

1101 0405250006

DEC -8 2003



**CH2MHILL**

CH2M HILL

Mound, Inc.

1 Mound Road

P.O. Box 3030

Miamisburg, OH

45343-3030

ER-119/03

December 8, 2003

Mr. Dewain V. Eckman, 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  
**PRS 11 PUBLIC FACT SHEET AND PACKAGE**

Dear Mr. Eckman:

Danny Punch from your office has approved the release of the following document for public review.

- PRS 11 Public Fact Sheet
- PRS 11 Package

The Core Team Members have reviewed this document. Responses to their comments are enclosed. The Public review period for this document will be from December 5, 2003 to January 4, 2004. Please contact Dave Rakel (937-865-4203) with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Monte A. Williams".

Monte A. Williams  
Project Manager, Environmental Restoration

MAW/DAR:jdg

Enclosures

cc: David Seely, USEPA, (1) w/attachment  
Mary C. Wojciechowski, Tetra Tech EM, Inc., (1) w/attachment  
Brian Nickel, OEPA, (4) w/attachment  
Paul Lucas, DOE/MEMP, (1) w/attachment  
Danny Punch, DOE/MEMP, (1) w/attachment  
Lisa Rawls, DOE/MEMP w/o attachment  
Dann Bird, MMCIC, (3) w/attachments  
John Fulton, CH2M HILL, w/o attachment  
Gene Valett, CH2M HILL, w/o attachment  
Dave Rakel, CH2M HILL, w/o attachment  
Karen Arthur, CH2M HILL, w/o attachment  
Monte Williams, CH2M HILL, w/o attachment  
DCC

# Response to Comments

on PRS 11: Thorium and Polonium Contaminated Waste Area  
Public Fact Sheet Draft, 2003

## USEPA Comments:

No formal comments received. Verbal comments addressed during November Core Team meeting.

## OEPA Comments:

**Comment 1:** Background, Second Paragraph, First Column: Please add a sentence at the end of this paragraph about the Dayton Units, source of the polonium. Without this, there is no explanation in the fact sheet about polonium contamination (see title).

**Response 1:** Sentence added: This location also contains buried wood ash and debris from a fire that had consumed the polonium-contaminated flooring from the Dayton units (Area 13).

**Comment 2:** Work Plan, Fifth Paragraph, First Column, First Sentence: Please insert after "Unique Work Package" the phrase "as reviewed by the Core Team<sup>2</sup>".

**Response 2:** Changes have been made.

**Comment 3:** VSAP, Last Paragraph, First Column, First Sentence: Please insert after "crushed drums" the phrase "and other debris associated with the Dayton Units if discovered".

**Response 3:** Changes have been made.

**Comment 4:** Fourth Paragraph, Left Column. The (RA) should be in bold font, for consistency with the other acronyms (like VSAP below). "COC" should be spelled out in place of using the acronym.

**Response 4:** Changes have been made. Contaminant of Concern.

**Comment 5:** Second Paragraph, Right Column. The parenthesis before the word "of" and the closing parenthesis after the word "material" should be removed.

**Response 5:** Changes have been made.

**Comment 6:** Figure 1, Right Column. This figure should be labeled as "Figure 1" (unless it already is, and it did not show on the screen and print out).

**Response 6:** On Figure itself.



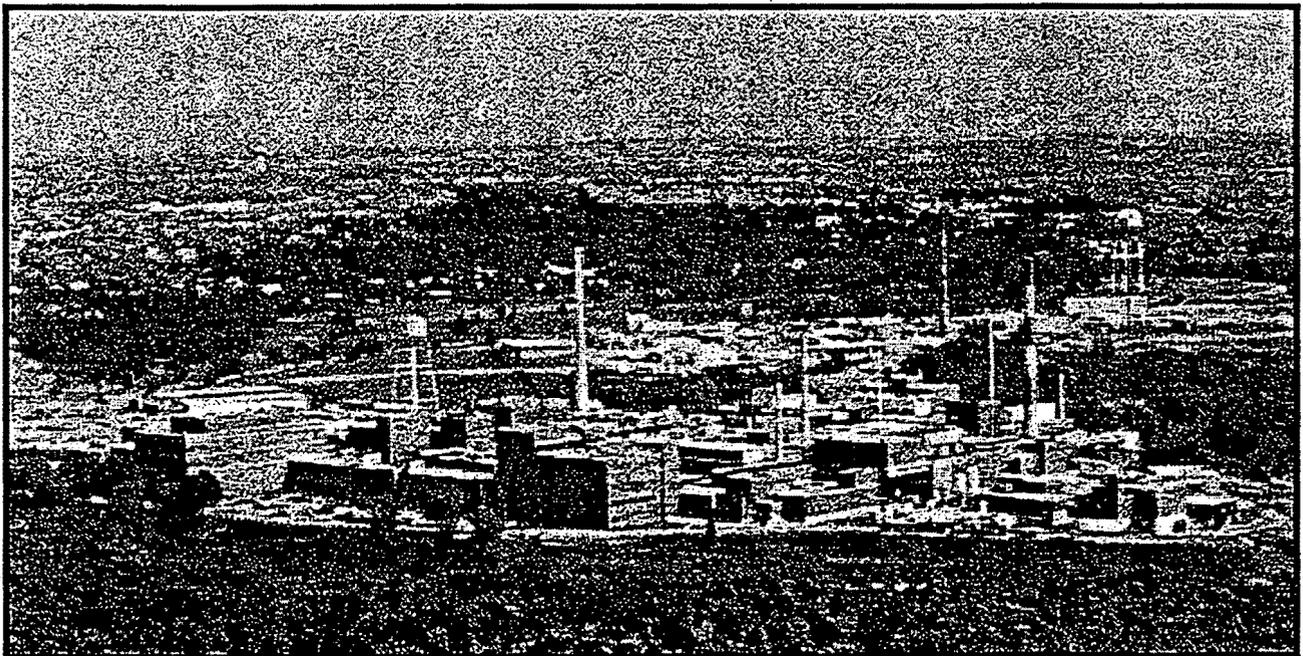
**Environmental  
Restoration  
Program**



