

300402 - 0610310002



**CH2MHILL**

CH2M HILL Mound, Inc.

1075 Mound Road

P.O. Box 750

Miamisburg, OH 45343-0750

SMO-460/06

July 27, 2006

Mr. Don Pfister, Director  
Miamisburg Closure Project  
U. S. Department of Energy  
175 Tri-County Parkway  
Springdale, OH 45246

ATTENTION: Paul Lucas

SUBJECT: **Contract No. DE-AC24-03OH20152: Deliverable #36 Building Data Package; Section C.2.1.1 Facility Demolition; Building HH Structure OSC Report Addendum, Final**

Dear Mr. Pfister:

Attached is the following Final document for your records.

- Building HH Structure OSC Report Addendum, Final

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Dave Rakel at 937-865-4203.

Sincerely,

Michael D. Ebben  
Site Manager

ME/jg

Enclosures

cc: T. Fischer, USEPA, (1) w/attachments  
B. Nickel, OEPA, (1) w/attachments  
S. Helmer, ODH, (1) w/attachments  
J. Crombie, ODH, (1) w/attachments  
M. Wojciechowski, Tetra Tech, (1) w/attach  
G. Gorsuch, DOE/MCP, (1) w/attachments  
R. Tormey, DOE/OH, (1) w/attachments  
G. Desai, DOE/HQ, (1) w/attachments  
C. Kline, CH2M Hill, (1) w/attachments  
Public Reading Room (1) w/attachments  
Admin Records, CH2M Hill, (2) w/attachs

ER Records, CH2M Hill, (1) w/attachs  
DCC (1) w/attachments  
M. Ebben, CH2M Hill, w/o attachments  
K. Armstrong, CH2M Hill, w/o attachments  
D. Rakel, CH2M Hill, w/o attachments  
D. Kramer, CH2M Hill, w/o attachments  
A. Upshaw, CH2M Hill, w/o attachments  
S. Barr, CH2M Hill, w/o attachments  
M. McDougal, CH2M Hill, w/o attachments  
file, CH2M Hill, w/o attachments

**BUILDING HH STRUCTURE  
REMOVAL ACTION**

**OSC REPORT  
Addendum**

**July 2006**

**Final**



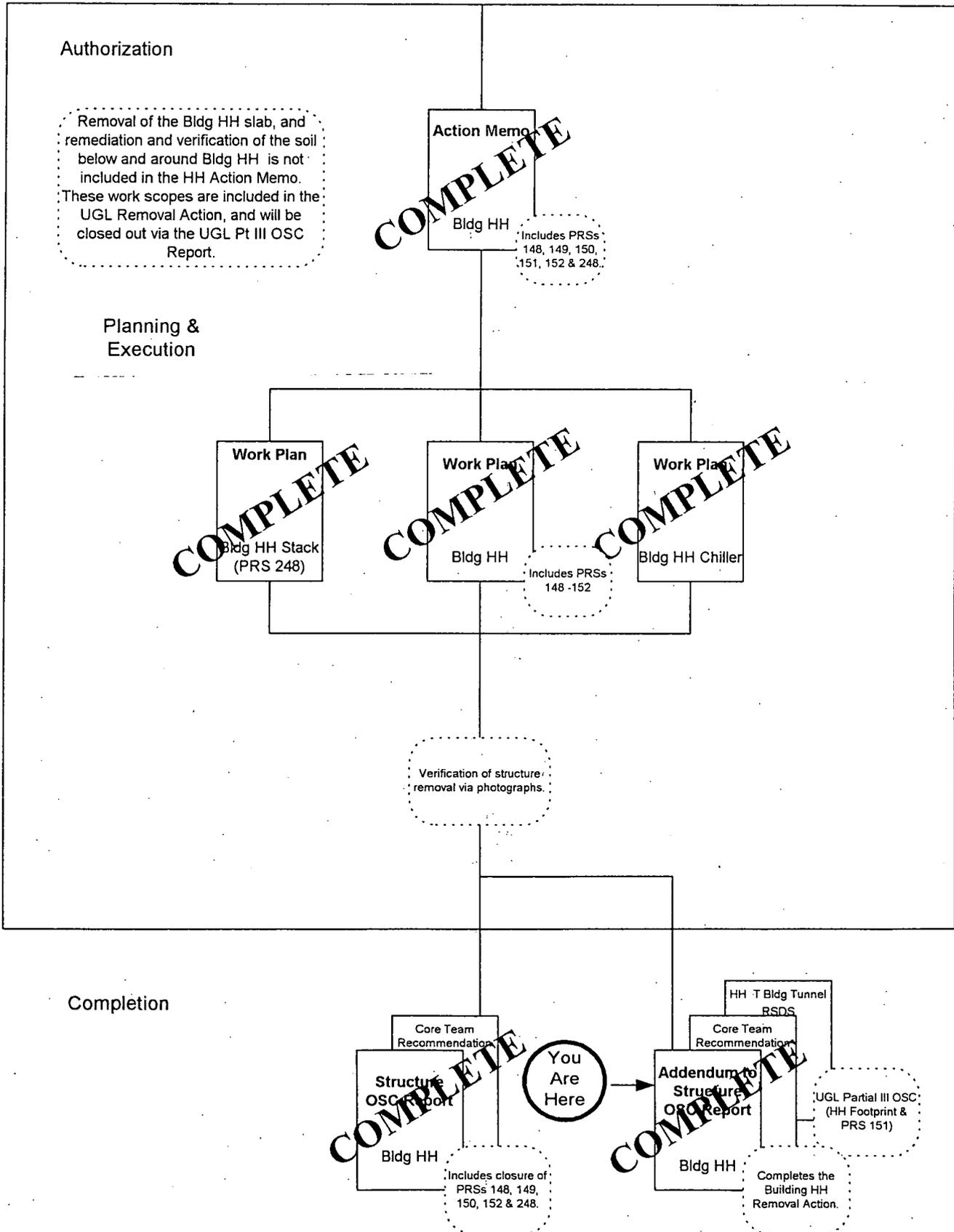
**Department of Energy  
Miamisburg Closure Project**



