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Rev. 07/10/02

174201

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Hi-Mill Manufacturing Company, Highland Township, Oakland County, Michigan.

STATEMENT OF BASIS

This decision document presents the selected remedial action for the Hi-Mill Manufacturing Company Superfund Site in Highland Township, Oakland County, Michigan, which was chosen 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 is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to the extent practicable. This decision is based upon the contents of the Administrative Record for the site. The attached index identifies the items which comprise the Administrative Record upon which the selection of the remedial action is based.

The State of Michigan does not concur with this Record of Decision.

DESCRIPTION OF THE SELECTED REMEDY

U.S. EPA has selected a "No Action with Groundwater Monitoring and Institutional Controls".

The remedy selected for groundwater contamination includes continued monitoring of both the shallow groundwater unit and the intermediate aquifer. In addition, the monitoring network will be designed to detect impacts to nearby surface water bodies. The selected remedy also incorporates institutional controls to prohibit future development of the Hi-Mill property for residential use. This remedy addresses the threat posed by contaminated groundwater by eliminating or reducing the risks posed by the site through groundwater monitoring and institutional controls.

The selected remedy includes the following major components:

Long-term groundwater monitoring of the shallow groundwater unit and intermediate aquifer for volatile organic compounds [trichloroethylene (TCE), 1,2 dichloroethylene (DCE) and vinyl chloride (VC)].

Long-term monitoring near nearby surface water bodies for the same constituents which are monitored for in the groundwater.

Quarterly monitoring of the groundwater for the first three years after which consideration will given to reducing sampling frequency to annually.

Implementation of institutional controls to restrict development of the Hi-Mill property for residential use.

This action will require the installation of additional monitoring wells in order to design the most effective monitoring network. In addition, this action will require operation and maintenance activities to ensure continued effectiveness of the remedial alternative. The action being taken is consistent with Section 121 of CERCLA as amended by SARA, 42 U.S.C. Section 9621.

DECLARATION

U.S. EPA has determined that conditions at the Site due to contamination by both organic and inorganic chemicals pose no current threat to human health or the environment. While the shallow groundwater unit on-site and off-site does appear to exhibit organic contamination which results in unacceptable potential future risks, these risks are only applicable if the property is developed for residential use in the future. Since the property has been industrial for nearly fifty years and is surrounded by a State Recreation Area, it is not anticipated that it will be developed for residential use in the future. Thus, treatment of groundwater to permanently and significantly reduce the toxicity, mobility and volume of contaminants was not found to be necessary to protect human health and the environment, or to be practical at the site at this time.

Monitoring will be conducted for thirty years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. If, however, the analytical results generated as a result of monitoring groundwater indicate the presence of contaminants above health based levels in the intermediate aquifer, a groundwater treatment system will be evaluated. Additionally, if at any time during the thirty year monitoring program groundwater monitoring results indicate that the contamination in the shallow groundwater unit is migrating toward nearby surface water bodies at levels that may cause adverse impacts, a treatment system will also be evaluated.

U.S. EPA has determined that no remedial action is necessary at the site. As this is a decision for "No Action", the statutory requirements of CERCLA Section 121 for remedial actions are not applicable and no statutory five-year review will be undertaken.

Valdas V. Adamkus
Regional Administrator
U.S. Environmental Protection Agency

7/28/93
Date

HI-MILL MANUFACTURING COMPANY

HIGHLAND TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

SEPTEMBER 1993

RECORD OF DECISION
HI-MILL MANUFACTURING SITE
HIGHLAND TOWNSHIP, OAKLAND COUNTY, MICHIGAN

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DECISION SUMMARY

I. SITE DESCRIPTION

The Hi-Mill Manufacturing Company is located at 1704 Highland Road (M-59) in Highland Township, Oakland County, Michigan (See Figure 1). The site itself is approximately 4.5 acres in size and is dominated by the manufacturing facility and a paved parking area. The site is bounded to the northwest by Highland Road (M-59) and, generally, on all other sides by the Highland State Recreation Area, which is owned and operated by the Michigan Department of Natural Resources (MDNR) (See Figure 2). Much of the Recreation Area is considered wetlands property. Target Pond, a marshy area of approximately 10-acres, borders the site to the east, and Waterbury Lake lies about 1,000 feet to the south. The immediate area around Hi-Mill is sparsely populated and rural in nature. The nearest homes are about 2,000 feet southeast of the site, along Waterbury Road.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Hi-Mill Manufacturing Company began in 1946 as a partnership between Robert F. Beard and Raymond Unruh. Robert and Richard Beard bought out the business in 1957 and remain the current owners. The Hi-Mill Manufacturing plant makes aluminum, brass, and copper tubing parts and fittings.

Hi-Mill operations consisted of two main processes: (1) anodizing (or "pickling") to brighten metals, and (2) degreasing to clean them. As part of plant operations, metals were bathed in tanks containing acids. Hi-Mill employees periodically emptied these tanks of process wastewater containing residues of acids and such heavy metals as copper, aluminum, chromium and zinc. From 1946 until 1979, this wastewater was discharged into a clay-lined lagoon at the Hi-Mill site (See Figure 3). The lagoon was about 10 feet deep, 100 feet long, and 100 feet wide.

Prompted by complaints from Hi-Mill employees to the MDNR, the two on-site production wells and Target Pond were sampled in 1972 (See Figure 2). One well was found to contain elevated levels of metals contamination. Target Pond was also found to be contaminated by metals. In 1976, MDNR resampled the production well and Target Pond. Elevated levels of metals previously detected in the production well were not evident. Elevated levels of metals, however, were detected in Target Pond.

In the fall of 1976, Hi-Mill built a second, smaller lagoon south of the original one. This second lagoon was designed to receive overflow from the original lagoon. On two separate occasions in 1976 and 1977, the big lagoon overflowed into the marsh bordering the site. The overflow came to the attention of the U.S EPA, and Hi-Mill applied for a special NPDES permit to authorize the discharges. The U.S. EPA did not concur with a permit

being issued by the state. MDNR ordered Hi-Mill to stop discharging untreated wastewater into the lagoon, requesting that the company design a wastewater recycling program. The recycling system was implemented in 1981, but the already contaminated lagoons remained a problem. Attempting to cleanup the big lagoon between 1981 and 1983, Hi-Mill evaporated liquid in the lagoon using a spray technique. This technique involved spraying liquids from the wastewater lagoons into the air. Spray nozzles were located on top of the production facility and along portions of the 8-foot high fence that surrounds the rear of the property. MDNR ordered Hi-Mill to stop this practice in 1983.

In November of 1983, under MDNR supervision, Hi-Mill cleaned up the big lagoon by removing 142 cubic yards of contaminated soil, 34,400 gallons of contaminated sludge, and 63,300 gallons of contaminated wastewater. The lagoon was then backfilled. Following this action, samples taken by the MDNR showed that removal of the water and sludge significantly reduced the levels of metals in on-site soils. However, other samples showed elevated levels of toxic metals in sediment from Target Pond and Waterbury Lake.

Between 1978 and 1980 (exact date unknown), activities related to the construction of an addition on the northeast side of the building resulted in damage to the solvent delivery line between a former 250 gallon aboveground storage tank and degreaser (See Figure 3). As a result of the damage, up to 250 gallons of solvent leaked from the damaged underground product line. The damaged underground product line has since been replaced with an aboveground product line.

The two on-site production wells were resampled in 1988. Analytical results indicated that the drinking water at Hi-Mill was contaminated with trichloroethylene (TCE) and 1,2-dichloroethylene (DCE). A new well was installed in 1989 to provide Hi-Mill employees with safe drinking water. Before the new well was hooked up, bottled water was offered at the facility. The two contaminated wells were eventually abandoned.

On June 24, 1988, the Hi-Mill site was proposed to be placed on U.S. EPA's National Priorities List (NPL), a roster of hazardous waste sites eligible for investigation and cleanup under the Superfund Program, it became final on February 21, 1990 (55 FR 6160). On October 5, 1988, an Administrative Order by Consent (U.S. EPA Docket #V-W-88-C-127) was signed between Hi-Mill and the U.S. EPA authorizing Hi-Mill to conduct the RI/FS.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Community interest with the Hi-Mill site was minimal throughout the RI/FS process. On October 23, 1989, a public meeting was held to answer questions about the site, the upcoming RI, and the Superfund program. Prior to the meeting, a fact sheet was sent out informing the public about the Superfund process and describing the activities planned for the RI/FS. In April 1990, an "Activities Update" was sent out informing the public on the progress of the RI/FS activities.

In April 1993, a fact sheet was sent out informing the public of the results of the Remedial Investigation. A public meeting to present the findings of the Remedial Investigation was held on April 13, 1993. A notice informing the public of the public meeting and the availability of the RI Report in the Information Repository, maintained at the U.S.EPA Docket Room in Region V and at the Highland Township Library, was published in the Oakland Press on March 25, 1993.

A fact sheet about the Feasibility Study and Proposed Plan was released to the public in August 1993. The FS Report and Proposed Plan were made available to the public for review and copying in the Information Repository. The notice published on August 19, 1993 in the Milford Times announced the beginning of the 30-day public comment period. The public comment period ended September 17, 1993. A public meeting was held on August 23, 1993, to present the proposed remedial alternative to the public and accept their oral and written comments.

The public participation requirements of CERCLA sections 113 (k) (2) (B) (i-v) and 117 have been met in the remedy selection process. This decision document presents the selected remedial action for the Hi-Mill Manufacturing Company Site, Highland Township, Oakland County, Michigan, chosen in accordance with CERCLA, as amended by SARA. The decision for this site is based on the Administrative Record maintained in the information repository located at the Highland Township Library in Highland Township, Michigan.