# **Miamisburg Closure Project Potential Release Site Package**

## **PRS 11**

Public Review Draft  
December 2003





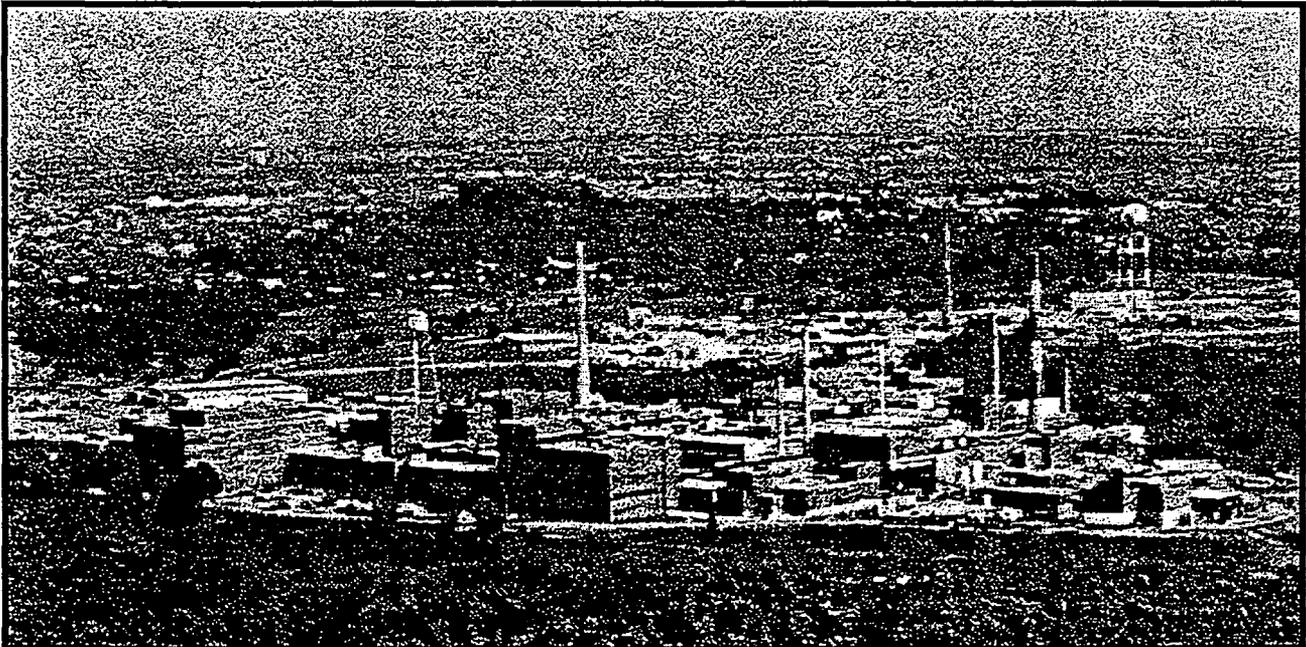
**Environmental  
Restoration  
Program**



**OhioEPA**

# **Miamisburg Closure Project Potential Release Site Package PRS 11 Addendum 1**

Public Review Draft  
December 2003



## **Addendum 1 to PRS 11 Package**

---

---

**Background:** This Addendum 1 to the original PRS 11 Package serves to present additional information realized since the PRS was binned No Further Assessment.

**Additional Information:** The following items are presented over the next four pages and were used as supporting information to update the PRS 11 status from No Further Assessment to Removal Action:

