

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
STANDARD WORK PACKAGE COVER SHEET

Page 1 of 2

STANDARD WORK PACKAGE SERIAL NUMBER: SWP-RFCSS-00002-00  
WORK CONTROL NO. \_\_\_\_\_ REVISION NO. 0

TITLE: RECONNAISSANCE LEVEL CHARACTERIZATION

Planner: A.R. Helmer / Paul A. Wojtaszek / A.R. Helmer / Paul M. Wright / 02/02/00  
Name Signature Date

CONCURRENCE:

Based on my personal review, I agree that the work described in this package meets technical requirements under my cognizance and can be performed safely.

Responsible:	<u>X M.C. Broussard</u>	<u>M.C. Broussard</u>	<u>2/3/00</u>
Organization	Name	Signature	Date
H&S:	<u>Brian Marziti</u>	<u>Brian Marziti</u>	<u>2/3/00</u>
	Name	Signature	Date
Engineering:	<u>N/A</u>		
	Name	Signature	Date
Rad Safety:	<u>M.M. Roberts</u>	<u>M.M. Roberts</u>	<u>2/3/00</u>
	Name	Signature	Date
Crit Safety:	<u>N/A</u>		
	Name	Signature	Date
Nuc Safety:	<u>N/A</u>		
	Name	Signature	Date
Environmental:	<u>M.B. Murray</u>	<u>M.B. Murray</u>	<u>02/03/00</u>
	Name	Signature	Date
Fire Protection:	<u>N/A</u>		
	Name	Signature	Date
Quality:	<u>MARK BROOKS</u>	<u>Mark Brooks</u>	<u>2-3-2000</u>
	Name	Signature	Date
ORC/PRC: (Review Only)	<u>N/A</u>		
	Initials	ORC/PRC Meeting No.	Date

APPROVAL:

If SWP used for TS&R work, signature indicates that specific limitations and boundaries on repair activities have been clearly identified

Responsible: N/A MCD 3-6-00 /  
Manager (Rep) Name Signature Date

SWP USE AUTHORIZATION:

Use of this Standard Work Package (SWP) is authorized for the work specified by the Work Control Form contained herein. Work must be started within 90 calendar days.

Responsible: M.E. NEELEY / M.E. Neeley / 3-6-00  
Manager (Rep) Name Signature Date

300  
REPAIR CENTER

ADMIN RECCRD

63

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
STANDARD WORK PACKAGE COVER SHEET

Page 2 of 2

WORK CONTROL NO. 50103087

REVISION NO. 0

**CLOSURE CONCURRENCE:**

Based upon my personal review of this work package and inspection of the work site, all of the work and retest specified in this package has been satisfactorily completed.

Job Supervisor: Paul A. Wojtoszke , Paul A. Wojtoszke , 07/14/00  
Name Signature Date

Engineering: N/A , \_\_\_\_\_ , \_\_\_\_\_  
Name Signature Date

Quality: R. G. LUMER , [Signature] , 9/7/00  
Name Signature Date

**CLOSURE APPROVAL:**

Responsible: M.C. Broussard , M. Broussard , 9/7/00  
Manager (Rep) Name Signature Date

## Section 2 Table of Contents / List of Effective Pages

Section	Title	Pages	Rev
1	Work Package Cover Sheet	1	0
2	Table of Contents / List of Effective Pages	2	0
3	Work Control Form	3	0
4	Work Package Change Log	4	0
5	List of Required Drawings and References	5	0
6	Bill of Materials	6	0
7	List of Special Equipment, Materials, and PPE	7	0
8	Initial Conditions and Prerequisites	8-9	0
9	Specific Task Instructions	10	0
10	Post Maintenance Test (PMT) Requirements	11	0
Total Page Sections 1-10, 11 Pages.			

## Appendices

### Appendix #

- Appendix - 1 Job Hazard Analysis (JHA), Activity Screen Form (ASF), Health & Safety Plan, MSDS's.
- Appendix - 2 Status Log
- Appendix - 3 Miscellaneous and Field Generated Paperwork.
- Appendix - 4 Pre-evolutionary Briefing Forms and Pre-ev Record Keeping.
- Appendix - 5 Work Package Re-Start Pre-Requisites
- Appendix - 6 Respiratory Protection On-The -Job Verification Work Sheet.
- Appendix - 7 Post Job Review Form and Instructions.
- Appendix - 8 Characterization Package.

Section 3

WCF

Pages 3a & 3b

WORK CONTROL: T0103087

Charge Code: NBE20000

Ops Area: D64

SECTION 1 \_\_\_\_\_ REPORT INITIATION \_\_\_\_\_

Name: WOJTASZEK, PAUL      Emp No: [REDACTED]      Date: 02/28/2000      Time: 08:56:am

Company: RMRS      Org:      Bldg: T893B      Ext: 3125

Source      Documents

OTHER      N/A

EQUIPMENT/FACILITY DATA

Description: RADIOLOGICAL SURVEYS ASBESTOS INSPECTION AND INSPECTION OF FLOURESCENT LIGHT BALLASTS FOR PCB'S FOR B575 IN PREPARATION FOR BLDG DISPOSITION.

VSS No: ----

EM/PM No:      Bldg No: 575      Loc: ENTIRE

Equipment Description: SURVEYS

Manufacturer:

Model No:      Serial No:

SECTION 2 \_\_\_\_\_ SHIFT MANAGER REVIEW \_\_\_\_\_

Comments:

Shift Manager Name:      Emp No:

SECTION 3 \_\_\_\_\_ RESPONSIBLE MANAGER EVALUATION \_\_\_\_\_

Program Area: D64      Process Date: 02/28/2000      09:00:am

Corrective Action Title: TRAILER CHARACTERIZATION

Priority Level: 4    Priority Class:    Compliance Date:

Resolution/Comments: TRAILER CHARACTERIZATION

IMPACT & SUPPORT REQUIREMENTS

N Engineering Support      N Impacts OSR/TSR

N Impacts Crit Safety      N AB Safety System

DAVIS-BACON DETERMINATION

N Davis Bacon Review Reqd  
Davis-Bacon Determination:

MINOR MAINTENANCE DETERMINATION

Minor Maintenance: NO

RM APPROVAL

Responsible Org: AREA MAINTENANCE MANAGER      Date: 02/28/2000      Time: 09:00

Approved By: DEZARN, M.A.      Emp No: [REDACTED]

COPY

5

Craft:(opt.)Lead: \_\_\_\_\_

Support: \_\_\_\_\_

SECTION 4 \_\_\_\_\_

RESPONSIBLE  
MANAGER  
PLANNING

\_\_\_\_\_

ACTIVITY SCREENING SUMMARY

Planning Level: L

SME Support (for H&M) H&S: N RAD: N NS: N ENV: N CRIT: N OTHER: N

WORK DOCUMENT SELECTION

Document Type: TYPE1

RM APPROVAL

RM Approved: DEZARN, M.A.

Appr Emp No: \_\_\_\_\_

Date: 02/28/2000

Status: OPEN

SECTION 5 \_\_\_\_\_

CLOSEOUT

\_\_\_\_\_

FEEDBACK

Post Job Review: \_\_ CAP: \_\_ Reference Library Input: \_\_

Standard Work Package Used: Y Standard Work Pkg No: \_\_ - \_\_ Rev. \_\_

Lessons Learned Input: \_\_

CLOSURE

Date Closed:

Close Status: OPEN

Responsible Mngr: DEZARN, M.A.

Close Approved By: \_\_\_\_\_

COPY

6



**Section 5  
 List of Required Drawings and References**

**Performance References**

<u>Ref/Draw No</u>	<u>Description</u>	<u>Issue Date</u>
PRO-563-ACPR	Asbestos Characterization Procedure	09/01/99
PRO-476-RSP-16.02	Radiological Surveys of Surfaces and Structures	09/30/99

**Developmental References**

<u>Ref/Draw No</u>	<u>Description</u>	<u>Issue Date</u>
29CFR 1926.32(f)	Occupational Safety and Health Standards	02-01-99
29CFR 1926.1101(k)(5) ii	Occupational Safety and Health Standards	02-01-99
29CFR 1926.1101(g)	Occupational Safety and Health Standards	02-01-99
3-PRO-165-RSP-07.02	Contamination Monitoring Requirements	02-17-98
MAN-077-DDCP	Decontamination & Decommissioning Characterization Protocol	11-20-98
MAN-066-COOP	Site Conduct of Operations Manual	09-15-98
3-PRO-141-RSP-09.01	Unrestricted Release of Property, Material, Equipment, and Waste	03-31-99
RM-06.02	Records Identification, Generation, and Transmittal	05-28-97
2-S47-ER-ADM-05.14	Use of Field Log Books and Forms	06-05-95
RMRS-QAPD-001	RMRS Quality Assurance Program Description	09-13-99
4-SOI-ENV-OPSF0.03	Field Decontamination Operations	02-16-95
RMRS/OPS-PRO.112	Handling of Decontamination Water and Wash Water	12-30-98
1-PRO-079-WGI-001	Waste Characterization, Generation, and Packaging	11-03-97
1-N07-HSP-7.03	Breathing Air	11-02-98
1-F13-HSP-7.05	Hearing Conservation	09-25-97
MAN-071-IWCP	Integrated Work Control Manual, Rev 1, Chg. 1	11-30-97
MAN-072-OS&IH PM	Chapter 19: Asbestos Management Program	9-30-98
MAN-072-OS&IH PM	Chapter 28: Chronic Beryllium Disease Prevention Program	5-24-99
MAN-072-OS&IH PM	Chapter 29: Eye and Face Protection Program	11-30-98
MAN-072-OS&IH PM	Chapter 30: Foot Protection	11-30-98
MAN-072-OS&IH.PM	Chapter 31: Respiratory Protection Selection	11-30-98
MAN-072-OS&IH PM	Chapter 33: Hearing Conservation Program	03-15-99
MAN-072-OS&IH PM	Chapter 34: Head Protection	11-30-98
MAN-072-OS&IH PM	Chapter 39: Ladder Safety	11-30-98
MAN-072-OS&IH PM	Chapter 40: Scaffolds	11-30-98
MAN-072-OS&IH PM	Chapter 41: Work Platforms	03-02-99
MAN-072-OS&IH PM	Chapter 42: Fall Protection and Equipment	11-30-98
RF/RMRS-98-284	Generic Health & Safety Plan for Characterization Sampling	01-99
RF/RMRS-DC-06.01	Document Control Program	05-28-97

8

**SECTION 6**

**BILL OF MATERIALS (BOM)**

NOTE

**MATERIAL ACQUISITION IS NOT SCHEDULED / REQUIRED FOR THIS PROCEDURE.**

7

## Section 7 Special Tools, Materials and Personnel Protective Equipment

### 7.0 SPECIAL TOOLS AND MATERIALS

#### 7.1 TOOL / MATERIAL DESCRIPTION

**NOTE**  
THE NE ELECTRA INSTRUMENT WILL BE USED TO PERFORM ALPHA SCANS. ADDITIONAL SURVEY EQUIPMENT APPROVED FOR USE AT RFETS MAY BE USED AS AUTHORIZED BY RADIOLOGICAL ENGINEERING. REFERENCE THE CHARACTERIZATION PLAN (CONTAINED IN APPENDIX 8 OF THIS WORK PACKAGE) FOR INSTRUMENTATION USAGE.

