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ESC-127/99

July 19, 1999

99-TC/07-19

Mr. Richard B. Provencher, Director
Miamisburg Environmental Management Project
U.S. Department of Energy
P.O. Box 66
Miamisburg, OH 45343-0066

ATTENTION: Dewain Eckman

SUBJECT: Contract No. DE-AC24-97OH20044
**BUILDING 38: DELIVERY OF PUBLIC REVIEW DRAFT ACTION
MEMORANDUM**

REFERENCE: Statement of Work Requirement C 7.1e -- Regulator Reports

Dear Mr. Provencher:

Attached is the Public Review Draft of the Action Memorandum for Building 38. This document was signed by representatives of DOE/MEMP, OEPA, and USEPA. The release of this document has been authorized by Debra White of MEMP.

Previously, USEPA, TechLaw, OEPA and ODH provided comments on the Draft Action Memorandum for Building 38. Attached is a summary of responses to these comments. We have reviewed these responses with representatives of OEPA, ODH, USEPA and DOE/MEMP.

Public review of the Building 38 Action Memorandum will be from July 22, 1999 through August 20, 1999. A copy of the newspaper announcement is also attached.

**Page 2 BUILDING 38: DELIVERY OF PUBLIC REVIEW DRAFT ACTION
MEMORANDUM**

Please advise if additional copies are required for distribution within DOE. If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,



Linda R. Bauer, Ph.D.
Manager, Environmental Safeguards & Compliance

LRB/nmg

Enclosures as stated

cc: Tim Fischer, USEPA, (1) w/attachment
Dave Meredith, TechLaw, (1) w/attachment
Brian Nickel, OEPA, (2) w/attachment
Ruth Vandegrift, ODH, (1) w/attachment
Art Kleinrath, MEMP, (1) w/attachment
Evans Reynolds, BWO, (2) w/attachment
Dann Bird, MMCIC, (1) w/attachment
Public Reading Room, (5) w/attachment
DCC

Technical Review of Building 38 Removal Action - Action Memorandum

USEPA and TechLaw Comments

Comment:

1. Section 5.1.7 - Project Schedule, Page 5-7

Section 5.1.7, Project Schedule, states that the project schedule on page 5-7 of the Action Memorandum is the schedule established for planning and implementing the Building 38 Removal Action. This schedule is presented in Table 5-2, titled Schedule Summary, and is comprised of three columns for activities, start dates, and completion dates. In order to effectively manage a project of this magnitude, a more detailed schedule must be developed delineating all subtasks and subcontracts associated with the project work breakdown structure. Certainly, a more detailed schedule exists or will be developed for this project. It is probably not practical to include a detailed schedule in this Action Memorandum. However, the current project schedule is extremely general and should be revised to identify major tasks and associated time frames within each activity.

Response:

Section 5.1.7, Project Schedule, states "The schedule established for planning and implementing the removal action is summarized in Table 5.2." A much more detailed, resource loaded schedule is a component of the performance measurement baseline (integrated scope, cost, and schedule) used by DOE and BWO to manage the project. This baseline information was reviewed and validated by DOE in consultation with the Corps of Engineers. The schedule summary presented in the Action Memorandum is designed to communicate to stakeholders the major steps involved in the removal and the approximate time for each.

Comment:

2. Section 5.2 - Estimated Costs, Page 5-8

The cost estimates in Table 5.3 appear disproportionate. For example, the building and stack demolition costs appear extremely low when compared to characterization and building decontamination costs. More detailed explanation and discussion of the cost estimates (i.e., how the estimates were determined) would provide a better understanding of the costs associated with this project.

Response:

“Bottom-up” cost estimates were generated for the baseline described in the response to the first comment. In this technique, the resources (manhours by skills set, purchased materials, purchased services, etc) required for each task are identified and the cost estimated.

A great deal of effort is being expended prior to demolition to ensure minimal radiation exposure during the demolition phase. This includes the decontamination (scabbling) of many interior masonry surfaces and extensive characterization to ensure the building demolition can occur in a conventional manner.

**Action Memorandum
Building 38 Removal Action**

OHIO EPA and ODH/BRP Comments

Comment:

1. Section 2.1.2, First Paragraph
Third Sentence, Page 2-1

D&D needs to be spelled out the first time it is used even though it is in the acronym list. Also, the sentence implies that the only contaminate present is Pu-238. This contradicts Section 2.1.2, first paragraph, top of page 2-5; and also the fourth paragraph. Please correct the text.

Response:

The text was changed.

2. Section 2.1.2, Top of Page
First Paragraph, Page 2-5

How will PRS 305, the Building 38 stack, be incorporated into the demolition of Building 38?

Response:

Section 2.1.2 is a description of Site Characteristics. The text in this section was changed to read "The Building 38 Stack is designated PRS 305; this is included as part of this removal action." (New text is underlined.) Section 5.1 "Proposed Action" and Section 5.1.1 "Proposed Action Description" indicate that the stack will be demolished and describe the current approach to that demolition.

3. Section 2.1.2, Page 2-5
Third Paragraph (of page)

It is not clear as to whether the PRSs mentioned in this paragraph (PRSs 77, 78, 285, and 287-293) are being addressed in the Building 38 Removal Action - or as separate events. Please clarify in the text.

Response:

These PRSs represent building systems and soils associated with SM Building. The building systems have been removed. Removal of remaining contaminated soil associated with these PRSs and verification of removal are included in this removal action. The text was changed to read "There are ten PRSs (PRS 77, 78, 285, and 287 through 293) within the previous boundary of SM Building. The building systems represented by these PRSs were removed when SM Building was demolished. Removal of any remaining contaminated soil associated with these PRSs and verification of achieving clean-up objectives will be included as part of this removal action." (New text is underlined.)

Comment:

4. Section 2.2.1, Second Paragraph
Third Sentence, Page 2-7

This sentence states that a previously utilized clean-up standard for Pu-238 was 100 pCi/g with an ALARA goal of 25 pCi/g. How will the current objective of 55 pCi/g be addressed in these locations?