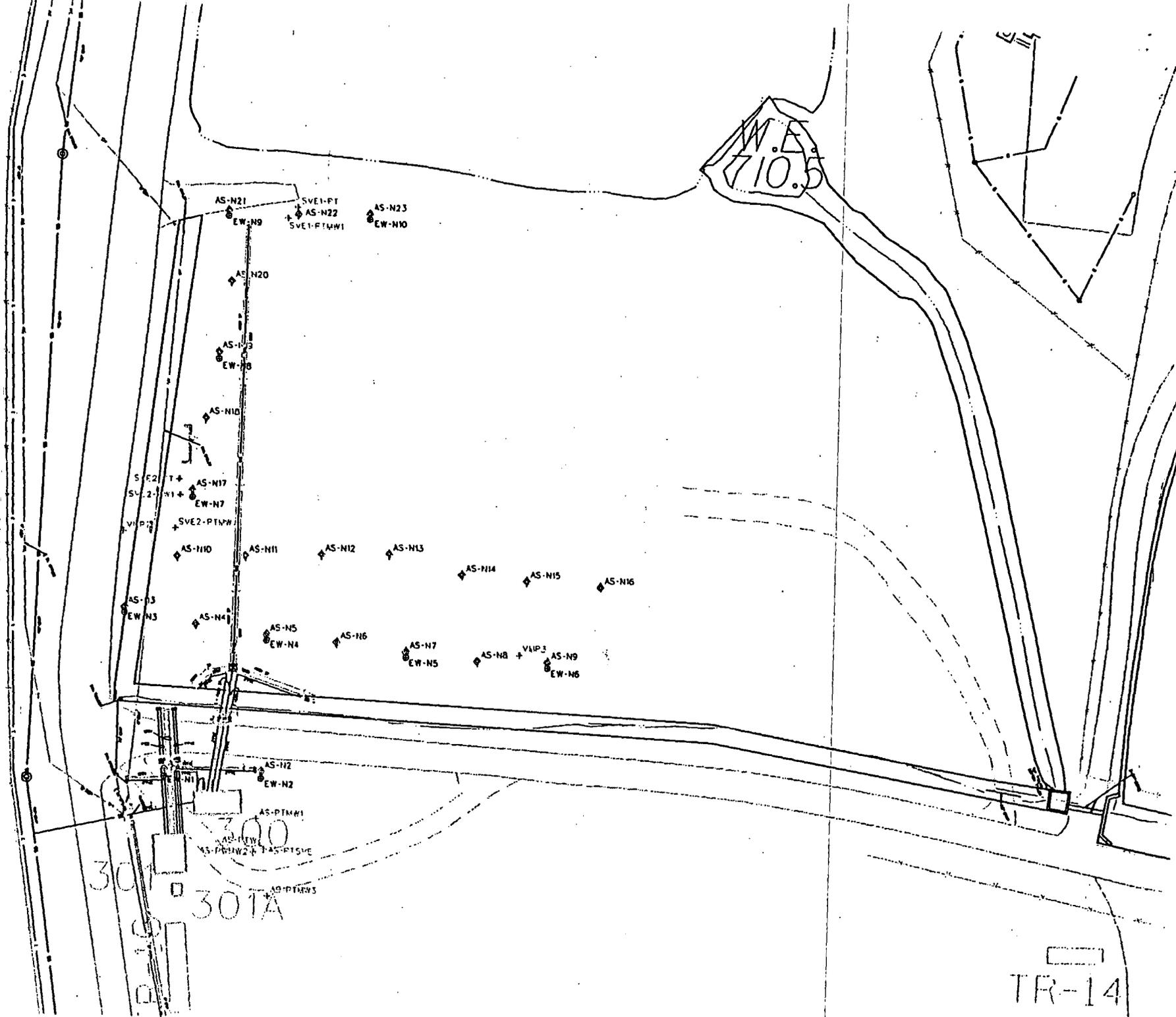
---

- Exhibit 1: Figure including sample locations at/near PRS 11
- Exhibit 2: table of data associated with Exhibit 1
- Public Fact Sheet
- Core Team Recommendation Page.

The Recommendation Page presented on page 2 of the Public Fact Sheet but was not duplicated herein.

**Prepared By:**

Karen M. Arthur, CH2MHill, ER QA



2 of 5

TR-14

Prepared by Large Soils Project Group 9/18/03

West Bench Well I.D. (North to South)	Th-232 (pCi/g)	South Bench Well I.D. (West to East)	Th-232 (pCi/g)	North Bench Well I.D. (West to East)	Th-232 (pCi/g)	By Road Well I.D. (North to South)	Th-232 (pCi/g)	Angle Bores Well I.D. (West to East)	Th-232 (pCi/g)
EW-N9	0.58	AS-N4	16.13	AS-N22	0.4	VPMP-3	0.37	AS-N11 (1)	0.49
AS-N21	0.55	EW-N4	98.64	AS-N23	0.37	AS-N3	0.52	AS-N11 (2)	0.3
AS-N20	0.42	AS-N5 (1)	132.8	EW-N10	MIA	EW-N3	0.42	AS-N12 (1)	1.21
EW-N8	0.42	AS-N5 (2)	106.2			VPMP-4	0.36	AS-N12 (2)	31.03
AS-N19	0.36	AS-N6	1.91			EW-N1	0.39	AS-N13	0.4
AS-N18	0.27	AS-N7	561.7			AS-N1	0.44	AS-N14	0.44
EW-N7	0.47	EW-N5	1.53			EW-N2	0.43	AS-N15	0.39
AS-N17	0.35	AS-N8	0.61			AS-N2	0.37	AS-N16	0.46
AS-N10	2.01	VPMP-2	0.66						
		AS-N9	0.47						
		EW-N6	0.52						

3 of 5

# PUBLIC FACT SHEET

## PRS 11: Thorium and Polonium – Contaminated Waste Area

This Fact Sheet satisfies the Public Notification requirement set forth in the Contingent Removal Action Memorandum<sup>1</sup>.

**Background.** Potential Release Site (PRS) 11, also known as Area 2 and the Crushed Drum Area, is located in the southwest portion of the site (within the boundary of CERCLA Operable Unit 1) as shown on Figure 1. Approximately 2,500 empty drums were crushed in place and covered with soil. These drums had previously contained thorium process materials used for thorium projects in the 1960s. This location also contains buried wood ash and debris from a fire that had consumed the polonium-contaminated flooring from the Dayton units (Area 13). Since Polonium-210 has a half-life of 138 days, it is no longer detectable. However, Lead-210 (half-life of 22 years) may have been used in one of the processes to produce the Polonium-210. Therefore, Lead-210 is listed in the table below.

**Characterization.** Thorium-232 was found during installation of drainage features and wells in support of the Operable Unit 1 Record of Decision remedy and subsequent augmentations. The maximum concentration found is included in the following table (unit = pCi/g).

Analyte	Bkgd**	Maximum Concentration	Cleanup Objective*
Lead-210 + D	1.2	see note	7.4
Thorium-232	1.4	561.7	2.1

note: Pb-210, as a COC, is only associated with Dayton debris, if found. No samples above C.O. have been reported.  
 \* risk criteria      \*\*background soil concentration

Based on the above, the Department of Energy (and the Core Team, see Recommendation Page on page 2) determined that a **Removal Action (RA)** was appropriate per the Contingent Removal Action Memo<sup>1</sup>. The RA Contaminants of Concern (COC) are listed in the table above.