IV. SCOPE & ROLE OF RESPONSE ACTION

This Record of Decision (ROD) addresses the final remedy for the Hi-Mill Manufacturing Site. The U.S. EPA recommends that no further remedial action be taken at the site for the following reasons:

(1) Although the shallow groundwater unit on-site and off-site is contaminated with relatively high levels of organics, this groundwater unit cannot be used as a drinking water source now or in the future due to its low water yield. There are no beneficial uses for the shallow groundwater unit.

(2) The intermediate aquifer, which is potable water source, showed no signs of contamination.

(3) The only potential risks due to site contamination are found under the future residential scenario and the likelihood of the Hi-Mill property, which has been industrial since the 1940's, being developed for residential purposes in the future is low.

(4) The complex geology of the shallow groundwater unit may make treatment of the contaminated groundwater difficult.

The main components of the preferred alternative are:

- Long-term (thirty years) monitoring of contaminated groundwater in the shallow groundwater unit for volatile organic compounds (TCE, DCE, and VC).

- Long-term (thirty years) monitoring of the shallow groundwater unit near nearby surface water bodies for TCE, DCE, and VC.

- Long-term (thirty years) monitoring of the intermediate aquifer.

- Implementation of institutional controls to restrict development of the Hi-Mill property for residential use.

Monitoring of the shallow groundwater unit will be implemented in order to monitor the migration of contamination. The monitoring system will also be designed to detect adverse impacts to the intermediate aquifer and potential impacts to nearby surface water bodies, if they should occur. The implementation of institutional controls will eliminate the potential risk for direct contact under the future residential scenario because they will prohibit the development of the Hi-Mill property for residential purposes. If the U.S. EPA determines that there are unacceptable impacts, due to the results of the long-term monitoring program, a treatment system will be evaluated.

V. SITE CHARACTERISTICS

Pursuant to the authorities under CERCLA, as amended by SARA, and the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), an RI was conducted at the site. The RI was conducted by the Potentially Responsible Party (PRP) between 1989 and 1992. A Baseline Risk Assessment was prepared by the U.S. EPA to evaluate the level of risk to human health and the environment. This section summarizes the analysis presented in the RI Report (dated March 1993) and the Baseline Risk Assessment Reports (dated December 1992).

A) Site Topography

The topography of the Hi-Mill Manufacturing site is gently sloping ranging in elevation from approximately 999 ft above mean sea level (msl) at Waterbury Lake to 1,011 ft msl south of the plant. There are several irregularly shaped upland areas ranging in elevation from 1,034 ft msl northeast of the site to 1,029 ft msl northwest of the site. Numerous shallow, closed depressions exist within the area and during periods of high rainfall may contain water.

Several water bodies are present in the area. These include Target Pond, Waterbury Lake, and Alderman Lake. Target Pond is located approximately 100 to 200 ft east of Hi-Mill and is a shallow surface water body and marshy area occupying a shallow depression in the

ground surface. Waterbury Lake and the North Arm of Waterbury Lake are separated by a small levee and are located approximately 1,000 ft south of the plant building. Alderman Lake, located approximately 1,000 ft northwest of the site, receives drainage from the storm sewer located in the M-59 median and roadway via a shallow creek which accepts outfall from the storm sewer system.

B) Site Geology

There are seven distinct geologic units at the site: shallow soils and granular material, brown periglacial and/or post periglacial lacustrine deposits, blue periglacial and/or post periglacial lacustrine deposits, interglacial lacustrine deposits, glacial outwash deposits, and post-glacial fluvioglacial outwash.

A thin veneer of sandy topsoil occurs as the uppermost unit that overlies a thin horizon of fine sands, silts, and other various soil types. On the Hi-Mill property, this thin sandy soil is generally absent and has been replaced by a clayey fill material above an organically rich topsoil or possibly peat.

A brown-gray variegated silty clay which underlies the topsoil and appears to be rather uniform in thickness, generally occurs between 1000 and 1010 ft msl and, except for the rear of the facility, is generally continuous across the site.

The brown clay is underlain by a stiff blue-gray clay that occurs between approximately 955 to 1000 ft msl except on the western edge of the study area. This gray clay contains numerous small sand and silt valves that are indicative of a lacustrine depositional environment. The gray clay thins toward the west and south and pinches out southeast of Target Pond.

Underlying the gray clay is a horizon of saturated outwash sands occurring from approximately 897 to 972 ft msl in the southwest, and 948 to 972 ft msl directly beneath the site. Except toward the north and southwest, this intermediate sand is approximately 28 to 30 ft thick across the site. The intermediate sand generally consists of medium to coarse-grained sand and fine gravel in the upper portions of the unit, and grades into a fine silty sand toward the south and west and a medium sand beneath the Hi-Mill facility.

The intermediate sand is underlain by a lower blue-gray clay layer which is composed of interglacial lacustrine clays similar to that of the upper gray clay horizon discussed previously. The lower gray clay pinches out toward the south and west and thickens to the east. Where the lower gray clay pinches out, the intermediate and deep sands merge into a single unit.

Below the lower gray clay horizon is a second layer of outwash sands similar to the intermediate sand unit. This deep sand was likely deposited prior to the deposition of the quiet, deep-water gray clay wedge. The deep sand unit merges with the intermediate sand to

the southeast where the lower gray clay pinches out.

C) Site Hydrology

Subsurface groundwater flow at the site has been subdivided into five distinct hydrostratigraphic units:

1. A shallow discontinuous groundwater unit within the brown clay.
2. An aquitard represented by the upper gray clay.
3. The intermediate flow system within the intermediate outwash sands.
4. A lower aquitard represented by the lower gray clay.
5. The deep flow system within the deep outwash sands.

Several dry locations in the shallow groundwater unit indicate that it is discontinuous with respect to the continuity in groundwater flow. It does not appear that the shallow discontinuous groundwater unit and the intermediate flow system are hydraulically connected, however, it should be noted that the lower aquitard (lower gray clay) does pinch out resulting in the hydraulic interconnection of the intermediate and deep flow systems to the southeast of the site.

D) Site Surface Water Hydrology

The Hi-Mill site is situated among several water bodies. Target Pond is adjacent to the east, Waterbury Lake and the North Arm to the south, and Alderman Lake to the northwest across M-59. The water bodies are surficially unconnected and lie within respective closed basins that do not possess surface water drainage outlets.

Target Pond is rimmed by adjoining wetland areas and generally possesses a surface water area of between 8 to 10 acres, at present, and a maximum depth of approximately 10 ft. The size of Target Pond changes substantially depending upon the surface water level of the pond.

The surface area of Waterbury Lake ranges from 35 to 40 acres and is rimmed by wetland areas. The maximum depth of the lake is unknown but is substantially greater than Target Pond. The North Arm of Waterbury lake is generally isolated surficially from the main portion of Waterbury Lake by a small levee. Surface water data suggest that the two water bodies are hydraulically interconnected through the levee located between them.

Alderman Lake possesses approximately the same surface area as Waterbury Lake and is adjoined by a wetland area. An arm of Alderman Lake extends southeast of the lake to the northwest side of M-59 across from the North Arm of Waterbury Lake. It is this arm that accepts discharge via an outfall pipe from the storm sewer system located within M-59. No surficial connection between the North Arm and Alderman Lake has been confirmed, and no surface water exit point for the water in the North Arm has been located southeast of M-59.

Another arm of the Alderman wetland is located northeast of M-59 across from the north edge of Target Pond. Previous investigations have suggested that these water bodies may be connected surficially during high water periods via a culvert beneath the M-59 roadway. While a conduit is present near the northern edge of Target Pond, no outflow pipe has been discovered on the northeast site of M-59. It is possible that the conduit located near Target Pond connects into the M-59 storm sewer system.

Observations made during the remedial investigations indicate that Target Pond, Waterbury Lake, the North Arm, and Alderman Lake are generally groundwater discharge zones, and that any limited hydraulic connection between the surface water bodies appears to be only through the shallow groundwater unit.

EXTENT OF CONTAMINATION

Between 1989 and 1992, the RI/FS was conducted by Hi-Mill under the guidance and oversight of the U.S. EPA and MDNR. The RI/FS was conducted to identify the types, quantities, and locations of contaminants at the site and to develop ways of addressing the contamination problems. The key findings of the RI are as follows:

1) Hydrogeologic Investigation

Results from groundwater sampling show that the shallow groundwater unit below the Hi-Mill property and M-59 has been contaminated by on-site sources. Several volatile organic compounds (VOCs) were detected in the shallow groundwater unit. The VOCs of primary concern are trichloroethylene (TCE), 1,2 dichloroethylene (DCE), and vinyl chloride (VC); maximum concentrations detected were 55ppm, 3.5ppm and 0.4ppm, respectively (See Figures 4, 5, & 6).

The primary source of contamination is believed to be the past accidental release of approximately 250 gallons of chlorinated solvents from the underground piping associated with the solvent storage tank located on the north side of the facility.

2) Site Soils Investigation

Results from the surface and subsurface soil sampling show that on-site soil near the facility has been contaminated with organic and inorganic chemicals. The primary sources of the organic contamination are believed to be the accidental release of solvents from the delivery line and the former and current solvent storage tanks located on the north and southwest sides of the facility. The primary sources of the inorganics contamination are believed to include the wastewater lagoons located at the rear of the facility and the abandoned wastewater recycling system.

3) Marsh Surface Waters and Sediment Investigation

Results of the sediment investigation show that although the sediments in Target Pond show concentrations of inorganics apparently from the Hi-Mill facility, there does not appear to be any adverse environmental effects associated with the inorganics concentrations. The surface water in Target Pond and Waterbury Lake and the sediment in Waterbury Lake does not appear to be severely impacted with inorganics.

The ecological inventory included a survey of the plants and wildlife and an aquatic survey of Target Pond. The survey results do not indicate any adverse impacts related to Hi-Mill activities.

