

300502-0605080001

CH2M HILL Mound, Inc.

1075 Mound Road

P.O. Box 750

Miamisburg, OH 45343-0750



CH2MHILL

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

R BUILDING STRUCTURE 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.

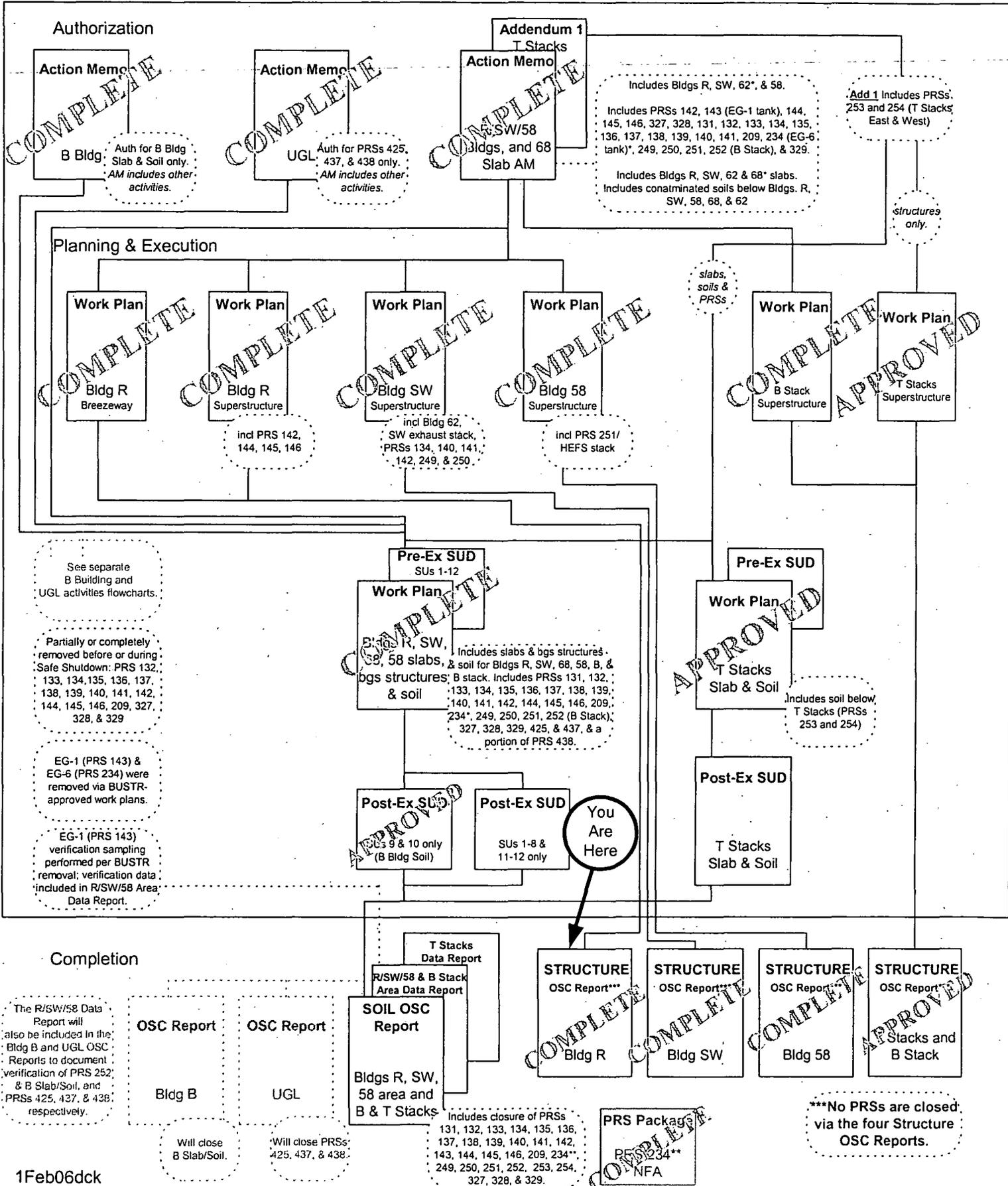


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Acronyms

B	Biological
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cy	cubic yard
DAC	derived air concentration
DOE	Department of Energy
H	Change House and Laundry
LSA	Low Specific Activity
MCP	Miamisburg Closure Project
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
USEPA	United States Environmental Protection Agency

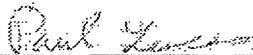
Recommendation

The R Building Removal Action (authorized via the Action Memorandum, Buildings R, SW, 58, and 68 Slab Removal Action, June 2003, Revision 1 (Final)) was performed based on radiological contamination from radioactive operations that occurred within the building. The Action Memorandum included the demolition and disposal of Buildings R, SW, 58, 68 Slab, and structural PRSs (PRSs 131 through 146, 209, 234, 249 through 252, and 327 through 329.)

This OSC Report documents the demolition of the R Building structure only. This portion of the removal action resulted in the disposal of approximately 46,809 cubic yards (cy) of radioactive waste (including 319 cy of asbestos debris) that was sent to Envirocare and the Nevada Test Site (NTS). Approximately 42,100 liters of ethylene glycol and 0.65 cy of PCB ballasts were disposed of through Clean Harbors, Inc., and 807 cy of metal (meeting surface release criteria) were disposed of through Metal Shredders, Inc. This OSC Report closes out the removal of the R Building above ground structure. The removal of the below ground structure of R Building, as well as the remediation and verification of the soil below and around R Building will be closed out in a separate OSC Report.

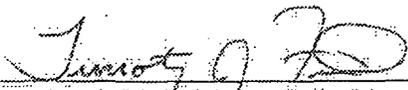
Recommendation:

After a thorough review of the R Building Structure On-Scene Coordinator Report, the Core Team agrees that the Removal Action of the R Building above ground structure is complete, and all previously existing environmental issues associated with this structure have been resolved. No PRSs are closed via this OSC Report.



9/13/05

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



9/13/05

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



9/13/05

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, June 2003, Revision 1 (Final) authorized the removal of R Building. This Structure On-Scene Coordinator (OSC) Report documents only the completion of the Removal Action for the R Building above ground structure. The levels of radiological contamination present in R Building warranted a Removal Action (RA) under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) and subsequent demolition of R Building and associated structures.

The removal and verification of contaminated slabs and soil in the vicinity of R Building will be performed per the above stated Action Memorandum, and closed via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

R Building Background

Building R (Research) was a single-story structure, with a penthouse, constructed of concrete block with brick facing. Building R, one of the original buildings constructed in 1948, was located as shown in Figure 1, Appendix A. The total area of Building R was 55,006 square feet. The R Building penthouse contained a high efficiency particulate air (HEPA) filter bank and associated ductwork connecting it to the T-West stack. In addition, several areas of the building were connected to the High Efficiency Filtration System (HEFS) in Building 58 and to the HEFS stack. The building was divided into two areas: the cold side and the hot side.

The hot side was associated with radiological areas, in particular, areas used for tritium recovery, rooms in which plutonium work was conducted, and rooms used for various analytical support activities. The cold side of the building contained research and development laboratories, analytical laboratories, a respirator fitting facility, offices, and the library.

In addition, a portion of the breezeway that connected B (Biological), H (Change House and Laundry), and R Buildings remained and its demolition is documented in this OSC Report.

Appendix D provides photographs of R Building and the B, H, R Breezeway remnant before, during, and after demolition.

Associated Potential Release Sites (PRs) and Previous Investigations.

Eight (8) PRs associated with R Building were included in the R Building RA. However, none are closed out via this R Building Structure OSC Report. The R Building PRs are listed in Table 1, Appendix B.