Response:

As we discussed at the May 19, 1999 Core Team Meeting, this section refers to six areas of soil remediation performed previously as D&D projects. Only verification sampling will occur in these areas. For analysis of the verification sampling data, the 100 pCi/g clean-up standard for ²³⁸Pu in soils will be used for these previously remediated areas. (A quick review of soil screening data obtained during remediation indicates the verification sampling results will be below the 55 pCi/g value.) A sentence was added to this section in an attempt to better communicate this intention. The sentence reads "The verification sampling analysis will use the ²³⁸Pu clean-up standard in place at the time these areas were remediated; i.e. 100 pCi/g with an ALARA goal of 25 pCi/g."

Comment:

5. Sections 3.1 and 3.2
Page 3-1

Is the only threat from radionuclides? Are there any other contaminants, i.e., has DOE Mound looked for other contaminants? If yes, then state such and explain what was or was not found. If no, why not?

Response:

The only identified threat is from radionuclides. The "Environmental Appraisal of the Mound Plant" (March 29, 1996) indicates "Chemicals in Building 38 were evaluated....Chemical storage and handling procedures are in place for proper disposal of chemicals. There have been no reported spills from Building 38. There was no visible evidence that chemicals have entered any of the wastewater collection systems."

6. Table 3.1, (iii)
Page 3-2

Pertaining to the entry under the Evaluation column: does this mean that hazardous substances are not present, or they are not being dealt with at this time?

Response:

The intent was to indicate that hazardous substances are not present in Building 38, the stack, or associated soils in "drums, barrels, tanks, or other bulk storage." The text was changed in an attempt to make this more clear. The table entry now reads "Not applicable. There are no hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage in Building 38, the Building 38 Stack, or the associated soils."

Comment:

7. Section 5.1.1, First Paragraph
Sixth Sentence, Page 5-1

Please provide the Phase I Work Plan documents to OEPA and ODH/BRP. No change to the text is needed.

Response:

The documents will be provided. Please understand there will not be a document entitled "Phase I Work Plan" or "Phase II Work Plan". There will be multiple work plans for A-Line Removal, F-Line Removal, Building Decontamination, Building Demolition, Stack Demolition, and Soil Remediation.

Comment:

8. Section 5.1.1, Second Bullet
Last Sentence, Page 5-3

Table 5.1 should be referenced as a list of "objectives," not guidelines. The last sentence should read: "Table 5.1 lists the Pu-238 objectives and their corresponding risk values."

Response:

The table has been changed. These objectives apply to the areas remediated as part of this removal action; Building 33 foundation and soil, Building 38 foundation and soil, SM West asphalt area soil. The text has also been changed in an attempt to make this more clear.

Comment:

9. Table 5.1
Page 5-4

Re-title the table so it reads "Clean-up Objectives" and change the text in the List of Tables on page ii. Replace "Mound D&D Clean-up Standard" in the first column, first row with "Risk Based Clean-up Standard." Replace 100 pCi/g in the second column, first row with 55 pCi/g. Replace the 1.8×10^{-5} in the third column, first row with 1×10^{-5} .

Response:

The table has been changed as requested. In addition, the row of the table referring to the ALARA Goal was removed. This objective applies to the areas remediated as part of this removal action; Building 33 foundation and soil, Building 38 foundation and soil, SM West & asphalt area soil. The text has also been changed in an attempt to make this more clear.

Comment:

10. Table 5.2
Page 5-7

Include the start dates and completion dates for the Phase I Work Plan, Phase II

Work Plan, and Verification Sampling and Analysis Plan.

Response:

There will not be a document entitled "Phase I Work Plan" or "Phase II Work Plan". During Phase I and II, there will be multiple work plans for A-Line Removal, F-Line Removal, Building Decontamination, Building Demolition, Stack Demolition, and Soil Remediation, among other activities.

Comment

11. Under "Public Notification" there is no mention of a public comment period, which makes this not consistent with the NCP. Is this considered a time critical or non-time critical removals? That has some bearing on what is required for public involvement.

Response:

The text was changed to read "A notice of the availability of this Action Memorandum for 30 day public comment period will be published in a local newspaper." This is considered a non-time critical removal, i.e. planning period of more than six months. The public review and comment period for this action memorandum and the administrative record for the site meet the public involvement requirements of the NCP.

MOUND



Environmental
Restoration
Program

MOUND PLANT
Notice of Public Review Period



The Action Memorandum for the Plutonium Processing Building (Building 38) is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. Public comment on this document will be accepted from July 22, 1999 through August 20, 1999.

Building 38: Plutonium Processing

Questions can be referred to Paul Lucas at (937) 865-4578.

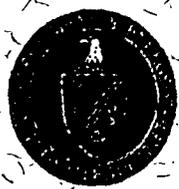
ACTION MEMORANDUM

BUILDING 38 REMOVAL ACTION

**MOUND PLANT
MIAMISBURG, OHIO**

JULY 1999

**Public Review Draft
(Revision 0)**



Department of Energy



Babcock & Wilcox of Ohio

ACTION MEMORANDUM

BUILDING 38 REMOVAL ACTION

**MOUND PLANT
MIAMISBURG, OHIO**

July 1999

PREPARED BY:

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for the

U.S. DEPARTMENT OF ENERGY

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ACRONYMS

AEC	Atomic Energy Commission
AM	Action Memorandum
AM/EE/CA	Action Memorandum/Engineering Evaluation/Cost Analysis
ARARs	Applicable or Relevant and Appropriate Requirements
BGS	Below Ground Surface
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
D&D	Decontamination and Decommissioning
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
ER	Environmental Restoration
FFA	Federal Facilities Agreement
FSP	Field Sampling Plan
ID	Identification
LSA	Low Specific Activity
mrem	millirem
MSL	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NTS	Nevada Test Site

ACRONYMS (cont.)

OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
pCi/g	picoCuries per gram
PRS	Potential Release Site
RCRA	Resource Conservation and Recovery Act
RESRAD	Residual Radioactive Material Program (Software)
RI/FS	Remedial Investigation/Feasibility Study
RSE	Removal Site Evaluation
SARA	Superfund Amendments and Reauthorization Act
SW	Semi-Works
TRU	Transuranic
USEPA	United States Environmental Protection Agency

1. PURPOSE

The U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (USEPA) have agreed on an approach for decommissioning surplus DOE facilities consistent with the **Policy on Decommissioning of Department of Energy Facilities under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** dated May 22, 1995. According to this approach, decommissioning activities will be conducted as CERCLA removal actions, unless the circumstances at the facility make it inappropriate (DOE 1995). The DOE is the designated lead agency under CERCLA and removal actions at the Mound Plant are implemented as federal-lead actions with DOE funds instead of the funds available to the EPA under CERCLA (i.e., non-Superfund). DOE provides the On-Scene Coordinator (OSC). Non-Superfund, federal-lead removal actions are not subject to United States Environmental Protection Agency (USEPA) limitations on the OSC (\$50,000 authority) and are not subject to National Oil and Hazardous Substances Pollution Contingency Plan (NCP) limitations on removal actions (i.e., \$2,000,000 in cost and 12 months in duration).

This Action Memorandum (AM) has been completed to document the evaluation of site conditions, to propose the action described herein, and to allow public input.

2. SITE CONDITIONS AND BACKGROUND

2.1 SITE DESCRIPTION

This section describes the physical site location, site characteristics, release of contaminants into the environment and the site's National Priorities List (NPL) status.

2.1.1 Physical Location

The Mound Plant is a 306-acre site on the southern border of the city of Miamisburg in Montgomery County, Ohio. The site is approximately 10 miles south-southwest of Dayton and 45 miles north of Cincinnati. This removal action is proposed for Building 38, the Building 38 Stack, and contaminated soils in the vicinity. Building 38 is also known as Plutonium Processing (or PP) Building. The Building 38 Stack is sometimes referred to as the SM Stack. The location of Building 38 is shown in Figure 2.1.

2.1.2 Site Characteristics

Building 38 was constructed in 1968 to replace the facilities in Building SM, also known as Special Metallurgical Building. Building 38 was originally used as a ^{238}Pu production processing facility and more recently supported the assembly and testing of Radioisotopic Thermoelectric Generators (RTGs), the repackaging and storage of excess nuclear material, and the storage and identification of orphan sources at Mound. Even though Building 38 has undergone extensive Decontamination and Decommissioning (D&D) cleanup in the past, sealed-in-place ^{238}Pu contamination is present. Eight Potential Release Sites (PRSs) (PRS 294, 295, 296, 297, 298, 299, 301, and 326) and numerous items of special processing equipment are also located in the building.

Building 38 is a two-story structure with the lower level constructed of reinforced concrete and prestressed concrete and the upper-level constructed of concrete block. The roof is prestressed concrete with built-up membrane of asphalt. The total floor space is 44,327 square feet. Figure 2.2 is a photograph of Building 38, the Building 38 Stack, and SM Building. Figure 2.3 is a more recent photograph of Building 38.

