

300502-0605080003



**CH2MHILL**

CH2M HILL Mound, Inc.  
1075 Mound Road  
P.O. Box 750  
Miamisburg, OH 45343-0750

SMO-085/06  
February 2, 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; Structure OSC Reports various (see below), Final

Dear Mr. Pfister:

Attached are the following Final documents for your records:

- R Structure OSC Report, Final
- SW Structure OSC Report, Final
- ✓ • Building 58 Structure OSC Report, Final

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

Sincerely,

Michael D. Ebben  
Site Manager

JL/jg

Enclosures

cc: T. Fischer, USEPA, (1) w/attachments  
B. Nickel, OEPA, (1) w/attachments  
R. Vandegrift, ODH, (1) w/attachments  
J. Webb, 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  
S. Davis, CH2M Hill, (1) w/attachments  
C. Kline, CH2M Hill, (1) w/attachments  
F. Bullock, MMCIC (2) 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  
MOAT Coordinator, CH2M Hill, w/o attachs  
S. Barr, CH2M Hill, w/o attachments  
M. McDougal, CH2M Hill, w/o attachments  
file, CH2M Hill, w/o attachments

# **BUILDING 58 AND HIGH EFFICIENCY FILTRATION SYSTEM (HEFS) STACK STRUCTURES REMOVAL ACTION**

No PRSs are closed via this OSC Report

# **OSC REPORT**

February 2006

Final



Department of Energy  
Miamisburg Closure Project



**CH2MHILL**

Bldg 68 was demolished via E Bldg Action Memo (final, April 2000).

Bldg 62 is considered part of Bldg SW.

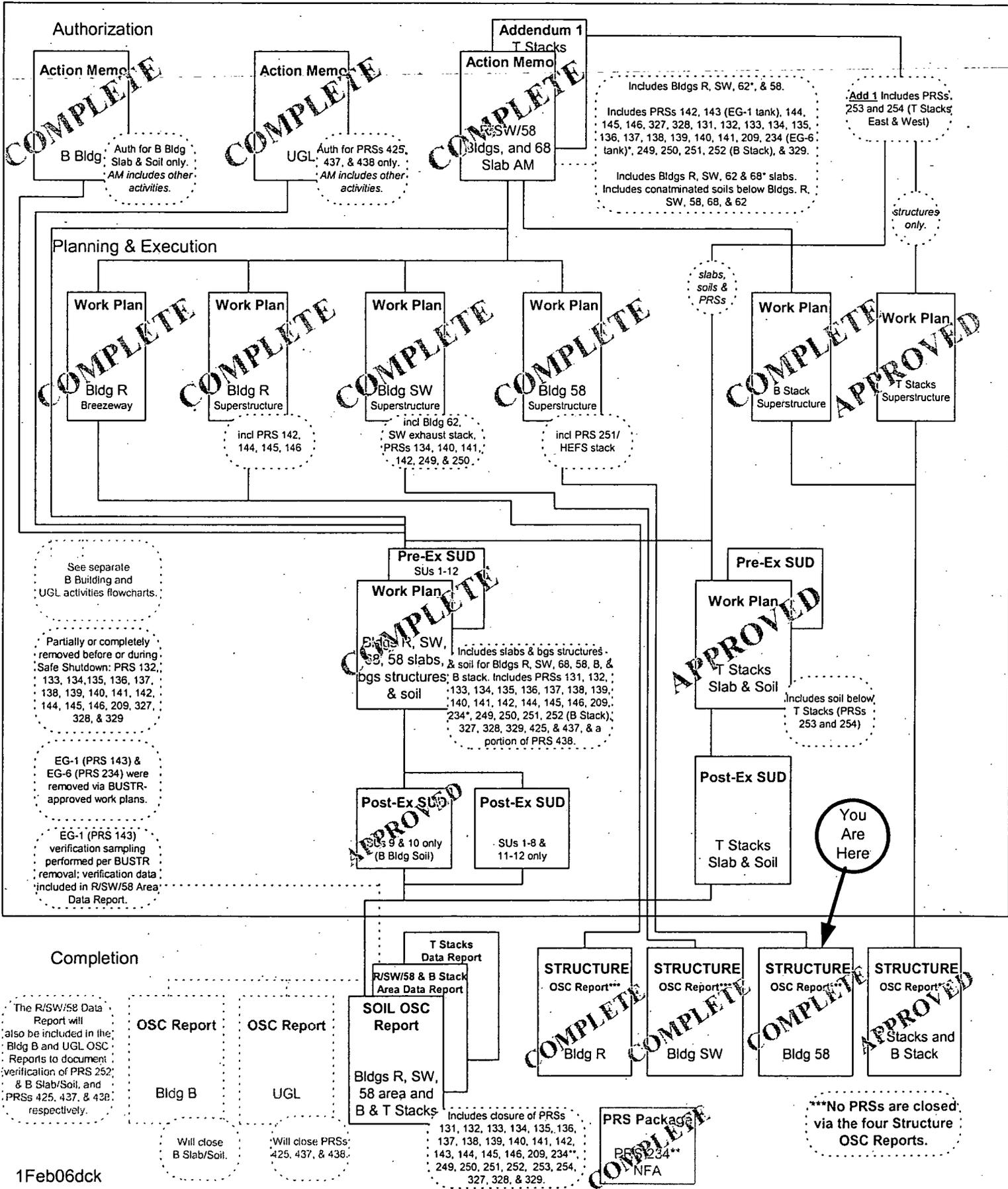
PRS 234 (EG-6 tank) is listed in R/SW AM, but was previously NFA on 8/23/96; the remaining soil in the vicinity will be verified via the SUD.

Some PRSs are listed in multiple work plans because the work was performed in phases.

# Bldgs R, SW, 58, 68, 62, B & T Stacks, and

Slabs for Bldgs R, SW, 68, 62, & B, & T Stacks, and

PRSs 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143 (EG-1 tank), 144, 145, 146, 209, 234\* (EG-6 tank), 249, 250, 251, 252, 253, 254, 327, 328, & 329.  
Includes work planning & verification of PRSs 425 & 437 and a portion of PRS 438.



# Table of Contents

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Section	Page
Recommendation .....	iii
1.0 SUMMARY OF EVENTS .....	1
1.1 Site Conditions and Background .....	1
1.2 Organization of the Removal Action .....	2
1.3 Objectives .....	3
1.4 Chronological Narrative of the Removal Action .....	4
2.0 EFFECTIVENESS OF THE REMOVAL ACTION .....	4
2.1 Actions Taken by Site Contractor .....	4
2.2 Actions Taken by Local, State, and Federal Agencies .....	6
2.3 Actions Taken by Subcontractors .....	7
3.0 DIFFICULTIES ENCOUNTERED .....	7
3.1 Items that Affect the Removal Action .....	7
3.2 Issues of Intergovernmental Coordination .....	7
4.0 RECOMMENDATIONS .....	7
4.1 Means to Prevent a Recurrence .....	7

## Figures

- Figure 1: Site Map  
Figure 2: Air Monitoring Station Map

## Tables

- Table 1: PRSs Associated with Building 58 and HEFS Stack  
Table 2: Organization of the Removal Action  
Table 3: Building 58 Materials and Disposition  
Table 4: HEFS Stack Materials and Disposition

