

Environmental Restoration Program

ACTION MEMORANDUM

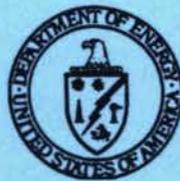
**POTENTIAL RELEASE SITE 111
OIL CONTAMINATION, MONITORING WELL 0034
RELEASE BLOCK Q**

**MOUND PLANT
MIAMISBURG, OHIO**

September 1996

FINAL

(Revision 0)



**Department of Energy
Ohio Field Office**

**Environmental Restoration Program
EG&G Mound Applied Technologies**

ENVIRONMENTAL RESTORATION PROGRAM

ACTION MEMORANDUM

**POTENTIAL RELEASE SITE 111
OIL CONTAMINATION, MONITORING WELL 0034
RELEASE BLOCK Q**

**MOUND PLANT
MIAMISBURG, OHIO**

July 1996

PREPARED BY:

**U. S. DEPARTMENT OF ENERGY
OHIO FIELD OFFICE**

**EG&G Mound Applied Technologies
P. O. Box 3000
Miamisburg, Ohio 45343-3000**

**DRAFT
Revision 0**

CONTENTS

| | <u>Page</u> |
|---|-------------|
| 1. PURPOSE | 1-1 |
| 2. SITE CONDITIONS AND BACKGROUND | 2-1 |
| 2.1 SITE DESCRIPTION | 2-1 |
| 2.1.1. Physical Location | 2-1 |
| 2.1.2. Site Characteristics | 2-1 |
| 2.1.3. Release or Threatened Release into the Environment | 2-1 |
| 2.1.4. National Priorities List Status | 2-1 |
| 2.2 OTHER ACTIONS TO DATE | 2-1 |
| 2.2.1. Previous Removal Actions | 2-2 |
| 2.2.2. Current Actions | 2-2 |
| 2.3 STATE AND LOCAL AUTHORITIES' ROLES | 2-2 |
| 2.3.1. State and Local Actions to Date | 2-2 |
| 2.3.2. Potential for Continued State and Local Response | 2-2 |
| 3. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT | 3-1 |
| 3.1 THREATS TO PUBLIC HEALTH OR WELFARE | 3-1 |
| 3.2 THREATS TO THE ENVIRONMENT | 3-1 |
| 3.2.1. Removal Site Evaluation | 3-1 |
| 4. ENDANGERMENT DETERMINATION | 4-1 |
| 5. PROPOSED ACTION AND ESTIMATED COSTS | 5-1 |
| 5.1 PROPOSED ACTION | 5-1 |
| 5.1.1. Proposed Action Description | 5-1 |
| 5.1.1.1. Rationale, Technical, Feasibility, and Effectiveness | 5-1 |
| 5.1.1.2. Monitoring | 5-1 |
| 5.1.1.3. Uncertainties | 5-2 |
| 5.1.1.4. Institutional Controls | 5-2 |
| 5.1.1.5. Soil Treatment/Disposal | 5-2 |

| | | |
|----------|--|------|
| 5.1.1.6. | Post-Removal Site Control | 5-2 |
| 5.1.1.7. | Cross-Media Relationships and Potential Adverse Impacts | 5-2 |
| 5.1.2. | Contribution to Remedial Performance | 5-2 |
| 5.1.3. | Description of Alternative Technologies | 5-3 |
| 5.1.3.1. | No Action | 5-3 |
| 5.1.3.2. | Institutional Controls | 5-3 |
| 5.1.4. | Engineering Evaluation/Cost Analysis EE/CA | 5-3 |
| 5.1.5. | Applicable, or Relevant and Appropriate Requirements (ARARs) | 5-4 |
| 5.1.5.1. | Air Quality | 5-4 |
| 5.1.5.2. | Worker Safety | 5-4 |
| 5.1.6. | Other Standards and Requirements | 5-4 |
| 5.1.7. | Project Schedule | 5-4 |
| 5.2. | ESTIMATED COSTS | 5-6 |
| 6. | EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN | 6-1 |
| 7. | OUTSTANDING POLICY ISSUES | 7-1 |
| 8. | ENFORCEMENT | 8-1 |
| 9. | RECOMMENDATION | 9-1 |
| 10. | REFERENCES | 10-1 |