BASELINE RISK ASSESSMENT

During the RI, the U.S. EPA conducted a risk assessment which analyzed the health and environmental problems that could result if site related contamination was not cleaned up. That analysis, called a Baseline Risk Assessment (BRA), compared the contamination levels at the site with Federal and State standards. It considered pathways by which people and wildlife could be exposed to site-related contaminants and whether such exposure could increase the incidence of carcinogenic (cancer-related) and noncarcinogenic (non-cancer related) diseases beyond the levels that normally occur in the study area.

The assessment assumed that people could come into contact with site related contaminants by eating or drinking them (ingestion), breathing them (inhalation), or absorbing them through the skin (dermal contact). The contaminants of concern are the VOCs (TCE, DCE, VC) found in the shallow groundwater unit both on-site and off-site. There are no unacceptable risks from inorganic chemicals associated with site activities.

The BRA evaluated the potential health threats to current Hi-Mill workers exposed to site soil and future residents exposed to site soil, groundwater, and Target Pond. The assessment concluded that current Hi-Mill workers are not at an unacceptable carcinogenic risk due to the soil at the site. Current worker exposure to site groundwater was not evaluated because there is no indication that workers are exposed to this groundwater (the shallow groundwater unit below the Hi-Mill property and M-59 is not used for drinking water by Hi-Mill or for residential wells). If the site is developed for residential use in the future, adult and child residents on-site will not be at an unacceptable risk due to site soil or Target Pond. However, future adult and child residents on-site who would regularly use water from the shallow groundwater unit may be at a carcinogenic risk by ingesting, inhaling, or having skin contact with the groundwater.

Table 1 lists all the pathways evaluated in the human health risk assessment and the potential carcinogenic risks associated with each. Listed below are the pathways of greatest concern showing risks in excess of U.S. EPA's acceptable risk range (1×10^{-6} to 1×10^{-4}) and the

estimated upper limits of additional cancer cases that could occur as a result of repeated exposures in the future to site related contaminants (these risks were estimated by assuming a person would be exposed to the contaminants of concern every day over a period of a lifetime). The excess lifetime cancer risks should be regarded as conservative estimates on the potential cancer risk rather that actual representations of true cancer risks:

- Future on-site residents inhaling, ingesting, or having direct contact with the water from the shallow groundwater unit:

Adults: 4 additional cases per 1,000 people exposed (4×10^{-3}).

Children: 3 additional cases per 1,000 people exposed (3×10^{-4}).

Some site-related contaminants could also pose various noncarcinogenic health problems. The measure of noncarcinogenic risk is termed a hazard index (H.I.). When the H.I. exceeds 1, there is a potential for adverse health effects. Table 2 lists all the pathways evaluated in the human health risk assessment and the potential noncarcinogenic risks associated with each of them. Of the exposure pathways evaluated, the H.I. is greater than 1 for future on-site adult residents ingesting or having direct contact with water from the shallow groundwater unit (H.I. = 37) and future on-site child residents ingesting water from the shallow groundwater unit (H.I. = 20).

In addition to performing an assessment of risks to human health, an assessment of risks to the environment was also performed. The results of the assessment show that there does not appear to be any adverse impacts to the surface water and sediments of Target Pond or Waterbury Lake as a result of site activities. There is also no indication of adverse impacts to wetland vegetation or terrestrial animals or plants.

In summary, the risk assessment shows there is no health risk to current workers from exposure to site soils or groundwater and no health risk to future residents from exposure to site soil. Also, there do not appear to be any risks to the environment. The risks apply only to future residents on-site, if any, who ingest, inhale, or have direct skin contact with water from the shallow groundwater unit at the site. Subsequent to the preparation of the risk assessment, the U.S. EPA determined that based on the fact that the shallow groundwater unit cannot be used as a drinking water source due to its low water yield and that the land use has been industrial for nearly 50 years, the probability of a future residential scenario occurring at this site is low. Therefore, the evaluation of a future residential scenario for the Hi-Mill site is considered to be too conservative and should not be considered in the determination of risk for the site.

VI. DESCRIPTION OF ALTERNATIVES

An array of alternatives for addressing groundwater and soil contamination at the Hi-Mill

Manufacturing Site was developed. The remedial alternatives considered were evaluated based on their ability to be protective of human health and the environment, attain compliance with Federal and State environmental regulations, be cost effective, and use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

The alternatives analyzed at the Hi-Mill Manufacturing site are presented below. The Feasibility Study analyzed three alternatives: No Action; Groundwater Monitoring and Institutional Controls; and Active Treatment (On-site and Off-site), however, the U.S. EPA has chosen to combine the No Action and Groundwater Monitoring and Institutional Controls alternatives. This is due to the fact that the U.S. EPA considers Groundwater Monitoring and Institutional Controls a form of "No Action". The active treatment alternatives are designed to remediate the soil and shallow groundwater unit on-site and/or off-site.

Alternative 1: No Action with Groundwater Monitoring and Institutional Controls
****Preferred Alternative****

Capital Costs:	$ 36,000
Annual O&M Costs:	
First 3 years:	$ 88,000
Next 27 years:	$ 23,000
Total Present Worth Costs:	$565,000

The statute requires that the "No Action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, no action will be taken to prevent exposure to the shallow site soils or to prevent contaminants from leaching from the soil at the site. In addition, no action will be taken to prevent the possible migration of the contaminated groundwater further off-site or into deeper aquifers. This alternative does, however, involve monitoring of the shallow groundwater unit and intermediate aquifer at the site and implementation of institutional controls (i.e. deed restrictions).

Groundwater monitoring would be utilized to monitor the migration of impacted groundwater in the shallow groundwater unit. The monitoring network would also be designed to detect impacts to the intermediate aquifer and nearby surface water bodies if it should occur. Data would be collected from the monitoring wells quarterly for the first three years after which consideration will be given to reducing sampling frequency to annually. If at any time U.S. EPA determines that contamination has adversely impacted nearby surface water bodies and/or the intermediate aquifer, a treatment alternative will be evaluated.

Institutional controls (deed restrictions) would be used as a means to prevent the Hi-Mill Manufacturing site from being developed for residential use. Such restrictions would eliminate the need to consider exposure risks to future residents.

Alternative 2A: Active Treatment (On-Site)

Capital Costs:	$ 452,000
Annual O&M Costs	
First 3 Years:	$ 134,000
Next 27 years:	$ 73,000
Total Present Worth:	$1,738,000

This alternative involves the use of a vacuum enhanced recovery system designed to remediate on-site soils and shallow groundwater that have been impacted by volatile organic compounds. This alternative also involves the implementation of institutional controls on the Hi-Mill property to prohibit development of the property for residential use.

Vacuum enhanced recovery wells would be placed around the Hi-Mill Manufacturing building in a pattern designed to capture shallow groundwater and air from suspected source areas and also to prevent migration of on-site groundwater that exceeds the cleanup levels. Once contaminated groundwater is captured, it would flow to a diffused aeration unit where primary treatment of VOCs would occur. Discharge from the aeration unit would be pumped to an activated carbon bed for final treatment. Treated water would be discharged to a selected discharge point. Recovered air would be treated in an activated carbon unit and discharged to the atmosphere.

The complex hydrogeology of the shallow groundwater unit may make successful treatment of the groundwater unit difficult. Pilot tests will need to be conducted in order to determine the effectiveness of this technology.

In addition to the vacuum enhanced recovery system, groundwater monitoring would be used to provide data on the effectiveness and progress of remedial efforts.

Alternative 2B: Active Treatment (On-Site & Off-site)

Capital Costs:	$ 564,000
Annual O&M Costs	
First 3 years:	$ 136,000
Next 27 years:	$ 73,000
Total Present Worth:	$1,857,000

This alternatives involves the same components as Alternative 2A with the addition of an off-site groundwater recovery component.

In order to capture off-site shallow groundwater, a single conventional groundwater well would be placed off-site (in the median of M-59). Captured shallow groundwater and air would undergo the same treatment process as described in Alternative 2A.

VII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

A. The Nine Evaluation Criteria

In selecting its preferred remedial alternative, U.S. EPA uses the following criteria to evaluate each of the cleanup alternatives developed in the FS. The nine evaluation criteria are summarized below:

1. Overall Protection of Human Health and the Environment addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses how the proposed alternatives complies with pertinent Federal and State environmental laws and/or justifies a waiver.

3. Long-term Effectiveness and Permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time.

4. Reduction of Toxicity, Mobility or Volume Through Treatment evaluates an alternative's use of treatment to reduce the harmful nature of contaminants, the contaminants' ability to move in the environment, and the amount of contamination present.

5. Short-term Effectiveness addresses the ability of alternatives to manage risks during construction and implementation phases, and reduce immediate risks posed by the hazardous materials present.

6. Implementability is the technical administrative feasibility of a remedy, including the availability of goods and services needed to implement a particular option.

7. Cost includes estimated capital and operation and maintenance costs.

8. Support Agency Acceptance indicates whether, based on its review of the Feasibility Study and Proposed Plan, the support agency concurs, opposes, or has no comments on the preferred alternative.

9. Community Acceptance summarizes the public's general response to the alternatives described in this Proposed Plan and in the Feasibility Study. Community acceptance will be assessed at the end of the public comment period.

B. Comparative Analysis

The following comparison of alternatives considers the options for soil and groundwater.

1. **Overall Protection of Human Health and the Environment**

Alternative 1 would promote the continued protection of human health and the environment by controlling land and groundwater use, as described above. As a result of the monitoring activities, appropriate remedial action could be taken, if necessary, to provide for the continued protection of human health and the environment in the event of a significant plume expansion.

Alternatives 2A and 2B would provide long-term protection of human health and the environment by reducing the concentration of the constituents of concern in the groundwater and soils.