The **Work Plan** for Contingent Removal Actions<sup>2</sup>, supplemented by the Unique Work Package as reviewed by the Core Team<sup>1,2</sup>, includes procedures, instructions, and applicable permits and notifications required to safely conduct the work. Erosion and runoff/runoff controls will be managed per the SWPPP<sup>3</sup>.

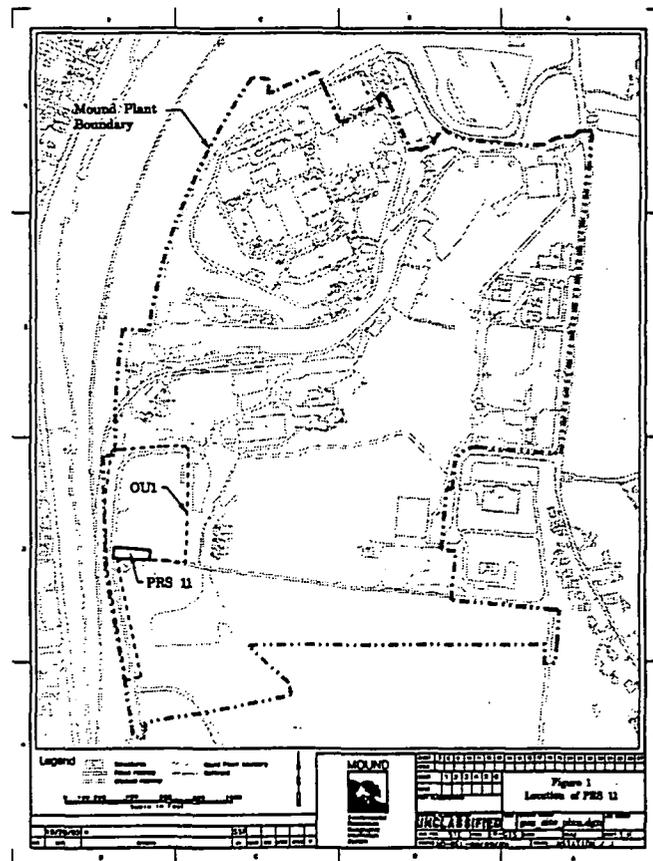
The RA will consist of excavation of the crushed drums (and other debris associated with the Dayton Units if discovered), as indicated by sample results above the

cleanup objectives (see table), and shipping of debris to an approved disposal facility. Post-excavation sampling will be performed within the area per a Core Team approved **Verification Sampling & Analysis Plan (VSAP)**.

**Schedule.** This Fact Sheet will be in public review for 30 days, ending January 4, 2004. The RA is planned for Summer 2004. A summary of the RA and the verification data will be included in the On-Scene Coordinator (OSC) Report. The OSC Report will be placed in the public reading room after the conclusion of the verification sampling and approval by the Core Team.

Excavation of approximately 13,000 yd<sup>3</sup> (9,939 m<sup>3</sup>) of material, disposal, and verification are expected to cost less than \$4,115,000.

Additional information can be found in the public reading room, or by contacting Danny Punch at 847-8350 ext. 301.



1: Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final  
 2: Standard Work Package for Contingent Removal Actions, November 2001, Final  
 3: Storm Water Pollution Prevention Plan

## Recommendation for PRS 11

---

Potential Release Site (PRS) 11, also known as Area 2 and the Crushed Drum Area, is located in the southwest portion of the site (within the boundary of CERCLA Operable Unit 1), see Figure 1 on Fact Sheet. Approximately 2,500 empty drums were crushed in place and covered with soil. These drums had previously contained thorium process materials used for thorium projects in the 1960s. This location also contains buried wood ash and debris from a fire that had consumed the polonium-contaminated flooring from the Dayton units (Area 13).

Thorium-232 was found during installation of drainage features and wells in support of the Operable Unit 1 Record of Decision remedy and subsequent augmentations. The maximum concentration of Th-232 found was 561.7 pCi/g, compared to the cleanup objective of 2.1 pCi/g. Based on the above information, the Department of Energy determined that a **Removal Action (RA)** was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum. The RA Contaminant of Concern is thorium-232.

The Core Team originally recommended No Further Assessment for PRS 11 based upon data available at that time. However, based upon the above information the Core Team recommends a Removal Action for PRS 11.

This Removal Action will be performed under the Action Memorandum for Contingent Removal Actions. Successful completion of the Removal Action will be documented via an On-Scene Coordinator (OSC) Report signed by the Core Team, which will be placed in the Public Reading Room.

A Public Fact Sheet along with this recommendation, signed by the Core Team, will be placed in the Public Reading Room for a 30-day review period. Upon closure of the public review comments, if any, the Fact Sheet will be issued as a final document and made available in the Public Reading Room.

### CONCURRENCE:

DOE/MCP: Paul Lucas 11/26/03  
Paul Lucas, Remedial Project Manager (date)

USEPA: David P. Seely 11/19/03  
David P. Seely, Remedial Project Manager (date)

OEPA: Brian K. Nickel 11/25/03  
Brian K. Nickel, Project Manager (date)