# Table of Contents

(continued)

## Appendices

Appendix A	Figures
Appendix B	Tables
Appendix C	General Media Information
Appendix D	Photographic Documentation
Appendix E	Radiological Air Monitoring Results

## Acronyms

AHR	Annex, High-Risk
ALR	Annex, Low-Risk
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cy	cubic yard
DAC	derived air concentration
DOE	Department of Energy
Ft.	Foot or Feet
HEFS	High Efficiency Filtration System
LSA	Low Specific Activity
MCP	Miamisburg Closure Project
NCDPF	Nuclear Component Development and Pre-Production Facility
NTS	Nevada Test Site
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
PRP	Potentially Responsible Party
PRS	Potential Release Site
R	Research
RA	Removal Action
SW	Semi-Works
USEPA	United States Environmental Protection Agency
WD	Waste Disposal

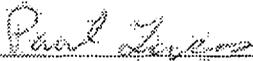
# Recommendation

The Building 58 and HEFS (High Efficiency Filtration System) Stack Structures Removal Actions (authorized via the Action Memorandum EE/CA Buildings R, SW, 58, and 68 Slab Removal Action, Revision 1 (Final), June 2003) were performed based on radiological contamination from low specific activity (LSA) radioactive activities that occurred within Buildings R and SW. The Action Memo included the demolition and disposal of Buildings R, SW, 58, B stack, Building SW exhaust stacks, Building 68 slab and 25 PRSs (PRSs 131 through 146, 209, 234, 249 through 252, and 327 through 329).

The structure portion of the Building 58 and the HEFS stack removal actions resulted in the disposal of approximately 1,901 cubic yards (cy) of radioactive waste that was sent to Envirocare and the Nevada Test Site (NTS). Approximately 3,507 liters of ethylene glycol were disposed of through Clean Harbors. This OSC Report closes out the removal of the Building 58 and HEFS stack above ground structures. The removal of the below ground structures of Building 58 and HEFS stack, as well as the remediation and verification of the soil below and around these structures will be closed out in a separate OSC Report.

## Recommendation:

After a thorough review of the Building 58 and HEFS Stack Structures On-Scene Coordinator Report, the Core Team agrees that the removal of the Building 58 and HEFS stack above ground structures is complete, and all previously existing environmental issues associated with these structures have been resolved. No PRSs are closed via this OSC Report.



9/13/05

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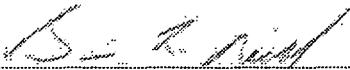
Paul Lucas, OSC  
U.S. Department of Energy  
Springdale, Ohio



9/13/05

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



9/13/05

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Brian K. Nickel, Project Manager  
OEPA  
Dayton, Ohio

## 1.0 SUMMARY OF EVENTS

This section describes the background and events leading up to the removal action, parties involved in supporting the removal action, chronological narrative of the removal action, and resources committed to complete the project.

### 1.1 Site Conditions and Background

The Action Memorandum, Buildings R, SW, 58, and 68 Slab Removal Action, Revision 1 (Final), June 2003, authorized the removal of Building 58 and SW stacks (including the HEFS Stack). This Structure On-Scene Coordinator (OSC) Report documents the completion of the removal of the Building 58 and HEFS stack above ground structures. The levels of radiological contamination present in Building 58 and the HEFS stack warranted a Removal Action (RA) under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) and subsequent demolition of the Building 58 and HEFS stack structures.

The removal of below grade structures and the remediation and verification of the soils in the vicinity of Building 58 and HEFS stack will be performed per the Buildings R, SW, 58, and 68 Slab Removal Action, Revision 1 (Final), June 2003 Action Memo, and closed via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

#### Building 58 Background

Building 58 constructed in about 1974 as the new High Efficiency Filtration System (HEFS) for SW and R Buildings, was an elevated one-story, steel-frame building with brick face exterior. Building 58 was located directly north of the Nuclear Component Development and Pre-Production Facility (NCDPF) (original SW Bldg). The main structure consisted of a Filter House atop a 7-foot (ft.) crawl space. A steel column framing system supported the Filter House and crawl space. The floor level of the Filter House was located approximately 34 feet above ground level. The building footprint (Filter House and substation) encompassed approximately 61,000 square-feet. Located directly beneath the insulated metal enclosed crawl space was an electrical substation (SW-2) and mezzanine area. The electrical substation was also an insulated metal enclosure. Ventilation equipment was sited on the mezzanine. The area below the crawl space and substation/mezzanine was open to ground level. The roof of the Filter House consisted of metal decking and asphalt built-up roofing. The walls of the Filter House were 8-inch thick masonry block with a 4-inch thick brick exterior. The building had central steam for heat, chilled water for cooling, and electrical service of 480 Volts. Electrical service of 12,470 Volts was provided to the SW-2 substation.

Building 58 contained the alpha and beta high efficiency filtration system banks and plenum exhaust for Building SW and portions of Building R. The building contained equipment contaminated with radioactive materials. The building had been used for the same purpose since construction.

Appendix D provides photographs of Building 58 before, during, and after structure demolition.

### **HEFS Stack Background**

Constructed in 1974, as a component of the Building 58 construction project, the HEFS stack was a 150 ft. tall steel stack, located at the northeast corner of Building 58. The stack had an outer diameter of approximately 9 ft. at the base that tapered to an outer diameter of approximately 6-½ ft. at the top. There were two openings in the stack: a 2 ft. x 3 ft. man way at the base of the stack and a 7 ft. diameter air inlet duct opening at the 40 ft.-to-47 ft. elevation. A 7 ft. diameter air inlet steel duct connected the HEFS stack to the Filter House. The exhaust duct, which connected the Filter House to the stack, contained an integral baffle at the point where the duct attached to the stack (baffle was interior to stack). A 4 ft. deep reinforced concrete base pad supported the stack. This concrete base will be removed with the soil portion of this Removal Action. Pre-demolition radiological surveys of Building 58 and the HEFS stack revealed low levels of <sup>238</sup>Pu and Tritium contamination.

Appendix D provides photographs of the HEFS Stack before, during, and after structure demolition.

### **Associated Potential Release Sites (PRs) and Previous Investigations.**

The Building 58 diesel fuel storage tank (Tank 222) is PRS 234. The HEFS stack is PRS 251. No PRSs are closed out via this Building 58 and HEFS Stack Structures Removal Action OSC Report. The Building 58 and HEFS stack PRSs will be closed following completion of the soil portion of this RA and will be documented in the Slab and Soil OSC Report.

**Removal Action.** The RA for the Building 58 and HEFS stack structures was authorized in the Action Memorandum EE/CA Buildings R, SW, 58, and 68 Slab Removal Action, Revision 1 (Final), June 2003.

Since DOE is the sole responsible party for cleanup of contamination in the Building 58 and HEFS stack structures, no Potentially Responsible Parties (PRPs) were sought to clean up the site. Monsanto Research Corporation, EG&G Mound Applied Technologies, and BWXT of Ohio, Inc. were the operating contractors at the site from 1948 to 30 September 1988, from 1 October 1988 until 30 September 1997, and from 1 October 1997 until 31 December 2002, respectively. CH2M Hill Mound, Inc. became the site contractor for the Miamisburg Closure Project (MCP) effective January 1, 2003.