- (1) Ladders
- (2) Sharpie (marking pens)
- (3) Whatman 41, 4.7 cm filter papers
- (4) NE Electra Instrument
- (5) SAC-4 Instrument

**NOTE**  
THE FOLLOWING PPE IS DEFINED AS THE MINIMUM USAGE FOR TRAILER SURVEYS. ADDITIONAL PPE MAY BE ADDED AND DOCUMENTED AT ANY TIME AS NECESSARY. NOTE: SUBSTITUTIONS SHALL NOT BE MADE WITHOUT INDUSTRIAL HYGIENE CONCURRENCE.

### 7.2 PPE

#### 7.2.1 SUBCONTRACTOR

Initiate site safety compliance by implementing personnel usage of the following PPE as appropriate:

- (1) Safety glasses with side shield (ANSI Z87.1 approved).
- (2) Hard Hat (ANSI Z98.1). Bump Cap (RMRS OPS/DIR-019) is authorized if work area is not posted as *specifically* requiring hard hat.
- (3) Approved above ankle leather boots, with ANSI Z41.1 approved safety toecaps.
- (4) Leather Gloves (optional-discretion of IH&S).

### Section 8 Initial Conditions and Prerequisites

**PURPOSE:** This standard work package provides instructions for radiological surveys, asbestos inspection and sampling, and inspection of fluorescent light ballasts for purposes of reconnaissance-level characterization or MARSSIM release.

**SCOPE:** Conduct radiological surveys, asbestos inspection and sampling, and inspection of fluorescent light ballasts

#### 8.1 PRECAUTIONS AND LIMITATIONS

- 8.1.1 Advise Workers that if any discrepancies, difficulties or hazards are encountered that cannot be safely resolved within the scope of work, STOP WORK, and immediately inform supervisory personnel. Note: Stop work is in accordance to RMRS Directive 1. Restart will be authorized by the RMRS Vice President or designee.
- 8.1.2 Develop / update A Job Hazard Analysis (JHA) based on the results of a Job Hazard Identification Tool (JHIT) walkdown as required in MAN-071-IWCP, Chapter 3. Place the completed JHA in Appendix 1.
- 8.1.3 Dispose of all waste in accordance with 1-P73-HSP-18.10 that includes requirements established by 3-PRO-141-RSP-09.01 "Unrestricted Release of Property, Material, Equipment and Waste", 3-PRO-088-RSP-09.02 "Radioactive Material Transfer and Shipment", and 3-PRO-140-RSP-09.03 "Unrestricted Release of Bulk or Volume Material". Comply with 1-PRO-079-WGI-001 "Waste Generation Instructions", as required and insert authorized instructions in Appendix 3 (titled: Miscellaneous & Field Generated Paperwork).
- 8.1.4 All records generated by this project will become part of the project history file as well as the Administrative Record as applicable.
- 8.1.5 Beware of wasps, nests, snakes and other wildlife that may be in the area. If wildlife cannot be avoided, THEN, contact and request site Ecology to investigate and authorize the continuation of the trailer radiological surveys as required. Call Ecology at x3764, Pager (303) 212-3167, Field Radio Individual #3787, and / or Field Radio Channel EMAD 12.
- 8.1.6 Check-off blocks (  ) are used for steps that do not require a signature. A check (√) or initial signifies completion.
- 8.1.7 Read the required reading materials prior to initiating work, and sign off the required reading checklist.

**NOTE**  
IF A STEP OR TECHNICAL STATEMENT IS DECLARED NOT APPLICABLE (N/A) BY THE DESIGNATED CONTRACTOR FIELD SUPERVISOR AND / OR SITE ENVIRONMENTAL ENGINEERING REP, MARK "N/A" IN THE SIGNATURE SPACE OR CHECK-OFF BLOCK, WITH INITIALS, EMPLOYEE NUMBER, AND DATE OF ENTRY. RECORD THE REASON FOR THE N/A IN STATUS LOG IN APPENDIX 2.

#### 8.2 PRELIMINARY ACTIONS

**NOTE**  
ACTIONS CAN BE PERFORMED OUT OF SEQUENCE EXCEPT AS SPECIFICALLY NOTED.

- 8.2.1 FIELD SUPERVISOR   
Verify that all personnel are trained and qualified to perform tasks as specified in Work Sequence Instructions. Review for Ladder training and Fall Protection training as specified for this work package.
- 8.2.2 FIELD SUPERVISOR   
Place and log all current and applicable material MSDSs in Appendix 3. Advise all workers where MSDSs are located for access as required. (N/A if not required).
- 8.2.3 FIELD SUPERVISOR   
Initiate POD Evolutionary Request Forms for tasks contained in the *Characterization Package* contained in Appendix 8, and submit to the Plan of the Week representative.

11

**Section 8  
Initial Conditions and Prerequisites**

8.3 SITE PREPARATION

**NOTE**  
ACTIONS CAN BE PERFORMED OUT OF SEQUENCE EXCEPT AS SPECIFICALLY NOTED.

8.3.1 **FIELD SUPERVISOR**

Arrange work site setup of instruments, tools and materials. Review the JHA contained in Appendix 1 and Comply with safety issues and potential hazard controls as required for site preparation.



8.3.2 **FIELD SUPERVISOR**

Inspect / verify previously established measurement locations identified by gridding on floors, walls and ceilings and roofs. In units where gridding is not practical, view labels or similar methods used. Signoff as a preliminary for work start.

FIELD SUPERVISOR \_\_\_\_\_  
Name Signature Date

8.4 APPROVALS AND NOTIFICATIONS

8.4.1 **FIELD SUPERVISOR**

Notify the following organizations a minimum of 24 hours prior to their services being required:

- (1) Radiological Operations
- (2) Industrial Health and Safety
- (3) Radiological Engineering



**NOTE**  
PRE-EVOLUTION BRIEFINGS MAY BE CONDUCTED AS A PRELIMINARY TO ALL BUILDING SURVEY SAMPLING ANALYSIS PROCESSES INDIVIDUALLY OR COLLECTIVELY. CHANGES IN PERSONNEL AND TASK INSTRUCTIONS REQUIRES NEW PRE-EVOLUTION BRIEFINGS PRIOR TO WORK START.

8.4.2 **FIELD SUPERVISOR**

Conduct pre-evolution briefings and Job Task Review (Safe Work Checklist) per MAN-066-COOP and RMRS OPS-DIR-016. Document pre-evolutionary briefing forms contained in Appendix 4. Briefings shall include all workers (applicable personnel) and be performed prior to the start of any / all work tasks to include site preparation activities.

FIELD SUPERVISOR \_\_\_\_\_  
Name Signature Date

12

**Section 9**  
**Specific Task Instructions**

9.1 **PERMISSION TO START WORK**

9.1.1 **RESPONSIBLE MANAGER**

All Initial Conditions, Prerequisites and Site Preparations are complete and permission is given to start work on radiological surveys, asbestos inspection and sampling, and fluorescent light ballast inspection.

RESP MANAGER M.E. NEELEY , *M E Neeley* , 3-6-00  
Name Signature Date

**WARNING**  
WORK AREAS ARE SUBJECT TO HAVING NESTS OF STINGING INSECTS, HIGH ENTRANCE ACCESSES AND POTENTIAL EXPOSURE TO LOOSE EQUIPMENT AND MATERIALS. THE JHA CONTAINED IN APPENDIX 1 PROVIDES SPECIFIC HAZARDS AND REQUIRED CONTROLS. ENSURE COMPLIANCE WITH THE JHA.

**NOTE**  
THE CHARACTERIZATION PACKAGE WITH SPECIFIC SURVEY INSTRUCTIONS CONTAINED IN APPENDIX 8 IS THE PRIMARY PROCEDURAL AND METHODOLOGY REFERENCE FOR RADIOLOGICAL SURVEYS AND SAMPLING AS REFERENCED IN THIS IWCP STANDARD WORK PACKAGE. CONDUCT OF WORK WILL BE IN ACCORDANCE WITH THE APPENDIX 8 CHARACTERIZATION INSTRUCTIONS. SECTION 9 WILL CONTAIN CHECKOFFS FOR THE COMPLETION OF EACH CHARACTERIZATION SURVEY .

**NOTE**  
ACTIONS CAN BE PERFORMED OUT OF SEQUENCE EXCEPT AS SPECIFICALLY NOTED.

9.2 **TASKS**

9.2.1 **RCT**

Conduct Radiological surveys and analysis processes in accordance with Characterization Package task instructions contained in Appendix 8.

9.2.2 **CDPHE-CERTIFIED ASBESTOS INSPECTOR**

Conduct asbestos inspection and sampling in accordance with Characterization Package task instructions contained in Appendix 8.

9.2.3 **SITE ELECTRICIAN OR FIELD PERSONNEL**

Inspect all fluorescent light fixtures for PCB-containing ballasts in accordance with Characterization Package task instructions contained in Appendix 8.

9.3 **TASK COMPLETION**

9.3.1 **FIELD SUPERVISOR / RAD ENGINEER**

All work tasks as indicated in Section 9 are completed satisfactorily in accordance with the Characterization Package and specified site procedures.

FIELD SUPERVISOR *Paul A Wojtas* , *Paul A Wojtas* , 07/14/00  
Name Signature Date

RAD ENGINEER *Paul A Wojtas* , *Paul A Wojtas* , *07/14/00*  
Name Signature Date

13

### Section 10 Post Maintenance Testing Instructions

**PURPOSE:** This section is for work package closure only. All survey, sampling and analysis process requirements were satisfied in Section 9.

10.1 **PRECAUTIONS AND LIMITATIONS**

10.1.1 NONE

10.2 **PREREQUISITES**

10.2.1 NONE

10.3 **POST SURVEY, SAMPLING TESTING**

10.3.1 NONE

10.4 **SYSTEM / AREA RESTORATION & WORK PACKAGE COMPLETION**

10.4.1 **RCT / RAD ENG / RAD OPS**

Complete post job contamination surveys per Radiological Safety Practices for area, equipment and tools for release. Post or deposit areas as applicable. (N/A if not applicable).



