Minnesota Superfund

A Report on Use of the Minnesota Environmental Response, Compensation and Compliance Fund during Fiscal Year 1991

SUPERFUND

A REPORT ON USE OF THE MINNESOTA ENVIRONMENTAL RESPONSE, COMPENSATION AND COMPLIANCE FUND DURING FISCAL YEAR 1991

November 1991

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The Minnesota Environmental Response and Liability Act (MERLA) of 1983 established the Environmental Response, Compensation and Compliance Fund (Fund) and authorized the Minnesota Pollution Control Agency (MPCA) to spend Fund dollars to investigate and clean up releases of hazardous substances. The Minnesota Comprehensive Groundwater Protection Act of 1989 amended MERLA to authorize the Minnesota Department of Agriculture (MDA) to access the Fund to investigate and clean up incidents involving agricultural chemicals.

The directives of MERLA are carried out through the Minnesota Superfund Program. This report details, as required by Minn. Stat. § 115B.20, subd. 6, the activities for which Fund dollars have been spent during Fiscal Year 1991 (FY 91) by MPCA and MDA and puts forth initiatives for the Fund for FY 92.

The Minnesota Superfund Program has been very effective. Response actions are underway at 140 sites. MPCA and MDA have been successful in efforts to seek out responsible parties (RPs) to fund cleanup activities. MPCA also has been successful in securing federal dollars to fund cleanup activities. Despite these efforts, the continued success of the Superfund program is dependent on the availability of Fund dollars to encourage cooperation by RPs, provide the state's required 10 percent match for federally funded cleanups, and conduct cleanups of sites not eligible for federal funding.

MPCA Responsibilities

The MPCA's Superfund porgram fulfills functions specified in MERLA (Minn. Stat. sec. 115B), as well as serving as the lead agency for investigation and cleanup of most federal Superfund sites under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The MPCA and the U.S. Environmental Protection Agency (EPA) work cooperatively on enforcement activities involving Minnesota's 44 federal Superfund sites.

MPCA's Superfund responsibilities consist of four basic components: assessing sites for possible addition to the state or federal Superfund lists; investigation and cleanup of "traditional" Superfund sites, such as old industrial facilities, old dump sites, and sites of spills or other chemical accidents; investigation and cleanup of permitted sanitary landfills; and providing property transfer assistance.

Under MERLA, the MPCA staff attempts to identify all parties responsible for contributing to the release or threatened release of hazardous substances, pollutants or contaminants at identified Superfund sites. Responsible parties (RPs) are given the opportunity to conduct site investigations and cleanup as requested by the MPCA. At some sites, no RPs can be identified, or the RPs are unable or unwilling to take the appropriate action. In these instances, the MPCA may use the Fund to investigate and, if necessary, clean

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up the site. The MPCA may then seek cost recovery.

The MPCA has 178 sites on the state Superfund list. Of those, 44 are also on the federal Superfund list. There are 118 sites in some stage of investigation and cleanup.

MDA Responsibilities (MDA Incident Response Program)

The MDA Incident Response Program has two basic components: cleanup of agricultural chemicals using authority under MERLA, and under the Agricultural Chemical Liability, Incidents, and Enforcement Law (Minn. Stat. ch. 18D). The Agicultural Chemical Response and Reimbursement Law (Minn. Stat. ch. 18E) established an account managed by a five-member board (ACRRA Board). The ACRRA Board reimburses responsible parties for a substantial portion of their cleanup costs up to $200,000.

Under chapter 18D, MDA staff request, order, or compel through legal action parties responsible for agricultural chemical incidents to perform the necessary investigation and cleanup activities. Responsible parties who conduct investigations and cleanups according to MDA requests or orders are eligible to apply to the ACRRA Board for partial reimbursement of costs incurred. Currently, investigation and cleanup work is underway at 60 responsible party sites.

In situations where the RP is unknown or unwilling to perform the necessary corrective actions, the MDA performs the work itself using MERLA authority and Superfund monies. The MDA has the authority to seek recovery of its costs in these instances.

The MDA will also be using state Superfund authorities and funding for actions such as emergency responses to agricultural chemical incidents or where alternative sources of drinking water need to be provided due to releases of agricultural chemicals. MDA currently has six sites on the state Superfund list.

To ensure the continued success of the Superfund Program, MPCA and MDA staff offer the following recommendations:

1 MPCA Landfills and Traditional Superfund Sites

Significant additional resources either within or outside the Fund are needed to address response actions at landfill sites. Due to political subdivision liability limits, decreasing availability of federal money, bankruptcies among private landfill operators, costs of landfill cleanup, and the sheer number of sites involved, additional money is needed to ensure that solid waste landfills can be properly closed to protect the public health and environment of the state.

The growing use of Superfund at a number of different sites may lead, eventually, to the Fund being exhausted. Traditional Superfund sites which are approaching the remedial action phase of cleanup are placing a greater demand on the Fund.

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By the end of FY 93, a shortage of funds necessary for cleanup actions is projected for Superfund to address both landfills and traditional sites. While cleanups by responsible parties may reduce this shortfall, even if alternative funding to address landfills is found, a shortage of funds for use at traditional sites appears likely. The legislature will need to address this situation to ensure the continued success of Superfund.

2 MPCA Property Transfer Program

Additional staff resources are necessary to conduct state-funded Property Transfer Assistance efforts. The program continues to grow as the demand for property transfer assistance increases from property owners, buyers, developers, bankers, insurers, and lawyers. Demand for cleanup assistance under this program also continues to increase dramatically.

3 MDA Agricultural Chemical Sites

The MDA has limited staff resources to work on Superfund activities. To address current needs for assessing and scoring sites, for management and oversight of fund-financed emergencies or long-term investigations and cleanups at agricultural chemical incident sites, and for oversight of investigation and cleanup activities at property transfer sites, MDA needs at least three additional Superfund positions.

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The following is a summary of expenditures and income of the Superfund Program with a review of Fund accomplishments.

Superfund Program Expenditures and Income

Expenditures from the Fund	FY 91	FY 83 - FY 91 (Cumulative)
MERLA Fund Expenditures	$6,902,609	$29,903,266
Unliquidated Obligations	322,022	322,022
Total Expenditures and Obligations	7,224,631	30,225,288
Income to the Fund		
Appropriations	0	16,400,000
Fines and Reimbursements Paid by Responsible Parties	3,599,508	11,157,839
Hazardous Waste Tax	889,352	7,738,323
Interest	1,138,466	6,973,486
Subtotals	$ 5,627,326	$ 42,264,648
MERLA Fund Balance as of June 30, 1991		**$12,039,360**
Federal Superfund Dollars		
Secured	$7,594,052	$43,874,275
Expended	4,817,130	20,347,027

Superfund Program Accomplishments

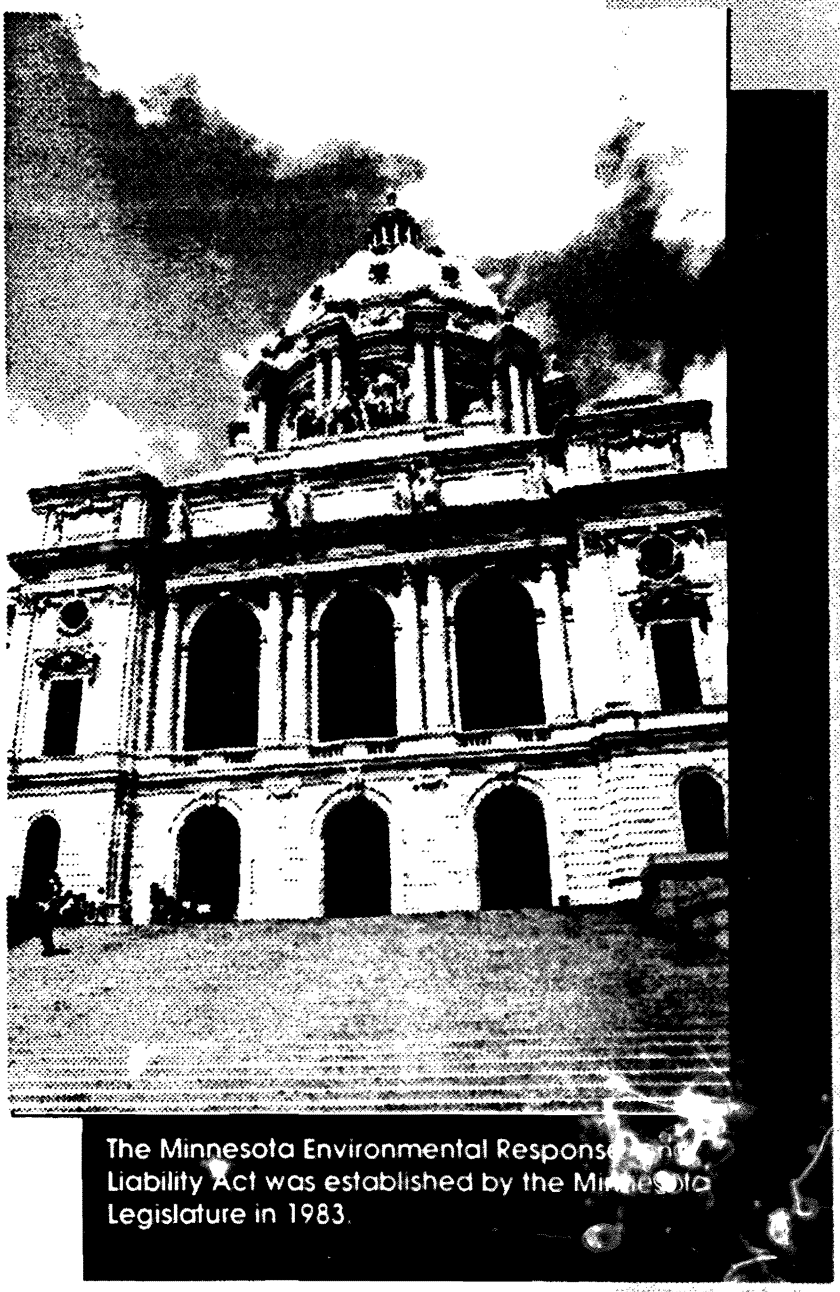
	FY 91	FY 83 - FY 91 (Cumulative)
Sites Added to the State's Permanent List of Priorities	14	178
Sites Deleted from the State's Permanent List of Priorities	1	13
Sites Added to the Federal National Priorities List	0	42
Responsible Party Response Actions Initiated	6	103
MERLA Funded Response Actions Initiated	3	29
Federally Funded Response Actions Initiated	2	24
Records of Decision (RODs) Executed	10	40
MPCA Involvement in Lawsuits	0	11
Emergencies	0	21
Abandoned Barrels Secured	59	371
MPCA Property Transfer Assistance		
File Search Requests	1866	5366+ (FY 85-91)
Cleanup-Assistance	69	125 (FY 89-91)

Introduction

The Minnesota Environmental Response and Liability Act (MERLA) of 1983 established the Environmental Response, Compensation and Compliance Fund (Fund) and authorized the Minnesota Pollution Control Agency (MPCA) to spend Fund dollars to investigate and clean up releases of hazardous substances.

The Minnesota Comprehensive Groundwater Protection Act of 1989 amended MERLA to authorize the Minnesota Department of Finance (MDF) to administer the Fund, but retained the language regarding appropriation of the money to MPCA and the Minnesota Department of Agriculture (MDA). In 1990, changes were made in the appropriation language to give full administrative authority to the Commissioner of Finance. This reauthorization allows MDA equal access to the Fund to investigate and clean up releases involving agricultural chemicals (pesticides and fertilizers).

MPCA and MDA jointly propose additions to the state's Permanent List of Priorities (PLP). MDF, MDA, and MPCA have completed a Memorandum of Agreement (MOA) to address various issues involved in this change. This report outlines the use of the MERLA Fund during FY 91, summarizes the status of the Minnesota Superfund program, and puts forth initiatives for the Fund for FY 92.



The Minnesota Environmental Respons[illegible] Liability Act was established by the Mi[illegible]ota Legislature in 1983.

Program Overview

The Minnesota Superfund program is composed of the following functions:

1. to discover and conduct preliminary investigations of potential hazardous substance releases from abandoned hazardous waste sites, solid waste sites, or agricultural chemical sites, and to identify responsible parties;

"Preventing environmental damage is a primary focus of the Superfund Program. The money in the Fund protects resources and maintains Minnesota's natural heritage."

2. to respond to emergency situations, such as a contaminated drinking water supply or abandoned drum removal;

3. to initiate remedial investigations and feasibility studies at identified sites;

4. to develop remedial designs and implement remedial actions for the final cleanup of sites;

5. to conduct the administrative activities for the management of response actions, contractors, the MERLA Fund, and federal Superfund money secured under Cooperative Agreements with the U.S. Environmental Protection Agency (EPA);

6. to conduct public information and community relations activities; and

7. to provide assistance to buyers, sellers, bankers, insurers, and others in the transfer of property where potential or real contamination problems and liability issues exist.

The program now includes a wide variety of sites, from traditional industrial sites to solid waste landfills to agricultural chemical sites. Recent administrative changes better allow the Superfund program to respond to new information on emerging technologies, changes in federal law, more accurate health risk information, and lower detection limits for some contaminants. The program also has to remain flexible to accommodate a broader range of sites.

Preventing environmental damage is a primary focus of the Superfund Program. The money in the Fund protects resources and maintains Minnesota's natural heritage. In addition, public awareness and interest in the Superfund is increasing as concerns over the environment and cleanup efforts become vital in the everyday lives of Minnesota citizens.

Status of the Fund

The status of the Fund as of June 30, 1991, is detailed in Table 1 (General Ledger). The Fund balance at the end of FY 91 is $12,039,360.

In 1983, the Fund was established with a $5,000,000 transfer from the General Fund. An additional $4,500,000 in FY 88, and $5,900,000 in FY 89, were appropriated from the Water Pollution Control Fund. Another $1,000,000 was transferred from the General Fund in FY 90.

The Fund investments are managed by the Department of Finance and the Hazardous Waste Tax is collected by the Department of Revenue. MPCA has recovered $11,152,839 in the form of penalties and reimbursements from responsible parties since the Fund was established.

Table 1: General Ledger Balance of the Environmental Response Fund as of June 30, 1991

Appropriations to Date	
Original (FY 83)	$ 5,000,000
Transfers from Water Pollution Control Fund (FY 88 - FY 89)	$10,400,000
Transfer from General Fund (FY 90)	$ 1,000,000
Income to Date (FY 83 - FY 91)	
Interest on Investments	$ 6,973,486
Fines and Reimbursements paid to the Fund by Responsible Parties	$ 11,152,839
Hazardous Waste Taxes	$ 7,738,323
Total Income to Date	**$42,264,648**
Expenditures and Obligations to Date (FY 83 - FY 91)	**$30,225,288**
Fund Balance as of June 30, 1991	**$12,039,360**

"... fifty percent of the administrative costs that are incurred by MPCA staff ... result in securing response action commitments from responsible parties."

A summary of Fund expenditures during FY 91 is presented in Table 2 below.

Table 2: FY 91 State Superfund Expenditures by MPCA and MDA.

	MPCA	MDA
Superfund Program Administrative Costs	3,796,741	110,000
Contractual Costs	2,589,418	44,278
Legal Costs	158,753	21,120
Laboratory Costs	182,299	
Unliquidated Obligations	322,022	
TOTAL	**$7,049,233**	**$175,398**

The MPCA's support costs are expended to run the Superfund Program within the agency and include telecommunications, facility rental, and purchasing functions. The Superfund Program administrative costs represent salaries for 55 staff, as well as travel, equipment, supply expenditures associated with responding to emergencies and implementing site cleanups. MPCA staff estimates that greater than fifty percent of the administrative costs that are incurred by MPCA staff are expenditures that result in securing response action commitments from responsible parties.

The legal cost of services rendered by the state Attorney General's Office for non-site specific expenses make up a portion of the MPCA administrative cost. Laboratory costs, a large portion of specific contractual costs, are expenses paid to the Minnesota Department of Health (MDH) for analytical services.

In FY 91 MDA received appropriations of $110,000 (including $55,000 carried foward from FY 90) for two staff positions along with $75,000 for legal costs incurred in responding to agricultural chemical incidents.

MDA Superfund Program Administrative costs in Table 2 include salaries ($110,000) for two positions and costs incurred for legal services provided by the Attorney General's Office ($21,120).

How the Fund Is Used

The Minnesota Superfund process for hazardous waste site cleanup is diagrammed in Figure 1. Potential Superfund sites are identified by MPCA and MDA through telephone calls from concerned citizens, routine inspections by agency staff, reports of hazardous substance spills, and analyses of drinking water supplies sampled by MDH.

Through a Cooperative Agreement with EPA, MPCA has established a program to assess potential hazardous waste sites in Minnesota. Initially, a preliminary assessment is conducted involving a general review of readily accessible information to characterize a site and to determine if the site warrants further action.

If further action is warranted, a site investigation is conducted. Data collected is used to rank a site using the Hazard Ranking System (HRS). The HRS scores are used to establish relative priorities among sites and to determine a site's eligibility for federal and/or state Superfund monies for response actions.

