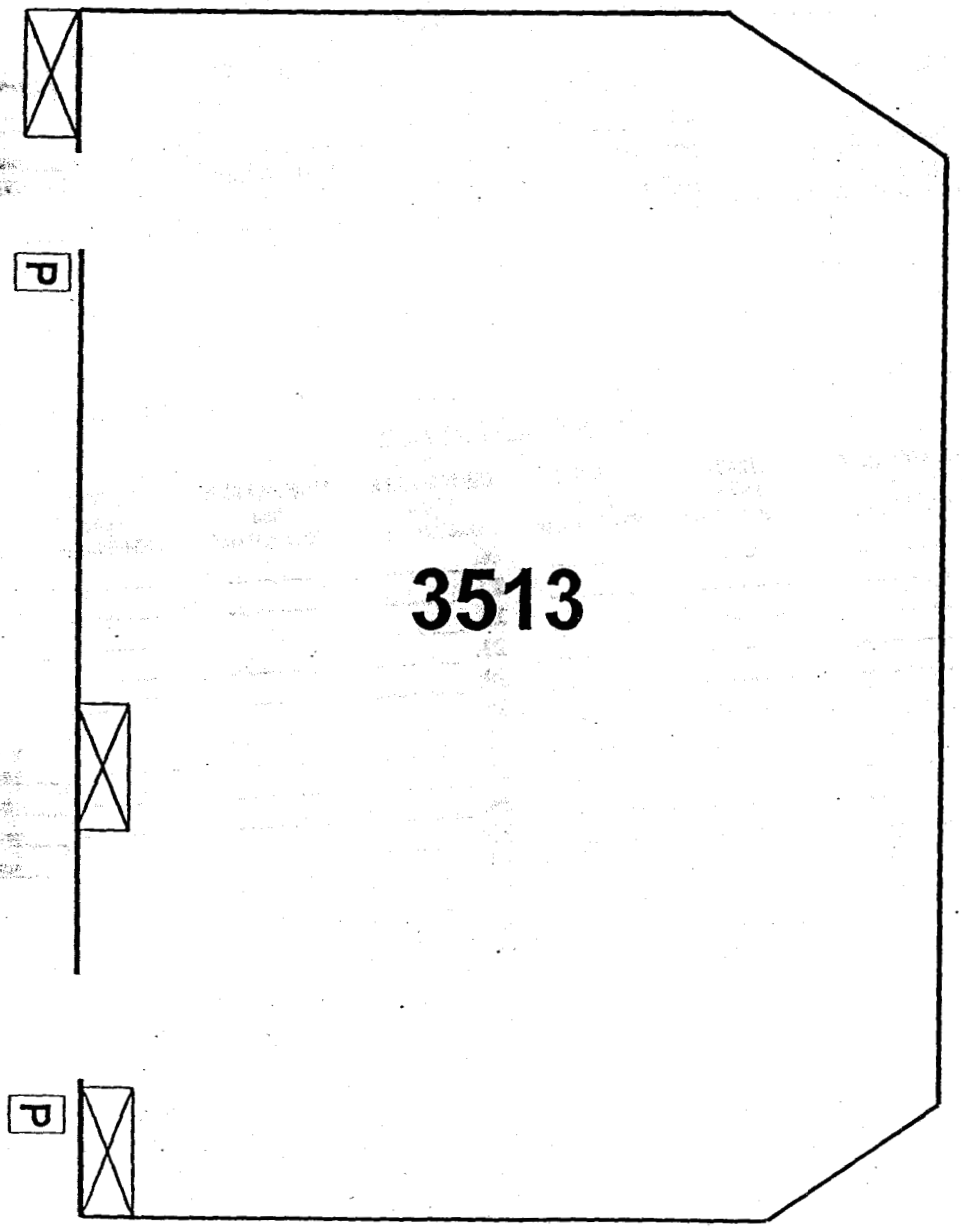
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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Print Name Signature Emp. #

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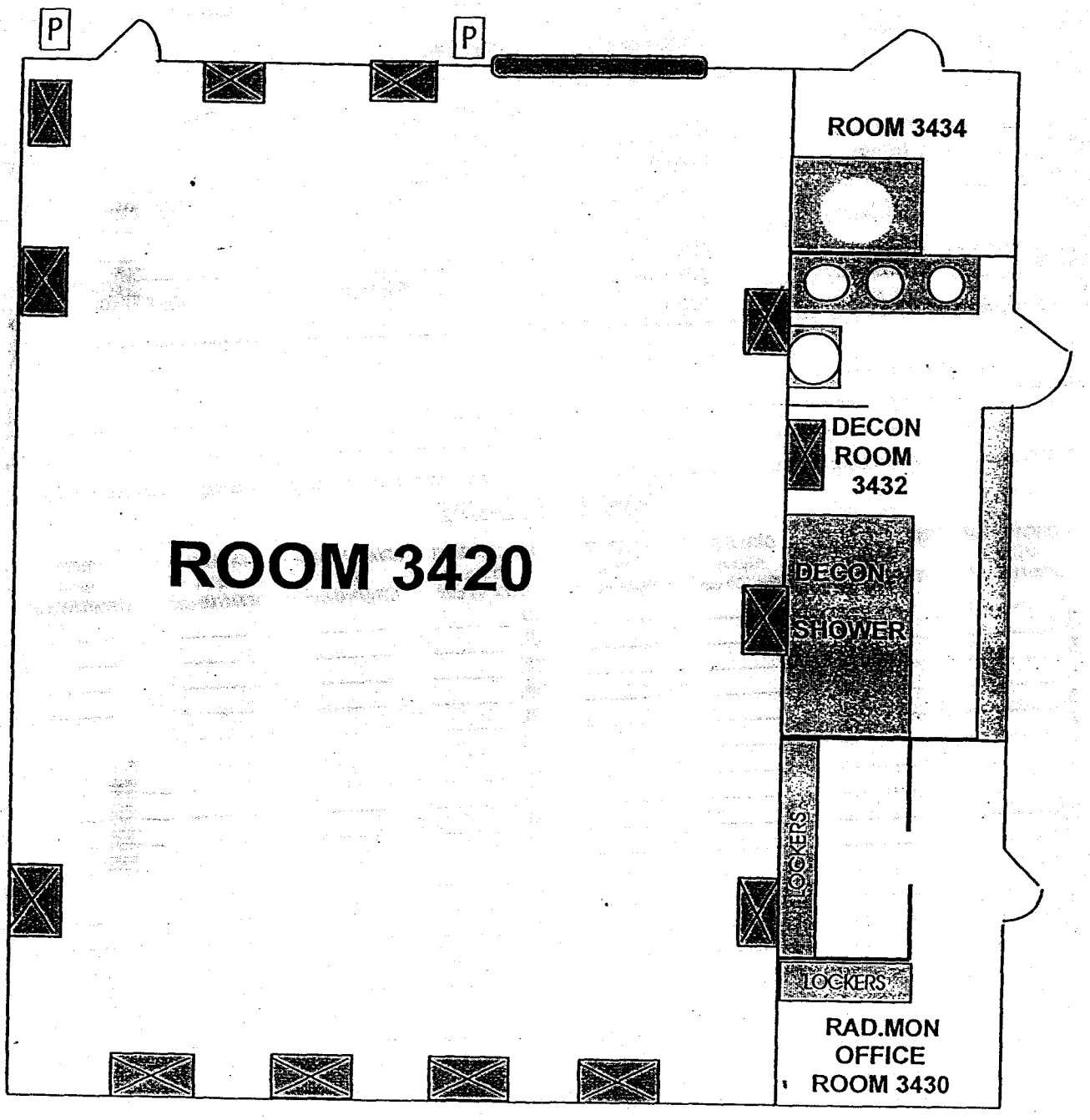
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:

Building:

Location:

Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :

Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: L		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: L	**Survey Unit:** N/A	**Area (m^2):** 1334

Survey Unit Description:. ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3031B, 3032, 3042, 3040, 3041; ROOMS 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721, 3717, 3709, 3719, 3606, 3189, 3713, 3715, AND 3701. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
118	125	40	5	0	143

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3031B, 3032, 3042, 3040, 3041; ROOMS 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721, 3717, 3709, 3719, 3606, 3189, 3713, 3715, AND 3701. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3031B, 3032, 3042, 3040, 3041; ROOMS 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721, 3717, 3709, 3719, 3606, 3189, 3713, 3715, AND 3701. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **118** unbiased survey points uniformly distributed within - Rooms 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721 (3 survey points per room) - Corridors 3031B, 3032, 3042, 3040, 3041 (5 survey points per room) - Rooms 3717, 3709, 3719, 3606, 3189 (15 survey points per room) - Rooms 3713, 3715, 3701 (19 survey points per room) **25** biased survey points with emphasis on the following types of locations: - Locations near gloveboxes/bag-out ports/areas of contained contamination/criticality drains/historical spills - Locations near drum storage areas and drum transport routes (elevators/corridors) - Other areas of potential concern based on RCT/RE judgement/experience ***CEILINGS/WALLS > 2 meters:*** **100** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - Rooms 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721 (1 survey points per room) - Corridors 3031B, 3032, 3042, 3040, 3041 (3 survey points per room) - Rooms 3717, 3709, 3719, 3606, 3189 (7 survey points per room) - Rooms 3713, 3715, 3701 (11 survey points per room)	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3031B, 3032, 3042, 3040, 3041; ROOMS 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721, 3717, 3709, 3719, 3606, 3189, 3713, 3715, AND 3701. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**CEILINGS/WALLS > 2 meters (continued):** - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations **EQUIPMENT:** **40** biased survey points on equipment with survey points: - Gloveboxes/B-boxes/IO stations - Tanks/pumps/piping associated with tanks - At room exhaust ducts - On top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **143** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **5** biased paint samples taken as follows: - 1 sample from each of rooms 3713, 3717, 3606, 3701, 3606	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A

Survey Unit Description: ROOMS ON THE MAIN FLOOR OF BUILDING 371 TO INCLUDE CORRIDORS 3031B, 3032, 3042, 3040, 3041; ROOMS 3434, 3432, 3432A, 3432B, 3430A, 3430, 3721, 3717, 3709, 3719, 3606, 3189, 3713, 3715, AND 3701. ALL OF THESE ROOMS ARE POSTED AS RADIOLOGICAL BUFFER AREAS.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: L	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]

CT Supervisor Signature	Date
roject RE Signature	Date
ESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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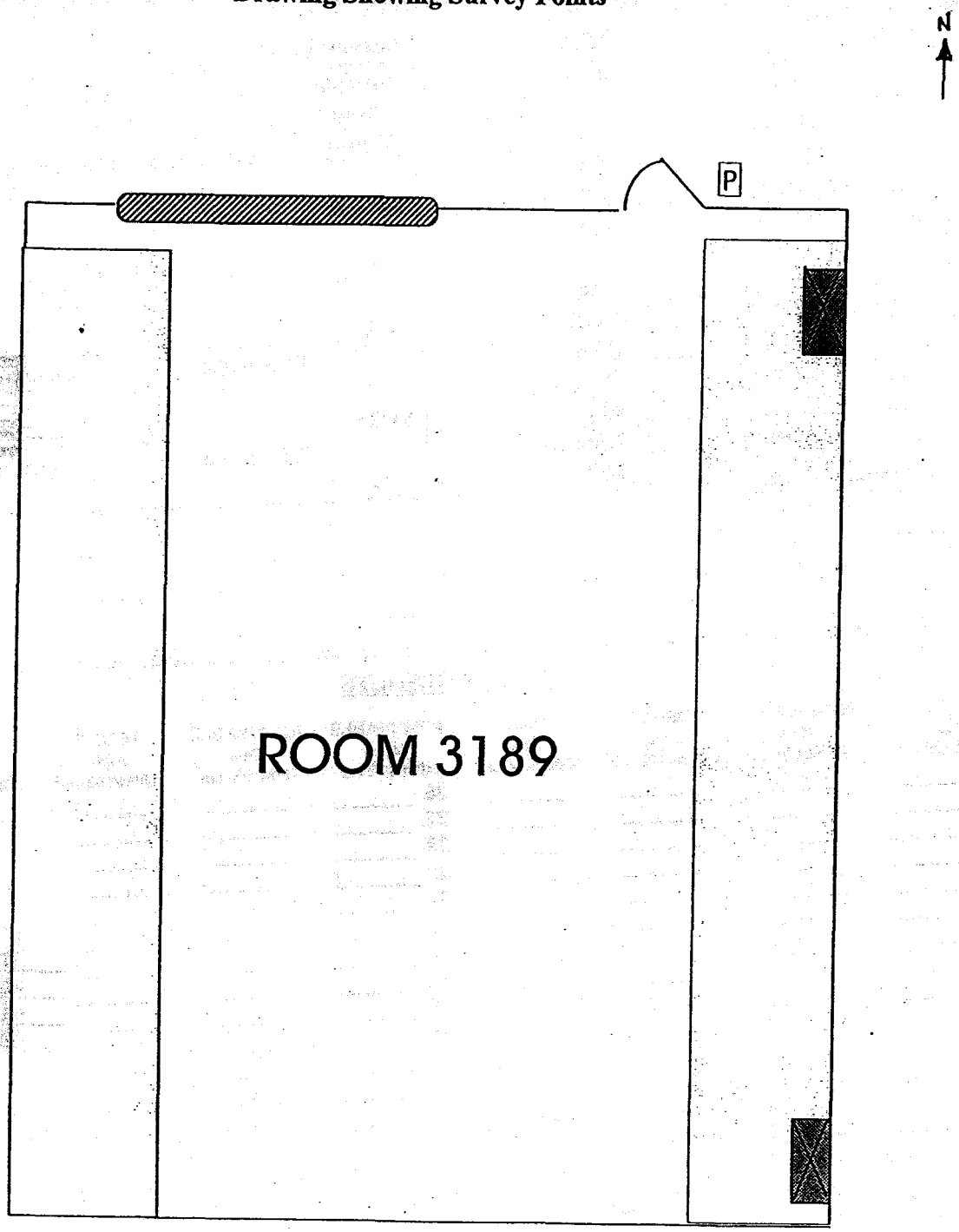
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Room 3606

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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This page has been removed due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points:

Rooms: 3701, 3709, 3703, 3715, and 3717

 RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:

Building:

Location:

Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :

Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
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9.					34.				
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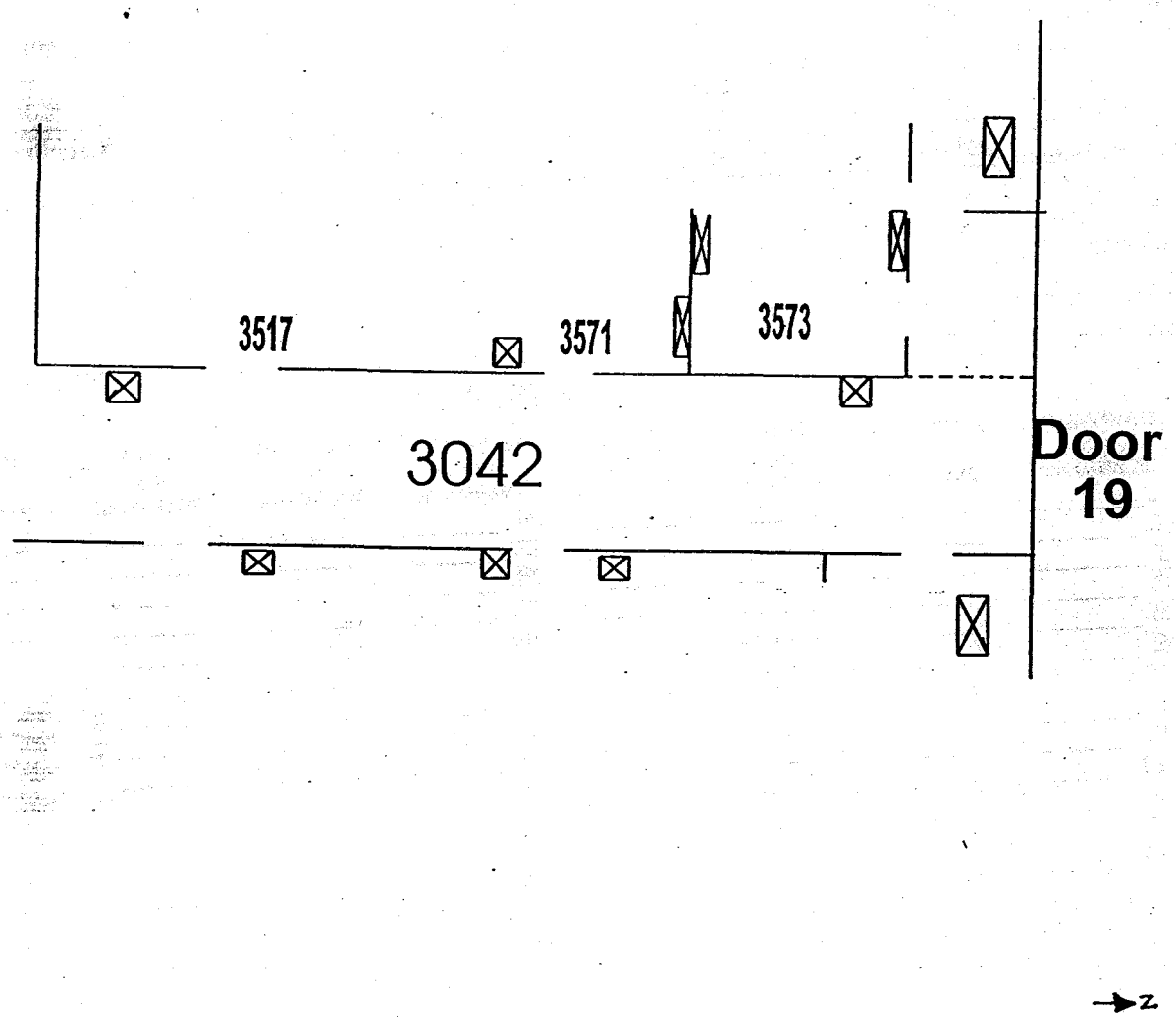
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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 RS FORMS 07.02-01

