RECORD OF DECISION ON REMOVAL ACTION FOR PCB-CONTAMINATED SOILS NEAR SITE D

TWIN CITIES ARMY AMMUNITION PLANT
NEW BRIGHTON, MINNESOTA

JUNE 1989

This Document is Intended to Comply with the National Environmental Policy Act of 1969.

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INSTALLATION ENVIRONMENTAL RESTORATION PROGRAM
TWIN CITIES ARMY AMMUNITION PLANT

RECORD OF DECISION ON REMOVAL ACTION

Thermal Treatment of PCB-Contaminated Soils near Site D

SITE: Twin Cities Army Ammunition Plant (TCAAP), New Brighton, Minnesota

STATEMENT OF BASIS AND PURPOSE:

This Record of Decision (ROD) document presents the selected remedial action for remediating soil contaminated with polychlorinated biphenyls (PCBs) near Site D of the TCAAP Superfund site located in New Brighton, Minnesota. The decision document is developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for this site. The following documents describe the basis for this decision.

INDEX

- Post Action Report on PCB Removal
  Site D
  Twin Cities Army Ammunition Plant
  Wenck & Associates, Inc. — January 31, 1986

- Final Report On-Site Incineration Testing
  of Twin Cities Army Ammunition Site
  New Brighton, MN
  Shirco Infrared Systems Portable Test Unit
  Report No. 833-87-01 — September 24, 1987

- Installation Restoration Program
  Twin Cities Army Ammunition Plant
  Site D - PCB-Contaminated Soil
  Feasibility Study
  Federal Cartridge Company
  Final Report — November 6, 1987

- Interim Remedial Action Plan
  Site D, PCB-Contaminated Soils
  Twin Cities Army Ammunition Plant
  Wenck Associates, Inc. — March 1989

- Endangerment Assessment of PCB
  Incineration at Site D,
  Twin Cities Army Ammunition Plant
  PRC Environmental Management
  Chicago, IL — March 1989

- Risk Evaluation of the Destruction of
  PCBs by High-Temperature Treatment
  of Affected Soils
  Twin Cities Army Ammunition Plant, Site D
  Carlos Stern Associates, Inc.
  Arlington, VA — March 1989

The final remedial action will be selected following completion of the TCAAP Remedial Investigation (RI) and New Brighton/Arden Hills Feasibility Study (FS), currently being conducted by the Department of the Army (DA), and the New Brighton/Arden Hills RI being conducted by the U.S. Environmental Protection Agency (EPA) and the Minnesota Pollution Control Agency (MPCA).

The State of Minnesota has concurred in the selected remedy.

DESCRIPTION OF SELECTED REMEDY:

Approximately 1,400 cubic yards of PCB-contaminated soils will be treated using a mobile thermal treatment system. The mobile system will be transported to TCAAP and assembled for operation. The thermal operation is expected to take approximately three weeks. This remedy is not intended to address the groundwater contamination at TCAAP. Groundwater contamination has been partially addressed by other Interim Remedial Actions. Soil and water contamination will be addressed in the final remedy.

DECLARATION:

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the NCP (40 CFR Part 300), we have determined that the thermal treatment of PCB-contaminated soils near Site D is a cost-effective interim removal action that will be consistent with the final remedial action selected. The TCAAP Remedial Investigation (RI) and New Brighton/Arden Hills Feasibility Study (FS) currently being conducted by the Department of the Army (DA) and the U.S. EPA/MPCA will determine the final remedial action. DA, U.S. EPA, and MPCA have thoroughly discussed this removal action and determined that the treated soil will meet all federal and state requirements. The interim removal action will be considered part of the approved final remedial action and eligible for Department of Defense Environmental Restoration Account

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THE DECISION SUMMARY

This Decision Summary provides an overview of the site location and description; site history and enforcement activities; community relations history; scope and role of the response action within the site strategy; summary of site characteristics; summary of site risks; documentation of significant changes; description of remedial action alternatives; summary of comparative analysis of alternatives, including the nine evaluation criteria used to screen the alternatives; the selected remedy; and the statutory determinations. The Decision Summary also explains the rationale for selecting the remedy and how the remedy meets the statutory requirements.