## **1.2 Organization of the Removal Action**

Table 2 (Appendix B) lists the parties supporting the removal action and their responsibilities.

### 1.3 Objectives

Documentation Objective. The objective of this Building 58 and HEFS Stack Structures Removal Action OSC Report is to describe the removal action fieldwork, report the air monitoring results, and document successful completion of the structure portion of the RA. Demolition debris quantities and disposition locations are presented in Tables 3 and 4 in Appendix B.

CH2M Hill, Inc. has elected to cluster financial data for multiple buildings together. Building 58 and HEFS stack are included in the cluster that includes Buildings SW, R, and 58. As a result, costs for individual demolitions are not available. When the cluster is completed, the total cost for the cluster will be reported in the Buildings R, SW, 58, and 68 Slab and Soil OSC Report. Therefore, no cost breakdown of the RA is presented in Appendix B.

Remediation and verification of the soils under and around the Building 58 and HEFS stack structures and removal of their below grade structures are included in the scope of this RA but are not included in this Structure OSC Report. The removal of the of below grade structures and soil remediation and verification will be closed out via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

Building 58 and HEFS Stack Removal Action Objectives. The objectives of this removal action included:

- Project Planning
- Public Participation
- Phase I - Establish Work Zones
- Phase I – Buildings R, SW, and 58 (structures) Decontamination
- Phase II - Demolition Buildings (structures)

The following activities will be documented in the Buildings R, SW, 58, and 68 Slab and Soil OSC Report:

- Phase II – Remove associated Foundations and Soils
- Phase II - Verification
- Phase II - Site Restoration
- Phase II - Documentation of Completion

Verification of the structure removals is provided in the photographs included in Appendix D.

## 1.4 Chronological Narrative of the Removal Action

The following is a chronological narrative of events surrounding the structure portion of the Building 58 and HEFS stack RAs.

Timeframe	Activity
1974	Initial construction of the Building 58 and HEFS stack complete
June 2003	Buildings R, SW, 58, and 68 Slab Final Action Memorandum issued
May-June 2004	Building 58 filter bank decontamination and safe shutdown/operations cease (Phase I)
June 2004	HEFS stack operations cease
November 19-20, 2004	HEFS stack demolition complete (Phase II)
January 7-13, 2005	Building 58 demolition complete (Phase II)
May 2005	Structure OSC Report generated (Phase II)

The removal of the below grade structures and soil remediation and verification will be closed out via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

## 2.0 EFFECTIVENESS OF THE REMOVAL ACTION

The Building 58 and HEFS stack above ground structures have been demolished and the debris removed and properly dispositioned per the Work Package (BOSS-38864-00). Photographs taken before, during, and after demolition are included in Appendix D.

### 2.1 Actions Taken by Site Contractor

CH2M HILL Mound, Inc. personnel planned and performed removal action oversight, building decontamination, building dismantlement and demolition, and onsite transportation and staging of debris as outlined in the demolition work plan, Demolition of Building 58, Revision 0. The project met the removal action objectives for the Building 58 and HEFS stack above ground structures as outlined in the Buildings R, SW, 58, and 68 Slab Removal Action Memorandum, Revision 1 (Final), June 2003. CH2M Hill Mound, Inc. personnel prepared the Structure OSC Report, which shows that the structure portion of the Building 58 and HEFS Stack Removal Action objectives were achieved.

In accordance with the RA, the following actions were taken: project planning, public participation, established work zones, Buildings 58 and HEFS stack decontamination, demolition of the Building 58 and HEFS stack above ground structures, and proper disposal of the debris. This Structure OSC Report provides the documentation of completion for the removal of the Building 58 and HEFS stack above ground structures.

Below ground structures and soils below and around the Building 58 and HEFS stack structures will be closed out via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

### **HEFS Stack Demolition**

To mitigate the generation of airborne fugitive dust emissions and/or radioactive contamination during demolition activities, engineering controls were employed. These controls included (but were not limited to) using water misting to mitigate fugitive dust emissions.

In order to prevent excess debris, silt, or other materials from entering surface streams or the storm sewer system, resulting from water misting and/or rainwater, an earthen berm was erected around the perimeter of the demolition project area. All wastewater generated/collected during demolition activities was sampled to assure compliance with release criteria and released or packaged for disposal in accordance with Mound Waste Management Procedures.

Absorbent material was used inside the base section of the HEFS section of the stack to absorb excess liquid. In addition, water misting was used during demolition of the stack to mitigate any dust emissions and/or contamination from becoming airborne during demolition. The resulting debris from the stack was disposed of as low-level waste. Any contamination potentially spread by fugitive dust will be found during the soil verification portion of this Removal Action and documented in the Slab and Soil OSC Report.

Prior to demolition, Radiological Controls performed an evaluation of the radiological history of the stack and performed radiological surveys of accessible areas within the stack. All radioactively contaminated debris was size reduced and packaged to meet the Envirocare or NTS waste acceptance criteria (see Table 4 of Appendix B).

HEFS stack above ground structures were removed; photograph documentation is contained in Appendix D.

### **Building 58 Demolition**

To mitigate the generation of airborne fugitive dust emissions during demolition activities, engineering controls were employed. These controls included (but were not limited to) fixing contamination using liquid fixatives and/or foam, acid etching fixed contamination locations to remove the contamination, removal of filter bank filters, and using water misting to prevent fugitive dust emissions. All wastewater generated during demolition activities was sampled to assure compliance with release criteria and released or packaged for disposal in accordance with Mound Waste Management Procedures.

Liquid and foam fixatives were used inside some contaminated pipes, ductwork, and on the filter bank framework to prevent the contamination from becoming airborne during

demolition. The resulting debris was disposed of as low-level waste. Acid etching was done as part of the isotopic analysis of certain contaminated areas of concrete. The resulting samples were analyzed by gamma and/or alpha spectroscopy, as appropriate. The sample was then disposed of through the appropriate waste stream. Water misting was performed to knock down fugitive dust. Any contamination potentially spread by fugitive dust will be found during the soil sampling effort in the verification sampling activities for the RA.

Prior to demolition, Radiological Controls performed an evaluation of the radiological history of the building and performed radiological surveys to determine levels and types of contamination. All radioactively contaminated debris was size reduced and packaged to meet the Envirocare or NTS waste acceptance criteria (see Table 3 of Appendix B).

Building 58 above ground structures were removed; photograph documentation is contained in Appendix D.

### **Air Monitoring for Worker Safety**

During demolition activities for the Building 58 and HEFS stack, the Mound Radiological Control organization performed air monitoring to confirm a safe work environment, in accordance with 10 CFR 835. Air monitoring for the Building 58 and HEFS stack demolitions was done as part of the air monitoring for the Buildings R, SW, 58, and 68 Removal Action. Air monitoring results from Building 58 and HEFS stack demolitions are provided in Appendix E. On each day that demolition activities were performed, at least two air monitors were used at any given time (one upwind of the radiological work area and the other downwind of the radiological work area). Reference the Air Monitoring Station Map, Figure 2, in Appendix A for locations of the air monitoring stations.