10.4.2 **FIELD SUPERVISOR**

Perform the following:

Ensure that all permits, forms, checklist, logs and reports are complete and returned to the appropriate organization or department.



Ensure all work areas are cleaned at least to the level of cleanliness prior to work start.



# APPENDIX 1

# ACTIVITY SCREENING FORM

Page 1 of 6

BLOCK A - ACTIVITY INFORMATION	BLOCK C - APPROVALS	
Activity Title: Reconnaissance Level Characterization	Project Manager/Responsible Manager Approval: Maria Broussard Name (Print) <u>Maria Broussard</u> Ext. <u>607</u> Date <u>02/03/00</u> Signature <u>[Signature]</u>	
Specific Work Location (s): Standard Work Package	Confirmation from another PM/RM (as required): <u>(Concurrent)</u> S. BEUSICE Ext. <u>607</u> Date <u>2/3/00</u> Name (Print) <u>S. BEUSICE</u> Signature <u>[Signature]</u>	
Major Tasks/activities: 1. Conduct radiological surveys and scans of each facility. 2. Carry out asbestos inspection and sampling as required. 3. Inspect fluorescent light fixtures for PCB ballasts.	Subject Matter Expert/Supporting Screen: Paul Wojtaszek <u>[Signature]</u> Ext. <u>02/02/00</u> Name (Print) <u>Paul Wojtaszek</u>	
BLOCK B - WORK ACTIVITY PRESCREEN -- SCREEN 1	YES NO COMMENTS	
1. Has this work activity been previously performed at the Site, since July 1995, and do approved work controls and/or documents currently exist to perform the work.	X	S.W.P. DEVELOPED SS
2. Have the impacts that this specific work activity can have on, or in, a Hazard Category 2/3 nuclear facility, its support systems, or its authorization basis documentation requirements or controls been determined?	X	No Hazard Category 2/3 nuclear facilities impacted.
3. Are the processes, type of equipment, hazards, controls, and work control documents the same since the last time this work activity was performed? (e.g., no significant change in location, material, equipment used, engineered/administrative controls, or procedures).	X	
Check Appropriate Box <input checked="" type="checkbox"/> If questions 1 through 3 are answered YES, completion and documentation of this ASF is not required. <input type="checkbox"/> Any one or more of questions 1 through 3 answered NO, ASF Screens 2 and 3 Required, Complete Blocks D, E, and then C.		

16

APPENDIX 3.2 - JOB HAZARD IDENTIFICATION TOOL (JHIT)

WCF No.:		Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION										Date: 2/1/00			
Specific Work Location:		Yes	No	P	T	M	H&S	ENG	RAD	Qual.	CRIT	NS	ENV	FP	
1	Is any electrical, mechanical, hydraulic, or chemical energy, either stored or active, available to energize the item being repaired or serviced, and will workers be placed at risk of contacting hazardous energy sources?		X	X	X		C								
2	Will work be done on an energized electric circuit?		X	X	X		C								
3	Does the task involve work in a confined space or an area that is a suspected confined space?		X	X	X		R							R	
4	Is the work activity likely to result in an inhalation or dermal exposure to dust, mists, vapors, gases, or fumes that may require the use of a respirator or protective clothing?		X		X	X	R								
5	Does the activity require the use of chemicals, or are chemicals present in the work area or to be brought into the area?		X		X		C								
<b>If "NO", then proceed to question #6.</b>															
5a	Will the worker's eyes or skin potentially be exposed to toxic or corrosive chemicals?		X		X		C								
5b	Will the activity result in the generation of waste chemicals?		X		X		C							R	
6	Is the area posted as a high noise area or will the work activities result in an uncharacterized noise exposure?		X		X	X	C								
7	Could workers be exposed to environments that may be immediately dangerous to life and health or chemicals for which air purifying respiratory protection is inadequate (e.g., methylene chloride, nitric acid, carbon monoxide, carbon dioxide, or other oxygen deficient atmospheres)?		X		X		R								
8	Will asbestos containing material (ACM) or possible asbestos containing material (PACM) be disturbed?	X		X	X	X	R			R				R	
9	Will worker be exposed to falling objects (e.g., construction area)?	X					C								
10	Are compressed gas cylinders or systems to be used?		X		X		C							R	
11	Are pressure vessels, systems and relief devices included in the work scope, or is there exposure to pressurized vessels other than gas cylinders in the vicinity of the work area that are not protected by compliant pressure devices?		X		X		C		C						
12	Is work to include movement of material, tools, or equipment?		X												
<b>If "NO", then proceed to question #13.</b>															
12a	Is hoisting and rigging equipment to be used?		X	X	X	X	C	C	C						
12b	Is a powered industrial truck (forklift) to be used?		X	X	X	X	C	C	C					R	
12c	Will rollers (multi-tons), lift tables, jacks, or other material movement accessories be used?		X				C	C	C						

CHG-1

P = Checklist or Permit Required / T = Training Required / M = Medical Monitoring  
 R = Required SME Involvement & Work Document Concurrence / R<sup>1</sup> = Required for High Planning Level Activities / R<sup>2</sup> = Required for Uncharacterized Noise Exposure /  
 R<sup>3</sup> = Required when welding is performed to verify conformance in accordance with the Site Quality Assurance Program. /R4= As required by activity and determined by planning team  
 C = SME Contacted & Involved in JHA Development w/o mandatory work document concurrence. C<sup>1</sup> = Preliminary review/screen by discipline required.

APPENDIX 3.2 - JOB HAZARD IDENTIFICATION TOOL (JHIT)

WCF No.:		Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION											Date: 2/1/00	
Specific Work Location:		Yes	No	P	T	M	H&S	ENG	RAD	Qual.	CRIT	NS	ENV	FP
SME INVOLVEMENT														
13	Is spark, flame, or heat producing work, to include welding, cutting and/or brazing to occur outside a NS/FP pre-approved designated welding area? If "NO", then proceed to question #14.		X	X	X		C	C		R <sup>3</sup>				C
13a	If welding, cutting or brazing is to be performed, is the material to be worked on contaminated with either fixed or removable radioactive material, or does the work surface or area have a radiological history?		X	X			C		R					
13b	Is spark, flame, or heat producing work, to include welding, cutting, and/or brazing, to occur in a nuclear facility, other than in a NS/FP pre-approved designated welding area (e.g., machine shop)?		X	X			C		C			C		C
14	Is beryllium to be handled, are surfaces in the work area beryllium contaminated or suspected to be beryllium contaminated, will workers enter a beryllium operations area or a limited access beryllium operations area, or is there a potential beryllium inhalation exposure during the work activities?		X	X	X		R			C			C	
15	Is work to be performed on domestic (potable) water lines?		X							R				
16	Are lead or lead containing products being cut, scraped, sanded or melted?		X		X		R						R	
17	Is work to be performed on batteries?		X		X		C							
18	Are explosives to be handled?		X		X		R						R	C
19	Does the activity involve maintenance of a ventilation system or ducting where a fume hood or glove box was vented and the potential for an explosion may exist due to residual perchlorates?		X		X		R						R	C
20	Will an established and marked exit or egress route be blocked while work is being performed?		X	X			C							R
21	Will the activity involve elevated work? If "NO", then proceed to question #22.	X												
21a	Will ladders be used for this work?	X	X	X			C							
21b	Is scaffolding required?		X	X			C							
21c	Is fall protection required?	X	X	X			C							
21d	Is an aerial work platform to be used?	X	X	X			C							
21e	Is the work being performed on a roof? (PERSONNEL WILL REMAIN ON LADDER)	X	X	X	X		C							
22	Are pinching hazards and/or sharp edges present?	X	X	X			C							
23	Are ergonomic hazards present? (i.e., does the activity involve a combination of the following, working in awkward postures, repetitive motion, and/or the use of force to complete the task?)	X					R							
24	Do temperature extremes exist?		X				R		C <sup>1</sup>					

P = Checklist or Permit Required / T = Training Required / M = Medical Monitoring  
 R = Required SME Involvement & Work Document Concurrence / R<sup>1</sup> = Required for High Planning Level Activities / R<sup>2</sup> = Required for Uncharacterized Noise Exposure /  
 R<sup>3</sup> = Required when welding is performed to verify conformance in accordance with the Site Quality Assurance Program. /R<sup>4</sup>= As required by activity and determined by planning team  
 C = SME Contacted & Involved in JHA Development w/o mandatory work document concurrence. C<sup>1</sup> = Preliminary review/screen by discipline required.

CHG-1

Handwritten notes and signatures at the bottom of the page, including "2/1/00" and "C.H.S.".

APPENDIX 3.2 – JOB HAZARD IDENTIFICATION TOOL (JHIT)

WCF No.:		Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION										Date: 2/1/00				
Specific Work Location:												SME INVOLVEMENT				
		Yes	No	P	T	M	H&S	ENG	RAD	Qual.	CRIT	NS	ENV	FP		
25	Will the activity involve any penetrations into or through, walls, ceilings, floors, slabs, or pads or demolition of any of these? (ASBESTOS SAMPLING WILL NOT PENETRATE) If "NO", then proceed to question #26.		X				C	R	R	R		R				
25a	Is the material being penetrated in a radiologically posted area or will the penetration protrude into a radiologically controlled area?	X		X	X				R				C			
25b	Is there record, evidence or suspicion that the material being penetrated could have come in contact with radioactive material?	X		X	X				R							
25c	Has the surface of the material being penetrated been treated in any way such that absorbed contamination could be hidden (e.g., painted, scabbled, or other decon efforts)?	X		X	X				R							
25d	Will the activity involve any penetrations into a Material Access Area?	X							R			C				
25e	Will the activity involve penetrating or cutting a hole through the tertiary confinement of a nuclear building?	X										R				
26	Does this activity involve a Configuration Change as defined by DES-210?	X						R	R	R	C	C				
27	Does the activity involve movement, interaction or removal of fissile material?	X			X		C		R		R	C				
28	Are flammable/explosive gases involved in or required for the work in a nuclear facility, other than in an approved area (e.g., maintenance shop)?		X				C		R			C		R		
29	Is the work activity occurring within a building, structure, or area that currently has or previously had radioactive material? (Only B-130C) If "NO", then proceed to question #30.	X														
29a	Is the work being conducted in a posted Radiation Area (RA), High Radiation Area (HIRA) or Very High Radiation Area (VHRA)?			X	X				R							
29b	Is the work conducted in a posted Contamination Area (CA)?	X		X	X				C							
29c	Is the work being conducted in a posted High Contamination Area (HCA)?	X		X	X				R							
29d	Is the work conducted in a posted airborne contamination area?	X		X	X				R				C			
29e	Has the area ever been designated as a radiological area? (Only B-130C)	X		X	X				C				C			
29f	Does the area's history indicate a past presence of radioactive materials or operations? (Only B-130C)	X		X	X				R							
29g	Is there a potential for the activity to release radioactive material to the air through mechanical, chemical or other means?		X	X					R				R			
29h	Does the area contain, or is it bounded by any radiological postings, barriers, signs or labels? (Only B-130C)	X		X	X				R							
29i	Will the activity involve the transfer, pumping, or draining of radioactive or radioactively contaminated liquids?		X	X					R		C		C			
29j	Does the work activity involve equipment containing a sealed radioactive source or on equipment capable of generating radiation?		X	X	X				R							

P = Checklist or Permit Required / T = Training Required / M = Medical Monitoring  
 R = Required SME Involvement & Work Document Concurrence / R<sup>1</sup> = Required for High Planning Level Activities / R<sup>2</sup> = Required for Uncharacterized Noise Exposure /  
 R<sup>3</sup> = Required when welding is performed to verify conformance in accordance with the Site Quality Assurance Program. /R4= As required by activity and determined by planning team  
 C = SME Contacted & Involved in JHA Development w/o mandatory work document concurrence. C<sup>1</sup> = Preliminary review/screen by discipline required.