1.0 SITE NAME, LOCATION, AND DESCRIPTION

The Twin Cities Army Ammunition Plant (TCAAP) is a plant owned by the U.S. Army that is located in New Brighton, Minnesota (Figure 1). TCAAP occupies an area of approximately four square miles north of the Saint Paul/Minneapolis area. A number of communities surround TCAAP, including Arden Hills, New Brighton, and Saint Anthony to the south and southwest, Shoreview to the north and east, and Mounds View to the northwest. Residences located near the southwest corner of TCAAP are approximately one mile away from those areas within TCAAP that were identified to be sources of contamination.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

TCAAP manufactured ammunition during major war conflicts. Wastes generated during manufacturing of ammunition were disposed of at several areas within TCAAP. Waste disposal, in turn, resulted in contamination of groundwater beneath and downgradient (southwest) of the TCAAP site. Earlier investigations on the groundwater contamination have identified a total of 14 waste disposal sites on the installation. Figure 2 depicts these sites, which have been designated Sites A through K, 129-3, 129-5, and 129-15. One of these sites is Site D.

To plan and dictate the course of actions necessary to remediate the contaminated areas of the TCAAP site, including Site D, the U.S. Army, the U.S. EPA, and MPCA signed a Federal Facility Agreement (FFA). The FFA was signed under the authority of Section 120 of CERCLA and became effective on December 31, 1987. All remedial investigation (RI) work and interim response actions (IRA) at the site were and are being undertaken in accordance with the stipulations of the FFA.

During the RI work at Site D, soil was found to be contaminated with polychlorinated biphenyls (PCBs). In addition to PCB contamination, other organic and inorganic contaminants were detected. Based on the RI work at the site, a soil gas

monies. Actual or threatened releases of hazardous substances from the PCB-contaminated soils near Site D, if not addressed by implementing the response action selected in the ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

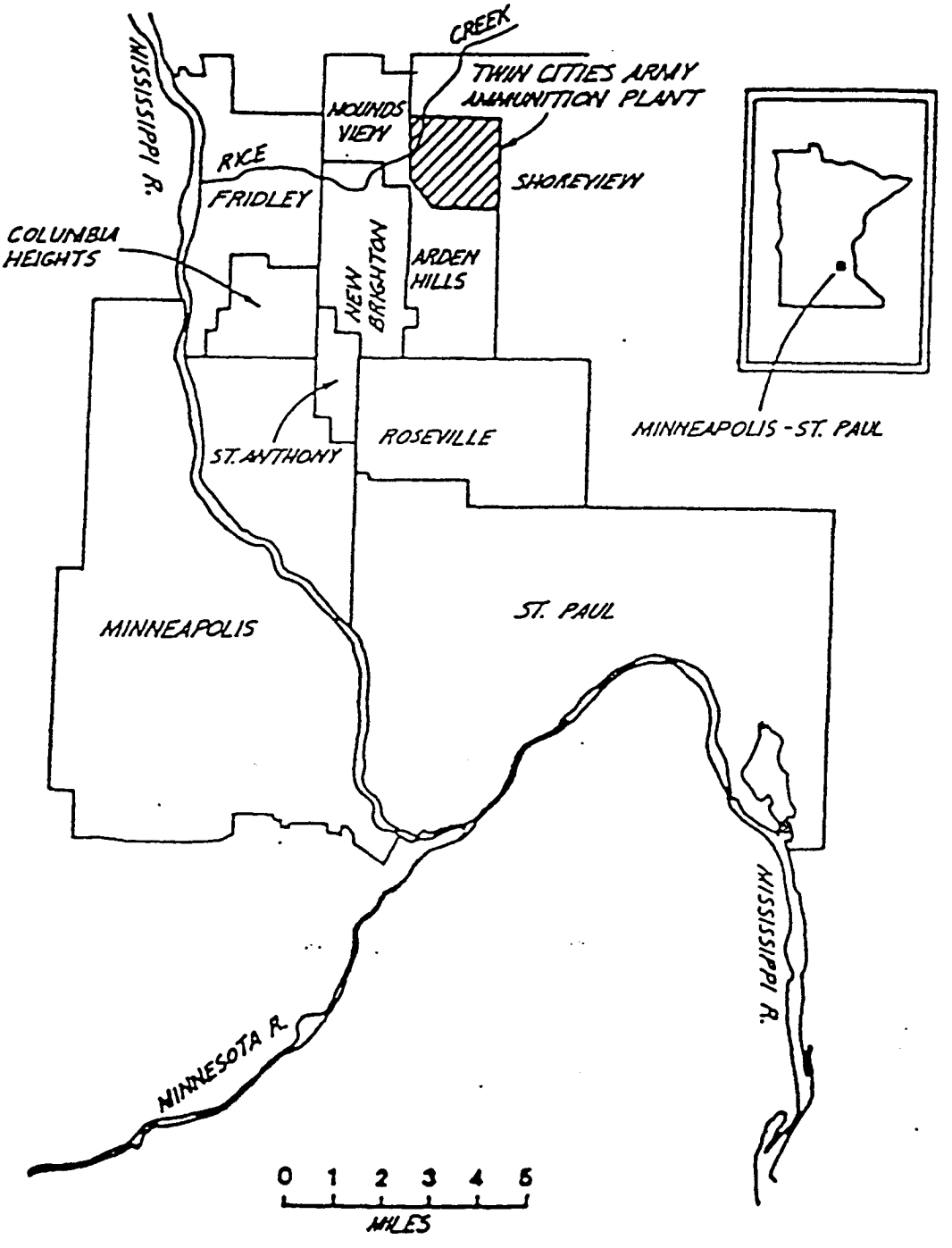
The selected remedy is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate for this remedial action, and is cost-effective. This remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element and utilizes a permanent solution to the maximum extent practicable.