2. **Compliance with Applicable and Relevant and Appropriate Requirements (ARARs)**

There are no ARARs associated with Alternative 1 since there are no reasonable potential risks due to site contamination. Compliance with chemical-specific ARARs would be anticipated over the long term for Alternatives 2A and 2B. Alternatives 2A and 2B would also comply with their respective action-specific ARARs. Assuming that regulatory agencies would approve the necessary site activities for the alternatives, Alternatives 2A and 2B would comply with the location-specific ARARs.

3. **Long-term Effectiveness and Permanence**

The institutional controls provided for in Alternative 1 would provide long-term effectiveness and permanence in promoting the continued protection of human health and the environment while monitoring the changes within the shallow groundwater plume. Monitoring would also be a reliable means for detecting future impacts, allowing for future implementation of remedial controls if necessary. Deed restrictions would prevent direct contact with, or ingestion of, impacted groundwater in the future, as described above.

Alternatives 2A and 2B will provide source control by controlling the flow of groundwater from the site source areas. The additional benefits of accelerated aquifer restoration may be limited due to complex hydrogeologic conditions.

4. **Reduction of Toxicity, Mobility, or Volume Through Treatment**

Alternative 1 does not incorporate active treatment and therefore would not reduce the toxicity, mobility or volume of contamination through treatment.

Alternatives 2A and 2B do provide for the reduction of toxicity, mobility, and volume of the constituents of concern through the active treatment of impacted soils and groundwater.

5. **Short-term Effectiveness**

Alternative 1 would provide a relatively high degree of short-term effectiveness because no disturbance of the impacted soils or groundwater would occur during implementation of deed restrictions, and the limited contact with potentially impacted soils and groundwater during the installation of the additional groundwater monitoring wells.

Alternatives 2A and 2B would provide a relatively lower level of short-term effectiveness because of the additional potential exposure risks that could occur during construction.

6. **Implementability**

The institutional controls provided for Alternatives 1, 2A and 2B could all be readily implemented. The additional components necessary for the implementation of Alternative 2A could also be constructed rather easily. Alternatives 2A and 2B may be difficult to implement due to the complex geology of the shallow groundwater unit. Alternative 2B would be the most difficult to implement primarily because of the technical and administrative difficulties due to the necessity to pipe extracted off-site groundwater to an on-site treatment system and the presence of the highway (M-59).

7. **Cost**

The costs of the individual alternatives are detailed below.

	Capital Cost	Annual O&M	Present Worth
Alt 1	$ 36,000	$ 88,000 (3yrs) $ 23,000 (27yrs)	$565,000
Alt 2A	$452,000	$134,000 (3yrs) $ 73,000 (27yrs)	$1,738,000
Alt 2B	$564,000	$136,000 (3yrs) $ 73,000 (27yrs)	$1,857,000

All costs are estimates. The costs associated with Alternatives 2A and 2B may change based on the results of pilot tests necessary to assess their effectiveness.

8. **Support Agency Acceptance**

The State of Michigan does not concur with the preferred alternative (See attached Responsiveness Summary).

9. **Community Acceptance**

Community acceptance is assessed in the attached Responsiveness Summary. The Responsiveness Summary provided a thorough review of the public comments received on the RI/FS and the Proposed Plan, and the U.S. EPA's responses to the comments received.

VIII. SELECTED REMEDY

The U.S. EPA has selected Alternative 1 as the preferred remedy for the Hi-Mill Manufacturing Site. Alternative 1 constitutes a "No Action with Groundwater Monitoring and Institutional Controls". The costs associated with this remedy are related to the design of an effective monitoring network, which will involve the installation of additional monitoring wells, and long-term monitoring for thirty years.

This alternative relies on the finding that: (1) the contaminated shallow groundwater unit is not presently being used as a potable water source and can not be used as one in the future due to its low water yield, therefore there are no beneficial uses for the shallow groundwater unit; (2) the intermediate aquifer, which does supply potable water, showed no signs of contamination; and (3) the only scenario under which unacceptable human health risks were found (future residential) is not likely to be realized due to the fact that the Hi-Mill property has been industrial for nearly fifty years and the possibility of it being developed for residential purposes in the future is low; and (4) the active treatment alternative evaluated may not be effective in treating contamination due to the complex geology of the shallow groundwater unit.

It is anticipated that no further action will be required to mitigate the migration of contaminants already present in the aquifer. Water quality monitoring will be conducted for thirty years to monitor contaminant migration in the shallow groundwater unit and to assess water quality in the intermediate aquifer. Total cost for installation of additional monitoring wells and monitoring for the site is estimated to be $565,000.

Alternative 1 will establish a database of groundwater analytical results which will be used in the assessment of the site remedy. If monitoring results indicate that organic contamination from the shallow groundwater unit appears to be migrating toward nearby surface water bodies at concentrations that could potentially exceed the more stringent of Federal and State water quality standards, the monitoring system and/or treatment alternatives will be re-evaluated. In addition, if monitoring results reveal organic contamination in the intermediate

aquifer at levels which could potentially cause risks to human health, the treatment alternatives will be re-evaluated.

Alternative 1 will also involve the implementation of institutional controls to prohibit the development of the Hi-Mill property for residential use in the future. For nearly 50 years the Hi-Mill property has been industrial. In addition, the property is surrounded on three sides by the State owned and operated Highland Recreation Area and on the fourth side by a highway (M-59), thereby further reducing the probability that the Hi-Mill property will be developed for residential use in the future. These facts eliminate the need to consider potential risks under the future residential scenario which leads to the U.S. EPA determination that there are no human health risks associated with the site contamination.

The U.S. EPA believes that the selected alternative provides the best balance of tradeoffs among alternatives with respect to the criteria used to evaluate the remedies. The selected alternative would be protective of human health and the environment and would utilize permanent solutions to the maximum extent practicable.

IX. STATUTORY AUTHORITY FINDINGS

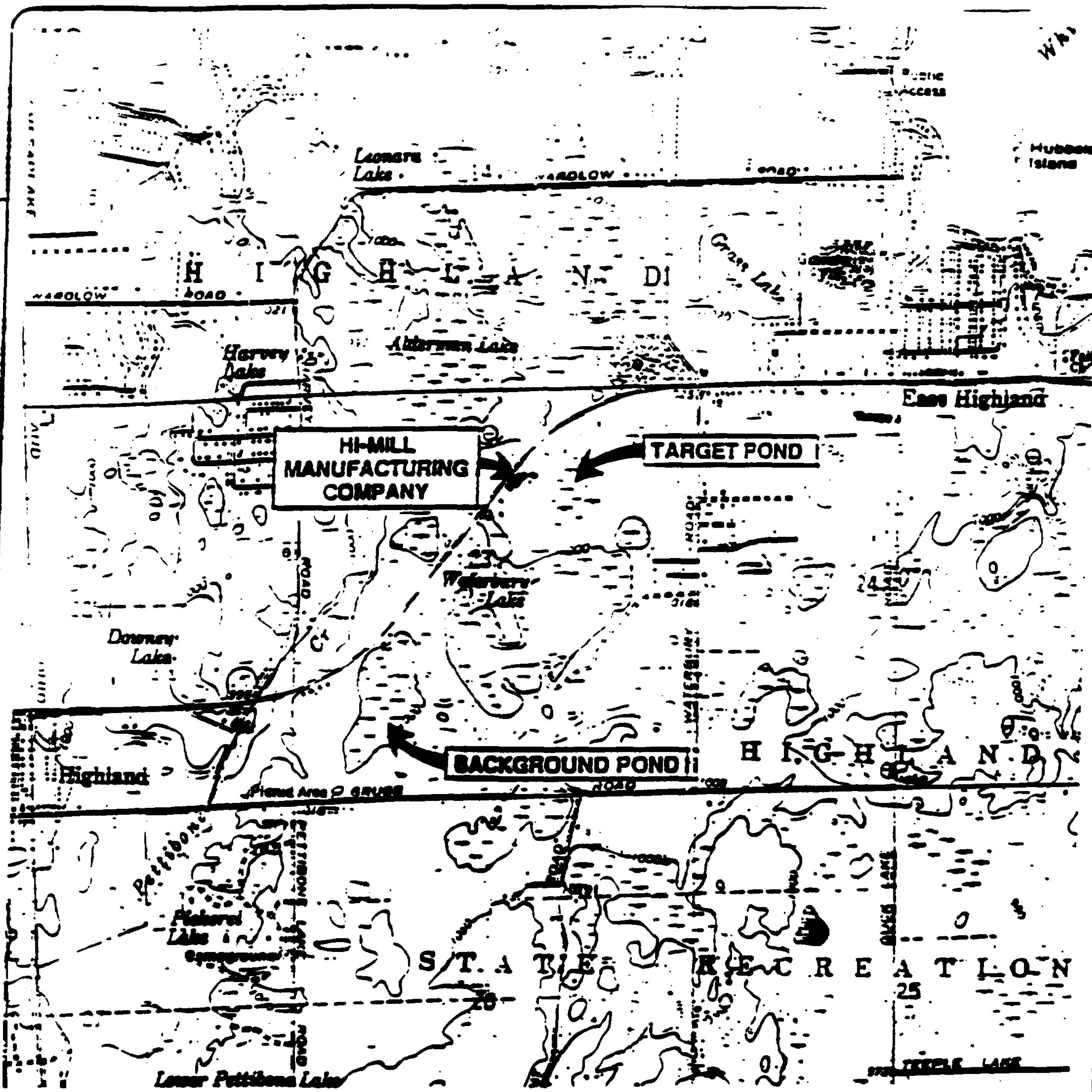
The human health risk assessment indicates that risks associated with site contamination fall within acceptable guidelines as long as the Hi-Mill property remains industrial and no potable water wells are screened in the shallow groundwater unit. These conditions will be achieved, through the selected remedy, by the implementation of deed restrictions on the Hi-Mill property which will prohibit residential development. All potable water wells on-site and off-site are screened in the intermediate aquifer and no contamination was found in this aquifer. In addition, the monitoring network proposed in the selected remedy will be designed to track the movement of the contaminant plume in the shallow groundwater unit and detect adverse impacts to the intermediate aquifer and nearby surface water bodies, if they should occur. This will allow the U.S. EPA to continually monitor and evaluate groundwater quality and reassess the need for active treatment, if necessary.