Removal Action. The RA for R Building was authorized in the Action Memorandum, Buildings R, SW, 58, and 68 Slab Removal Action, June 2003, Revision 1 (Final).

Since DOE is the sole responsible party for cleanup of contamination in R Building, 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 R Building Structure 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 Table 3, Appendix B.

CH2M Hill, Inc. has elected to cluster financial data for multiple buildings together. R Building is part of a cluster that also includes Buildings SW, 58, EG-1, EG-6, B slab, and T stacks. When this 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. Thus, no cost breakdown of the RA is presented in Appendix B.

The removal of the slab and below grade structures and the removal and verification of contaminated soil in the vicinity of R Building will be performed per the above stated Action Memorandum, and closed via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

Removal Action Objectives. The objectives of the removal action, as outlined in the Action Memorandum, Buildings R, SW, 58, and 68 Slab Removal Action, June 2003, Revision 1 (Final) and documented in this R Building Structure OSC Report include:

- Project Planning
- Public Participation
- Phase I - Establish Work Zones

- Phase I - Buildings R, SW, and 58, Decontamination
- Phase II - Demolish Buildings

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
- Site Restoration
- Documentation of Completion

Verification of the removal of the structure 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 R Building structure RA.

Timeframe	Activity
1948	R Building initial construction complete
1959	R & E Building addition
1961	R Building Storage addition and building modifications
1963-64	R Building addition
1964	Area Engineer's Office addition
1965	R & E Laboratory addition
1965	Technical Information Center (Library) addition
1966	R Building Annex addition
2003	R Building Operations ceased
June 2003	Buildings R, SW, 58, and 68 Slab Final Action Memorandum issued
June 2003 – August 2004	Phase I - R Building Decontamination
April 2004	B, H, R Breezeway remnant demolished
August – Sept. 2004	Phase II - R Building Structure demolished
May 2005	R Building Structure OSC Report generated

2.0 EFFECTIVENESS OF THE REMOVAL ACTION

The R Building structure has been demolished, and the debris removed and properly disposed of per the Work Package (BOSS-38562). 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. The project met the removal action objectives related to the R Building structure, as outlined in the Action Memorandum, Buildings R, SW, 58, and 68 Slab Removal Action, June 2003, Revision 1 (Final) and the demolition work plan, Demolition of R Building, Revision 0.

In accordance with the RA, the following actions were taken: Project Planning, Public Participation, Phase I: Establish Work Zones and Building R Decontamination, Phase II: Building R Structure Demolition, including proper disposal of the debris. This Structure OSC Report provides the documentation of completion for the removal of the R Building above ground structure. The removal of the R Building slab and underground structures and remediation and verification of contaminated soil in the vicinity of R Building will be performed per the above stated Action Memorandum, and closed via the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

Building Dismantlement and Demolition

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

Liquid and foam fixatives were used inside some contaminated pipes and ductwork 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 samples were then disposed of through the appropriate waste stream. Water misting was performed with the goal of no visible fugitive dust. Any contamination potentially spread by fugitive dust will be found and remediated, if indicated, during the soil sampling effort in the verification sampling activities for the RA.

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 such water 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.

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.

In addition, a remnant of the breezeway that connected B, H, and R Buildings was demolished.

The R Building above ground structure and the B, H, R Breezeway remnant were removed; photograph documentation is provided in Appendix D.

Air Monitoring for Worker Safety

During demolition activities, the Mound Radiological Control organization performed air monitoring to confirm a safe work environment, in accordance with 10 CFR 835. Air monitoring results from the building demolition are provided in Appendix E. The locations of the air monitor stations are shown on Figure 2 in Appendix A. On each day that demolition activities were performed, at least two air monitors were used at any given time (one upwind of the work area and the other downwind of the work area). The monitors were repositioned in response to changes in wind direction.

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 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, thus the demolition activities did not pose any additional risk to human health or the environment. (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 have 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 Subcontractor

Subcontractors involved in the R structure demolition project included the following:

- American Services (Cleveland, Ohio) performed asbestos abatement,
- Clean Harbors (Cincinnati, Ohio) treated and disposed of the light ballasts and ethylene glycol waste,
- Envirocare (Salt Lake City, Utah) received radioactive waste via rail and truck,

- Metal Shredders (West Carrollton, Ohio) transported and dispositioned metal waste (meeting surface release criteria), and
- Nevada Test Site (NTS) (Las Vegas, Nevada) received radioactive waste via truck.

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 building debris was removed and properly disposed of per the Core Team-approved work plan; therefore, the spread of contamination was prevented. The R Building slab and underground structures will be removed and the soil in the R Building footprint and surrounding area will be remediated and verified in accordance with the above Action Memorandum, and completion will be documented in the Buildings R, SW, 58, and 68 Slab and Soil OSC Report.

The below grade structures and soil below the R Building 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