DA is currently implementing the DA/EPA/MPCA Federal Facility Agreement (effective 31 December 1987) in order to complete the RI/FS process. A ROD will be prepared for approval of any future remedial actions selected prior to or after completion of the ongoing RI/FS.

Valdas V. Adamkus 8/11/89 Date
Regional Administrator
Region V
Environmental Protection Agency

Lewis D. Walker 7/19/89 Date
Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)
Office of the Assistant Secretary of the Army (Installations and Logistics

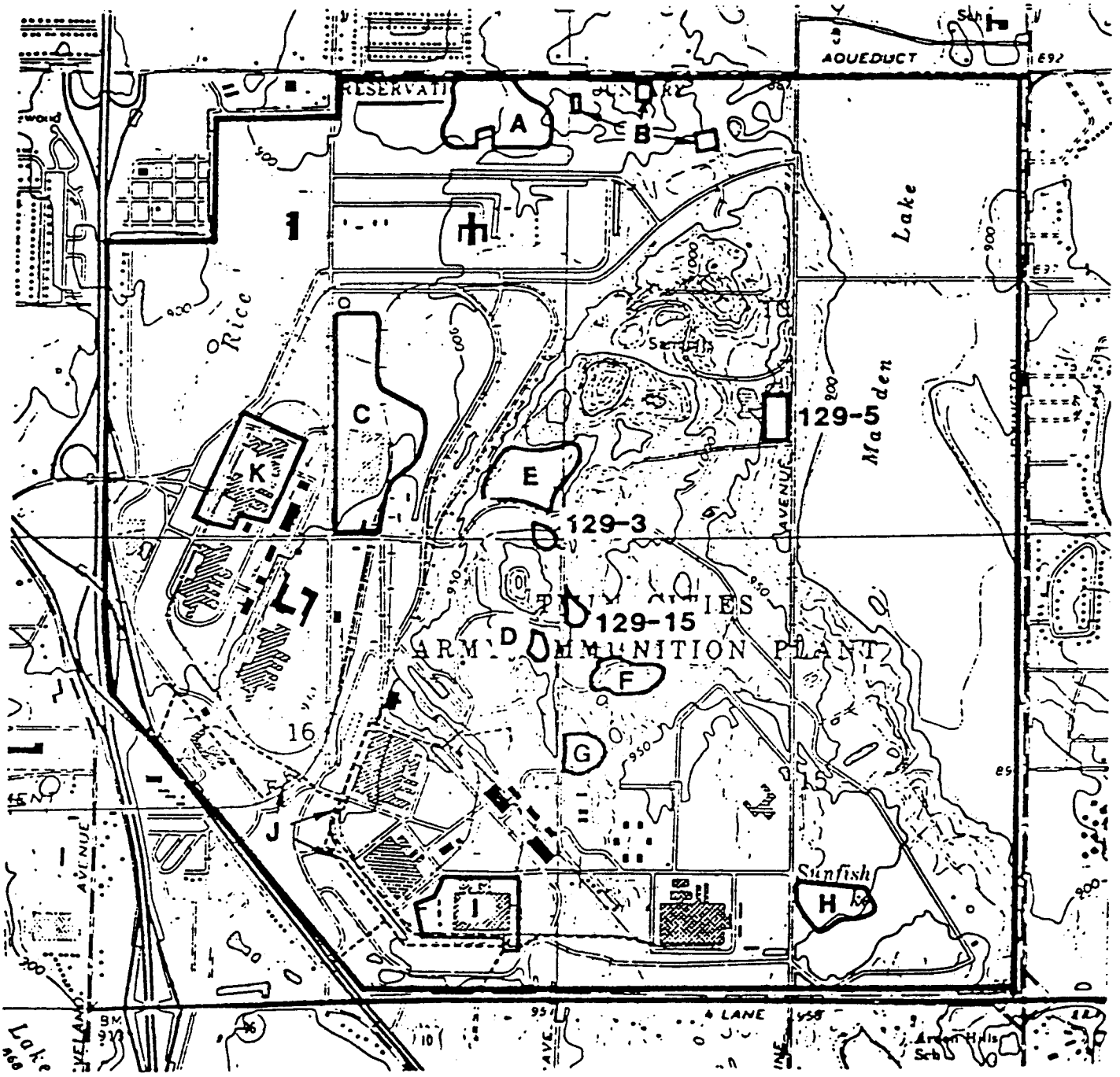
FIGURE 1



General Location Map of the

Twin Cities Army Ammunition Plant

FIGURE 2



Areas of Contamination in the Twin Cities Army Ammunition Plant

extraction system was implemented to remove the source of volatile organic contamination and reduce the potential of migration to the groundwater. In implementing the soil gas extraction system, PCB-contaminated soil was removed, stockpiled, and sealed within plastic liner material.

In November 1987, under the FFA, a feasibility study (FS) was conducted to identify, evaluate, and select the remedial action alternative that would: (1) be most protective of human health and the environment by permanently destroying site contamination; (2) meet all federal, state, and local regulatory requirements; and (3) be cost-effective. Of the five alternatives identified in the FS, on-site thermal treatment of contaminated soil was selected as the most feasible alternative. The FS was supplied to U.S. EPA and MPCA for review and approval. The U.S. EPA and MPCA concurred that the on-site thermal treatment alternative was the most feasible to implement at Site D, consistent with the requirements under CERCLA, SARA, and the NCP.