The site may then be added to EPA's and/

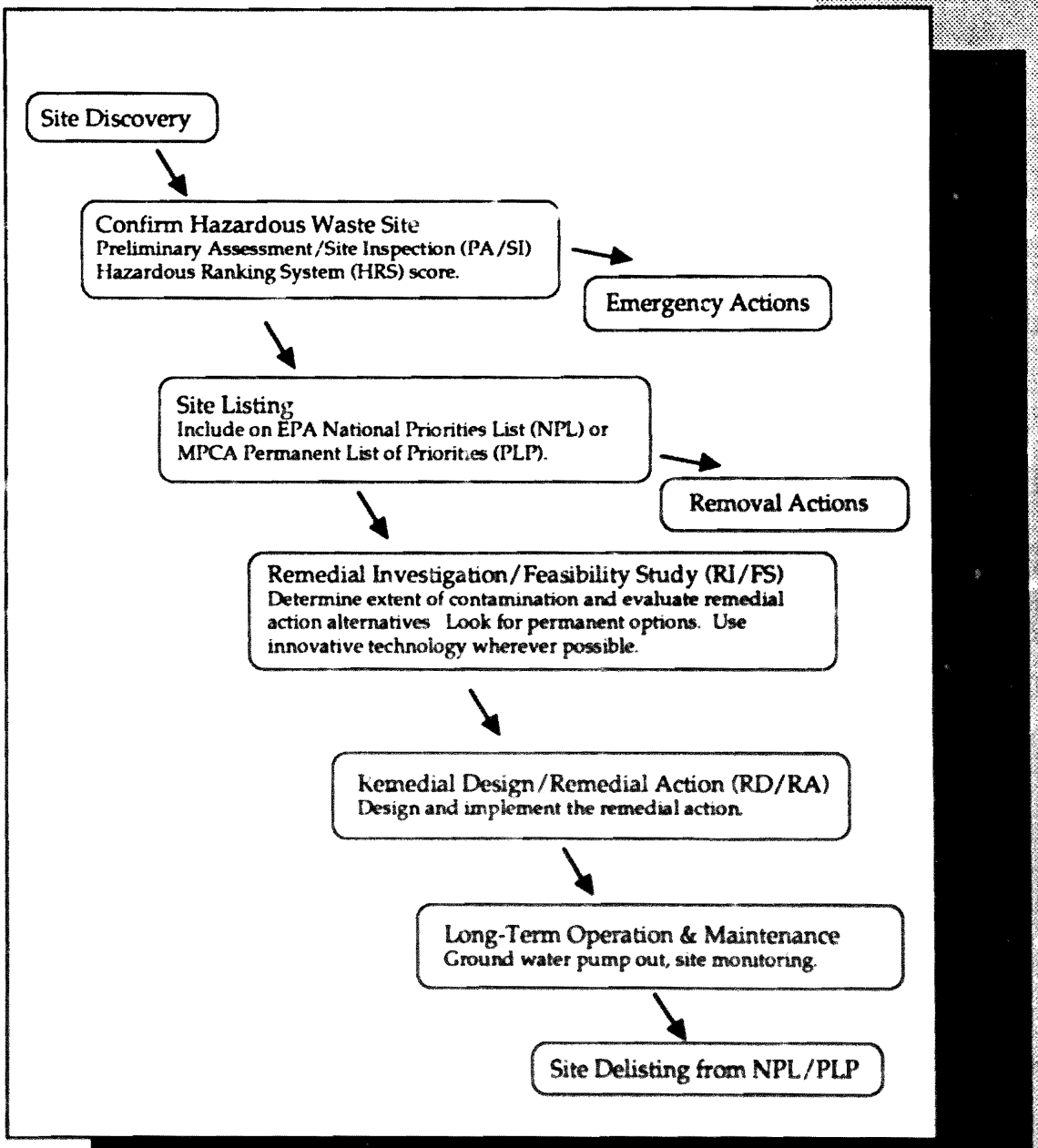


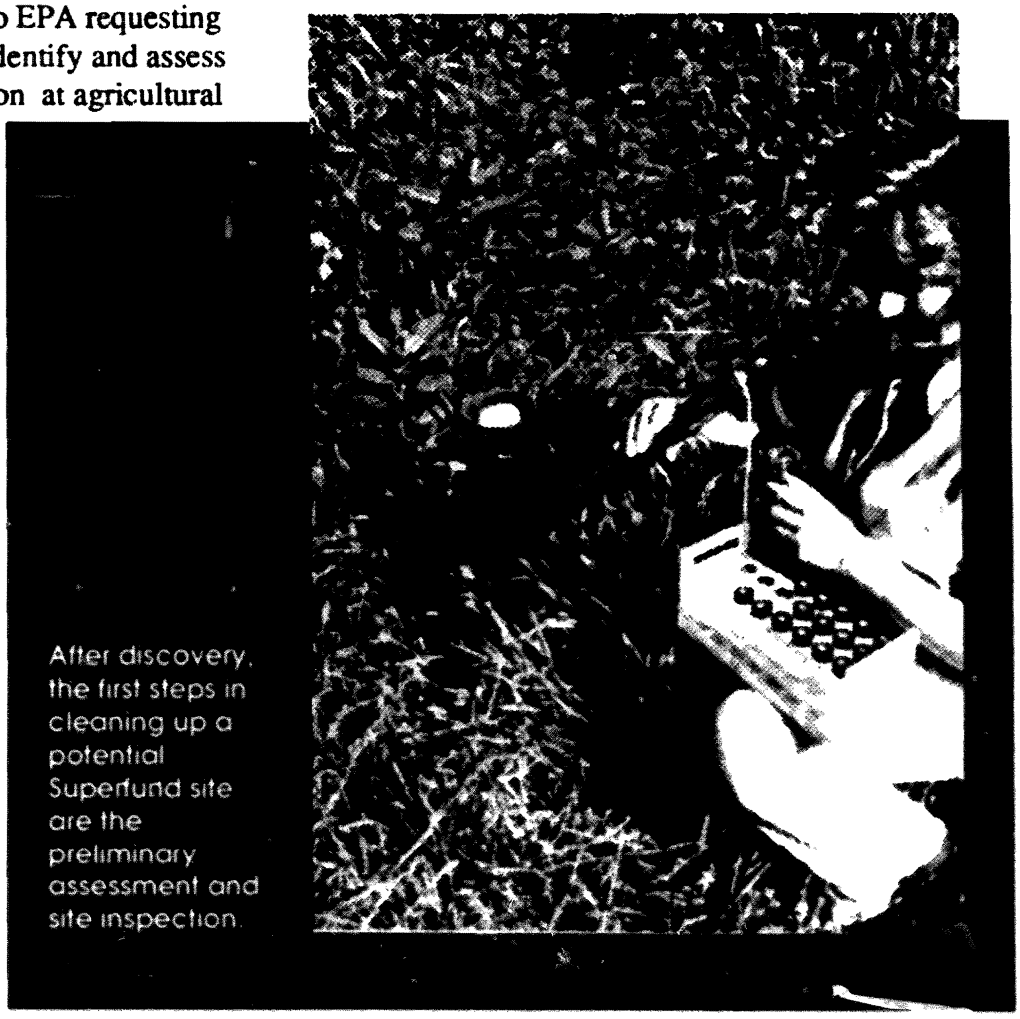
Figure 1: The Minnesota Superfund process.

"The process provides ample opportunities for responsible parties to negotiate Consent Orders or operate under a Request for Response Action."

or the state's priority lists, after which a remedial investigation/feasibility study is conducted to determine the extent of contamination and to evaluate remedial action alternatives. EPA has developed a new Hazard Ranking System (HRS II), which should operate the same as the current HRS. However, HRS II requires considerably more staff time to complete each scoring package. In addtion, the development of HRS II has delayed EPA's listing of additional Minnesota sites on the National Priority List (NPL).

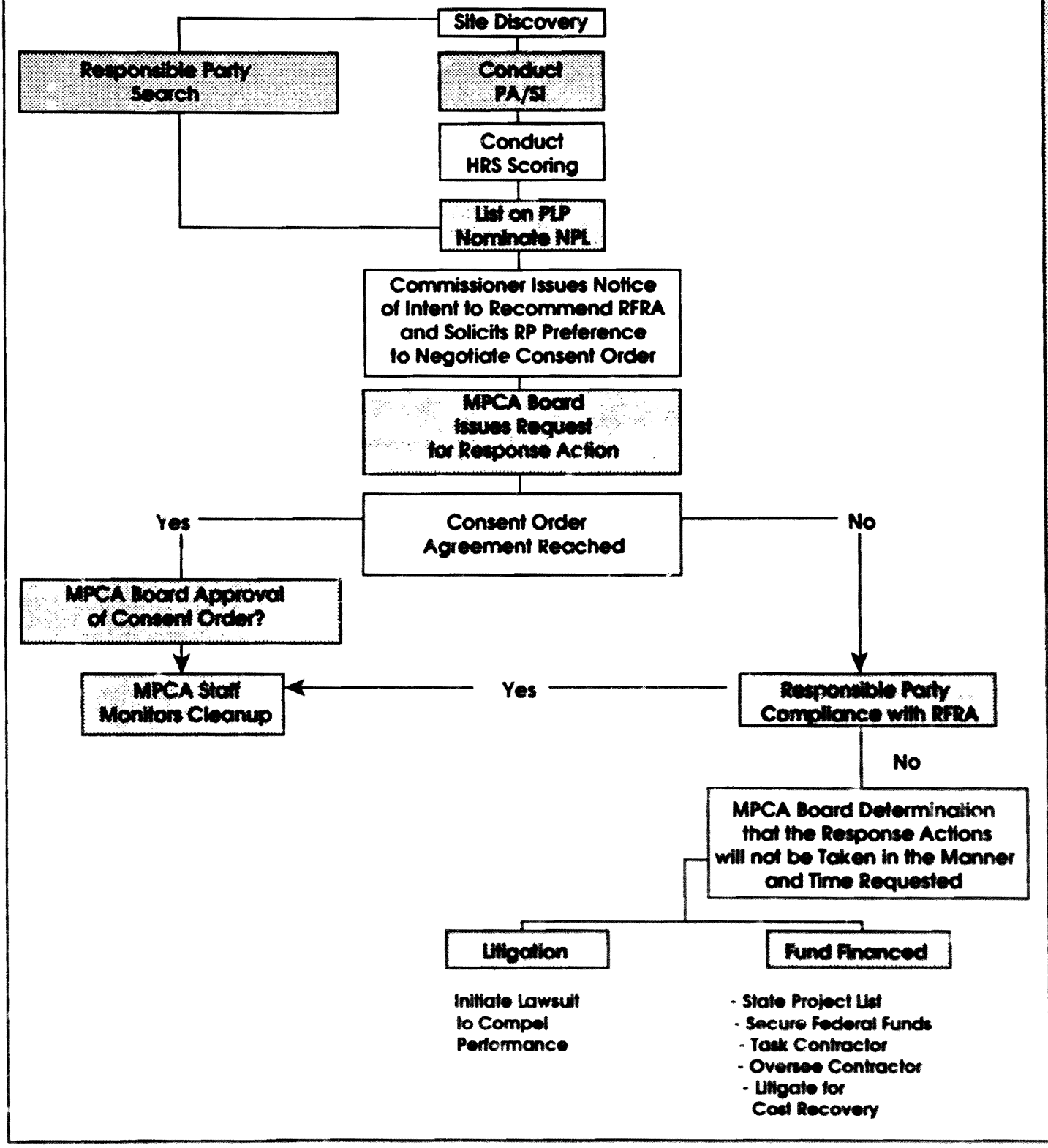
MDA has submitted an amendment to the MPCA/EPA cooperative agreement to EPA requesting funding to identify and assess contamination at agricultural chemical sites in Minnesota

At sites where responsible parties have been identified, even if those parties have insufficient funds to undertake a Superfund investigation and cleanup, MPCA staff undertake an Administrative/Enforcement Process. The process (described in Figure 2) provides ample opportunities for responsible parties to negotiate Consent Orders or operate under a Request for Response Action. MPCA rules for this Superfund Administrative/Enforcement process should be completed by the end of FY 92.



After discovery, the first steps in cleaning up a potential Superfund site are the preliminary assessment and site inspection.

Figure 2: MPCA Administrative/Enforcement Process under MERLA



Types of Sites in Superfund

Sites on the Permanent List of Priorities (PLP)

All sites listed on the PLP have been assigned to one or more response action classes as required by Minn. Stat. sec. 115B.17, subd.1. Each of the four response action classes is defined as follows:

Class A - Declared Emergencies

This class includes all sites at which an emergency has been declared by the MPCA or MDA Commissioner. An "emergency" means that there is an imminent risk of fire or explosion, that a temporary water supply is needed where an advisory has been issued, or that immediate adverse human health effects may be anticipated due to direct contact or inhalation and an advisory has been issued.

Currently, five sites are listed in Class A. They include the Duluth Former City Dump and ground water contamination at Askov, Lakeland, St. Paul Park, and Winona.

Class B - Response Actions Completed and Operation and Maintenance/Long-term Monitoring Ongoing

This class includes all sites where response actions have been completed and long-term monitoring of these completed actions is in progress. This class also includes all sites where activities are necessary to operate and maintain response actions that have previously been completed. A list of these 32 sites is shown in Table 3.

Table 3: Class B Sites on the 1991 Permanent List of Priorities

Atwater Municipal Well Field
Boise Cascade Paint Waste Dump, Ranier
Boise Cascade/Medtronic, Fridley
Boise Cascade/Onan, Fridley
Burlington Northern, Brainerd
DNR-Duxbury Pesticide Site
Electric Machinery, St. Cloud
Faribault Coal Gasification Plant, Faribault
FMC Corp., Fridley
General Mills, Minneapolis
Hopkins Agricultural/Allied Chemicals, Minneapolis
Hutchinson Technology, Inc.
Ironwood Sanitary Landfill, Spring Valley
Jackson Municipal Well Field
Kurt Manufacturing, Fridley
Lund's Farmer Seed and Nursery, St. Cloud
McLaughlin Gormley King Co., Minneapolis
Minneapolis Community Development Agency/FMC
Nutting Truck and Caster, Faribault
Oakdale Dump
PCI, Inc., Shakopee
Perham Arsenic Site, Ottertail County
Reilly Tar, St. Louis Park
St. Regis Paper, Cass Lake
3M Kerrick Disposal Site, Kerrick
Tonka/Woyke Site, Annandale
Wadena Arsenic Site
Waite Park Groundwater Contamination Site
Weisman Scrap, Winona
West Duluth Industrial Site
Whittaker Corporation, Minneapolis
Winona County Sanitary Landfill

Class C - Response Actions Necessary or in Progress or First Year Operation and Maintenance at a Site

This class includes all sites where remedial design and implementation of response actions (other than Class A or B) such as barrel removal, soil decontamination, first-year ground water pump out or monitoring are necessary to effect a permanent remedy or cleanup of a site. There are 146 sites listed in Class C.

Class D - Remedial Investigations and Feasibility Studies (RI/FS) Necessary or in Progress

This class includes all sites which require a remedial investigation (RI) to determine the extent, magnitude, and nature of the release or threatened release, and a feasibility study (FS) to evaluate and select response action(s). There are currently 131 sites listed as Class D.

Since sites may be listed under more than one class depending upon their status, the totals of Class A, B, C, and D sites is much greater than the total number of sites on the PLP. More than one listing indicates the site may have a number of actions pending.

Deleted Sites

Since the PLP was created, 13 sites have been deleted from the list either because cleanup of known contamination at these sites has been completed and no further action is thought to be necessary or the site was combined with another site or transferred out of the Superfund program.

Table 4: Sites Deleted from the PLP

Airco Lime Sludge Pit

Maple Plain Dump

DNR-Nett Lake/Orr Pesticide Site

Morris Arsenic Site

Ecolotech Inc., Minneapolis

Northern Township Groundwater Contamination

Former McKay Manufacturing Co.

Polymetal Products, Inc.

43 East Water Street

Portec-Pioneer Division

Lost Lake Dump Site

Sonford Products/Abandoned Trailer Site

Union Scrap Iron and Metal

Use of Federal Fund Dollars

MPCA has 42 sites on the NPL that are eligible for federal funding based on priority. So far, MPCA has secured a total of 43,874,275 in federal Superfund dollars ($7,594,052 secured during FY 91) for:

1. conducting preliminary assessments and preliminary site investigations at Minnesota sites included on the federal inventory (CERCLIS) of potential hazardous waste sites;

2. conducting remedial investigations and feasibility studies, remedial design/ remedial action, operation and maintenance (O&M) activities at Minnesota sites included on the federal NPL;

3. carrying out response actions at designated sites;

4. the Core Program which allocates money for administration of Superfund sites by MPCA employees; and

5. the enforcement program which allocates money for responsible party searches, RFRA development and follow-ups, and oversight activities for RI/FS and RD/RA.

The federal dollars secured are to be expended over several fiscal years. State money is needed to match 10 percent of the amount secured from federal Superfund for remedial actions.

During FY 91, MPCA spent $4,817,130 federal Superfund dollars for response action activities at 19 sites. Table 5 details expenditures of federal Superfund dollars by MPCA. In addition, federal Superfund dollars were used to fund salaries for a number of positions during FY 91, and for enforcement activities at six sites.

The MDA currently does not have any sites listed on the NPL. MDA has prepared and submitted an amendment to the MPCA/EPA Cooperative Agreement to obtain funding to identify and assess sites with agricultural chemical contamination and is currently waiting for EPA concurrence.

"State money is needed to match 10 percent of the amount secured from federal Superfund for remedial actions."

Table 5: FY 91 Expenditures of Federal Superfund Dollars

Site/Program	Amount Spent	Activity
Adrian	$ 278	RI/FS
Agate Lake	7,634	RI/FS
Arrowhead	103,709	Federal RD/State RD, PRP Search, RD/RA Negotiations
Core Program	548,870	Management/ Program Development
Dakhue SLF	14,172	RI/FS, PRP Search
Interlake	44,963	RI/FS/RD
Kummer SLF	421,432	RI/FS, RD/RA
LaGrande SLF	321,470	RI/FS
LeHillier	41,801	RA Extended
Long Prairie	265,440	RD
MacGillis and Gibbs	28,728	RI
New Brighton	220,468	RI/FS
Oak Grove SLF	111,232	RI/FS, RD
PA/SI	444,704	PA/SI
Perham	11,262	RI/FS
PRP Search	54,137	Enforcement Cooperative Agreement
Reilly	35,590	RA
Ritari	322,689	RI/FS
St. Anthony	1,767,143	RA
St. Augusta SLF	15,336	RI/FS
South Andover	11,277	RI/FS, RD
WDE SLF	24,795	Negotiations
TOTAL	**$4,817,130**	

MERLA-funded Site Cleanups

During FY91 $2,974,748 from the Fund was used by the MPCA and MDA to cover the costs of providing contractors to respond to releases of hazardous substances at 17 sites listed on the PLP and other hazardous waste incidents, as well as numerous reports of abandoned barrels containing potentially hazardous substances. Table 6 details FY 91 expenditures of MERLA dollars.