APPENDIX 3.2 - JOB HAZARD IDENTIFICATION TOOL (JHIT)

WCF No.:	Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION	Date: 2/1/00												
		SME INVOLVEMENT												
Specific Work Location:		Yes	No	P	T	M	H&S	ENG	RAD	Qual.	CRIT	NS	ENV	FP
29k	Does the work involve penetration into systems, or surfaces containing or suspected of containing radioactive materials or contamination?		X	X	X				R					
29l	Does the work involve removal or addition of shielding?		X						R					
29m	Does the activity involve removal of equipment, ducts, piping, gloveboxes, plenums or tanks from a radioactive area?		X	X	X		C		R		R	C	R	
30	Does the activity involve the use of "NEW" processes, equipment or tools used in the work process? <b>If "NO", then proceed to question #31.</b>		X											
30a	Will this new tool, process or equipment be used for radioactive materials?		X	X	X			R	R		R	C		
30b	Has the user of this new tool, process, or equipment been trained on its use? Will this activity be conducted outside of a building? <b>If "NO", then proceed to question #32.</b>		X					R						
31	Is the work being conducted in a soil contamination area?	X												
31a	Will the work involve excavation in an area adjacent to an under-building contamination area?		X						R				C	
31b	Does the activity involve soil probing or well installation?		X						R				C	
31c	Will this activity involve excavations, trenching, drilling, geoprobe sampling or any other disturbances of ground (soil, pavement, etc.) to occur?		X						R				C	
31d	Will the activity disturb an Individual Hazardous Substance Site (IHSS) and result in potential worker exposure to hazardous substances?		X	X	X	X	R	R	R	R			R	
31e	Is there a potential for pyrophoric material to be handled, processed, or encountered during the work activity?		X						R				R	
32	Will there be a new air emission or a change in the quantity of an existing air emission to the atmosphere (including radionuclide NESHAP)?		X	X					R				R	
33	Is this work activity being conducted in accordance with a Decommissioning Operations Plan (DOP), a Proposed Action Memorandum (PAM), an Interim Measures/Interim Remedial Action (IM/IRA) document, consent orders, Federal Facility Compliance Agreements (FFCA), or other CERCLA decision document under the Rocky Flats Cleanup Agreement (RFCA)?	X											R	
34	Will this activity install, modify, move, or impact an Underground Storage Tank or Aboveground Storage Tank?		X		X		R		C <sup>1</sup>				R	
35	Will this activity modify a current RCRA-regulated hazardous waste unit, relocate all or part of a unit, or otherwise impact a unit?		X		X		R						R	
36	Does the activity include closure of a RCRA hazardous waste unit or placing it in a RCRA stable condition?		X		X		R						R	
37	Will this activity generate waste? <b>If "NO", then proceed to question #39.</b>		X											

P = Checklist or Permit Required / T = Training Required / M = Medical Monitoring  
 R = Required SME Involvement & Work Document Concurrence / R<sup>1</sup> = Required for High Planning Level Activities / R<sup>2</sup> = Required for Uncharacterized Noise Exposure /  
 R<sup>3</sup> = Required when welding is performed to verify conformance in accordance with the Site Quality Assurance Program. /R4= As required by activity and determined by planning team  
 C = SME Contacted & Involved in JHA Development w/o mandatory work document concurrence. C<sup>1</sup> = Preliminary review/screen by discipline required.

20

APPENDIX 3.2 – JOB HAZARD IDENTIFICATION TOOL (JHIT)

WCF No.:		Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION											Date: 2/1/00	
Specific Work Location:		SME INVOLVEMENT												
		Yes	No	P	T	M	H&S	ENG	RAD	Qual.	CRIT	NS	ENV	FP
38a	Will this activity generate PCB ballasts or other TSCA governed waste types, including PCB bulk product or bulk waste?		X		X		C						C	
38b	Will this activity generate a liquid sanitary waste (non-radioactive, non-hazardous aqueous waste)?		X		X		C						R	
38c	Will this activity generate solid sanitary waste, which falls into the category of "special sanitary wastes"?		X		X		C						R	
38d	Will this activity generate solid sanitary waste (excluding prohibited items)?		X		X		C		C <sup>1</sup>				R	
38e	Will this activity generate hazardous, radioactive, or mixed waste?		X		X		C		R				R	
39	Is the work being conducted in an area covered by a Criticality Accident Alarm System (CAAS) that has been determined to not meet Life Safety / Disaster Warning (LS/DW) system audibility criteria or that has not been tested for LS/DW audibility and CAAS beacons are not visible from or within the affected area?		X				C				C	R		
40	Does this activity impact other facilities outside of the facility where the work is being performed (i.e.: work on the LS/DW radio feed affects other buildings required to broadcast music)?		X				R <sup>4</sup>							
41	Does the work activity involve generation, transfer or storage of any plutonium metals, solutions, residues, or salts that are within the scope of HSP 31.11		X				C		C			R		C
42	Do any Standing Orders, Operations Orders, or company/facility specific directives/instructions containing additional health and safety requirements apply to the work activity?		X				R <sup>4</sup>							
43	Does this activity involve any other hazards not previously identified or could this activity introduce any new hazards? (SHARP EDGES ON METAL SHEETING ON TRAILERS)	X					R <sup>4</sup>							

CHG-1

P = Checklist or Permit Required / T = Training Required / M = Medical Monitoring  
 R = Required SME Involvement & Work Document Concurrence / R<sup>1</sup> = Required for High Planning Level Activities / R<sup>2</sup> = Required for Uncharacterized Noise Exposure /  
 R<sup>3</sup> = Required when welding is performed to verify conformance in accordance with the Site Quality Assurance Program. /R4= As required by activity and determined by planning team  
 C = SME Contacted & Involved in JHA Development w/o mandatory work document concurrence. C<sup>1</sup> = Preliminary review/screen by discipline required.

12

# JOB HAZARD ANALYSIS (Low & Medium Planning)

Title/Description: RECONNAISSANCE LEVEL CHARACTERIZATION		Date: 2/1/00
Company/Organization: RMRS	Location:	Department: CHARACTERIZATION
SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARD (FROM WALKDOWN & JHIT)	REQUIRED CONTROLS
<b>Radiological Surveys:</b>		
1. Use ladder to access areas above 2 meters. (Most areas are below 2 meters). <i>Use aerial lift to access elevated areas as required.</i>	Falls	Training: Ladder Safety Awareness or Fall Protection; OS&IH PM Ch. 39 compliance; <i>Aerial lift. Training plus</i>
2. Carry out smears, scans, and surveys.	Spread of radiological contamination	Training: Radworker 2 or RCT training; RWP, if required
	Falling objects (i.e., radiological instrument)	Head protection when work is occurring overhead. <i>hard hat and shock abs.</i>
<b>Asbestos inspection and sampling:</b>		
1. Visually inspect suspect asbestos-containing material.	None.	None.
2. RCT: Carry out pre-sampling survey.	Spread of radiological contamination	Training: Radworker 2 or RCT training; RWP, if required
3. Collect sample as described in PRO-563-ACPR, "Asbestos Characterization Procedure," utilizing Wondermaker, hole saw, chisel, snips, etc	Asbestos exposure.	Training: Asbestos Awareness; IH&S determination of additional measures
4. RCT: Carry out post-sampling survey.	Spread of radiological contamination	Training: Radworker 2 or RCT training; RWP, if required
5. RCT: Carry out release survey on samples/ sample containers.	Spread of radiological contamination	Training: Radworker 2 or RCT training; RWP, if required
<b>Inspection of light fixtures for PCB ballasts</b>		
1. Use ladder as necessary	Falls	Training: Ladder Safety Awareness or Fall Protection; OS&IH PM Ch. 39 compliance
2. Open fixture and visually inspect ballast	Falling objects	Head and eye protection.
<b>Team Leader (Name / Signature / Date)</b>		
<b>Paul Wojtaszek</b> <i>[Signature]</i> 02/02/00	<b>AI Helmick</b> <i>[Signature]</i> 02/10/00	<b>Brian Maria</b> <i>[Signature]</i> 2/3/00
<b>Engineer (Name / Signature / Date)</b>		
N/A	<b>Rick Roberts</b> <i>[Signature]</i> 2/3/00	<b>Steve Luker</b> <i>[Signature]</i> 2/3/00
<b>Criticality Engineer (Name / Signature / Date)</b>		
N/A	N/A	Environmental (Name / Signature / Date) <i>per clearance zone</i>
<b>Fire Protection (Name / Signature / Date)</b>		
N/A	N/A	M. B. Murdock <i>[Signature]</i> 02/03/00 Other (Name / Signature / Date) <i>N/A</i>

Signature indicates concurrence and approval of the Job Hazard Identification Tool and the Job Hazard Analysis for those programs identified in the JHIT as necessary for planning

*AW*  
*2/21/00*

*22*

## APPENDIX 2



This is a  
CONTROLLED DOCUMENT  
ROCKY FLATS PLANT  
This is a RED stamp  
COPY HOLDER NO. W01

RF/RMRS-98-284

# Generic Health and Safety Plan for Characterization Sampling

Revision 1

Reviewed for Classification/UCNI

By: DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

Date: January 27, 1999

**RMRS**  
**GENERIC HEALTH AND SAFETY PLAN**  
**FOR**  
**CHARACTERIZATION SAMPLING**

**Revision 1**

**January 1999**

**RF/RMRS-98-284**

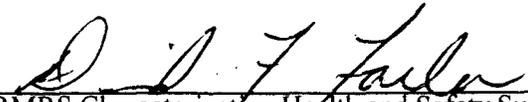
26

**APPROVAL SIGNATURES**

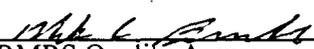
This Generic Health and Safety Plan for Characterization Sampling is approved:

  
\_\_\_\_\_  
RMRS Characterization Manager 1-27-99  
Date

  
\_\_\_\_\_  
RMRS Industrial Hygiene Lead 1/26/99  
Date

  
\_\_\_\_\_  
RMRS Characterization Health and Safety Supervisor 1/26/99  
Date

  
\_\_\_\_\_  
RMRS Radiological Engineer 1/26/99  
Date

  
\_\_\_\_\_  
RMRS Quality Assurance 1-26-99  
Date

## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	SAFE WORK PRACTICES .....	1
2.1	ELECTRICAL HAZARDS.....	2
2.2	CONCRETE SAMPLING .....	2
2.3	FALLS .....	2
2.4	LADDERS .....	2
2.5	CONFINED SPACES.....	2
2.6	RADIOLOGICAL AND CHEMICAL HAZARDS .....	3
2.7	HEAT AND COLD STRESS .....	3
2.8	NOISE .....	3
2.9	HAZARDS PRESENTED BY OTHER OPERATIONS.....	3
3.0	ASBESTOS.....	3
4.0	LEAD .....	4
5.0	BERYLLIUM .....	5
6.0	RESPONSIBILITIES.....	6
6.1	RMRS MANAGER OF CHARACTERIZATION OR DESIGNEE.....	6
6.2	PROJECT MANAGER.....	6
6.3	HEALTH AND SAFETY OFFICER.....	6
6.4	FIELD SUPERVISOR.....	6
7.0	TRAINING .....	6
8.0	PERSONAL PROTECTIVE EQUIPMENT.....	7
9.0	MEDICAL SURVEILLANCE .....	8
10.0	AIR MONITORING .....	8
11.0	SITE CONTROL .....	8
12.0	DECONTAMINATION.....	8
13.0	EMERGENCIES.....	8
14.0	ACTIVITY HAZARD ANALYSIS.....	9
15.0	REVIEW AND UPDATE.....	9
16.0	REFERENCES.....	10

28

## 1.0 INTRODUCTION

This program defines the health and safety requirements for characterization sampling activities. It was designed to ensure that consistent health and safety practices are followed during sampling.

In addition to the requirements specified in this document, a minimum of a job-specific Activity Hazard Analysis (AHA) and a project-specific organization chart are required for each project/sampling event. Additional documents (i.e. Lead Compliance Plan or an addendum to this program) may also be required depending on planned sampling activities. Contact the Characterization Health and Safety Supervisor for assistance.

Characterization sampling may be conducted for waste disposal and worker health and safety purposes. Sampling conducted for worker health and safety purposes is driven by the need to determine the presence, quantity and location of hazardous substances in building materials which may create a health hazard to employees involved in demolition or renovation. The Characterization Health and Safety Supervisor will specify health and safety related sample points, collection methods and analysis for each project/sampling event in accordance with the requirements listed in the compound-specific sections of this document.

## 2.0 SAFE WORK PRACTICES

Sampling will be conducted in a manner which:

- minimizes potential exposure to the sampler,
- eliminates potential exposure to collocated workers,
- minimizes potential for generation of airborne material, and
- ensures no contamination of the work area.

No eating, drinking, smoking, chewing, or applying cosmetics is allowed in the sampling area.

Whenever possible, sampling methods which encase or contain the suspect material will be used. Examples include core samplers used to collect asbestos samples and plastic bags taped to the wall underneath paint chip scraping areas.

Wet sampling methods will be used when feasible to minimize generation of airborne material. This includes surfactant used during asbestos sampling and water mist used during paint chip sampling. All materials resulting from sampling will be removed. If potential asbestos debris or paint chips fall on the floor during sampling, they will be cleaned with wet methods or a HEPA vacuum. Absolutely no contamination of the work area will be left after sampling activities.

Collocated workers and supervisors must be notified about sampling activities and must be kept out of the sampling area. Any potential exposure to collocated workers is unacceptable. Each sampling area will either be guarded by an individual assigned to inform collocated workers about the sampling or marked by caution tape or other means to alert personnel to remain out of the area. If caution tape or other means is used, signs reading "DO NOT ENTER/ CHARACTERIZATION SAMPLING IN PROGRESS/ CONTACT BUILDING MANAGER" will be posted at all entrances to the sampling area.

Many other hazards may be present during characterization sampling. The work area must be evaluated prior to sampling to identify these hazards, and they must be addressed in the AHA. These may include the following:

## **2.1 ELECTRICAL HAZARDS**

Characterization sampling often involves drilling into floors, walls or ceilings. RMRS Operations Directive #006 will be followed to minimize potential of accidental contact with energized electrical utilities during all work involving penetration greater than 2 inches of concrete or masonry pads, floors, walls, ceilings, or asphalt pads.

Lockout/Tagout (LO/TO) is required when potential contact with an electrical power circuit exists. The LOTO Program in the RFETS Health and Safety Practices Manual will be followed. LOTO training is required biennially.

## **2.2 CONCRETE SAMPLING**

In addition to inherent electrical hazards, concrete contains silica. If sampling methods generate airborne particles, such as drilling, precautions must be taken. Wet methods will be used. In addition, the following Personal Protective Equipment (PPE) is required:

- a full-face respirator equipped with HEPA cartridges, and
- Tyvek coveralls.

Personal air monitoring for silica will be conducted by the Characterization Health and Safety Supervisor in accordance with NIOSH Method #7500 (See references). If sampling results indicate airborne silica levels less than 25 micrograms of silica per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ), the PPE may be downgraded during future similar sampling events.

Concrete patch, float, or seal material may contain asbestos. If the material is not known to be asbestos free, it must either be assumed to contain asbestos or must be sampled prior to future disturbance.

## **2.3 FALLS**

If sampling personnel must work on unprotected elevated surfaces higher than 6 feet, fall protection is required. Fall Protection Awareness Training is required biennially for employees and their supervisors who work in areas that could result in a fall of 6 feet or more.

## **2.4 LADDERS**

Ladders must often be used during sampling activities. Ladder users and their supervisors must have Ladder Safety Awareness Training biennially.

## **2.5 CONFINED SPACES**

Confined spaces may need to be entered for sampling purposes. All personnel involved in the entry must have Confined Space Entry Safety Awareness Training annually. A permit is required for all confined space entries.

30

## 2.6 RADIOLOGICAL AND CHEMICAL HAZARDS

A thorough pre-job walk-through involving the Radiological Engineer and Characterization Health and Safety Supervisor must be conducted to identify these hazards. An RWP and/or ALARA Job Review may be required based on potential radiological hazards present. The RWP will specify required radiological controls, PPE, hold points, etc. The ALARA Job Review will specify additional radiological controls.

## 2.7 HEAT AND COLD STRESS

Guidelines established in the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for Heat and Cold Stress will be followed. The Characterization Health and Safety Supervisor will communicate with Medical to ensure that employees involved are medically approved to work in hot or cold environments.

## 2.8 NOISE

The RFETS Health and Safety Practices Manual Hearing Conservation chapter will be followed. All areas with noise levels greater than 85 decibels on the A-weighted scale (dBA) will require posting and the use of hearing protection. The Characterization Health and Safety Supervisor or designee will measure noise levels and post the area if required.

## 2.9 HAZARDS PRESENTED BY OTHER OPERATIONS

It is very important to communicate with the building manager regarding other activities in the area. When possible, sampling will be conducted when no other personnel are present. The AHA will address any additional hazards presented by other operations.

## 3.0 ASBESTOS

All suspect asbestos containing materials potentially involved in the demolition or renovation will be sampled. Asbestos sampling will be conducted in accordance with EPA 40 CFR 763.86, and with applicable sections of Colorado Regulation 8 (CCR 8).

The sample collector must hold a current Colorado State Asbestos Inspector Certification. RCTs or other personnel who may contact but not disturb asbestos must have Asbestos Awareness Training annually. Other sampling personnel must have the one time Asbestos Briefing. All personnel wearing respiratory protection must have current annual Respirator Indoctrination Training and fit test.

Personal Protective Equipment (PPE) required for asbestos sampling includes the following:

- a full-face respirator equipped with HEPA cartridges
- Tyvek coveralls
- leather outer gloves (if cut or pinch hazards exist) (to be disposed of as asbestos waste)
- inner surgeons gloves, and
- disposable shoe covers

A current RFETS medical approval to wear a respirator is also required.

The above listed PPE (with the exception of gloves) is NOT required when air monitoring data is provided with the AHA which shows that a similar asbestos sampling activity was monitored in the past twelve months and resulted in airborne asbestos levels less than 0.1 fibers per cubic centimeter of air (Fibers/cc). Gloves are always required.

Personal breathing zone sampling for asbestos may be conducted periodically to assess exposures in accordance with 29 CFR 1926.1101. The Characterization Health and Safety Supervisor or designee will determine when sampling is required and will conduct the sampling.

#### 4.0 LEAD

Demolition of structures coated with lead paint may result in employee exposures to lead, depending on the demolition methods used. Therefore, paint may be sampled to determine the content of lead or other metals, or it can be assumed to contain lead. Paint can be sampled by scraping and collecting paint chips or nondestructively by X-ray diffraction. Scrape sampling allows a much lower detection limit [10 parts per million (ppm)] as inductively coupled plasma (ICP) analysis (total metals) is performed in a laboratory. X-ray diffraction has a higher detection limit of 600 ppm lead in paint. However, it is fast (1 minute), accurate, and does not potentially create airborne dusts. X-ray diffraction analysis is suitable for demolition and renovation methods unlikely to result in lead overexposure to personnel above the action level of 30 micrograms of lead per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ).

Activities for which X-ray diffraction analysis is approved include:

- Cold cutting (shearing or pipe cutting) of material coated with non-oxidized lead based paint, and
- nondestructive disassembly.

For remote demolition methods (heavy equipment), no paint sampling is required. Personal air sampling during previous projects has repeatedly shown that no lead levels were detected during demolition of buildings having lead paint, while using heavy equipment.

Prior to sampling, all employees who sample paint by scraping will receive Lead Awareness Training. This training is required annually. In addition, operators of the Niton X-ray diffraction unit must attend the Niton eight-hour training class prior to sampling.

PPE required for scrape sampling includes the following:

- a full-face respirator equipped with HEPA cartridges
- Tyvek coveralls
- leather outer gloves (to be disposed of or used only for paint scraping)
- inner surgeons gloves, and
- disposable shoe covers

All personnel wearing respiratory protection must have current annual RFETS Respirator Indoctrination Training and fit test.