3.0 COMMUNITY RELATIONS HISTORY

Pursuant to CERCLA Section 113(k), 2 U.S.C.9613(k), and Section 300.67 of the NCP, the public, local authorities, Region V of the U.S. EPA, and the State of Minnesota were all requested to comment on the Interim Response Decision Record and the proposed ROD. Remediation was discussed at the community leaders meeting. One special meeting was held specifically to discuss the on-site thermal treatment. Since this ROD will be signed by the U.S. Army and U.S. EPA, these agencies will respond to each significant comment, criticism, and new data submitted.

Notification of comment period:	24 May 1989
Closing date of comment period:	22 June 1989
Public Meeting:	Held at New Brighton, Minnesota on June 15, 1989

4.0 SCOPE AND ROLE OF RESPONSE ACTION WITHIN SITE STRATEGY

As described in Section 2.0 of this ROD, soils stockpiled near Site D are contaminated with PCBs, organic, and inorganic contaminants. These soils were excavated, stockpiled, and covered with a liner at the site. If no action were to be taken, the possibility of physical damage to the liner would potentially cause release of the above contaminants to the environment. The liner would have to be maintained and local groundwater monitored for potential adverse impacts indefinitely. Furthermore, the future access or land use of the site would have to be restricted in perpetuity. Therefore, the remedial action sought for alleviating contamination at the site should remove the source of contamination and, using treatment response technology, permanently reduce the mobility, toxicity, or volume of the contaminant mass. This would prevent potential future release, migration, or adverse impacts to human health and the environment.