ROCKY HILL ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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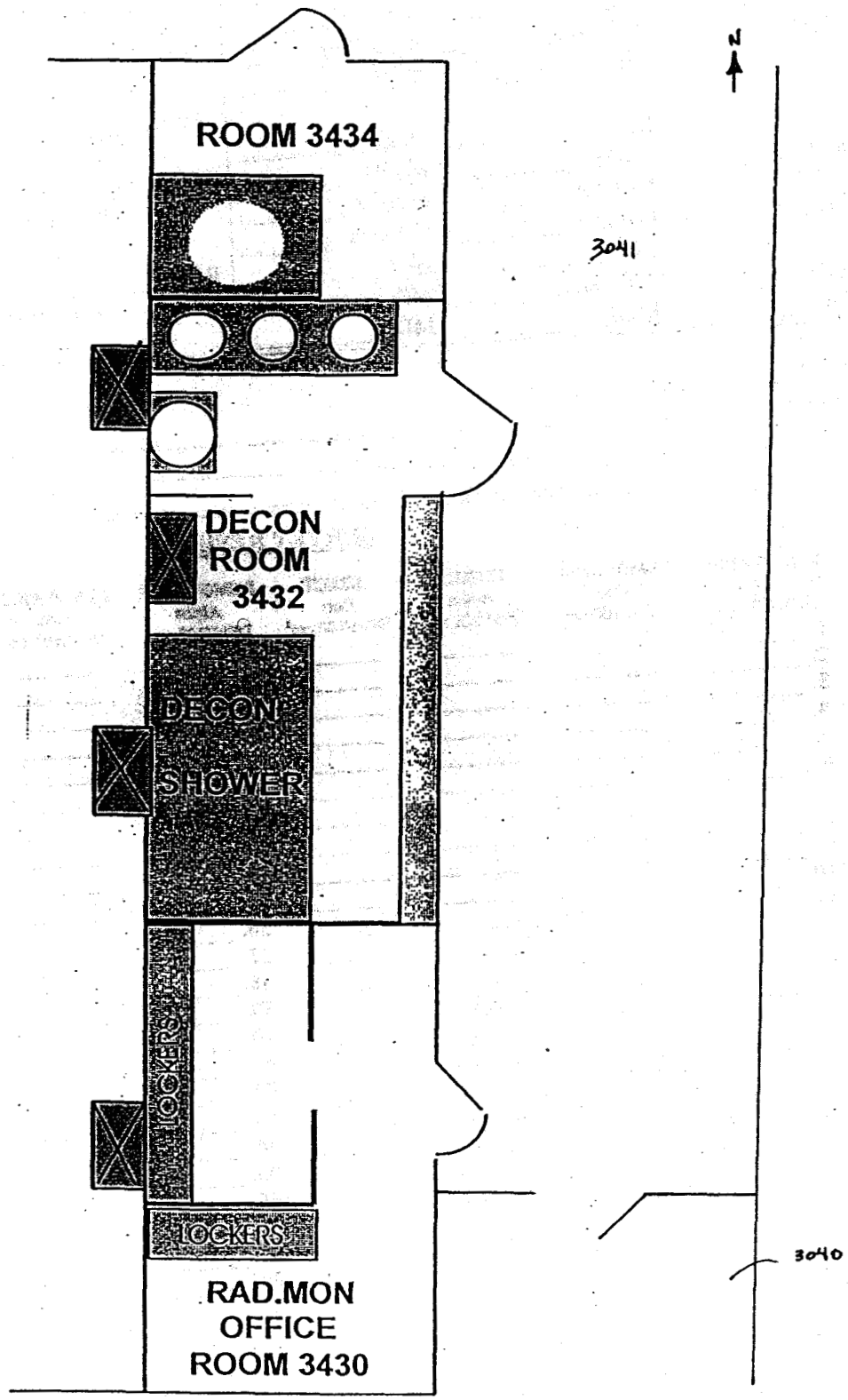
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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RS FORMS 07.02-01

ROCKWELL HS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: M		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: M	**Survey Unit:** N/A	**Area (m^2):** 1638

Survey Unit Description:. NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHWEST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE WEST OF CORRIDOR 3017A INCLUDING CORRIDOR 3017A. THERE ARE A TOTAL OF 61 ROOMS/CORRIDORS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALL POSTED.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
122	86	30	0	0	137

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

347349

284/488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHWEST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE WEST OF CORRIDOR 3017A INCLUDING CORRIDOR 3017A. THERE ARE A TOTAL OF 61 ROOMS/CORRIDORS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALL POSTED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHWEST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE WEST OF CORRIDOR 3017A INCLUDING CORRIDOR 3017A. THERE ARE A TOTAL OF 61 ROOMS/CORRIDORS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALL POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **122** unbiased survey points uniformly distributed within the non-radiological offices/rooms as follows: - 2 survey points per room (1 on floor, 1 on one wall within room). **15** biased surveys with focus on following areas: - Rooms directly adjacent (shared walls) to rooms posted as RBA's or CA's (excludes corridors) - Areas/rooms previously used for egress to/from the radiological areas - Stained or discolored areas - Areas around pipe or other penetrations that cross from RBA to non-RBA's - Areas as determined by RE/RCT **CEILINGS/WALLS > 2 meters:** **71** biased surveys, divided between wall and ceiling when possible, with focus on following areas: - 1 survey points per room (1 on ceiling) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHWEST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE WEST OF CORRIDOR 3017A INCLUDING CORRIDOR 3017A. THERE ARE A TOTAL OF 61 ROOMS/CORRIDORS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALL POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** **30** biased survey points on equipment with one or more samples from: - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in individual rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools)	
Surface Scanning	**FLOORS/WALLS < 2 meters:** **137** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHWEST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE WEST OF CORRIDOR 3017A INCLUDING CORRIDOR 3017A. THERE ARE A TOTAL OF 61 ROOMS/CORRIDORS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALL POSTED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For each media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* prior to media sampling.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: M	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]	RCT Supervisor Signature	Date
	Project RE Signature	Date
	RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

354 355

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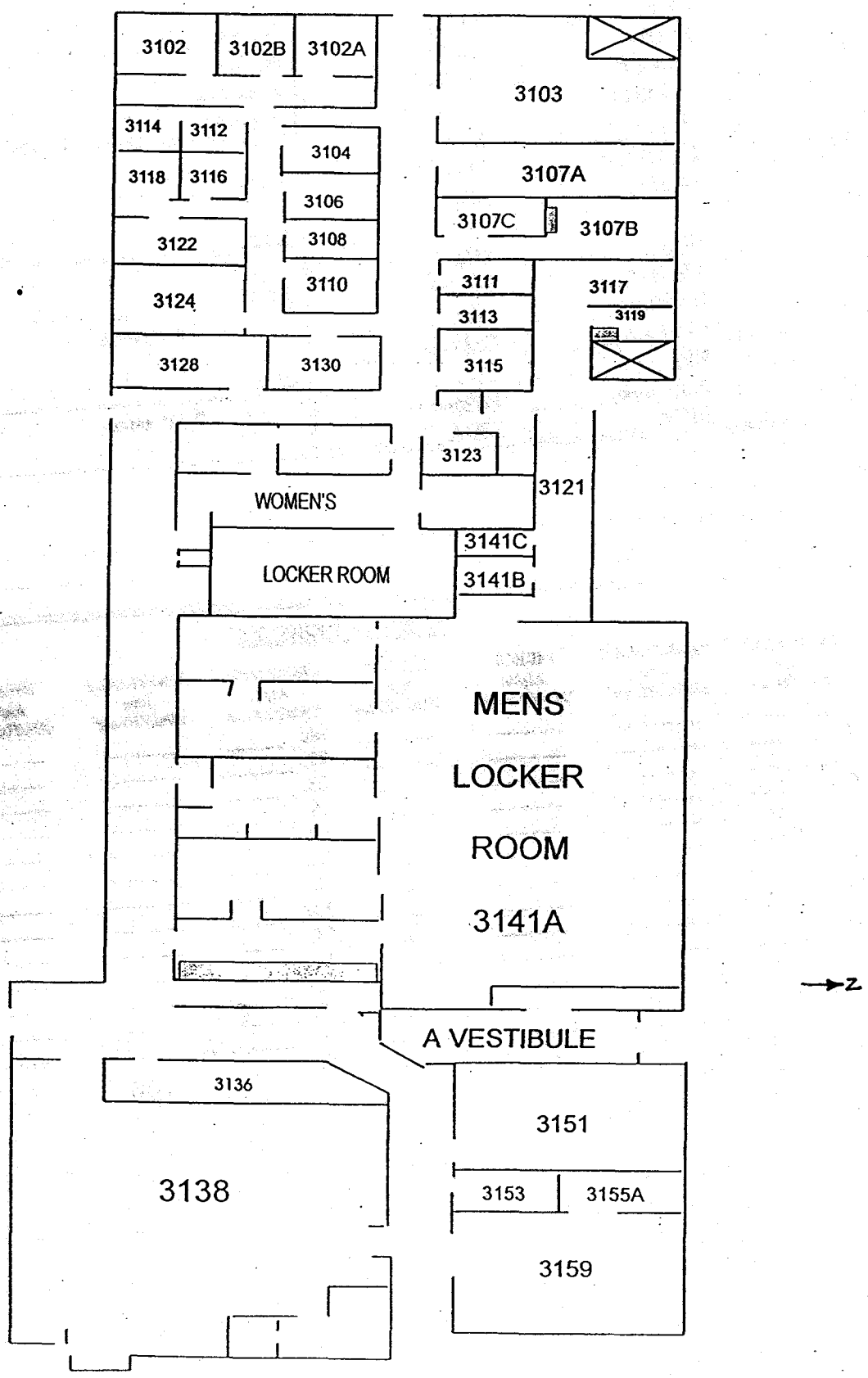
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



356

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: N		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: N	**Survey Unit:** N/A	**Area (m^2):** 1380

Survey Unit Description:. NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHEAST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE EAST OF CORRIDOR 3017A AND EXCLUDES CORRIDOR 3017A. THERE ARE A TOTAL OF 31 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
62	56	30	0	0	77

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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~~359~~

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHEAST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE EAST OF CORRIDOR 3017A AND EXCLUDES CORRIDOR 3017A. THERE ARE A TOTAL OF 31 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHEAST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE EAST OF CORRIDOR 3017A AND EXCLUDES CORRIDOR 3017A. THERE ARE A TOTAL OF 31 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 62 unbiased survey points uniformly distributed within the non-radiological offices/rooms as follows: - 2 survey points per room (1 on floor, 1 on one wall within room). 15 biased surveys with focus on following areas: - Rooms directly adjacent (shared walls) to rooms posted as RBA's or CA's (excludes corridors) - Areas/rooms previously used for egress to/from the radiological areas - Stained or discolored areas - High traffic/congregation areas - Areas around pipe or other penetrations that cross from RBA to non-RBA's - Areas as determined by RE/RCT **CEILINGS/WALLS > 2 meters:** 41 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - 1 survey points per room (1 on ceiling) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHEAST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE EAST OF CORRIDOR 3017A AND EXCLUDES CORRIDOR 3017A. THERE ARE A TOTAL OF 31 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** 30 biased survey points on equipment with one or more samples from: - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in individual rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools)	
Surface Scanning	**FLOORS/WALLS < 2 meters:** 77 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES IN THE SOUTHEAST CORNER BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE EAST OF CORRIDOR 3017A AND EXCLUDES CORRIDOR 3017A. THERE ARE A TOTAL OF 31 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. (NOTE: ROOM NUMBERS ARE TOO EXTENSIVE TO LIST INDIVIDUALLY) ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall *utilize best judgement as to safely accessing these areas.* Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: N	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

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~~369~~

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RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

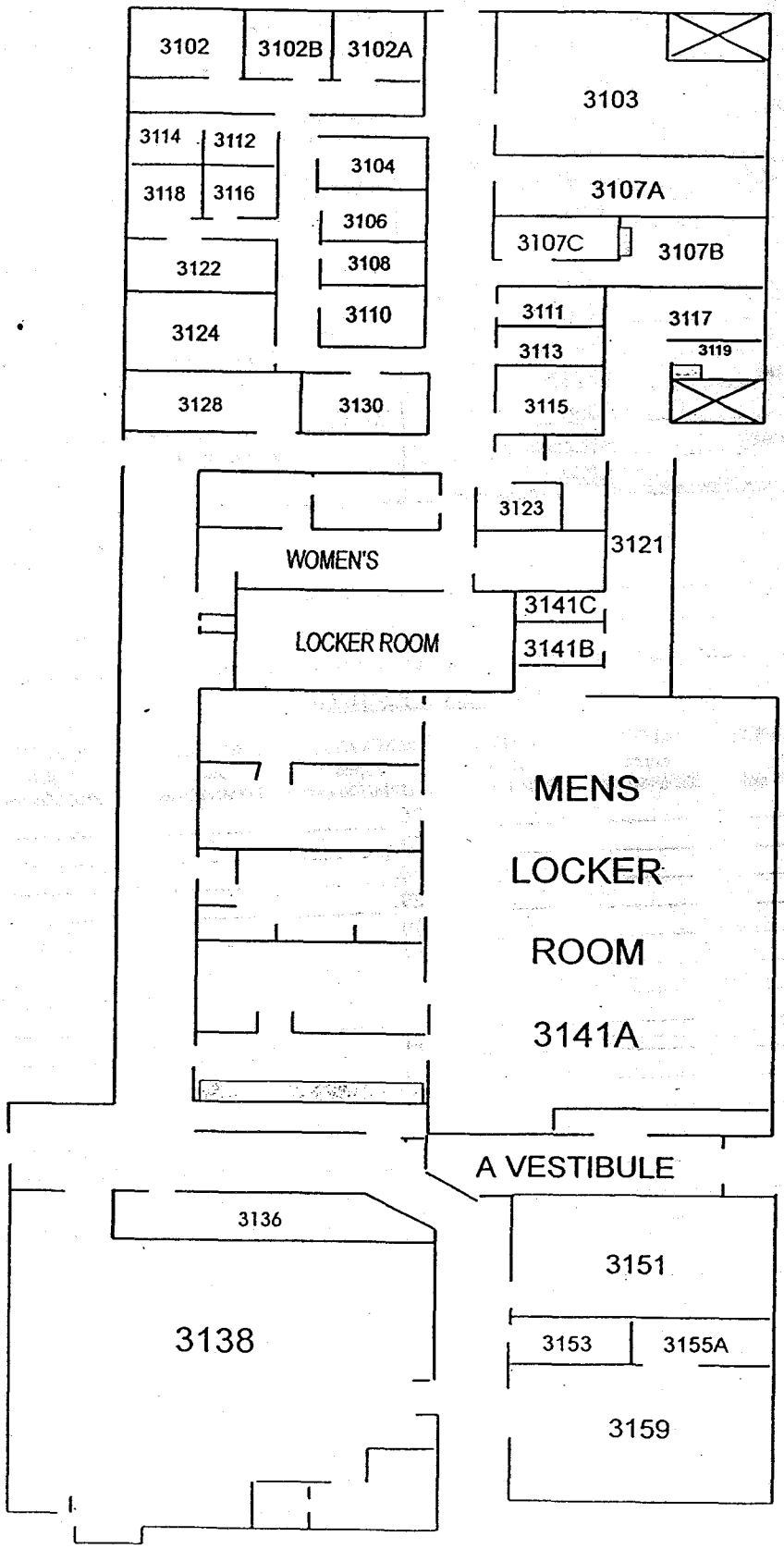
	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