FIGURES

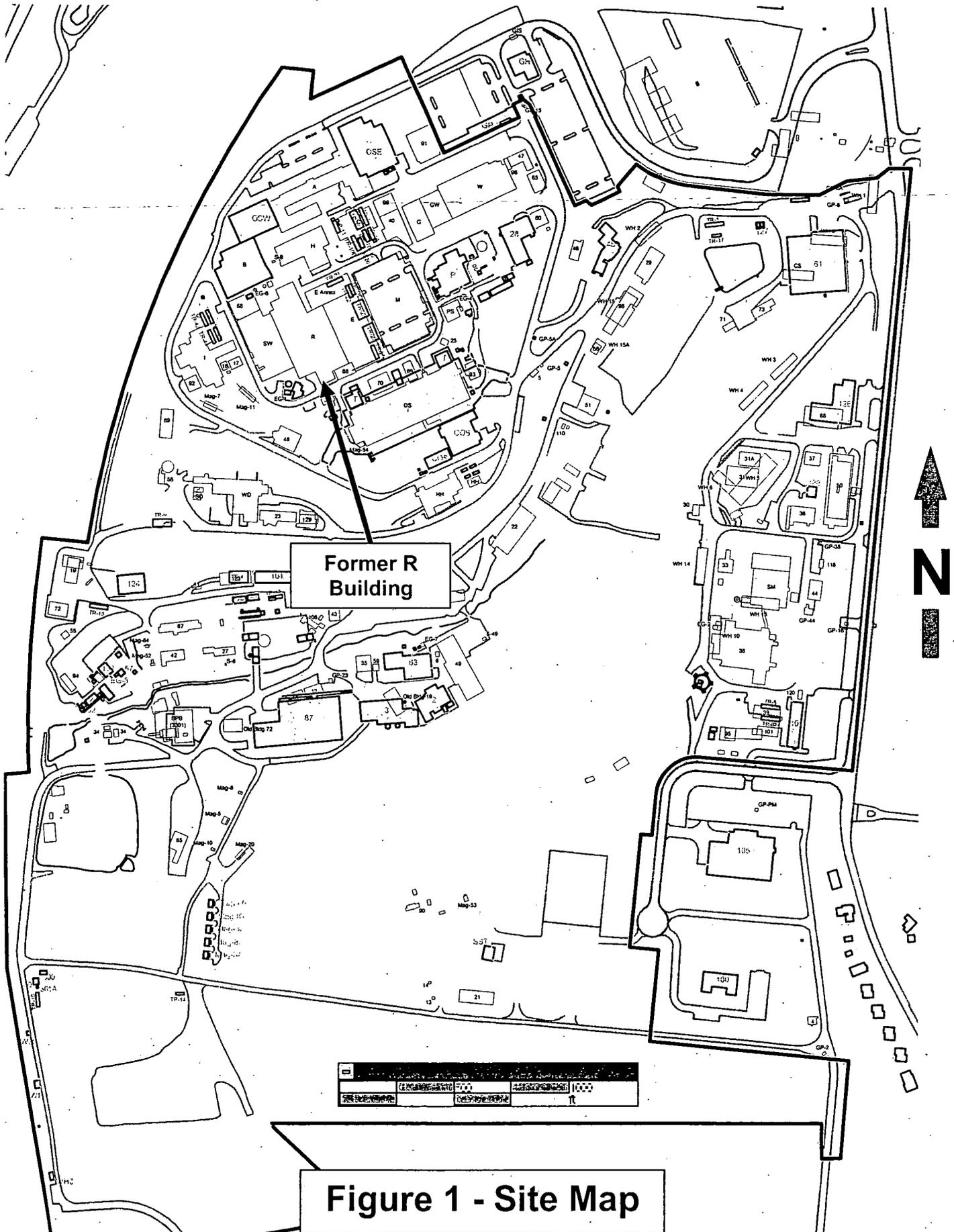


Figure 1 - Site Map

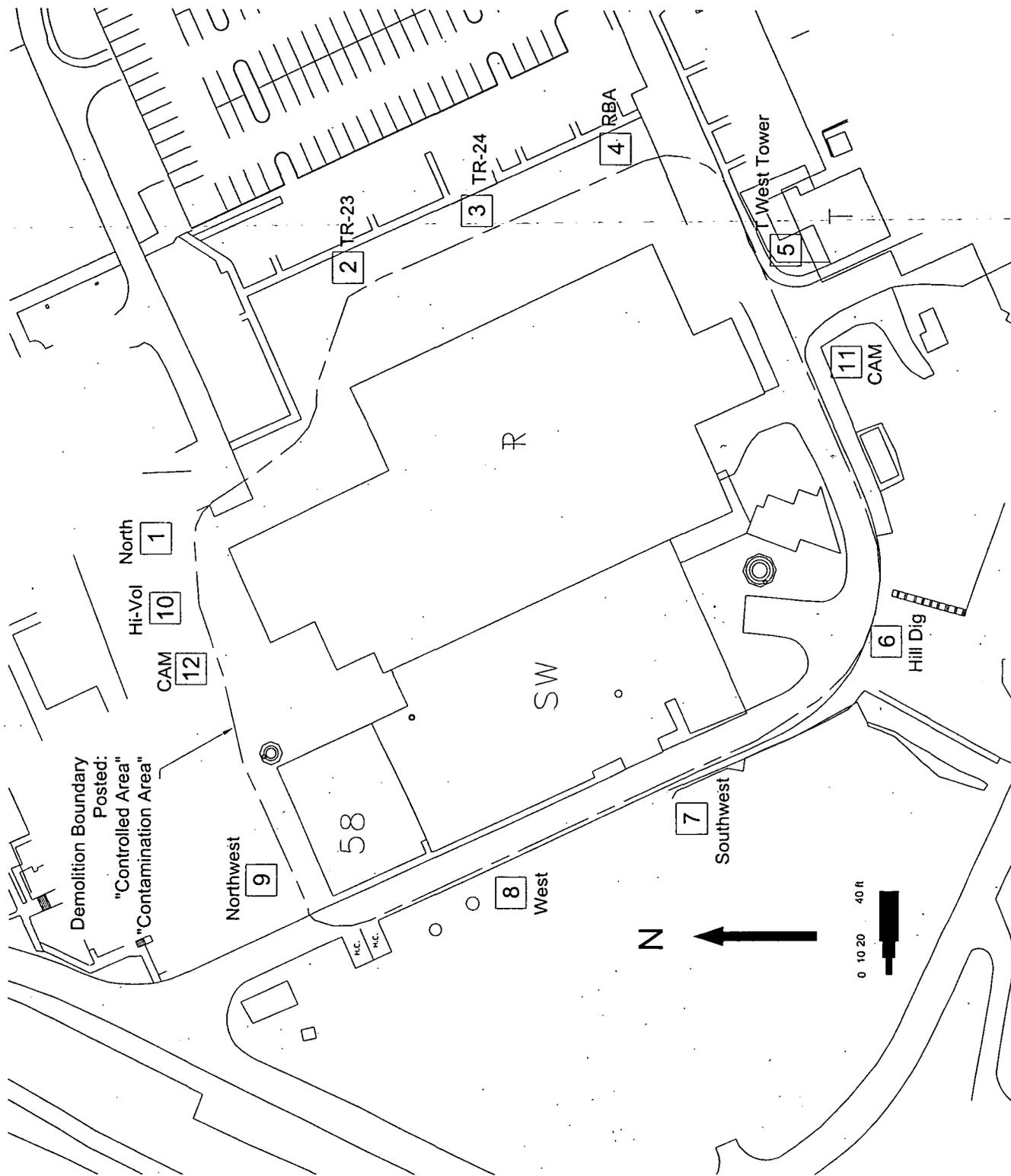


Figure 2 – R, SW, 58, T Stacks Demo Air Monitor Locations

APPENDIX B

TABLES

Table 1 - PRSs Associated with R Building

No PRSs are closed out via this structure OSC Report. All R Building PRSs will be addressed via the R, SW, 58, and 68 Slab and Soils OSC Report.

PRS	Description	Comments
142	Building SW/R Solid Radioactive Waste Compactor	
143	Building SW/R/T Stack Diesel Fuel Storage Tank (Tank 117)	
144	R Building Sanitary Waste Collection Tank (Tank 120)	
145	Room R-128 Alpha Waste Water Tank (Tank 19)	
146	R Building Rooms 121, 144, 146, and 148 entombed drains	Sealed in concrete in building floor drains.
327	R-111 Calorimetry Bath (Tank 255)	
328	R-111 Calorimetry Bath (Tank 256)	
252	B Building Stack	

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 J. 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 K. 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: Materials and Disposition

Building R Material	Quantity	Disposal Method	Destination
Phase I: Decontamination			
Asbestos Debris (disposed as radioactive waste)	319 cubic yards*	Truck	Nevada Test Site - Nevada
Light ballasts	0.65 cubic yards	Treatment	Clean Harbors - Cincinnati, OH
Ethylene Glycol	42,100 liters	Treatment	Clean Harbors - Cincinnati, OH
Radioactive Waste	35,418 cubic yards*	Truck	Nevada Test Site - Nevada
Phase II: Demolition			
Metal (meeting surface release criteria)	807 cubic yards	Truck	Metal Shredders - West Carrollton, OH
Radioactive Waste	10,770 cubic yards*	Rail/Truck	Envirocare - Utah
Radioactive Waste	302 cubic yards*	Truck	Nevada Test Site - Nevada

* Total radioactive waste was approximately 46,809 cy.