**CH2MHILL**

# Building HH

Removal of Building HH superstructure, HH stack (PRS 248), cooling tower, three sumps (150, 151, & 152), three penthouses, three sheds, and two small attached buildings and PRSs 148, and 149, and decontamination of an underground tunnel (T to HH)



# TABLE OF CONTENTS

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Section	Page
RECOMMENDATION .....	iii
1.0 SUMMARY OF EVENTS .....	1
1.1 Building HH planning and completion documents .....	1
1.2 Building HH tunnel .....	1
1.3 North Wall Segment .....	2

## Attachments

Attachment A	Underground Lines Partial III OSC Report Recommendation
Attachment B	Photo of HH Area after Removal of North Wall
Attachment C	Building HH Tunnel Surveys

# TABLE OF CONTENTS

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## Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EE/CA	Engineering Evaluation/Cost Analysis
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
PRS	Potential Release Site
RA	Removal Action
UGL	underground line
USEPA	United States Environmental Protection Agency
VSAP	Verification Sampling and Analysis Plan

Jul-26-2006 10:00am From-

T-002 P.003/003 F-792

### Recommendation

The Building HH Removal Action (authorized via the Action Memorandum EE/CA Building HH Removal Action, Final, August 2002) was performed based on radiological contamination within the building resulting from multiple processes involving radioactive wastes. The Building HH Structure On-Scene Coordinator Report documented the completion of the demolition of the Building HH superstructure and associated structures and closure of PRSs 148, 149, 150, 152 and 248. The UGL Partial III OSC Report documented the removal of the Building HH slab and foundation, remediation and verification of the soil below Building HH and the closure of PRS 151.

This Addendum to the HH Structure OSC Report provides decontamination surveys of the HH tunnel and photographic documentation of the removal of a segment of the north wall of Building HH.

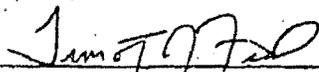
#### Recommendation:

After a thorough review of this On-Scene Coordinator (OSC) Report Addendum, the Core Team agrees that the HH Building RA is complete.



7/26/06

Paul Lucas, OSC  
U.S. Department of Energy  
Miamisburg, Ohio



7/26/06

Timothy J. Fischer, Remedial Project Manager  
USEPA  
Chicago, Illinois



7/26/06

Brian K. Nickel, Project Manager  
OEPA  
Dayton, Ohio

### 1.0 SUMMARY OF EVENTS

The Building HH Structure Removal Action On-Scene Coordinator Report (OSC) recommendation (April, 2005), deferred closure of PRS 151, decontamination surveys of the HH tunnel, removal of underground drains, and removal of the north wall of Building HH. Completion of these items were to be documented in a separate OSC Structure Addendum to conclude the HH Building removal action. Closure of PRS 151 and removal of the underground drains were documented in the Underground Lines project (see Section 1.1). This OSC Addendum documents removal of the north wall segment and decontamination surveys of the HH tunnel.

#### 1.1 Building HH planning and completion documents

The Building HH Action Memorandum (August 2002) authorized the removal of the Building HH superstructure, HH stack (PRS 248), cooling tower, three sumps (PRSs 150, 151, 152,), PRSs 148 and 149, and decontamination of an underground tunnel (T to HH) and additional ancillary structures.

The Building HH Core Structure Demolition work plan dated April 10, 2004, defined the requirements for the performance of the structure demolition. The work plan addressed removal of PRSs 148, 149, 150 and 152. To optimize field efforts, the removal of PRS 151 (Room HH-6 Alpha Wastewater Sump), the Building HH slab and soil, underground drains (in crawl spaces) and the remaining north wall (a segment of this wall was kept in place temporarily as a retention wall) were included in the Underground Lines (UGL) field work. Removal of the Building HH slab, foundation, drains, closure of PRS 151, and remediation and verification of the soil below Building HH were closed out in the UGL Partial III OSC Report (March 2006) (see Recommendation in Attachment A).

#### 1.2 Building HH tunnel

The HH tunnel was a utility conduit between HH and T Buildings. This utility conduit ends at the 17 ft exterior wall of T Building. Openings in the T Building wall were sized for the pipes (not for personnel access).

A radiological survey was performed on the Building HH tunnel on October 8, 2003. Ten locations were surveyed for both fixed and removable contamination. The survey confirmed the presence of fixed contamination at a previously identified and marked location (approximately 75 ft from the HH end of the tunnel). A survey in October 2004 of fifty locations along the entire length of the tunnel indicated this location was the only location above surface release criteria. This fixed contamination was removed by "digging out" the surface of the floor. A subsequent survey demonstrated successful removal of the fixed contamination. (Attachment C).

The tunnel is no longer accessible. The HH Building end of the tunnel was closed and covered with soil. The openings in the T Building wall were surveyed and met surface release criteria. (T Building Final Status Survey Report for Survey Uniot 1S-06, Final, March 2006). The openings at the T Building end of the tunnel were plugged with concrete.

