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ER/WM-060/04
August 23, 2004

Ms. Margaret L. Marks, Director
Miamisburg Closure Project
U. S. Department of Energy
500 Capstone Circle
Miamisburg, OH 45342

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
Statement of Work Requirement 055 - Regulator Reports
**Building R, SW, 58, and 68 Slab Removal Action, Action Memorandum,
Addendum 1, August 2004**

Dear Ms. Marks:

The Core Team has authorized the release of the following document for public review:

- Building R, SW, 58, and 68 Slab Removal Action, Action Memorandum, Addendum 1, August 2004

This addendum adds two structure removal actions to the scope of the work. Public comments will be accepted from August 23, 2004 through September 22, 2004.

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

Sincerely,

David A. Rake
CERCLA Lead

DAR/ms

Enclosures

cc: David Seely, USEPA, (1) w/attachments
 Brian Nickel, OEPA, (1) w/attachments
 Ruth Vandegrift, ODH, (1) w/attachments
 Mary Wojciechowski, Tetra Tech, (1) w/attach
 Sue Smiley, DOE/MCP, (1) w/attachments
 Lisa Rawls, MCP, w/o attachments
 Randy Tormey, DOE/OH, (1) w/attachments
 Frank Bullock, MMCIC, (3) w/attachments
 Jim Bonfiglio, MESH, (1) w/attachments
 Public Reading Room, (4) w/attachments

Chris Watson, CH2M Hill, (1) w/attachs
 ER Records, CH2M Hill, (1) w/attachs
 DCC (1) w/attachments
 John Fulton, CH2M Hill, w/o attachments
 Dave Rake, CH2M Hill, w/o attachments
 Val Darnell, CH2M Hill, w/o attachments
 Bob Ransbottom, CH2M Hill, w/o attachments
 file

Buildings R, SW, 58 and 68 Slab Removal Action

ACTION MEMORANDUM

ADDENDUM 1

Public Review Draft

August 2004

MIAMISBURG CLOSURE PROJECT

**ACTION MEMORANDUM
ADDENDUM 1**

The following document is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. (Public comment will be accepted August 23, 2004 through September 22, 2004)

Buildings R, SW, 58, and 68 Slab Removal Action, Action Memorandum Addendum 1, August 2004

(The Buildings R, SW, 58, and 68 Slab Removal Action, Action Memorandum was previously approved. Addendum 1 is written to add two structure removal actions to the scope of work.)

Questions can be referred to Paul Lucas at
(937) 847-8350 ext. 314

U.S. Department of Energy
U.S. Environmental Protection Agency
Ohio Environmental Protection Agency

PURPOSE:

The purpose of this addendum is to add two Potential Release Sites (PRSs) PRS 253 and PRS 254 to those included in the Buildings R, SW, 58 and 68 Slab Action Memorandum (AM, Reference 1). Justification for adding the two PRSs to the existing Action Memo is as follows:

- the two PRSs (253, 254) are located in the immediate vicinity of the Buildings R, SW, 58 and 68 Slab removal actions,
- the contaminants for these PRSs are the same as those for the soil removal/verification in the existing action memo,
- combining like work scopes increases efficiencies in budget and use of manpower and allows for a potential reduction in overall schedule duration, and
- combining local PRSs into one Action Memo affords streamlining of sampling and reporting documentation.

The approach used to add the two PRSs into the Buildings R, SW, 58 and 68 Slab Action Memo is to identify sections in the Buildings R, SW, 58 and 68 Slab Action Memo where additional information would be presented and provide the information as an attachment to this addendum for ease in comparison to the parent document. The additional information required includes updates to:

- Section 2, Site Conditions and Background,
- Table 2.1 PRSs to be dispositioned,
- Table 5.1 Cleanup Objectives
- Section 5.1.1, Proposed Action Description, Phase II,
- Section 5.2, Estimated Costs, and
- Section 9 Recommendation (see new Recommendation Page for Addendum 1)

The Buildings R, SW, 58 and 68 Slab Action Memorandum Addendum 1 was generated to include Buildings R, SW, 58, 68 slab, B Stack, T East and T West stacks, and contaminated soil in the vicinity. Included herein are two tables, one for building -related PRSs and one for soil/slab-related PRSs.

REFERENCES:

- 1) Action Memorandum, Buildings R, SW, 58 and 68 Slab Removal Action, June 2003, Final.