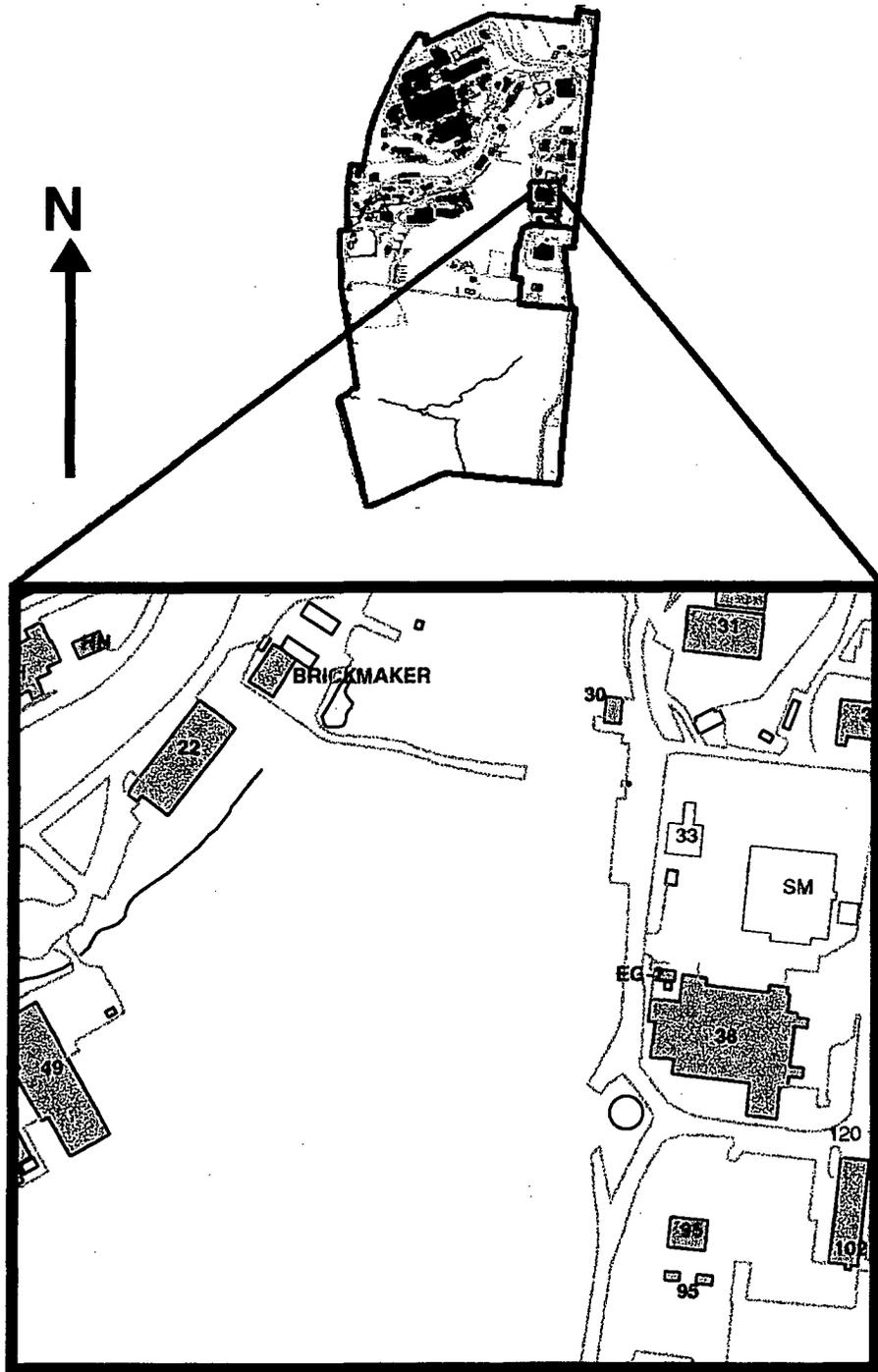


Figure 2.1 Location of Building 38

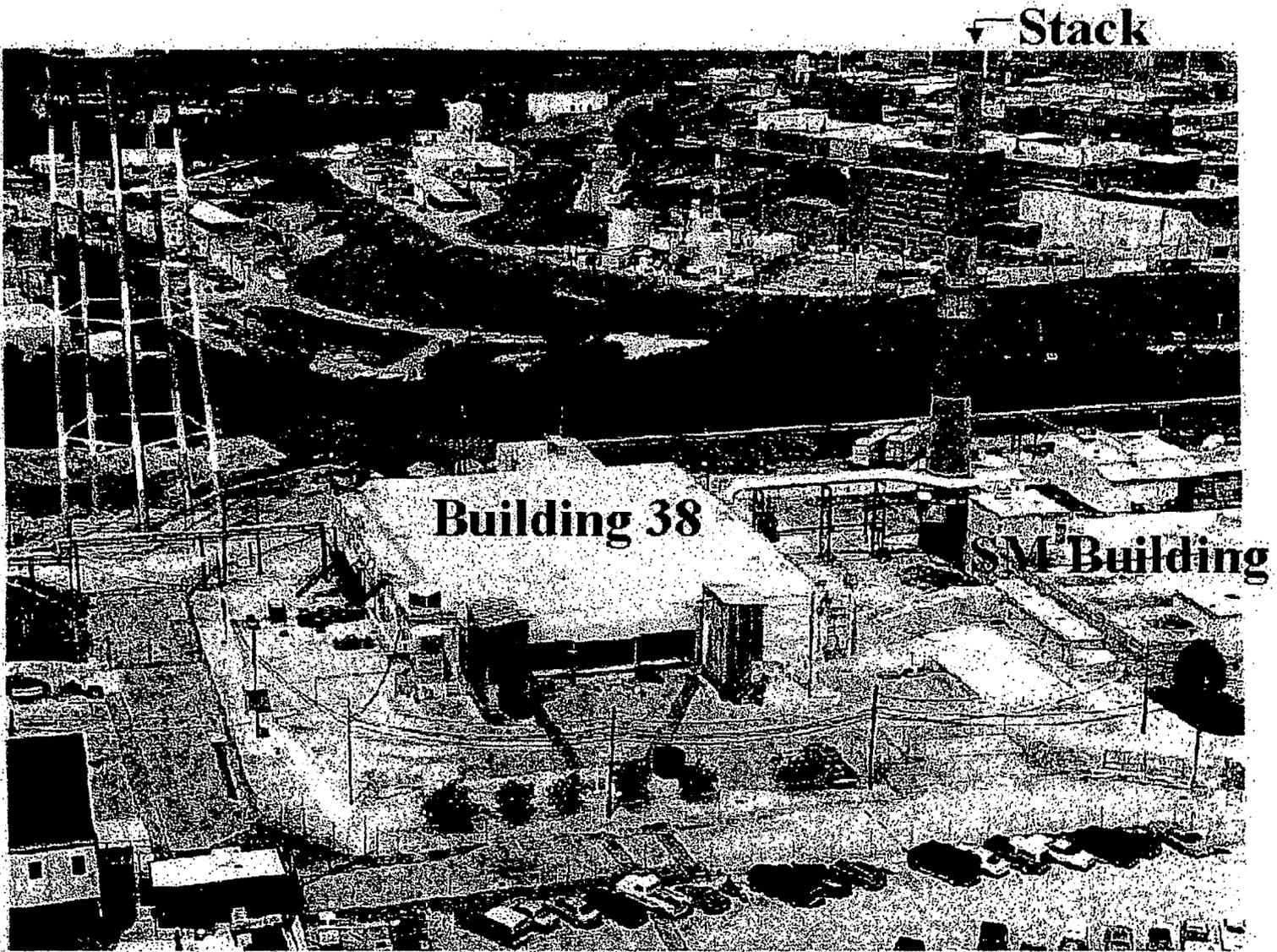


Figure 2.2 Building 38, Building 38 Stack, and SM Building



Figure 2.3 East Side of Building 38. At time of this photo, SM has been removed.
Building 38 Stack is out of the field of view to the right.

July 1999
Merced Plant
Contract #DL-AC24-970H26044

Aclon Memorandum
Building 38
Public Review Draft (Rev. 0)

The Building 38 Stack is a masonry process exhaust stack that served SM Building prior to its removal and currently serves Building 38. The stack's interior has been exposed to radioactive isotopes of thorium, americium, uranium, and plutonium. The stack is 200 feet tall. The stack is made of bricks and mortar, reinforced with wire mesh and rebar, and coated on the inside face. The stack is supported by a square reinforced concrete base pad. The stack also includes the 48-inch diameter exhaust duct from Building 38 to the plenum, the exhaust plenum with support platform, and stack exhaust fan. The Building 38 Stack is designated PRS 305; this is included as part of this removal action.