### 1.3 North Wall Segment

A segment of the north wall of HH Building was kept in place to serve as a retaining wall during the Underground lines field work. When the retaining wall was no longer needed, it was removed. The area was backfilled with soil and graded. A photo of the area after the removal of the north wall is included in Attachment B.

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# Attachment A

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## UGL Partial III OSC Report Recommendation

## RECOMMENDATION: HH Footprint & PRSs 151 & 413

The HH Footprint and Potential Release Site (PRS) 413 Removal Actions (RAs) were authorized via the underground line (UGL) Action Memo, Final, September 2003. The PRS 151 RA was authorized via the Building HH Removal Action Action Memo, Final, August 2002. The HH Footprint and PRS 151 RAs were based on historical processes, and radiological surveys and soil sample results which showed elevated levels of Ac-227, Ag-108m, Bi-207, Bi-210m, Bi-214, Cs-137, Co-60, Pa-231, Pb-214, Ra-226, tritium, Th-230, and Th-232. The PRS 413 RA was based on historic elevated results of ethylbenzene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene.

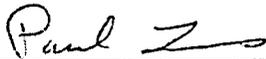
Contaminated soil at HH Footprint and PRS 151 was excavated per the associated Action Memo and UGLs Removal Plan, Final, April 2004. Verification sampling and analysis was performed in accordance with the Standard Soils Verification Sampling & Analysis Plan (VSAP), Final, August 2004 to demonstrate that the remaining soil meets the cleanup criteria. This removal action was successfully completed and resulted in the excavation and disposal of approximately 4,791 cubic yards (cy) of radioactively contaminated soil (for disposal at Envirocare).

Contaminated soil at PRS 413 was previously remediated and verification samples were collected at that time.

The cleanup criteria established in the Standard VSAP are satisfied if all verification sample results are below cleanup objectives (COs) or all sample results are below hot spot (HS) criteria and the 95% UCL (upper confidence limit) for the area of interest is less than the CO and the data set passes the Sign test.

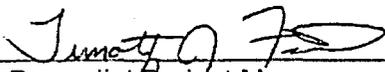
The contaminants of concern (COCs) are identified above. All results for HH Footprint and PRS 151 are below COs documenting that the cleanup criteria were met. All results for PRS 413 were below concentrations that could leach to groundwater at unacceptable levels.

After a thorough review of this On-Scene Coordinator (OSC) Report, the Core Team agrees that the RAs associated with HH Footprint and PRSs 151 & 413 are complete, and that all previously existing environmental issues associated with them have been resolved.



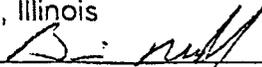
3/23/06

Paul Lucas, OSC  
U.S. Department of Energy  
Springdale, Ohio



3/21/06

Timothy J. Fischer, Remedial Project Manager  
USEPA  
Chicago, Illinois



3/23/06

Brian Nickel, Project Manager  
OEPA  
Dayton, Ohio

## Attachment B

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Photo of HH Area after Removal of North Wall

Building HH Structure OSC Addendum



# Attachment C

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**Building HH Tunnel Surveys**

**Building HH Tunnel Characterization**

**RSDS #03-HH-0110**

**Building HH Tunnel Characterize Tunnel for Cleanout**

**RSDS 04-TF-0310**

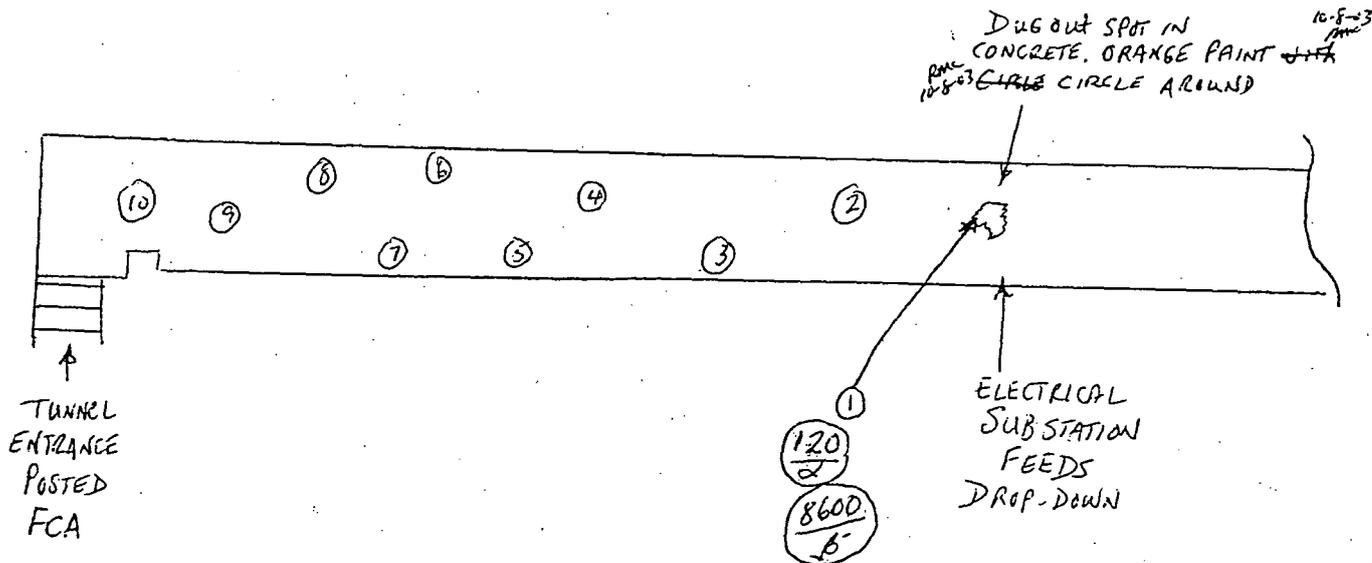
**Building HH Tunnel Post Remediation Survey**