The average of the air monitoring results at the demolition boundary was below 0.02 derived air concentration (DAC), which means that worker exposure was less than the Mound Administrative Control level of 100 mrem/year, based on 10 CFR 835. The air monitoring results from the site perimeter monitors were all below the 0.3 DAC Mound posting criteria. No MCP worker or environmental exposure limits were exceeded, therefore the demolition activities did not pose any additional risk to human health or the environment. (Reference air monitoring results in Appendix E).

## **2.2 Actions Taken by Local, State, and Federal Agencies**

The Department of Energy (DOE)/MCP, the United States Environmental Protection Agency (USEPA), and Ohio EPA (OEPA) had oversight responsibility for the removal action. The DOE/MCP was the lead agency for the RA and provided the funding and oversight for the RA. The USEPA and OEPA had oversight responsibility for the RA and review of the Action Memorandum and OSC Reports to ensure that the objectives are/were met.

## **2.3 Actions Taken by Subcontractors**

Subcontractors involved in the project included the following:

- Envirocon, Inc., Mandeville, Louisiana, provided structural consulting and design services for Building 58 and the HEFS stack demolition work plan, and also provided engineering oversight during demolition of the HEFS stack.

## **3.0 DIFFICULTIES ENCOUNTERED**

### **3.1 Items that Affect the Removal Action**

No difficulties were encountered that affected the removal action.

### **3.2 Issues of Intergovernmental Coordination**

All DOE/USEPA/OEPA interactions were good. The agencies were updated informally on a regular basis, and formally at monthly Core Team meetings. The Mound 2000 Process worked well.

## **4.0 RECOMMENDATIONS**

### **4.1 Means to Prevent a Recurrence**

The debris from the Building 58 and HEFS stack structures were removed and properly dispositioned per the Core Team-approved work plans; therefore, the spread of contamination was prevented. Removal of the above ground structures of Building 58 and HEFS stack concludes the scope of the structure portion of this RA.

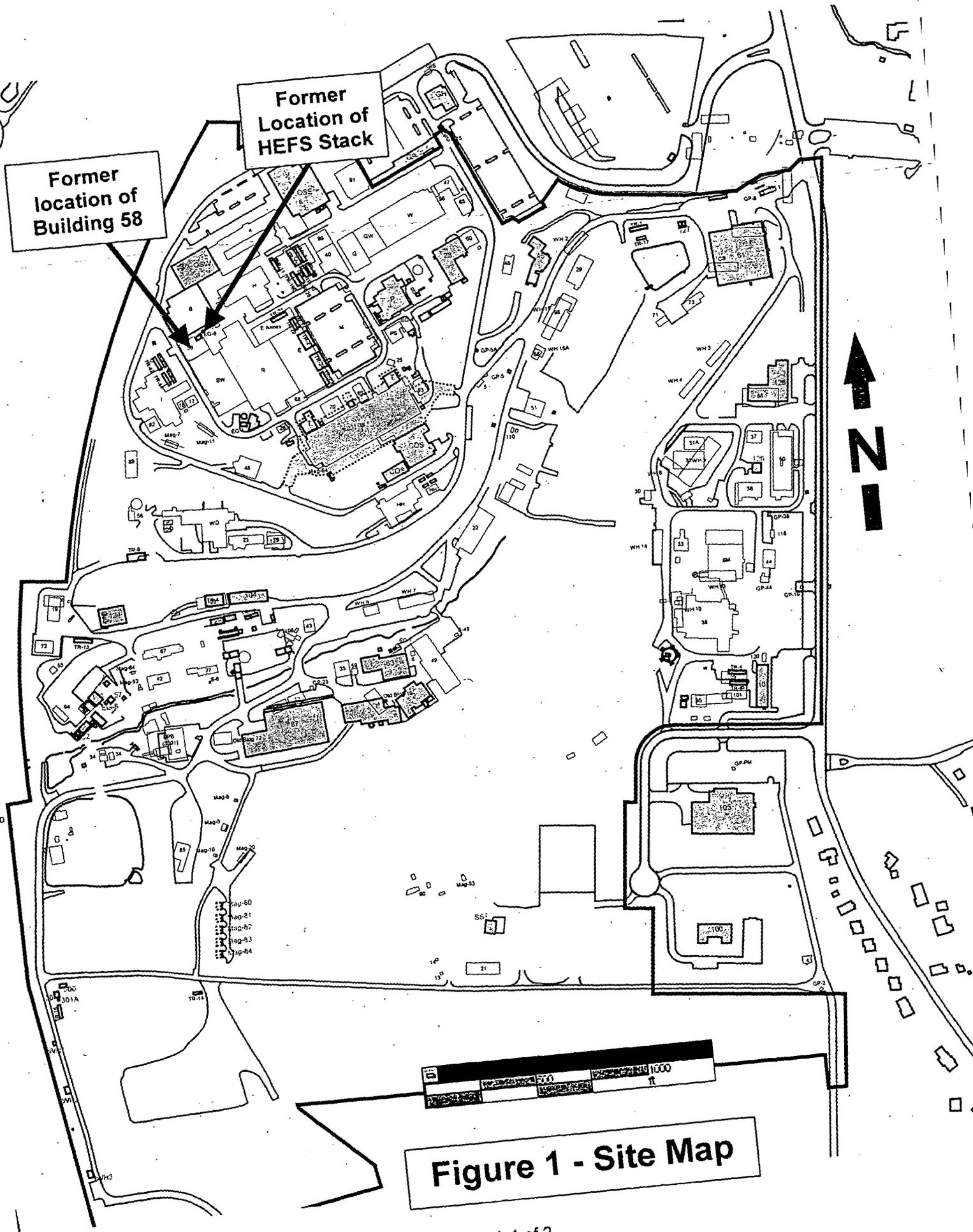
The below grade structures and soil below the Building 58 and HEFS stack structures and surrounding areas will be remediated and verified in accordance with the Buildings R, SW, 58, and 68 Slab Removal Action, Revision 1 (Final), June 2003 Action Memorandum, and will be closed out via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report. After the removal action and the CERCLA process for the parcel are complete, the area will be transferred from federal to private ownership. All State and Federal disposal rules will apply.