The foundation and soils for Building 38 are included in this proposed removal action. There are other contaminated soils in the vicinity that are also included. Figure 2.4 illustrates the location of these soils areas. The Building 33 foundation consists of the footers, foundation, walls, floor slab, and soils from the Building 33 Maintenance Facility. The structure was demolished in February 1998. The soil area directly south of Building 33 (SM West Asphalt area) is highly contaminated with ^{238}Pu , therefore, the Building 33 foundation will be included as part of the foundation and soils removal.

When SM Building was demolished in March 1995. The entire building slab and approximately 75% of the building foundation, footers, and soil have already been removed. The remaining 25% of the foundation, footers, and soil were left in place due to structural considerations associated with the Building 38 Stack. The remaining foundations and footers associated with Building SM and the asphalt/soil area directly west of the original building site are included in the proposed removal action. There are ten PRSs (PRS 77, 78, 285, and 287 through 293) within the boundary of SM Building. The building systems represented by these PRSs were removed when SM Building was demolished. Removal of contaminated soil associated with these PRS's and verification of achieving clean-up objectives will be included as part of this removal action.

An underground fuel oil storage tank served Emergency Generator 2. This 4,000 gallon tank (Tank 121) was closed in December, 1998. It will be removed as part of this removal action.

2.1.3 Release or Threatened Release into the Environment

The potential release of radionuclides prompted this removal action.

2.1.4 National Priorities List Status

The USEPA placed the Mound Plant in Miamisburg, Ohio on the NPL by publication in the Federal Register on November 21, 1989.