X. EXPLANATION OF SIGNIFICANT CHANGES

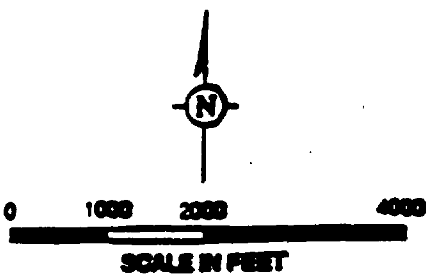
There are no significant changes from the recommended alternative described in the Proposed Plan.

APPENDIX I

FIGURES



SOURCE: USGS 7.5 Minute Topographic Map, HIGHLAND, MICHIGAN Quadrangle, 1969



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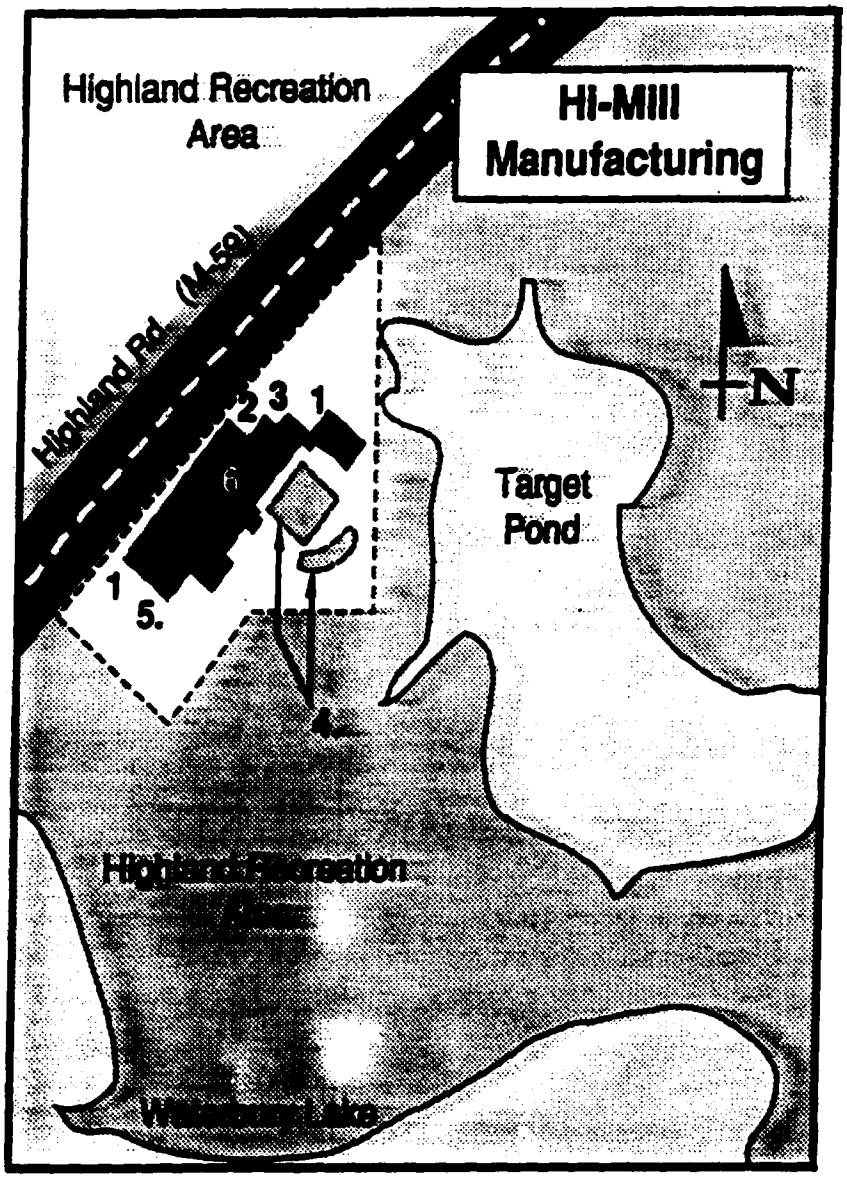
Environmental Services

SITE LOCATION

HI-MILL MANUFACTURING COMPANY
HIGHLAND, MICHIGAN

FIGURE
1

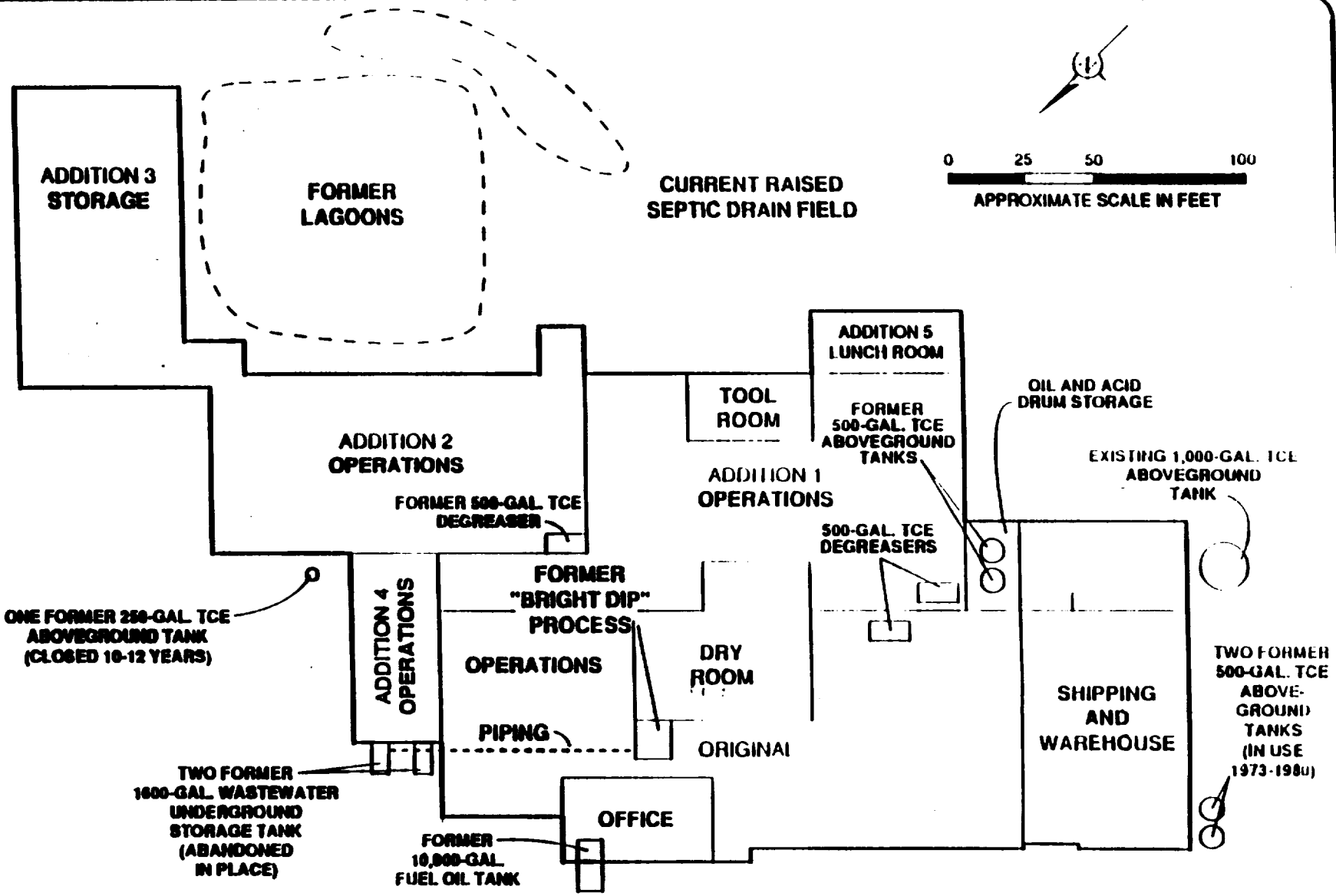
HI-MILL MANUFACTURING



1. Former Wells (2)
2. Former Underground Storage tanks
3. Former Solvent Storage Tank
4. Former Waste Water Lagoons
5. Solvent Storage Tanks
6. Former TCE Degreasing