**RSDS # 04-T-1573**

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG. / ROOM / AREA) <u>HH TUNNEL</u>	SURVEY NO. <u>03-HH-0110</u>
PURPOSE: <u>Characterization Survey</u>	RWP NO. <u>N/A</u>
	DATE: <u>10-8-03</u>
	TIME: <u>0800</u>

## MAP / DRAWING



ALL DIRECTS  $\frac{2100}{2}$   $\frac{25K}{\beta}$  unless otherwise indicated

# COPY

LEGEND: # = mrem/hr ( $\gamma$ ) whole body       $\Delta$  = mrem/hr neutron      # = swipe number  
 #E = mrem/hr ( $\beta + \gamma$ ) extremity on contact  
 K = factor of 1000      # = air sample number      #/a or  $\beta$  = direct contamination measurement in dpm/100 cm<sup>2</sup>  
 - - - - = radiological boundary

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360/43-89	5771/5782	9-5-04
A		
N		

Completed by: [Redacted]	Date: <u>10-8-03</u>
Counted by: (Signature) <u>See attached printout</u>	Date:
Counted by: (Print Name)	Date:
Reviewed/Approved by: (Print Name) [Redacted]	Date: <u>10/8/03</u>



### Smear Analysis

Unit Type: LB4100/W  
Counting Unit ID: Green  
Data file name: SMEAR037  
Batch Ended: 10/8/03 8:01  
Cal. Due Date: 5/1/05  
Serial Number: 26966-3

Batch ID: 03-HH-0110 COBLENTZ-10 BSB

Detector ID	Sample ID
A1	1
A2	2
A3	3
A4	4
B1	5
B2	6
B3	7
B4	8
C1	9
C2	10

Alpha Activity		
DPM	$\sigma$	flags
1.28	2.05	
3.18	2.78	
3.31	3.07	
0.00	2.08	
0.00	1.98	
1.50	2.01	
0.00	2.15	
1.13	1.97	
3.48	2.86	
0.00	1.82	

Beta Activity		
DPM	$\sigma$	flags
2.58	2.53	
3.24	2.52	
3.84	2.76	
6.25	3.15	
2.80	2.46	
5.04	2.93	
5.53	3.20	
0.00	1.21	
0.00	1.73	
1.81	1.93	

*RMC*

*RMC*

COPY

C3/17

08 Oct 2003 07:57

ALPHA/BETA - 1.09

Page #1

Protocol #: 1

PW H3 405828

User : 5268

Time: 2.00

Data Mode: DPM

Nuclide: SMGLS02

Quench Set: SMGLS02

Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 - 18.6		0	0.0	7.50
Region B:	2.0 - 18.6		0	0.0	7.39
Region C:	40.0 - 2000		0	0.0	10.70

*By Brown*

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

03-HH-0110 COBLENTZ-10 BSB

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: c:\data\PROT1.DAT

Count Data Filename: c:\data\SDATA1.DAT

Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	7.50	7.39	0	B	596.08		0.00	10.70
0	2.00	544.43	516.70	0		467.26	1237.35	120.67	3.80
1	2.00	4.00	4.11	0		408.23	9.91	12.65	5.80
2	2.00	4.00	3.20	0		672.80	7.56	9.65	2.17
3	2.00	6.00	4.15	0		625.02	11.73	10.75	0.00
4	2.00	14.00	12.25	0		598.87	27.98	13.72	4.86
5	2.00	12.17	11.04	0		584.42	24.63	13.30	3.80
6	2.00	11.24	10.37	0		467.06	25.56	14.59	7.12
7	2.00	18.31	16.43	0		537.83	38.57	15.84	10.56
8	2.00	17.30	15.78	0		483.93	38.43	16.37	4.80
9	2.00	12.00	11.11	0		610.18	23.76	12.96	9.95
10	2.00	6.53	5.08	0		550.18	13.61	11.66	0.80

