

3001-0405110003

APR 20 2004

CH2M HILL  
Mound, Inc.  
1 Mound Road  
P.O. Box 3030  
Miamisburg, OH  
45343-3030



ER-024/04  
April 20, 2004

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

SUBJECT: Contract No. DE-AC24-03OH20152  
Contract Deliverable 039 – PRS Documents  
**CONTINGENT REMOVAL ACTIONS FOR CONTAMINATED SOILS -  
ADDENDUM 1: STRUCTURES, PUBLIC REVIEW DRAFT**

Dear Ms. Marks:

Paul Lucas from your office has approved the release of the following document for public review.

- Contingent Removal Actions for Contaminated Soils -  
Addendum 1: Structures, Public Review Draft

This document will begin public review from April 22 to May 22, 2004. A copy of the ad that will appear in the Dayton Daily News on April 22 is enclosed. Responses to the regulators' comments on the draft version of the document are also enclosed.

Sincerely,

Monte A. Williams  
Deputy Project Manager, Environmental Restoration

MAW/DAR:jdg

Enclosures

- cc: David Seely, USEPA, (1) w/attachments  
Mary C. Wojciechowski, Tetra Tech EM, Inc., (1) w/attachments  
Brian Nickel, OEPA, (4) w/attachments  
Ruth Vandegrift, ODH, (1) w/ attachments  
Paul Lucas, DOE/MCP, (1) w/attachments  
Danny Punch, DOE/MCP, (1) w/attachments  
Lisa Rawls, DOE/MCP, w/o attachments  
Randy Tormey, DOE/OH, (1) w/attachments  
Dann Bird, MMCIC, (3) w/attachments  
Jim Bonfiglio, MESH, (1) w/attachments  
John Fulton, CH2M HILL, w/o attachments  
Gene Valett, CH2M HILL, w/o attachments  
Dave Rakel, CH2M HILL, w/o attachments  
Karen Arthur, CH2M HILL, w/o attachments  
Monte Williams, CH2M HILL, w/o attachments  
Public Reading Room, (4) w/attachments  
DCC

**RESPONSE TO OHIO ENVIRONMENTAL PROTECTION AGENCY  
COMMENTS OF MARCH 26, 2004 ON  
CONTINGENT REMOVAL ACTION FOR CONTAMINATED SOILS  
ADDENDUM 1: STRUCTURES  
FEBRUARY 2004, DRAFT**

**SUBSTANTIVE**

- 1). A Flow Chart must be provided to illustrate how the building will be process.  
(Refer to: Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach)

**Response**

The attached flowchart illustrates the CRA process for buildings. This flowchart will be included in the addendum. The following sentence was added to the last paragraph of the Purpose section. "A flowchart that illustrates the CRA process for buildings (other than Building 30 and Building 50 red drain line) is included as Figure 2."

Per Telecon 4/2/04, OEPA would like BDP with Factsheet for information. The flow chart was revised accordingly.

- 2). This Addendum needs to be incorporated with the original CRA Plan for Soils.  
**Response.**

When presented to the public, this Addendum will be incorporated with the original CRA. The Public Review Draft will be a single document that includes this Addendum followed by the original Action Memo.

- 3). The explanation as to how this addendum will be integrated with the original document implies that there will be attachments to the original document. Are the section numbers assumed to update or supplement the sections in the final June 2002 document as described in the Purpose? References within the text to the original document should be inserted where appropriate for easier understanding. (See comment # 6).

**Response**

Information in the Addendum for Sections 2, 5, and 9 of the original Action Memo supplements the original document. The original Action Memo on the Public Review Draft and subsequent versions (see response to comment 2) will ease understanding. In an early, internal draft, we inserted this supplemental information directly into the original action memo and found it to be confusing because the PRS information is out of date.

- 4). Can CH2M Hill and DOE/MCP give any estimate of the number of and which buildings are planned to be included under this addendum.

**Response**

As noted in comment 5, the original purpose of the CRA process for buildings was to provide a mechanism for dealing with unexpected contamination. At this time, the

process will be applied to Building 30, Building 50 red drain line, and Building 36 Dock. The buildings this process might be applied to (in whole or in part) would be the remaining structures whose demolition is expected to be via "industrial demolition". These buildings are 22, 24, 25, 31, 56, 57, 72, 104, 112, 113, 300, 301, 415, 432, 301A, 31A, DS, EG-1, EG-4, EG-6, EG-8, GP-8, P, PH, WH1, WH2, WH3. These buildings are now listed in the intro section for Section 5.1.1 Proposed Action Description.