# APPENDIX A

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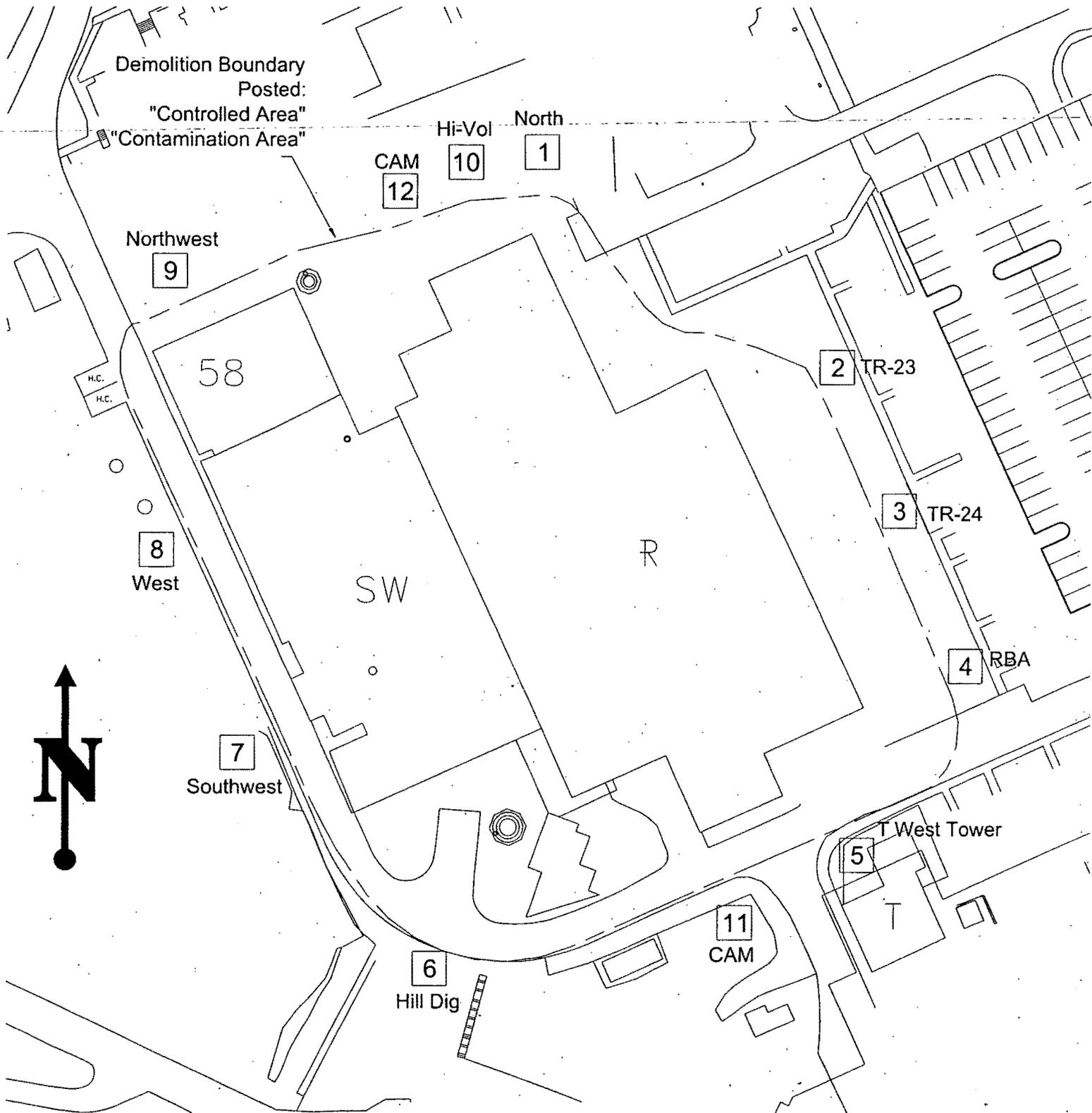
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## FIGURES



**Figure 1 - Site Map**

# R/SW/58/T West Stack Demo Air Monitor Locations



**Figure 2 – Air Monitoring Station Map**

# APPENDIX B

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## TABLES

**Table 1: PRSs Associated with Building 58 and HEFS Stack**

PRS	Description	Comments
234	Building 58 Diesel Fuel Storage Tank (Tank 222)	Tank removed December 1989. Binned No Further Assessment (NFA) 8/20/96.
251	SW Building HEFS Stack	

No PRSs are closed out via this Building 58 and HEFS Stack Structures Removal Action OSC Report. The Building 58 and HEFS stack PRSs will be closed following completion of the soil portion of this RA and will be documented in the Slab and Soil OSC Report.

**Table 2: Organization of the Removal Action**

Agency or Party Involved	Contact	Description of Participation
US EPA (SR-6J) 77 W. Jackson Chicago, IL 60604 312-886-7058	Timothy Fischer  USEPA Remedial Project Manager	Federal agency responsible for MCP oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel  OEPA Project Manager	State agency responsible for MCP oversight.
DOE/ MCP 175 Tri-County Parkway Springdale, OH 45246 513-246-0071	Paul Lucas  DOE/MCP On- Scene Coordinator	DOE is responsible for project oversight and success.
CH2M Hill Mound, Inc. P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-608-8007	Chris Watson	Performed demolition, provided the DOE/ MCP Project Manager with technical assistance, administrative support, sampling, decontamination, site safety, and report preparation.

**Table 3: Building 58 Materials and Disposition**

<b>Building 58 Material</b>	<b>Quantity</b>	<b>Disposal Method</b>	<b>Destination</b>
Ethylene Glycol (Prep/Decontamination)	3,507 liters	Treatment	Clean Harbors, Cincinnati, Ohio
Radioactive Waste (Prep/Decontamination)	561 cubic yards	Truck	Nevada Test Site, Las Vegas, Nevada
Radioactive Waste (Demolition)	1,294 cubic yards	Rail	Envirocare, Salt Lake City, Utah
Radioactive Waste (Demolition)	36 cubic yards	Truck	Nevada Test Site, Las Vegas, Nevada

**Table 4: HEFS Stack Materials and Disposition**

<b>HEFS Stack Material</b>	<b>Quantity</b>	<b>Disposal Method</b>	<b>Destination</b>
Radioactive Waste (Demolition)	10 cubic yards	Truck	Nevada Test Site, Las Vegas, Nevada

## **APPENDIX C**

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### **GENERAL MEDIA INFORMATION**