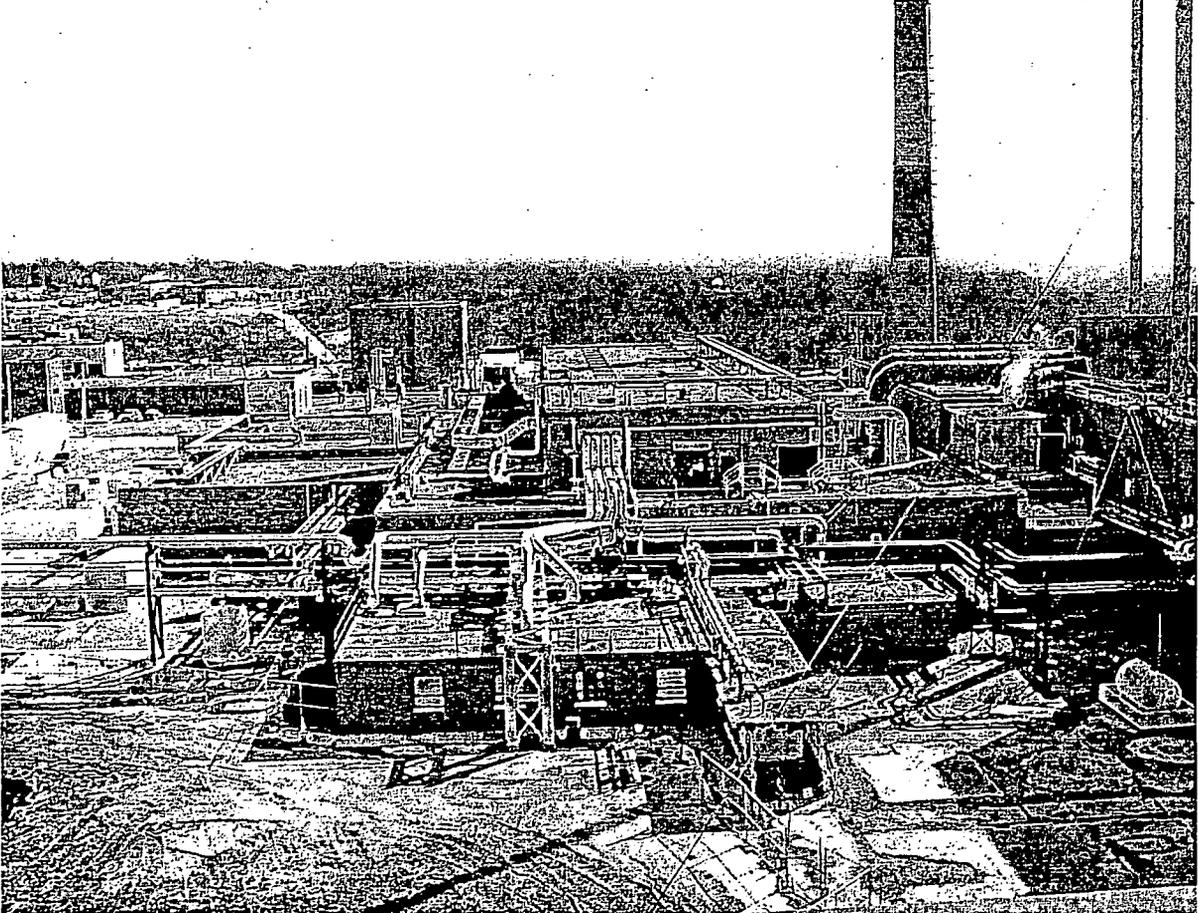
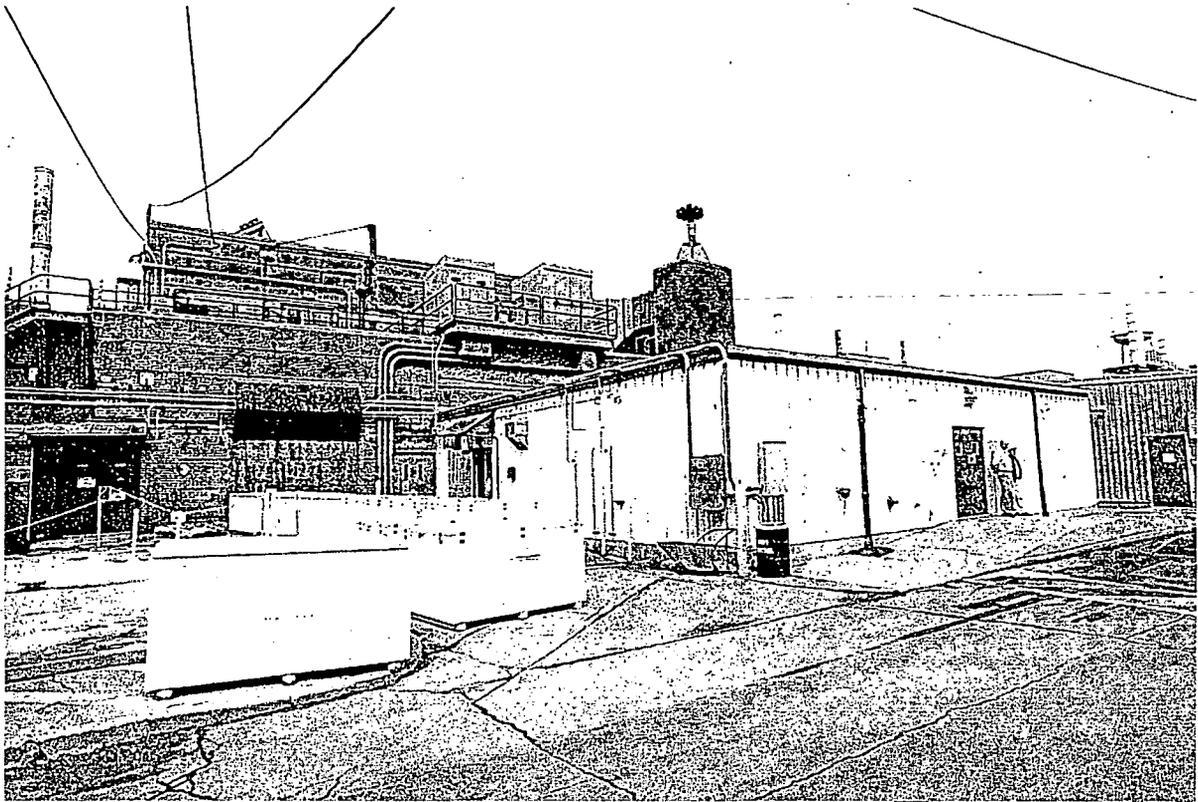
APPENDIX C