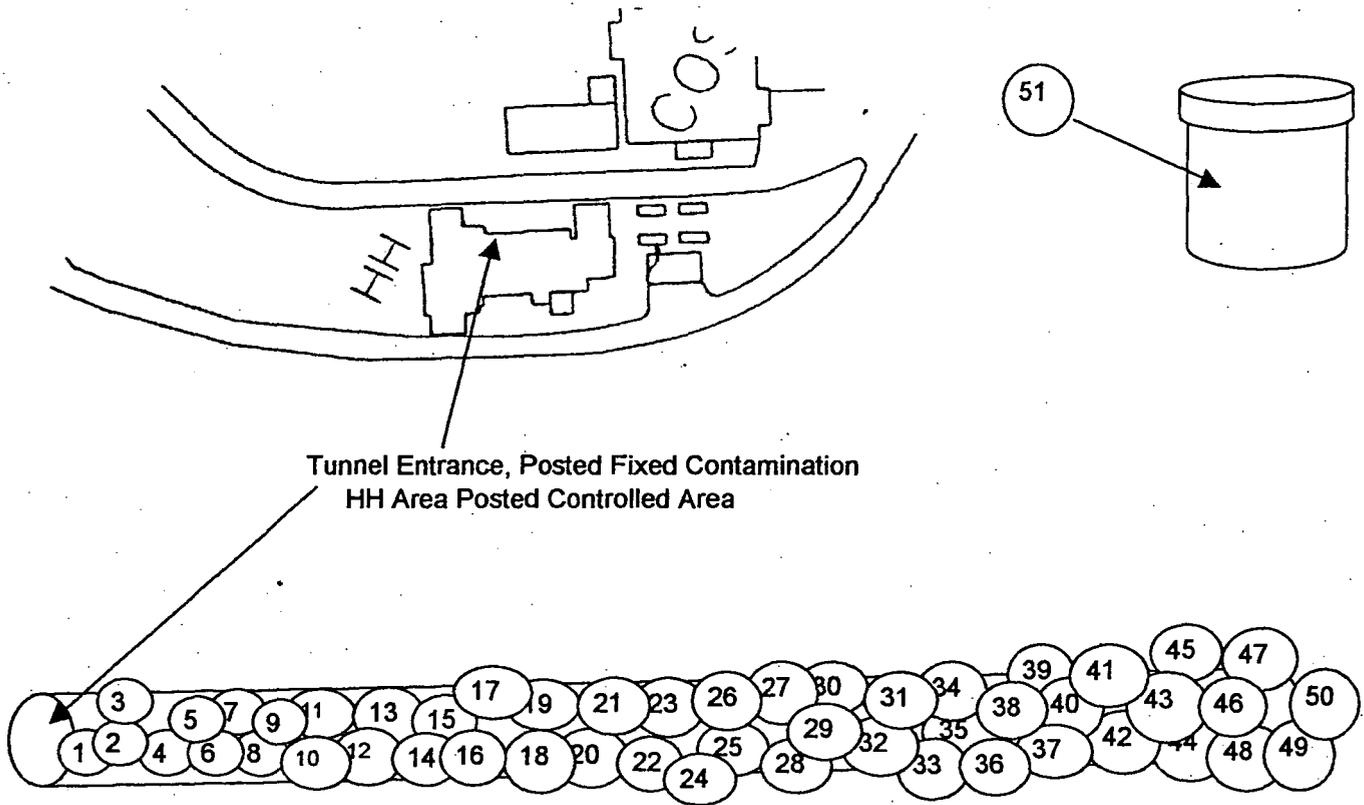
*Line*

COPY

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) <b>HH west building exterior sump</b>	SURVEY NO. <b>04-TF-0310</b>
PURPOSE:  <b>Water sample prior to excavating</b>	RWP NO. <b>None</b>
	DATE: <b>10/2/2004</b>
	TIME: <b>13:00</b>

## MAP / DRAWING



**LEGEND:**  
 # = mrem/hr ( $\gamma$ ) whole body  
 #E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact  
 K = factor of 1000  
 - - - - - = radiological boundary

# (triangle) - mrem/hr neutron  
 # (square) - air sample number  
 # (circle) - swipe number  
 #/alpha or #/beta - direct contamination measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360/43-89	5752/5732	10/23/2004
NA		

Completed by: (Printed Name)	HP#	Date:
[Redacted]	7707	10/5/04
Counted by: (Signature)	HP#	Date:
See attached		
Counted by: (Printed Name)		
Reviewed by: (Printed Name)	HP#	Date:
[Redacted]	5781	10/1/04
Reviewed/Approved by: (Print Name)		

**RADIOLOGICAL SURVEY DATA SHEET (cont.)**

Removable Contamination				
Swipes (dpm/100cm <sup>2</sup> )				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE ATTACHED SHEETS			Bottom
2				Right
3				Top
4				Left
5				Bottom
6				Right (unused piping)
7				top(copper piping)
8				Bottom
9				Right(conduit)
10				Top(conduit)
11				Left(conduit)
12				Bottom
13				Right(conduit)
14				Top(conduit)
15				Left(conduit)
16				fixed contam area
17				Right(cables)
18				Top(cables)
19				Left
20				Bottom
21				Right
22				Top(pipes in verticle opening
23				wall of verticle opening
24				Left
25				Pump
26				Pump
27				Bottom(loose piping)
28				Bottom
29				Right
30				Top
31				Left
32				Bottom(loose piping)
33				Bottom
34				Right
35	↓	↓	↓	Top(piping)

Removable Contamination							
Swipes (dpm/100cm <sup>2</sup> )							
Sample #	β/γ	Alpha	Tritium	Comments			
36	SEE ATTACHED SHEETS			Bottom(/s pipe end)			
37				Bottom			
38				Right			
39				Top			
40				Bottom			
41				Left			
42				Top			
43				Bottom			
44				Right			
45				Top			
46				Brush			
47				Bottom			
48				Right			
49				Top(piping)			
50				end wall			
51	↓	↓	↓	sample container			
52	↘						
53							
54							
55							
56							
57							
58							
59							
60					N	A	
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							

COMMENTS: HH building area posted Controlled Area. Tunnel posted Fixed Contamination. All direct readings <100dpm/100cm<sup>2</sup> alpha, and <5000dpm/100cm<sup>2</sup> beta, with no audible indication, unless otherwise noted.

- NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
  2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
  3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

Survey No. 04-TF-0310

**RADIOLOGICAL SURVEY DATA SHEET (cont.)**

Ludlum 2360 Integrated Measurement Results							
		Alpha			Beta		
		BKGD	3	cpm	BKGD	283	cpm
		DL	2.2	Net cpm	DL	20	Net cpm
No.	Item/Location Description	Gross (cpm)	CF	Results (dpm/100cm2 or Sample)	Gross (cpm)	CF	Results (dpm/100cm2 or Sample)
5	Bottom	5	8	<DL	385	4	408
12	Bottom	10	8	56	658	4	1500
N/A	Bottom @ Seam	13	8	80	884	4	2404
N/A	Bottom @ drip area	24	8	168	3168	4	11540
N/A	Seam beyond drip	8	8	40	763	4	1920
<div style="position: relative; width: 100%; height: 100%; border: 1px solid black;"> <span style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em; font-weight: bold;">N A</span> </div>							

# Smear Analysis

Unit Type: LB4100/W  
 Counting Unit ID: Aqua  
 Data file name: SMEAR002  
 Batch Ended: 10/2/04 13:32

Crosstalk correction performed.