Emergency contaminant source removal is an example of MERLA-funded action.

Table 6 FY 91 Expenditures of MERLA dollars

Site/Program	Amount Spent	Activity
Arsenic	$ 29,400	Investigation/cleanup
Abandoned Barrel	190,021	Responded to reports of abandoned barrels
Amdura	15,298	FS
Baytown Township	1,391	Site investigation
Castle Rock*	1,500	Bottled drinking water
Claims	54,780	TCAAP settlement
Duluth Dump	695	Bottled drinking water and connection to carbon system
Hazardous Waste Spill Response	221,198	Response activities to investigate/ stabilize spills and complaints
Hermantown Emergency	156	Bottled drinking water/investigation
Howe Soil Contamination Site*	42,587	Site investigation
Killian/Leech Lake SLF	37,284	Well installation, pre-RI
Kummer SLF	44,629	RA state matching funds
Site Specific Laboratory/ Analytical Services	182,299	Laboratory Services at Minnesota Department of Health
Lakeland	1,542,667	Bottled drinking water, RD/RA, Municipal Water Supply System
Site Specific Legal Expenses	158,753	Attorney General support
LTD SSI	3,197	Well installation
McGuire Wire	150,896	Interim RA
Perron Road	108	Emergency action
Pine Bend/Cap SLF	127,253	RI/FS, ecological risk assessment
Sauk Centre SLF	5,645	Ecological risk assessment
St. Anthony	113,502	Water filtration system
St. Paul Park	11,516	Bottled drinking water, RI
Wawina	1,094	Tire fire emergency response
Winona	8,879	RI/FS
TOTAL	**$2,974,748**	

*MDA Sites

MPCA Actions Using Fund Dollars

Priority Sites

MPCA has identified and listed 447 sites on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), a nationwide inventory of potential hazardous waste sites. Twenty of these sites were added in FY 91. Preliminary assessments have been conducted at 444 of these sites; 20 during FY 91. Sixteen screening site investigations were completed during FY 91.

Currently there are 178 sites listed on the PLP for investigation and cleanup, 14 of which were added to the list during FY 91. An additional four sites are proposed to be added to the PLP, and three sites are proposed to be deleted for a total of 179 sites in December 1991. Forty-two of the 178 sites currently listed on the PLP are also included on the federal NPL. Remedial actions at those 42 sites are eligible for federal funding if responsible parties (RPs) are unwilling or unable to do the work and monies are available.

As of October 15, 1991, there were 140 sites in the cleanup process "pipeline" (i.e., response actions initiated which include remedial investigation and feasibility study, remedial design and implementation of final remedial action). Response actions at 103 of these sites are being conducted by RPs. MERLA Fund or federal dollars have been spent at the remainder of the sites for response actions.

Approximately 70,260 pounds of arsenic contaminated soils have been cleaned up at 250 sites since 1984. Two sites with below ground arsenic contaminated soils were cleaned up using MERLA Fund dollars during FY 91. These cleanups involved the removal of approximately 28 cubic yards of contaminated soil. MPCA's arsenic program is divided into three parts: large arsenic site cleanups, discoveries of above-ground barrels or other containers of arsenic which can be removed and disposed of elsewhere, and below-ground arsenic where soil may be contaminated and must be excavated and disposed of at another location.

Emergency Spill Response

The Spills Unit of the Hazardous Waste Division responds to reports of acute environmental emergencies. In FY 91, 1,113 incidents were reported to the Spills staff. These included truck and train accidents, pipeline breaks, oil slicks, chemical fires, abandoned or dumped barrels of unknown chemical contents, unknown substances and odors, discovery of explosives, and fish and waterfowl kills. One member of the four-person Spills staff is "on-call" during all non-working hours of the year.

Most spill cases are handled by the RP stabilizing and cleaning up the problem under Spills staff guidance and oversight. Often this is done with the assistance of local fire and police and MPCA regional staff. For some incidents the RP is unknown or unavailable, or is unwilling to immediately commit to doing an adequate cleanup. Spills staff have access to the MERLA emergency funds and have a standing contract with a cleanup firm. If the spill or incident is creating an immediate danger to the public or environment the state's contractor will be

activated to stabilize and/or clean up the site. In FY 91 MERLA funds amounting to $221,198 were used at 67 sites for emergency spill response.

Records of Decision

Records of Decision (RODs), which document the MPCA's final cleanup decisions, were signed for 10 sites in FY 91.

Washington County Landfill - August 1990 - Ramsey and Washington Counties agreed to install a municipal water supply system for ten homes having drinking water advisories due to contamination from the landfill and expand the water -supply system for an additional 71 homes. A Joint Powers Agreement between the Counties, Lake Elmo and Oakdale will supply Oakdale municipal water to these homes. The system should be on line next year.

Naval Industrial Reserve Ordnance Plant (NIROP) - September 1990 - The remedy for the ground water operable unit at NIROP consists of a ground water pump out system with interim discharge to the Metropolitan Waste Control Commission (MWCC) system, and construction of a water treatment system with discharge to the Mississippi River.

St. Louis River/Interlake Iron/Duluth Tar - September 1990 - The remedy for the Tar Seeps operable unit is to excavate the tar and burn it in an industrial boiler as a recyclable fuel. The lead for this operable unit was given back to EPA for completion of the ROD.

Reilly Tar (St. Peter Aquifer) - September 1990 - The St. Peter Aquifer remedy represents one operable unit within the overall site strategy at the Reilly Tar Site. The remedy consists of a ground water pump-out system with discharge to the MWCC system.

Kummer Landfill - September 1990 - The ground water remedy for the Kummer

A black, viscous tar pool in a wetland will be excavated in compliance with the ROD for the St. Louis River/ Interlake Iron/ Duluth Tar Site

Landfill represents Operable Unit 3 within the overall site strategy. The remedy consists of a ground water pump-out system using Advanced Oxidation Process (AOP) chemical treatment or bioremediation.

Oak Grove Landfill - December 1990 - The ROD for this site considers natural attenuation within the shallow aquifer, and long-term ground water monitoring in the shallow and deep aquifers as the appropriate remedy. If monitoring shows that the deep aquifer is contaminated, a ground water pump-out system may be required.

The MPCA contributed $2.1 million dollars from the state Superfund and Petrofund for the (Lakeland/Lakeland Shores) project...

Isanti Rumpel - March 1991 - The remediation system at the Isanti Rumpel Site has five major components: a ground water extraction system; an air injection system; a vapor extraction system; an aqueous liquid-phase granular activated carbon (GAC) treatment system; and a vapor phase GAC treatment system.

Isanti Martin - March 1991 - Based upon the results of the RI Report for the Isanti Martin Site, the MPCA determined that the recommended alternative of no further action was appropriate and a no action ROD was issued.

Lakeland Ground Water Contamination - June 1991 - A ROD was signed for the installation of a municipal water supply system. The MPCA contributed $2.1 million dollars from the state Superfund and Petrofund for the project over the course of FY 90 and FY 91. The long-term drinking water alternative was necessary due to contamination that prompted 101 drinking water advisories by the MDH. The system went on line in September 1991.

Dakhue Landfill - June 1991 - The first of several operable unit RODs was issued for this site. The ROD for this operable unit consists of the installation of a final landfill cover.

Requests for Response Action

The MPCA Citizens Board issued Request for Response Actions (RFRAs) for 10 Minnesota Superfund sites during FY 91.

Gopher Oil-Thornton, Minneapolis - August 1990 - The RPs associated with this site were issued a RFRA for the cleanup of petroleum and solvent contaminated soil and ground water.

McGuire Wire and Salvage - August 1990 - The RP associated with this site were issued a RFRA for the cleanup of lead contaminated soils at this site.

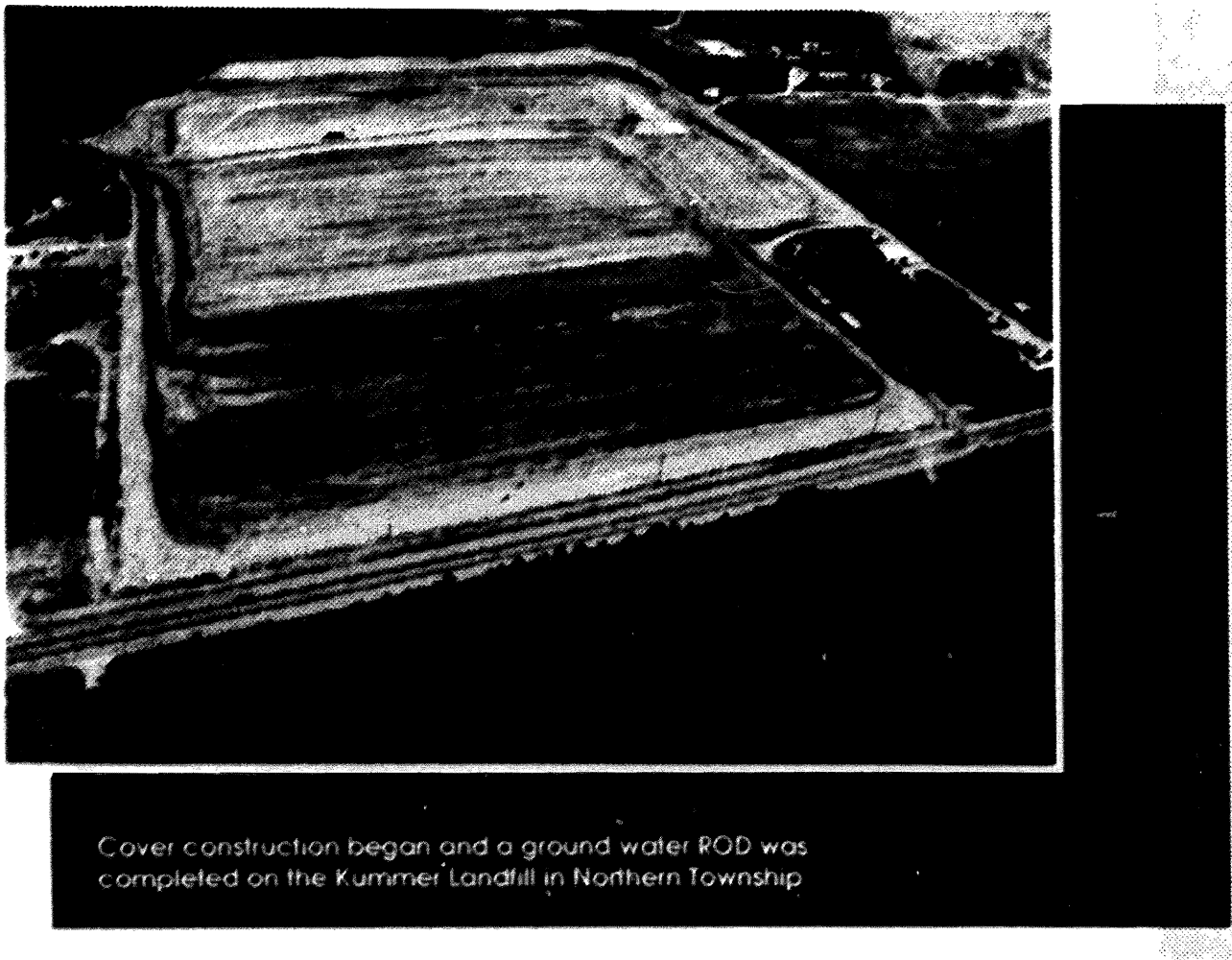
"The Arrowhead (Refinery) Site RPs have been asked to invesitgate and clean up contaminated ground water... soils, and .. a three-acre sludge lagoon."

Arrowhead Refining Company - August 1990, November 1990, March 1991 - RFRAs were issued to 10 RPs in August 1990, to 13 RPs in November 1990, and to 20 RPs in March 1991, bringing the total number of parties to 56 issued requests to clean up the Arrowhead Refining Site. The Arrowhead Site RPs have been asked to investigate and clean up contaminated ground water, soils, and a highly contaminated three-acre sludge lagoon.

Superior Plating - January 1991 - Superior Plating, Inc. was issued a RFRA to undertake response activities at the site.

Winona Ground Water Contamination - February 1991 - Leaf's Services, Inc. in Winona was issued a RFRA for the cleanup of perchloroethylene (PCE) contaminated soils and ground water.

St. Augusta Sanitary Landfill/Engen Dump - January 1991, June 1991 - A total of 22 RPs for the St. Augusta Sanitary Landfill/ Engen Dump site were issued RFRAs to investigate and clean up ground water contaminated with trichloroethylene, as well as soils and ground water contaminated with metals.



Cover construction began and a ground water ROD was completed on the Kummer Landfill in Northern Township

"Prior to using Fund dollars, a Determination of Inadequate Response must be issued which indicates the inability or unwillingness of a RP to take ... action"

St. Louis River/Interlake Iron/Duluth Tar - March 1991 - This site was converted from a fund-financed site to a RP site with the issuance of a RFRA to three RPs. The RFRA was for the cleanup of the tar seeps and soil Operable Units. Another RFRA is expected to be issued to the RPs for the Sediments Operable Unit in FY 92.

Shafer Metal Recycling - March 1991 - The Minnesota Department of Transportation was issued a RFRA for investigation and remediation of the Shafer Metal Recycling Site in Minneapolis.

Battle Lake Landfill - April 1991 - RFRAs were issued to several Battle Lake area municipalities to investigate and clean up ground water contamination and address final cover issues at the site.

Rice Municipal Well # 2 - May 1991 - A RFRA was issued to WATAB, Inc. for PCE contamination found in the city of Rice Municipal Well # 2.

Determinations of Inadequate Response

The MPCA Citizens Board issued Determinations of Inadequate Response (DIR) for five Superfund sites during FY 91. Prior to using Fund dollars, a DIR must be issued which indicates the inability or unwillingness of a RP to take the actions requested.

McGuire Wire and Salvage - July 1990 - A DIR was issued to Gerald and Barbara McGuire for their inability to undertake the actions requested in the RFRA.

Crosby American Landfill - August 1990 - A DIR was issued to Crosby American Properties for their inability to undertake response actions required in a April 1985, Consent Order.

Battle Lake Landfill - April 1991 - A DIR was issued to several Battle Lake area municipalities. The DIR: 1) incorporates actions required by the closure order into the RFRA; 2) amends the FY 91 MERLA project list; 3) authorizes the use of state Superfund money to implement the required actions; and 4) authorizes the Commissioner to commence legal action at his discretion.

Rice Municipal Well # 2 - May 1991 - A DIR was issued to WATAB, Inc. for their inability to undertake the action requested in the RFRA.

Winona Ground Water Contamination - May 1991 - A DIR was issued to Leaf's Services, Inc. for not implementing the requirements of the RFRA issued in February 1991. MPCA staff recommended that the Board: 1) issue a determination that actions will not be taken in a manner and time requested; 2) amend the FY 91 MERLA Project list to transfer funds from the Class C Remedial Design account for the site to an Interim Response Action account; 3) authorize the use of state Superfund money for implementing the requirements of the RFRA; 4) authorize placing an environmental lien on the property.

Most emergencies involve drinking water contamination, but the MPCA also responds to fire fires with Superfund money. Here are remains from one such blaze.

Emergency Actions

Since 1983, the MPCA has responded to 23 MERLA-funded emergencies involving contaminated drinking water supplies and has taken action to provide affected residences with alternate drinking water. The MPCA continues to supply safe drinking water to affected residences at these sites. Permanent supplies are planned for each site and action toward that end has begun.

Sites where alternate drinking water supplies were provided in FY 91 include Lakeland/Lakeland Shores, Perron Road, St. Paul Park, and Duluth Former City Dump

MPCA Abandoned Barrel Program

During FY 91, there were 79 complaints of abandoned barrels. Fifty-nine of these cases dealt with the disposal of hazardous waste or non-regulated wastes that were treated as hazardous. The following breakdown shows the number of cases for the various types of hazardous wastes dealt with by the Abandoned Barrel Program.

19	Used/Waste Oil
13	Paint Wastes
6	Pesticides
6	Sludge Waste
4	Solvents
4	Various (multiple waste streams)
3	Unknowns*
2	Adhesive Wastes
1	Resin Waste
1	Sandblast Media
59	Total recovered abandoned barrels

* Unknowns indicate that waste analysis was not completed at the time of this report or the waste containers were smaller and handled by the contractor as a labpack, in which case no analysis was required.

Overall, the program was responsible for the pick-up and disposal of approximately 600 containers of waste in FY 91. Of that amount, 137 containers were 30- gallon and 55-gallon drums. Fifty-one of those drums were from a pesticide spill response and are now in long term storage at Aptus, an MPCA contractor. The remainder of the containers handled by the program were smaller containers ranging from pint cans of paint waste to five-gallon pails of assorted wastes.

Danger to soil and ground water is posed by leaking and rusting barrels, such as these, exposed to Minnesota s elements

MPCA Responsible Party Actions

Since the passage of MERLA, RPs have committed an estimated $191,583 million to the cleanup of hazardous waste sites and have paid penalties and made reimbursements to the Fund of $11,152,839 to cover costs incurred by MPCA in administering and overseeing site cleanup activities. During FY 91, $3,599,508 was reimbursed. Of this amount, $1,875,000 was paid by Marvin Windows after a Consent Degree was signed concerning hazardous waste violations at the company's Warroad facility. The cumulative amount of money being reimbursed to the Fund through RP actions is shown in Figure 3.

To assist in identifying RPs at NPL sites, federal funds have been secured, allowing specific MPCA staff to conduct RP searches. These RP search specialists work closely with the members of a Superfund project team. They identify potential RPs through information gathered from various sources, including area residents, site operators, past and current employees, and local government officials. Other sources include title searches, historical documents, and old fire insurance maps. A database that includes people and companies involved with a site is created to track information. Letters and questionnaires are sent out by the RP search specialists to gather and document further information. The program is expected to enhance MPCA's enforcement efforts and allow for more effective identification of RPs, although it is noted that RP searches at landfills are especially difficult due to the large number of potetial RPs.