GENERAL MEDIA INFORMATION

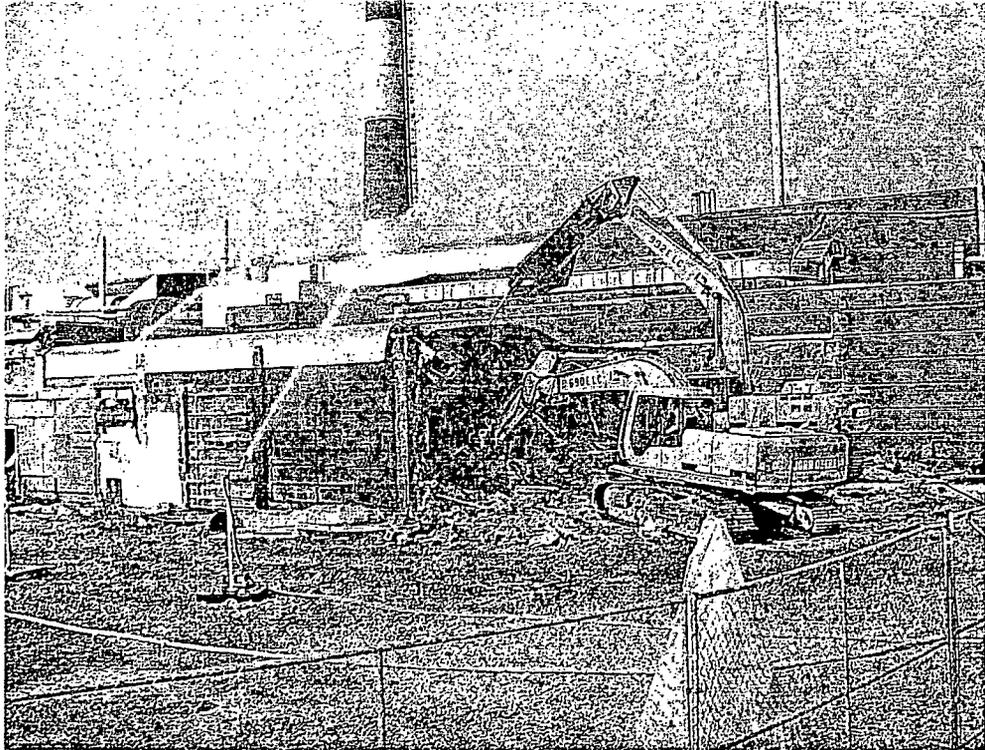
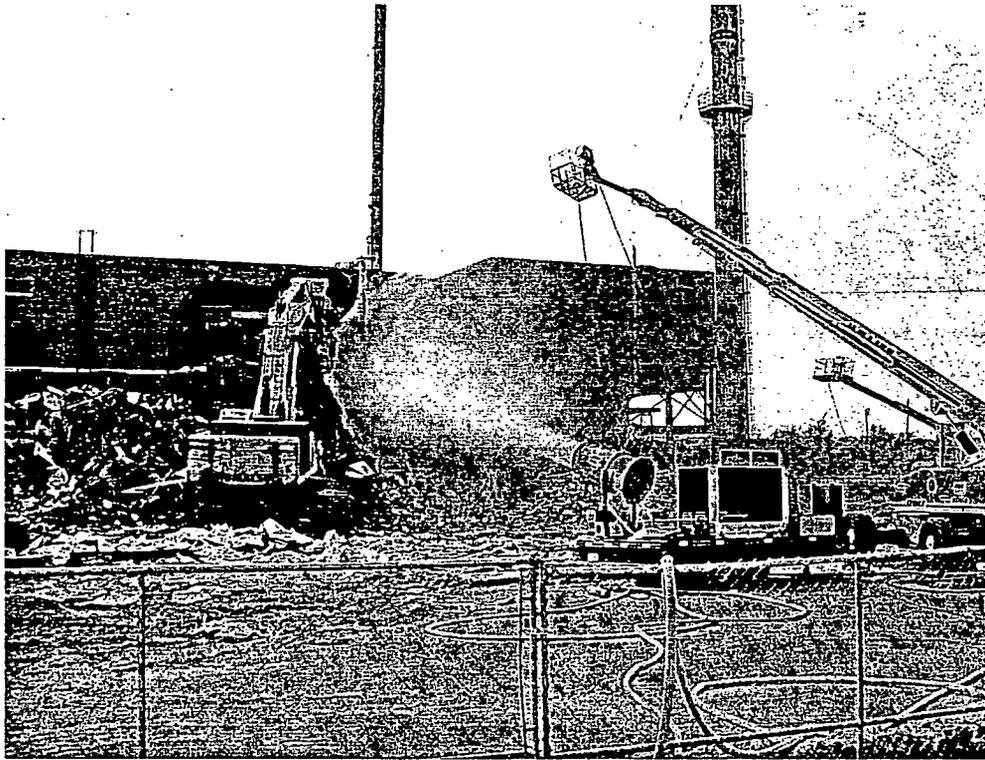
No Media Information Exists

APPENDIX D

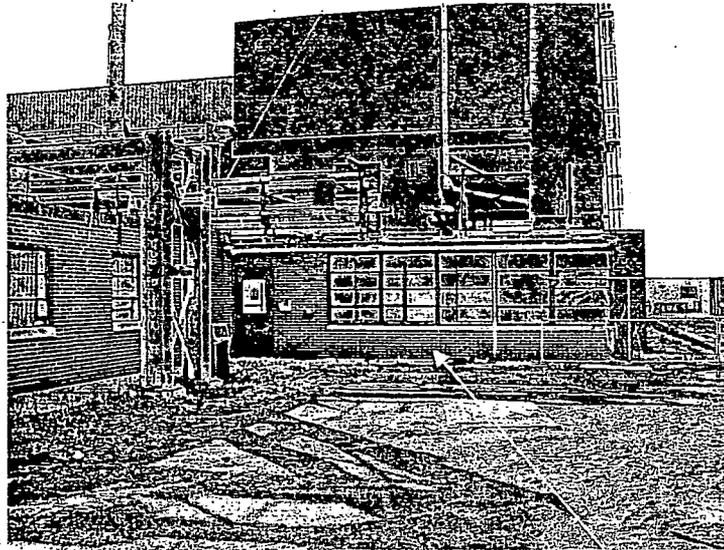
PHOTOGRAPH DOCUMENTATION



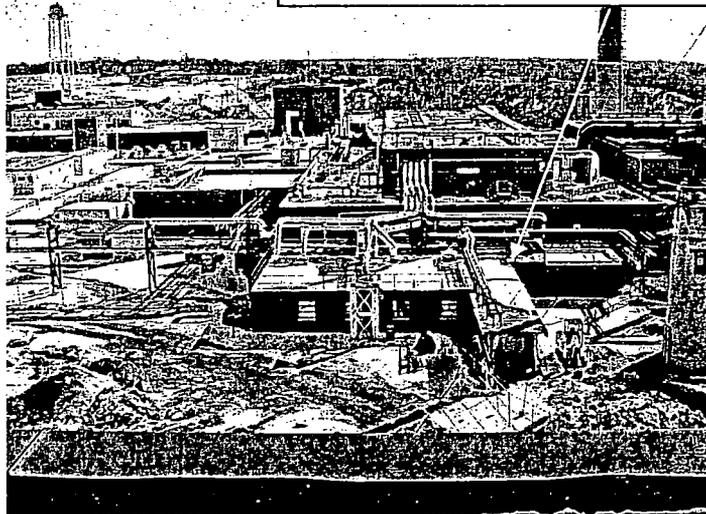
R Building Before Demo
Top – Looking Northeast
Bottom – Looking South



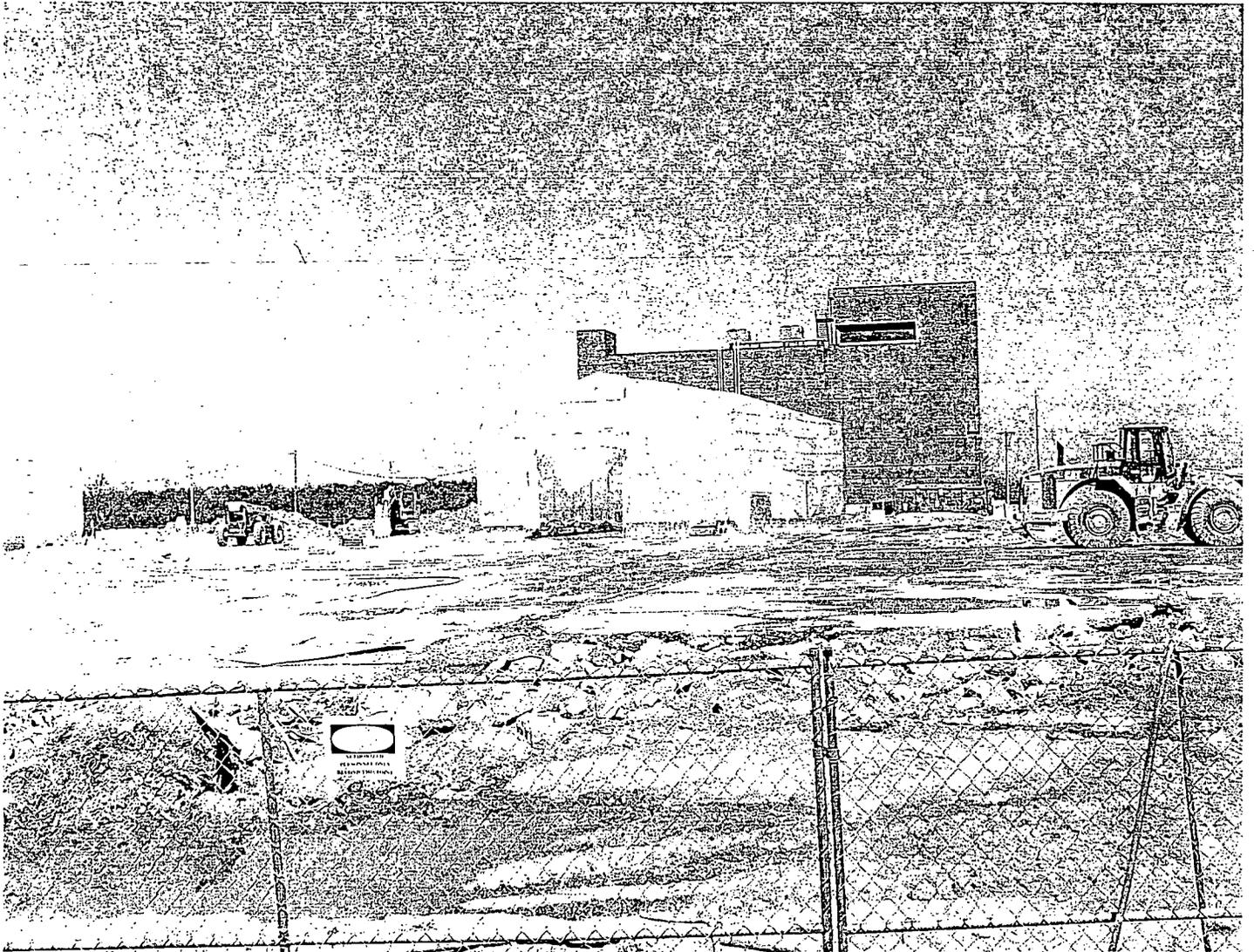
R Building During Demo
Top – Looking Northwest
Bottom – Looking Southwest