The above listed PPE (with the exception of gloves) is NOT required when air monitoring data is provided with the AHA which shows that a similar paint scraping activity was monitored in the past twelve months and resulted in airborne lead levels less than the action level. Gloves are always required.

Personal breathing zone sampling for airborne lead is required unless previous representative sampling has been conducted within the past twelve months. The Characterization Health and Safety Supervisor or designee will conduct the monitoring.

Medical surveillance for lead is not required as sampling activities are not expected to result in airborne lead levels above the action level. However, if monitoring results show that this level has been exceeded, all affected personnel will receive lead medical surveillance. If personnel are wearing respiratory protection, medical approval is required.

Sampling locations will be determined based upon planned demolition or renovation activities. The Characterization Health and Safety Supervisor or designee will determine sample location and number of samples. If a full characterization is requested, all paint colors, textures, and ages must be sampled. Care will be taken to sample all layers of paint.

## 5.0 BERYLLIUM

Beryllium smear samples may be taken by RMRS Industrial Hygiene. The following factors are used to determine when sampling for beryllium is required:

- presence of the building on the list of beryllium areas,
- history of the building/ area, and
- potential of employee exposure due to demolition/renovation methods.

Sampling methodology will be in accordance with the RFETS Chronic Beryllium Disease Prevention Program (CBDPP). In addition, biased samples may be collected based on building/area history. Samples will be collected in accordance with the RMRS Beryllium Swipe Sampling Procedure. Samples will be analyzed via ICP.

Surgeon's gloves are the required PPE. Personal breathing zone sampling has shown that respiratory protection for beryllium is not required during beryllium smear sampling. However, if the area is extremely dusty, or if further air sampling shows higher beryllium levels, respirators will be required.

The Beryllium Operations Computer-Based Training (CBT) Course is required for the sampler. A new Beryllium Awareness Training Course is currently being developed, and will replace the Beryllium Operations CBT.

Personal breathing zone samples may be collected by the Characterization Health and Safety Supervisor.

Beryllium medical surveillance is not required unless personal breathing zone samples show airborne beryllium levels exceeding the action level of  $0.5 \mu\text{g}/\text{m}^3$ .

## **6.0 RESPONSIBILITIES**

Each person is responsible for the health and safety of themselves and their coworkers, for completing tasks in a safe manner, and reporting any unsafe acts or unanticipated hazards or conditions to the Project Manager, Field Supervisors, or the Health and Safety Officer. All personnel are responsible for continuous adherence to this HASP during the performance of their work. No person may work in a manner that conflicts with the safety and environmental precautions expressed in this document.

### **6.1 RMRS DIRECTOR OR MANAGER OF CHARACTERIZATION OR DESIGNEE**

The RMRS Director of Manager of Characterization or designee is responsible for the following:

- liaison activities between Kaiser-Hill Environmental Restoration management and RMRS Project management;
- providing assistance to the Project Manager; and
- issuing approval for restart of the project following suspension of activities.

### **6.2 PROJECT MANAGER**

The Project Manager is responsible for overall operations during fieldwork on the site including the health safety of project personnel during site activities. The Project Manger is responsible for implementation of the HASP and protecting surrounding facilities and any potentially affected communities. The Project Manager shall ensure that work crews have adequate resources to effectively perform the tasks required, proper personal protective equipment is being used (as specified in the HASP), and disciplinary actions are enforced when health and safety requirements are not being followed or unsafe practices occur.

### **6.3 HEALTH AND SAFETY OFFICER**

The Health and Safety Officer is responsible for overall compliance with and implementation of the HASP and for the safe conduct of operations.

### **6.4 FIELD SUPERVISOR**

The Field Supervisor, in coordination with the Project Manager and the Health and Safety Officer, will be responsible for the implementation of this HASP. This will include communicating site requirements to all on site project personnel.

## **7.0 TRAINING**

The following is a list of training and medical approvals which may be required. The job-specific List of Qualified Individuals (LOQI) and training matrix included in the readiness assessment will specify required training for each project.

- Asbestos Awareness (RCTs and others who may contact but not disturb asbestos)
- Asbestos Briefing (all other sampling personnel)

- Asbestos Inspector/Refresher
- Beryllium Operations/ Beryllium Awareness
- Confined Space Entry Safety Awareness
- Fall Protection Awareness
- Ladder Safety Awareness
- Lead Awareness
- Lock Out/Tag Out Training
- Respirator Fit Test
- Respirator Medical Approval
- Training required by the building/area
- 24 hour or 40 hour OSHA as determined by the H&S officer

Daily safety briefings for site employees will be conducted. The briefings will address the day's planned activities, reminders of safety responsibilities, and any safety concerns. These meetings will be documented by the Field Supervisor.

## 8.0 PERSONAL PROTECTIVE EQUIPMENT

For all sampling, the following PPE is required:

- safety glasses with sideshields
- safety-toed work boots
- leather gloves if appropriate
- work clothing (DOE coveralls), and
- hard hat if any overhead or bump hazards exist.

Characterization personnel must wear any additional PPE required by the building/area.

The following PPE may be required based upon the materials being sampled or materials present in the area during sampling.

- full-face respirator equipped with HEPA or other cartridges
- SCBA
- Tyvek or other coveralls
- Protective gloves
- Protective booties
- hearing protection

The Characterization Health and Safety Supervisor and Radiological Engineer or RWP will specify PPE. The required PPE will be listed in the AHA.

35

## **9.0 MEDICAL SURVEILLANCE**

All field personnel working on this task shall meet the medical surveillance requirements found in 29 CFR 1910.120 (f) and participate in RFETS Medical Surveillance Program, in accordance with HSP Section 4.0, with subsequent certification by an occupational physician for physical fitness, the ability to perform hazardous waste work.

The RMRS Health and Safety Officer will review medical documentation from the physician to ensure fitness for duty. Any restrictions will be noted and adhered to.

## **9.0 AIR MONITORING**

Air monitoring for asbestos or other potential contaminants shall be at the discretion of the Field Supervisor and the Health and Safety Officer. Sampling methods will be used that minimize the potential for worker exposures to hazardous contaminants.

## **10.0 SITE CONTROL**

In order to minimize the hazards for non-project personnel, control of the job site shall be the responsibility of the Field Supervisor. All visitors to the site shall not be allowed to work area during sampling activities. The safe distance for visitors to the work area shall be determined by the Field Supervisor.

## **11.0 DECONTAMINATION**

Personnel and equipment contamination prevention techniques will be used wherever feasible. When necessary, personnel and equipment shall be decontaminated prior to leaving the site using wet methods approved by the Project Manager and the Health and Safety Officer. All waste generated shall be disposed of in accordance with RF plant requirements.

## **13.0 EMERGENCIES**

Preplanning will reduce potential injuries in the result of an emergency. Sampling personnel must receive a building/area indoctrination if applicable or be escorted by an indoctrinated individual. Sampling personnel will become familiar with the locations of emergency egress routes, assembly areas, eye wash/safety shower stations, fire extinguisher locations, and nearby telephones.

The sampling team will always have at least one radio and will establish radio contact while out in the field.

36

If any employee is injured or becomes ill, and the situation is life threatening, call 2911. If the situation is not life threatening, transport the employee to Medical at Bldg. 122. If the situation occurs after hours, transport the employee to the Fire Department at Bldg. 331.

In the event unanticipated hazards or conditions are encountered, the project activities will pause to assess the potential hazard or condition. The potential hazard or condition will be evaluated to determine the severity or significance of the hazard or condition and whether the existing project controls are sufficient to address the hazard or condition. Based on this initial evaluation, a determination will be made whether to proceed with the controls currently in place; segregate the condition or hazard from the project activity, if this can be done safely; or curtail operations to address the unexpected hazard or condition. Concurrence to proceed down the selected path must be obtained from the RMRS Director or their designee.

In all cases, notify the following individuals:

**Characterization Manager**

Marla Broussard X6007 page# 212-6261 home # ( [REDACTED] )

**Characterization Health and Safety Supervisor**

David Farler X4340 page # 212-6555 home # [REDACTED]

**Radiological Engineering Manager (if radiological contamination)**

Jeff Smith X7582 page # 212-6470 home # [REDACTED]

## 14.0 ACTIVITY HAZARD ANALYSIS

An Activity Hazard Analysis (AHA) is required for all projects/sampling events. The AHA need not repeat the requirements detailed in this Health and Safety Program.

## 15.0 REVIEW AND UPDATE

This program will be amended as necessary. At a minimum, the program will be fully reviewed and updated on an annual basis. Safety inspections will be conducted to determine compliance with this program, the applicable AHA, and the applicable OSHA Health and Safety Standards.

## 16.0 REFERENCES

American Conference of Governmental Industrial Hygienists (ACGIH) 1998 TLVs and BEIs (or newer version).

Colorado Regulation 8 (CCR8).

EPA 40 CFR 763.86

Kaiser-Hill Draft Chronic Beryllium Disease Prevention Program (CBDPP), September, 1998.

NIOSH Manual of Analytical Methods, 4<sup>th</sup> Edition, August, 1994 (or newer version), method numbers 7300, 7400, and 7500.

OSHA Construction Standard for Asbestos, 29 CFR 1926.1101.

RFETS Health and Safety Practices Manual:

1-15320-HSP-2.08 Lockout/Tagout

1-E36-HSP-6.04 Confined Space Entry

1-I87-HSP-7.06 Hearing Conservation.

RMRS Operations Directive 001, Safety and Environmental Stewardship.

RMRS Operations Directive 006, Safety Requirements for Work Involving Penetration of Walls, Floors, Ceilings, and Concrete, Asphalt, or Masonry Pads.

**APPENDIX 3**





Rocky Mountain  
Remediation Services, L.L.C.  
... protecting the environment

## INTEROFFICE CORRESPONDENCE

DATE: February 8, 2000

TO: FILE

FROM:   
R. S. Roberts, Radiological Engineering Support Services, Bldg. T130B, X4869

SUBJECT: SCAN SURVEY REQUIREMENTS FOR THE PRE-DEMOLITION SURVEY FOR  
THE GROUP B/C FACILITIES- RSR-001-00

The purpose of this correspondence is to document the methodology to be used to perform radiological scan surveys for the Pre-Demolition Survey at the Group B/C facilities.

To perform beta scans for the Group B/C facilities, the following methodology will be used.

1. The NE Electra with DP6 Probe will be used.
2. The probe will be moved at a speed of 4 inches/second. This corresponds to a scanning MDC of 2525 dpm/100 cm<sup>2</sup> (See Rad Engineering Calculation No. 00-RS-0001, "Beta Scan MDC Calculation For NE Electra with DP6 Probe").
3. If elevated activity is found during scanning, perform a 1-minute PAT at that location.
4. Record PAT results. If PAT results are  $\geq 3750$  dpm/100 cm<sup>2</sup>, contact radiological engineering.
5. Continue scanning.