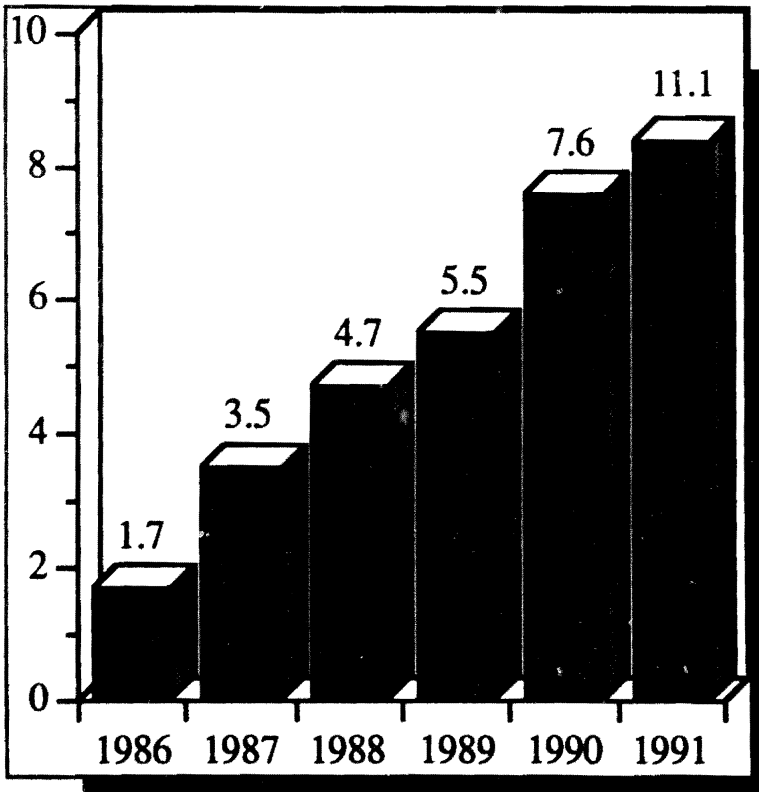


Figure 3:

Cumulative Reimbursement to the Fund by Responsible Parties (in Millions of Dollars)

MPCA Legal Actions and Superfund

The MPCA continued to be involved in a number of legal cases during FY 91.

Ongoing Cases

Sylvester Brothers Development Company v. Great Central Insurance Company, et.al.

The MPCA and the Attorney General's Office filed a friend of the court (amicus) brief in this case, which is currently before the Minnesota Court of Appeals. The issue in the case is whether the cost of cleaning up ground water pollution from a permitted solid waste landfill (the East Bethel Site) is covered by general liability insurance policies containing a so-called "pollution exclusion" clause drafted in 1970. The Minnesota Supreme Court has recently decided, in a different case, that cleanup costs incurred by the state constitute damages to property which are covered by general liability insurance policies. However, no Minnesota appellate court has yet decided whether the pollution giving rise to such costs is exempt from coverage under insurance policies that contain a pollution exclusion clause.

The outcome of this case could set an important precedent for future claims by persons against their insurance carriers for coverage of the costs incurred to clean up releases of hazardous substances. If insurance becomes unavailable to cover these cleanup costs, more publicly funded cleanups will be required.

State of Ohio et. al. v. U.S. EPA.

This case involves a challenge to the rules adopted by the EPA in 1990, revising the National Contingency Plan (NCP) which provides the blueprint for implementation of the federal Superfund program. Minnesota is one of nine states that have sued EPA to challenge significant portions of these rules. The case is currently pending before the U.S. Circuit Court of Appeals, District of Columbia circuit, where briefs have not yet been filed. Minnesota is responsible for the portion of the states' brief that addresses state participation in the federal Superfund program. Key issues in the case include whether EPA has adopted standards and criteria for cleanup that are consistent with federal law and sufficiently protective of public health and environment; whether EPA has arbitrarily precluded states from taking actions pursuant to the federal Superfund law that Congress intended states to have an opportunity to take; and whether EPA has placed a greater share of the cost of publicly funded cleanups on states than provided in the federal law.

Bankruptcy Cases: Thermo-Serv, Amdura, General Fabrication.

The MPCA and the Attorney General's Office have participated in several bankruptcy cases of corporations who are RPs for releases of hazardous substances under MERLA. The purpose of such participation has been to recover MERLA investigation and cleanup costs incurred by the MPCA or to seek other cleanup relief from the party who has commenced a bankruptcy proceeding. In the Thermo-Serv case, a settlement was reached resulting in payment of an unsecured claim to the MPCA for a portion of its costs

incurred for the Waste Disposal Engineering Site. Thermo-Serv was alleged to be a generator of wastes disposed of at that site. In Amdura, the MPCA has made claims against the Amdura Corporation relating to three separate sites for which Amdura is alleged to be a RP. Those claims remain in dispute in the current bankruptcy proceeding. In the General Fabrication case, MPCA obtained payment of an administrative claim for use in investigating contamination at a parcel of property that had been part of the bankruptcy estate but was transferred back (abandoned) to the corporation that owned it at the time bankruptcy was commenced. Bankruptcy of MERLA RPs is expected to occur more frequently in the future, requiring more involvement in bankruptcy proceedings to recover MPCA costs and achieve other cleanup goals.

Settlements/ Cost Recovery

Two major settlement negotiations were ongoing in FY 91 for recovery of substantial amounts of MPCA investigative and cleanup costs incurred under MERLA. Both cases were settled in early FY 92. In the matter of the Lansing Ground Water Contamination, the MPCA will recover $379,379 in costs incurred to investigate the nature and extent of releases of hazardous substances at and from the Huntting Elevator Company property in Lansing, and to provide bottled water to residents whose wells had been

By using legal assistants to perform responsible party searches, the MPCA is making sure that all parties who contribute to a release are named and requested to participate in the cleanup process.

contaminated. The Askov Ground Water Contamination case involved three parties. A settlement of $350,000 in costs incurred to respond to releases of hazardous substances affecting the drinking water supply in the city of Askov was reached in this case.

Amendment of Speed-O-Laq Consent Decree

The 1987 settlement of the case of United States and state of Minnesota vs. Speed-O-Laq Chemicals Corporation et al was amended by agreement of the MCPA and nine RPs and the amendment was approved by the U.S. District Court, District of Minnesota, in April 1991. Under the amended Consent Decree, the RPs agreed to delete the dollar limitation on cleanup costs provided in the original decree ($1 million) and to implement cleanup remedies selected by the MPCA for two sites of ground water contamination in Isanti County.

The MPCA Property Transfer Program

The MPCA Property Transfer Program was created through legislative action in the 1988 Waste Management Act Amendments in response to requests of MPCA from business and industry concerning the liability associated with real estate transactions. MERLA imposes liability on parties who knew or reasonably should have known that a hazardous substance, pollutant, or contaminant was located on the property at the time right, title, or interest in the property was acquired. Therefore, buyers associate themselves with the release by their activities on the site.

Buyers, sellers, lending institutions, developers, property owners, and insurers request MPCA staff assistance in determining whether property of interest has been the site of a release or threatened release of a hazardous substance, pollutant, or contaminant. MPCA assistance consists of conducting file searches, reviewing the investigation and response action work plans, and assisting in or supervising the implementation of reasonable and necessary response actions.

The yearly increase in the number of these requests is shown in Figure 4. In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA) which stimulated a jump in the number of file search requests conducted

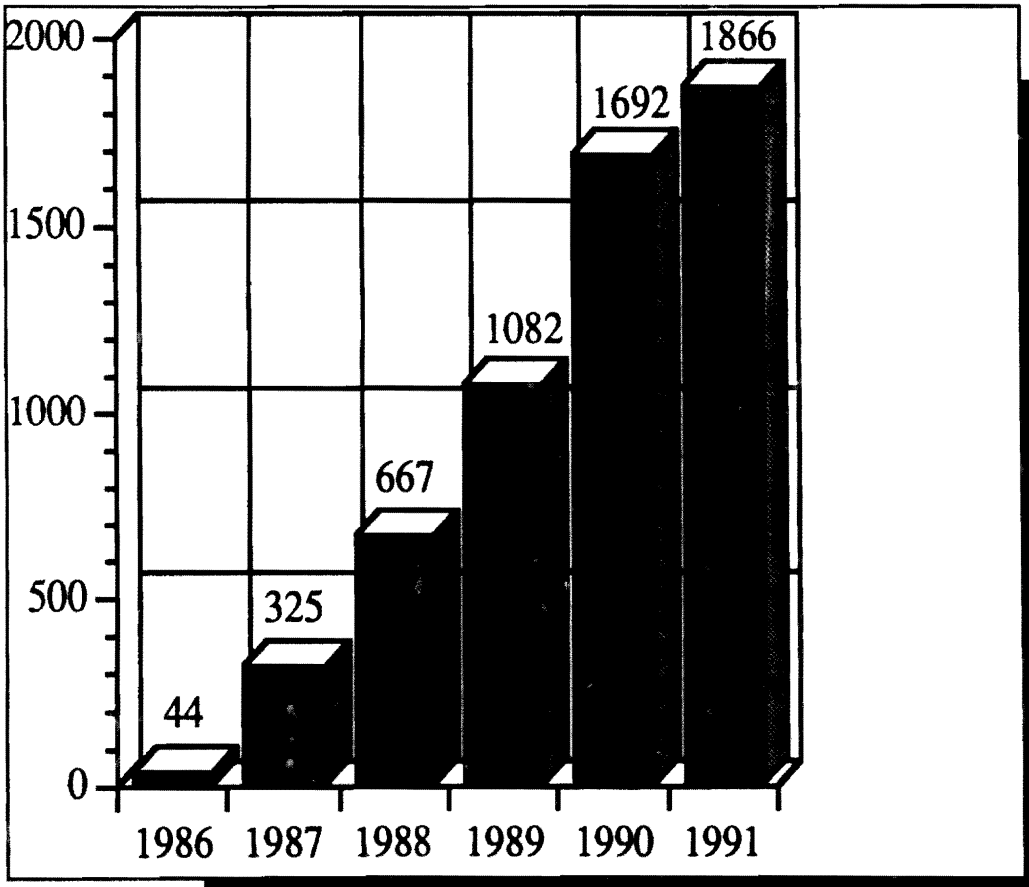


Figure 4:

Number of file search requests per year since the MPCA Property Transfer Assistance program began.

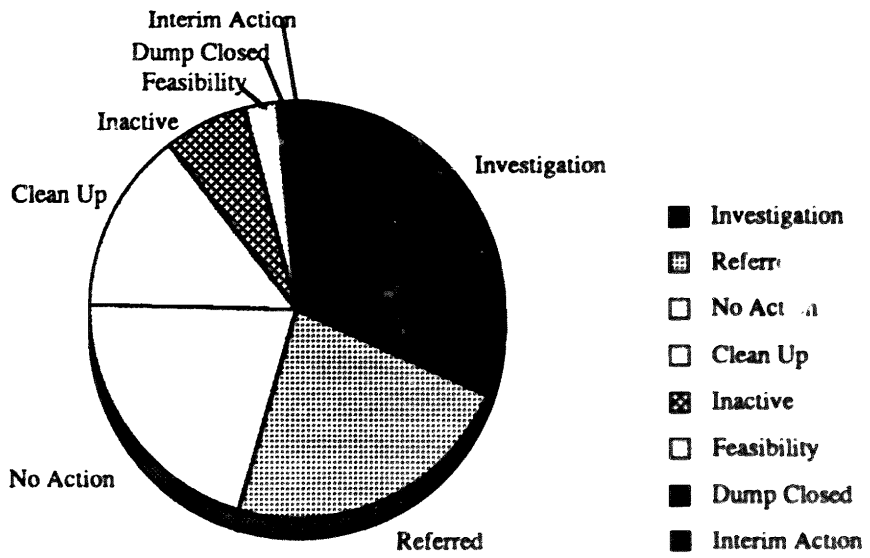
by MPCA. Property owners, bankers, insurers, and lawyers became increasingly interested in possible hazardous waste releases on property. During FY 91 MPCA responded to 1,866 property transfer assistance requests.

In 1989, legislation authorized MPCA to recover staff costs associated with these requests. MPCA began to charge for the service of conducting file requests in FY 89 and has thus far recovered $295,435 for the cost of providing the service. MPCA anticipates that the number of requests for file searches will continue to increase, and is building a computerized data base for the purpose of automating the file search process.

Two positions created by the 1988 legislature and two positions created by the 1990 legislature are devoted to reviewing investigation and response action work plans and assisting in or supervising the implementation of response actions. Since August 1988, the Property Transfer Technical Assistance Program staff have overseen a total of 170 projects. Fifty-four of these sites were in the investigative stage while 24 sites had been cleaned up and another 35 received no action letters in FY 91.

Since its inception, the Property Transfer Assistance Program has recovered 91 percent of the costs incurred for providing their service.

Figure 5: Status of Sites in the MPCA Property Transfer Technical Assistance Program



"... staff have overseen a total of 170 projects. Fifty-four... are in the investigative stage... 24 have been cleaned up ... 35 received no action letters."

MPCA expects to continue reviewing work plans and assisting in the implementation of response actions. These activities are likely to continue to increase during the next year. To help those who request the

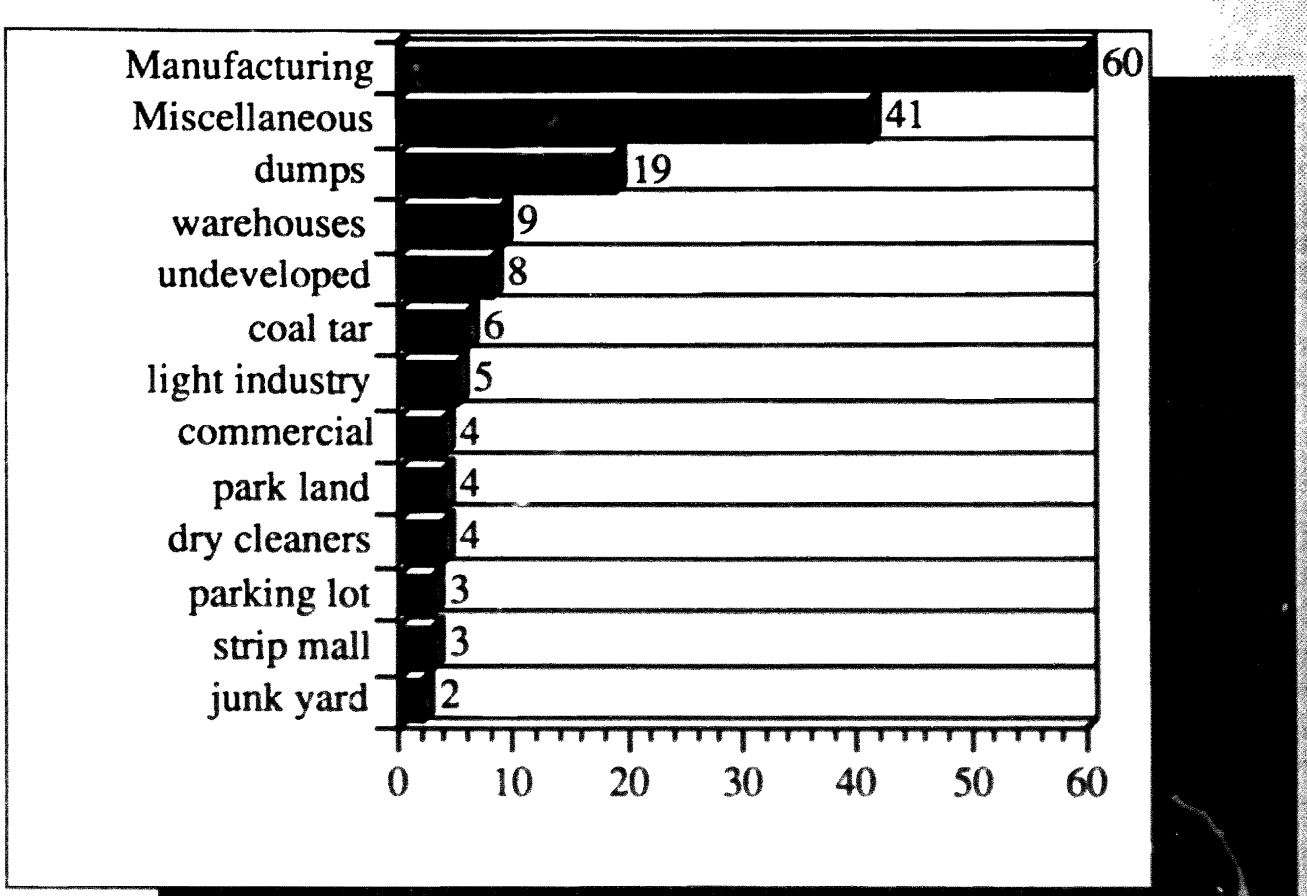


Figure 6: Types of Sites Evaluated through the MPCA Property Transfer Assistance Program

assistance and to streamline the review process, the MPCA staff has prepared a set of fact sheets that provide guidance on hiring an environmental consultant, preparing work plans and reports, and conducting investigations. These guidelines have been widely distributed in the business and consulting communities.

MPCA Action at Sanitary Landfills

The MPCA has mounting concerns regarding the demands landfills are placing on the Fund due to the liability limits on political subdivisions, bankruptcy of landfill operators, dwindling federal dollars, high clean-up costs, the large number of landfills currently on the PLP and those likely to be added. In addition, transaction costs such as the difficulty and expense of RP discovery, assessment and negotiation of blame (often third-party law suits), greatly increase the costs and delay the implementation of remedies, whether the work is ultimately performed by RPs or regulatory agencies. A commonly used estimate indicates that 30 to 40 percent of all "cleanup" dollars are spent on litigation and other transaction costs instead of site cleanup.

"A commonly used estimate indicates that 30 to 40 percent of all cleanup dollars are spent on litigation and other transaction costs instead of site cleanup."