- 5). Page 2, Purpose The original purpose of the addendum to the CRA for buildings was to have a quick, approved process to deal with unexpected contamination in what was found in what was thought to be clean non-CERCLA buildings. Therefore the addition of Building 30 within this addendum is inappropriate and the building should be taken through the normal process. The purpose section should be re-written to reflect the original intent.

Response

Based on discussions with Anthony Campbell on April 1, 2004 the inclusion of the flowchart (response to comment 1) provides the response to this comment. The Building 30 information and application of the CRA process to Building 30 remains.

- 6). Purpose, Second Paragraph, Page 2 of 4 -How does CH2M Hill and DOE/MCP plan on adding other structures? (See comment # 3). A concise explanation of how this will be handled administratively (documentation, interaction and agreement with regulators and stakeholders, estimated costs, etc.) should be included in the text of the addendum.

Response

The process is described in the flowchart provided in response to comment 1.

- 7). Page 3, Section 2.1.2 Please provide the results of the sampling that encompassed the red drain system within building 50 or provided the reference for the data.

Response

The data were provided in the Building 50 Final Status Survey Report submitted with the BDP.

- 8). Page 4, Section 5.1.1 Verification The second paragraph should be rewritten to clearly state that each building or structure will have an associated VSAP.

Response

The paragraph was revised as follows:

"A VSAP will be developed for each building or structure included in the CRA process. Due to the number of structures and analytes, specific the analytes for a building will need to be specified for specific structures within the specific that building's VSAPs. These VSAPs will be submitted in one or more documents to the Core Team for review and approval. Each structure/building will be considered separately and will retain COCs identified above. If information is realized before or during the course of the removal action that could change the COCs verified, the information will be brought to

the attention of the Core Team for evaluation.”

**EDITORIAL**

9). Purpose, Page 2 of 4 - Should not this section be numbered Section 1?

**Response**

The Purpose section was not numbered to help set it apart from the supplemental material for the original action memo which starts on page 3 with section 2. A separator page labeled “Attachments” has been added.

## RESPONSE TO U.S. EPA COMMENTS

On the DOE Mound - Action Memo/ EE/CA for Contingent Removal Actions for Contaminated Soils - Addendum 1: Structures, dated February 25, 2004

### Specific Comments

1. Purpose: The format used for this addendum is acceptable for including removals for Building 30 and Building 50 Red Drain System under the Contingent Removal Action. However if DOE intends to include any additional buildings under the contingent action memo in the future, the format should follow the format of the original more closely so that the final document would reflect a consistent approach. In general if additional buildings will be added in the future, it is assumed that the building process will mirror the PRS process included in the original Contingent Action Memo (i.e. issuance of fact sheets to further describe the additional buildings). Additionally, it is expected that the additional buildings will be binned for removals by the Core Team and a recommendation sheet would be included in the Building Data Packages to provide a similar decision process.

### Response

It is the intent to establish this process to be able to include additional buildings in the future. A flowchart for the building CRA process has been added. It does mirror the CRA process for PRSs and is consistent with the description above.

For the current buildings, the addendum should include a similar Core Team Recommendation summary sheet or should clearly state that this addendum represents the removal decision of the Core Team and include a similar decision summary for each building. It is also unclear if a fact sheet will be issued for Building 30 and/or Building 50 Red Drain System. If not, this addendum should clearly specify that the public review of the addendum will represent the public notification requirements for these two facilities as Section 5.1.1 does for PRSs in the original Contingent Removal Action Memo.

### Response

The following text was added to the addendum at the end of the Purpose section: "Public review of this Addendum meets the public notification requirements for Building 30 and the Building 50 red Drain Line. For other buildings added to the CRA process, public notification will be via Factsheet and a notice published in a local newspaper. "

2. Para 2.1.2 Site Characteristics - Building 30, Page 3 of 4: The text states that one of the past functions of Building 30 was to serve as the "SM storage building." The text should be revised to state what kind of materials were stored in the building and how these materials were handled.