To perform alpha scan surveys for the Group B/C facilities, the attached methodology outlined in Attachment A will be used. This alpha scan methodology is consistent with the methodology used to perform Final Status Surveys at Building 779. If a 90-second PAT result is  $\geq 75$  dpm/100 cm<sup>2</sup>, contact Radiological Engineering Support Services.

Each survey unit within the Group B/C facilities will have 10% of the surface area scanned for both alpha and beta contamination. Areas with the highest potential for contamination will be scanned.

### CONCURRENCE



Bates Estabrooks, Manager  
Radiological Engineering Support Services

JWP:alk

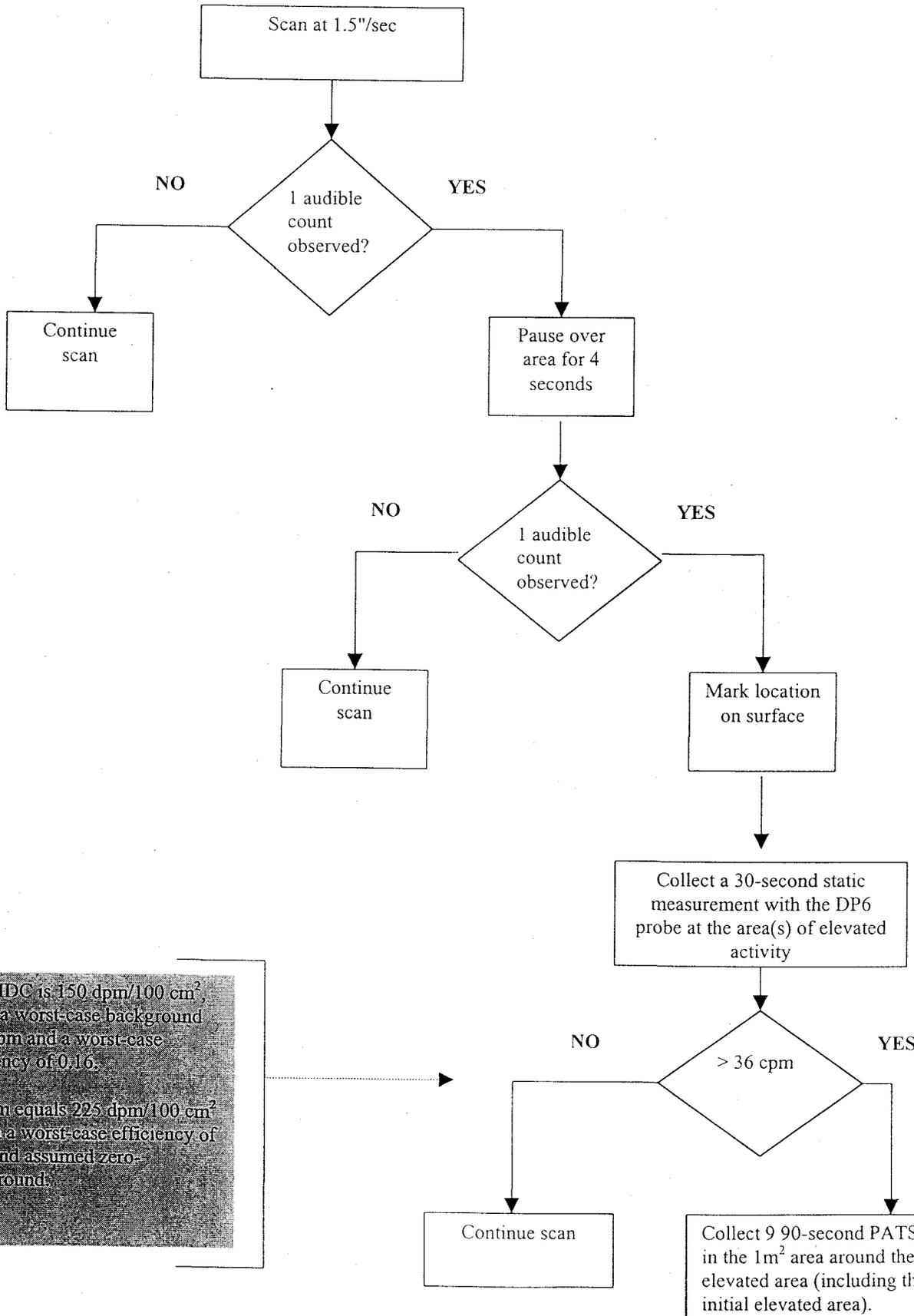
Attachment  
As Stated

cc:

H. B. Estabrooks  
E. D. Lesses  
R. P. Worster

41

# Attachment A Scan Method with DP6 (Alpha)



• The MDC is 150 dpm/100 cm<sup>2</sup>, given a worst-case background of 8 cpm and a worst-case efficiency of 0.16.

• 36 cpm equals 225 dpm/100 cm<sup>2</sup> (given a worst-case efficiency of 0.16 and assumed zero-background).

42

**Wojtaszek, Paul**

**From:** Wojtaszek, Paul  
**Sent:** Tuesday, February 08, 2000 10:53 AM  
**To:** Roberts, Rick  
**Subject:** RE: Documentation of Beta Scan Requirements For the Group B/C Facilities

This letter has been inserted into the project file.

-----Original Message-----

**From:** Roberts, Rick  
**Sent:** Monday, February 07, 2000 3:27 PM  
**To:** Worster, Ronald; Sawyer, Roland  
**Cc:** Estabrooks, Bates; Luker, Steve; Broussard, Marcella; Lesses, Elliott; Wojtaszek, Paul  
**Subject:** Documentation of Beta Scan Requirements For the Group B/C Facilities

To perform beta scans for the Group B/C facilities, the following methodology will be used.

1. The NE Electra with DP6 Probe will be used.
2. The probe will be moved at a speed of 4 inches /second. This corresponds to a scanning MDC of 2525 dpm/100 cm<sup>2</sup> (See Rad Engineering Calculation No. 00-RS-0001, "Beta Scan MDC Calculation For NE Electra withDP6 Probe")
3. If elevated activity is found during scanning, perform a 1 minute PAT at that location.
4. Record PAT results. If PAT results are  $\geq 3750$  dpm/100 cm<sup>2</sup>, contact radiological engineering.
5. Continue scanning.

If it is found that numerous PAT surveys are required using this methodology, the use of a timed PAT of less than one minute duration will be investigated.

If you have any questions or comments, please call.

Rick Roberts  
X4869  
Pager 212-5358



Rocky Mountain  
Remediation Services, L.L.C.  
... protecting the environment

## INTEROFFICE CORRESPONDENCE

DATE: February 9, 2000

TO: FILE 

FROM: R.S. Roberts, Radiological Engineering, Bldg. T130B, X4869

SUBJECT: RADIOLOGICAL SURVEY FORMS FOR THE PRE-DEMOLITION SURVEY  
FOR THE GROUP B/C FACILITIES- RSR-002-00

The purpose of this correspondence is to delineate the radiological survey forms that will be used to document total, removable and scan surveys for the Pre-Demolition Survey at the Group B/C facilities.

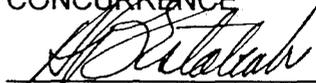
The following attached survey forms will be used to document the total, removable and scan surveys for the Pre-Demolition Survey at the Group B/C facilities.

1. Instrument Data Sheet
2. Survey Signature Sheet
3. Total Surface Activity Sheet
4. Removable Contamination Data Sheet
5. Final Survey NE Electra Scan & Investigation Survey Form
6. Final Survey NE Electra Scan & Investigation Survey Form (Continuation Sheet)
7. Final Survey NE Electra Scan & Investigation Survey Map

These attached survey forms replace RSFORMS-16.02-1, "Total Surface Activity Survey Data Form," RSFORMS-16.02-2, "Removable Surface Activity Data Survey Form," and RSFORMS-16.02-3, "Surface Scanning Data Sheet." The attached forms were used during the Final Status Survey at Building 779, and their use will streamline the process by which radiological surveys are documented. The following changes to the forms are noted.

- The use of a "Probe Correction Factor" and an "Efficiency" is redundant so the use of the "Probe Correction Factor" was discontinued.
- A "Sample Location" with an associated location map is being used instead of both a "Sample/Swipe Number" and "Location/Description" designator. These are equivalent.
- The date of the survey is being recorded instead of both the date and time. This is sufficient for documentation.
- The "Probe Number" has been deleted for swipe survey instruments since no probe is associated with these instruments.

CONCURRENCE



Bates Estabrooks, Radiological Engineering Support Services Manager

attachments

cc: Ron Worster Bates Estabrooks

Survey Area:	Survey Unit:	Building:
Survey Unit Description		

## INSTRUMENT DATA SHEET

### Removable Contamination Survey Instrument Data

Manufacturer				
Model				
Inst. ID #	1	2	3	4
Serial #				
Cal. Due Date				
Analysis Date				
Instrument Bkgd				
Instrument Eff.				
Instrument MDA				

### Total Surface Activity Instrument Data

Manufacturer	N.E. Tech.	N.E. Tech.	N.E. Tech.		
Model	Electra	Electra	Electra		
Inst. ID #	5	6	7	8	9
Serial # / Probe #	/	/	/		
Cal. Due Date					
Survey Date					
Alpha Bkgd / Beta Bkgd	/	/	/		
Alpha Efficiency / Beta Efficiency	/	/	/		
Instrument MDA Alpha / Beta	/	/	/		

45

Survey Area:	Survey Unit:	Building:
Survey Unit Description		

## SURVEY SIGNATURE SHEET

### Removable /Total Surface Activity Performed By

RCT ID # 1				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 2				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 3				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 4				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 5				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 6				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 7				
	RCT Printed Name	Employee #	RCT Signature	Date

### Quality Control Measurements Performed By

RCT ID # 8				
	RCT Printed Name	Employee #	RCT Signature	Date
RCT ID # 9				
	RCT Printed Name	Employee #	RCT Signature	Date