Most permitted sanitary landfills in Minnesota, especially first generation unlined facilities, will eventually have ground water contamination; this is an inevitable consequence of past waste disposal practices. Minnesota has used two mechanisms to deal with public health and environmental impacts associated with landfills—the permit process and the Superfund process. Currently, the MPCA addresses most open facilities and some actions at closed facilities (such as cover or ground water monitoring requirements, where possible) under the permit and solid waste rules. Superfund is typically used at closed sites to achieve landfill compliance and/or cleanup; often Fund dollars are needed given municipal liability limits or due to unwilling or unable RPs.

Currently there are 60 landfills on the Superfund PLP out of approximately 133 permitted facilities that accept mixed municipal solid waste. As the number of landfills on the PLP continues to grow, Fund resources continue to decrease. The point may already have been reached where the demand for Fund resources to remediate landfills has exceeded the supply, as some projects, where RPs are not performing the work, are delayed in FY 92 due to a lack of federal dollars and a shortage of available state dollars. Currently, out of 26 landfill sites in the Superfund process, 11 are partially or completely fund financed (42%), compared to less than 20% for traditional Superfund sites.

The Superfund Law requires that the MPCA attempt to identify RPs to pay for the actions required at landfills, or to recover state funds spent at landfills. As a result, hundreds of staff hours are spent reviewing landfill documents and requests for information from up to 300 individuals

The state's solid waste rules, which require protective landfill liners and caps as well as financial assurance for landfill closure, will prevent future Minnesotans from having to deal with problems associated with unlined or improperly closed facilities. Here, a contractor installs a liner at the Hopkins Landfill.

and firms, to identify from 4 to 25 RPs per site. At one site, a hauler list identified over 800 individuals or businesses who could potentially be issued Requests for Information.

Superfund grants RPs the right to identify additional RPs, which is leading to numerous third-party law suits, including litigations against municipalities and many small businesses within a landfill site's service area. As a result, hundreds of thousands of dollars are spent on transaction costs and/or assessing blame, instead of correcting the problems.

The Minnesota Superfund Law originally intended to limit the liability of political subdivisions for state Superfund actions; however, the limits were unclear. The 1989 and 1991 clarifications of Superfund liabilities for political subdivisions acting as facility owners/operators, made clear the potential demands which will be made on

"As these factors drain the Fund, it becomes less likely that federal funds will be available to make up the shortfall."

the state Superfund. The language changes clarified the political subdivisions liability limits, and shifted the burden of cleanup costs from the political subdivisions to the state Superfund.

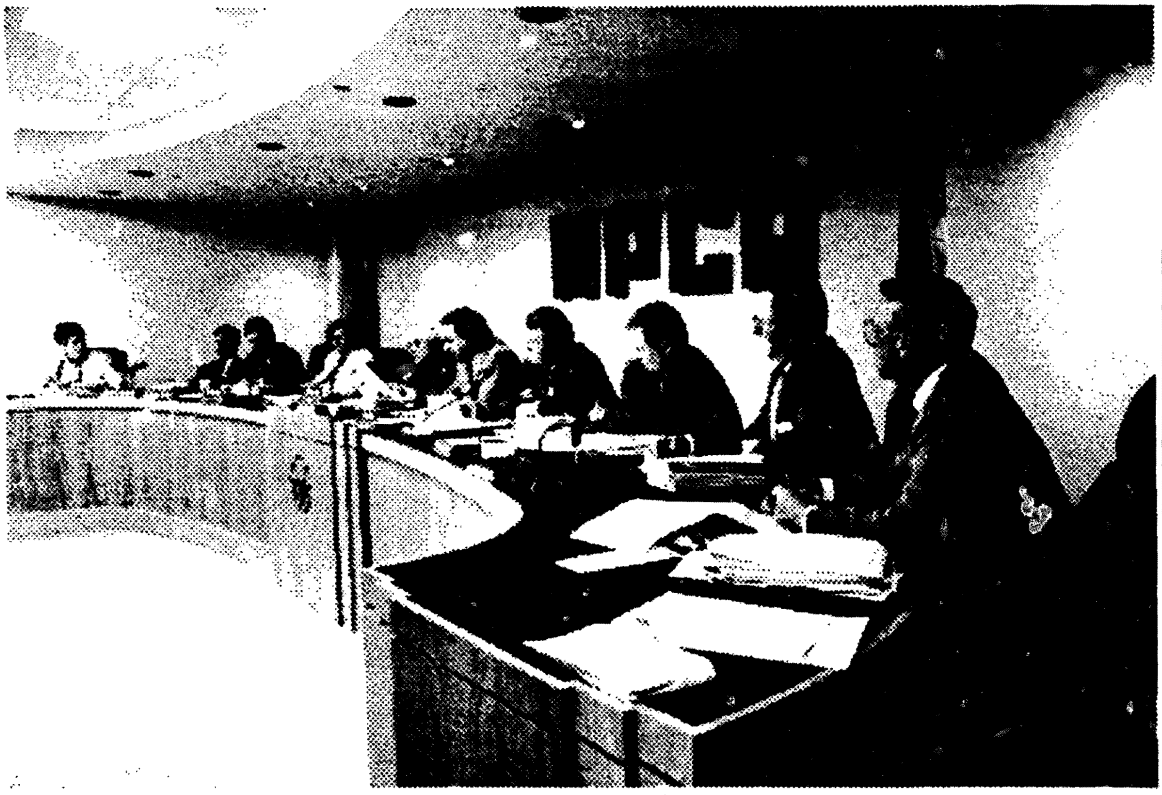
As these factors drain the Fund, it becomes less likely that federal funds will be available to make up the shortfall. Although MPCA has aggressively sought federal funding for landfill sites, only 11 of the 60 landfills are on the NPL. While the MPCA will continue to propose new landfills for the NPL, concerns have been raised about continued use of this arrangement, given recent experiences at the Kummer and Oak Grove sites where federal enforcement actions have led to cleanup delays, excessive transaction costs and potential third party lawsuits against municipalities and businesses.

Of the 133 permitted sanitary landfills, 80 are closed, and an additional 28 are expected to close before the end of 1995. Other unpermitted closed dumps in the state -- possibly as many as 1,373 -- may eventually add to the drain on Superfund. Most of these are not listed in CERCLIS and have not yet been thoroughly assessed for potential public health and environmental damage. It is likely that at least some of these sites will need to be added to the PLP, but less likely that RPs will be located to assume the cleanup costs.

MPCA Superfund Community Relations

Growing public awareness and concern about environmental issues affects the Superfund Program, as well as all MPCA programs and services. Increased interest in the Superfund Program is also the result of nationwide campaigns, such as that being conducted by the American International Group, to change federal Superfund law's strict, joint and several liability provisions. Many national studies have been undertaken of the federal Superfund process, and Minnesota's Superfund program has been the focus of much scrutiny because of its success in cleaning up sites.

Each Superfund site has an information officer on the project team. Among the routine activities employed to assure communities a voice in the investigation and cleanup process are phone calls, informal meetings, news releases, site-specific fact sheets, public meetings, cable television appearances, radio interviews, and site tours. MPCA staff emphasizes a day-to-day approach to community relations, with a focus on local officials and media as important information sources for residents.

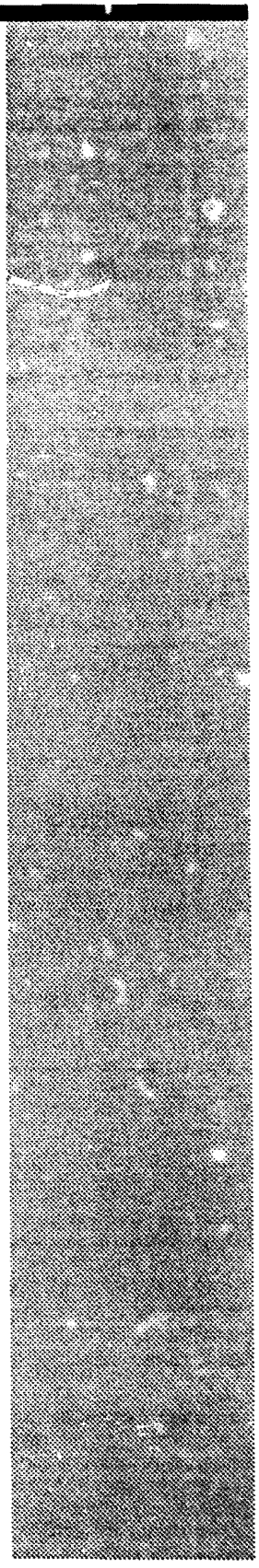


MPCA s Citizens Board provides a forum for interested citizens to give their views on Superfund issues.

"Minnesota's Superfund program has been the focus of much scrutiny because of its success in cleaning up sites."

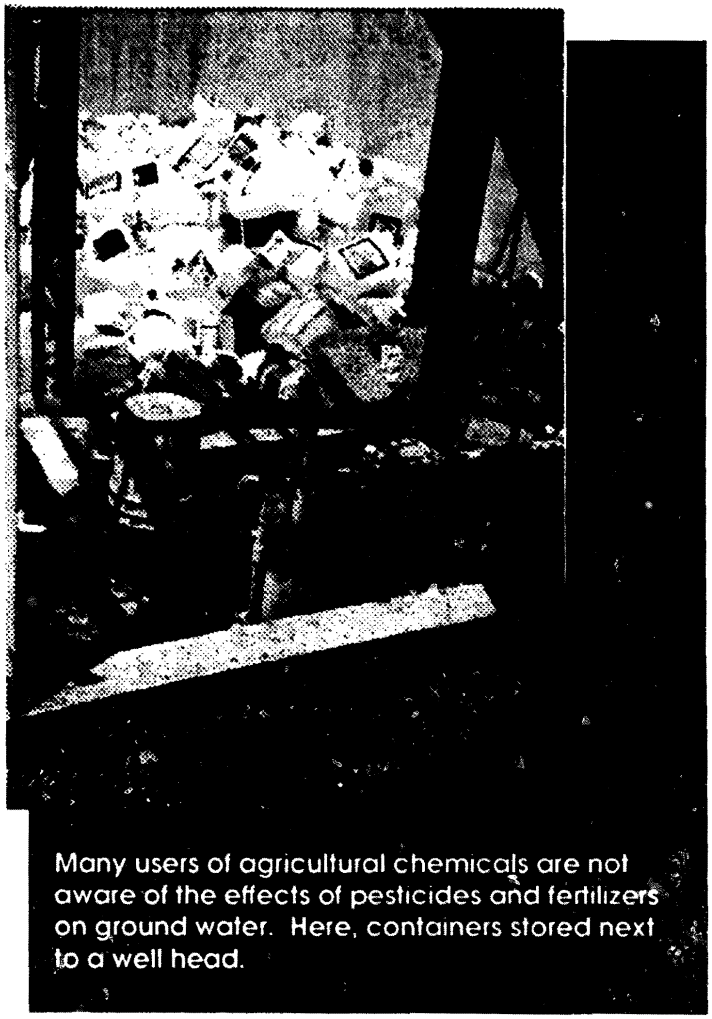
In addition to site-specific work, the MPCA Public Information Office staff are providing more training to technical staff on community relations, as well as more general information to all of the MPCA's key audiences: public officials, community groups, local media, environmentalists, attorneys, consulting firms, and RPs. Several fact sheets addressing concerns common to all Superfund sites were prepared, some in cooperation with the MDH. Among the topics covered in these fact sheets are explanations of cancer-causing chemicals and health risk calculations, private well testing and pollution prevention for homeowners with private wells, and an explanation of land application of leachate at landfill sites. A set of seven fact sheets for the Property Transfer Program outlining guidelines for consultants, public officials and businesses on environmental audits was designed to improve the quality of investigations at property transfer sites and streamline the MPCA review and oversight process.

Superfund community relations activities have also included the continuing publication of Minnesota Superfund Quarterly, hosting visiting EPA community relations staff, and developing and establishing Administrative Records so that communities have convenient access to important documents about nearby sites.



MDA Cleanup Program

The Minnesota Comprehensive Groundwater Protection Act (1989 Laws of Minnesota, Chapter 326, Article 8 and 1990 Laws of Minnesota, Chapter 597, Sections 52, 53 and 54) authorized MDA to access the Fund for sites contaminated with agricultural chemicals (pesticides and fertilizers). MDA is the lead state agency for these types of investigations and cleanups.



Many users of agricultural chemicals are not aware of the effects of pesticides and fertilizers on ground water. Here, containers stored next to a well head.

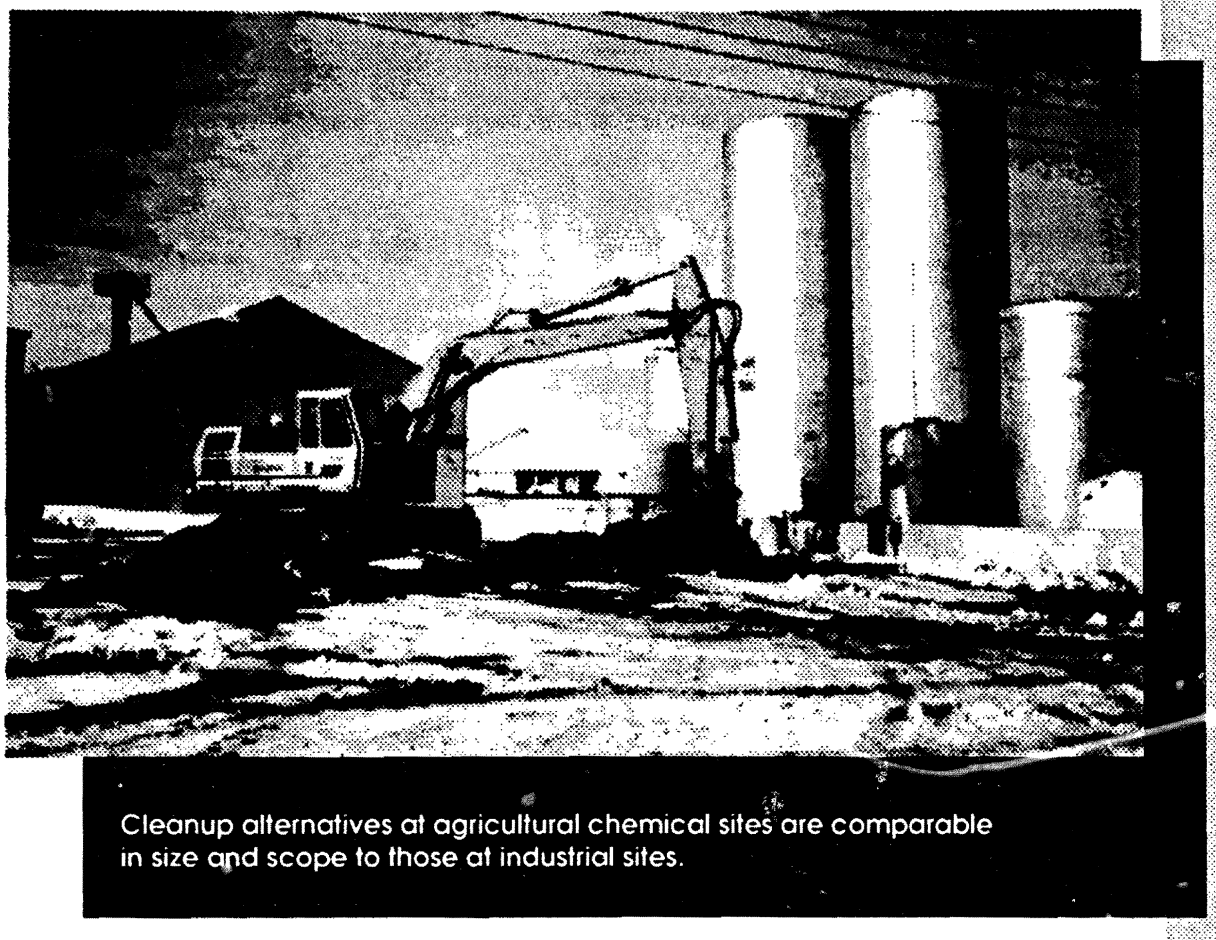
In 1989, the Agricultural Chemical Response and Reimbursement Law (Minnesota Statutes, Chapter 18E) established an account which, in certain circumstances, provides partial reimbursement to eligible persons for their costs of investigation and cleanup of agri cultural chemical incidents. This account, called the Agricultural Chemical Response and Reimbursement Account (ACRRA), reimburses a portion of corrective action costs. ACRRA does not cover the costs of providing alternative sources of drinking water. At sites which require alternative drinking water and in situations where a RP is unwilling to pay for cleanup costs or cannot be identified, Superfund will need to be accessed.

The MDA Incident Response Program has two basic components: cleanup of agricultural chemicals using authority under the Agricultural Chemical Liability, Incidents, and Enforcement Law (Minnesota Statutes Chapter 18D), and under MERLA (Minnesota Statutes Chapter 115B). Under Chapter 18D, MDA staff will first request parties responsible for incidents to voluntarily perform necessary investigations and clean-ups. RPs who conduct investigations and clean-ups according to

MDA guidance will be eligible to apply to the ACRRA Board for reimbursement of their costs.

If these requests for corrective actions prove unsuccessful, the department is prepared to order such actions. Alternatively, where the RP is unknown, unwilling, or unable to perform the necessary corrective actions, the MDA may perform the work itself using Superfund monies. The MDA has authority to seek recovery of its costs in these instances.

The MDA will also be using state Superfund authorities and resources for certain MDA-initiated actions, such as for emergency responses, for agricultural chemical contaminated sites which have no RP, or where alternative sources of drinking water need to be provided.



Cleanup alternatives at agricultural chemical sites are comparable in size and scope to those at industrial sites.

MDA has a total of 10 staff positions working in the Incident Response program. Two of the positions are funded by MERLA. There are currently 100 facility incident sites (including six PLP sites) where agricultural chemical contamination has been documented. These sites typically are locations where storage,

"MDA expects a majority of responsible parties to cooperatively conduct cleanup and receive reimbursement of eligible cleanup costs from ACRRA..."

handling and distribution of agricultural chemicals at the retail and wholesale level occurred. The MDA has identified ground water contamination at approximately twenty of these sites.