PREPARED BY:

Mary E. Sizemore, CH2MHill, Main Hill Technical Staff
Ken Armstrong, CH2MHill, Main Hill Deputy Program Manager

2. SITE CONDITIONS AND BACKGROUND

2.1 SITE DESCRIPTION

This section describes the physical site location, site characteristics, and release of contaminants into the environment.

2.1.1 Physical Location

The Miamisburg Closure Project is a site on the southern border of the city of Miamisburg in Montgomery County, Ohio. The additional removal action is proposed for T East and T West stacks shown in Figure 2-1.

2.1.2 Site Characteristics

2.1.2.1 Building R, Building 68 Slab, T-West stack, and T-East stack

Building R is a single-story structure, with a penthouse, constructed of concrete block with brick facing. The roof is metal with a built-up membrane of coal tar. Building R, one of the original buildings constructed in 1948, is located on the main hill. The total area of Building R is 55,006 square feet. The R Building penthouse contains a high efficiency particulate air (HEPA) filter bank and associated ductwork connecting it to the T-West stack. T-West and T-East stack are both two hundred foot tall brick and mortar exhaust stacks. T-West stack is an exhaust stack that services T Building and R/SW Buildings. T-East stack services T Building. The building has central steam for heat, chilled water, and electrical service of 480V. The building was divided into two areas: the cold side and the hot side.

Seven Potential Release Sites (PRSs) (PRS 142, 143, 144, 145, 146, 327, and 328) are associated with Building R. There is one PRS (252) associated with B Stack. There is one PRS (253) associated with T-West Stack. There is one PRS (254) associated with T-East Stack. The PRSs and a brief description are listed in Table 2.1. These PRSs are included in the removal action. Additional COCs associated with the T Building stacks have been added to Table 5-1. These COCs were associated with the polonium processing that was conducted in T Building.