TABLES

| | |
|--|-----|
| Table 3.1. - Evaluation of Removal Action Appropriateness Criteria | 3-2 |
| Table 5.1. - Removal Action Cost Estimate | 5-7 |

ACRONYMS

| | |
|--------|---|
| AEC | Atomic Energy Commission |
| AM | Action Memorandum |
| 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 | U. S. 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 |
| 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 |

ACRONYMS (Cont.)

| | |
|--------|--|
| RCRA | Resource Conservation and Recovery Act |
| RESRAD | Residual Radioactive Material Program |
| RI/FS | Remedial Investigation/Feasibility Study |
| RSE | Removal Site Evaluation |
| | |
| SARA | Superfund Amendments and Reauthorization Act |
| SW | Semi-Works |
| | |
| TRU | Transuranic |

1. PURPOSE

The U. S. Department of Energy (DOE) is the designated lead agency under the Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA) and removal actions at the Mound Plant are implemented as non-Superfund, federal-lead actions. DOE provides the On-Scene Coordinator (OSC). Non-Superfund federal-lead, removal actions are not subject to United States Environmental Protection Agency (EPA) 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 and to propose the removal action described herein for the Potential Release Site (PRS) 111 Oil Contamination, Monitoring Well 0034, Release Block Q.

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 south 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. The specific location of the contamination area is defined in the Potential Release Site (PRS) 111 Data Package, Rev. 0, April 22, 1996, Release Block Q.

2.1.2. Site Characteristics

The specific site characteristics are described in the PRS 111 Data Package, Rev. 0, April 22, 1996, Release Block Q.

2.1.3. Release or Threatened Release into the Environment

The release of Petroleum Hydrocarbons prompted this removal action.

2.1.4. National Priorities List Status

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

2.2 OTHER ACTIONS TO DATE

The Mound Plant initiated a CERCLA program in 1990, now guided by the agreement between the DOE, Ohio Environmental Protection Agency (OEPA), and USEPA. A Federal Facilities Agreement (FFA) under CERCLA Section 120 was executed between DOE and USEPA Region V on October 12, 1990, and was revised on July 15, 1993 (EPA Administrative Docket No. OH 890:008984) to include the Ohio EPA. The general purposes of this agreement are to:

- Ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate remedial action taken as necessary to protect the public health, welfare, and the environment;

- Establish a procedural framework and schedule for developing, implementing, maintaining and monitoring appropriate response actions at the site in accordance with CERCLA, Superfund Amendment and Reauthorization Act (SARA), the NCP, Superfund guidance and policy, and Resource Conservation and Recovery Act (RCRA) guidance and policy; and
- Facilitate cooperation, exchange of information, and participation of the parties in such actions.

The CERCLA program is assessing and evaluating the current risks, as necessary, for over 400 potential actions.

2.2.1. **Previous Removal Actions**

No previous removal actions at PRS 111 are known.

2.2.2. **Current Actions**

Actions to implement a plan for the removal of contaminants associated with PRS 111 are presented in this document.

2.3 **STATE AND LOCAL AUTHORITIES' ROLES**

2.3.1. **State and Local Action to Date**

In 1990, as a result of Mound Plant's placement onto the NPL, DOE and USEPA entered into a FFA which specified the manner in which the Mound CERCLA-based Environmental Restoration (ER) program was to be implemented. In 1993, the FFA was amended to include the OEPA. Under the ER program, DOE remains the lead agency.

2.3.2. **Potential for Continued State and Local Response**

Eventual release of this area for other commercial (non-DOE) use is planned. Periodic environmental monitoring of the area may be required until a final Record of Decision is implemented for the entire Mound site. This monitoring would need to be coordinated with local, state, and federal authorities.

Current plant-wide environmental monitoring programs will continue until such time as remediation is complete in this and adjacent areas.

3. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

The presence of an "oily substance" in the well has created a potential threat to the Public Health or Welfare from the potential threat of migration to adjacent groundwater.

3.2. THREATS TO THE ENVIRONMENT

The visual presence of an "oily substance" in the well has created a potential threat to the environment.

3.2.1 Removal Site Evaluation

The RSE requirements, as outlined under EPA's NCP regulations in 40 CFR 300.415, are presented throughout this AM. The source and nature of the release are described in PRS 111 Data Package. An evaluation by public health agencies has not been performed for this area and, therefore, is not included in this AM. The determination of the need for a removal action is outlined in this section, in Table 3.1.

With regard to that determination, the NCP includes eight factors that must be considered in determining the appropriateness of a removal action (40 CFR 300.415(b)(2)). These criteria, as applied for the contamination, 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..." | Potential for migration into water supplies do exist. |
| (ii) "Actual or potential contamination of drinking water supplies..." | Potential for migration to adjacent ground water and aquifer. |
| (iii) "Hazardous substances or pollutants of contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;" | None |
| (iv) "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" | The visual presence of an "oily" substance indicates that water is a likely pathway for potential migration. |
| (v) "Weather conditions that may cause hazardous substances to migrate or be released;" | Significant rain storm event may cause migration of contamination into area surrounding well. |
| (vi) "Threat of fire or explosion;" | None |
| (vii) "The availability of other appropriate federal or state response mechanisms to respond to the release;" and | There are no state mechanisms, no other Federal mechanisms (DOE is designated lead agency at Mound under CERCLA), and no other DOE programs to provide an appropriate response. |
| (viii) "Other situations or factors that may pose threats to public health or welfare or the environment." | None |

4. ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants and contaminants from this site, if not addressed by implementing the response action selected in this AM, may present an imminent and substantial endangerment to public health or welfare or the environment.

5. PROPOSED ACTION AND ESTIMATED COSTS

5.1 PROPOSED ACTION

The proposed action, in an effort to mitigate contamination migration, is the removal, storage, and disposal of petroleum hydrocarbon contaminated water. The removal of approximately two 55 gallon drums of water is expected. The removal will use on-site interim storage and future off-site permanent disposal.

5.1.1. Proposed Action Description

The proposed action will include:

- Removal by pumping approximately 110 gallons of water from well 0034.
- Characterization of the removed material for chemical and radioactive materials.
- Cleaning and monitoring of the well to determine if additional contaminated material enters the well cavity.
- Disposal of pumped material to a permanent off-site treatment/disposal facility.
- Abandon the well following established EPA guidance.

5.1.1.1. Rationale, Technical Feasibility, and Effectiveness

The removal action chosen for PRS 111 is necessary for the removal of known contamination and to ensure that migration of the contamination does not occur.

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 material removed and monitoring of the well, after removal, will be described in more detail in the PRS 111 Removal Work Plan.

5.1.1.3. Uncertainties

The major uncertainties at the site are the original quantity, contamination levels and source of petroleum hydrocarbons. The minor uncertainties include location of abandoned utilities and possible unknown utilities that may exist in the area. The extent of groundwater that may be encountered may depend upon the depth of the well and weather conditions. If the oily substance does not return, and groundwater contamination is not indicated, the well will be properly abandoned. If the substance returns, further assessment will be required, and this action memorandum will be revised and resubmitted defining the proposed action.

5.1.1.4. Institutional Controls

DOE will remain in control of the subject area over the near term. However, portions of the Mound Plant may be released to non-DOE uses in the foreseeable future. At that time all necessary deed restrictions will be put in place to protect public health and welfare.

5.1.1.5. Soil Treatment/Disposal

The excavation and treatment/disposal of soil is not anticipated. The initial effort will be the removal of water from the well and characterization of the "oily substance". In the event that the monitoring is complete and there is indication of additional "oily substance" entering the well, soil sampling would be considered. As stated in section 5.1.1.3, this Action Memorandum will be revised and resubmitted defining the proposed action.