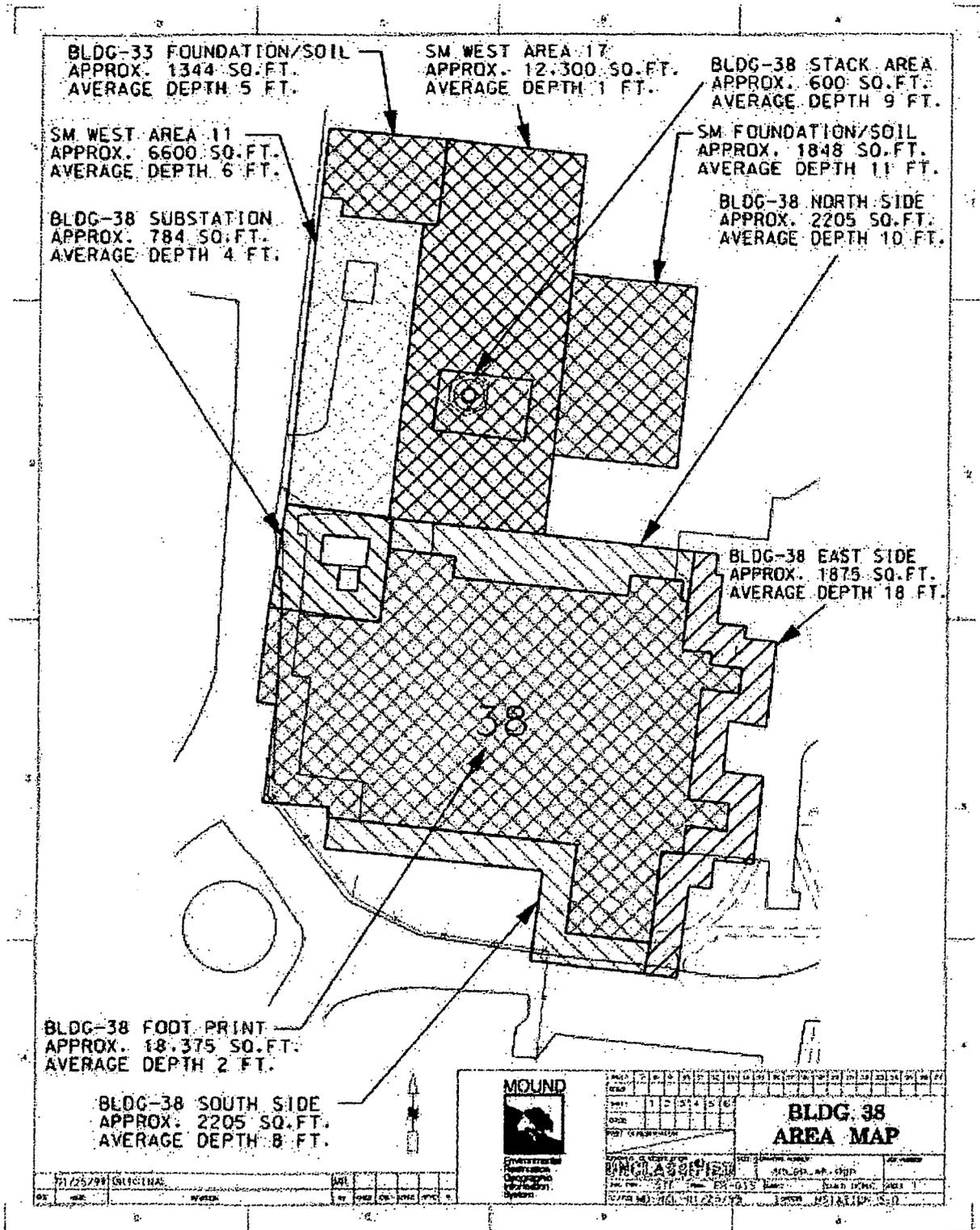


Figure 2.4 Location of Soils Areas Associated with Building 38 Removal Action

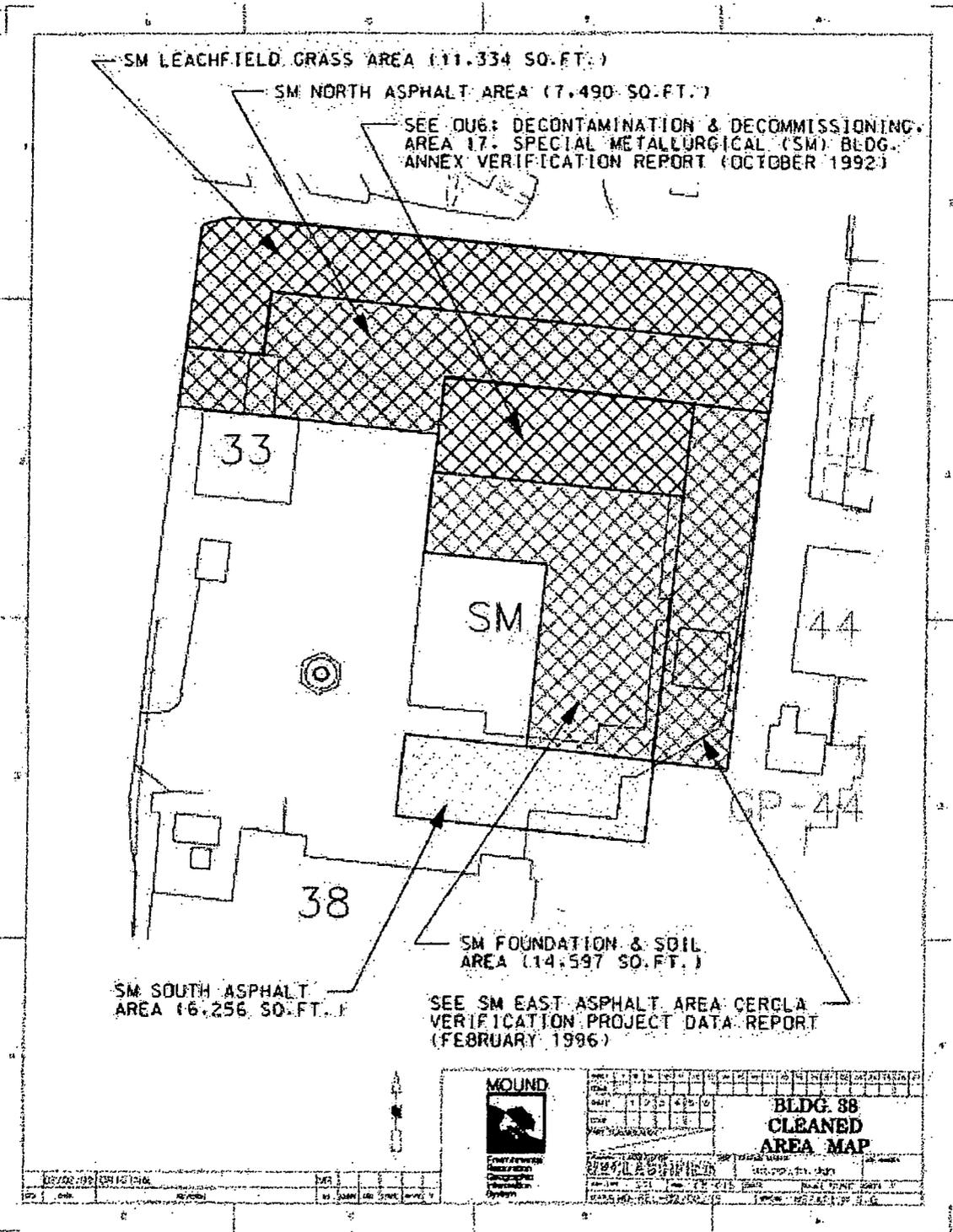


Figure 2.5 Location of Soils Areas Associated With Previous D&D Projects Near Building 38

3. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

The potential release of radionuclides may create a potential threat to the public health or welfare.

3.2 THREATS TO THE ENVIRONMENT

The potential release of radionuclides may create a potential threat to the environment.

3.2.1 Removal Site Evaluation

The Removal Site Evaluation (RSE) requirements, as outlined under EPA's NCP regulations in 40 CFR 300.415, are presented throughout this AM. An evaluation by public health agencies has not been performed for this area, and, therefore, is not included in this AM.

The NCP identifies eight factors that must be considered in determining the appropriateness of a removal action [40 CFR 300.415(b)(2)]. These criteria are evaluated in Table 3.1.

**Table 3.1 Evaluation of Removal Action Appropriateness Criteria
[40 CFR 300.415(b)(2)]**

Criteria		Evaluation
(i)	"...potential exposure to nearby human populations, animals, or the food chain..."	There is potential exposure to nearby human populations, animals, or the food chain from radionuclides when present institutional controls are relaxed.
(ii)	"Actual or potential contamination of drinking water supplies..."	There is potential contamination of on-site drinking water supplies from the radionuclides. The contaminants could migrate to the ground water that is the source for the plant drinking water.
(iii)	"Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;"	Not applicable. This removal action does not address hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage.
(iv)	"High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;"	There are high levels of radioactive contaminants in soils largely at or near the surface, that may migrate when present institutional controls are relaxed.
(v)	"Weather conditions that may cause hazardous substances to migrate or be released;"	This site is exposed to weather conditions. Rain might cause the associated hazardous substances to migrate.
(vi)	"Threat of fire or explosion;"	Not applicable.
(vii)	"The availability of other appropriate federal or state response mechanisms to respond to the release;" and	There are no other appropriate federal or state mechanisms to respond. The Federal Facilities Agreement (FFA) established a combined state and federal mechanism to respond under CERCLA. DOE is the designated lead agency at Mound under CERCLA
(viii)	"Other situations or factors that may pose threats to public health or welfare or the environment."	Not applicable.

4. ENDANGERMENT DETERMINATION

There is a potential or threat of release of pollutants or contaminants from this site that could pose an endangerment to public health or welfare or to the environment. To eliminate the possibility of endangerment, as the site transfers from DOE ownership and control, DOE has determined that removal of the contaminants is appropriate.