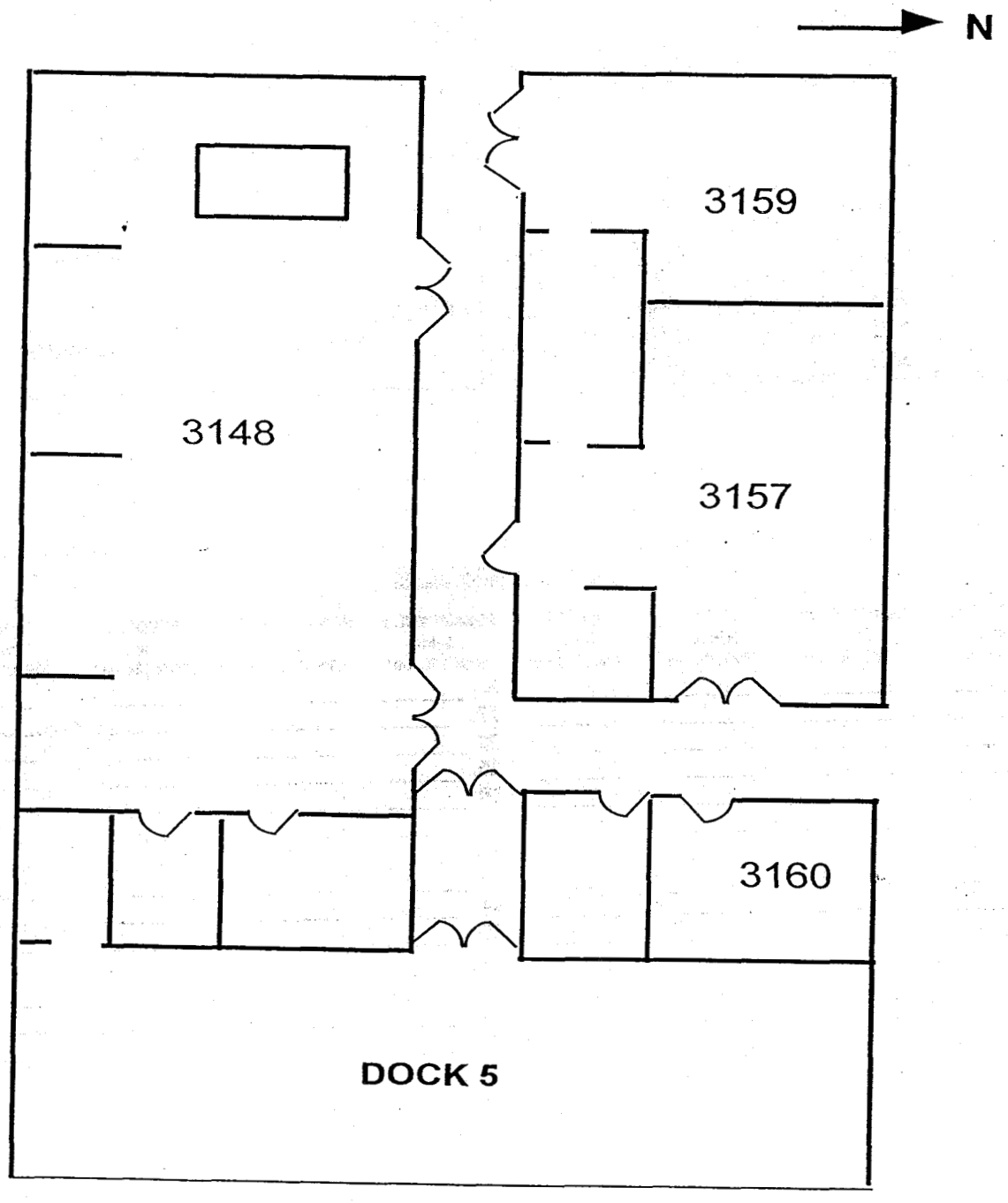
SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

ie Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

372

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		Building: 371/374	
Survey Area: O		Survey Unit: N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: O	**Survey Unit:** N/A	**Area (m^2):** 1712

Survey Unit Description:. NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES/DOCKS IN THE NORHTEAST CORNER OF BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE NORTH OF CORRIDOR 3023 AND ROOMS 3038, 3583, 3581, 3044, 3587, 3043, AND 3585. THERE ARE ~36 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED. EXCLUDED ARE ROOMS 3168, 3168A, 3168B.

Survey Type:	**Classification:**
RLC Survey X FSS ☐	Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
72	61	46	30	0	87

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:	**Classification:**
RLC Survey ☐ FSS ☐	Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐

Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:	**Classification:**
RLC Survey ☐ FSS ☐	Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐

Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:	**Classification:**
RLC Survey ☐ FSS ☐	Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐

Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

373 374

305/488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES/DOCKS IN THE NORHTEAST CORNER OF BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE NORTH OF CORRIDOR 3023 AND ROOMS 3038, 3583, 3581, 3044, 3587, 3043, AND 3585. THERE ARE ~36 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED. EXCLUDED ARE ROOMS 3168, 3168A, 3168B.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES/DOCKS IN THE NORHTEAST CORNER OF BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE NORTH OF CORRIDOR 3023 AND ROOMS 3038, 3583, 3581, 3044, 3587, 3043, AND 3585. THERE ARE ~36 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED. EXCLUDED ARE ROOMS 3168, 3168A, 3168B.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 72 unbiased survey points uniformly distributed within the non-radiological offices/rooms as follows: - 2 survey points per room (1 on floor, 1 on one wall within room). 15 biased surveys with focus on following areas: - Rooms directly adjacent (shared walls) to rooms posted as RBA's or CA's (excludes corridors) - Areas/rooms previously used for egress to/from the radiological areas - Stained or discolored areas - High traffic/congregation areas - Areas around pipe or other penetrations that cross from RBA to non-RBA's - Areas as determined by RE/RCT **CEILINGS/WALLS > 2 meters:** 46 biased surveys, divided between wall and ceiling when possible, with focus on following areas: - 1 survey points per room (1 on ceiling) - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES/DOCKS IN THE NORHTEAST CORNER OF BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE NORTH OF CORRIDOR 3023 AND ROOMS 3038, 3583, 3581, 3044, 3587, 3043, AND 3585. THERE ARE ~36 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED. EXCLUDED ARE ROOMS 3168, 3168A, 3168B.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	**EQUIPMENT:** 30 biased survey points on equipment with one or more samples from: - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in individual rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools)	
Surface Scanning	**FLOORS/WALLS < 2 meters:** 87 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A

Survey Unit Description: NON-RADIOLOGICAL ROOMS/ADMINISTRATIVE OFFICES/DOCKS IN THE NORHTEAST CORNER OF BUILDING 371 (MAIN FLOOR LEVEL). ROOMS INCLUDED ARE THOSE NORTH OF CORRIDOR 3023 AND ROOMS 3038, 3583, 3581, 3044, 3587, 3043, AND 3585. THERE ARE ~36 ROOMS/CORRIDORS/AREAS IN SURVEY AREA. ALL OF THESE ROOMS ARE NOT RADIOLOGICALLY POSTED. EXCLUDED ARE ROOMS 3168, 3168A, 3168B.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: O	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

380

379

311 / 488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: RS Supervision: / /
Print Name Signature Emp. #

380 381

312 /100

This page has been removed due to classification issues.

Personnel with access to UCNI may obtain this information from either the Project Manager, or the DOE ARC.

RFETS / RMRS Radiological and Non-Radiological Characterization Package for the Building 371 Cluster

November 1999,

Revision 0

Radiological Safety

Drawing Showing Survey Points

Rooms 3025, 3028, 3162, 3163, 3165, 3166, 3167, 3169, 3171, 3173, 3175, 3177A, 3177B, 3179, 3181, 3183, 3185, 3187, 3187A, 3187B, 3189, 3193, and 3195

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

382 383

313 / 105

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: P		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: P	**Survey Unit:** N/A	**Area (m^2):** 1217

Survey Unit Description: NORTH END OF ROOM 4301 AND STAIRWAY #2. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
42	55	30	0	0	67

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A

Survey Unit Description: NORTH END OF ROOM 4301 AND STAIRWAY #2. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: • Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A
Survey Unit Description: NORTH END OF ROOM 4301 AND STAIRWAY #2. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **42** unbiased survey points uniformly distributed within the rooms - 40 points (6 on floor in each of the 3 bermed areas that run length of room, 1 on floor in each of the smaller 16 bermed areas that run between walls and 2 on each of 3 walls) in rooms 4301. - 2 points (2 on floor) in stairwell #2. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys ((A) 28 points room 4301 (B) 2 points in stairwell #2.) divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more surveys from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping ot tanks (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A
Survey Unit Description: NORTH END OF ROOM 4301 AND STAIRWAY #2. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 67 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A

Survey Unit Description: NORTH END OF ROOM 4301 AND STAIRWAY #2. THIS SURVEY AREA IS POSTED AS A RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

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319 / 488

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: P	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

391 392

321 / 488

 RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
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14.					39.				
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16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

ate Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

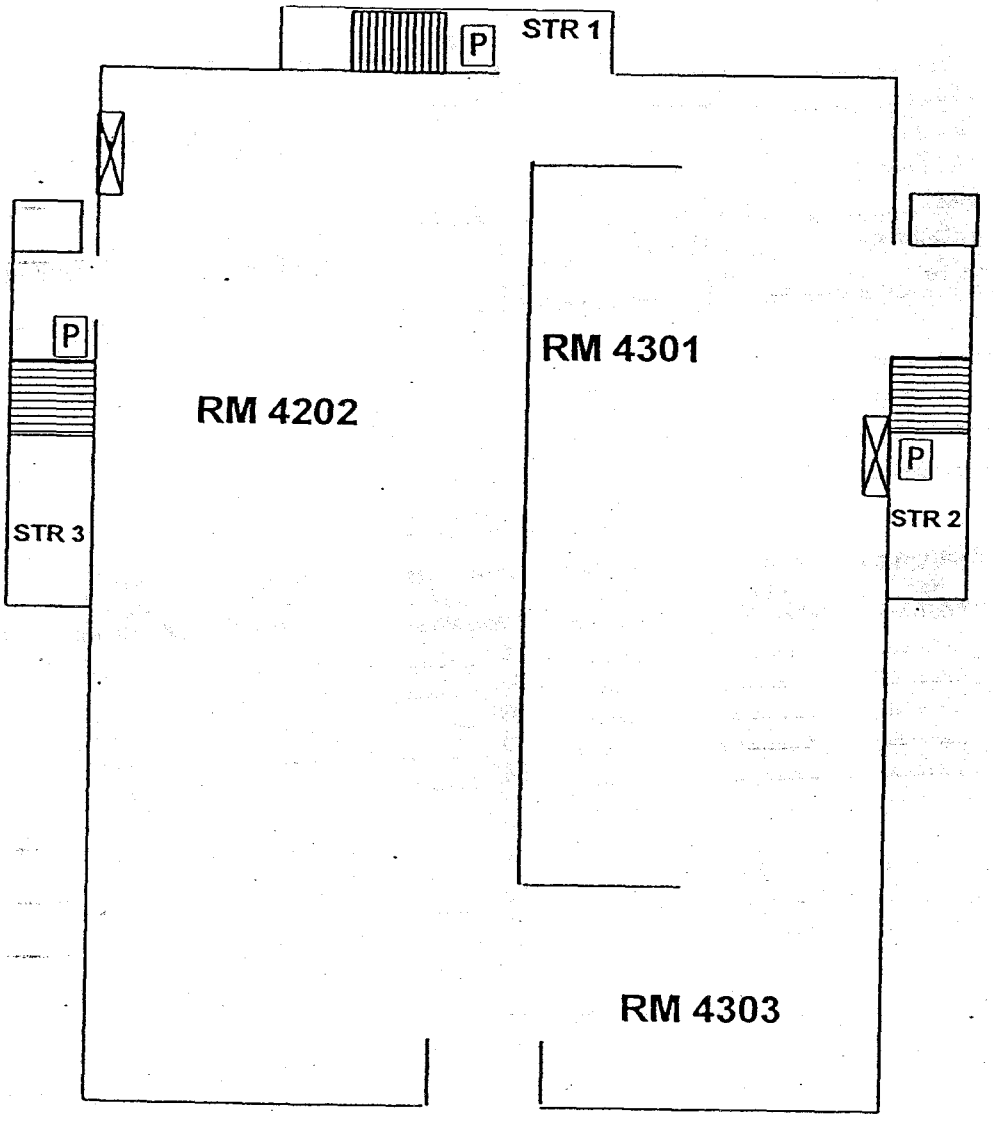
392 398

322 / 488

@RAH

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: Q		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: Q	**Survey Unit:** N/A	**Area (m^2):** 1116

Survey Unit Description: ROOMS 4303, 4305, 4307, SOUTH END OF 4301 AND STAIRWAY #1. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
45	55	30	0	0	70

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4303, 4305, 4307, SOUTH END OF 4301 AND STAIRWAY #1. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4303, 4305, 4307, SOUTH END OF 4301 AND STAIRWAY #1. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **45** unbiased survey points uniformly distributed within the rooms - 24 points (6 on floor in each of the 3 bermed areas and 2 on each of 3 walls) in rooms 4301. - 15 points (1 on floor in each of the 8 bermed areas and 1on each of 7 walls) in rooms 4303. - 6 points (2 on each floor) in each of rooms 4305, 4307 and stairwell. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys ((A) 2 points in each of rooms 4305, 4307 and stairwell (B) 8 points in room 4303 (C) 16 points in room 4301.) divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more surveys from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping or tanks (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4303, 4305, 4307, SOUTH END OF 4301 AND STAIRWAY #1. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 70 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4303, 4305, 4307, SOUTH END OF 4301 AND STAIRWAY #1. THIS SURVEY AREA IS POSTED AS A RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Q	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

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330/488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
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21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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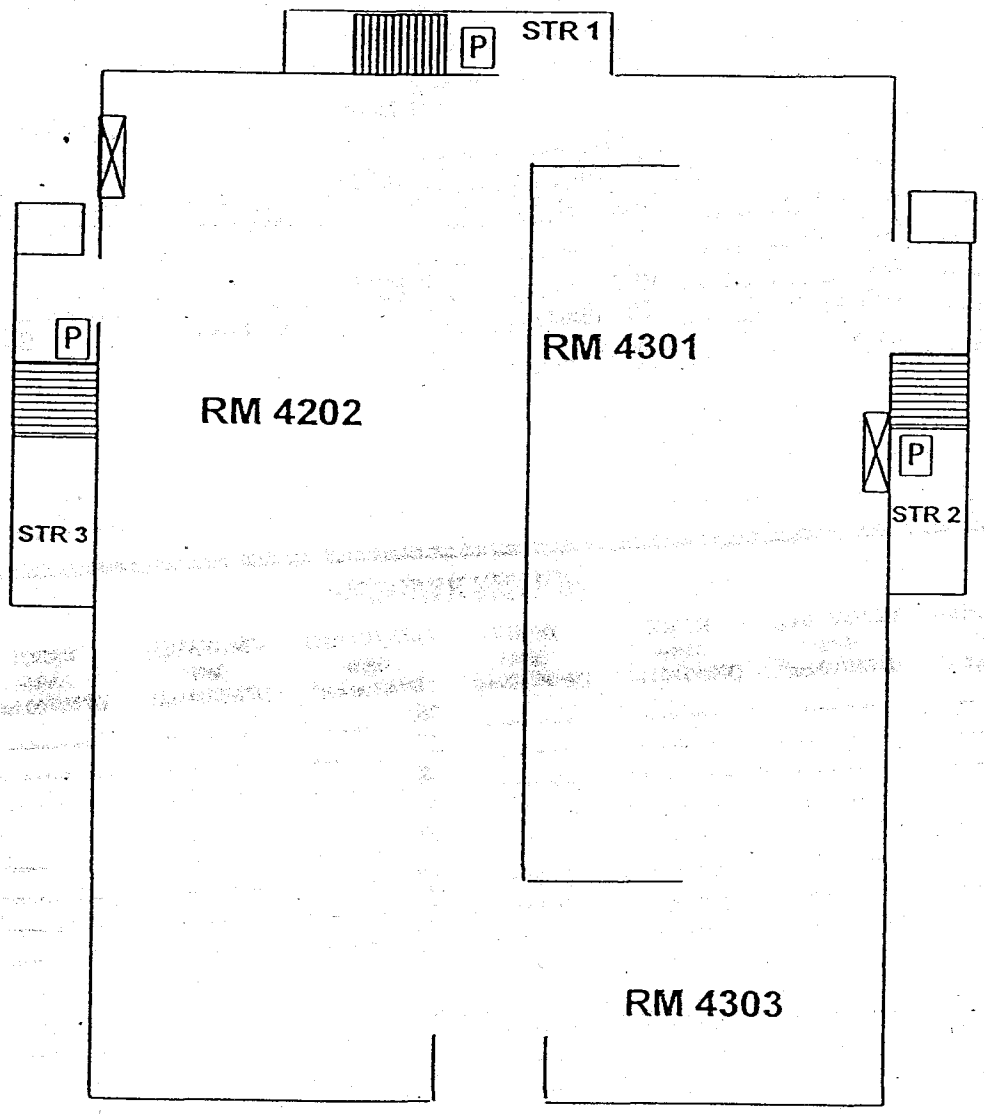
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

404 405

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: R		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: R	**Survey Unit:** N/A	**Area (m^2):** 1773

Survey Unit Description: ROOMS 4202, 4204, 4003 AND 4004 INCLUDING STAIRWAY #3. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
48	57	30	0	0	73

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4202, 4204, 4003 AND 4004 INCLUDING STAIRWAY #3. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]		
	RESS Radiological Engineer Signature	Date
	N/A	N/A
	REFS Manager Signature	Date
	RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4202, 4204, 4003 AND 4004 INCLUDING STAIRWAY #3. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **48** unbiased survey points uniformly distributed within the rooms - 40 points (6 on floor in each of the 5 bermed areas and 2 on each of 5 walls) in rooms 4202. - 8 points (2 on each floor) in each of rooms 4204, 4003, 4004 and stairwell. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **32** biased surveys ((A) 2 points in each of rooms 4204, 4003, 4004 and stairwell (B) 24 points in room 4202.) divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more surveys from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping ot tanks (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4202, 4204, 4003 AND 4004 INCLUDING STAIRWAY #3. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 73 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4202, 4204, 4003 AND 4004 INCLUDING STAIRWAY #3. THIS SURVEY AREA IS POSTED AS A RBA.	