#### Response

Building 30 has served three functions since it was built in 1965; SM storage building (65-late 70s), gamma scanning facility (late 70s thru mid 80s), and counting laboratory (mid 80s until recently). Unfortunately, no information could be found on the kind of materials stored in the building and how these materials were handled while Building 30 served as the SM storage building. The section was revised to read as follows:

"Building 30 was constructed in 1965 and has served three main functions: the SM storage building (65 – late 70s), a gamma scanning facility for drums and boxes of radioactively contaminated materials (late 70s to mid 80s), and a counting laboratory for the analysis of radionuclides (mid 80s to recently). When Building 30 was used as a gamma scanning facility, soil in sealed dishes was screened in a gamma counter to determine the amount of plutonium or thorium present in the sample. The sealed dishes were not opened and were discarded in a Low Specific Activity (LSA) container outside of Building 30. As a radiological counting laboratory, Building 30 personnel used liquid scintillation counting to count paper smear samples for the detection of tritium and gross alpha/beta activity."

3. Para 2.1.2 Site Characteristics - Building 30, Page 3 of 4: This section should clearly state the COC(s) for building 30.

#### Response

The following text was added to 2.1.2 "The Contaminant of Concern for Building 30 is plutonium-238. "

4. Para 2.1.2 Site Characteristics - Building 30, Page 3 of 4: The text indicates that "soil under the building 30 footprint is addressed elsewhere." The text should be revised to specify the efforts that will address these soils and clarify whether or not they will be addressed under a separate removal plan and verification sampling and analysis plan (VSAP). If these soils will not be addressed as part of this removal action and no PRS exist which includes these soils, these soils should be included in this removal action or an additional PRS should be created to track these concerns.

#### Response

The sentence was revised to read:

"Soil under the Building 30 footprint is addressed elsewhere in the Building 38 Soils Action Memorandum Addendum 1, SM/PP Hill Removal Plan, and Building 38 Area VSAP. "

5. Para 5.1.1 Proposed Action Description, Phase II: This section states that "since multiple contaminants may be present, the data may need to be reviewed to determine if cumulative risk is acceptable." The text goes on to state that "due to the number of structures and analytes, specific analytes will need to be

specified for specific structures within specific VSAPs.” These statements seem to contradict Section 2.1 of the CAM addendum, which states that both Building 30 and Building 50 have only one constituent of concern. This apparent discrepancy should be resolved.

#### Response

The language for multiple contaminants was for buildings other than Building 30 and Building 50 red drain line. In response to an OEPA comment the second paragraph has been revised to read as follows: see OEPA # 8

Results of telecon April 12, 2004 (David Seely & Dave Rakel)

#### Section 2.1.2 Site Characteristics

##### Building 30

Additional justification needed for Pu-238 being the only COC (analysis result, process knowledge,...) The following text was added to second paragraph:

“Only plutonium-238 was observed by this analysis. “

##### Building 50 Red Drain Line

End of paragraph, discussion of secular equilibrium. Agreed to change to the following:

“A sediment sample from the wastewater holding tank was analyzed and Th-232 was found observed (13.84 pCi/g) in excess of the cleanup objective (~~13.84 pCi/g vs. cleanup objective of 2.1 pCi/g~~). Th-228 was also found in the same sample (12.16 pCi/g) (~~cleanup objective of 2.6 pCi/g~~). ~~Because thorium-232 and thorium-228 are in equilibrium, an acceptable level of thorium-232 indicates that thorium-228 is also at an acceptable level.~~ Accordingly, the Contaminants of Concern for the Building 50 Red Drain System is are thorium-232 (cleanup objective 2.1 pCi/g) and thorium-228 (cleanup objective 2.6 pCi/g). “

#### Section 5.1.1 Proposed Action Description

Agreed to add text indicating CRA process for buildings mirrors that for PRSs.

The following text was added:

The CRA process for buildings mirrors the CRA process for PRSs. Figure 2 is a flowchart illustration of the CRA process for buildings. The CRA process for buildings is applied when new information becomes available that indicates the industrial demolition path (Figure 4.4 in Reference 2) is inappropriate. This information is documented in the Factsheet. The current list of buildings expected to be industrial demolitions is 22, 24, 56, 57, 72, 104, 112, 113, 300, 301, 415, 432, 301A, DS, EG-1, EG-4, EG-6, EG-8, GP-8, P, PH, WH1, WH2, and WH3.