FIGURE
2

DWG DATE: 02APR93	PRJCT NO : MI319 02	FILE NO 96	DRAWING. 06	CHECKED HS	APPROVED JJ	DRAFTER MS



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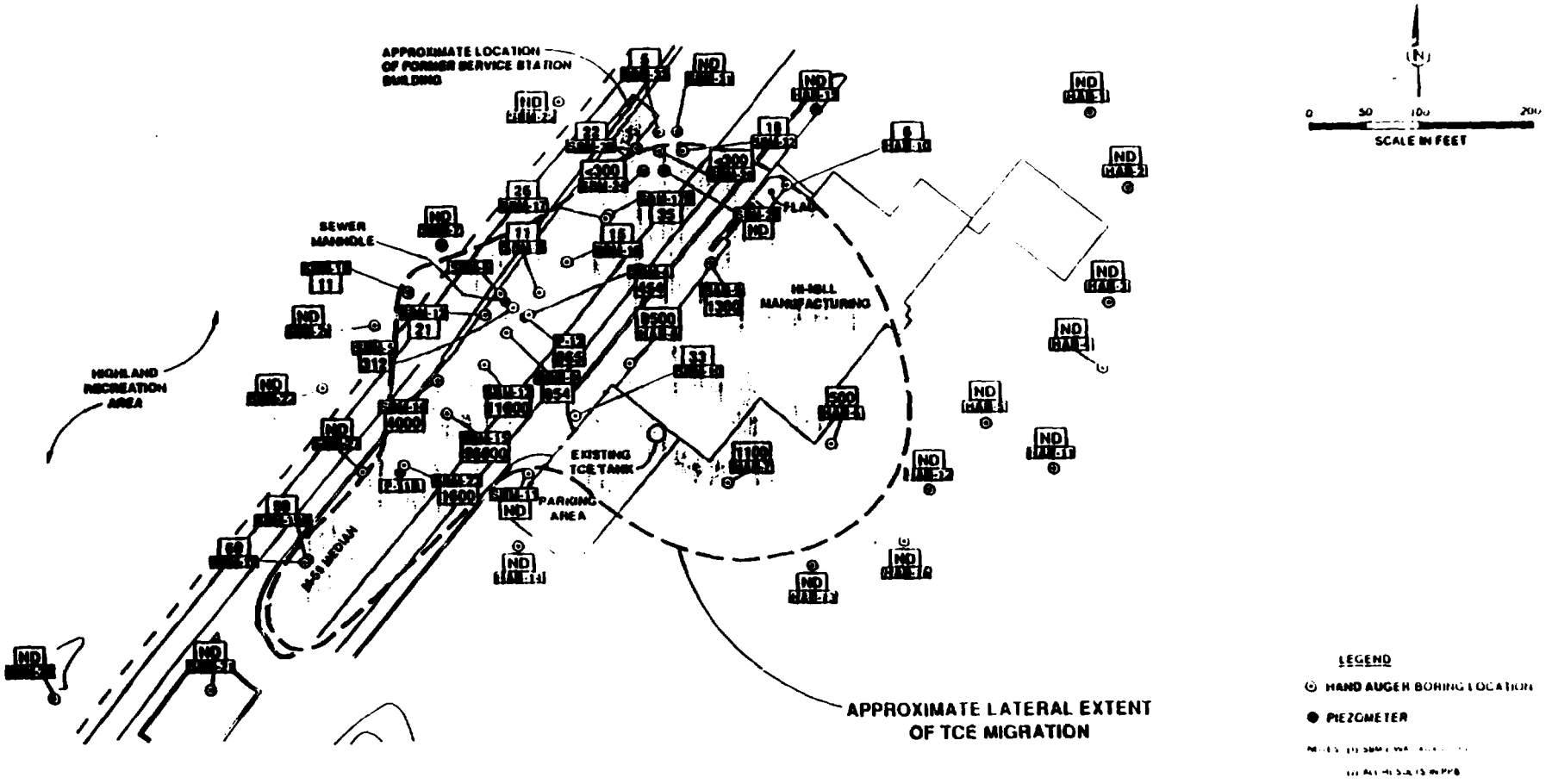
MAIN MANUFACTURING PLANT DIAGRAM

HI-MILL MANUFACTURING
HIGHLAND, MICHIGAN

FIGURE 3



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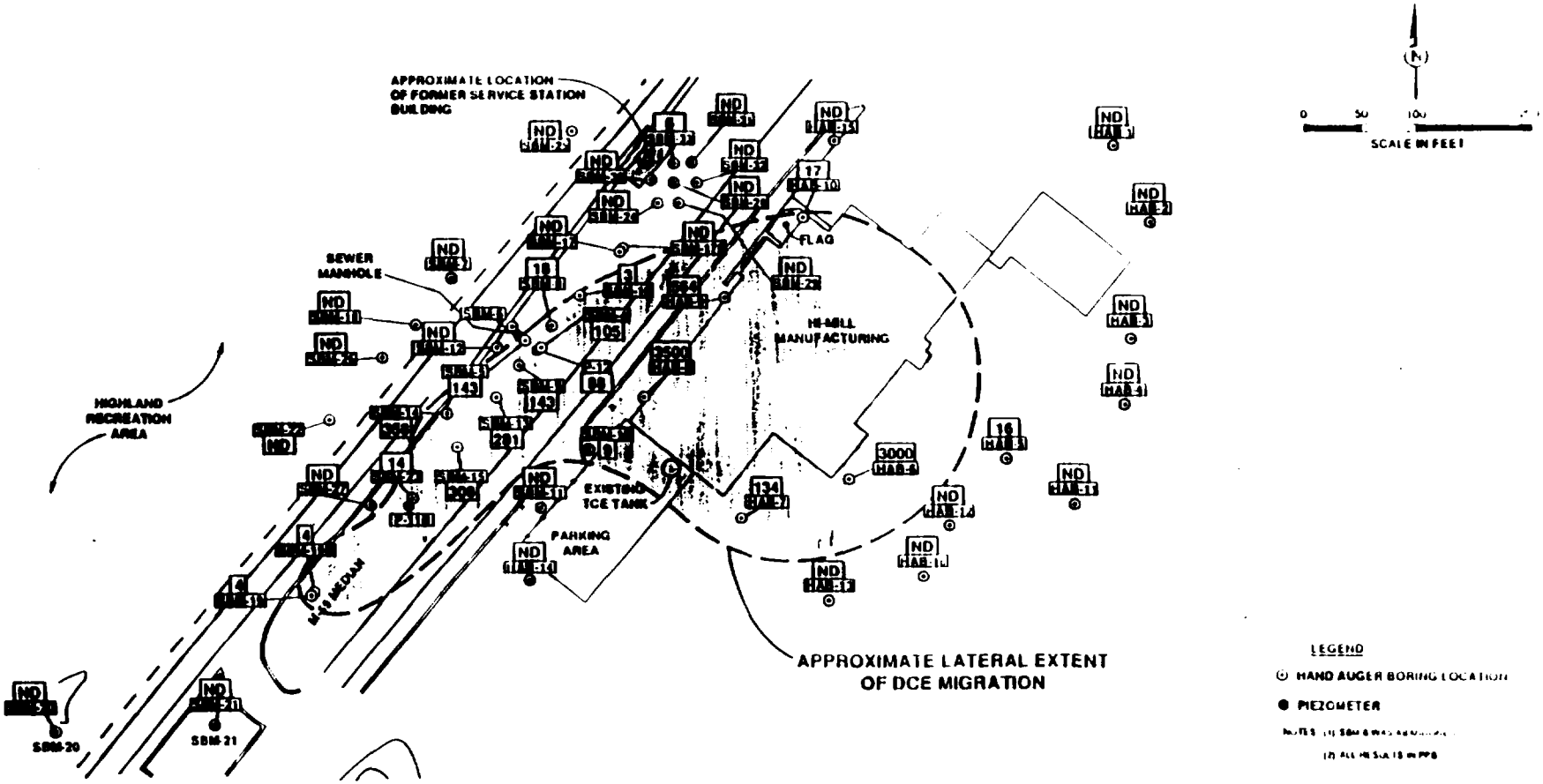
Environmental Services