Recalibration Date: 03/18/05  
 Serial Number: 26966-1

Batch ID: COBLENTZ 04-TR-0310 [51] JC

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	$\sigma$	flags	DPM	$\sigma$	flags
A1	1	1.92	2.16		0.00	1.33	
A2	2	0.00	2.21		0.54	1.81	
A3	3	1.59	2.22		2.72	2.47	
A4	4	1.40	2.04		0.00	1.78	
B1	5	0.00	2.01		3.20	2.77	
B2	6	0.00	2.07		0.00	2.08	
B3	7	0.00	1.93		0.00	1.80	
B4	8	0.00	1.90		0.43	2.00	
C1	9	0.00	2.32		0.00	1.46	
C2	10	0.00	2.18		0.00	2.37	
C3	11	0.00	2.11		0.22	2.31	
C4	12	0.00	2.09		1.24	2.57	
D1	13	3.30	3.06		0.00	1.53	
D2	14	0.00	2.23		1.26	2.19	
D3	15	0.00	1.96		2.78	2.86	
D4	16	0.00	2.16		0.63	2.39	
A1	17	0.00	2.19		0.96	2.23	
A2	18	1.74	2.21		0.37	1.81	
A3	19	0.00	2.16		0.00	1.27	
A4	20	0.00	2.05		1.15	2.16	
B1	21	0.00	2.07		6.55	3.39	
B2	22	0.00	2.05		0.00	1.72	
B3	23	1.51	1.95		0.00	2.17	
B4	24	0.00	1.97		6.07	3.23	
C1	25	0.00	2.34		0.00	1.97	
C2	26	0.00	2.21		2.31	3.03	
C3	27	0.00	2.15		4.12	3.23	
C4	28	0.00	2.09		1.24	2.57	
D1	29	0.00	2.24		4.57	3.53	
D2	30	2.02	2.17		0.00	1.31	
D3	31	3.37	2.74		0.00	2.05	
D4	32	2.68	3.01		0.00	1.44	
A1	33	0.00	2.17		0.00	1.83	
A2	34	0.00	2.23		1.79	2.20	

C8/17

Page 4 of 8

# Smear Analysis

Unit Type: LB4100/W  
 Counting Unit ID: Aqua  
 Data file name: SMEAR002  
 Batch Ended: 10/2/04 13:32

Crosstalk correction performed.

Recalibration Date: 03/18/05  
 Serial Number: 26966-1

Batch ID: COBLENTZ 04-TF-0310 [51] JC

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	$\sigma$	flags	DPM	$\sigma$	flags
A3	35	0.00	2.18		0.48	1.76	
A4	36	0.00	2.08		3.60	2.77	
B1	37	0.00	1.99		2.09	2.54	
B2	38	0.00	2.07		0.00	2.08	
B3	39	0.00	1.95		0.10	2.17	
B4	40	0.00	1.89		0.00	1.65	
C1	41	0.00	2.37		0.50	2.73	
C2	42	3.04	3.03		0.00	2.37	
C3	43	0.00	2.11		0.22	2.31	
C4	44	0.00	2.11		3.75	3.13	
D1	45	0.00	2.19		0.00	1.53	
D2	46	0.00	2.17		0.00	1.30	
D3	47	0.00	1.95		0.00	2.04	
D4	48	0.00	2.16		0.63	2.39	
A1	49	1.92	2.16		0.00	1.33	
A2	50	0.00	2.24		3.04	2.54	
A3	51	5.84	3.85		12.11	4.27	

09/17

*J. Collins*

Page 5 of 8

02 Oct 2004 13:58  
Protocol #: 3

ALPHA/BETA - 1.09  
405828

Page #1  
User : 5662

Time: 2.00  
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02  
Background Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
Region A:	0.5 - 18.6		0	0.0	5.88
Region B:	2.0 - 18.6		0	0.0	5.21
Region C:	40.0 - 2000		0	0.0	9.59