B, H, R Breezeway Remnant



B, H, R Breezeway Remnant
Top – Prior to Demolition Looking West
Middle – Prior to Demolition Looking South
Bottom - After Demolition Looking South



R Building Slab After Structure Demo
Looking North
(Slab and Underground Line Removal Underway)

APPENDIX E

RADIOLOGICAL AIR MONITORING RESULTS

RADIOLOGICAL AIR MONITORING RESULTS

RwpNo	SampleId	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area*	TotalDac
1596	27473	8/25/2004	04	R/SW DEMO	0103	1	0.015
1596	27474	8/25/2004	04	R/SW DEMO	0103	2 TR-23	0.100
1596	27440	8/25/2004	04	R/SW - Demo	0103	#6	0.002
1596	27475	8/25/2004	04	R/SW DEMO	0103	3 TR-24	0.164
1596	27476	8/25/2004	04	R/SW DEMO	0103	4 RBA EAST	0.000
1596	27477	8/25/2004	04	R/SW DEMO	0103	5 T WEST TOWER	0.011
1596	27478	8/26/2004	04	R/SW DEMO	0106	1 North	0.026
1596	27479	8/26/2004	04	R/SW DEMO	0106	2 TR-23	0.000
1596	27480	8/26/2004	04	R/SW DEMO	0106	3 TR-24	0.000
1596	27481	8/26/2004	04	R/SW DEMO	0106	4 RBA SE	0.000
1596	27482	8/26/2004	04	R/SW DEMO	0106	T-WEST TOWER	0.007
1596	27491	8/30/2004	04	R/SW DEMO	0108	#1	0.000
1596	27501	8/30/2004	04	R/SW DEMO	0108	2 nf tr 23	0.006
1596	27502	8/30/2004	04	R/SW DEMO	0108	3 tr 24 east	0.000
1596	27503	8/30/2004	04	R/SW DEMO	0108	4 RBA se	0.000
1596	27504	8/30/2004	04	R/SW DEMO	0108	5 t west tower	0.000
1596	27498	8/31/2004	04	R/SW DEMO	0113	3 tr-24	0.000
1596	27493	8/31/2004	04	R/SW DEMO	0113	#2 TR23	0.001
1596	27500	8/31/2004	04	R/SW DEMO	0113	5 west tower	0.000
1596	27499	8/31/2004	04	R/SW DEMO	0113	4 rba	0.000
1596	27497	8/31/2004	04	R/SW DEMO	0113	1 North	0.006
1596	27534	9/1/2004	04	R/SW DEMO	0116	1 NORTH	0.000
1596	27535	9/1/2004	04	R/SW DEMO	0116	2 TR23	0.000
1596	27536	9/1/2004	04	R/SW DEMO	0116	3 TR24	0.009
1596	27537	9/1/2004	04	R/SW DEMO	0116	5 T WEST TOWER	0.000
1596	27547	9/1/2004	04	R/SW DEMO	0116	4 RBA	0.000
1596	27538	9/1/2004	04	R/SW DEMO	0116	6 HILL DIS	0.020
1596	27539	9/1/2004	04	R/SW DEMO	0116	9 NORTH WEST	0.000
1596	27540	9/2/2004	04	R.SW DEMO	0120	1 NORTH	0.016
1596	27542	9/2/2004	04	R.SW DEMO	0120	3 TR24	0.000
1596	27543	9/2/2004	04	R.SW DEMO	0120	4 RBA	0.000
1596	27544	9/2/2004	04	R.SW DEMO	0120	5 T WEST TOWER	0.011
1596	27545	9/2/2004	04	R.SW DEMO	0120	6 HILL DIG	0.000
1596	27546	9/2/2004	04	R.SW DEMO	0120	9 NORTH WEST	0.000
1596	27541	9/2/2004	04	R.SW DEMO	0120	2 TR23	0.000
1596	27560	9/7/2004	04	R/SW DEMO	0126	HILL DIG	0.000
1596	27556	9/7/2004	04	R/SW DEMO	0126	TR 23	0.000
1596	27557	9/7/2004	04	R/SW DEMO	0126	TR 24	0.000
1596	27561	9/7/2004	04	R/SW DEMO	0126	NORTHWEST	0.000
1596	27559	9/7/2004	04	R/SW DEMO	0126	T-WEST TOWER	0.000
1596	27558	9/7/2004	04	R/SW DEMO	0126	SE R BD.	0.000
1596	27555	9/7/2004	04	R/SW DEMO	0126	#1 NORTH	0.000
1596	27598	9/10/2004	04	R/SW DEMO	0138	1 NORTH	0.008
1596	27600	9/10/2004	04	R/SW DEMO	0138	2 TR-23	0.000
1596	27602	9/10/2004	04	R/SW DEMO	0138	4 RBA	0.013

*Figure 2 (Appendix A) shows the location of the air monitor stations.