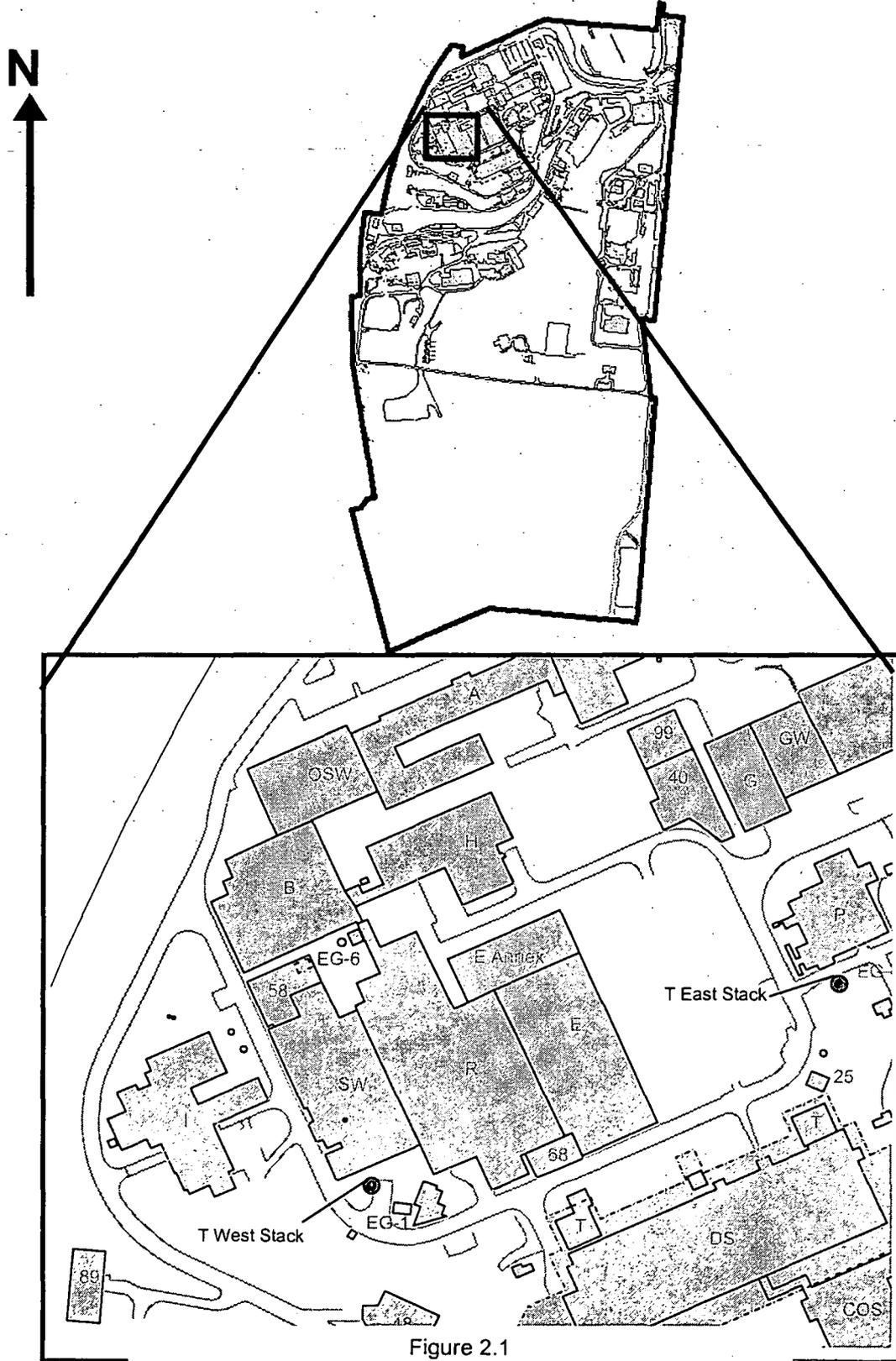


Figure 2.1
Location of Buildings R, SW, 58, and formerly 68

Buildings R, SW, 58 and 68 Slab Action Memo

Addendum 1

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	
253	T West Stack	
254	T East Stack	

Building 68 was a one-story structure constructed in 1979 of pre-fabricated metal with a metal roof. The Building 68 structure was demolished as part of the E Building demolition project in May 2000. (See E Building Action Memo, Final, April 2000.) Following the demolition of the Building 68 structure, the slab was left to be used as an equipment staging area for the Buildings R/SW demolition project. The total area of the Building 68 slab is approximately 1,990 square feet. Following completion of the R/SW demolition, the Building 68 slab will be removed along with the R and SW building slabs. B, T-West, and T-East stacks will be demolished.

PROPOSED ACTION AND ESTIMATED COSTS

5.1 PROPOSED ACTION

The proposed action is the demolition of Buildings R, SW, 58, B stack, T West stack, T East Stack, Building SW exhaust stacks, removal of the Building 68 slab, and removal of contaminated soils in the vicinity of Building SW. Since the proposed action is within the site boundaries, it is not expected to have a disproportionate impact on low income or minority populations.

5.1.1 Proposed Action Description

- **Phase I - Buildings R, SW, and 58, T West and T East Stack Decontamination**

Decontamination of Building R includes the removal of contaminants from the solid radioactive waste compactor (PRS 142), contaminated sumps (wastewater tanks) (PRSs 144, 145), the EG-1 diesel fuel storage tank (PRS 143), the R-111 calorimetry baths (PRS 327, 328), the contaminated (entombed) room drains (PRS 146), B Stack (PRS 252), T West Stack (PRS 253), T East Stack (PRS 254), fan houses associated with the stacks, fixed contamination areas/walls, soil, waste handling, and disposal. Openings to the underground airshafts associated with the T East and West stacks will be sealed. The plena associated with the stacks will be demolished to 3 feet below grade.

- **Phase II: Remove Associated Foundations and Soil**

The foundations and soils associated with Buildings R, SW, 58, 68, B stack, T West stack, and T East stack will be removed. Some soil remediation will occur prior to the demolition of the building. This includes the area under SW-8 and the "Old Cave" area. The underground airshafts that lead from the T building head houses to the plena are addressed under the T Building Action Memorandum.

- **Phase II: Verification**

A partial listing of radionuclides processed in Buildings R and SW including the primary contaminants of concern (COC) for Buildings R, SW, 58, T West stack and T East stack is given in Table 5.1, along with the risk-based guideline values (RBGV) and cleanup objectives. The RBGV have been identified in (DOE 1997) Risk Based Guideline Values, Mound Plant, March 1997.