5.1.1.6. Post-Removal Site Control

Post removal site control will be provided by DOE/Mound. See Institutional Controls above.

5.1.1.7. Cross-Media Relationships and Potential Adverse Impacts

The potential cross-media impact associated with the removal action is the potential for unintended release of contamination into the surrounding soils. 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 in or near the site of the removal action, the exact volume of water and the levels of contamination identified and removed will be documented. The work will be documented by photographs, record drawings, and OSC report, and other information collected during the removal action.

5.1.2. Continued

Because the Mound Plant is anticipated to be cleaned up by removal actions, this clean-up will be a final remedy for this defined problem. The information obtained, as a result of this removal, will be used in determining the availability for final disposition of the release block and will be subject to review in the release block risk evaluation.

5.1.3. Description of Alternative Technologies

Several alternative technologies were identified and screened for their ability to meet specific criteria for the removal action. Criteria used to screen alternatives include timely response, protection of human health and the environment, effectiveness, implementability, and cost. 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 excavation) 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 "No Action" approach was eliminated from consideration because the need for action has been demonstrated as necessary based on the PRS 111 data package.

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. Implementation of additional institutional controls to minimize the potential for human contact with the existing contamination will not prevent further migration of the contaminants from the source. Also, institutional controls will be difficult to implement, when commercial use of adjacent areas is permitted. Thus, institutional controls were eliminated from further consideration.

5.1.4. Engineering Evaluation/Cost Analysis (EE/CA)

Because this is a time-critical removal, an EE/CA is not required.

5.1.5. Applicable, or Relevant and Appropriate Requirements (ARARs)

Mound ARARs for the ER Program have been identified (DOE 1993b). CERCLA regulations require that removal actions comply with ARARs only to the extent practicable.

The following areas have been initially identified as applicable, or relevant and appropriate to this removal action. During the development of the specific work plan detail, further evaluation of these ARARs will be conducted.

5.1.5.1. Air Quality

- Air Pollution (Ohio Administrative Codes)
- Particulate Ambient Air Quality Standards (Ohio Administrative Codes)
- Particulate Non-Degradation Policy (Ohio Administrative Codes)

5.1.5.2. Worker Safety

- General Industry Standards (Occupational Safety and Health Act, OSHA)
- Safety and Health Standards (OSHA)
- Recordkeeping, Reporting, and Related Regulations (OSHA)
- Occupational Radiation Protection (Codes of Federal Regulations, CFRs)

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 Design Work Plan Document.

5.1.7. Project Schedule

The schedule established for planning and implementing the removal action is shown in Figure 5.1.

5.2 ESTIMATED COSTS

The cost to perform the removal action is shown in Table 5.1. Costs include the water removal, cleaning the well, characterization activities, lab analysis, waste disposal, and well abandonment. The estimate is based on the removal of approximately 110 gallons of water. The cost to perform this removal is based on the fact that the petroleum hydrocarbon material will not return and groundwater contamination is not indicated.

Table 5.1. - Removal Action Cost Estimate

| Activity | Cost |
|---|-----------------|
| Engineering/Project Management | \$10,000 |
| Water Removal, Well Monitoring/Sampling/Abandonment | \$30,000 |
| Transportation/Disposal | \$ 510 |
| Closeout | \$ 5,000 |
| TOTAL | \$45,510 |

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

Contamination in the subject area poses a potential threat to public health and welfare and the environment because (see Table 3.1.): Petroleum hydrocarbons from the area may migrate into ground water.

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 DOE is the sole party responsible for implementing this clean-up. Therefore, DOE is undertaking the role of lead agency, per the CERCLA and 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

The decision document represents the selected removal action for PRS 111, developed in accordance with CERCLA, as amended by SARA, and consistent 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:

Arthur W. Kleinrath, DOE/MB, Remedial Project Manager

Date

Brian K. Nickel, Project Manager

OEPA

Date

Timothy J. Fischer, Remedial Project Manager

USEPA

Date

10. REFERENCES

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

Potential Release Site 111 data package, Revision 0, April 22, 1996, Release Block Q.