In addition to the longer term facility incident sites, there are approximately 650 sudden incident/emergency sites which have been reported to the MDA for follow-up. Sudden incidents generally occur as a result of spills during the storage, handling and distribution of agricultural chemicals by facilities or by end users of the products. As additional information is learned, some of these will become longer term facility incident sites. MDA expects a majority of responsible parties for these sites to cooperatively conduct cleanup and become eligible for reimbursement of cleanup costs from ACRRA, however, as stated above, some will require monies from state Superfund.

"... there are approximately 650 sudden incident/ emergency sites which have been reported to the MDA for followup."

If an emergency response to an incident is necessary, and a responsible party is unknown or refuses to take action, MDA may hire a clean up contractor to take the action necessary to stabilize and clean up the incident using MERLA funds. MDA has a staff member on call to respond to incidents occurring after work hours.

MDA Superfund activities include response to agricultural chemical incident emergencies; oversight of investigation and cleanup activities at the six PLP sites; scoring and listing new sites on the PLP; oversight of investigation and cleanup activities at property transfer sites; response to file search requests to identify property transfer sites which have agricultural chemical contamination; preparation of amendments to the MPCA's Preliminary Assessment/Site Investigation Cooperative Agreement with US EPA; community relations activities; work on the MPCA/MDA Superfund Memorandum of Agreement; contract administration and work on the annual Superfund Report to the Legislature.

MDA Actions Using Fund Dollars

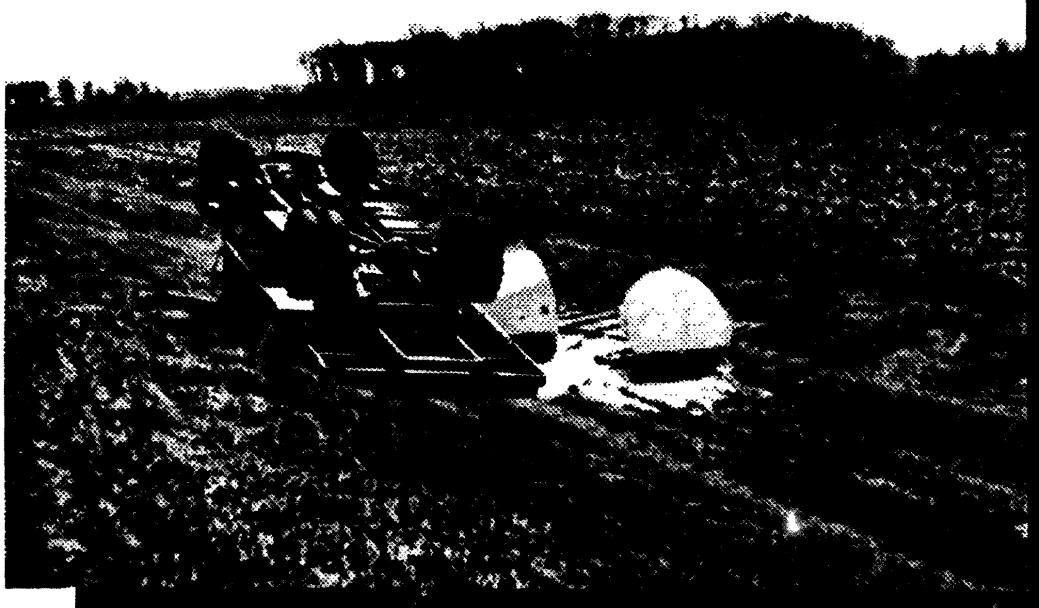
MDA has six sites on the state's PLP, three of which were added in FY 91. An additional site was proposed for listing on the PLP near the end of FY 91. MDA has not proposed any sites for listing on the NPL. In addition to work on PLP sites, MDA is currently providing oversight of investigations and cleanups at 60 RP sites which have not been listed on the PLP.

MDA took MERLA-funded action at three sites during FY 91. Emergency response action was required at two of these sites.

MDA confirmed contamination of drinking water supplies in excess of health standards at the Castle Rock site and took action to provide alternative drinking water to five residences. Sixteen private wells have been sampled to date, with ten more to be added for future sampling. Two potential RPs have been identified.

At a site in Lake Benton, MDA recovered three barrels of insecticide and associated contaminated soil resulting from cleanup of a previous incident. The RP allegedly intended to improperly dispose of these barrels, an issue which is being pursued by the Attorney General's Office as a possible criminal action.

MDA staff directed a limited RI/FS at the Howe Chemical Soil Contamination site in Martin County. This study assessed the nature and extent of contamination and evaluated alternatives for remedial action. Response Action at this site is planned for FY 92 using MERLA funds.



Incidents such as this form a large portion of MDA staff s workload.

MDA Legal Actions

During FY 91, staff from MDA and Attorney General's office were involved in litigation to recover MERLA funds spent in 1988-89 to clean up and dispose of fire debris from the Lund's Farmers Seed and Nursery, Inc.

In March 1990, the MDA initiated litigation against Lund's, Lund's landlord, and pesticide manufacturers and distributors that had products stored at Lund's during the fire. In July 1990, the Ramsey County District Court decided in favor of the defendants. The MDA appealed the case.

In the interim, the MDA succeeded in obtaining a settlement from two of the chemical manufacturers involved. In March 1991, the State Appeals Court affirmed the lower court decision. According to the decision in this case, the manufacturers and distributors were not liable for cleanup of this incident. The MDA is continuing a cost recovery action against Lund's and their landlord.

Other legal actions against RPs include a Corrective Action Order issued to a structural pest control operator in the Twin Cities area. This order was issued because of significant levels of insecticides documented in soils on their property. The RP failed to comply with the requirements of the order. An administrative hearing was held in District Court to compel the RP to perform the investigative and cleanup work requested in the order. MDA is awaiting the court's decision. This site is not currently proposed for listing on the PLP.

Corrective Action Orders were issued to two former operators of an abandoned pesticide formulation facility in northern Minnesota. This chemical manufacturing plant was in operation from 1975 to 1986, and involved the production of pesticides. Soil testing performed by the landowner documented pesticide contamination in the soil surrounding and under the building. The site is not currently proposed for the PLP.

MDA Property Transfers

Requests for property transfer review have become an increasingly large responsibility for MDA staff. Staff are working with a farm lender to evaluate their inventory of 115 farms for agricultural chemical contamination. To date, investigation and cleanup is underway at 16 agricultural chemical wholesale/retail operations as a result of property transfer transactions.

MDA staff received 22 requests for file searches during FY 91. The number of these requests will increase in the future as buyers and lenders become more concerned about liability for agricultural chemical contamination. MDA has approximately 1,000 hard copy files on agricultural chemical incidents dating back to the mid-1970s. Some information on incidents which have occurred since 1987 has been entered into MDA's Incident Data Base and is available in summary form. MDA plans to continue work on developing this database to include all reported incidents, to the extent staff resources are available.

Further Fund Accomplishments

MPCA Cleanup Goals and Remedy Selection Criteria

The model RFRA was modified in FY 91 to incorporate the following cleanup goals and criteria which are now being used to evaluate which response actions should be implemented at a site. The ultimate goal of implementing any final response action is to achieve a permanent remedy for the site.

An implemented remedy is considered permanent when it allows for unrestricted use of all land and natural resources affected by the contamination, does not involve removal of the contaminants to another site, and minimizes exchange of the contaminants to another environmental media.

Clear remedy selection criteria will aid both staff and consultants to assess possible cleanup options

° A threshold criterion provides overall protection for the public health, welfare, and the environment. This criterion is met if the response action achieves the site-specific response action objectives and cleanup goals identified by the MPCA commissioner. The response action must consider applicable, relevant, and appropriate requirements (ARARs) and other standards.

° Long-term effectiveness is the ability of an alternative to maintain the desired level of protection over time. Permanent remedies provide the ultimate in long-term effectiveness. In the event a permanent remedy is not feasible, evaluated alternatives that alter the contaminants to produce significant reductions in toxicity, mobility, or volume through treatment are preferred.

"An implemented remedy is considered permanent when it allows for unrestricted use of all land and natural resources..."

° The technical and administrative feasibility of the alternative and the availability of goods and services needed to implement the alternative are evaluated and considered.

° The short-term risks posed as a result of implementing an alternative are expressly considered and weighed against the long-term benefits of the alternative.

° The complete cost of implementation of the alternative including the cost of any long-term monitoring and operation and maintenance is to be evaluated. The future costs to replace the alternative or respond to a future release is also considered in this evaluation.

In addition to the above criteria, the community is consulted regularly in regard to the alternatives available for site remediation. The community must be informed about the hazards of the site and the advantages and disadvantages of various approaches to remediation, and staff must attempt to understand the concerns and desires of the community with regard to remedy selection. The community's concerns and wishes will be expressly considered in selecting a remedy.

MPCA Defense and State Memorandum of Agreement

In June 1991, the Department of Defense (DOD) and the MPCA signed a Defense and State Memorandum of Agreement (DSMOA) which will award the MPCA with funding to continue to staff positions involved with federal facilities within the state of Minnesota. The federal facilities affected by the DSMOA include Twin Cities Army Ammunition Plant, Twin Cities Air Force Reserve Base, U.S. Naval Industrial Reserve Ordnance Plant, and Duluth Air Force Base. Currently, the anticipated funding level is about $1.17 million from July 1991, through the successful conclusion of the work to be performed at these sites.

MPCA Ground Water Cleanup Guidance

During FY 91, the MPCA finalized a document entitled "Compilation of Ground Water Rules and Regulations - Minnesota Pollution Control Agency - Superfund Program." The document describes the approach of the MPCA in selecting response actions to address contaminated ground water at sites in the Minnesota Superfund program.

MPCA Soil Cleanup Criteria

During FY 91, the MPCA finalized the soils cleanup strategy and continued its involvement in state and national soils cleanup issues. A document detailing the soil cleanup strategy is expected to be finalized in the fall of 1991.

MPCA Involvement with Innovative Treatment Technologies

The MPCA continues to be involved in exploring innovative treatment technologies for use in remedial actions. In-house seminars on alternative treatment technologies are conducted on a regular

basis. The following innovative technologies are currently being used or studied:

° Bioremediation is being used at both the Joslyn and Burlington Northern sites for remediation of polynuclear aromatic hydrocarbon (PAH) soil contamination;

° Lead contaminated soil is being treated by the use of acid extraction at the McGuire Wire site. Use of this technology is also being considered for use in treating arsenic-contaminated soil;

° An air sparging/vacuum extraction system is being designed for remediation of volatile organic compound (VOC) contaminated soil and ground water at the Isanti Rumpel and Koch Refining Sites; and

° The Contained Recovery of Oily Water (CROW) process is being used to remediate PAH-contaminated soil and ground water at the Bell Pole site. The CROW process involves the underground injection of hot water to displace and remove oily water from the subsurface.

In addition, the MPCA is coordinating with the University of Minnesota in identifying areas of needed research in the remediation of hazardous waste sites.

Bioremediation technology is being explored at several Superfund sites.

Health Risk Limits

The 1989 Ground Water Protection Act gave the Minnesota Department of Health (MDH) authority for establishing Health Risk Limits (HRLs) for substances that degrade the ground water. The HRLs are based on potential human health effects from long-term exposure by the consumption of ground water. MPCA and MDA staff participated in a work group organized by MDH to develop the rule establishing HRLs. Final reports

"MDA, MPCA and MDF recently completed a Memorandum of Agreement to establish and clarify each department's MERLA responsibilities..."

summarizing the issues discussed and recommendations of the work group was submitted to the MDH.

Memorandum of Agreement

MDA, MPCA, and MDF recently completed negotiations on a Memorandum of Agreement (MOA) to establish and clarify each departments' MERLA responsibilities. The MOA contains a strategy for establishing priorities and funding agricultural chemical site cleanups, including updating the PLP, scoring projects using HRS, and developing the project list.

MDA Guidance Documents

MDA has developed a series of guidance documents to explain agricultural chemical incident investigation and cleanup procedures. This was necessary to help RPs and environmental consultants become familiar with the unique aspects of pesticide and fertilizer cleanups.

Several of these documents are intended to help RPs understand MDA requirements. They outline the general approach to investigation and cleanup, and include general information about ACRRA reimbursements. Other documents are directed toward consultants and provide more specific guidance, such as sampling protocols, soil landspreading procedures, and a suggested format for reports.

MDA Consultants' Day

The MDA held a Consultant's Day on February 8, 1991. This seminar focused on MDA cleanup program objectives and discussed how to design an agricultural chemical site investigation and cleanup. Eighty-six consultants representing 53 firms attended the seminar.

MDA Pesticide Analytical Lists

MDA has developed three standard lists of pesticide compounds for analysis of soil and ground water samples from sites where the types and amounts of pesticide contaminants are unknown. For each standard list, one laboratory method can detect one or all of the compounds on the list. This has increased the efficiency and cost effectiveness of investigating pesticide incident sites.

MDA Commercial Laboratory Quality Assurance/Quality Control Plans

To ensure consistent and reliable analytical results, MDA developed a format and procedures for reviewing the quality assurance/quality control plans and the proposed analytical methods for commercial laboratories. A list of commercial laboratories with MDA-approved quality assurance/quality control plans is available.

Superfund Program Initiatives

MPCA and MDA began in FY 91, and intends to finalize in FY 92, a number of initiatives designed to enhance the Minnesota Superfund Program. A brief discussion of each initiative follows.

The Superfund Alternatives Report

In 1991, the legislature required the MPCA to identity needed changes to Superfund or an alternative mechanism to deal with the remediation of landfills and the funding of required actions. MPCA staff are preparing the Superfund Alternatives Report, which will be completed by November 1, 1991. The Report will discuss: Liability and the changing nature of land disposal facilities; Municipal permitee responsibilities; The time-consuming nature of addressing landfills through the state Superfund program; Financial issues; The need for a more defined program; Alternative funding mechanisms; and Recommendations. This report will undoubtedly recommend major changes in the use of Superfund or some other mechanism to address closed landfills and their contamination problems.

Superfund works for some landfill sites, but MPCA staff hope to identify better ways to clean up solid waste landfills in its alternatives report

To aid in the preparation of this report, a task force was established with representatives from MDA, MPCA and Attorneys General staff.

MPCA Involvement in National Superfund Issues

The Minnesota Superfund program is recognized nationally as being very effective at ensuring the cleanup of hazardous waste sites. Minnesota's streamlined approach and emphasis on RP involvement early in the response action process is of considerable interest to EPA and other states with developing Superfund programs.

EPA has made changes in its program to more closely reflect the successful programs being conducted at MPCA. In an effort to share our experience and shape national Superfund policy, during FY 92, MPCA staff will:

1) Continue leadership in the Association of State and Territorial Solid Waste Management Officials and the State/EPA Superfund Senior Policy Forum Work Groups; and

2) Provide the state congressional delegation with MPCA's perspectives on federal Superfund reauthorization issues. These efforts will be beneficial to the national Superfund program and the information exchange with EPA and other states will enhance Minnesota's Superfund program.

In FY 90, Minnesota entered into litigation with other states against EPA to ensure that the states' administrative involvement in federal Superfund sites will be meaningful and substantial, and to limit the expense to the state at these sites. Minnesota will continue its active participation in this suit as the litigation continues into FY 92.

Ecological impacts of Superfund sites are high according to EPA data. Risk assessments for ecological factors will be important tools in the Fund's future. Above, a young bird suffering possible toxic effects at the St. Louis River Interlake Iron/ Duluth Tar Site

MPCA Ecological Risk Assessment Guidance

In the past, the cleanup work done at Superfund sites was driven primarily by the site's impact on human health. This approach does not ensure that the remedial action is protective of the ecosystem or the environment. A memorandum from the EPA Region V Director of the Waste Management Division to Waste Management Division Supervisors and technical staff in April 1991 states, "Clearly, the Agency is moving towards placing additional emphasis on ensuring that both human health and the environment are protected." This is a clear indication that the EPA is not only

concerned that remedial actions are protective of human health, but also protective of the ecosystem and natural resources.

In response to this new direction, the MPCA in early September requested proposals for the development of an ecological risk assessment guidance document. Ecological risk assessment is a newly emerging area of study and specific ecological risk assessment guidance is unavailable. The guidance document that will be developed will outline specific components of ecological risk assessments for parties required to do an ecological risk assessment. One goal of the guidance document is to simplify the ecological risk assessment process as well as expedite MPCA review of the ecological risk assessment. The final guidance document is expected to be complete by September 1992.

MPCA Natural Resource Damage Program

MERLA provided that the Attorney General, in the name of the state as trustee for natural resources, may bring an action for damages for injury to, destruction of, or loss of natural resources resulting from the release of a hazardous substance, or a pollutant or contaminant. (Minn. Stat. § 115B.17, subd. 7 1983).

In 1986, the Department of the Interior (DOI) promulgated the Natural Resources Damage Assessments (NRDA) rule establishing procedures for assessing damages to natural resources resulting from a discharge of oil or a release of a hazardous substance. The DOI subsequently requested assistance from the Governor of Minnesota to involve the appropriate agencies. The MPCA and the Department of Natural Resources (DNR) were designated by the Governor as co-trustees to act on behalf of the public as trustees and assess damages to natural resources under their trusteeship.

The MPCA is currently evaluating state Superfund sites to determine which sites have the greatest potential for significant natural resource damages and integrating the requirements to conduct natural resource damage assessments at those sites into the Superfund Program. The MPCA will be requesting the RPs to perform a NRDA in the RFRA. The NRDA will weigh ten factors to determine the most appropriate plan that will accomplish restoration, rehabilitation, or replacement of the damaged resource. The NRDA will assist the Superfund program in achieving the goal of permanence and long-term effectiveness in remedy selections.

The NRDA will be conducted during the RI/FS stage, and will be performed in accordance with the DOI NRDA regulation. The MPCA staff is currently working on compiling the NRD, Health and Risk Assessment Requirements into one data-gathering assessment process. The utilization of one assessment process to collect data for all three areas of assessments required will reduce duplication of effort and streamline the Superfund process.