Buildings R, SW, 58 and 68 Slab Action Memo

Addendum 1

Table 5.1 - Cleanup Objectives [pCi/g]
Footnotes on next page

Contaminant	Risk Based Guideline Values (10 ⁻⁵) ⁽²⁾	Background Values	Cleanup Objective
Actinium-227 + decay products in secular equilibrium to Lead-207	4.5	0.11 ⁽³⁾	4.6
Americium-241	63	ND	63
Bismuth-207	1.2	ND	1.2
Bismuth-210m*	8.3	NA	8.3
Cesium-137 + decay products in secular equilibrium to Barium-137	3.4	0.42	3.8
Cobalt-60*	0.7	NA	0.7
Lead-210 + decay products in secular equilibrium to Lead-206	6.2	1.2 ⁽³⁾	7.4
Protactinium-231 + decay products in secular equilibrium to Lead-207	3.9	0.11 ⁽³⁾	4.0
Plutonium-238	61	0.13	55 ⁽¹⁾
Plutonium-239/240	60	0.18	60.2
Radium-226 + decay products in secular equilibrium to Lead-206	0.9	2.0	2.9
Strontium-90 + decay products in secular equilibrium to Zirconium-90	94	0.72	94.7
Silver 108m*	1.2	NA	1.2
Thorium-228 + decay products in secular equilibrium to Lead-208	1.1	1.5	2.6
Thorium-230 + decay products in secular equilibrium to Lead-206	0.9	1.9	2.8
Thorium-232 + decay products in secular equilibrium to Lead-208	0.7	1.4	2.1
Tritium	75,800	1.6	75,800
Uranium-233 + decay products in secular equilibrium to Bismuth-209	4.8	NA	4.8
Uranium-234 + decay products in secular equilibrium to Lead-206	0.9	1.1	2.0
Uranium-238 + decay products in secular equilibrium to Lead-206	1.0	1.2	2.2 ⁽⁴⁾

Footnotes to Table 5.1

- (1) The 10^{-3} RBGV for Pu-238 is 61 pCi/g, however, 55 pCi/g has been retained due to its familiarity to the public.
- (2) These guideline values are based on the more restrictive of the Construction Worker and Site Employee Values. These values were calculated using the methodology contained in Risk Based Guideline Values, March 1997, Final but were performed using April 2001 HEAST slope factors.
- (3) These radionuclides have comparatively short half-lives and are deduced to be in secular equilibrium with the parent nuclide. Thus the background value measured for the parent is considered to be the appropriate value for these as well. The validity of using this method for background determination for other radionuclides will be assessed on a case by case basis.
- (4) If Uranium-238 is present in concentrations greater than 2.2 pCi/g, evaluate secular equilibrium with daughters. If secular equilibrium exists, use 2.2 pCi/g as cleanup goal. If secular equilibrium does not exist, adjust Uranium-238 cleanup goal upward to account for reduced daughter concentrations.

NA = Not Available; ND = Not Detected, * = associated only with T stacks

5.2.1 R Building and Building 68 Slab Estimated Costs

The cost estimate to perform the removal action, based on the Main Hill Project work scope definition sheets for Building R, T-West and T-East Stacks is shown in Table 5.4. Costs include the construction activities, all engineering and construction management, and site restoration.

Table 5.4 - Removal Action Cost Estimate for Building R, T West Stack, and T East Stack

COST ESTIMATE	
Activity	Cost
Work Planning	\$710,827
Buildings Decontamination ^(A)	\$23,079,496
Buildings Demolition	\$6,049,237
Remove Foundations & Soils	\$155,833
Verification	\$122,470
Site Restoration	\$76,155
OSC Report	\$32,564
TOTAL	\$30,231,370

^(A) Building R, T West and T East stack costs consist of historical costs plus the latest revised estimate to complete for work associated with Main Hill.

Note: Costs are subject to change pending award of the cost plus incentive fee contract for completing the work.

RECOMMENDATION

This decision document represents concurrence to incorporate PRSs 253 (T West Stack) and 254 (T East Stack) into the Buildings R, SW, 58 and 68 Slab Removal Action. Presentation of the information in this addendum models the approved Buildings R, SW, 58 and 68 Slab Action Memorandum that was prepared in accordance with CERCLA as amended by SARA, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

Information provided in this Addendum 1 is consistent with the actions already proposed for Buildings R, SW, 58 and 68 Slab Removal Action. No additional contaminants of concern were identified. The contaminants of concern associated with the addition of these two PRSs are already included. We recommend that they be initiated as described herein.

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8/2/04

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