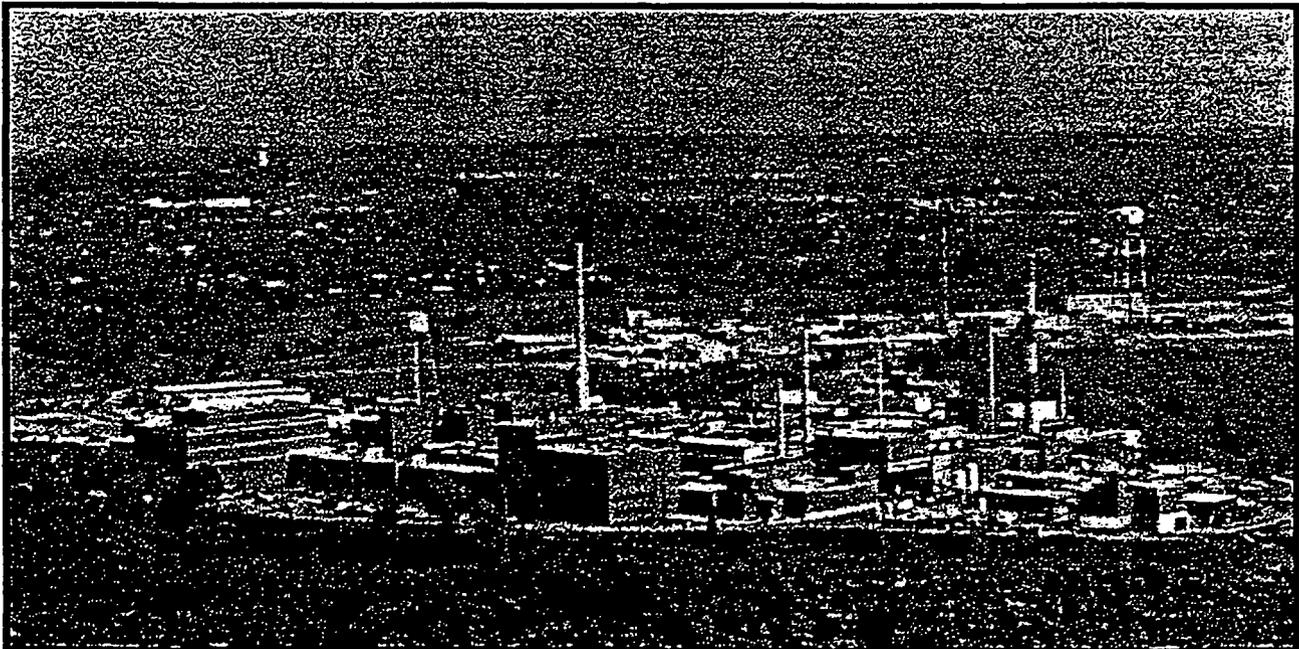
**Environmental  
Restoration  
Program**