Quench Indicator: tSIE/AEC  
Ext Std Terminator: Count  
COBLENTZ 04-TF-0310 [51] 10-2-04 RLH  
Coincidence Time(ns): 18  
Delay Before Burst(ns): Normal  
Protocol Data Filename: c:\data\PROT3.DAT  
Count Data Filename: c:\data\SDATA3.DAT  
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	CPMC	LUM	tSIE	DFM1	2Sigma	FLAG
-1	10.00	5.88	5.21	9.59	7	560.01		0.00	B
0	2.00	773.00	717.48	2.91	0	614.93	1447.01	132.52	
1	2.00	2.62	3.29	0.00	0	554.21	5.19	8.70	
2	2.00	2.12	1.99	2.41	0	392.67	5.13	10.34	
3	2.00	0.00	0.00	0.00	0	439.32		0.00	
4	2.00	2.12	2.58	0.00	0	564.67	4.16	8.39	
5	2.00	3.06	3.47	0.00	6	517.55	6.26	9.21	
6	2.00	41.06	36.49	123.12	3	418.00	95.35	23.90	
7	2.00	0.00	0.55	6.41	0	446.05	0.00	0.00	
8	2.00	0.00	0.00	0.00	0	536.38	0.00	0.00	
9	2.00	0.00	0.00	0.00	11	353.59	0.00	0.00	
10	2.00	1.45	2.11	0.00	0	361.17	3.73	10.63	
11	2.00	0.30	0.96	0.91	8	273.24	0.97	12.55	
12	2.00	0.00	0.00	0.00	0	527.94	0.00	0.00	
13	2.00	0.00	0.00	1.94	0	372.40	0.00	0.00	
14	2.00	2.62	3.29	0.00	6	341.68	7.09	11.90	
15	2.00	0.00	0.30	2.74	8	480.50	0.00	0.00	
16	2.00	0.00	0.00	0.00	10	366.20	0.00	0.00	
17	2.00	0.00	0.00	1.59	11	251.17	0.00	0.00	
18	2.00	0.19	0.85	3.44	8	227.80	0.74	14.69	
19	2.00	2.12	2.79	0.00	0	503.65	4.40	8.89	
20	2.00	0.62	1.29	0.00	0	524.91	1.27	7.96	
21	2.00	0.00	0.00	0.07	27	526.61	0.00	0.00	
22	2.00	0.12	0.79	1.91	0	446.53	0.28	8.44	
23	2.00	0.62	1.29	1.41	0	436.43	1.41	8.86	
24	2.00	0.00	0.00	0.00	0	643.13	0.00	0.00	
25	2.00	0.12	0.44	0.00	0	362.04	0.32	9.74	
26	2.00	2.62	2.90	2.54	0	387.63	6.38	10.71	
27	2.00	0.00	0.00	0.45	0	515.92	0.00	0.00	
28	2.00	1.12	1.58	1.91	0	561.35	2.21	7.94	
29	2.00	0.00	0.00	4.41	0	302.70	0.00	0.00	
30	2.00	0.00	0.33	0.00	0	332.30	0.00	0.00	
31	2.00	0.00	0.29	2.91	0	361.88	0.00	0.00	
32	2.00	0.62	0.90	0.00	0	386.52	1.52	9.54	
33	2.00	1.61	0.88	0.00	0	429.98	3.68	9.50	
34	2.00	0.00	0.00	0.00	0	390.36	0.00	0.00	
35	2.00	0.00	0.00	0.00	0	536.90	0.00	0.00	

S#	TIME	CPMA	CPMB	CPMC	LUM	tsIE	DPM1	2Sigma	FLAG
36	2.00	0.00	0.00	0.00	0	506.48	0.00	0.00	
37	2.00	0.00	0.00	2.41	0	392.07	0.00	0.00	
38	2.00	0.00	0.00	1.91	0	273.87	0.00	0.00	
39	2.00	2.62	3.09	0.00	0	557.96	5.17	8.67	
40	2.00	0.00	0.00	2.41	0	397.95	0.00	0.00	
41	2.00	2.12	2.79	0.00	0	419.34	4.92	9.93	
42	2.00	1.62	2.29	0.91	0	557.61	3.20	8.21	
43	2.00	0.92	1.58	0.00	0	537.13	1.85	8.02	
44	2.00	0.00	0.00	0.00	0	527.96	0.00	0.00	
45	2.00	0.93	1.38	0.74	0	507.96	1.92	8.25	
46	2.00	1.13	1.38	0.91	0	401.65	2.70	9.63	
47	2.00	0.00	0.00	1.23	0	412.16	0.00	0.00	
48	2.00	0.60	1.23	0.00	0	458.99	1.32	8.57	
49	2.00	0.00	0.24	0.00	0	474.36	0.00	0.00	
50	2.00	0.00	0.00	0.41	0	421.11	0.00	0.00	
51	2.00	1.62	1.29	0.00	0	583.39	3.13	8.02	

*J. C. ...*

# SOIL ANALYSIS REPORT

Field Sample ID:  
Lab Sample ID: GL03042  
File ID: 1SC00641.s0  
Priority: Yes

**Description\Location**

HH Tunnel Debris  
Long Count

Collector: 7707

Date Received: 10/4/04

Date Collected: 10/2/04

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>
Co-60	0.07	0.07
Cs-137	0.1	0.06
Pb-210 *	0.66	1.38
Ra-226 *	0	1.6
Ac-227 (D) *	0.04	0.48
Th-230	16.07	14.07
Th-232 (D)	0.25	0.21
Pu-238 *	0	29.2
Am-241 *	0	0.15

**Other Nuclides**

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>
Ag-108m	0.59	0.06
Bi-207	3.64	0.05
Bi-210m	25.1	0.12

$\Sigma$  DOT 0.08 nCi/g

Instrument type: High Purity Germanium

$\Sigma$  DOT 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.  
Sample is Assumed to be in secular equilibrium.

\* Indicates activity < MDA. MDA used in limits calculation

**Comments:**

Date: 10/4/04

Counted By: 5288

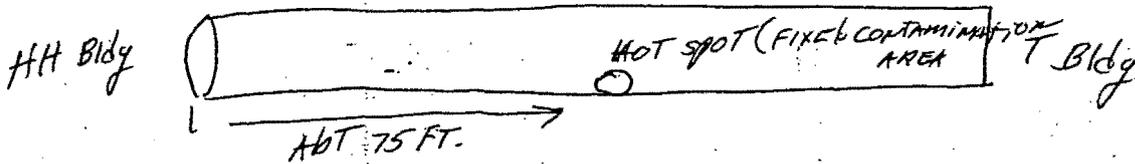
Analyzed By: 5288

Initials

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) <u>TUNNEL BETWEEN HA Bldg &amp; T Bldg</u>	SURVEY NO. <u>04-T-1573</u>
PURPOSE: - <u>POST JOB SURVEY OF FIXED CONTAMINATION AFTER REMOVING SURFACE (11-30-04)</u>	RWP NO. <u>N/A</u>
	DATE: <u>12-2-04</u>
	TIME: <u>1500</u>