#### Phase II: Verification

Second paragraph, second line. Changed “analytes” to “COCs”

### Flow Chart Changes

Link "Continue to Building Evaluation Process" to Mound 2000 Work Plan

Link "Go To Building Response Action Process" to Mound 2000 Work Plan

Change "Prepare Factsheet Core Team Review" to "Prepare Factsheet Core Team Review and Approval"

Remove (30day) from Regulator Review and Approval of VSAP (30day)

Add footnote indication Factsheet documents the new information that "moves" the building into the CRA process.

# Action Memo / EE/CA

for

## Contingent Removal Actions for Contaminated Soils

### Addendum 1: Structures

April 2004

Public Review Draft



Department of Energy



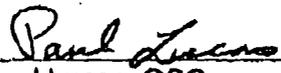
**CH2MHILL**

## RECOMMENDATION

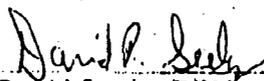
This decision document represents concurrence to incorporate Building 30, the Building 50 red drain line system, and similar structures that are simple removals, easily verified, with a small number of contaminants into the Contingent Removal Action. Plutonium-238 was observed on the floor of Building 30 by alpha spec at 294,197 dpm/sample. This exceeds the surface contamination guideline (100 dpm/100cm<sup>2</sup>). A sediment sample from the Building 50 red Drain Line was analyzed and Th-232 was observed (13.84 pCi/g) in excess of the cleanup objective (2.1 pCi/g). Th-228 was also found in the same sample (12.16 pCi/g) in excess of the cleanup objective (2.6 pCi/g).

Presentation of the information in this addendum models the approved Contingent 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 actions already proposed for buildings and we recommend that they be inflated as described herein.

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

4/14/04

  
David Seely, RPM  
USEPA  
Chicago, Illinois

4/16/04

  
Brian Nickel  
OEPA  
Dayton, Ohio

4/15/04

### PURPOSE:

The purpose of this addendum is to add applicable buildings and structures to the contingent removal action (CRA) process (AM, Reference 1). Justification for adding buildings and structures to the existing CRA process is as follows:

- demolition of contaminated buildings frequently exhibit the same characteristics for inclusion in the CRA process as PRSs,
  - simple removal action,
  - easily verified, and
  - small number of contaminants of concern (COCs).
- the contaminants for the specified buildings 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 similar activities into one Action Memo affords streamlining of sampling and reporting documentation.

The approach used to add buildings/structures into the Contingent Action Memo is to identify, for two examples (Building 30 and the Building 50 red drain line), sections in the Contingent 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,
- figure of structure locations,
- Section 5.1.1, Proposed Action Description, Phase II,
- Section 5.1.7 Project Schedule,
- Section 5.2 Estimated Costs, and
- Section 9 Recommendation (see new Recommendation Page for Addendum 1).

The Contingent Action Memo was generated to address contaminated soil Potential Release Sites (PRSs) at the Mound Closure Project (MCP) that meet certain criteria. This addendum incorporates into the Contingent Action Memo Building 30, Building 50 red drain line, and those buildings and structures that meet similar criteria. A flowchart that illustrates the CRA process for buildings (other than Building 30 and Building 50 red drain line) is included as Figure 2. Public review of this Addendum meets the public notification requirements for Building 30 and the Building 50 red Drain Line. For other buildings added to the CRA process, public notification will be via Factsheet and a notice published in a local newspaper. Included herein are text inserts as itemized above, one figure, and one table (cost estimate).

### REFERENCES:

- 1) Action Memorandum, Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final.

- 2) Work Plan for Environmental Restoration of the DOE Mound Site, The Mound  
2000 Approach, February 1999, Final

**PREPARED BY:**

Karen M. Arthur, CH2MHill, ER QA

Attachments

## 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 MCP is a site on the southern border of the city of Miamisburg in Montgomery County, Ohio. The additional removal action is proposed for the Building 30 superstructure and the Building 50 red drain line system (Figure 1).

#### 2.1.2 Site Characteristics

**Building 30** is known as the Health Physics Count Lab/SM [Special Metallurgical] Storage Building, and is located as shown on Figure 1. Building 30 was constructed in 1965 and has served three main functions: the SM storage building (65 – late 70s), a gamma scanning facility for drums and boxes of radioactively contaminated materials (late 70s to mid 80s), and a counting laboratory for the analysis of radionuclides (mid 80s to recently). When Building 30 was used as a gamma scanning facility, soil in sealed dishes was screened in a gamma counter to determine the amount of plutonium or thorium present in the sample. The sealed dishes were not opened and were discarded in a Low Specific Activity (LSA) container outside of Building 30. As a radiological counting laboratory, Building 30 personnel used liquid scintillation counting to count paper smear samples for the detection of tritium and gross alpha/beta activity. The building is currently inactive and undergoing preparations for demolition.