Revision of MERLA Priority Rules

The 1989 and 1990 amendments to MERLA authorized MDA to have access to the state Superfund. As a result, MDA and MPCA recognize a need to amend the Priority Rule for establishing the PLP to reflect MDA's MERLA authority. MDA and MPCA plan to begin the rule revision process during FY 92.

MPCA Superfund Community Relations Guidance

Although MERLA does not require specific community relation activities, community relations have become an increasingly important factor in the Superfund cleanup process. The MPCA staff's flexible and informal approach to community relations has been effective, but all parties interested in the Superfund process have requested a set of guidelines governing public participation at state sites. In FY 92, the MPCA Public Information Office staff plans to draft a guidance document that combines a common-sense approach to community relations with a commitment to public involvement for all state sites.

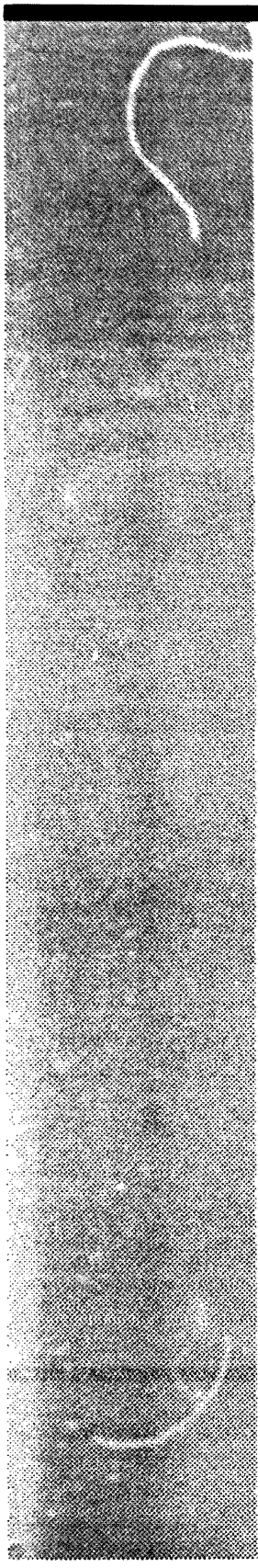
MDA Involvement in National Issues

The MDA is cooperating with EPA, national organizations representing agricultural chemical retailers and registrants, and other states to develop and promote research on cost-effective cleanup procedures for accidental and incidental pesticide spill sites. The MDA presented an overview of the issues at the 1991 American Chemical Society meetings in New York and has helped develop a series of focused research proposals through an industry-sponsored work group.

MDA Pesticide Research

In July 1991, the Legislative Commission on Minnesota Resources (LCMR) funded a research proposal involving the University of Minnesota and MDA. The purpose of the project is to better understand pesticide transport and degradation processes in soil and investigate bioremediation technologies for the treatment of soil contamination resulting from accidental and incidental pesticide spills. MDA is responsible for reviewing and evaluating the existing and new information regarding bioremediation technology. The University is conducting studies on the leaching potential and mineralization of atrazine and alachlor at elevated concentrations and on the use of plants and microbes to enhance biodegradation and removal of pesticides from spill sites.

The MDA is cooperating with the Tennessee Valley Authority (TVA) to conduct studies on other innovative treatment technologies, such as the use of solar evaporators for treatment of pesticides rinsates and soil residues. A solar evaporator may be used at the University of Minnesota, Southern Experiment station in Waseca to evaluate rinsate management. MDA is working with TVA to expand research to include other treatment technologies for pesticide-contaminated soils. MDA is providing pesticide-contaminated soil samples from a spill site.



MDA Cleanup Criteria

The MDA is developing cleanup criteria for soil and ground water at agricultural chemical incident sites. MDA anticipates that the Health Risk Limits will be used on a site specific basis, as one criteria for evaluating potential impacts of agricultural chemical incidents on ground water.

MDA Cooperative Agreement with EPA

MDA will continue efforts to secure federal funding through an amendment to MPCA's Preliminary Assessment/Site Investigation Cooperative Agreement with EPA. MDA has submitted a proposed program to EPA which is designed to identify and assess agricultural chemical incident sites in Minnesota.

MDA Property Transfer Assistance

MDA is developing a database of all reported agricultural chemical incidents as a service to parties involved in property transfer transactions. MDA has approximately 1000 hard copy files on reported incidents dating to the mid-1970s. MDA continues to receive requests for file searches and for cleanup oversight assistance on property transfer sites.

The Future of the Fund

Based on the number of sites undergoing preliminary assessment at this time and the number of sites historically discovered each year, the MPCA and MDA project that 201 sites will be on the PLP by the end of FY 94, 20 more sites than in FY 92.

Consistent with the directives of MERLA, MPCA and MDA will continue to be aggressive in efforts to seek out RPs and maximize the use of federal Superfund dollars. During FY 92, MPCA will continue its efforts to secure federal Superfund dollars for program management and response actions at specific sites.

MPCA and MDA will continue to place a high priority on sites where response actions are currently underway. New site starts will be considered a lower priority and will be initiated as staff resources and funds become available. These priorities are consistent with the overall program goals to achieve site cleanups which are necessary to protect the public health and achieve permanent environmental remedies.

The costs of cleaning up landfills in accordance with landfill closure rules may need to come from a source other than Superfund. These costs will increase in coming years as the number of landfills to be closed increases and the owners and other RPs are less likely to be able to pay the cost of closure. The Superfund Alternatives Report, to be completed by

Table 7: General Superfund Projections

	FY 92	FY 93	FY 94
Sites on PLP	179	191	201
Sites undergoing Response Action by RP	123	136	149
Sites undergoing Response Action using state or federal Superfund money	33	36	40
Total Response Actions	156	172	188
Hazardous Waste Site Verification per year	25	25	25
Property Transfer Program per year			
File Search Requests	1900	2000	2100
Cleanup Assistance	100	100	100
Expenditures under Superfund (cumulative in millions)			
Estimated dollar amount of RP actions	211	241	270
Federal Superfund monies secured	51	59	68
Site specific expenditures from state Superfund	29.95	36.48	45.01
Gross Agency administrative costs	22.26	26.21	30.26
RP reimbursement of agency administrative costs	9.15	9.95	10.8
Net Agency administrative costs	13.11	16.26	19.46
Ratio of actual agency administrative costs to estimated RP expenditures	1:16	1:15	1:14
Nondedicated Revenues (millions)	1.83	1.83	1.83

November 1, 1991, will identify needed Superfund changes or an alternative mechanism for dealing with the funding of required actions at landfills.

MDA's cleanup program is designed to identify and encourage RPs to proceed with an investigation and cleanup of agricultural chemical incident sites. The existence of the ACRRA fund has been helpful in obtaining the cooperation of RPs. Property owners are also eligible for partial reimbursement through ACRRA. If an RP is not identified or is unable to proceed with cleanup, the property owner may proceed with cleanup and receive reimbursement for their eligible cleanup costs. The strong incentives for use of the ACRRA fund by RPs and property owners (collectively called eligible parties) will help preserve Superfund dollars for sites where no viable RPs are identified and/or drinking water supplies are needed.

Table 8: Fiscal Projection of Obligations through FY 93

	FY 92	FY 93
Balance Forward In	$12,039,360	$ 3,734,511
Receipts		
Penalties/Reimbursements	$ 1,850,000	$ 850,000
Interest	675,000	300,000
Taxes	1,000,000	1,000,000
Transfer, Motor Vehicle Fund	1,000,000	1,000,000
Subtotal	$16,564,360	$ 6,884,511
Revenue Refunds	40,000	40,000
Total Available	**$16,524,360**	**$ 6,844,511**
Expenditures		
MPCA Administration	$ 3,937,000	$ 4,007,000
MPCA Cleanups	7,972,849	1,957,511
MDA	880,000	880,000
Total Expenditures	**$12,789,849**	**$ 6,844,511**
Balance Forward	**$ 3,734,511**	**0**

"...strong incentives for use of the ACRRA fund by responsible parties and property owners ... will help preserve Superfund dollars..."

Exposure of the fund due to agricultural chemical sites could be further reduced if the ACRRA reimbursement provisions in Minn. Stat. § 18E were amended to include reimbursement for costs of providing alternative sources of drinking water. These costs are not covered under the current law. Additionally, to provide sufficient incentives for RPs to provide alternative sources of drinking water, the amount available for reimbursement of corrective action costs at an incident site could be increased from the current $200,000 per incident site. These changes would limit Superfund exposure to those agricultural chemical sites where a RP is not identified or is unwilling to proceed with cleanup.

Table 8 demonstrates a possible scenario for the future of Superfund. While the shortfall projected for the end of FY 93 may be compensated for by RPs, it is unlikely that Superfund will maintain a positive balance going into FY 94. Since the Fund cannot be drawn down below zero, by FY 94 site response actions may not begin at several sites or current response action may be delayed and the program could lose federal funding if the state cannot meet the 10 percent required match.

Conclusions and Recommendations

The Minnesota Superfund Program has been very effective at traditional Superfund sites. Response actions are underway at 140 sites. MPCA and MDA have been successful in their efforts to seek out RPs, and MPCA also has been successful in securing federal dollars to fund cleanup activities. Despite these efforts, the continued success of the Superfund program is dependent on the availability of Fund dollars to encourage cooperation by RPs, provide the state's required 10 percent match for federally funded cleanups, and conduct cleanups of sites not eligible for federal funding.

To ensure the continued success of the Superfund Program, MPCA and MDA staff offers the following recommendations:

° Landfills are becoming increasingly burdensome within the Superfund program. Sixty landfills are currently listed on the PLP and that number will continue to increase. It is anticipated that in the future, significant additional state Fund monies will be necessary to address these sites. Fewer landfills will qualify for federal funding support due to lower scores on the HRS. In addition, municipally-owned landfills have liability caps which shift the burden to the Fund if other RPs cannot be identified. Considering the demand landfills are placing on the Superfund Program funding sources (both federal and state Funds) and the need for cleanup monies to reduce future contamination problems, significant additional resources will be needed in the future to address response actions at landfill sites.

° The growing use of Superfund at a number of traditional Superfund sites may lead, eventually, to the Fund being exhausted. Traditional Superfund sites which are approaching the remedial action phase of cleanup will place a greater demand on the Fund over the coming years.

° Very limited research information currently exists on cost-effective remediation techniques for agricultural chemical incidents. Disposal of contaminated soils containing cancelled or suspended agricultural chemicals through landfilling or incineration at out-of-state locations are very costly alternatives for owners of agricultural chemical facilities.

During the 1991 legislative session, the Legislative Commission on Minnesota Resources funded a literature survey to research the applicability of bioremediation methods to agricultural chemical incidents. This and additional research will be necessary to identify and evaluate cost-effective cleanup approaches to mitigate agricultural chemical incidents. Research on and application of cost-effective remediation techniques will help preserve Fund dollars in the future.

° The success of the new ACRRA corrective action cost reimbursement program incentives at MDA will help preserve the Superfund. MDA is currently providing oversight for investigation and cleanup work at 60 RP sites. The administrative and cleanup costs associated with these sites are not borne by the Superfund program.

° MDA's limited Superfund staff resources are not sufficient to address current program needs. MDA has immediate need for at least three additional Superfund positions to identify, score, and list sites on the PLP and recommend potential NPL sites to EPA; manage both MERLA fund-financed emergencies and site investigations and cleanups; and provide property transfer assistance.

Currently, funding for two positions and attorney general costs has been provided for MDA at $130,000 per year, however, additional funding is needed to assure a qualified and adequate staff. MDA has been providing additional resources, including staff time and laboratory services for Superfund activities from its pesticide and fertilizer regulatory dedicated accounts.

° Additional MPCA staff resources are necessary to conduct the state funded Property Transfer efforts. Over the past few years the number of requests for file searches and technical assistance has increased significantly. Additional clarification and direction may be needed from the Legislature regarding the Technical Assistance Program statutory authority with respect to issues such as "no action letters" and "covenants not to sue" agreements.

Notes

Attachment 1

The tables on the following pages provide information about the status of each Superfund site in Minnesota

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1991

SITE NAME/LOCATION	HRS SCORE	NPL	RFRA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLA$ (MILLION)	MERLA$ (MILLION)	ESTIMATE OF RESP. PARTY $ (MILLION)	CLEANUP PHASE							
										RI /	FS	RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
ADRIAN MUNICIPAL WELL FIELD	34 **	F				9/30/89	0.590	0.200		XF	XF			XS			
AGATE LAKE SCRAP YARD	30 **	F	1/28/86						0.500	X	X	O	R			R	R
AMDURA (AMHOIST)	13			2/28/89	8/28/90			0.150	0.250	C	OS				OS		
ANCHOR GLASS CONTAINER, SHAKOPEE	16								0.760	O	O		O				
ANDERSEN WINDOW, BAYPORT	24			1/27/87				0.025	2.000	X	X	X	X		O	O	O
ANOKA MUNICIPAL SANITARY LANDFILL	51			5/30/85					2.700	X	X	X	O		O	R	R
ARROWHEAD REFINERY CO., HERMANTOWN	40	F	11/27/90			9/29/86	2.150	0.025	2.250	XF	XF	R	R	X	R	R	R
ARSENIC SITES - ABOVE GROUND, STATEWIDE *								0.400		XS			X				
ARSENIC SITES - BELOW GROUND, STATEWIDE *								0.370		XS			OS				
ASHLAND OIL CO. - COTTAGE GROVE	34	N	3/26/85						0.075	X	X	R	R			R	R
ASHLAND OIL CO. - PINE COUNTY	22		12/18/84						0.250	X	O	R	R			R	R
ASHLAND OIL/PARK PENTA/SONFORD PROD., ST. PAUL PARK	32	N							0.420	O	O						
ASHLAND REFINERY, ST. PAUL PARK	32			1/22/91					2.700	X	R	R	R	O	R		
ASKOV GND. WTR. CONTAM. (REFER TO TANKS & SPILLS)	18							0.443	0.350	XS	XS		XS	X			
ATWATER MUNICIPAL WELL FIELD	31		12/16/86					0.260		XS	XS	XS	XS	XS		OS	
B.J. CARNEY COMPANY, MINNEAPOLIS	38																
BASSETT CREEK/IRVING AVENUE DUMP, MINNEAPOLIS	10								0.100	O	O						
BATTLE LAKE AREA SAN. LDFL., OTTER TAIL COUNTY	34	N	4/23/91		4/23/91					OS							
BAYTOWN TWP. GRND. WTR. CONTAMINATION, WASHINGTON CO.	38	N	8/27/91						0.250	O	R	R	R	O		R	R
BECKER COUNTY SANITARY LANDFILL	28													O			
BELL LUMBER AND POLE CO.	48	F	2/28/84	5/30/85					5.500	X	X	O	R		O	R	R
BOISE CASCADE/MEDTRONIC, FRIDLEY	59	F		1/24/84					2.000	C	C	X	X		O	O	O
BOISE CASCADE/ONAN, FRIDLEY	59	F		12/28/84					3.000	C	C	X	X		O	O	O
BOISE CASCADE PAINT WASTE DUMP, RANIER	17		2/26/85	6/25/85					2.000	X	X	X	X			O	O
BRAINERD FORMER CITY DUMP	38																
BROOKLYN PARK DUMP, HENNEPIN CO.	36								0.100								
BUECKERS SANITARY LANDFILL, STEARNS COUNTY	25																
BURLINGTON NORTHERN, BRAINERD	47	F	11/28/83	3/26/85		6/10/86			2.000	X	X	X	O		IO	O	O
BURLINGTON NORTHERN CAR SHOPS-BRAINERD	38								0.300	O					O		
BURLINGTON NORTHERN CAR SHOP-WAITE PARK	38		10/22/85						1.000	O	O	R	R		R	R	R

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1991

SITE NAME/LOCATION	HRS SCORE	NPL	RFRA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY $ (MILLION)	CLEANUP PHASE							
										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
BURNSVILLE SANITARY LANDFILL	43		4/28/87						0.200	O	R	R	R		R	R	R
CASTLE ROCK GND. WTR. CONTAM. (REFER TO DEPT. OF AG.)	25							0.014									
CEDAR SERVICE, MINNEAPOLIS (REFER TO DEPT. OF AG.)	17																
CENTRAL COOP. OIL, MEDFORD (REFER TO DEPT.OF AG.)	16																
CLAY COUNTY SANITARY LANDFILL	17																
CONOCO INC. - WRENSHALL REFINREY	41	N	6/23/87						0.600	X	O	R	R		R	R	R
CONTROL DATA CORP. - PRINTED CIRCUITS OPERATION	6			4/26/88		6/12/90			1.600	X	X	X	O		IO	O	O
CROW WING COUNTY SANITARY LANDFILL	14																
DM&IR SHOPS, DULUTH (REFER TO HAZ. WASTE DIV.)	11																
DNR-DUXBURY PESTICIDE SITE	11		12/18/84						0.250	X	X	X	X		O	O	
DAKHUE SANITARY LANDFILL, DAKOTA COUNTY	42	F		6/23/87	9/27/88	6/30/91	0.171	0.030	0.300	OF	OF						
DEALERS MANUFACTORING CO., FRIDLEY	28																
DODGE COUNTY SANITARY LANDFILL	25																
DULUTH AIR FORCE BASE	21		8/28/90						3.100	C	O	R	R		R	R	R
DULUTH FORMER CITY DUMP	28		8/23/88		11/22/88			0.050	0.150	O	R	R	R	OS	R	R	R
EAST BETHEL DEMOLITION LANDFILL, EAST BETHEL	31	F		4/28/87					3.000	X	O	R	R		R	R	R
EAST MESABA SANITARY LANDFILL, ST. LOUIS COUNTY	14																
ECOLOTECH, INC. - ST. PAUL, MPLS	3		8/23/83	3/27/84	2/28/84			0.070	1.500	X	X	X	O		O	O	
ELECTRIC MACHINERY, SAINT CLOUD	38		3/25/86			1/5/89			2.500	X	X	X	X		IO	O	O
ELECTRONIC INDUSTRIES, INC., NEW HOPE	26			1/24/84					0.150	O	O	C	O		O	O	O
ELK RIVER SANITARY LANDFILL	25																
ELYSIAN FORMER CITY DUMP	23																
FMC CORP. - FRIDLEY PLANT (VAULT)	66	F		6/08/83					6.000	C	C	X	X		O	O	O
(GROUND WATER PUMPOUT)				10/28/86					0.750	X	X	X	X		O	O	O
FAIRBAULT COAL GASIFICATION PLANT SITE	46		10/28/86	7/26/88		6/07/88			1.200	X	X	X	X			O	O
FAIRBAULT MUNICPAL WELL FIELD	36																
FERGUS FALLS SANITARY LANDFILL, OTTERTAIL CO.	25																
FLYING CLOUD SANITARY LANDFILL, EDEN PRAIRIE	40			9/25/85					4.500	X	X	X	O		R	R	R
FOOT, S.B. TANNING SLUDGE DISPOSAL AREA, RED WING	25																
FORD - TWIN CITIES ASSEMBLY PLANT, ST. PAUL	8		6/26/90						0.500	O	R	R	R		R	R	R