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: R	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

320/488

443

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
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18.					43.				
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23.					48.				
24.					49.				
25.					50.				

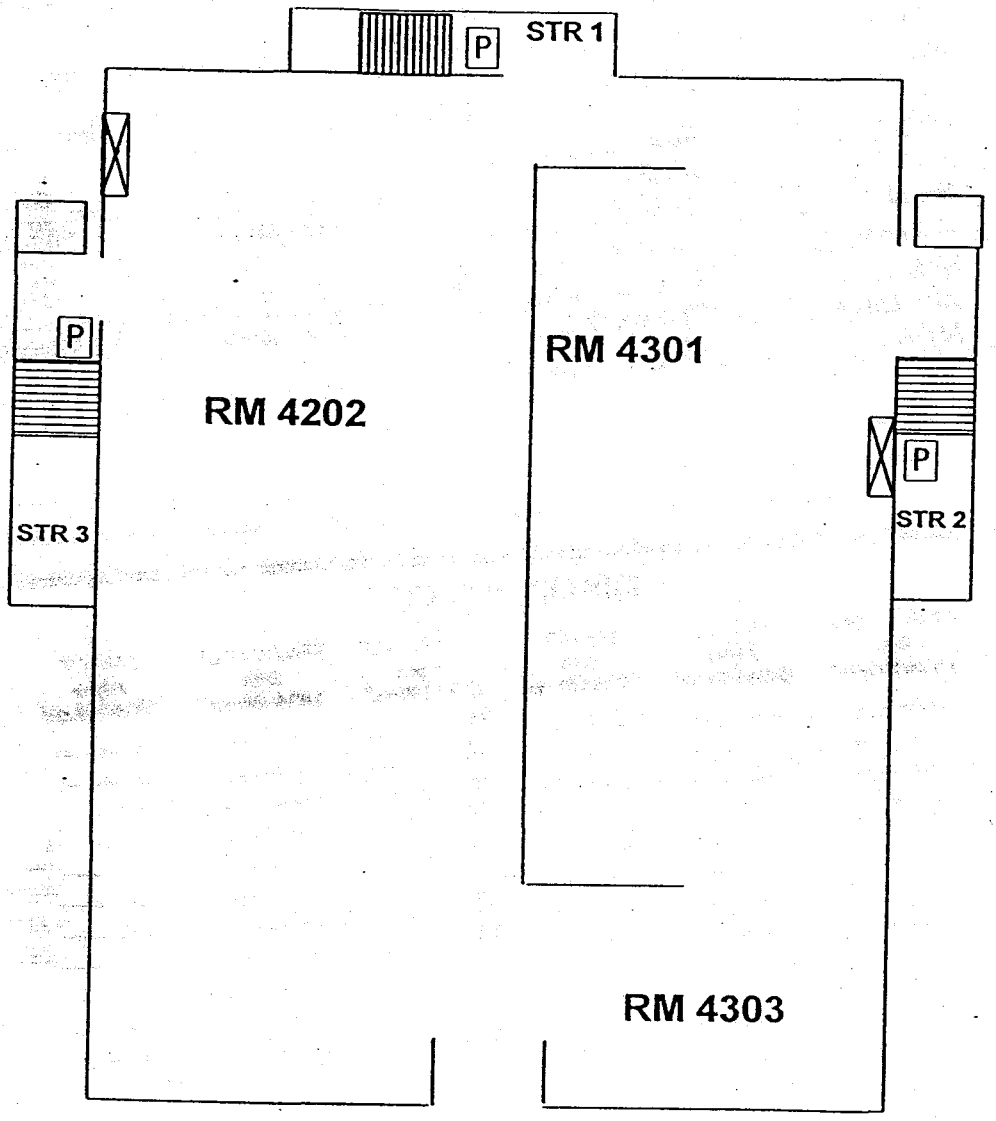
Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

444 445

241 1106

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

46 47

2/3 1/10

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: S		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

419

Rev. 9/99

418

343 /488

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: S	**Survey Unit:** N/A	**Area (m^2):** 1032

Survey Unit Description: ROOMS 4101, 4102, 4103, 4104, 4105, 4106 STAIRWAY #6 AND STAIRWAY #7. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
53	55	30	0	0	78

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4101, 4102, 4103, 4104, 4105, 4106 STAIRWAY #6 AND STAIRWAY #7. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4101, 4102, 4103, 4104, 4105, 4106 STAIRWAY #6 AND STAIRWAY #7. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 53 unbiased survey points uniformly distributed within the rooms - 20 points (15 on floor and 1 on each of 5 of the longer walls) in rooms 4101. - 9 points (5 on floor and 1 on each of 4 walls) in room 4104. - 12 points (4 per room/area) in rooms 4102, 4103, 4105, 4106 and Stairwells #6 & #7. - 2 points (2 on floor in) in stairwell #2. 25 biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 30 biased surveys ((A) 12 points in room 4101 (B) 6 points in room 4104 and (C) 2 points in rooms 4102, 4103, 4105, 4106 and Stairwells #6 & #7.) divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** 30 biased survey points on equipment with one or more surveys from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping ot tanks (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4101, 4102, 4103, 4104, 4105, 4106 STAIRWAY #6 AND STAIRWAY #7. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** **78** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4101, 4102, 4103, 4104, 4105, 4106 STAIRWAY #6 AND STAIRWAY #7. THIS SURVEY AREA IS POSTED AS A RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: S	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

426
425

350/488

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

426 429

357 1488

@RAH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: T		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: T	**Survey Unit:** N/A	**Area (m^2):** 625

Survey Unit Description: ROOM 2804 INCLUDING STAIRWELL IN BUILDING 374. THIS SURVEY AREA IS POSTED AS A CA.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
35	55	30	2	0	60

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	

Survey Unit Description:

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

430

353 / 488

429

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A

Survey Unit Description: ROOM 2804 INCLUDING STAIRWELL IN BUILDING 374. THIS SURVEY AREA IS POSTED AS A CA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

[redacted]

[redacted]

[redacted]			
		RESS Radiological Engineer Signature	Date
		N/A	N/A
		REFS Manager Signature	Date
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A
Survey Unit Description: ROOM 2804 INCLUDING STAIRWELL IN BUILDING 374. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **35** unbiased survey points uniformly distributed within the rooms - 2 on each wall and 22 on floor. - 5 survey points on stairwell **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys , divided between upper walls, lower walls and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Surveys on top of tanks - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A
Survey Unit Description: ROOM 2804 INCLUDING STAIRWELL IN BUILDING 374. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 60 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 2 biased paint samples taken as follows: - 1 each at the two floor drains in room 2804	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A
Survey Unit Description: ROOM 2804 INCLUDING STAIRWELL IN BUILDING 374. THIS SURVEY AREA IS POSTED AS A CA.	

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following:

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: T	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
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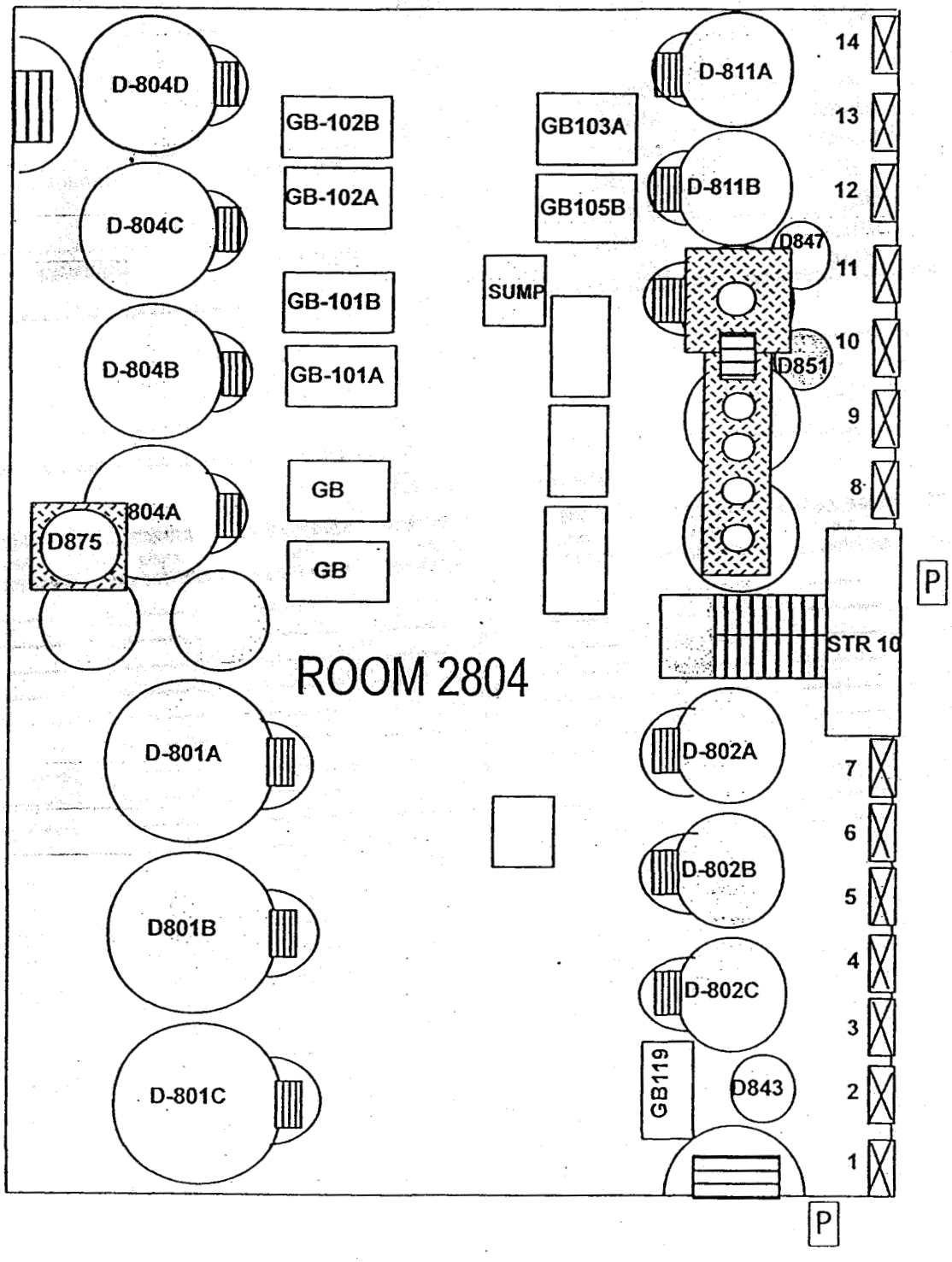
25.					50.				

.te Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



438

437

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: U		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: U	**Survey Unit:** N/A	**Area (m^2):** 1340

Survey Unit Description: ROOMS 2801, 2805, 2807, 2808, 2811, 2812, AND STAIRWELL #8. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
40	55	30	0	0	65

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

440
439

362/488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A

Survey Unit Description: ROOMS 2801, 2805, 2807, 2808, 2811, 2812, AND STAIRWELL #8. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A

Survey Unit Description: ROOMS 2801, 2805, 2807, 2808, 2811, 2812, AND STAIRWELL #8. THIS SURVEY AREA IS POSTED AS A RBA.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 40 unbiased survey points uniformly distributed within the rooms - 6 points in each of rooms 2807, 2811 and 2812. - 16 points in rooms 2805 and 2808. - 14 points in room 2801. - 4 points in stairwell #8 25 biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 30 biased surveys ((A) 8 in each of rooms 2801, 2805 and 2808 and (B) 2 in each of rooms 2807, 2811 and 2812), divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** 30 biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A
Survey Unit Description: ROOMS 2801, 2805, 2807, 2808, 2811, 2812, AND STAIRWELL #8. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 65 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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443

442

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A

Survey Unit Description: ROOMS 2801, 2805, 2807, 2808, 2811, 2812, AND STAIRWELL #8. THIS SURVEY AREA IS POSTED AS A RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: U	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Printed Name	Employee #	RCT Supervisor Signature	Date
JAMES S. JARVIS	519503		
Project RE Printed Name	Employee #	Project RE Signature	Date
H. B. ESTABROOKS	520337		
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

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446

445

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

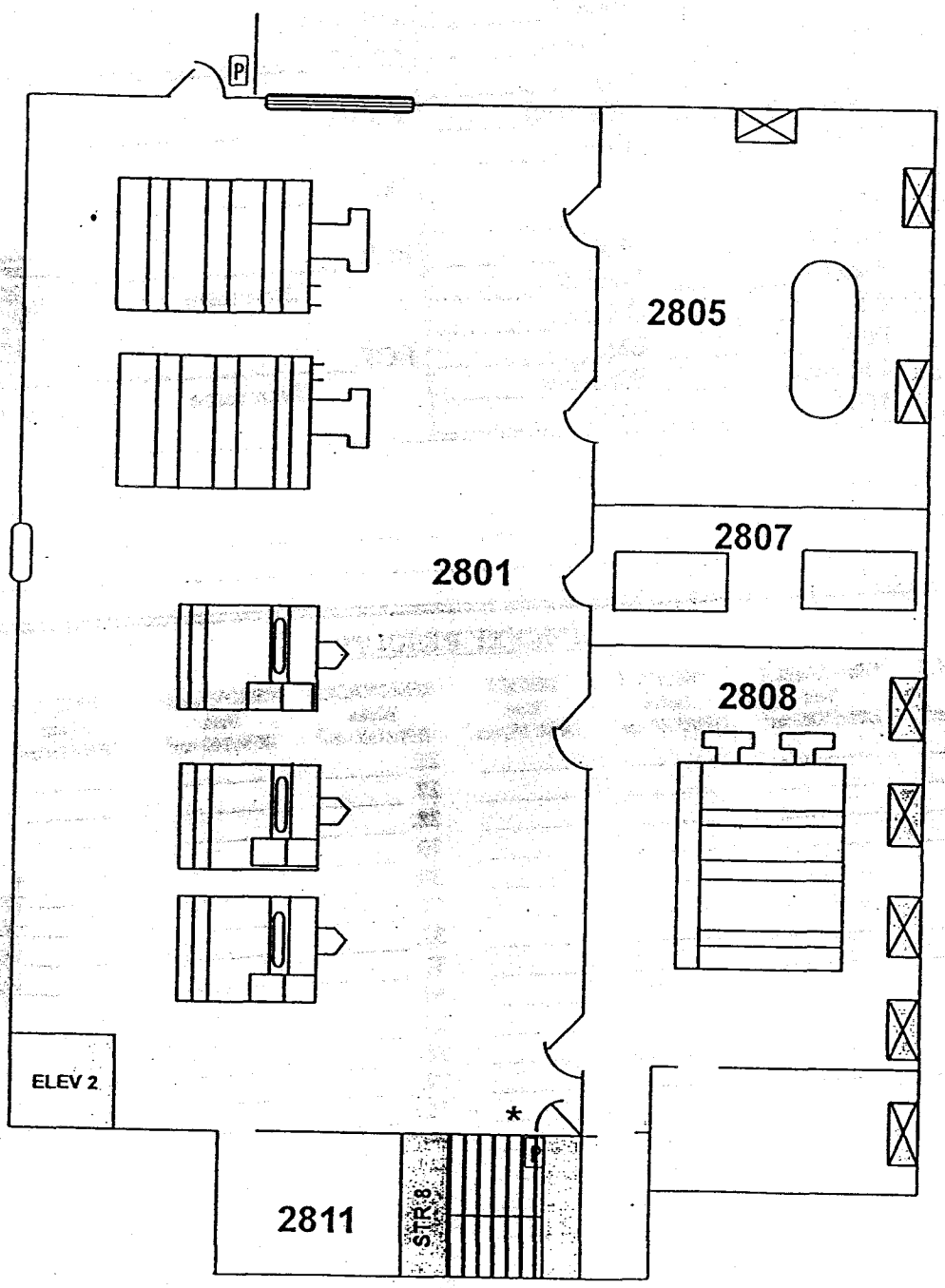
~~446~~ 447

269 Tiec.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



448

447

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

448 449

27x 1/100

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		Building: 371/374	
Survey Area: V		Survey Unit: N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: V	**Survey Unit:** N/A	**Area (m^2):** 610
Survey Unit Description: ROOMS 3801 AND 3803. THIS SURVEY AREA IS POSTED AS A CA.		

Survey Type: RLC Survey X FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
30	55	30	3	0	55

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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372 / 488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A

Survey Unit Description: ROOMS 3801 AND 3803. THIS SURVEY AREA IS POSTED AS A CA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A
Survey Unit Description: ROOMS 3801 AND 3803. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **30** unbiased survey points uniformly distributed within the rooms - 15 points (1 on each wall and 11 on floor) in each of rooms 3801 and 3803. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys (15 in each room), divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A
Survey Unit Description: ROOMS 3801 AND 3803. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	*Number and Type*	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 55 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 3 biased paint samples taken as follows: - 1 each at the two floor drains in room 3801 - 1 at floor drain in room 3803	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A
Survey Unit Description: ROOMS 3801 AND 3803. THIS SURVEY AREA IS POSTED AS A CA.	