RwpNo	SampleId	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area*	TotalDac
1596	27601	9/10/2004	04	R/SW DEMO	0138	3 TR-24	0.000
1596	27603	9/10/2004	04	R/SW DEMO	0138	5 T-WEST TOWER	0.000
1596	27604	9/10/2004	04	R/SW DEMO	0138	6 HILL DIG	0.000
1596	27605	9/10/2004	04	R/SW DEMO	0138	9 NORTHWEST	0.000
1596	27599	9/10/2004	04	R/SW DEMO	0138	1 NORTH	0.000
1596	27616	9/11/2004	04	R/SW DEMO	0141	NORTH 1	0.009
1596	27619	9/11/2004	04	R/SW DEMO	0141	RBA 4	0.000
1596	27620	9/11/2004	04	R/SW DEMO	0141	T WEST TOWER 5	0.011
1596	27621	9/11/2004	04	R/SW DEMO	0141	HILL DIG 6	0.000
1596	27622	9/11/2004	04	R/SW DEMO	0141	NW 9	0.000
1596	27618	9/11/2004	04	R/SW DEMO	0141	TR-24 -3	0.000
1596	27617	9/11/2004	04	R/SW DEMO	0141	TR-23 -2	0.000
1596	27627	9/13/2004	04	R/SW DEMO	0142	RBA 4	0.010
1596	27626	9/13/2004	04	R/SW DEMO	0142	TR-24 3	0.004
1596	27624	9/13/2004	04	R/SW DEMO	0142	NORTH 1	0.024
1596	27625	9/13/2004	04	R/SW DEMO	0142	TR-23 2	0.003
1596	27629	9/13/2004	04	R/SW DEMO	0142	NW 9	0.001
1596	27628	9/13/2004	04	R/SW DEMO	0142	T WEST TOWER 5	0.008
1596	27632	9/13/2004	04	R/SW DEMO	0142	HILL DIG 6	0.141
1596	27630	9/13/2004	04	R/SW DEMO	0142	NORTH 10	0.002
1596	27641	9/14/2004	04	R/SW DEMO	0144	NORTH 10	0.000
1596	27634	9/14/2004	04	R/SW DEMO	0144	NORTH 1	0.010
1596	27636	9/14/2004	04	R/SW DEMO	0144	TR-24 3	0.000
1596	27638	9/14/2004	04	R/SW DEMO	0144	T WEST TOWER 5	0.005
1596	27640	9/14/2004	04	R/SW DEMO	0144	NORTH WEST 9	0.000
1596	27635	9/14/2004	04	R/SW DEMO	0144	TR-23 2	0.000
1596	27637	9/14/2004	04	R/SW DEMO	0144	RBA 4	0.000
1596	27639	9/14/2004	04	R/SW DEMO	0144	SW HILL DIG 6	0.005
1596	27653	9/15/2004	04	R/SW DEMO	0151	S.W. HILL D16 #6	0.004
1596	27655	9/15/2004	04	R/SW DEMO	0151	R-DEMO #10 NORTH	0.000
1596	27652	9/15/2004	04	R/SW DEMO	0151	T-WEST TOWER #5	0.000
1596	27648	9/15/2004	04	R/SW DEMO	0151	#1 NORTH	0.019
1596	27649	9/15/2004	04	R/SW DEMO	0151	N-E TR 23 #2	0.000
1596	27650	9/15/2004	04	R/SW DEMO	0151	TR 24 EAST #3	0.000
1596	27651	9/15/2004	04	R/SW DEMO	0151	RBA #4	0.000
1596	27654	9/15/2004	04	R/SW DEMO	0151	N.W. #9	0.019
1596	27708	9/16/2004	04	R/SW DEMO	0148	SW HILL DIG	0.000
1596	27707	9/16/2004	04	R/SW DEMO	0148	T WEST TOWER 5	0.010
1596	27705	9/16/2004	04	R/SW DEMO	0148	TR 24 3	0.000
1596	27706	9/16/2004	04	R/SW DEMO	0148	RBA 4	0.000
1596	27704	9/16/2004	04	R/SW DEMO	0148	TR 23 2	0.000
1596	27703	9/16/2004	04	R/SW DEMO	0148	NORTH 1	0.000
1596	27709	9/16/2004	04	R/SW DEMO	0148	NW 9	0.000
1596	27710	9/16/2004	04	R/SW DEMO	0148	NW 10	0.001
1596	27721	9/17/2004	04	R/SW DEMO	0155	NORTH 10	0.000
1596	27714	9/17/2004	04	R/SW DEMO	0155	TR 23 2	0.000
1596	27717	9/17/2004	04	R/SW DEMO	0155	T WEST TOWER 5	0.000

*Figure 2 (Appendix A) shows the location of the air monitor stations.

RwpNo	SampleId	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area*	TotalDac
1596	27718	9/17/2004	04	R/SW DEMO	0155	SW HILL DIG 6	0.000
1596	27715	9/17/2004	04	R/SW DEMO	0155	TR 24 3	0.000
1596	27716	9/17/2004	04	R/SW DEMO	0155	RBA 4	0.000
1596	27719	9/17/2004	04	R/SW DEMO	0155	SW 7	0.000
1596	27720	9/17/2004	04	R/SW DEMO	0155	NW 9	0.000
1596	27692	9/18/2004	04	R/SW DEMO	0157	TR 23 2	0.000
1596	27693	9/18/2004	04	R/SW DEMO	0157	TR 24 3	0.000
1596	27694	9/18/2004	04	R/SW DEMO	0157	RBA 4	0.000
1596	27695	9/18/2004	04	R/SW DEMO	0157	T WEST TOWER 5	0.000
1596	27696	9/18/2004	04	R/SW DEMO	0157	SW HILL DIG	0.000
1596	27697	9/18/2004	04	R/SW DEMO	0157	NW 9	0.000
1596	27699	9/18/2004	04	R/SW DEMO	0157	NW 9	0.000
1596	27691	9/18/2004	04	R/SW DEMO	0157	NORTH 1	0.000
1596	27698	9/18/2004	04	R/SW DEMO	0157	NORTH 10	0.029
1596	27724	9/20/2004	04	R/SW DEMO	0159	NORTH 1	0.000
1596	27730	9/20/2004	04	R/SW DEMO	0159	NW 9	0.000
1596	27732	9/20/2004	04	R/SW DEMO	0159	11	0.000
1596	27725	9/20/2004	04	R/SW DEMO	0159	TR 23 2	0.000
1596	27726	9/20/2004	04	R/SW DEMO	0159	TR 24 3	0.000
1596	27727	9/20/2004	04	R/SW DEMO	0159	RBA 4	0.000
1596	27731	9/20/2004	04	R/SW DEMO	0159	NORTH 10	0.000
1596	27728	9/20/2004	04	R/SW DEMO	0159	T WEST TOWER 5	0.000
1596	27729	9/20/2004	04	R/SW DEMO	0159	SW HILL DIG	0.000
1596	27761	9/21/2004	04	R/SW DEMO	0161	SW HILL DIG 6	0.000
1596	27766	9/21/2004	04	R/SW DEMO	0161	NORTH 11	0.000
1596	27760	9/21/2004	04	R/SW DEMO	0161	T WEST TOWER 5	0.000
1596	27765	9/21/2004	04	R/SW DEMO	0161	NORTH 10	0.001
1596	27756	9/21/2004	04	R/SW DEMO	0161	NORTH 1	0.000
1596	27757	9/21/2004	04	R/SW DEMO	0161	TR 23 2	0.000
1596	27764	9/21/2004	04	R/SW DEMO	0161	NW 9	0.000
1596	27759	9/21/2004	04	R/SW DEMO	0161	RBA 4	0.000
1596	27758	9/21/2004	04	R/SW DEMO	0161	TR 24 EAST	0.000
1596	27762	9/21/2004	04	R/SW DEMO	0161	SW 7	0.000
1596	27763	9/21/2004	04	R/SW DEMO	0161	W 8	0.001
1596	27767	9/21/2004	04	R/SW DEMO	0161	NORTH 12	0.000
1596	27746	9/22/2004	04	R/SW DEMO	0163	SW HILL DIG 6	0.008
1596	27747	9/22/2004	04	R/SW DEMO	0163	SW 7	0.015
1596	27748	9/22/2004	04	R/SW DEMO	0163	W 8	0.003
1596	27749	9/22/2004	04	R/SW DEMO	0163	NW 9	0.006
1596	27744	9/22/2004	04	R/SW DEMO	0163	RBA 4	0.001
1596	27741	9/22/2004	04	R/SW DEMO	0163	NORTH 1	0.002
1596	27742	9/22/2004	04	R/SW DEMO	0163	TR 23 2	0.000
1596	27743	9/22/2004	04	R/SW DEMO	0163	TR 24 EAST 3	0.000
1596	27745	9/22/2004	04	R/SW DEMO	0163	T WEST TOWER 5	0.000
1596	27750	9/22/2004	04	R/SW DEMO	0163	N 10	0.003
1596	27752	9/22/2004	04	R/SW DEMO	0163	12	0.048
1596	27751	9/22/2004	04	R/SW DEMO	0163	11	0.007

*Figure 2 (Appendix A) shows the location of the air monitor stations.