5.0 SUMMARY OF SITE CHARACTERISTICS

Based on the results of previous investigations at the site, approximately 1,400 cubic yards of contaminated soil were excavated from Site D in 1985 to allow implementation of the soil gas extraction system at the site. The excavated contaminated soil was then stored, pending final disposal, in secure containment near Site D on a 40-mil high-density polyethylene (HDPE) liner, with a 20-mil HPDE cover. Testing of the excavated soil revealed the following average concentrations, in milligrams per kilogram (mg/kg) of the following contaminants:

Constituent	Average Concentration mg/kg
Organics	
PCB	71.1
1,1,1-Trichloroethane	65.2
Tetrachloroethene	2.3
Trichloroethene	341.0
Inorganics	
Arsenic	1.3
Barium	91.8
Lead	85.8

6.0 SUMMARY OF SITE RISKS

U.S. EPA conducted an Endangerment Assessment (EA) on PCB-contaminated soil at Site D. The EA evaluated site risks under two scenarios: (1) no-action, in which it is assumed that contaminated soil is left in place and the public can easily access the site (which is not possible under the present security of the TCAAP), and (2) on-site thermal treatment of excavated soil.

For conducting the EA, the following indicator chemicals were selected: PCBs, organic contaminants (1,1,1-trichloroethane, tetrachloroethene, trichloroethene, and dioxin), and inorganics (arsenic, barium, and lead).

It is believed that organic contaminants may migrate from the site primarily through volatilization and release of fugitive dusts. Because a portion of the area surrounding Site D is contaminated with organic (except PCBs) and inorganic contaminants, fate and transport data were ineffective in determining migration routes for indicator chemicals other than PCBs.

Under the no-action alternative, three exposure scenarios were identified: (1) ingestion of soils, (2) direct contact with soils, and (3) inhalation of volatile organic compounds (VOCs) and particulate air contaminants. Under the probable-case scenario, 6 lifetime excess cancer risks in a population of 10,000 might be induced due to contamination. Under the worse-case scenario, the lifetime excess cancer risk increases to 2 in 1,000. The no-action alternative poses potential risks to human health. These risks exceed the Superfund acceptable risk range of 1 in 10,000 to 1 in 10 million.

One exposure scenario was identified for the on-site thermal treatment alternative: inhalation of stack emissions. The worst-case lifetime excess cancer risk would be 4 in 10 million (equivalent to 1 in 2.5 million). Relative to the no-action alternative, thermal treatment does not present significant human health risks. The potential health risks that may be posed from implementing the remaining four alternatives considered in the FS were not quantified. However, the relative performance of these alternatives with respect to the nine evaluation criteria (presented in Section 9) is discussed in Section 9 of this ROD.

7.0 DOCUMENTATION OF SIGNIFICANT CHANGES

This ROD does not differ significantly from the public comment draft ROD of May 1989. There are no significant changes in the joint decision (by U.S. Army, U.S. EPA, and MPCA) to implement the selected remedy at Site D. This ROD has only been changed from the May 1989 public comment draft ROD to clarify the criteria and basis used in this decision.

8.0 DESCRIPTION OF REMEDIAL ACTION

The FS for remediating PCB soil contamination near Site D identified and evaluated five response action alternatives: (1) no action; (2) transfer of contaminated soils to Honeywell's Retrievable Monitored Containment Structure (RMCS) located near Building No. 502 of TCAAP; (3) off-site disposal; (4) on-site thermal treatment; and (5) off-site thermal treatment.

Alternative A: No Action

Under the no-action alternative, the contaminated soil would remain in the secured soil storage area near Site D. Specific components of the no-action remedial alternative include:

- Continue maintenance of the HDPE liner, site fence, and access gate.
- Leave the contaminated soil in its present location for an undetermined period of time.

- Monitor the storage area for possible infiltration to or leakage from the HDPE liner.

- Monitor the local groundwater to determine whether soil storage is impacting the aquifer.

Implementation Time: Maintenance of the site and monitoring of groundwater contamination would continue indefinitely.

Total Cost: Approximately $500 per month.

Alternative B: Transfer to Honeywell's RMCS

This alternative consists of transporting the contaminated soil and liner to the Honeywell Retrievable Monitored Containment Structure (RMCS), a specially designed storage vault, located near Building No. 502 on the TCAAP installation. The following measures comprise the RMCS alternative:

- General site preparation

- Loading transport vehicles

- Relocating contaminated soil and liner to RMCS

- Site closure

Implementation Time: Approximately 1-2 months

Total Cost: $100,000 with additional monthly fees.