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following:

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling.</u>
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: V	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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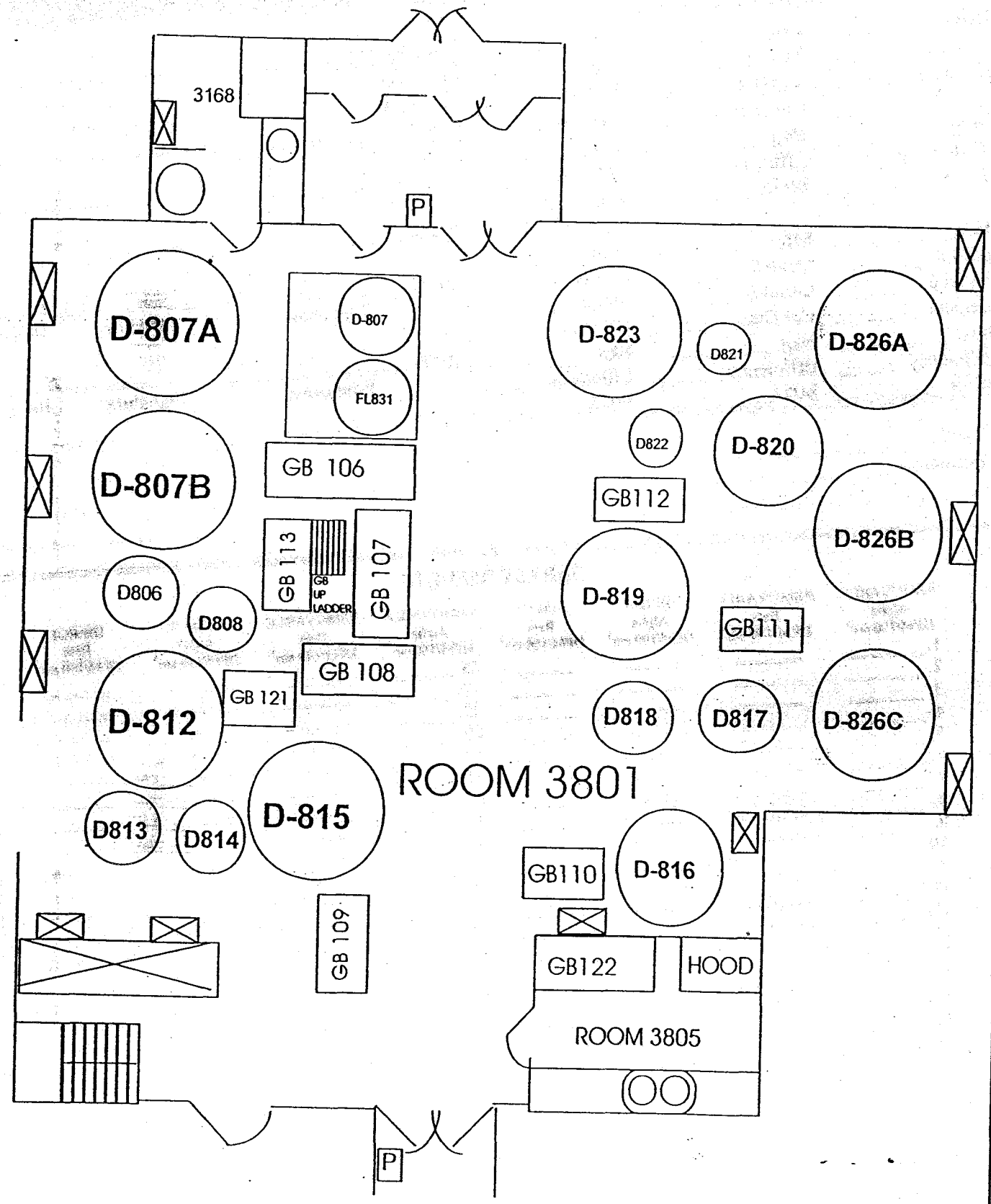
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
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10.					35.				
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12.					37.				
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14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
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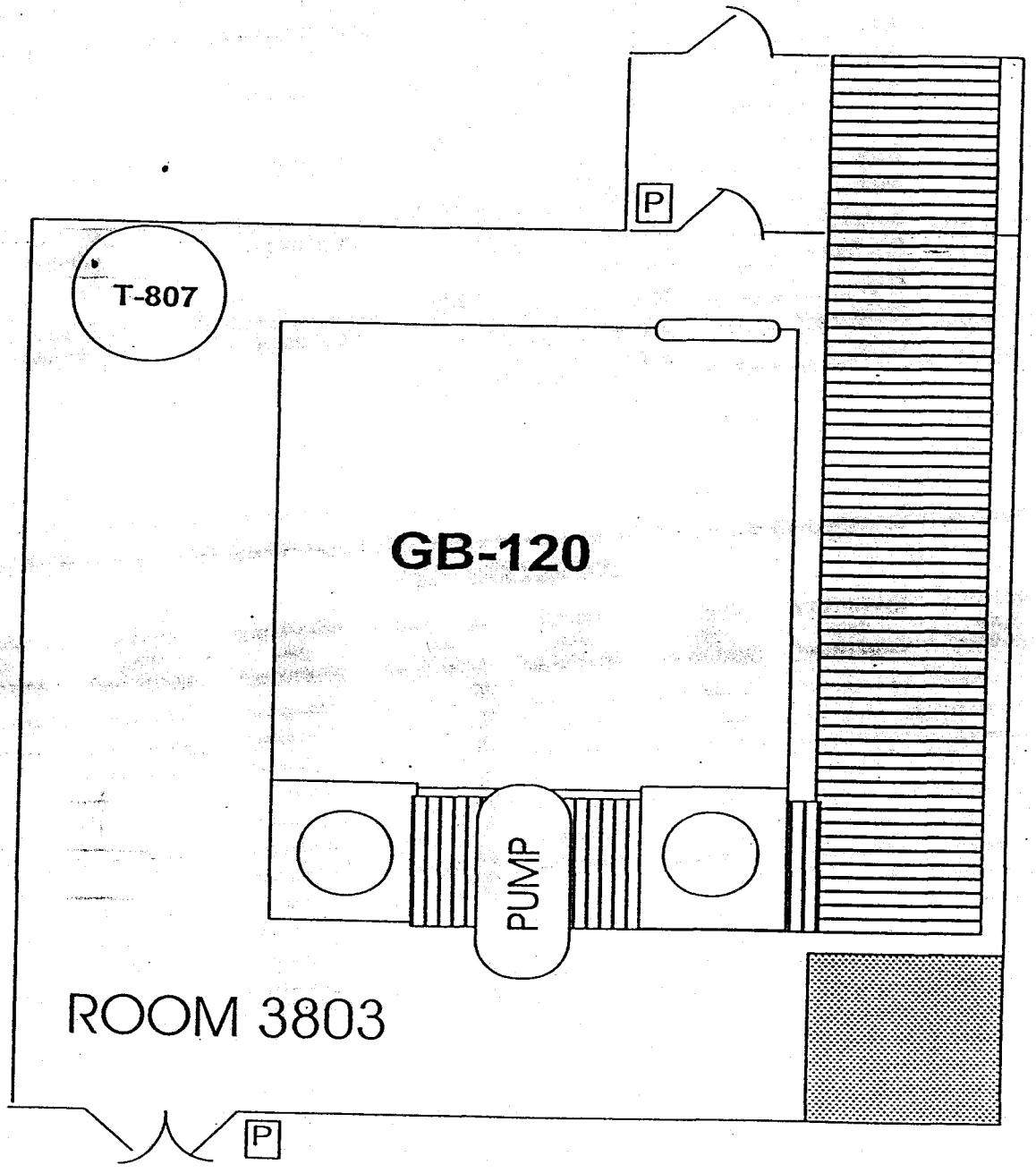
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

4.60

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



4661 4662

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: W		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

462 463

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: W	**Survey Unit:** N/A	**Area (m^2):** 1199

Survey Unit Description: ROOMS 3802, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813 INCLUDING DOWNWARD STAIRWELL #8, AND ROOMS 3168 AND 3168A. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey **X** FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
56	61	30	0	0	81

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A

Survey Unit Description: ROOMS 3802, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813 INCLUDING DOWNWARD STAIRWELL #8, AND ROOMS 3168 AND 3168A. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 X

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

ESS Radiological Engineer Signature	Date
N/A	N/A
EFS Manager Signature	Date
ESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A

Survey Unit Description: ROOMS 3802, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813 INCLUDING DOWNWARD STAIRWELL #8, AND ROOMS 3168 AND 3168A. THIS SURVEY AREA IS POSTED AS A RBA.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 56 unbiased survey points uniformly distributed within the rooms - 2 points (2 on each floor) in each of rooms 3802, 3804, 3805, 3806, 3807, 3808, 3811 and 3812. - 10 points (1 on each wall and 6 on floor) in each of rooms 3809, 3810 and 3813 including stairwell #8 - 5 points each in rooms 3168 and 3168A. 25 biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** 36 biased surveys ((A) 1 point in each of rooms 3802, 3804, 3805, 3806, 3807, 3808, 3811 and 3812 (B) 8 points in each of rooms 3809, 3810 and 3813. (C) 3 points each in rooms 3168 and 3168A) divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** 30 biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping ot tanks (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A
Survey Unit Description: ROOMS 3802, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813 INCLUDING DOWNWARD STAIRWELL #8, AND ROOMS 3168 AND 3168A. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 81 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A
Survey Unit Description: ROOMS 3802, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813 INCLUDING DOWNWARD STAIRWELL #8, AND ROOMS 3168 AND 3168A. THIS SURVEY AREA IS POSTED AS A RBA.	

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: W	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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25.					50.				

e Reviewed: _____ RS Supervision: _____ / _____
Print Name Signature Emp. #

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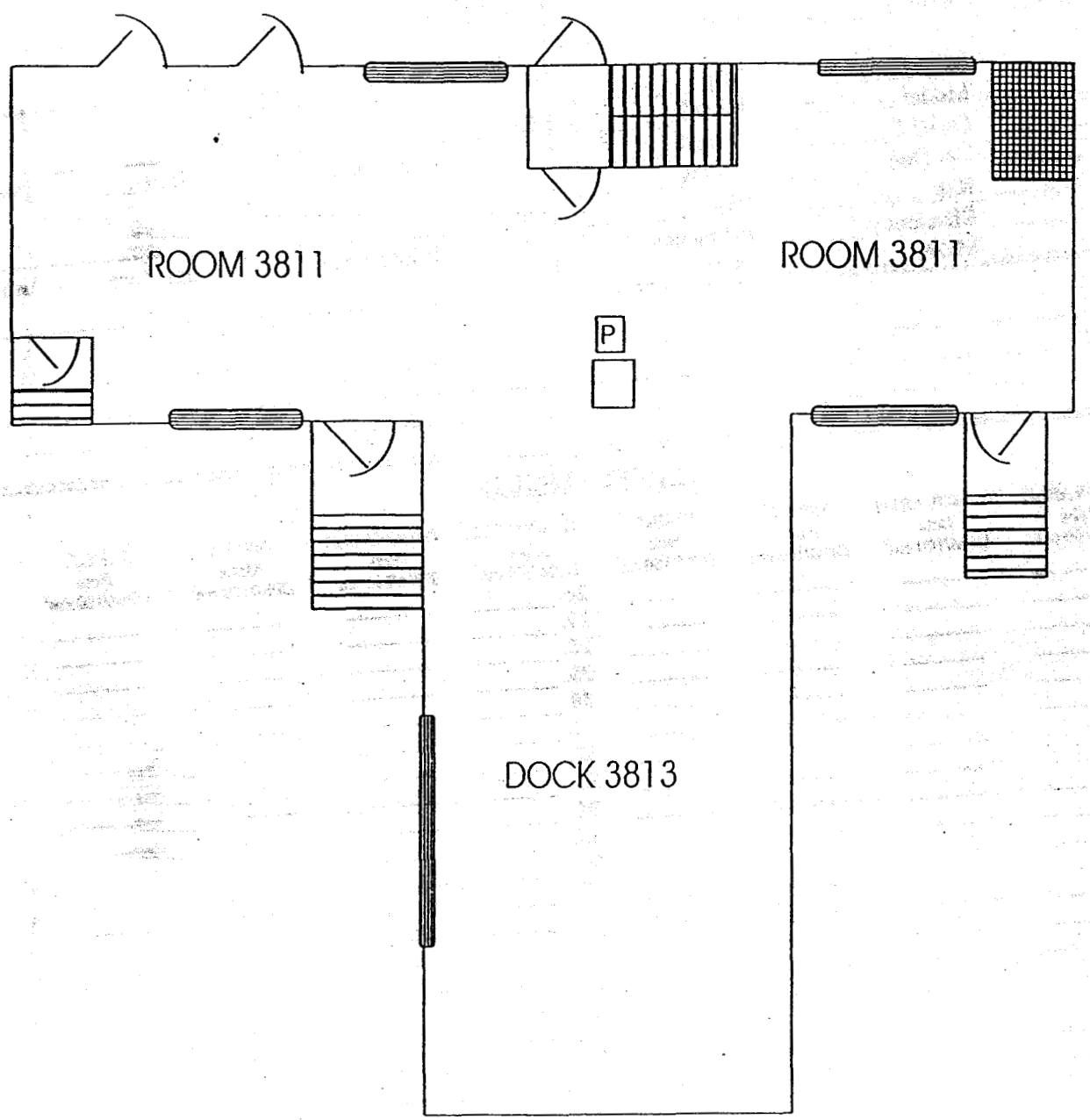
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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 RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
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25.					50.				

te Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

472 472

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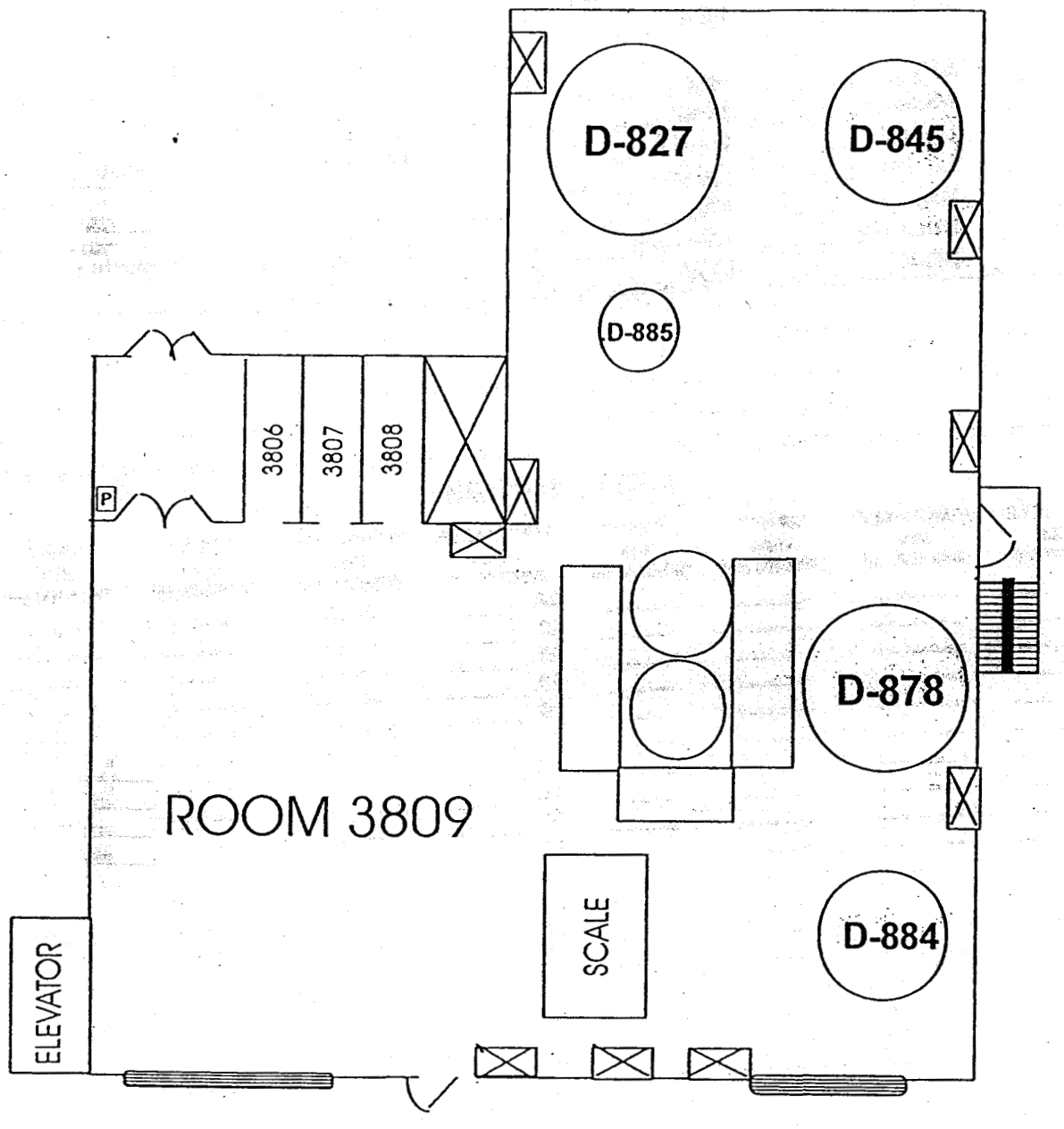
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



 RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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22.					47.				
23.					48.				
24.					49.				
25.					50.				