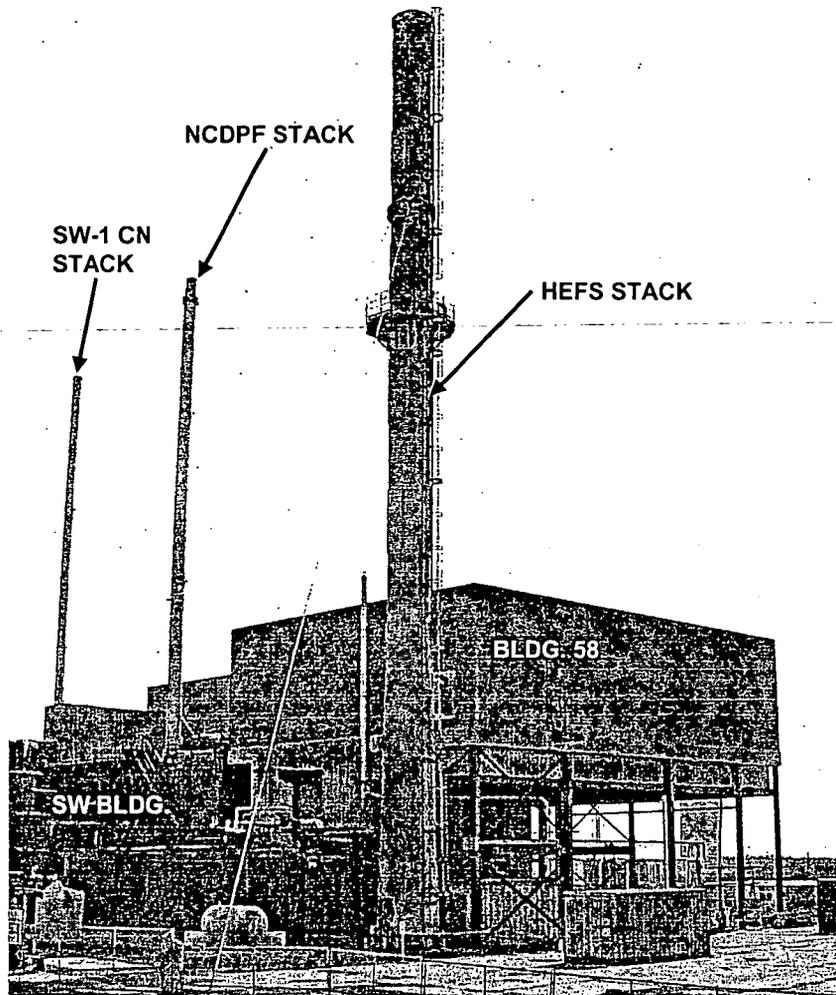
**No Media Information Exists**

# **APPENDIX D**

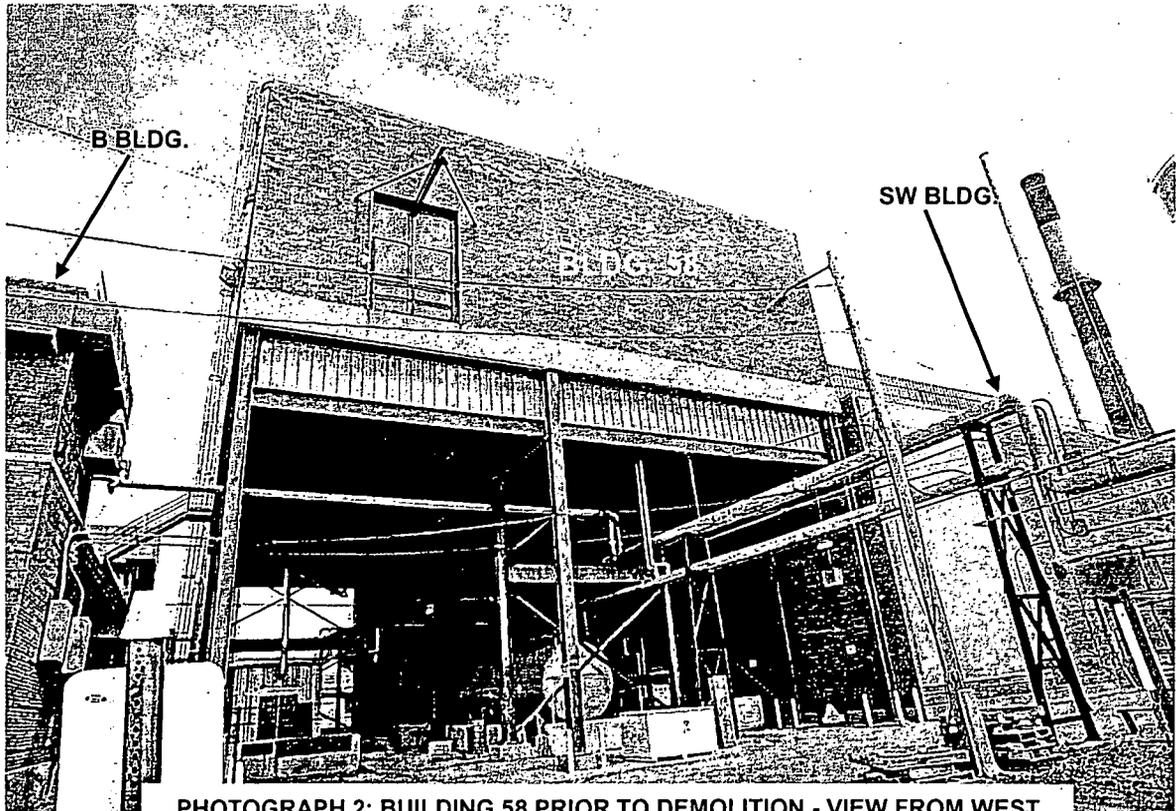
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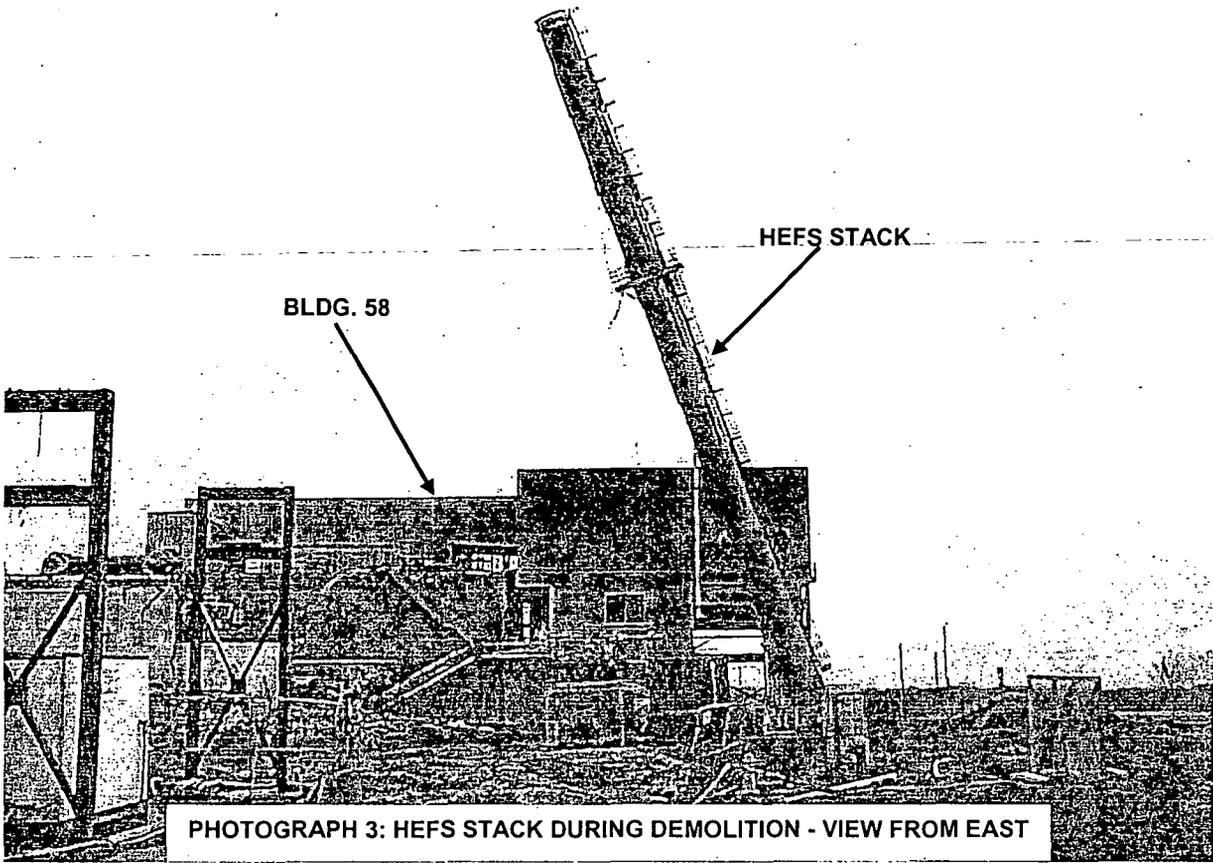
## **PHOTOGRAPH DOCUMENTATION**