Alternative C: Off-Site Disposal

Another alternative is to relocate the contaminated soil and liner to an off-site Secure Chemical Management Facility (SCMF). Placing the material in a SCMF would eliminate environmental threats posed by leaving the contaminated soil on-site. The Off-Site Disposal alternative consists of the following remedial action measures:

- General site preparation

- Loading transport vehicles

- Decontaminating loading equipment and transport vehicles

- Off-site transportation/disposal

- Site closure

Implementation Time: Approximately 1-2 months

Total Cost: $500,000 - $1,000,000

Alternative D: On-Site Thermal Treatment

Soil remediation by the on-site thermal treatment method involves the use of a leased portable thermal processing unit at the soil storage area. The thermal treatment technology would eliminate environmental threats posed by leaving the contaminated soil on-site as well as avoid any liability incurred by placing the material in a SCMF. The thermal treatment process involves:

- General site preparation
- Mobilizing thermal processing unit
- Thermal processing of soil
- Disposing of treated soil (ash)
- Demobilization
- Site closure

Implementation Time: Approximately 3 weeks of thermal processing.

Total Cost: $1.2 million

Alternative E: Off-Site Thermal Treatment

This alternative is to transport the contaminated soil and liner to an off-site thermal treatment facility for destruction; it involves the following measures:

- General site preparation
- Load transport vehicles
- Decontaminating loading equipment and transport vehicles
- Off-site transportation/disposal
- Site closure

Implementation Time: 3-7 months

Total Cost: $4.7 - $5.0 million

9.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

This section describes the criteria used for evaluating the remedial action alternatives and identifies the strengths and weaknesses of each alternative in satisfying these criteria. It also identifies the legally applicable, relevant, or appropriate requirements (ARARs) with which the remedial actions have to comply.

9.1 EVALUATION CRITERIA

The alternatives are weighed against nine evaluation criteria:

- Overall protection of human health and the environment;
- Compliance with applicable or relevant and appropriate requirements (ARARs);
- Long-term effectiveness and permanence;
- Reduction of mobility, toxicity, or volume (M/T/V);
- Short-term effectiveness;
- Implementability;
- Cost;
- State acceptance; and
- Community acceptance.

In addition, the selected remedy must satisfy the statutory requirements of Section 121 of CERCLA as amended by SARA.

9.2 COMPARISON OF ALTERNATIVES

The five remedial action alternatives are compared below in terms of their ability to satisfy the above nine evaluation criteria:

Overall Protection of Human Health and the Environment

Under the no-action alternative (Alternative A), the contaminated soil would be left intact and the potential for releasing contaminants to the environment would still exist because of possible physical damage to the HDPE liner material.

On-site storage in Honeywell's RMCS (Alternative B) and off-site disposal (Alternative C) would alleviate the potential for adverse environmental impacts by storing and monitoring the contaminated soil in approved storage facilities. However, Alternatives B and C do not provide a permanent solution to the

Long-Term Effectiveness and Permanence

Alternatives A, B, and C would do nothing to remove permanently and effectively the contaminants of concern. Only on-site and off-site thermal treatment (Alternatives D and E) would destroy permanently the contaminants by treating thermally the contaminated soil. According to the TSCS requirements, Alternatives D and E would have to meet a Destruction Removal Efficiency (DRE) performance standard of 99.9999 percent, or greater, to ensure that contaminants are effectively removed from the Site D soil.

Reduction of Mobility, Toxicity, or Volume (M/T/V)

The no-action alternative would not reduce the M/T/V of contamination because, under this alternative, no treatment or containment measures would be implemented. On-site storage and off-site disposal (Alternatives B and C) would reduce the mobility of the contaminants in the short-term by reducing the potential for migration due to infiltration or precipitation. Only on-site and off-site thermal treatment (Alternatives D and E) would permanently reduce the M/T/V of contaminants from the contaminated soil.

Short-Term Effectiveness

Except for the no-action alternative, the remaining alternatives would effectively alleviate the contamination problem at Site D on the short-term basis. The primary short-term concern during implementation of any alternative other that no-action would be with volatilization of VOCs and PCB-contaminated fugitive dust that may be generated during handling of soil. The on-site storage, off-site disposal, and off-site thermal treatment would require more handling of the contaminated soil than on-site thermal treatment. Therefore, the on-site thermal treatment alternative would involve minimal soil handling and would be more effective than the other alternatives on the short-term basis.