**Miamisburg Closure Project  
Potential Release Site Package**

**PRS 11**

**ORIGINAL PRS PACKAGE**



# MOUND



Environmental  
Restoration  
Program



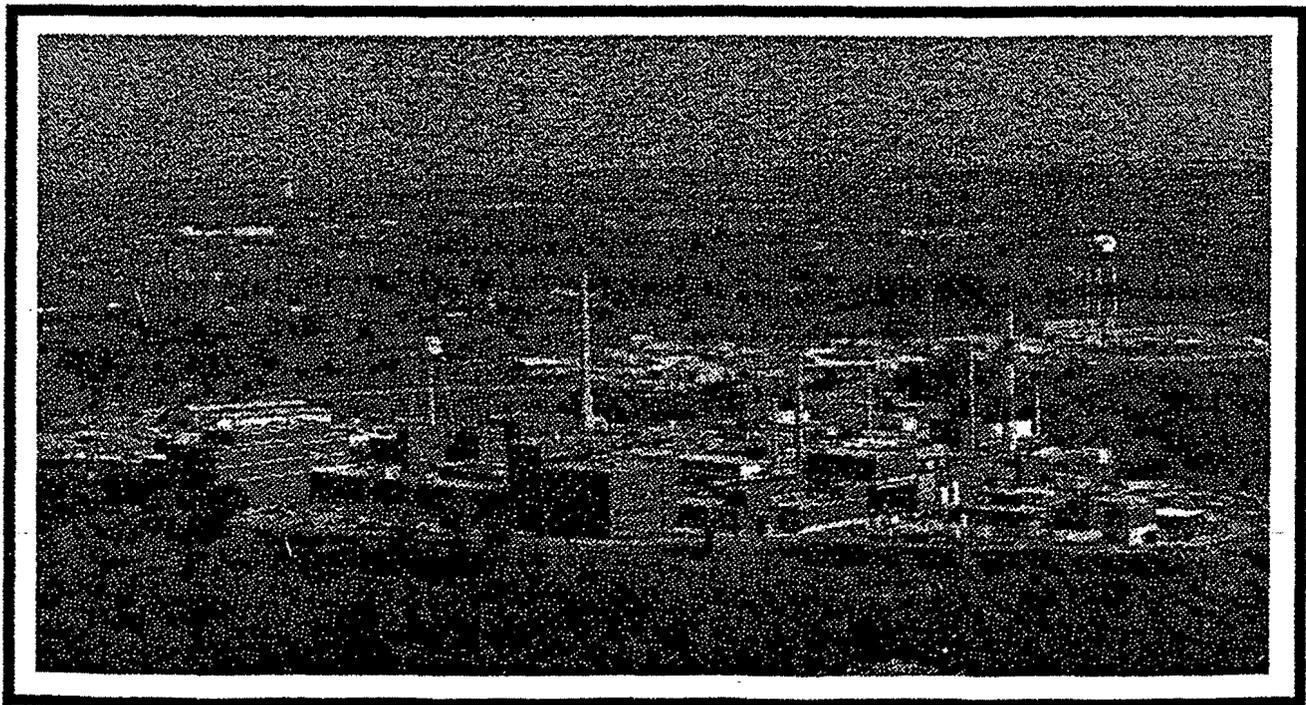
OhioEPA



# MOUND PLANT

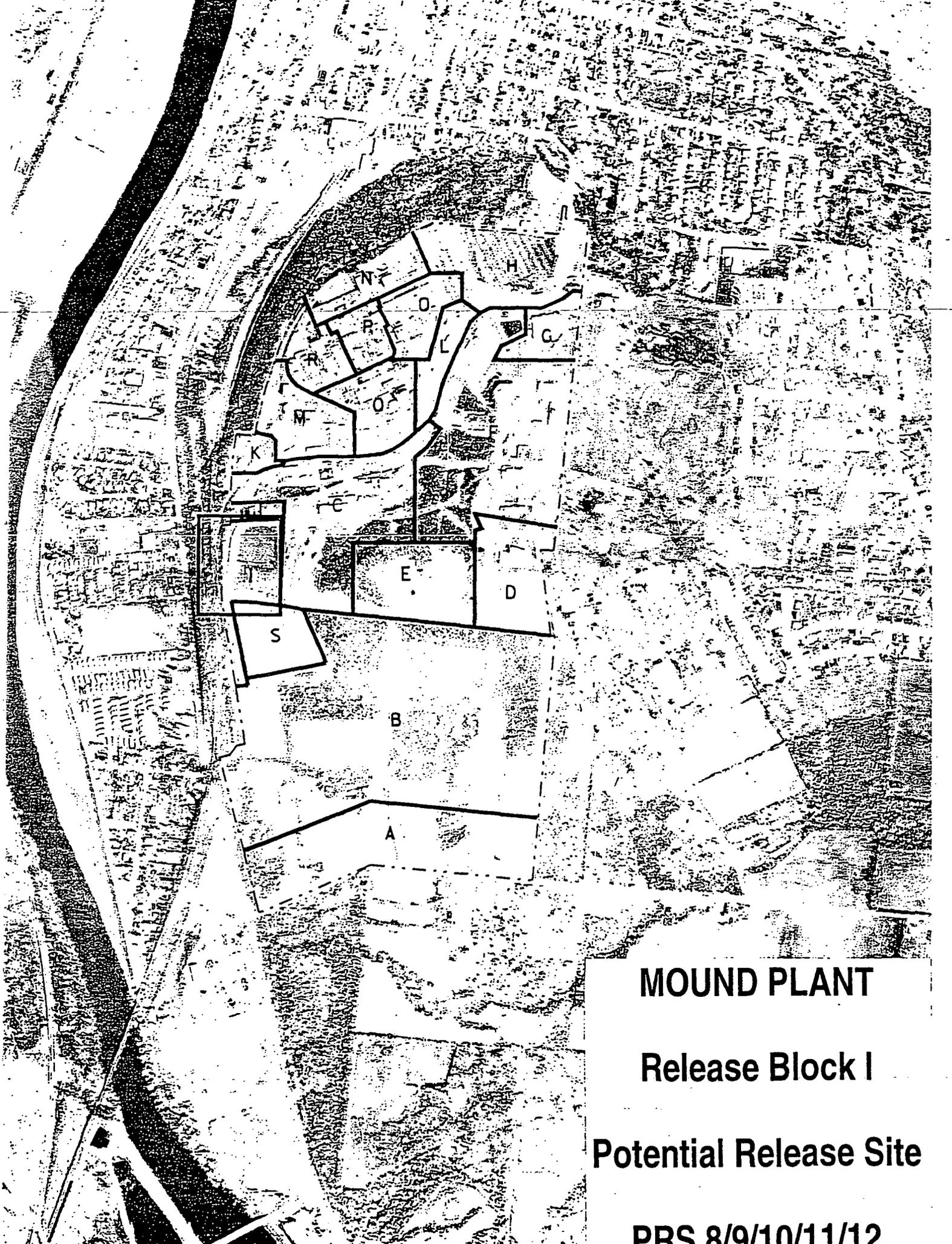
## Potential Release Site Package

### PRS # 8/9/10/11/12



PRS 8/9/10/11/12

REV	DESCRIPTION	DATE
0 <b>PUBLIC RELEASE</b>	Available for comments.	<b>Mar. 4, 1996</b>
1 <b>FINAL</b>	Comment period expired. No comments. Recommendation page annotated.	<b>Oct. 10, 1996</b>
2 <b>FINAL</b>	Signature page changed to show correct review period.	<b>Nov. 19, 1996</b>