ate Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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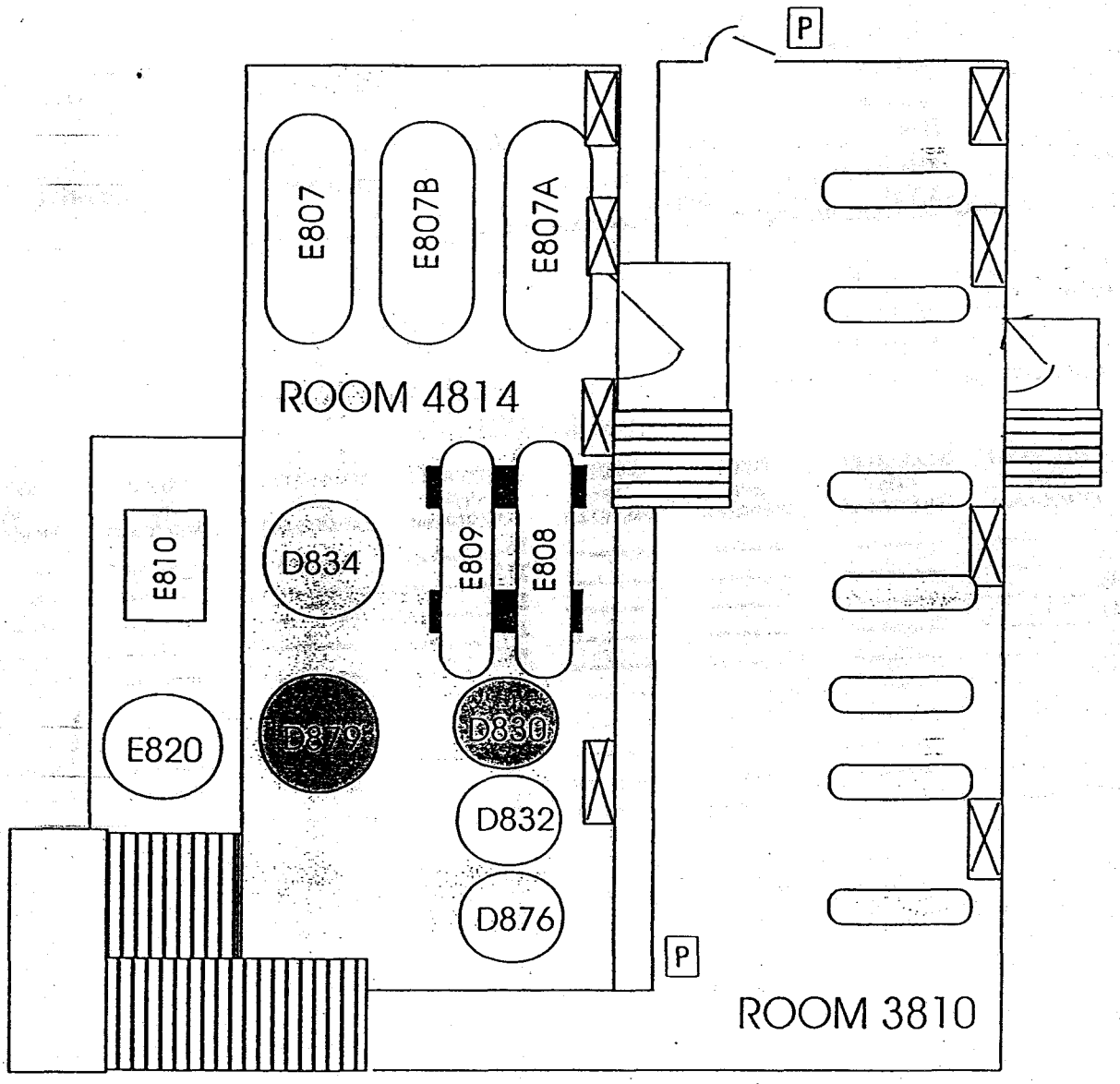
@RAH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: X		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: X	**Survey Unit:** N/A	**Area (m^2):** 287

Survey Unit Description: ROOMS 4803, 4804, 4805, 4806, 4807 & 4815 INCLUDING STAIRWELL #9. THIS SURVEY AREA IS POSTED AS A CA.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
50	55	30	1	0	75

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4803, 4804, 4805, 4806, 4807 & 4815 INCLUDING STAIRWELL #9. THIS SURVEY AREA IS POSTED AS A CA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4803, 4804, 4805, 4806, 4807 & 4815 INCLUDING STAIRWELL #9. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **50** unbiased survey points uniformly distributed within the rooms - 8 points (1 on each wall and 3 on floor) in each of rooms 4803, 4804, 4806 and 4807. - 9 points (1 on each wall and 5 on floor) in each of rooms 4805 and combined 4815 + stairwell. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys (5 in each room), divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4803, 4804, 4805, 4806, 4807 & 4815 INCLUDING STAIRWELL #9. THIS SURVEY AREA IS POSTED AS A CA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 75 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of 1 biased paint samples taken as follows: - 1 at the floor drain in room 4805	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4803, 4804, 4805, 4806, 4807 & 4815 INCLUDING STAIRWELL #9. THIS SURVEY AREA IS POSTED AS A CA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following:

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: X	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Printed Name	Employee #	RCT Supervisor Signature	Date
JAMES S. JARVIS	519503		
Project RE Printed Name	Employee #	Project RE Signature	Date
H. B. ESTABROOKS	520337		
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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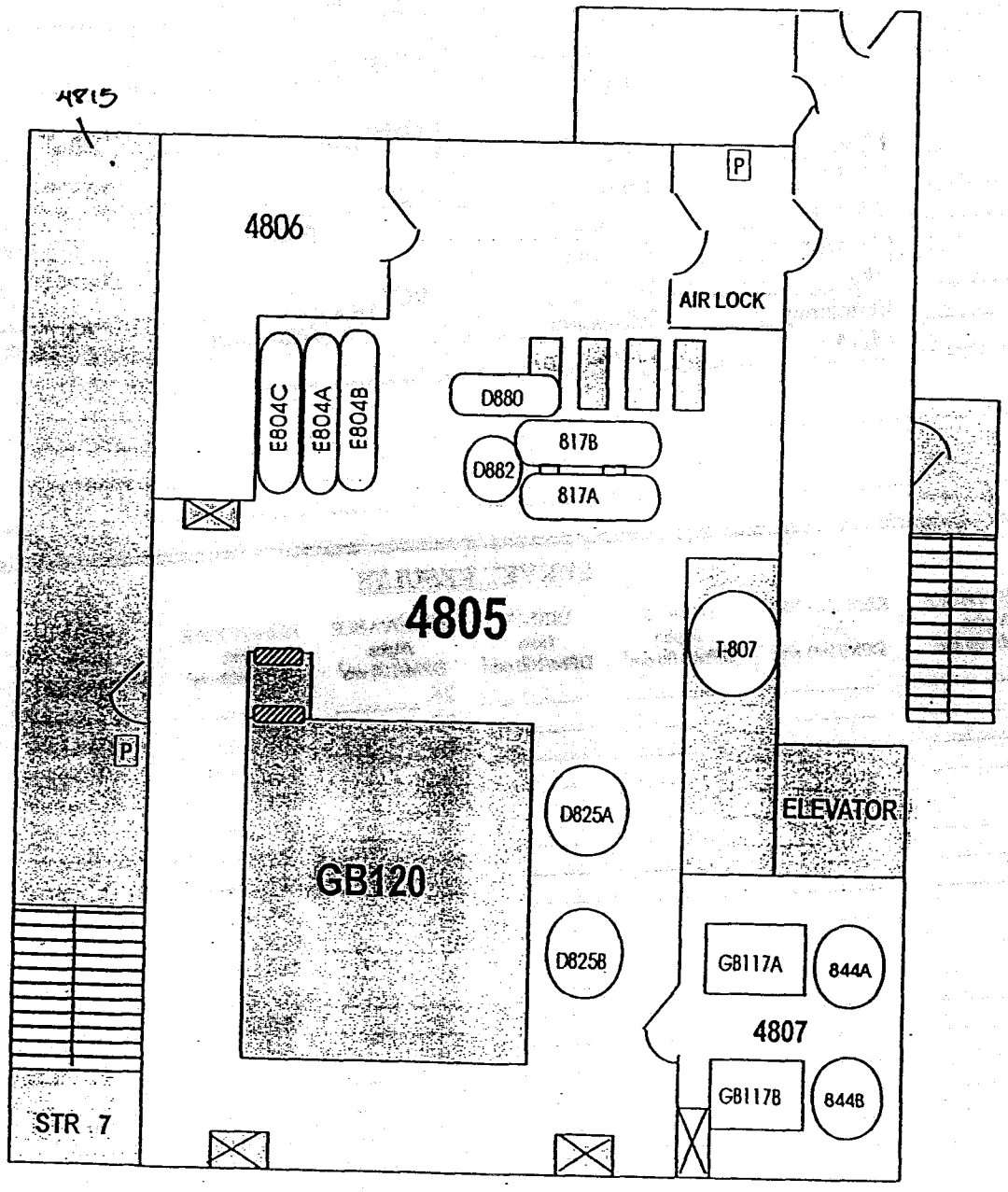
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

485 487

461 1/04

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374	
Survey Area: Y		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374	**Type:** 3
Survey Area: Y	**Survey Unit:** N/A	**Area (m^2):** 395

Survey Unit Description: ROOMS 4801, 4802, 4810, 4812 AND 4814 INCLUDING STAIRWAY. THIS SURVEY AREA IS POSTED AS A RBA.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
50	55	30	0	0	75

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4801, 4802, 4810, 4812 AND 4814 INCLUDING STAIRWAY. THIS SURVEY AREA IS POSTED AS A RBA.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]	
RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4801, 4802, 4810, 4812 AND 4814 INCLUDING STAIRWAY. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **50** unbiased survey points uniformly distributed within the rooms - 8 points (1 on each wall and 3 on floor) in each of rooms 4801, 4810, 4812 and stairwell. - 9 points (1 on each wall and 5 on floor) in each of rooms 4802 and 4814. **25** biased survey points with emphasis on the following types of locations: - Gloveboxes/IO stations/bag-out ports - Points adjacent to internally contaminated equipment - Locations near waste drum storage areas - Other areas of potential concern based on RCT judgement/experience **CEILINGS/WALLS > 2 meters:** **30** biased surveys (5 in each room and stairwell), divided between wall and ceiling when possible, with focus on: - Walls behind process lines - Stained or discolored areas - Areas around pipe or other penetrations **EQUIPMENT:** **30** biased survey points on equipment with one or more samples from: - Equipment which has visible leaks or contained spills beneath them - Survey points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A
Survey Unit Description: ROOMS 4801, 4802, 4810, 4812 AND 4814 INCLUDING STAIRWAY. THIS SURVEY AREA IS POSTED AS A RBA.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 75 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

491 493 406/488

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A

Survey Unit Description: ROOMS 4801, 4802, 4810, 4812 AND 4814 INCLUDING STAIRWAY. THIS SURVEY AREA IS POSTED AS A RBA.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

493 495

408 / 488

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374
Survey Area: Y	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

496
494

409/488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

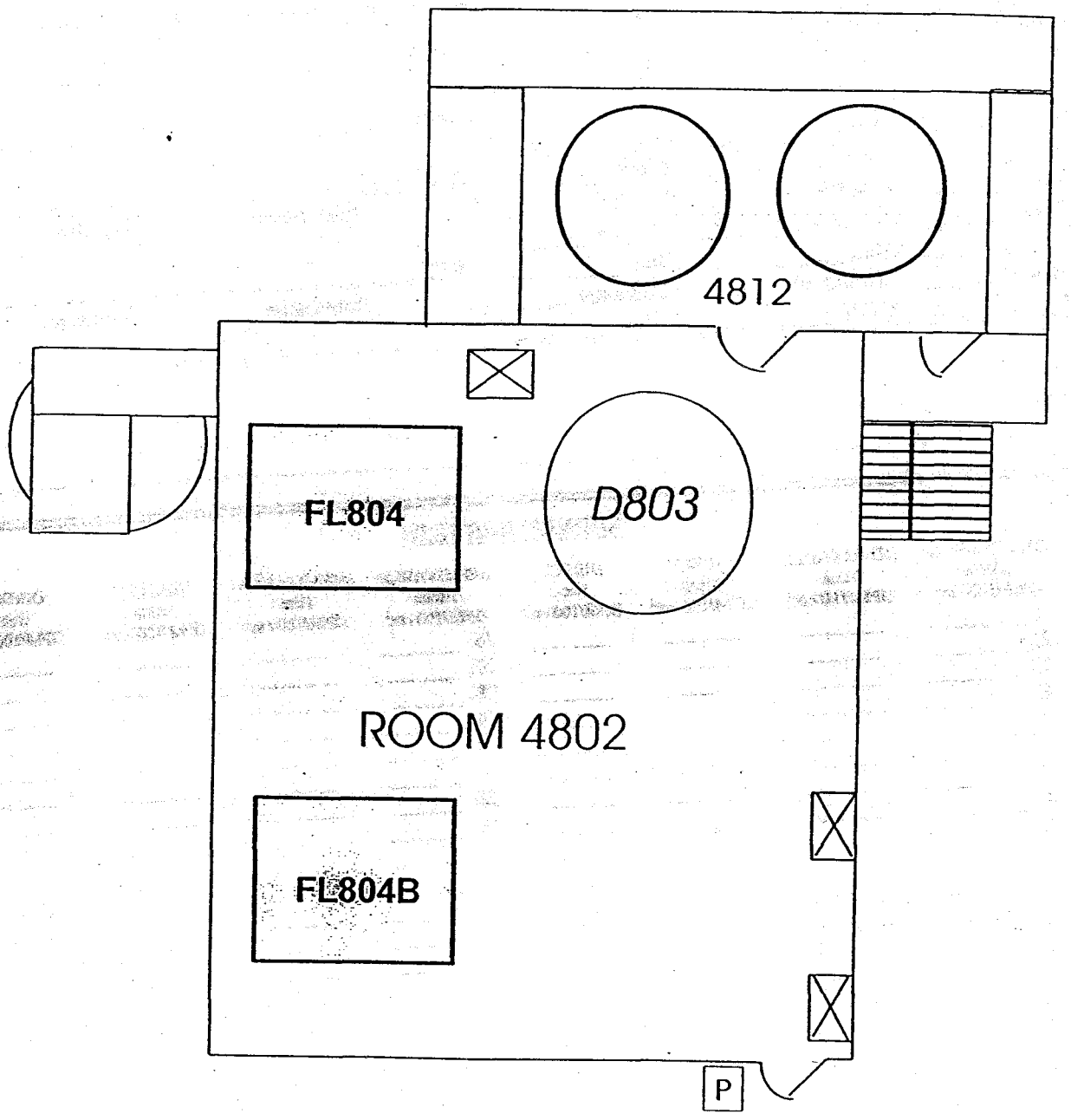
Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

496 497

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



498

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

497 497

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

500

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374 (EXTERIOR/ROOF)	
Survey Area: Z		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

SDI
Rev. 9/99

412/458

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374 (EXT./ROOF)	**Type:** 3
Survey Area: Z	**Survey Unit:** N/A	**Area (m^2):** N/A
Survey Unit Description: External surfaces/roof of building 371/374.		

Survey Type: RLC Survey X FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
65	101	0	8	0	166

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type: RLC Survey ☐ FSS ☐			**Classification:** Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

502

500

413/488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A

Survey Unit Description: External surfaces/roof of building 371/374.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 ☐ Type 3 **X**

Classification: ,Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead areas may require additional controls. Review RWP requirements and surveys prior to entry. Use caution when working in overheads.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

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501

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A
Survey Unit Description: External surfaces/roof of building 371/374.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**ROOF/EXTERIOR WALLS :** **65** unbiased survey points uniformly distributed as follows: - 5 survey points distributed across exterior walls facing in the north, south, east and west directions around building in each at an elevation < 2 meters (20 points total) - 10 survey points on each of roof 1, roof 2 and roof 3. 5 survey points on roof 4 (35 points total) - 10 survey points total located on roof sections not identified above. **101** biased survey points: - 61 survey points located at the exit of each roof drain or downspout. - 40 survey points distributed among the following locations: roof exhaust vents/duct work and capped roof openings.	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A
Survey Unit Description: External surfaces/roof of building 371/374.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**ROOF/EXTERIOR WALLS:** **166** 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted.	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	Total of **8** biased roof material samples taken as follows: 4 samples - 2 samples taken near ventilation ductwork/plenum exhausts on roof sections 1 and 3. 4 samples total with 1 sample being taken on each of roof sections 1, 2, 3 and 4.	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Y16 / Y18

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A
Survey Unit Description: External surfaces/roof of building 371/374.	