Plutonium-238 is present on the building floor and possibly on the interior walls. The highest isotopic analysis result by alpha spec was 294,197 dpm/sample plutonium-238. This exceeds the surface contamination guideline (100 dpm/100cm<sup>2</sup> in Reference 2). Only plutonium-238 was observed by this analysis. Perimeter survey results found no contamination outside of the building. Since extensive remediation of the floor is not considered practical, the floor contamination will be encapsulated with the application of a paint fixative. Building 30 will be demolished in its entirety as a radiological facility and the debris disposed of as low level waste per Waste Management direction. The Contaminant of Concern for Building 30 is plutonium-238.

This Removal Action includes the demolition of the Building 30 superstructure. Soil under the Building 30 footprint is addressed in the Building 38 Soils Action Memorandum Addendum 1, SM/PP Hill Removal Plan, and Building 38 Area VSAP.

**Building 50 Red Drain System:** Building 50, the Alpha Fuels Environmental Test Facility was located as shown on Figure 1. Building 50 housed projects that only used encapsulated (sealed) radiological sources. All final radiological surveys of Building 50's interior and exterior superstructure surfaces met surface release criteria, and the building was demolished per the Building Data Package and Demolition Work Plan. During pre-demolition surveys of Building 50, elevated levels of thorium were discovered on a drain cover, drain line, and associated 1,100-gallon sump designed to hold wastewater from the Building 50 red drain system (lines that could potentially be radiologically contaminated). The sump is a steel tank in a secondary concrete containment pit. A sediment sample from the wastewater holding tank was analyzed and Th-232 was observed (13.84 pCi/g) in excess of the cleanup objective. Th-228 was also

found in the same sample (12.16 pCi/g). Accordingly, the Contaminants of Concern for the Building 50 Red Drain System are thorium-232 (cleanup objective 2.1 pCi/g) and thorium-228 (cleanup objective 2.6 pCi/g).

This Removal Action includes the removal of all drain lines in the Building 50 red drain system, the associated wastewater holding tank and concrete vault, and contaminated soil, if any, associated with the removal of the structures.

Buildings/structures utilizing the Contingent Action Memo will be closed out via an OSC Report.

### **5.1.1 Proposed Action Description, Phase II**

The CRA process for buildings mirrors the CRA process for PRSs. Figure 2 is a flowchart illustration of the CRA process for buildings. The CRA process for buildings is applied when new information becomes available that indicates the industrial demolition path (Figure 4.4 in Reference 2) is inappropriate. This information is documented in the Factsheet. The current list of buildings expected to be industrial demolitions is 22, 24, 56, 57, 72, 104, 112, 113, 300, 301, 415, 432, 301A, DS, EG-1, EG-4, EG-6, EG-8, GP-8, P, PH, WH1, WH2, and WH3.

- Phase II: Remove Structures and Soil

Building 30 and the Building 50 red drain line system and tank will also be demolished and disposed of properly.

- Phase II: Verification

Confirmation sampling will be conducted within the additional areas to confirm COCs are below cleanup objectives. A DOE, USEPA, and OEPA-approved Verification Sampling and Analysis Plan (VSAP) will further define the verification sampling and analysis process. Since multiple contaminants may be present, the data may need to be reviewed to determine if cumulative risk is acceptable.

A VSAP will be developed for each building or structure included in the CRA process. Due to the number of structures and analytes, the COCs for a building will be specified within that building's VSAP. VSAPs will be submitted to the Core Team for review and approval. Each structure/building will be considered separately and will retain COCs identified above. If information is realized before or during the course of the removal action that could change the COCs verified, the information will be brought to the attention of the Core Team for evaluation.