### Survey Reviewed By

RCT Foreman Printed Name	Employee #	RCT Foreman Signature	Date

4/6





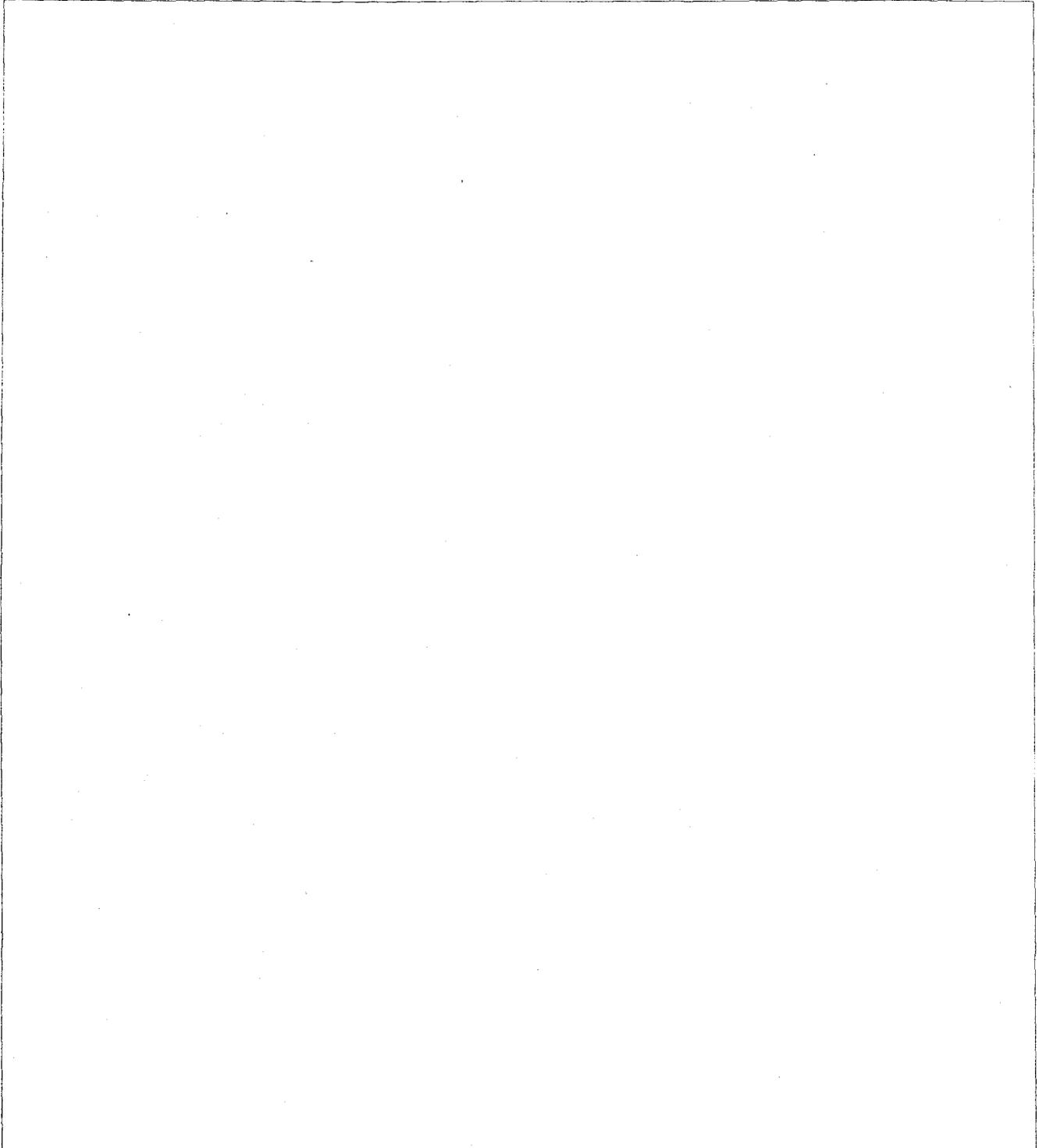




## Final Survey NE Electra Scan & Investigation Survey Map

SU:	Survey Date:	Survey Number:
Survey Unit Description:		
RCT Initials/Date:	RCT Initials/Date:	RCT Initials/Date:

Refer to the Final Survey NE Electra Scan & Investigation Survey Form for instrumentation, surveyor & approval information.



51

# APPENDIX 4

# APPENDIX 5

Work Control Number: \_\_\_\_\_  
Standard Work Package No: \_\_\_\_\_

Rev. 0

Appendix 5  
Page 1 of 1

**WORK PACKAGE RE-START PRE-REQUISITES**

---

**TO BE INSERTED BY PLANNING IF REQUIRED**

54

# APPENDIX 6

---

PERSONAL PROTECTIVE EQUIPMENT

APPENDIX 3

Page 1 of 2

Respiratory Protection Selection On-the-Job Verification Worksheet

---

Process/Project Title and Work Package Number

1. Identify the material for which respirators are used.

Radioactive Particulate

Asbestos Fibers

Beryllium Dust

Organic Vapors (Specify) \_\_\_\_\_

Acid Gases

Other (Specify) \_\_\_\_\_

2. Identify the potential occupational exposures for each contaminant to be encountered that was identified in the occupational exposure assessment.

\_\_\_\_\_  
\_\_\_\_\_

3. Identify the reason that respirators are required.

Lack of engineering controls.

Less than adequate engineering or administrative controls.

4. Identify the efforts that are being made to reduce or eliminate the need for respiratory protection for this activity.

\_\_\_\_\_  
\_\_\_\_\_

PERSONAL PROTECTIVE EQUIPMENT

APPENDIX 3

Page 2 of 2

**Respiratory Protection Selection On-the-Job Verification Worksheet**

5. Identify the type of respirator selected and the reasons it is appropriate.

\_\_\_ Air Purifying Respirators

- Filter cartridge type \_\_\_\_\_
- Cartridge replacement time (how long can the cartridge be used for this job) \_\_\_\_\_ hrs.
- The environment is not IDLH.
- The expected contaminant concentration is within the limits of the respirator assigned protection factor.
- If used to protect against gases or vapors, the contaminant(s) have warning properties that allow the user to recognize the need to replace the respirator.
- The filters will effectively remove the contaminant(s).
- The time in the respirator is identified before beginning work.

\_\_\_ Powered Air Purifying Respirator

- The environment is not IDLH (PremAire's® with escape bottle can be used in IDLH).
- Workers have completed hands on orientation with the PAPR.
- The expected level of contaminants is within the limits of the respirator assigned protection factor.

\_\_\_ Supplied Air Respirator

- The environment is not IDLH. SAR can be used in IDLH if properly configured.
- The expected concentration are within the limits of the respirator assigned protection factor.
- The breathing air source has been checked to ensure it meets Grade D requirements within the last three months. Results are posted.
- The airline is protected from damage.

\_\_\_ Self Contained Breathing Apparatus

- Work be performed within the time limits of the cylinder.

Prepared By: \_\_\_\_\_

Date: \_\_\_\_\_

Job Supervisor: \_\_\_\_\_

Date: \_\_\_\_\_

# APPENDIX 7



**APPENDIX 11.1 - POST JOB REVIEW CHECKLIST & INSTRUCTIONS**

**Comment Section**

Ref. No. (1-12)	Comment/Suggested Improvement

**Personnel Attending:**

<u>Name</u>	<u>Initial</u>	<u>Employee No.</u>	<u>Name</u>	<u>Initial</u>	<u>Employee No.</u>

**PJR Review:**

<u>Responsible Manager Name</u>	<u>Signature</u>	<u>Date</u>

Submitted to Lessons-Learned Program. If so, submit the following.

Background:

Lessons Learned:

CHG-1

60

## APPENDIX 11.1 - POST JOB REVIEW CHECKLIST & INSTRUCTIONS

Instructions for completing the Post Job Review Checklist.

1. Enter the work document number and the date the form was completed.
2. Enter the name of the Job Supervisor who was responsible for the performance of the work. (This person **SHALL** lead the PJR.)
3. Evaluate how well the activity went. Check the appropriate box, and provide comments to clarify needs identified during the work or to suggest improvements. In addition to mentioning areas for improvement, when the process is excellent it can be beneficial to say why it went so well. This positive feedback may increase the likelihood that the performance will be repeated.

### Additional Information to clarify the evaluation

The following section provides some narrative descriptions for some of the key questions on the PJR checklist.

1. **Safety Barriers Were Effective (Item 1)** is intended to capture issues and suggestions related to the adequacy of the safety during the work. The review **Should** consider the adequacy of the safety hazard identification, special safety equipment, safety coordination and support, pre-job briefing, and worker performance during the job.
2. **System, Component, and Support Were Ready for Work (Item 6)** is intended to evaluate the physical conditions needed to perform the work. It considers whether the equipment and system being worked on were in a condition where work could be performed as scheduled. This evaluation includes the coordination between planning, operations, maintenance and support organizations to ensure proper configuration and condition of work site equipment.
3. **Support Coverage Was Adequate (Item 9)** is intended to evaluate the coordination and cooperation between support organizations and the worker(s) performing the work. It includes having key people available when needed and having cooperation between work groups to accomplish the work.

Unacceptable = Significant delays encountered, key people not available, major conflict between work groups

Marginal = Minor delays encountered, coordination break downs, some conflict between work groups

Good = No delays encountered, good coordination or cooperation, but not both

Excellent = Support ready to work as planned, good coordination and cooperation between work groups

4. **Environmental Barriers Were Effective (Item 10)** is intended to capture issues and suggestions related to the adequacy of the environmental controls during the work. The review **Should** consider the adequacy of the environmental hazard identification, special equipment, coordination and support, pre-job briefing, and worker performance during the job.

5. **Work Document Was Adequate (Item 11)** is intended to capture issues and suggestions related to the adequacy of the work document. These include evaluating that the work instructions were appropriate and comprehensive, that instructions were clear, drawings and references were appropriate and comprehensive, tools equipment and processes used to accomplish the work were appropriate, and identifies any contributing factors that helped improve the job performance.
6. **Other (Description) (Item 12)** This section is provided to allow individuals to identify improvement opportunities that do not seem to fit in the other sections. It should also be used to indicate when an occurrence report has been generated as a result of an incident that occurred during performance of the work. Provide additional information in the comment section of the checklist.
7. The **Comment Section** should be used to:
  - Provide clarifying information about the PJR
  - Provide specific suggestions to improve work performance in the future

Some example comments are provided below:

- # 1 The lifting straps issued for the work were found to be damaged during the pre-job preparation. The damaged straps were returned to the tool room for disposal. Good straps were drawn from stock. We need to ensure that straps are inspected prior to being issued by the tool room.
- #9 The Radiation Safety coverage was not available for the first two hours of the scheduled work. They were called over to support an unplanned shipment of casks. We need to follow the plan of the day or let people know when conditions change. We could have completed another work order while we waited if we had known this was going to happen.
- #11 This work document was well prepared. The preparer walked the job down with the team prior to preparing the document. During the walkdown we considered several alternatives and determined that by removing some grating we could save more than 5 hours in the pump replacement. This worked great!

- CHG-1
8. **Lessons Learned** This section is provided to allow individuals to submit the lessons learned from the project to the Lessons Learned program. A background of the project should be given, followed by the lessons learned during the project.

67

## APPENDIX 8

(Contained in separate binder due  
to its size.)

63/63