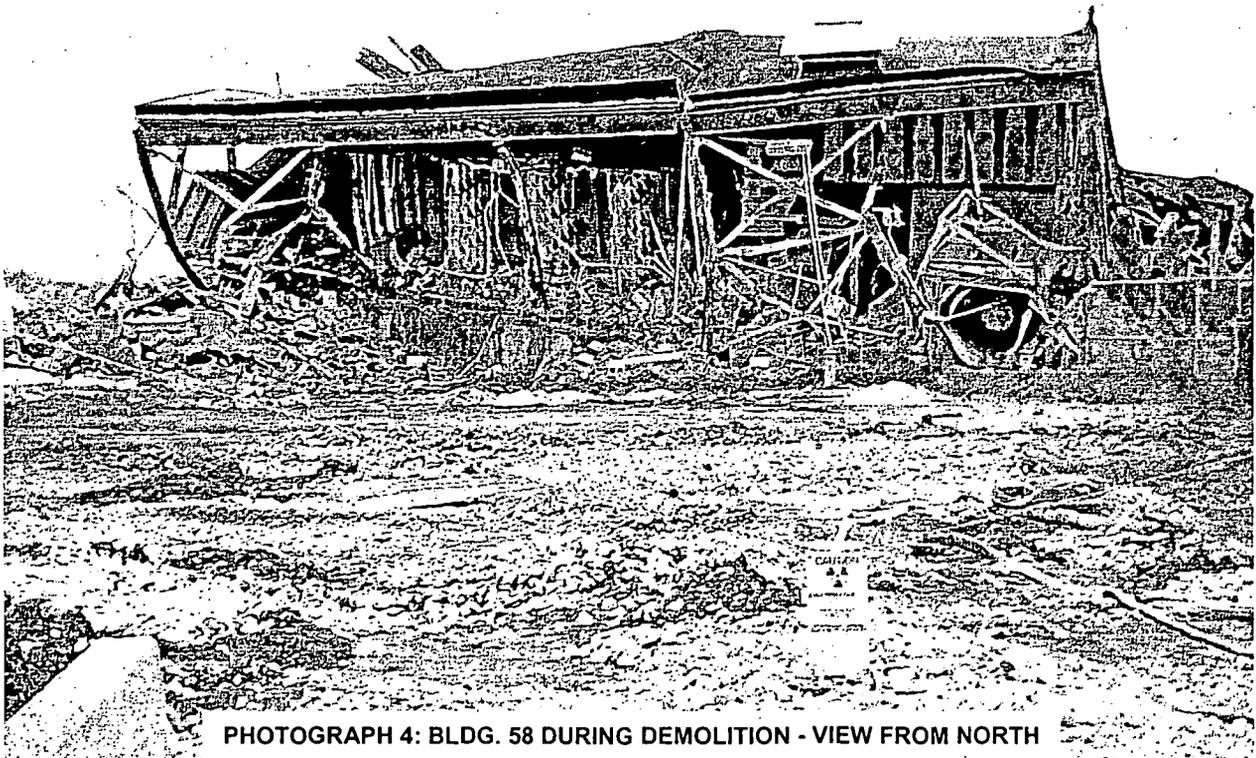
PHOTOGRAPH 1: BUILDING 58 AND HEFS STACK PRIOR TO DEMOLITION  
VIEW FROM NORTHEAST



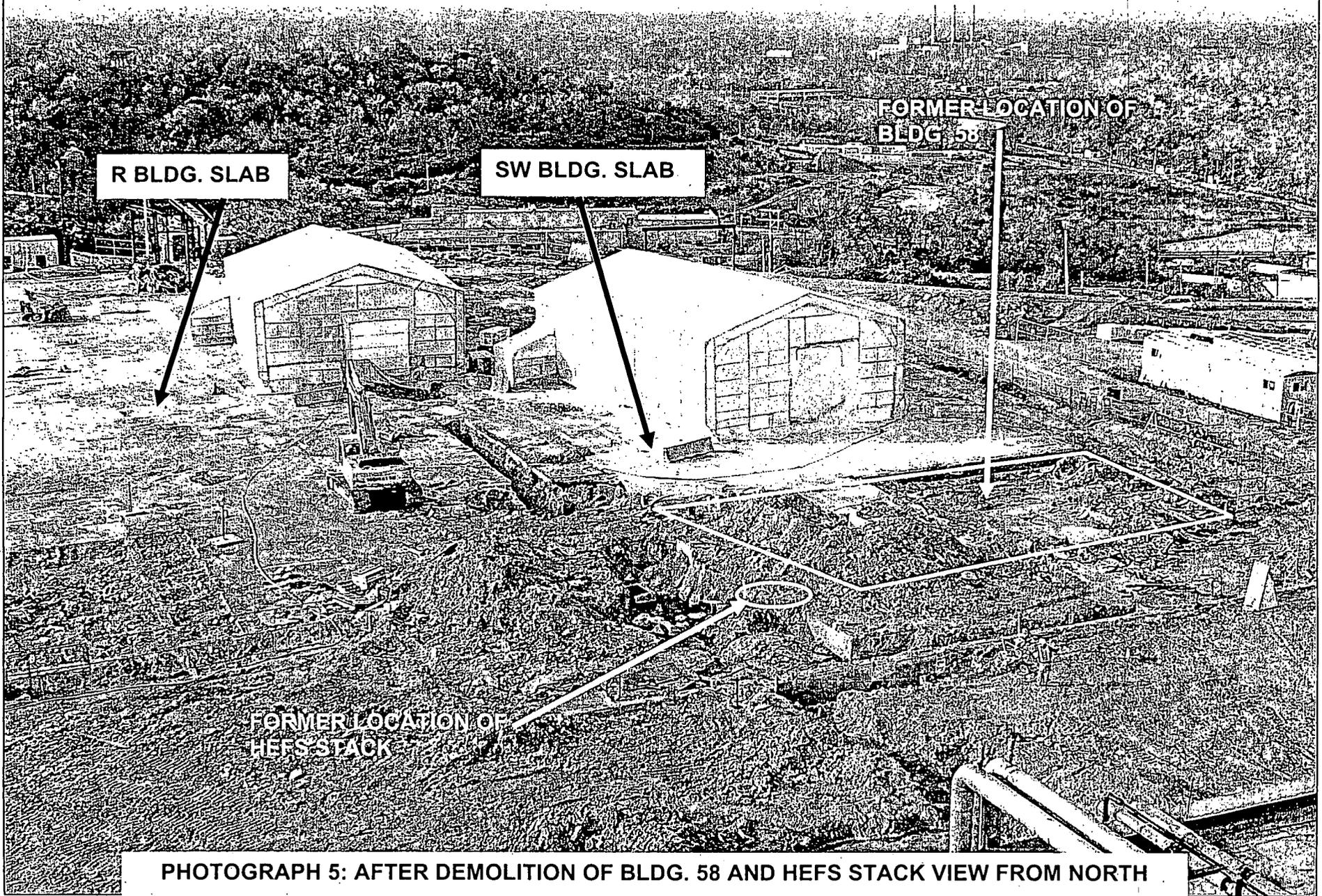
PHOTOGRAPH 2: BUILDING 58 PRIOR TO DEMOLITION - VIEW FROM WEST



PHOTOGRAPH 3: HEFS STACK DURING DEMOLITION - VIEW FROM EAST



PHOTOGRAPH 4: BLDG. 58 DURING DEMOLITION - VIEW FROM NORTH



PHOTOGRAPH 5: AFTER DEMOLITION OF BLDG. 58 AND HEFS STACK VIEW FROM NORTH

# **APPENDIX E**

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## **RADIOLOGICAL AIR MONITORING RESULTS**