MEDIAN INVESTIGATION
TCE DISTRIBUTION

HI-HILL MANUFACTURING
HIGHLAND, MICHIGAN

FIGURE 4

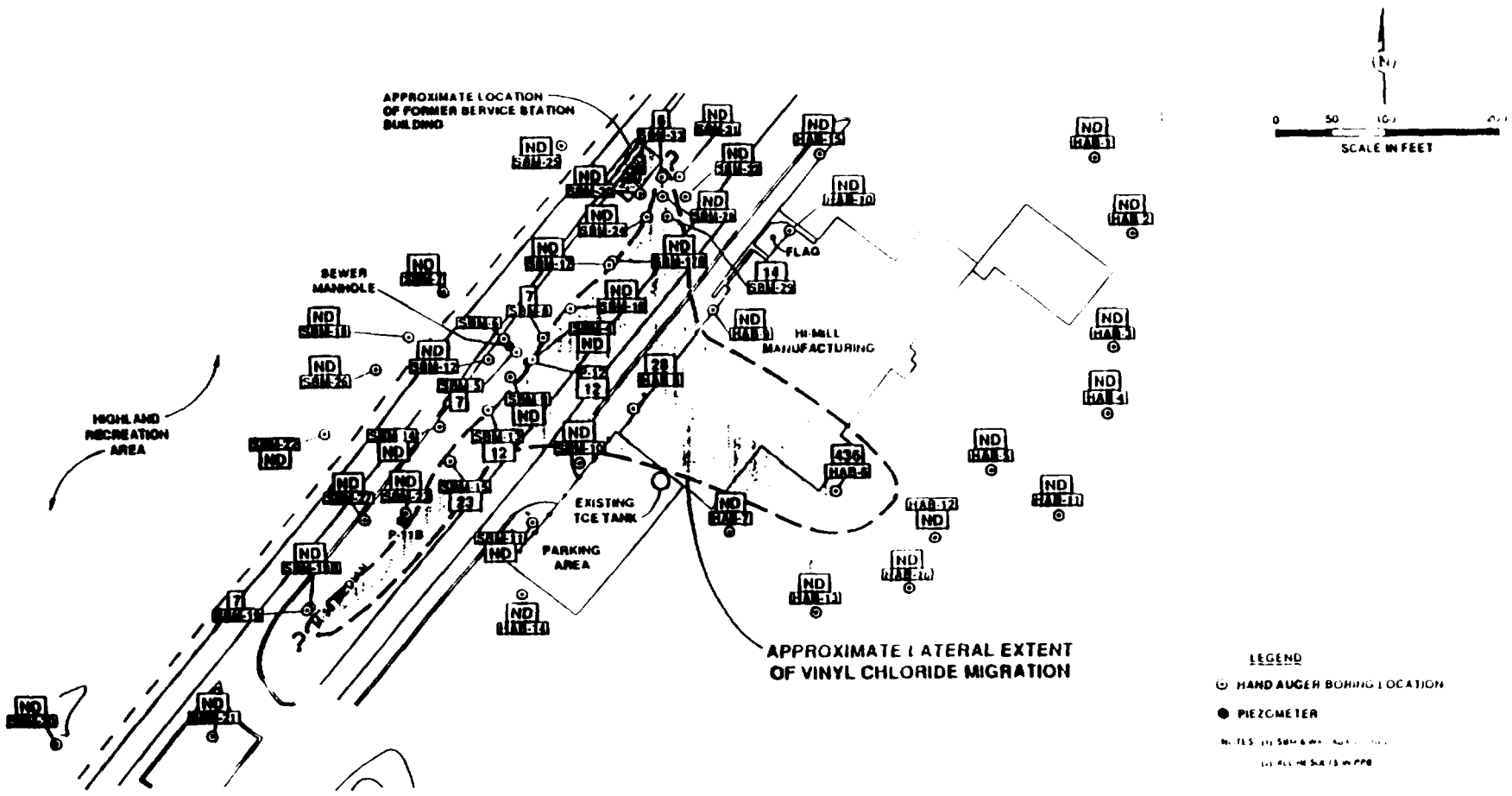


GERAGHTY & MILLER, INC.
Environmental Services

MEDIAN INVESTIGATION
DCE DISTRIBUTION

HI-MILL MANUFACTURING
HIGHLAND, MICHIGAN

FIG 5



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Environmental Services

MEDIAN INVESTIGATION
VINYL CHLORIDE DISTRIBUTION

HI-MILL MANUFACTURING
HIGHLAND, MICHIGAN

FIGURE 6

APPENDIX II

TABLES

TABLE 1 Summary Of Excess Cancer Risks For Populations At Hi-Mill

Exposed Population	Exposure Point	Exposure Medium	Exposure Route	Cancer Risk AVG	Cancer Risk RME
Current Worker	On-site	Soil	Oral	5E-07	2E-06
Future Resident, Adult	On-site	Groundwater	Oral	4E-04	2E-03
			Dermal	6E-05	2E-04
		Indoor Air	Inhalation	5E-04	2E-03
		Soil	Oral	7E-07	1E-05
		Ambient Air	Inhalation	3E-09	1E-08
		Garden Vegetables	Oral	4E-07	2E-06
Future Resident, Child	On-site	Groundwater	Oral	5E-04	9E-04
			Dermal	7E-05	8E-05
		Indoor Air	Inhalation	2E-03	2E-03
		Soil	Oral	4E-06	8E-06
		Ambient Air	Inhalation	1E-08	1E-08
		Garden Vegetables	Oral	6E-07	1E-06
Future Resident, Youngster	Target Pond	Surface Water	Oral	(a)	(a)
			Dermal	(a)	(a)
		Sediment	Oral	9E-08	5E-07

(a) No carcinogenic chemicals detected in surface water.

TABLE 2 Summary Of Hazard Indices For Populations At Hi-Mill

Exposed Population	Exposure Point	Exposure Medium	Exposure Route	Hazard Index (a) AVE	RME
Current Worker	On-site	Soil	Oral	2E-02	4E-02
Future Resident, Adult	On-site	Groundwater	Oral	2E+01	3E+01
			Dermal	6E+00	7E+00
		Indoor Air	Inhalation	2E-01	3E-01
		Soil	Oral	2E-02	2E-01
		Ambient Air	Inhalation	8E-06	8E-06
		Garden Vegetables	Oral	8E-02	1E-01
Future Resident, Child	On-site	Groundwater	Oral	1E+01	2E+01
			Dermal	2E-01	2E-01
		Indoor Air	Inhalation	4E-01	5E-01
		Soil	Oral	2E-01	4E-01
		Ambient Air	Inhalation	1E-05	1E-05
		Garden Vegetables	Oral	2E-01	3E-01
Future Resident, Youngster	Target Pond	Surface Water	Oral	4E-04	2E-03
			Dermal	1E-03	1E-02
		Sediment	Oral	1E-02	6E-02

(a) Hazard Index is subchronic for child resident and chronic for all other populations.

APPENDIX III

RESPONSIVENESS SUMMARY

HI-MILL MANUFACTURING SITE
HIGHLAND TOWNSHIP, OAKLAND COUNTY, MICHIGAN
RESPONSIVENESS SUMMARY

TABLE OF CONTENTS

A. Overview 1

B. **Background on Community Involvement** 1

C. **Summary of Comments Received During the Public Comment Period and Agency Responses** 2

HI-MILL MANUFACTURING SITE
HIGHLAND TOWNSHIP, OAKLAND COUNTY, MICHIGAN

RESPONSIVENESS SUMMARY

This Responsiveness Summary has been prepared to meet the requirements of Sections 113 (k)(2)(B)(iv) and 117 (b) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) which requires a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations on the proposed plan for a remedial action.

A. Overview

At the time of the public comment period, the U.S. EPA had selected a preferred alternative for the Hi-Mill Manufacturing site located in Highland Township, Oakland County, Michigan.

The preferred alternative, "No Action with Groundwater Monitoring and Institutional Controls", would provide for the long-term monitoring of the shallow groundwater unit and intermediate aquifer and the implementation of institutional controls in the form of permanent deed restrictions on the development of the Hi-Mill property for residential use.

This Responsiveness Summary addresses concerns expressed by the public during the 30-day public comment period on the Proposed Plan, which was held from August 19, 1993 to September 17, 1993.

Fifteen written comments were received from the public during the public comment period. Also, three oral comments were received during the Proposed Plan public meeting held on August 23, 1993. In general, the community was supportive of the preferred alternative, now the chosen remedy, as described above. Based on review of the public comments, no modifications to the preferred remedy were necessary.

B. Background on Community Involvement

The level of public interest regarding this site has been low since the listing of this site on the National Priorities List. The U.S. EPA and MDNR have held three public meetings concerning the site. Three fact sheets and one "Activities Update" were released to the public. Since the issuance of the Proposed Plan for public comment, the general public has

been mostly supportive of the selected remedy.

C. Summary of Comments Received During the Public Comment Period and Agency Responses

The public comment period on the Feasibility Study and the Proposed Plan for the Hi-Mill Manufacturing site was held from August 19, 1993 to September 17, 1993. Comments received during this time are summarized below. Copies of all written comments submitted to the U.S. EPA are included in the Administrative Record for the site which is located in the Highland Township Library. The Administrative Record also contains a copy of the public meeting transcript.

Written Comments

Comment: A United States Senator expressed his confidence that the alternative selected by the U.S. EPA is the best plan.

Response: The U.S. EPA appreciates your confidence in the proposed alternative for the remedial action at the Hi-Mill Manufacturing Site.

Comment: A United States Representative stated that he was pleased that the agency has been able to develop a cost-effective remedial plan which will protect human health and the environment in the most economically feasible manner and urged the implementation of the proposed plan.

Response: The U.S. EPA appreciates your comments on the proposed alternative for the remedial action at the Hi-Mill Manufacturing Site.

Comment: The County Executive for Oakland County expressed his support of the U.S. EPA's conclusions and recommendations and his pleasure that the Agency has developed a cost-effective plan that is protective of human health and at the same time not detrimental to the families dependent on Hi-Mill for their livelihood.

Response: The U.S. EPA appreciates your support of its conclusions and recommendations for the proposed alternative for remedial action at the Hi-Mill Manufacturing Site.

Comment: A State Senator expressed his endorsement and support of the Agency's conclusions and recommendations and his belief that the proposed alternative will protect public health and the environment in the most economically feasible manner.

Response: The U.S. EPA appreciates your endorsement and support of its conclusions and

recommendations for the proposed alternative for the remedial action at the Hi-Mill Manufacturing Site.

Comment: A State Representative expressed his support for the EPA's proposed plan for remedial action at the Hi-Mill Superfund site and encourages the Agency to take all appropriate steps toward implementing the Remedial Action as quickly as possible.

Response: The U.S. EPA appreciates your support of the proposed plan for remedial action at the Hi-Mill Manufacturing Site.

Comment: In a written endorsement to the U.S. EPA, the Highland Township Board proposed and unanimously adopted a resolution, during their regular meeting held on August 25, 1993, stating their support of the U.S. EPA's preferred plan for remedial action at the Hi-Mill site.

Response: The U.S. EPA appreciates your endorsement and support of the U.S. EPA's preferred plan for remedial action at the Hi-Mill Manufacturing Site.

Comment: The County Commissioner for the 10th District of Oakland County (which includes Highland Township) expressed his endorsement and support of the Agency's conclusions and recommendations for the proposed alternative and urged implementation of the proposed plan as quickly as possible.

Response: The U.S. EPA appreciates your endorsement and support of the proposed plan for remedial action at the Hi-Mill Manufacturing Site.

Comment: One commentor wished to testify on behalf of the exceptional work that the Hi-Mill Manufacturing Co. has done in the past in the area of responsible, environmentally conscience manufacturing. In addition, he expressed his confidence that the EPA's recommendation of Alternative 1 is the best plan.

Response: The U.S. EPA appreciates your confidence that its recommendation of Alternative 1 is the best plan.

Comment: Thirty-eight employees of the Hi-Mill Manufacturing Company signed and submitted a letter in favor of the EPA's Alternative 1: "No Action with Groundwater Monitoring and Institutional Controls"

Response: The U.S. EPA appreciates your comments in favor of the proposed alternative for remedial action at the Hi-Mill Manufacturing Site.