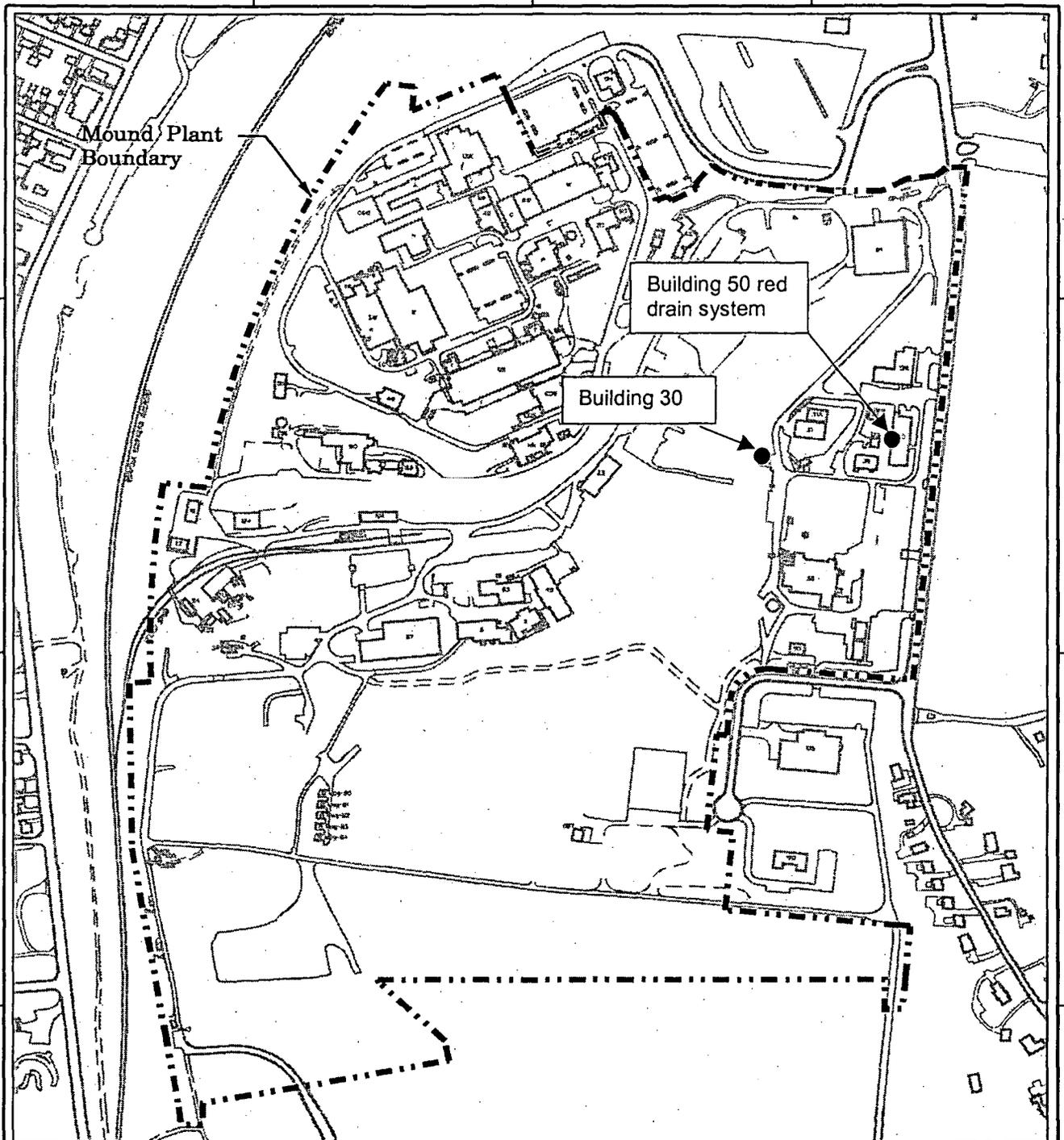
### **5.1.7 Project Schedule**

Building 30 and the Building 50 red drain line system are in queue for implementation in 2004.

## 5.2 ESTIMATED COSTS

The cost estimate to perform removal and sampling activities for Building 30 and the Building 50 red drain system are shown on the table below.