Implementability

All considered remedial action alternatives are implementable. The no-action alternative (Alternative A) would only require maintenance of the fence, the HDPE liner, and monitoring of the contaminated soil and ground beneath the site. On-site storage and off-site disposal (Alternatives B and C) would utilize conventional construction equipment such as front-end loaders, bulldozers, and trucks to remove the contaminated soil and transport it to its final destination (on-site to the RMCS or off-site to a SMCF). The FS estimated that it would take approximately 30-60 days to implement Alternative B and 30-60 days to implement Alternative C. On-site and off-site thermal treatment (Alternatives D and E) would implement proven technologies for treating and removing PCBs and VOCs from the contaminated soil. The estimated time for implementing Alternative D is approximately 3 weeks while implementing Alternative E would take 3-7 months.

Cost

The total costs for the remedial action alternatives were presented in the FS for PCB-contaminated soil remediation at the site. These costs are presented below:

Alternative	Description	Total Cost (1989 Dollars)
A	No-Action	$500/month
B	On-Site Storage	$100,000 + Monthly Fee
C	Off-Site Disposal	$500,000 - $1,000,000
D	On-Site Thermal Treatment	$1,200,000
E	Off-Site Thermal Treatment	$4,700,000 - $5,000,000

The costs shown above represent 1989 dollar estimates. The on-site thermal treatment alternative (Alternative D) is the second most expensive alternative after off-site thermal treatment.

State Acceptance

The State of Minnesota fully agrees and supports the on-site thermal treatment alternative. The other alternatives are less acceptable to the State because either they do not provide a permanent remedy for the contamination problem or they do not reduce the M/T/V of the contaminants.

Community Acceptance

From the public meeting held in New Brighton, Minnesota on June 15, 1989, and from no public comments received during the comment period, it appears that the public has no distinct preference as to which alternative is acceptable for remediation of contaminated soil. A total of 41 people attended the June 15th public meeting, of which about 10 were private citizens and not from federal, state, or local agencies.

9.3 IDENTIFICATION OF LEGALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

The purpose of this section is to identify the federal and state ARARs that should be applied to the effluent from the thermal treatment system, pursuant to Section 121 of SARA.

The following factors were applied in selecting ARARs:

1. Any standard, requirement, criteria or limitation under federal environmental law may be an ARAR [SARA 121 (d)(2)(A)(1)]. Non-binding advisories, goals, and guidelines are not ARARs.

2. Any promulgated standard, requirement, criteria or limitation under a state environmental law that is more stringent than any federal standard is of general applicability, enforceable by the state, and identified by the state to the U.S. Army in a timely manner, may be an ARAR.

3. Only substantive requirements may be ARARs. Permits, notices, and reporting requirements in federal and state laws do not apply to CERCLA response actions.

Based upon these factors, the intent of the following standards and regulations are applicable federal and Minnesota ARARs:

1. Resource Conservation and Recovery Act (Federal)

2. The Toxic Substances Control Act Regulations (Federal)

3. Standards issued pursuant to the Clean Air Act by the Minnesota Pollution Control Agency (Federal and State)

4. Discharge limitations as related to the Clean Water Act from the scrubber water discharge

5. Occupational Safety and Health Act

At this time there are no known toxic substances, pollutants, or any contaminants, as defined by SARA, migrating from the stockpiled PCB-contaminated soil. The U.S. Army, in conjunction with the U.S. EPA and MPCA, will continue to monitor any toxic substances, pollutants, or contaminants that may migrate from this PCB-contaminated soil pile, and will take appropriate action to avoid imminent and substantial danger to public health or the environment.

Establishing water quality criteria to determine the necessary extent and degree of remediation for groundwater migrating from the TCAAP site is not part of this interim ROD. Such determinations will be based on ARARs or on a risk-based number and will be included in the final RI/FS and ROD. However, a thermal treatment level for the soils will be based upon a PCB concentration of 2 parts per million (ppm) or less to meet the TSCA requirements. Processed soil found to have PCB concentrations of greater than 2 ppm will be returned for retreatment. In the past, the thermal treatment chosen has consistently reduced the PCB concentrations to below detection levels.

10.0 THE SELECTED REMEDY -- ON-SITE THERMAL TREATMENT

This section describes the selected remedy and the rationale for its selection.

10.1 DESCRIPTION OF THE SELECTED REMEDY

A mobile infrared thermal treatment unit owned by the OH Materials (OHM) Corporation will be used on this site to thermally destroy the polychlorinated biphenyls (PCBs) in the soils. The OHM treatment unit has been contracted through the Ecova Company. This unit has a National Toxic Substances Control Act (TSCA) permit to dispose of PCBs.