Comment: One local businessman expressed appreciation that the site investigation has finally ended and stated his support for the No Action alternative recommended by the U.S. EPA. He also stated that it is evident that the U.S. EPA has met its commitment to

protecting the public health and environment and should be commended for effectively bringing this issue to a conclusion.

Response: The U.S. EPA appreciates your support of the proposed alternative for remedial action at the Hi-Mill Manufacturing Site.

Comment: Four comments from local residents were received in the form of a joint letter. The letter stated their dissatisfaction with the proposed alternative because they feel that it doesn't provide for the clean-up of contaminants on-site and off-site. They expressed a preference for Alternative 2B because it provides for active cleanup and they feel it decreases the possibility of future contamination. They also expressed a concern that the quality of water in their residential wells must not pose a potential risk to their health.

Response: The results of the Remedial Investigation and Risk Assessment indicate that the only unacceptable risk to human health is that resulting from direct contact with contaminated shallow groundwater under the future residential scenario. This means that if at some time in the future the Hi-Mill property is used for residential development and drinking water wells are placed in the shallow groundwater unit, the residents using that water would potentially be at risk. This scenario is not likely for several reasons: 1) it is unlikely that the property will be used for residential development since it has been industrial for nearly 50 years and; 2) the shallow groundwater unit is not currently being used as a drinking water source and could not be used as a drinking water source in the future due to its low water yield. Because of these facts, it is not necessary to cleanup the contamination in the shallow groundwater unit, there is no human health or environmental risk.

Although the active treatment alternatives do provide for clean-up of contamination, the U.S. EPA only considers cleaning up contamination that poses a threat to human health or the environment. The U.S. EPA is concerned with the possibility of contamination reaching the intermediate aquifer, a drinking water source, and the nearby surface water bodies. Therefore, long-term monitoring (30 years) of the groundwater will be conducted. If any unacceptable impacts are detected, an active treatment alternative will be evaluated. In addition to the monitoring, institutional controls will be implemented to eliminate the possibility of the Hi-Mill property being used for residential use and consequently eliminate the risk found under the future residential scenario.

The U.S. EPA understands that you have concerns regarding the water quality of your residential wells. The last round of residential well sampling, conducted in November 1989, did not detect any contamination. Additionally, the groundwater contamination found at the site is not located in the aquifer in which your wells are screened. Finally, your residential wells are located upgradient of the contamination.

Comment: A letter from the "Friends of Rose Township", an environmental group active in the nearby Rose Township community, submitted a letter strongly opposing EPA's proposed remedial alternative for the Hi-Mill Manufacturing Site. They feel that the proposed

alternative does not satisfy the intent of CERCLA nor does it satisfy the nine criteria EPA uses to rate site cleanup proposals. They feel that Alternative 2B provides complete remediation of the site and therefore meets all criteria for cleanup and protection of the public's health. They urge EPA to reject alternative 1 and adopt Alternative 2B.

Response: The U.S. EPA has determined that the proposed Alternative 1 is protective of public health and the environment and therefore satisfies the intent of CERCLA, which is to respond to releases or threatened releases that may endanger public health, welfare, or the environment. In addition, the proposed alternative does satisfy the nine criteria U.S. EPA uses to evaluate alternatives. Although Alternative 2B does provide for complete remediation of the site, the U.S. EPA believes that the proposed alternative provides protection of public health and the environment and therefore complete remediation is unnecessary.

Comments: The Michigan Department of Natural Resources (MDNR) stated that it does not agree with or support the EPA's Proposed Plan for Remedial Action at the Hi-Mill Manufacturing Site for the following reasons: 1) Although the groundwater contamination off plant property has been verified, the extent of contamination has not been defined and therefore a reasonable informed decision on the appropriate remedy cannot be made and; 2) The proposed remedy does not comply with the Applicable or Relevant and Appropriate Requirements (ARARs) of the Michigan Environmental Response Act 307, as amended, and its administrative rules.

Response: The U.S. EPA has determined that: 1) The results of the Remedial Investigation give adequate information regarding the extent of the plume off plant property. The data indicates that the plume is contained in the shallow groundwater unit only and does not pose a threat to human health or the environment. The U.S. EPA recognizes that contamination in the shallow groundwater unit could, in the future, potentially cause adverse impacts to the deeper aquifers and nearby surface water bodies, which may threaten human health or the environment. The U.S. EPA has, therefore, included contingencies in the Proposed Alternative that would call for the evaluation of an active treatment alternative should adverse impacts to deeper aquifers and nearby surface water bodies occur that could result in a potential risk to human health or the environment. The U.S. EPA believes that it has made an informed decision based on the information gathered for the site and; 2) According to U.S. EPA OSWER Directive #9355.0-30, "If the baseline risk assessment and the comparison of exposure concentration to chemical specific standards indicates that there is no unacceptable risk to human health or the environment and that no remedial action is warranted, then CERCLA Section 121 cleanup standards for the selection of a Superfund remedy, including the requirement to meet applicable or relevant and appropriate requirements (ARARs), are not triggered." Therefore, since it was determined by the U.S. EPA that there is no risk associated with Hi-Mill site contamination and, subsequently no need for remedial action, no ARARS apply, including Michigan Environmental Response Act 307, as amended, and its administrative rules.

Oral Comments Taken During The Public Meeting

Comment: One commentor stated that if the alternative proposed by the EPA is the best that can be done, then he is in favor of it.

Response: The U.S. EPA appreciates your comments on the U.S. EPA's preferred plan for remedial action at the Hi-Mill Manufacturing Site.

Comment: A MDNR representative stated that the shallow groundwater flows radially from the site. In addition, he stated that there is a possibility that the shallow and intermediate aquifers are connected. Finally, he stated that there is some strange geology in the median and that there is the possibility that the contamination either is or can get into the intermediate aquifer.

Response: The U.S. EPA agrees that the shallow groundwater flows radially from the site. The U.S. EPA also acknowledges that although there is a possibility that the shallow groundwater unit and intermediate aquifer may be connected, the results from the remedial investigation did not indicate that the two flow systems are connected. Finally, the results of the remedial investigation did not indicate the presence of contamination in the intermediate aquifer but, the U.S. EPA agrees that there is some strange geology in the median and there is the possibility that contamination can get into the intermediate aquifer. Therefore, we have proposed monitoring of the intermediate aquifer, which will alert us to any adverse impacts to that aquifer, if they should occur.

Comment: One commentor stated that they would like to go on record to say that those who have been involved in the lengthy and costly past investigation appreciate the EPA's involvement and the fact that the EPA is trying to bring this site to a safe conclusion for the community.

Response: The U.S. EPA appreciates your comments on the U.S. EPA's actions with regard to the Hi-Mill Manufacturing Site.

APPENDIX IV

ADMINISTRATIVE RECORD INDEX

U.S. EPA ADMINISTRATIVE RECORD
HI-HILL MANUFACTURING SITE
HIGHLAND, MICHIGAN
ORIGINAL
07/30/93

AR

ITEM	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	[illegible]	MDEQ	File	Community Public Water Supplies Summary Report	1
2	00/00/00	USGS	U.S. EPA	Hi-Hill Manufacturing Co. 3-Mile Radius Map	1
3	00/00/00	U.S. EPA	File	Potential Ground Water Contamination Source Identification and Preliminary Assessment	5
4	12/18/75	Leonard, D. and Bailey, S., MDNR	Beard, R., Hi-Hill Manufacturing Company	Letter re: Compliance	1
5	[illegible]	Turney, W., MDNR	Hi-Hill Manufacturing Company	Permit To Discharge	5
6	12/06/76	Schraneck, R., MDNR	Beard, R., Hi-Hill Manufacturing Company	Letter re: Status of Compliance	2
7	01/12/77	Mangeli, M., MDNR	Schraneck, R., MDNR	Memo re: Water Quality of Waterbury Lake	1
8	01/18/78	Beard, R., Hi-Hill Manufacturing Company	Bek, C., MDNR	Letter re: Request for 30 Day Extension	1
9	04/07/78	Beard, R., Hi-Hill Manufacturing Company	Schraneck, R., MDNR	Letter re: Final Plans and Specifications for the Elimination of Process Water Discharges, With Attachments	7
10	08/14/79	Beard, R., Hi-Hill Manufacturing Company	Dougherty, T., MDNR	Letter re: July 18, 1979 Letter and Progress Report	2
11	01/15/80	Beard, R., Hi-Hill Manufacturing Company	Dougherty, T., MDNR	Letter re: Completion of Zero Discharge System	2
12	02/04/80	Beard, R., Hi-Hill Manufacturing Company	Schraneck, R., MDNR	Letter re: Cancellations of All Water Discharge Permits (Unsigned)	3
13	02/15/80	Schraneck, R., MDNR	Beard, R., Hi-Hill Manufacturing Company	Letter re: Plans for Zero Discharge	1

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[illegible]	[illegible]	Beard, R., Hi-Mill Manufacturing Company	[illegible], R., MDNR	Letter re: Land Discharge	[illegible]
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[illegible]	[illegible]			Test Well Records	[illegible]
[illegible]	11/22/81	Baldwin, R., MDNR	Permittee	Letter re: Discharge Permit	[illegible]
[illegible]	12/15/81	Beard, R., Hi-Mill Manufacturing Company	Dillner, [illegible], MDNR	Letter re: Request for Permit Modification	[illegible]
19	03/31/82	Bibo, A., MDNR	MDNR	A Hydrogeological Study of the Vicinity of Hi-Mill Manufacturing	[illegible]
[illegible]	[illegible]/83	King, [illegible], MDNR	Beard, R., Hi-Mill Manufacturing Company	Letter re: Lagoon Cleanup	[illegible]
21	11/02/83	Maki, R., MDNR	Beard, R., Hi-Mill Manufacturing Company	Letter re: October 31, 1983 Site Inspection	2
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