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

418/488

505

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374 (EXTERIOR/ROOF)
Survey Area: Z	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		Supervisor Signature	Date
		ct RE Signature	Date
		S Manager Signature	Date

502

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RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

507 ~~504~~

420 / 488

@RAH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374 COMPLEX	
Survey Area: AA		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

421/488

509 511

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX	**Type:** 3
Survey Area: AA	**Survey Unit:** N/A	**Area (m^2):** < 2000

Survey Unit Description:. DIESEL FUEL/STORAGE TANKS 262, 262A, AND TK-4; LIQUID ARGON STORAGE TANK 166, LIQUID NITROGEN STORAGE TANK 170. THESE AREAS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
0	0	30	0	0	30

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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540

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A

Survey Unit Description: DIESEL FUEL/STORAGE TANKS 262, 262A, AND TK-4; LIQUID ARGON STORAGE TANK 166, LIQUID NITROGEN STORAGE TANK 170. THESE AREAS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 X Type 2 ☐ Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]	
[redacted]ESS Radiological Engineer Signature	Date
N/A	N/A
[redacted]EFS Manager Signature	Date
[redacted]ESS Manager Signature	Date

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A

Survey Unit Description: DIESEL FUEL STORAGE TANKS 262, 262A, AND TK-4; LIQUID ARGON STORAGE TANK 166, LIQUID NITROGEN STORAGE TANK 170. THESE AREAS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** N/A **CEILINGS/WALLS > 2 meters:** N/A **EQUIPMENT:** **30** biased survey points on tanks and associated equipment: - 3 survey points per tank (tank proper) - 2 survey point beneath each tank - 1 survey point on piping/equipment associated with each tank	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

424/488

514
542

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A
Survey Unit Description: DIESEL FUEL/STORAGE TANKS 262, 262A, AND TK-4; LIQUID ARGON STORAGE TANK 166, LIQUID NITROGEN STORAGE TANK 170. THESE AREAS ARE NOT POSTED AS RADIOLOGICAL AREAS.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 30 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

425 / 488

513

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A

Survey Unit Description: DIESEL FUEL/STORAGE TANKS 262, 262A, AND TK-4; LIQUID ARGON STORAGE TANK 166, LIQUID NITROGEN STORAGE TANK 170. THESE AREAS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

426 / 488

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

427/488

515

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: AA	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]		
	RCT Supervisor Signature	Date
	Project RE Signature	Date
	RESS Manager Signature	Date

518

576

Rev. 9/99

428 / 488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

517 511

429 / 688

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

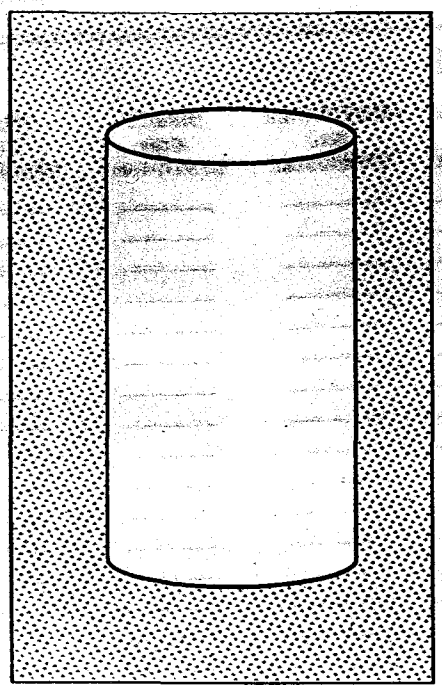
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

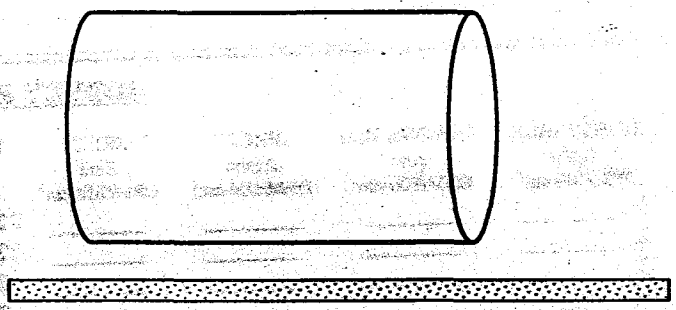
DIESEL TANK _____

**INDICATE GEOGRAPHIC DIRECTION (N, S, E, W) ON DIAGRAMS

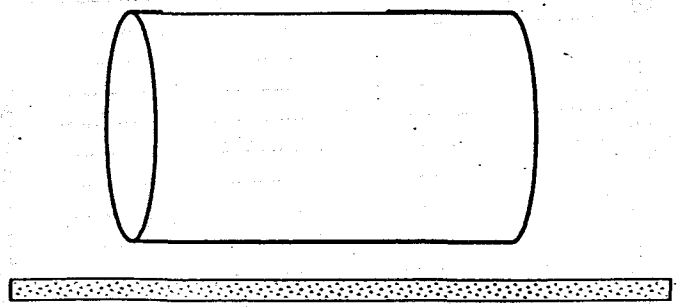
TOP VIEW



SIDE VIEW #1
_____ SIDE



SIDE VIEW #2
_____ SIDE



518 520

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

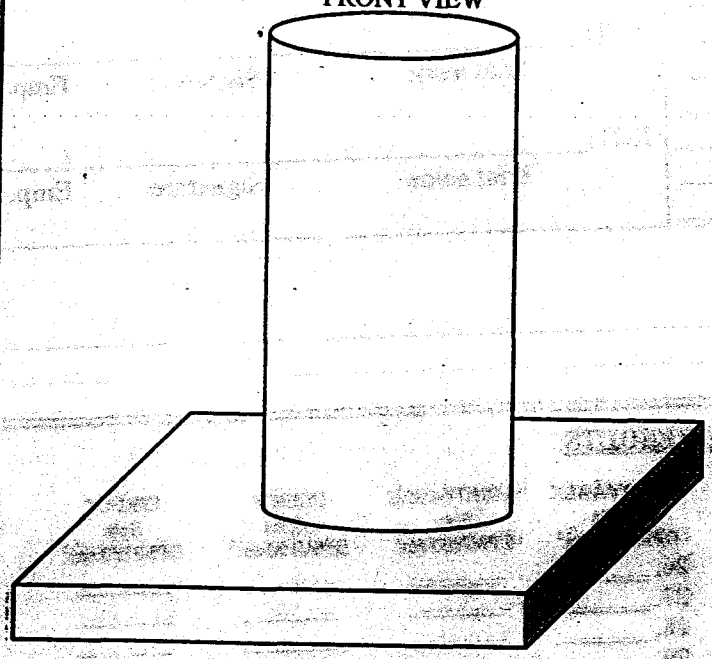
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

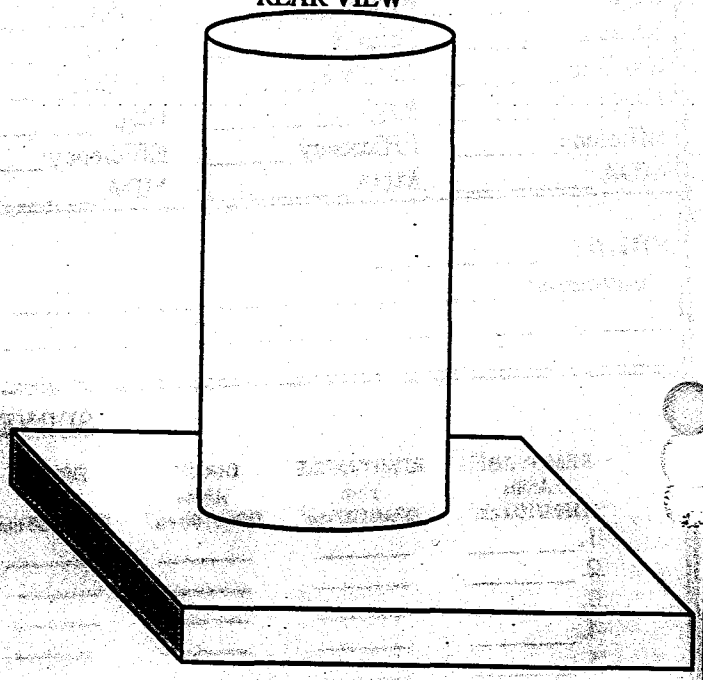
TANK #_____

**INDICATE GEOGRAPHIC DIRECTION (N, S, E, W) ON DIAGRAMS

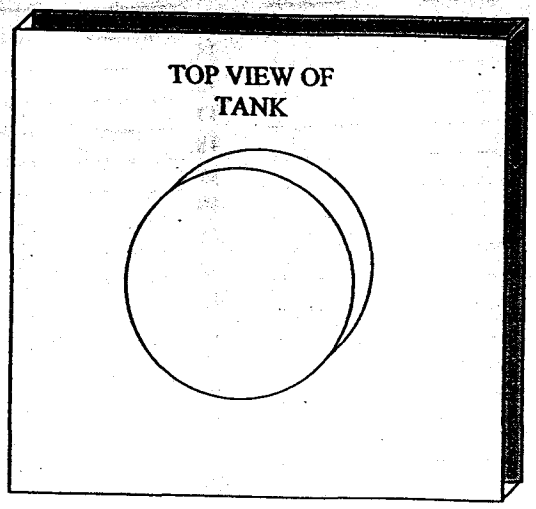
FRONT VIEW



REAR VIEW



TOP VIEW OF TANK



520 522

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
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16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

ate Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

521 523

431 / 448

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374 COMPLEX	
Survey Area: BB		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

523

V32 / 488

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX	**Type:** 2 (TANKS)
Survey Area: BB	**Survey Unit:** N/A	**Area (m^2):** ~212

Survey Unit Description: 1ST, 2ND, 3RD, AND 4TH EFFECT VAPOR BODY TANKS (H20 + NaOH) = TANKS 224, 225, 226, AND 227. THESE TANKS DO NOT HAVE VISIBLE RADIOLOGICAL POSTINGS BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
0	0	32	0	0	32

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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433/488

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A

Survey Unit Description: 1ST, 2ND, 3RD, AND 4TH EFFECT VAPOR BODY TANKS (H20 + NaOH) = TANKS 224, 225, 226, AND 227. THESE TANKS DO NOT HAVE VISIBLE RADIOLOGICAL POSTINGS BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 X Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

434 / 488

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A

Survey Unit Description: 1ST, 2ND, 3RD, AND 4TH EFFECT VAPOR BODY TANKS (H20 + NaOH) = TANKS 224, 225, 226, AND 227. THESE TANKS DO NOT HAVE VISIBLE RADIOLOGICAL POSTINGS BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** N/A **CEILINGS/WALLS > 2 meters:** N/A **EQUIPMENT:** 32 biased survey points on tanks and associated equipment: - 4 survey points per tank (tank proper) - 3 survey point in areas around/beneath each tank - 1 survey point on piping/equipment associated with each tank	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A

Survey Unit Description: 1ST, 2ND, 3RD, AND 4TH EFFECT VAPOR BODY TANKS (H20 + NaOH) = TANKS 224, 225, 226, AND 227. THESE TANKS DO NOT HAVE VISIBLE RADIOLOGICAL POSTINGS BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 32 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Y35 / Y88

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A

Survey Unit Description: 1ST, 2ND, 3RD, AND 4TH EFFECT VAPOR BODY TANKS (H20 + NaOH) = TANKS 224, 225, 226, AND 227. THESE TANKS DO NOT HAVE VISIBLE RADIOLOGICAL POSTINGS BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

437 / 488

530

528

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

438 / 488

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: BB	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

572
530

439/488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
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17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

531 537

440 / 488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 371/374 COMPLEX	
Survey Area: CC		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX	**Type:** 1 (TANKS/SILO)
Survey Area: CC	**Survey Unit:** N/A	**Area (m^2):** ~695

Survey Unit Description:. PRODUCT WATER TANKS 163 AND 164; CEMENT SILO 165; NITRIC ACID TANK 167 (aka D-222), KOH STORAGE TANK 168 (aka D-225) AND 169 (aka D-842); SPRAY DRYER TANK 228. THESE TANKS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Survey Type:			**Classification:**		
RLC Survey X FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
0	0	42	0	0	42

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐ FSS ☐			Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A

Survey Unit Description: PRODUCT WATER TANKS 163 AND 164; CEMENT SILO 165; NITRIC ACID TANK 167 (aka D-222), KOH STORAGE TANK 168 (aka D-225) AND 169 (aka D-842); SPRAY DRYER TANK 228. THESE TANKS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey **X** Final Status Survey ☐

Building Type: Type 1 **X** Type 2 ☐ Type 3 ☐

Classification: • Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown **X**

Contaminants of Concern: Plutonium **X** Uranium **X** Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A **X**

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A

Survey Unit Description: PRODUCT WATER TANKS 163 AND 164; CEMENT SILO 165; NITRIC ACID TANK 167 (aka D-222), KOH STORAGE TANK 168 (aka D-225) AND 169 (aka D-842); SPRAY DRYER TANK 228. THESE TANKS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** N/A **CEILINGS/WALLS > 2 meters:** N/A **EQUIPMENT:** **42** biased survey points on tanks and associated equipment: - 3 survey points per tank (tank proper) - 2 survey points beneath each tank - 1 survey point on piping/equipment associated with each tank	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A
Survey Unit Description: PRODUCT WATER TANKS 163 AND 164; CEMENT SILO 165; NITRIC ACID TANK 167 (aka D-222), KOH STORAGE TANK 168 (aka D-225) AND 169 (aka D-842); SPRAY DRYER TANK 228. THESE TANKS ARE NOT POSTED AS RADIOLOGICAL AREAS.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 42 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A

Survey Unit Description: PRODUCT WATER TANKS 163 AND 164; CEMENT SILO 165; NITRIC ACID TANK 167 (aka D-222), KOH STORAGE TANK 168 (aka D-225) AND 169 (aka D-842); SPRAY DRYER TANK 228. THESE TANKS ARE NOT POSTED AS RADIOLOGICAL AREAS.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 371/374 COMPLEX
Survey Area: CC	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

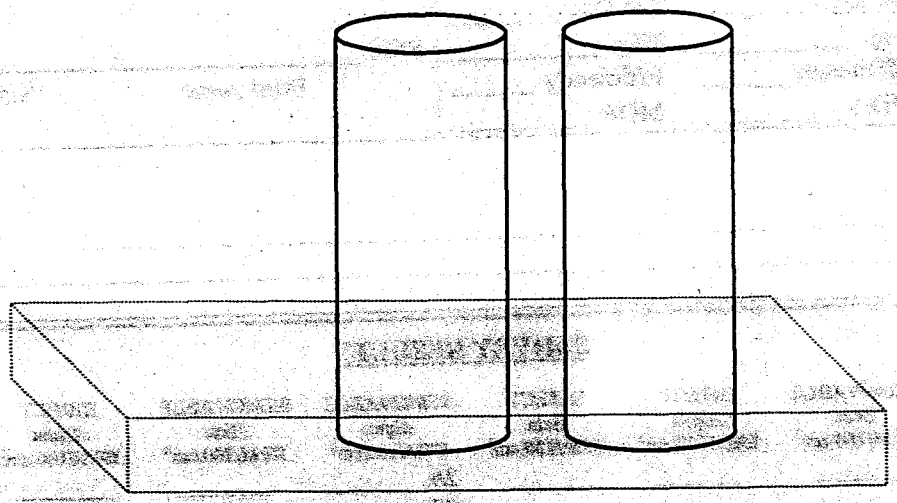
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

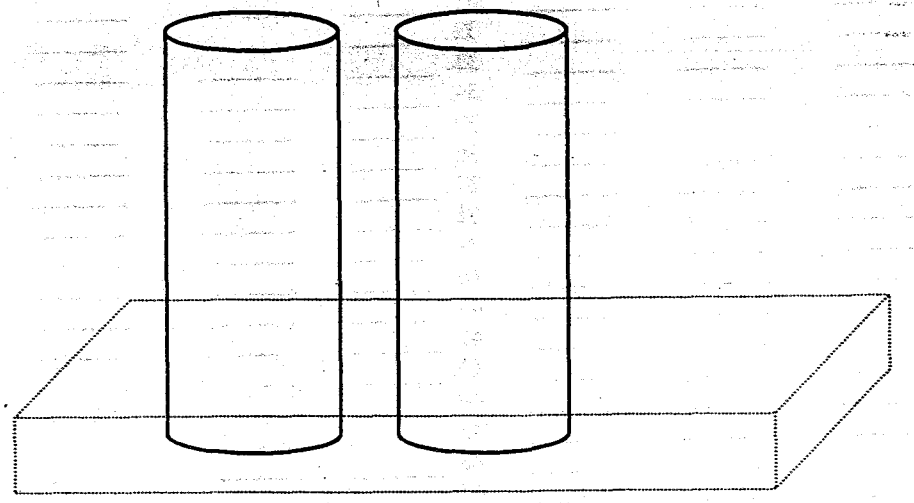
TANK/SILO #_____

TANK/SILO #:_____

FRONT VIEW FROM: N/S/E/W



REAR VIEW FROM: N/S/E/W



**INDICATE GEOGRAPHIC DIRECTION (N, S, E, W) ON DIAGRAMS

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

543 545

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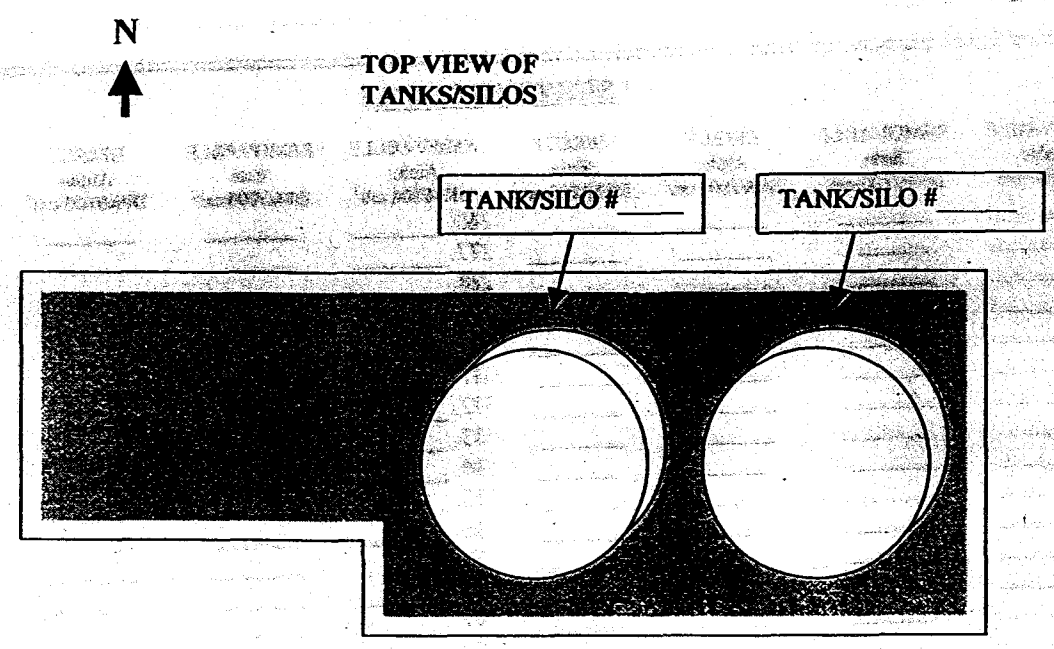
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg._____	Mfg._____	Mfg._____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg._____	Mfg._____	Mfg._____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ **Time:** _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ **RS Supervision:** _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