The mobile thermal treatment process consists of a high-temperature-powered primary chamber with a high-temperature alloy belt conveying system. The secondary chamber is fossil-fuel fired, operated at a temperature of approximately 2,000° Fahrenheit. Combustion off-gases from the secondary chamber will be run through pollution control equipment consisting of a quench section, a scrubber chevron mist eliminator, and a packed column chemical scrubber.

The thermal treatment operation will be performed in accordance with conditions of the TSCA permit and other applicable requirements [40 CFR §761.70(b)(2)]. Comprehensive monitoring of the process streams and complete system checks will be conducted to ensure safe and efficient operating conditions.

Thermally treated soil will be analyzed to ensure a PCB concentration of less than 2 ppm before it is placed at an area near Site D.

Treated wastewater, meeting the regulatory guidelines, will be discharged to the TCAAP sanitary sewer system and ultimately to the MWCC system.

After completing the soil thermal treatment, the equipment used in the process will be decontaminated before being removed off-site.

10.2 RATIONALE FOR SELECTION

The selected alternative is chosen based on the assessment of each criterion listed in Section 9.2. Section 121 of CERCLA stipulates that to be considered for selection in the ROD, an alternative must be protective of human health and the environment and able to attain ARARs, unless a waiver is granted. For those alternatives that met these statutory requirements, the U.S. Army, U.S. EPA, and MPCA focused on the other evaluation criteria, including short-term effectiveness, long-term effectiveness, implementability, permanently reduced M/T/V of contamination, and cost.

Thermal treatment technology satisfies all of these criteria, particularly permanence. On-site thermal treatment was found to be more cost-effective than off-site thermal treatment. Additionally, the short-term impacts associated with off-site treatment, such as increased truck traffic and the transportation of contaminated materials untreated over long distances through public access areas, are considered to be less acceptable than the construction impacts associated with on-site thermal treatment.

The U.S. Army, U.S. EPA, and MPCA also considered nontechnical factors that affect the implementability of a remedy, such as state and community acceptance. Based upon this assessment, taking into account the statutory preferences of CERCLA and SARA, the thermal treatment approach was selected for the site.

11.0 STATUTORY DETERMINATIONS

The interim remedial action selected for implementation at the site is consistent with CERCLA, SARA, and, to the extent practicable, the NCP. The thermal treatment alternative addresses the five statutory criteria in the following manner:

(1) Protects Human Health and the Environment

Thermal treatment will permanently reduce the risks presently posed to human health and the environment by preventing exposure to contaminated soils.

(2) Attains ARARs

This remedy will meet all applicable federal, state, and local ARARs that apply to the site. Federal environmental laws that apply to the selected remedial action at the site include:

- Resource Conservation and Recovery Act (RCRA)
- Clean Water Act (CWA)
- Toxic Substances Control Act (TSCA)
- Clean Air Act (CAA)
- Occupational Safety and Health Act (OSHA)

During removal and thermal treatment of PCB-contaminated soil, air emissions will be monitored and all relevant federal and state standards will be attained. Specifically, the National Ambient Air Quality Standards (NAAQS) will be met through specified techniques for activities, as well as required air monitoring during removal, to ensure that site-specific ambient levels are not exceeded.

OSHA regulations include 29 CFR 1910.120, which specify standards for handling hazardous wastes, and 29 CFR 1910.1000, which sets allowable ambient air concentrations for VOCs in the workplace. Suppressant foams and air-purifying and filtering devices will be used to comply not only with OSHA regulations but with any federal and state air quality standards.

(3) Is Cost-Effective

The estimated cost of on-site thermal treatment may be somewhat higher than several of the other remedial alternatives. However, the U.S. Army, U.S. EPA, and MPCA believe that the selected remedy is cost-effective because it will permanently destroy the PCB contamination at the site.

(4) Employs Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

Thermal treatment technology provides a permanent solution to the PCB problem at the site. Removing and treating the PCB-contaminated soil will reduce the risks posed to human health by virtual complete destruction of PCBs, as well as by eliminating the potential risk of release of PCBs from the soils into groundwater.

(5) Satisfies the Preference for Treatment as a Principal Element to Reduce Mobility, Toxicity, or Volume

Thermal treatment of PCB-contaminated soils will reduce the M/T/V of the contaminated soils and will minimize the threat posed by these soils to human health and the environment.