5. PROPOSED ACTION AND ESTIMATED COSTS

5.1 PROPOSED ACTION

The proposed action is the demolition of Building 38, demolition of the Building 38 Stack, removal of Building 33 foundation and soils, and removal of contaminated soils in the vicinity of Building 38. 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

The proposed action is described as follows:

- **Project Planning**

Planning and execution of the proposed action is divided into two phases, Phase I and Phase II. Phase I will be accomplished while the integrity of the building's environmental envelope is intact. Phase II will be accomplished after the environmental envelope is breached. The environmental envelope is defined as the building, the ability to maintain a negative pressure to the outside, the absolute filter bank, and the environmental monitoring of discharge air from the filter bank to the outside environment. Due to the complexity of the work, multiple work plans will be generated during each phase. Because the environmental envelope is still intact during Phase I, work plan documents will be reviewed and approved by DOE and made available to USEPA and OEPA on request. Work plans for Phase II will be reviewed and approved by DOE, USEPA, and OEPA. Project specific safety documentation (HASP/JSHA) is reviewed and approved by DOE.

- **Public Notification**

A notice of the availability of this Action Memorandum for 30 day public comment period will be published in a local newspaper.

- **Phase I**

The Phase I work addresses the major system removals within the building's environmental envelope. The decontamination activities include removal of contamination from equipment and facility interior walls, ceilings, columns, and floors. The North A-Line includes 21 gloveboxes and four fumehoods. These gloveboxes contain some of the highest levels of ²³⁸Pu in the building.

Corridor 5-A contains five gloveboxes and one fumehood. They will be decontaminated by removing wipeable contamination and sealing fixed contamination in place. Gloveboxes will be cut apart for size reduction and loaded into waste burial boxes. The Low-Level Liquid Waste vacuum system, transfer lines, and 10,000 gallon holding tank are ^{238}Pu contaminated and must be removed. All floor drains and the two sump tanks will be removed due to ^{238}Pu contamination. Miscellaneous contaminated piping and electrical conduits associated with these systems will be removed and disposed as radioactive waste. The ventilation exhaust duct work is ^{238}Pu contaminated and will be removed.

- Phase II: Building Decontamination

The decontamination Phase II work is associated only with Building 38 and will be accomplished after the ventilation system is shut down. A temporary filter bank rated for nuclear service will be established to perform the remaining work within the building. The motor control center and absolute filter bank will be removed. This work will be similar to the glovebox removals.

- Phase II: Demolish Building 38, Demolish Building 38 Stack, Remove Underground Storage Tank

Building 38 and its additions will be demolished. Demolition will typically be accomplished by heavy equipment such as excavator-mounted shear and/or grapple. The exhaust duct from Building 38 to the Building 38 Stack will be removed along with a large air plenum and stack fan. The Building 38 electrical substation will be removed.

The plan for the demolition of the Building 38 Stack includes abrasive blasting of the interior and vacuuming out the contaminated debris and demolishing the stack wall with power sawing and removing the contaminated debris.

The underground storage tank serving Emergency Generator 2 was abandoned and replaced by an above ground tank in December, 1998. The underground tank will be removed.

- Phase II: Remove Associated Foundations and Soils

The foundations and soils associated with Building 38 and the Building 38 Stack will be removed. The Building 33 foundation and soil will be removed. The remaining foundations and footers from SM building and the asphalt/spoil area directly west of the original building site will be removed.

- Phase II: Verification

This step includes among other activities: sampling and analysis of soil at edges of excavation to determine the residual contaminant concentration and verifying that the residual contaminant concentration is within acceptable limits. The locations previously remediated by D&D projects (described in Section 2.2.1 - Previous Removal Actions) will also be verified. A region with a surface area of approximately 90,000 square feet will be verified. Approximately 40,000 square feet of this surface area is from previous D&D projects. The verification sampling and analysis process will be further defined by a Verification Sampling and Analysis Plan. Table 5.1 lists the ²³⁸Pu clean up objective and corresponding risk value. This objective applies to the areas remediated as part of this removal action; Building 33 foundation and soil, Building 38 foundation and soil, SM West Asphalt area soil.

- Site Restoration

Equipment, materials, waste containers, and boundaries will be removed. The site will be back-filled and restored to industrial use standards. The grounds will be seeded and mulched.

- Documentation of Completion

Completion of the Removal Action will be documented by an On-Scene Coordinator (OSC) report.

5.1.1.1 Rationale, Technical Feasibility, and Effectiveness

The removal action chosen is necessary for the removal of known contamination and to ensure that migration of the contamination does not occur.

Table 5.1 Clean-Up Guideline

Standard	²³⁸ Pu Concentration	Corresponding Risk ⁺
Risk Based Clean-Up Standard	55 pCi/g	1.0 x 10 ⁻⁵

⁺ Construction/Mound Employee, Risk Based Guideline Values, March 1997, Final, Rev. 4.

5.1.1.2 Monitoring

Health and safety monitoring will be performed throughout the removal action according to standard Mound procedures. Sampling and analysis of excavated soil will be described in more detail in the Work Plan for this removal action.

5.1.1.3 Uncertainties

The major uncertainties are the concentration levels of the contaminants and the extent of contamination.

5.1.1.4 Institutional Controls

DOE will remain in control of Building 38 during the removal action.

5.1.1.5 Post-Removal Site Control

Initially, post removal site control will be provided by DOE/Mound. The Mound Plant is to be sold to Miamisburg Mound Community Improvement Corporation (MMCIC). The institutional and site controls needed at the time of the site transfer in order to ensure future protection of human health and the environment will be included in the Record of Decision.

5.1.1.6 Cross-Media Relationships and Potential Adverse Impacts

The potential cross-media impact associated with the removal action is the potential for unintended release of contaminated materials into the atmosphere. Careful monitoring and control will be implemented during the removal action.

No potential adverse impacts of the removal action have been identified.

5.1.2 Contribution to Future Remedial Actions

To facilitate further assessments and removal actions in or near the site of this removal action, the exact dimensions of the excavation and the levels of contamination identified and removed will be documented. The On-Scene Coordinator Report will document the removal action with photographs, drawings, and other information collected during the field work.