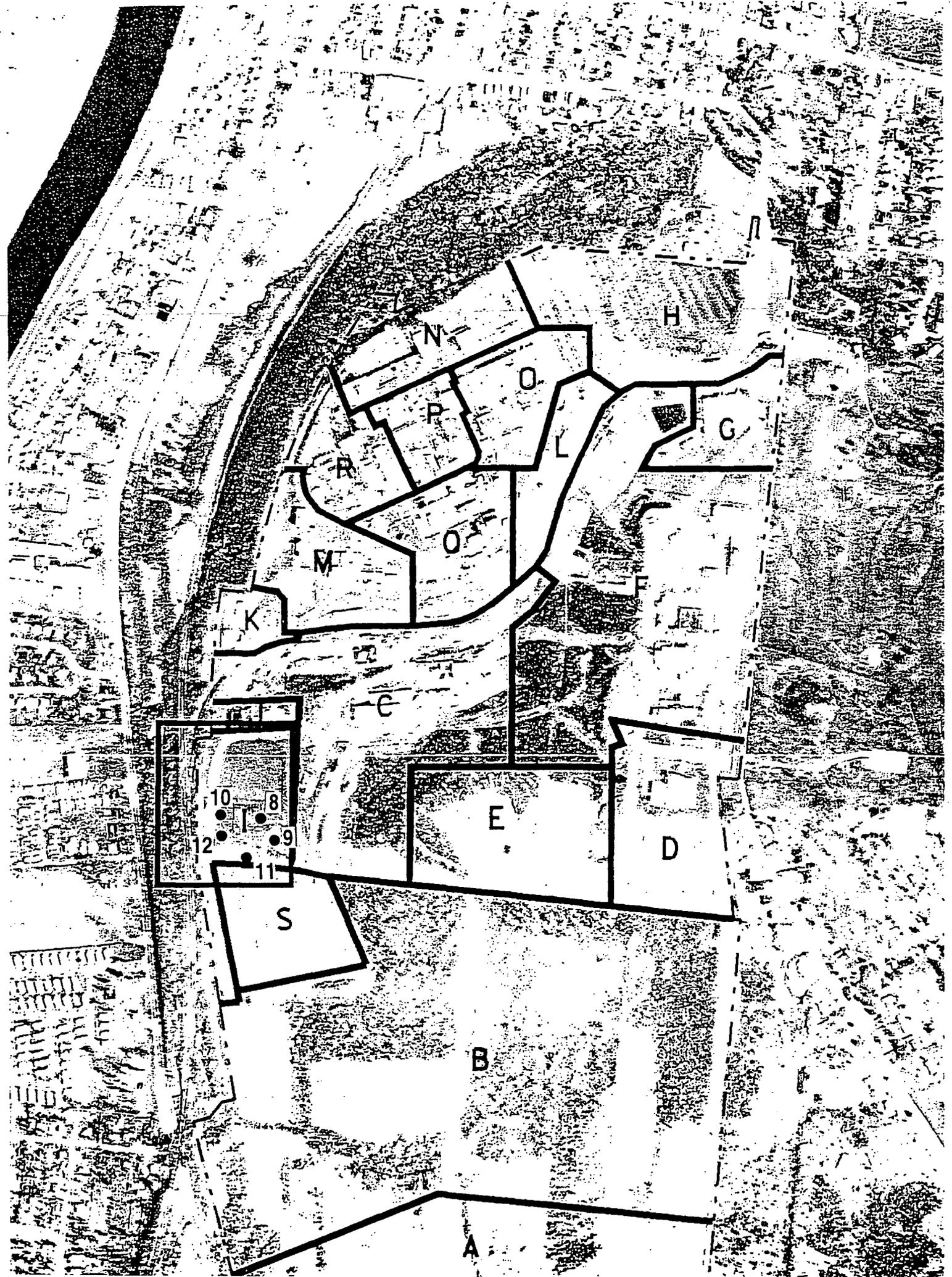


**MOUND PLANT**

**Release Block I**

**Potential Release Site**

**PRS 8/9/10/11/12**

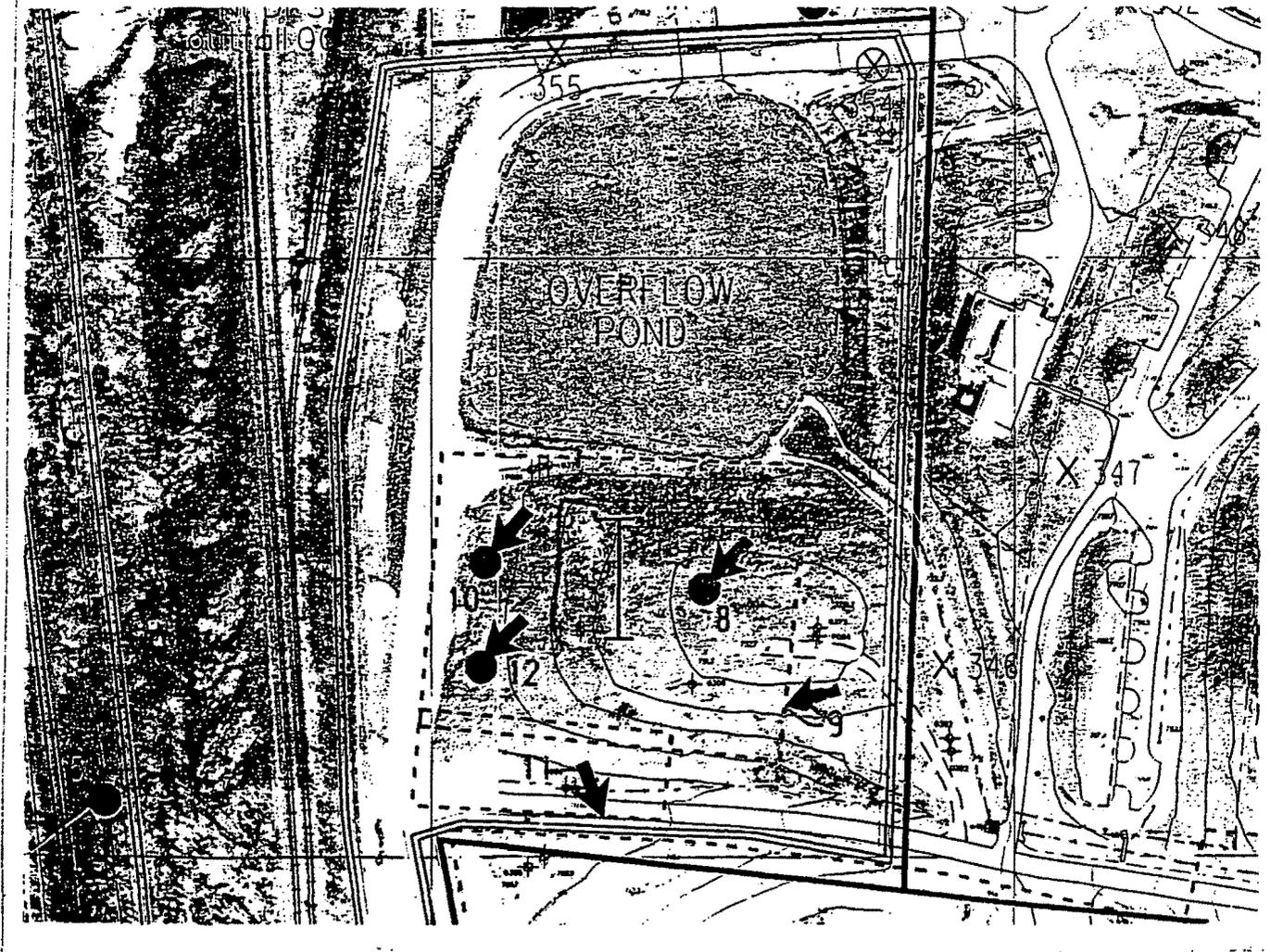


# MOUND PLANT

## Release Block I

### Potential Release Site

PRS 8/9/10/11/12





**MOUND PLANT  
PRSs 8, 9, 10, 11, 12  
WASTE STORAGE AND DISPOSAL SITES  
RELEASE BLOCK I**

**RECOMMENDATION:**

Potential Release Sites (PRSs) 8, 9, 10, 11, 12 include the historical landfill site and historical disposal site of plant waste materials, including general trash and liquid waste in an area of the site commonly referred to as Area B. This area has been addressed under the Remedial Investigation/Feasibility Study (RI/FS) process for Operable Unit 1. Operable Unit 1 will proceed with the CERCLA process as per the regulatory approved Operable Unit 1, Record of Decision (ROD).

The selected remedy for controlling contamination from the soils and groundwater at Release Block I, Operable Unit 1, is the Collection, Treatment, and Disposal of groundwater. Additionally, the DOE Innovative Treatment Remediation Demonstration Program will be independently evaluating remedial technologies which could augment the technologies presently selected.

Because the area containing these PRSs has been addressed by the OUI ROD, these individual PRSs are determined to require NO FURTHER ASSESSMENT beyond the remediation being implemented as described in the OUI ROD.

**CONCURRENCE:**

DOE/MB: Arthur W. Kleinrath 2/29/96  
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 3/4/96  
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 2/29/96  
Brian K. Nickel, Project Manager (date)

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from 4/15/96 <sup>3/15/96</sup> to 5/15/96 <sup>4/01/96</sup>

- No comments were received during the comment period.
- Comment responses can be found on page \_\_\_\_\_ of this package.

**MOUND PLANT  
PRS 8, 9, 10, 11, & 12  
AUGUST 28, 1995**

**PRS HISTORY:** (Release Block I), PRS 8 Site Summary Landfill, PRS 9 Site Sanitary Landfill Cover, PRS 10 Historical Landfill, PRS 11 Thorium and Polonium - Contaminated Waste Area and PRS 12 Drum Storage Area (also recognized, in CERCLA documents, as Area 2, Area B, and Operable Unit 1) was identified as a VOC release site as a result of the Mound Plant groundwater reconnaissance sampling from 1984-1990.<sup>1</sup> As a result of this VOC contamination, the Mound Plant was placed on the CERCLA National Priority List (NPL) in 1989.