	<b>Bldg 30</b>	<b>Bldg 50 Red Drain System</b>
Work Planning	\$6,550	\$6,550
Characterization	\$2,715	\$10,725
Utilities	\$4,430	\$27,020
Safe Shutdown	\$9,500	\$38,680
Decontamination	\$1,070	\$5,840
Demolition	\$7,190	\$70,945
Slab & Piping Removal	\$5,295	\$48,710
VSAP	\$2,000	\$11,430
Hauling & Disposal	\$5,000	\$50,000
Site Restoration	\$3,015	\$5,950
Total	\$46,765	\$275,850



Legend

- Structures
- Paved roadway
- Unpaved roadway
- Mound Plant boundary
- Railroad



02/25/03	SSF								
DATE	REVISION	BY	CHKD	DATE	APPROV				

**MOUND**



Environmental  
Restoration  
Geographic  
Information  
System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
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Figure 1: CAM Addendum 1

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Contingent Removal Action  
 Process for Buildings Not Listed in this Addendum  
 (Buildings To Be Demolished)

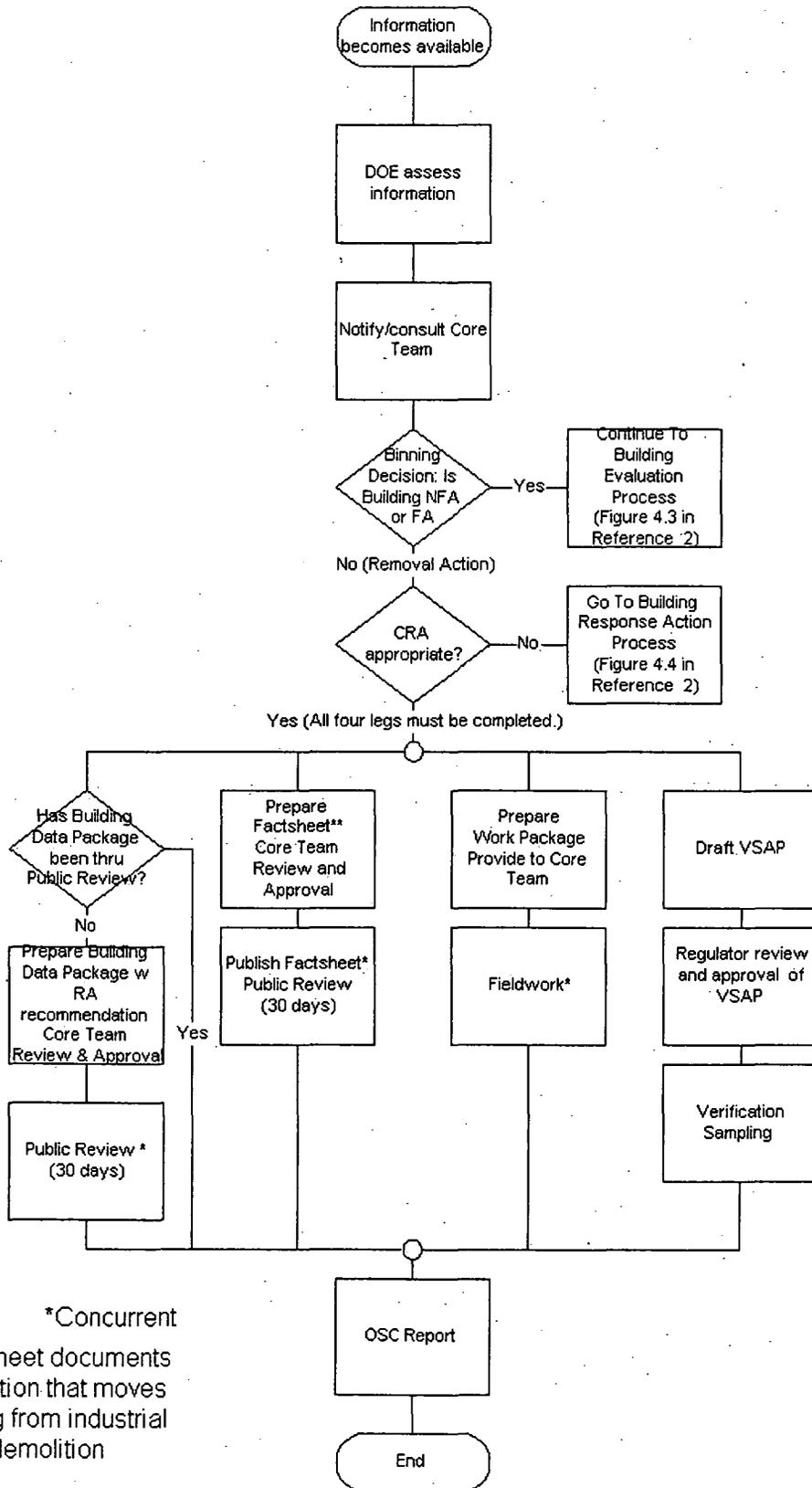


Figure 2