The information obtained, as a result of this removal, will be used in determining the availability of the Mound site for final disposition and will be subject to review in the subsequent residual risk evaluation.

5.1.3 Description of Alternative Technologies

Alternative technologies frequently evaluated for CERCLA remediation include institutional controls, containment, collection, treatment, and disposal. Based on the prevailing conditions, the following alternatives (in addition to the proposed alternative of dismantlement) were developed.

1. No Action
2. Institutional Controls

The performance capabilities of each alternative with respect to the specific criteria is discussed below.

5.1.3.1 No Action

The levels of radioactive contamination in Building 38, Building 38 Stack, and associated soils are unacceptable. The "No Action" option was eliminated from further consideration.

5.1.3.2 Institutional Controls

Existing Mound Plant institutional controls effectively minimize the potential for contact of the subject contamination with the general public. However, after ownership is transferred, these same institutional controls will be difficult to monitor and enforce. Thus, institutional controls were eliminated from further consideration. A Removal Action is warranted.

5.1.4 Engineering Evaluation/Cost Analysis (EE/CA)

This document serves as the Action Memorandum and EE/CA.

5.1.5 Applicable, or Relevant and Appropriate Requirements (ARARs)

Mound ARARs for the ER Program have been identified (DOE 1998). CERCLA regulations require that removal actions comply with ARARs.

The following have been identified as applicable, or relevant and appropriate to this removal action:

- 49 CFR 172, 173: DOT hazardous material transportation and employee training requirements.

5.1.5.1 Air Quality

- 40 CFR Part 61 Subpart H: National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities.
- Ohio Administrative Code (OAC) 3745-15-07(A): Air Pollution Nuisances Prohibited.
- OAC 3745-17-02 (A,B,C): Particulate Ambient Air Quality Standards
- OAC 3745-17-05: Particulate Non-Degradation Policy
- OAC 3745-17-08: (A1), (A2), (B),(D): Emission Restrictions for Fugitive Dust

5.1.5.2 To Be Considered

- EPA/230/02-89/042: Methods for Evaluating the Attainment of Cleanup Standards.
- DOE Order 5400.5: Radiation Protection of the Public and the Environment

5.1.5.3 Worker Safety

- 29 CFR Part 1910: Occupational Safety and Health Act (OSHA) - General Industry Standards
- 29 CFR Part 1926: Occupational Safety and Health Act (OSHA) - Safety and Health Standards

- 29 CFR Part 1904: Occupational Safety and Health Act (OSHA) - Record keeping, Reporting, and Related Regulations

5.1.6 Other Standards and Requirements

Other standards or requirements related to the actual implementation of the response action may be identified subsequently during the design phase and will be incorporated into the Work Plan for this removal action.

5.1.7 Project Schedule

The schedule established for planning and implementing the removal action is summarized in Table 5.2.

Table 5.2 Schedule Summary

Activity	Start Date	Completion Date
Work Planning	29 June 1998	16 April 2001
Safe Shutdown	29 June 1998	28 January 2002
Characterization	29 June 1998	01 October 2002
A-Line Removal	20 May 1999	19 January 2000
F-Line Removal	27 October 1999	26 October 2000
Building Decontamination	02 August 1999	18 September 2001
Building Demolition	19 September 2001	16 July 2002
Stack Demolition	19 September 2001	30 May 2002
Soil Remediation	24 April 2001	31 October 2002
Verification	04 November 2002	16 December 2003
Site Restoration	17 December 2002	19 February 2003
OSC Report	24 February 2003	24 April 2003

5.2 ESTIMATED COSTS

The cost estimate to perform the removal action is shown in Table 5.3. Costs include the construction activities, all engineering and construction management, and site restoration.

TABLE 5.3 REMOVAL ACTION COST ESTIMATE

COST ESTIMATE	
Activity	Cost
Work Planning	\$ 1,130,090
Safe Shutdown	1,002,200
Characterization	4,386,600
A-Line Removal	1,756,160
F-Line Removal	1,259,890
Building Decontamination	2,424,380
Building Demolition	883,010
Stack Demolition	635,770
Soil Remediation	1,951,270
Verification	800,360
Site Restoration	417,910
OSC Report	37,940
Miscellaneous Items	365,460
TOTAL	\$17,051,040

6. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

There is the potential for the contaminants to migrate.

7. OUTSTANDING POLICY ISSUES

There are currently no outstanding policy issues affecting performance of this removal action.

8. ENFORCEMENT

The core team consisting of DOE, USEPA, and OEPA has agreed on the need to perform the removal. The work described in this document does not create a waiver of any rights under the Federal Facility Agreement, nor is it intended to create a waiver of any rights under the Federal Facility Agreement. The DOE is the sole party responsible for implementing this clean-up. Therefore, DOE is undertaking the role of lead agency, per CERCLA and the NCP, for the performance of this removal action. The funding for this removal action will be through DOE budget authorization and no Superfund monies will be required.

9. RECOMMENDATION

This decision document represents the selected removal action for the Building 38 site, developed 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.

Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the response action.

Approved:

Debra A. White for Art Kleinrath 7/1/99
Art Kleinrath, On-Scene Coordinator DOE/MEMP Date

Timothy J. Fischer 7/7/99
Timothy J. Fischer, Remedial Project Manager USEPA Date

Brian K. Nickel 7/12/99
Brian K. Nickel, Project Manager OEPA Date

10. REFERENCES

USEPA 1990. Superfund Removal Procedures Action Memorandum Guidance. Office of Emergency and Remedial Response. U.S. Environmental Protection Agency. December 1990.

DOE 1998. List of Ohio Administrative Code and Ohio Revised Code ARARs, Letter from Nickel to Kleinrath, August 19, 1998.

DOE 1992. OU6: Decontamination & Decommissioning, Area 17, Special Metallurgical (SM) Building Annex Verification Report, October, 1992.

DOE 1996. SM East Asphalt Area CERCLA Verification Project Data Report, February, 1996.

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