**PROCESS DESCRIPTION:** No Mound Plant buildings are presently located in Release Block I. No radioactive or hazardous waste generating processes are known to have occurred at the location of PRS 8, 9, 10, 11, & 12.<sup>2</sup>

**CONTAMINATION:** The nature and extent of groundwater contamination in Release Block I has been well documented. Volatile organic compounds (VOCs) have been detected and monitored in the groundwater in and around Release Block I since 1986.<sup>3</sup> During the OUI assessment process, soil in Release Block I was analyzed. None of the surface soil samples had detectable quantities of VOCs. Subsurface soil analyses indicated that VOC contamination is restricted to the area of past disposal activity. The VOC contamination appears to be randomly dispersed.<sup>3</sup> From 1982-1985, the Mound Plant collected radiologic data in Area B. Except for one subsurface sample (17.1 pCi/g), of Pu-238, all concentration in Release Block I were within the range of less than (1 to approximately 4 pCi/g).<sup>4</sup> The following activities and documents have been completed as part of the OUI CERCLA process.

**CERCLA Assessment Completed<sup>3,4,5,6</sup>**  
History of Area B (February 1991)  
Remedial Investigation Report (RI) (July 1994)  
Feasibility Study/Proposed Plan (October 1994)  
Record of Decision (ROD) (June 1995)

The EPA approved remedy for remediation in the OUI Proposed Plan and ROD is the Collection, Treatment and Disposal remedy.<sup>5</sup>

**CERCLA Remediation Completed**  
RD/RA Work Plan (July 1995)

**READING ROOM  
REFERENCES:**

- 1) Area B, OUI, DOE Mound Plant, History of Area B (February 1991)
- 2) OU9, Site Scoping Report: Volume 7 - Waste Management
- 3) OUI, Remedial Investigation Report, Vol. 1, Text, Final (May 1994)
- 4) OUI, Feasibility Study Report/Proposed Plan, Final (October 1994)
- 5) OUI, Record of Decision, Final (June 1995)
- 6) OUI, Remedial Design/Remedial Action Work Plan, Final (July 1995)
- 7) OU9, Site Scoping Report: Volume 3 - Radiological Site Survey (June 1993)

**PREPARED BY:** Kenneth Hacker, Member of EG&G Technical Support

## **REFERENCE MATERIAL**

---

**PRS 8 (ALSO KNOWN AS SITE SANITARY LANDFILL)**

**PRS 9 (ALSO KNOWN AS SITE SANITARY LANDFILL COVER)**

**PRS 10 (ALSO KNOWN AS HISTORICAL LANDFILL)**

**PRS 11 (ALSO KNOWN AS THORIUM AND POLONIUM-CONTAMINATED WASTE  
AREA)**

**PRS12 (DRUM STORAGE AREA)**

Environmental Restoration Program

**OPERABLE UNIT 1  
RECORD OF DECISION**

**MOUND PLANT  
MIAMISBURG, OHIO**

June 1995

Final

U.S. Department of Energy  
Ohio Field Office

EG&G Mound Applied Technologies