## MAP/DRAWING



TOOK DIRECT READINGS + WIPES (SEE ATTACH)

LEGEND: # = mrem/hr ( $\gamma$ ) whole body  
 #E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact

$\triangle$  # = mrem/hr neutron  
 $\square$  # = air sample number

$\circ$  # = swipe number  
 $\circ$  # or  $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
<u>2360</u>	<u>5709/3731</u>	<u>8-17-05</u>
<del> </del>	<del>N/A</del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>

HP # <u>5524</u>	DATE: <u>12-2-04</u>
Counted by: (Signature) <u>SEE ATTACH</u>	HP # <u> </u> DATE: <u> </u>
Counted by: (Print Name) <u> </u>	HP # <u>6209</u> DATE: <u>12-6-04</u>

# Smear Analysis

Unit Type: LB4100/W  
Counting Unit ID: Aqua  
Data file name: SMEAR008  
Batch Ended: 12/2/04 15:35

Crosstalk correction performed.

Recalibration Date: 03/18/05  
Serial Number: 26966-1

Batch ID: 04-T-1573 WILLIAMS (3) AG

Detector ID	Sample ID
A1	1
A2	2
A3	3

Alpha Activity		
DPM	$\sigma$	flags
0.00	2.16	
1.74	2.23	
0.00	2.16	

Beta Activity		
DPM	$\sigma$	flags
0.00	1.34	
1.62	2.20	
0.00	1.27	

04-T-1573

C14/17

~~Page 1 of 1~~  
12-4-04  
RW

AW



04-T-1573

02 Dec 2004 16:50

ALPHA/BETA - 1.09

Page #1

Protocol #: 1

Pw H3 #40372B

User : 2138

12-4-04

RW

Time: 2.00

Data Mode: DPM

Nuclide: SMGLO2

Quench Set: SMGLO2

Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 - 18.6		0	0.0	8.68
Region B:	2.0 - 18.6		0	0.0	8.27
Region C:	40.0 - 2000		0	0.0	10.34

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

04-T-1573 WILLIAMS (3) AG

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: c:\data\prot1.dat

Count Data Filename: c:\data\SDATA1.DAT

Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	8.68	1	B	663.41		0.00	10.34
0	2.00	626.05	0		607.02	1154.02	95.50	1.16
1	2.00	0.32	0		623.92	0.57	8.42	2.16
2	2.00	7.26	0		575.69	13.73	11.28	0.00
3	2.00	10.82	0		612.78	19.84	12.02	1.16

✓ RW

RW

MSR #: 41093

CH2MHILL - Maintenance Service Request

Date Printed: 11/29/2004

Charge #: FB26AF

Area assigned to: T

Awaiting action by EMRICK

Date called in: 11/22/2004

Bldg/Room T-BLD

Equipment# 000371

RWP #: 1533

Priority: 03

REMOVED OR LOCATED IN HH/BLD TUNNEL AREA

Building Manager / Core Team Review Notes :

5 of 5  
04-T-1573

BM Review	Description	
CORE=Y	CORE TEAM HAS REVIEWED THIS MSR	
CONFIN	CONFINED SPACE WORK - SEE IND.HYGIENE - PERMIT	
RWPGEN	GENERAL RWP TO BE USED (LIST RWP # IN WORK PKG)	
USQ=N	USQ NOT REQUIRED - WORK SCOPE SCREENED OUT	
POD=Y	THIS WORK MUST BE IDENTIFIED ON POD	
IH	INDUSTRIAL HYGIENE MONITORING REQ'D	JSHA RECOMMENDED
JSHA=N	JSHA NOT REQUIRED	

Work Planning Details:

SUPV - Obtain the key to the HH Tunnel from G. Weidenbaugh

WARNING

The HH Tunnel is considered a confined space. A confined space entry form should be completed and reviewed at the pre-job prior to entry.

IH - Verify that the HH Tunnel breathing air is acceptable for entry.

Verified: Greg Lullenkamp 11/30/04 21.1% oxygen 0% LEL  
 Industrial Hygiene POC Date 0 H<sub>2</sub>S 0% CO

DT and RCT - Review and comply with the requirements of RWP 1533 for a fixed contamination.

DT - Locate the fixed contamination area in the HH tunnel. The area is circled in red spray paint approximately 2/3 of the way into the tunnel and appears to be a corrosive spill that has removed a small area of concrete.

WARNING

Use of anything but hand held tools will require a review of the radiological requirements and possible change in PPE.

DT- Using hand held tools only, remove the concrete within the red spray painted circle to a depth such that the RCT can no longer detect fixed contamination. During the process, concrete debris should be bagged for removal to T Building and should be included with T Building concrete cap debris.

RCT - Verify that no fixed contamination exists.

Verified: R.L. Williams 12/02/04  
 Radiological POC Date

11/22/2004 :

Tradesman notes and closeout :

1. Is this job complete and ready to closeout ? YES/NO (circle one) [If no, what work remains to be done ???]
2. Was advance planning and coordination of work activities adequate for this type job ? YES/NO (circle one) [If not, please explain]
3. Should a post-job review be done on this job ? YES/NO (circle one)
4. Do you have any suggestions for improvements ?

Hours spent on this job : \_\_\_\_\_ Name : \_\_\_\_\_ Date : \_\_\_\_\_

Foreman (signature) : \_\_\_\_\_ Date : \_\_\_\_\_

C17/17