RwpNo	SampleId	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area*	TotalDac
1596	27810	9/23/2004	04	R/SW DEMO	0169	W #8	0.001
1596	27811	9/23/2004	04	R/SW DEMO	0169	NW #9	0.002
1596	27803	9/23/2004	04	R/SW DEMO	0169	NORTH #1	0.001
1596	27804	9/23/2004	04	R/SW DEMO	0169	TR 23 NE #2	0.000
1596	27805	9/23/2004	04	R/SW DEMO	0169	TR-24 EAST#3	0.000
1596	27806	9/23/2004	04	R/SW DEMO	0169	RBA #4	0.000
1596	27808	9/23/2004	04	R/SW DEMO	0169	SW HILL DIG#6	0.000
1596	27809	9/23/2004	04	R/SW DEMO	0169	SW #7	0.000
1596	27812	9/23/2004	04	R/SW DEMO	0169	NORTH #10	0.001
1596	27807	9/23/2004	04	R/SW DEMO	0169	T-WEST TOWER #5	0.000
1596	27813	9/23/2004	04	R/SW DEMO	0169	South #11	0.000
1596	27814	9/23/2004	04	R/SW	0169	NORTH #12	0.000
1596	27829	9/24/2004	04	R/SW DEMO	0173	NORTH #10	0.001
1596	27822	9/24/2004	04	R/SW DEMO	0173	TR24 EAST #3	0.000
1596	27825	9/24/2004	04	R/SW DEMO	0173	SW HILL DIG#6	0.000
1596	27820	9/24/2004	04	R/SW DEMO	0173	NORTH #1	0.000
1596	27821	9/24/2004	04	R/SW DEMO	0173	TR 23 NE #2	0.000
1596	27823	9/24/2004	04	R/SW DEMO	0173	RBA #4	0.000
1596	27824	9/24/2004	04	R/SW DEMO	0173	T WEST #5	0.000
1596	27826	9/24/2004	04	R/SW DEMO	0173	SW #7	0.000
1596	27827	9/24/2004	04	R/SW DEMO	0173	W #8	0.000
1596	27828	9/24/2004	04	R/SW DEMO	0173	NW #9	0.000
1596	27830	9/24/2004	04	R/SW DEMO	0173	SOUTH #11	0.027
1596	27831	9/24/2004	04	R/SW DEMO	0173	NORTH #12	0.000
1596	27859	9/27/2004	04	R/SW DEMO	0178	NORTH #1	0.000
1596	27863	9/27/2004	04	R/SW DEMO	0178	T-WEST #5	0.000
1596	27868	9/27/2004	04	R/SW DEMO	0178	NORTH #10	0.001
1596	27864	9/27/2004	04	R/SW DEMO	0178	SW HILL DIG#6	0.015
1596	27862	9/27/2004	04	R/SW DEMO	0178	RBA #4	0.000
1596	27866	9/27/2004	04	R/SW DEMO	0178	W #8	0.000
1596	27867	9/27/2004	04	R/SW DEMO	0178	NW #9	0.000
1596	27869	9/27/2004	04	R/SW DEMO	0178	SOUTH #11	0.000
1596	27870	9/27/2004	04	R/SW DEMO	0178	NORTH #12	0.000
1596	27860	9/27/2004	04	R/SW DEMO	0178	TR 23 NE #2	0.000
1596	27865	9/27/2004	04	R/SW DEMO	0178	SW #7	0.001
1596	27930	9/28/2004	04	R/SW DEMO	0182	NW #9	0.000
1596	27926	9/28/2004	04	R/SW DEMO	0182	T-WEST TOWER	0.000
1596	27928	9/28/2004	04	R/SW DEMO	0182	SW #7	0.000
1596	27932	9/28/2004	04	R/SW DEMO	0182	SOUTH #11	0.001
1596	27931	9/28/2004	04	R/SW DEMO	0182	NORTH # 10	0.000
1596	27924	9/28/2004	04	R/SW DEMO	0182	TR 24 EAST #3	0.000
1596	27933	9/28/2004	04	R/SW DEMO	0182	NORTH #12	0.000
1596	27922	9/28/2004	04	R/SW DEMO	0182	NORTH #1	-0.000
1596	27923	9/28/2004	04	R/SW DEMO	0182	NE TR23 #2	0.000
1596	27925	9/28/2004	04	R/SW DEMO	0182	RBA #4	0.000
1596	27927	9/28/2004	04	R/SW DEMO	0182	SW HILL DIG #6	0.000
1596	27929	9/28/2004	04	R/SW DEMO	0182	W #8	0.000

*Figure 2 (Appendix A) shows the location of the air monitor stations.

RwpNo	SampleId	StartTime	RSDSYear	RSDSRoomArea	RSDSNo	Area*	TotalDac
1596	27936	9/29/2004	04	R/SW DEMO	0184	NORTH	0.000
1596	27945	9/29/2004	04	R/SW DEMO	0184	North # 10	0.000
1596	27946	9/29/2004	04	R/SW DEMO	0184	South #11	0.000
1596	27947	9/29/2004	04	R/SW DEMO	0184	North #12	0.000
1596	27937	9/29/2004	04	R/SW DEMO	0184	NE TR23 #2	0.000
1596	27938	9/29/2004	04	R/SW DEMO	0184	TR 24 EAST #3	0.000
1596	27939	9/29/2004	04	R/SW DEMO	0184	RBA #4	0.000
1596	27940	9/29/2004	04	R/SW DEMO	0184	T WEST TOWER	0.007
1596	27942	9/29/2004	04	R/SW DEMO	0184	SW #7	0.000
1596	27941	9/29/2004	04	R/SW DEMO	0184	SW HILL DIG#6	0.031
1596	27943	9/29/2004	04	R/SW DEMO	0184	W #8	0.000
1596	27944	9/29/2004	04	R/SW DEMO	0184	NW #9	0.000
1596	27958	9/30/2004	04	R/SW DEMO	0188	EAST TR 24 #3	0.000
1596	27957	9/30/2004	04	R/SW DEMO	0188	NE TR 23 #2	0.000
1596	27966	9/30/2004	04	R/SW DEMO	0188	# 11	0.209
1596	27960	9/30/2004	04	R/SW DEMO	0188	T WEST TOWER	0.000
1596	27961	9/30/2004	04	R/SW DEMO	0188	SW HILL DIG #6	0.015
1596	27962	9/30/2004	04	R/SW DEMO	0188	SW #7	0.038
1596	27963	9/30/2004	04	R/SW DEMO	0188	W #8	0.011
1596	27964	9/30/2004	04	R/SW DEMO	0188	NW #9	0.003
1596	27967	9/30/2004	04	R/SW DEMO	0188	South #12	0.000
1596	27965	9/30/2004	04	R/SW DEMO	0188	North # 10	0.000
1596	27956	9/30/2004	04	R/SW DEMO	0188	North #1	0.000
1596	27959	9/30/2004	04	R/SW DEMO	0188	RBA #4	0.000
						Max	0.209
						Average	0.006
						Standard Deviation	0.022
						Confidence Interval	0.003
						n	210

*Figure 2 (Appendix A) shows the location of the air monitor stations.