RADIOLOGICAL AIR MONITORING DATA FOR THE DEMOLITION OF BUILDING 58  
(1/07/2005 – 1/13/2005)

RwpNo	SampleID	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area	TotalDac
1633	29978	1/7/2005	2005	R/SW	0014	RBA	0.000
1633	29966	1/7/2005	2005	R/SW	0014	NORTH	0.000
1633	29969	1/7/2005	2005	R/SW	0014	TR 23	0.000
1633	29975	1/7/2005	2005	R/SW	0014	TR 24	0.000
1633	29982	1/7/2005	2005	R/SW	0014	WEST	0.000
1633	29980	1/7/2005	2005	R/SW	0014	HILL DIG	0.000
1633	29981	1/7/2005	2005	R/SW	0014	S WEST	0.000
1633	29983	1/7/2005	2005	R/SW	0014	N WEST	0.000
1633	29984	1/7/2005	2005	R/SW	0014	NORTH	0.024
1633	29979	1/7/2005	2005	R/SW	0014	T WEST	0.000
1633	29953	1/10/2005	2005	R/SW	0022	#2	0.000
1633	29954	1/10/2005	2005	R/SW	0022	#3	0.000
1633	29955	1/10/2005	2005	R/SW	0022	#4	0.000
1633	29958	1/10/2005	2005	R/SW	0022	#6	0.000
1633	29951	1/10/2005	2005	R/SW	0022	#1	0.000
1633	29956	1/10/2005	2005	R/SW	0022	#5	0.000
1633	29959	1/10/2005	2005	R/SW	0022	#7	0.000
1633	29962	1/10/2005	2005	R/SW	0022	#8	0.000
1633	29963	1/10/2005	2005	R/SW	0022	#9	0.000
1633	29964	1/10/2005	2005	R/SW	0022	#10	0.031
1633	29974	1/10/2005	2005	R/SW	0022	#18	0.000
1633	30018	1/11/2005	2005	R/SW	0025	TR-23	0.000
1633	30019	1/11/2005	2005	R/SW	0025	TR-24	0.000
1633	30020	1/11/2005	2005	R/SW	0025	RBA	0.000
1633	30021	1/11/2005	2005	R/SW	0025	T WEST	0.000
1633	30022	1/11/2005	2005	R/SW	0025	HILL DIG	0.051
1633	30023	1/11/2005	2005	R/SW	0025	S WEST	0.000
1633	30017	1/11/2005	2005	R/SW	0025	NORTH	0.000
1633	30024	1/11/2005	2005	R/SW	0025	WEST	0.024
1633	30025	1/11/2005	2005	R/SW	0025	N WEST	0.000
1633	30026	1/11/2005	2005	R/SW	0025	NORTH	0.016
1633	30035	1/12/2005	2005	R/SW	0033	TR 24	0.000
1633	30036	1/12/2005	2005	R/SW	0033	T WEST	0.000
1633	30034	1/12/2005	2005	R/SW	0033	TR 23	0.000
1633	30033	1/12/2005	2005	R/SW	0033	NORTH	0.000
1633	30037	1/12/2005	2005	R/SW	0033	HILL DIG	0.040
1633	30038	1/12/2005	2005	R/SW	0033	SOUTH WEST	0.000
1633	30039	1/12/2005	2005	R/SW	0033	WEST	0.000
1633	30040	1/12/2005	2005	R/SW	0033	NORTH WEST	0.000
1633	30041	1/12/2005	2005	R/SW	0033	NORTH	0.043
1633	30051	1/13/2005	2005	R/SW	0031	T WEST	0.000
1633	30049	1/13/2005	2005	R/SW	0031	NORTH	0.000
1633	30050	1/13/2005	2005	R/SW	0031	TR 23	0.000
1633	30052	1/13/2005	2005	R/SW	0031	N WEST	0.000
1633	30053	1/13/2005	2005	R/SW	0031	NORTH	0.029

Max	0.051
Average	0.006
Standard Deviation	0.013
Confidence Interval	0.004
n	45

RADIOLOGICAL AIR MONITORING DATA FOR THE DEMOLITION OF THE HEFS STACK  
(11/19/2004 – 11/20/2004)

RwpNo	SampleID	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area	TotalDac
1605	28906	11/19/2004	2004	R/SW-Demo	0363	#1 north	0.000
1605	28907	11/19/2004	2004	R/SW-Demo	0363	#2 tr-23	0.000
1605	28909	11/19/2004	2004	R/SW-Demo	0363	#4 rba	0.000
1605	28912	11/19/2004	2004	R/SW-Demo	0363	#10 north high vol	0.014
1605	28908	11/19/2004	2004	R/SW-Demo	0363	#3 tr-24	0.000
1605	28910	11/19/2004	2004	R/SW-Demo	0363	#5 t-west tower	0.000
1605	28911	11/19/2004	2004	R/SW-Demo	0363	#9 n.w.	0.000
1605	28913	11/19/2004	2004	R/SW-Demo	0363	#11 cam north	0.000
1596	28941	11/20/2004	2004	R/SW-Demo	0364	#5 t-west tower	0.000
1596	28937	11/20/2004	2004	R/SW-Demo	0364	#1 north	0.000
<b>1596</b>	<b>28946</b>	<b>11/20/2004</b>	<b>2004</b>	<b>R/SW-Demo</b>	<b>0364</b>	<b>#10 north high vol</b>	<b>0.024</b>
1596	28938	11/20/2004	2004	R/SW-Demo	0364	#2 r-23	0.000
1596	28939	11/20/2004	2004	R/SW-Demo	0364	#3 tr-24	0.000
1596	28940	11/20/2004	2004	R/SW-Demo	0364	#4 rba	0.000
1596	28942	11/20/2004	2004	R/SW-Demo	0364	#6 hill dig	0.000
1596	28943	11/20/2004	2004	R/SW-Demo	0364	#7 s.w.	0.000
1596	28944	11/20/2004	2004	R/SW-Demo	0364	#8 west	0.000
1596	28945	11/20/2004	2004	R/SW-Demo	0364	#9 n.w.	0.000
1596	28947	11/20/2004	2004	R/SW-Demo	0364	#11 cam	0.000

Max	0.024
Average	0.002
Standard Deviation	0.006
Confidence Interval	0.003
n	19