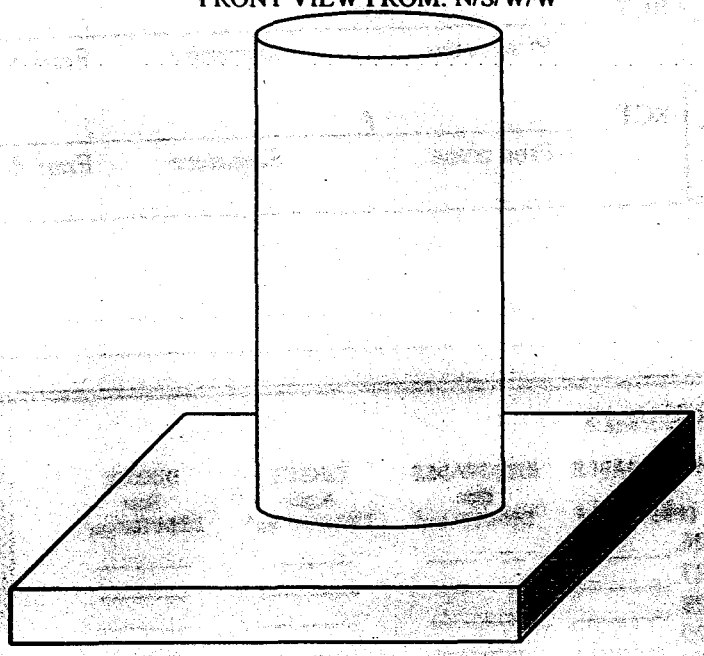
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

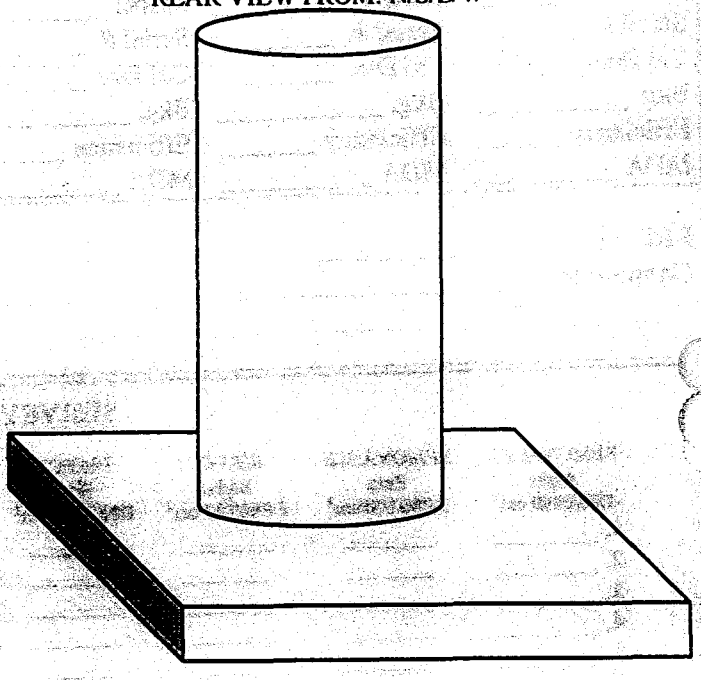
TANK/SILO #_____

**INDICATE GEOGRAPHIC DIRECTION (N, S, E, W) ON DIAGRAMS

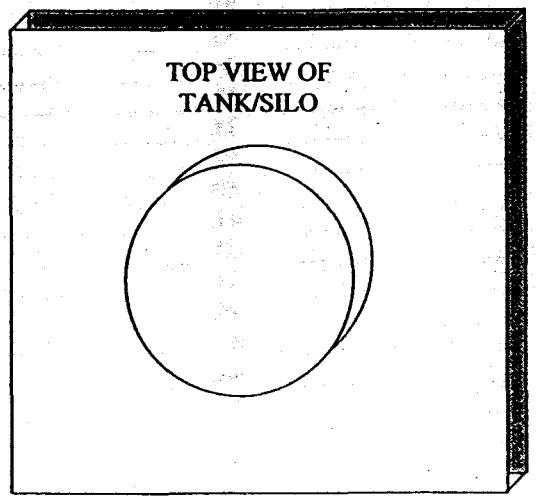
FRONT VIEW FROM: N/S/W/W



REAR VIEW FROM: N/S/E/W



TOP VIEW OF TANK/SILO



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

547 549

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 373	
Survey Area: DD		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 373	**Type:** 1
Survey Area: DD	**Survey Unit:** N/A	**Area (m^2):** ~341

Survey Unit Description:. INTERIOR OF COOLING TOWER AND PUMP HOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
35	30	30	0	2	35

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF COOLING TOWER AND PUMP HOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 X Type 2 ☐ Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A
Survey Unit Description: INTERIOR OF COOLING TOWER AND PUMP HOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** 35 unbiased survey points uniformly distributed as follows: - 25 survey points inside of the cooling tower structure - 10 survey points within pump house building NO biased survey points **CEILINGS/WALLS > 2 meters:** 30 biased surveys of ceilings and walls of cooling tower and pump house. **EQUIPMENT:** 30 biased survey points on equipment within pumphouse and cooling tower	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A
Survey Unit Description: INTERIOR OF COOLING TOWER AND PUMP HOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED..	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 35 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	2 sludge samples from within cooling tower.	**SEE NOTE 5** **where sampling is feasible.
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF COOLING TOWER AND PUMP HOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For each media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* prior to media sampling.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 373
Survey Area: DD	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X	Final Status Survey ☐

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

[redacted]	
[redacted] RCT Supervisor Signature	Date
[redacted]	
[redacted] Project RE Signature	Date
[redacted]	
[redacted] RESS Manager Signature	Date

557
556

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 377/381/374A	
Survey Area: EE		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

560
558

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 377/381/374A	**Type:** 1
Survey Area: EE	**Survey Unit:** N/A	**Area (m^2):** ~208

Survey Unit Description:. INTERIORS OF BUILDINGS 377 (AIR COMPRESSOR BUILDING), 381 (FLUORINE STORAGE/PAINT SHOP), AND 374A CARPENTER SHOP. ALL BUILDINGS IN THIS AREA ARE NOT RADIOLOGICALLY POSTED.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
30	20	30	0	0	40

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A

Survey Unit Description: INTERIORS OF BUILDINGS 377 (AIR COMPRESSOR BUILDING), 381 (FLUORINE STORAGE/PAINT SHOP), AND 374A CARPENTER SHOP. ALL BUILDINGS IN THIS AREA ARE NOT RADIOLOGICALLY POSTED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 X Type 2 ☐ Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

ESS Radiological Engineer Signature	Date
N/A	N/A
EFS Manager Signature	Date
ESS Manager Signature	Date

562
560

464 / 480

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A

Survey Unit Description: INTERIORS OF BUILDINGS 377 (AIR COMPRESSOR BUILDING), 381 (FLUORINE STORAGE/PAINT SHOP), AND 374A CARPENTER SHOP. ALL BUILDINGS IN THIS AREA ARE NOT RADIOLOGICALLY POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **30** unbiased uniformly distributed survey points distributed throughout the three buildings **10** biased survey points as determined by RE/RCT. **CEILINGS/WALLS > 2 meters:** **10** biased surveys as determined by RE/RCT **EQUIPMENT:** **30** biased survey points on equipment within the buildings as determined by RE/RCT.	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A

Survey Unit Description: INTERIORS OF BUILDINGS 377 (AIR COMPRESSOR BUILDING), 381 (FLUORINE STORAGE/PAINT SHOP), AND 374A CARPENTER SHOP. ALL BUILDINGS IN THIS AREA ARE NOT RADIOLOGICALLY POSTED.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 40 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

564
562

466 / 488

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A

Survey Unit Description: INTERIORS OF BUILDINGS 377 (AIR COMPRESSOR BUILDING), 381 (FLUORINE STORAGE/PAINT SHOP), AND 374A CARPENTER SHOP. ALL BUILDINGS IN THIS AREA ARE NOT RADIOLOGICALLY POSTED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 377/381/374A
Survey Area: EE	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____
Building: _____
Location: _____
Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____
Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

5606 567

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements*.

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		Building: 378	
Survey Area: FF		Survey Unit: N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 378	**Type:** 2
Survey Area: FF	**Survey Unit:** N/A	**Area (m^2):** ~12

Survey Unit Description:. INTERIOR OF BUILDING 378 WASTE COLLECTION PUMP HOUSE. THIS AREA IS NOT RADIOLOGICALLY POSTED, BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED DUE TO IDENTIFICATION AS A TYPE 2 FACILITY OR PROCESS HISTORY.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
30	10	30	1	0	30

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF BUILDING 378 WASTE COLLECTION PUMP HOUSE. THIS AREA IS NOT RADIOLOGICALLY POSTED, BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED DUE TO IDENTIFICATION AS A TYPE 2 FACILITY OR PROCESS HISTORY.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 ☐ Type 2 X Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF BUILDING 378 WASTE COLLECTION PUMP HOUSE. THIS AREA IS NOT RADIOLOGICALLY POSTED, BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED DUE TO IDENTIFICATION AS A TYPE 2 FACILITY OR PROCESS HISTORY.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**FLOORS/WALLS < 2 meters:** **30** unbiased survey points uniformly distributed throughout building **NO** biased survey points **CEILINGS/WALLS > 2 meters:** **10** biased surveys of ceilings and walls of building **EQUIPMENT:** **30** biased survey points on equipment and piping within building.	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF BUILDING 378 WASTE COLLECTION PUMP HOUSE. THIS AREA IS NOT RADIOLOGICALLY POSTED, BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED DUE TO IDENTIFICATION AS A TYPE 2 FACILITY OR PROCESS HISTORY.

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**FLOORS/WALLS < 2 meters:** 30 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. **CEILINGS/WALLS > 2 meters:** NONE **EQUIPMENT:** NONE	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	1 media sample in building	**SEE NOTE 5** ****media samples may not be possible in this area due to floor structure/configuration. Skip those samples which cannot be obtained and document.**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A

Survey Unit Description: INTERIOR OF BUILDING 378 WASTE COLLECTION PUMP HOUSE. THIS AREA IS NOT RADIOLOGICALLY POSTED, BUT MAY BE CONSIDERED INTERNALLY CONTAMINATED DUE TO IDENTIFICATION AS A TYPE 2 FACILITY OR PROCESS HISTORY.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For each media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* prior to media sampling.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 378
Survey Area: FF	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		
All Surveys and Samples Accounted For	**RCT Supervisor**	**PRE**
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

478/488

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type:
Building:
Location:
Purpose:

RWP #:

Date: Time:

RCT: / /
Print name Signature Emp. #

RCT: / /
Print name Signature Emp. #

PRL # :
Comments:

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
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19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: RS Supervision: / /
Print Name Signature Emp. #

AC 578

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0001		**Building:** 377/378/381/374A/373 ROOF/EXT	
Survey Area: GG		**Survey Unit:** N/A	
Initiator/ Date	**Release Date**	**Validation Date**	**Closure Date**
11/5/99			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF	**Type:** 1
Survey Area: GG	**Survey Unit:** N/A	**Area (m^2):** ~674

Survey Unit Description:. ROOF AND EXTERIOR OF 377, 378, 381, 374A, AND 373 COOLING TOWER WITH PUMPHOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Survey Type:			**Classification:**		
RLC Survey X	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**
60	0	0	3	0	60

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

Building:	**Type:**	**Survey Area:**
Survey Unit:	**Area (m^2):**	
Survey Unit Description:		

Survey Type:			**Classification:**		
RLC Survey ☐	FSS ☐		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	**Biased Surface Activity Measurements**	**Equipment Surface Activity Measurements**	**Media Samples**	**Volumetric Samples**	**Surface Activity Scans**

SURVEY PACKAGE COVER SHEET

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A

Survey Unit Description: ROOF AND EXTERIOR OF 377, 378, 381, 374A, AND COOLING TOWER STRUCTURE AND PUMPHOUSE (373). THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Building Information:

Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐

Building Type: Type 1 X Type 2 ☐ Type 3 ☐

Classification: Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown X

Contaminants of Concern: Plutonium X Uranium X Other ☐ _____

Justification for Classification: N/A

Special Support Requirements: Ladder, manlift, scaGGolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads.

Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made.

Isolation Controls:

Level 1 ☐ Level 2 ☐ N/A X

Labeling Requirements: NONE.

Survey Package Implementation:

[redacted]

Survey Package Closure:

[redacted]

RESS Radiological Engineer Signature	Date
N/A	N/A
REFS Manager Signature	Date
RESS Manager Signature	Date

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A
Survey Unit Description: ROOF AND EXTERIOR OF 377, 378, 381, 374A, AND 373 COOLING TOWER WITH PUMPHOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Activity Measurements	**ROOF/EXTERIOR WALLS:** 60 uniformly distributed survey points distributed as follows: - 2 per wall on each building (48 total points) - 2 per roof on each building (12 total points) **FLOORS/WALLS < 2 meters:** N/A **CEILINGS/WALLS > 2 meters:** N/A **EQUIPMENT:** N/A	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A
Survey Unit Description: ROOF AND EXTERIOR OF 377, 378, 381, 374A, AND 373 COOLING TOWER WITH PUMPHOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.	

Minimum Survey/Sampling Measurement Requirements

Measurement	Number and Type	Comments
Surface Scanning	**ROOF/EXTERIOR WALLS:** **60 1 m^2 surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted.** **FLOORS/WALLS < 2 meters:** N/A **CEILINGS/WALLS > 2 meters:** N/A **EQUIPMENT:** N/A	**SEE NOTE 1** **SEE NOTE 2** **SEE NOTE 3** **SEE NOTE 4**
Media Samples	**Total of 3 roofing material samples will be taken from Buildings in this survey area. Specific buildings to be identified at time of survey based upon access and structural configuration.**	**SEE NOTE 5**
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A

Survey Unit Description: ROOF AND EXTERIOR OF 377, 378, 381, 374A, AND 373 COOLING TOWER WITH PUMPHOUSE. THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED.

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07.02, "Contamination Monitoring Requirements", for the following:

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- $1m^2$ scan measurements for alpha then beta/gamma contamination

NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package.

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped.

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations. RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16.03, "Radiological Samples of Building Media."

- RCT - verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample.
- RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements,* <u>prior to media sampling</u>.
- Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area.
- Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler – Sample weight of media samples shall be determined prior to analysis. Disposition the sample in accordance with approved procedures.
- Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238.
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A

Change #	Description	Initiator/ Date	PRE

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0001	**Building:** 377/378/381/374A/373 ROOF/EXT
Survey Area: GG	**Survey Unit:** N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey ☐	

All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		
Total Activity Surveys		
Exposure Rate Surveys		
Removable Surveys		
Media Samples		
Volumetric Samples		

Comments:

RCT Supervisor Signature	Date
Project RE Signature	Date
RESS Manager Signature	Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg.	Mfg.	Mfg.
Model	Model	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due	Cal Due
Bkg.	Bkg.	Bkg.
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

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

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

PRL # : _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²		REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
1.					26.				
2.					27.				
3.					28.				
4.					29.				
5.					30.				
6.					31.				
7.					32.				
8.					33.				
9.					34.				
10.					35.				
11.					36.				
12.					37.				
13.					38.				
14.					39.				
15.					40.				
16.					41.				
17.					42.				
18.					43.				
19.					44.				
20.					45.				
21.					46.				
22.					47.				
23.					48.				
24.					49.				
25.					50.				

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name Signature Emp. #

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE FOR ALL AREAS.

SURVEY MAP(S) TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, *Contamination Monitoring Requirements.*

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