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1991

SITE NAME/LOCATION	HRS SCORE	NPL	RFRA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY $ (MILLION)	CLEANUP PHASE							
										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
FREEWAY SANITARY LANDFILL, BURNSVILLE	46	F	2/25/86					0.177	0.600	O	R	R	R		R	R	R
FRITZ CRAIG SALVAGE OPERATION, PARK RAPIDS	8																
GENERAL COATINGS	10																
GENERAL MILLS, MINNEAPOLIS	39	F		10/23/84					1.500	C	C	X	O		IO	O	O
GLIDDEN, MINNEAPOLIS	11																
GOFER SANITARY LANDFILL, MARTIN COUNTY	26																
GOPHER OIL-DELAWARE, MINNEAPOLIS	3																
GOPHER OIL-THORNTON, MINNEAPOLIS	3		8/28/90						1.800	O	R	R	R		R	R	R
GRAND RAPIDS AREA SANITARY LANDFILL	34																
GREATER MORRISON SANITARY LANDFILL, MORRISON COUNTY	29																
HWK ENT./MEEKER MFG./DSG. CLS./LITCHFIELD MWS	24																
HANSEN AND MANKATO SANITARY LANDFILL,BLUE EARTH CO.	19																
HASTINGS FORMER CITY DUMP	31	N							0.120	O						O	
HIGHWAY 96 DUMP	31	N	7/22/86						0.600	X	X	O	O		IO	R	R
HONEYWELL, INC.- GOLDEN VALLEY PLANT	31		5/30/85	11/19/85		6/19/90			3.000	C	C	C	O		IO	O	O
HOPKINS AGRICULTURAL CHEM./ALLIED CHEM., MINNEAPOLIS	3		6/25/85						1.000	X	X	X	X			O	X
HOPKINS SANITARY LANDFILL	15																
HOUSTON COUNTY SANITARY LANDFILL	25													X			
HUTCHINSON TECHNOLOGY, INC., HUTCHINSON	9								0.500	C	C	C	O		O	O	
INTERPLASTIC CORP., MINNEAPOLIS	18		7/23/91						0.020	O	R	R	R		R	R	R
IRONWOOD SAN. LDFL. (ADV. TRANSFMR.), SPRING VALLEY	34			8/26/86					1.350	X	X	X	X	IO	IO	O	O
ISANTI-CHISAGO SANITARY LANDFILL	34		6/16/88						0.500	X	O			X			
ISANTI MARTIN, ISANTI COUNTY	3		7/1/83	11/12/87		3/15/91		0.010	0.150	X	X	R	R		R	R	R
ISANTI RUMPEL, ISANTI COUNTY	13		7/1/83	11/12/87		3/15/91		0.020	0.404	X	X	R	R		R	R	R
ISANTI SOLVENT SITE, ISANTI COUNTY	30		7/17/83	11/12/87	9/28/83	6/15/90	1.250	0.030	0.982	X	X	R	R	O	R	R	R
JACKSON MUNICIPAL WELL FIELD	26							0.020		X						O	
JOSLYN MFG. & SUPPLY CO., BROOKLYN CENTER	44	F	9/27/83	5/30/85		7/31/89			8.000	X	X	X	O		IO	O	O
KANABEC CO. SANITARY LANDFILL, ARTHUR TWP.	21													O			
KANDIYOHI COUNTY SANITARY LANDFILL	41	N															
KAPLAN, H.S. SCRAP IRON AND METAL CO., ST. PAUL	4								0.200	X	O						

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
KARLSTAD SANITARY LANDFILL, KITTSON COUNTY	10																
KILLIAN SANITARY LANDFILL, TODD COUNTY	19							0.020		OS							
KLUVER SANITARY LANDFILL, DOUGLAS COUNTY	39	N															
KOCH REFINING/N-RaN CORP., ROSEMOUNT	31	F	1/22/85	10/22/85					1.000	X	X	O	R		IO	R	R
KOOCHICHING COUNTY SANITARY LANDFILL	27																
KOPPERS COKE, ST.PAUL	55	F	3/25/86						0.500	X	O	R	R		R	R	R
KUMMER SANITARY LANDFILL, BELTRAMI CO.-DRINKING	42 **	F	6/26/84		8/28/84	6/12/85	2.033	0.067	0.245		XF	XF	XF	IO			O
-COVER						9/30/88	3.320	0.270		XF	XF	XF	OSF				
-GND. WATER						8/28/90	1.990	0.061		XF	XF	OF					
KURT MANUFACTURING, FRIDLEY	31 **	F	4/24/84	8/24/84		5/13/86			0.500	X	X	O	O		IO	O	O
La GRANDE SANITARY LANDFILL, DOUGLAS COUNTY	34	F	7/28/87		9/22/87		0.334			OF	OF						
LAKELAND GROUND WATER CONTAMINATION	38	N				4/21/91		1.600		X	X	OS	OS	XS			
LANSING GROUND WATER CONTAMINATION	17		4/21/89					0.455	0.800	X	X	R		X	R	R	R
LEECH LAKE SANITARY LANDFILL, HUBBARD CO.	25							0.030		XS							
LeHILLIER/MANKATO	42 **	F				9/30/85	2.680	0.150		XF	XF	XSF	XSF	XS	XSF	OSF	OSF
LEWISTON GROUNDWATER CONTAM. (REFER TO DEPT. OF AG.)	34							0.002									
LONG PRAIRIE GROUND WATER CONTAMINATION	32 **	F				6/27/88	0.750	0.300		XF	XF	OF		XS			
LOUISVILLE SANITARY LANDFILL, JORDAN	29		9/23/86						0.230	X	O	R	R		R	R	R
LUND'S FARMER SEED AND NURSERY, ST. CLOUD (DEPT. OF AG)	14									XS	XS	XS	XS			OS	
MacGILLIS & GIBBS CO., NEW BRIGHTON	48 **	F	2/28/84		11/28/89		0.519	0.280	0.030								
-OPERABLE UNIT #1	**									OF	OF	OF					
-OPERABLE UNIT #2	*									OF	OF						
McGUIRE WIRE SALVAGE SITE, MORA	20		8/28/90		8/28/90			0.151		XS	XS	XS	O				
McLAUGHLIN GORMLEY KING, MINNEAPOLIS	4		1/22/85	11/19/85		9/28/87			0.511	X	X	X	X		O	O	O
MEEKER COUNTY SANITARY LANDFILL	15																
METALS REDUCTION, ST.PAUL	2																
MINNEAPOLIS COMM. DEV. AGENCY/FMC, MINNEAPOLIS	1			11/26/85					1.000	X	X	X	O			O	O
MINNEGASCO, MINNEAPOLIS	42	N	6/24/86						1.000	X	X	O	R		R	R	R
NL INDUSTRIES/TARACORP/GOLDEN AUTO, ST.LOUIS PARK	48	F	1/11/84	2/26/85		9/23/88			0.975	X	X	X	X			O	O
NORTHWEST REFINERY, FORMER, NEW BRIGHTON	9		4/22/86						0.100	O	O	O	O			R	R

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1991

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
NORTHWOODS SANITARY LANDFILL, ST.LOUIS COUNTY	18																
NUTTING TRUCK & CASTER CO., FARIBAULT	38	F	9/22/83	4/26/84					0.140	X	X	X	X		IO	O	O
OAK GROVE SANITARY LANDFILL-GROUND WATER	43 **	F	8/28/84		9/27/84	12/21/90	1.277			XSF	XF	O	O				
-FINAL COVER						9/30/88	0.256	0.078			XF	O	O				
OAKDALE DUMP	59	F		7/26/83					16.000	C	C	X	X	X	IO	O	O
OLMSTED COUNTY SANITARY LANDFILL	34	F	7/25/89	12/19/89			0.037		0.956	O	R						
OWATONNA CITY DUMP	23							0.020									
PCI, INC., SHAKOPEE	52	N		6/25/85					0.250	C	C	C	X			O	O
PERHAM ARSENIC SITE	38 *	F	7/26/83		9/22/83		0.015	0.225		OF	OF						
PICKETT SANITARY LANDFILL, HUBBARD COUNTY	34	N	4/26/88						0.410	O	R	R	R		R	R	R
PIG'S EYE LANDFILL	43																
PINE BEND/CROSBY AMERICAN SLF, INVER GROVE HEIGHTS	52	F	10/22/84	10/23/85				0.139	3.200	X	O	R	R	O	R	R	R
PINE LANE SANITARY LANDFILL, CHISAGO COUNTY	25																
PIPESTONE COUNTY SANITARY LANDFI. L	27																
PONDEROSA SANITARY LANDFILL, BLUE EARTH COUNTY	25																
PORTEC-PIONEER DIV. (REFER TO TANKS AND SPILLS DIV.)																	
RED ROCK SANITARY LANDFILL MOWER COUNTY	29																
REDWOOD COUNTY SANITARY LANDFILL	15																
REILLY TAR, ST. LOUIS PARK	59 *	F	12/18/84	9/22/86		9/28/90	1.504		5.000								
-PRAIRIE DU CHIEN-JOR. AQUIFER																	
-SLP # 10 & #15 GAC. ROD						6/6/84				X	X	X	X	O	O	O	O
-SLP #4-GRAD. CONT.										X	X	X	X		O	O	O
-SLP #23 SOURCE CONT.										X	X	X	X		O	O	O
-ENFORCEMENT DECISION DOCUMENT	59 *					5/15/86											
-DRIFT-PLATTEVILLE AQUIFER	59 *																
-GRADIENT CONT.												X	X		IO	O	O
-SOURCE CONT.												X	X		IO	O	O
-NORTHERN AREA										O	R	R	R		R	R	R
-ST. PETER AQUIFER	59 *					9/28/90				X	X	X	X		IO	O	O
-MT. SIMON-HINCKLEY AQUIFER	59 *															O	

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
-IRONTON-GAILSVILLE AQUIFER	59 *									X	X	X	X		O	O	O
-LEAKING MULTI-AQUIFER WELLS	59 *																
-OPEN TO MT. S-H, I-G, P.D.CH										O	O	R	R				
-OPEN TO ST. PETER										O	O	R	R				
-NEAR SURFACE CONTAMINATION	59 *									X	X	X	X				
-BIOREMEDIATION-SOURCE	59 **						0.070					OF					
RICE MUNICIPAL WELL #2	22		5/21/91		5/21/91			0.150		OS							
RITARI POST AND POLE, WADENA COUNTY	30	F	2/25/86		4/22/86		0.893			OF							
ROBINSDALE DEVELOPMENT SITE, ROBINSDALE	36	N							0.100	O							
ROCHESTER GAS MANUFACTURING SITE	37								0.100	O							
ST. AUGUSTA SAN. LDFL./ENGEN DUMP, STEARNS COUNTY	34	F	7/23/91				0.025	0.040	0.200	O	R	R	R	R	R	R	R
ST. LOUIS RIVER/INTERLAKE, DULUTH	32 **	F	3/26/91			9/14/90	1.140			XF	X	O					
ST. LOUIS RIVER/U.S. STEEL, DULUTH	32	F	9/27/83	3/26/85		2/17/89			2.000	X	X	O	O		R	R	R
ST. PAUL PARK GROUND WATER CONTAMINATION	36	N	6/27/89					0.270		X	X	OS		OS			
ST. REGIS PAPER, CASS LAKE	53	F	4/24/84	2/26/85					10.000	X	X	X	X		IO	O	O
SALOL SANITARY LANDFILL, ROSEAU CO.	22																
SAUK CENTRE SANITARY LANDFILL	38	N	9/27/88					0.010	0.400	OS	R	R	R	X	R	R	R
SCHLOFF CHEMICAL, ST. LOUIS PARK	7		3/27/90						0.050	OS	O						
SCHNITZER IRON & METAL CO., ST. PAUL	10			7/28/87					0.500	X	O	R	R		R	R	R
SHAFER METAL RECYCLING, MINNEAPOLIS	41			3/26/91					0.050	O	O						
SHELDAHL, NORTHFIELD	21								0.425								
SIBLEY COUNTY SANITARY LANDFILL	9																
SOUTH ANDOVER, ANDOVER	35 *	F	6/26/84			3/30/88	1.500	0.100		OF	OF						
SPRING GROVE MUNICIPAL WELL FIELD	28			3/23/88		2/23/88			0.500	C	C	X	X	IO	IO	O	O
SUPERIOR PLATING, INC., MINNEAPOLIS	6		1/27/91						0.200	O	O	R	R		R	R	R
3M CHEMOLITE DISPOSAL SITE, COTTAGE GROVE	33		1/22/85	5/30/85					0.500	X	X	X	X		IO	O	O
3M KERRICK DISPOSAL SITE, KERRICK	9			1/25/84					0.200	X	X	O	O		O	O	O
TELLURIAN SANITARY LANDFILL	17																
TONKA MAIN PLANT, MOUND	31		7/22/86						0.400	X	X	X	X			O	O
TONKA/WOYKE SITE, ANNANDALE	9		5/30/85	11/25/86					0.500	X	X	X	X			O	O

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
TOWER ASPHALT, LAKELAND	40								0.040	O							
TRIO SOI VENT SITE, NEW BRIGHTON	21		8/26/86		1/24/89			0.025	0.500	X	X	X	O		O	R	R
TWIN CITIES AIR FORCE RESERVE BASE, MINNEAPOLIS	34	F	11/28/89						3.500	O	O	R	R		IO	R	R
TCAAP/NEW BRIGHTON/ARDEN HILLS/ST. ANTHONY SITE	59	F		12/31/87				0.041	35.000								
OFF TCAAP: -GROUND WATER	-- **						2.884			XF	R	R	R		R	R	R
-SEWER	-- *						0.050			XF	R	R	R				
-ARDEN MANOR														X			
-NEW BRIGHTON WELL #7	-- *					6/86, 4/89	0.431				XF	XF					
-NEW BRIGHTON CARBON (TEMPORARY 1983)	-- *										XF	XF	XF	XF			
-ARDEN HILLS PIPELINE	-- **						0.237	0.024			XF	XF	XSF	XSF			
-YEPMA CONNECTION								0.004					XS	XS			
-ST. ANTHONY INTERCONNECTION	-- **						0.140	0.014			XF	XF	XSF	XSF			
-NEW BRIGHTON PERMANENT CARBON									2.000					X			
-ST. ANTHONY CARBON	-- **						2.700	0.330		XF	XF	XF	XF	XF	XF		OF
ON TCAAP:			6/28/83	12/31/87		9/25/87				X	O/R	O/R	O/R	O	O/R	R	R
			10/25/83														
			1/24/84														
			2/26/85														
			4/23/85														
			8/26/86														
-EMPLOYEES														X			
U.S. NAVAL INDUS. RES. ORD. PLT. (NIROP), FRIDLEY	63	F	5/22/84	2/26/91		9/28/90		0.059	5.600	X	X	O	R		R	R	R
U OF MINNESOTA - ROSEMOUNT RESEARCH CENTER	46	F	9/25/84	5/30/85		6/29/90			2.000	X	X	X	R	O	IO	R	R
VALENTINE-CLARK, ST. PAUL	4									OS							
WABASHA COUNTY SANITARY LANDFILL	22																
WADENA ARSENIC SITE	25		7/26/83		9/22/83			0.200		XS	XS	XS	XS			OS	
WADENA SANITARY LANDFILL	25																
WAITE PARK GROUND WATER CONTAMINATION	32	F	10/22/85		11/25/86			0.200	3.000	X	X	X	X	IO	O	O	O
WASECA COUNTY SANITARY LANDFILL	13																
WASHINGTON COUNTY LANDFILL, LAKE ELMO	42	F		10/24/84		9/27/90			2.400	C	C	X	X	O	IO	O	O

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
WASTE DISPOSAL ENGINEERING	51	F	9/24/91	3/21/84	3/22/88	12/31/87	0.083		4.000	X	X	R	R		R	R	R
WEISMAN SCRAP, WINONA	25		3/25/86						0.500	X	X	X	X		O	O	R
WEST DULUTH INDUSTRIAL SITE	11		1/28/86	9/08/86	3/26/86			1.100	0.800	X	X	XS	XS		X	O	O
W. LAKE SUPERIOR SANITARY DISTRICT LDFL./DULUTH DUMP	34																
WESTLING MANUFACTURING, PRINCETON	32																
WHITTAKER CORPORATION, MINNEAPOLIS	40 **	F	4/23/85						1.500	X	X	X	X		IO	O	O
WINDOM DUMP	38	F	6/24/86			4/7/89			1.000	X	X	X	X		IO	O	R
WINONA COUNTY SANITARY LANDFILL	34		3/26/85						0.400	X/R	X/R	X	X				
WINONA GROUND WATER CONTAMINATION	25		2/26/91		5/21/91			0.200		OS	OS	OS	OS	O			
WOODLAKE SANITARY LANDFILL, MEDINA	16																
YONAK SANITARY LANDFILL, WRIGHT COUNTY	28																

SITES PROPOSED FOR DELETION FROM THE DECEMBER 1990 PLP

-ASKOV GROUNDWATER CONTAM., PINE COUNTY
-ISANTI MARTIN,ISANTI COUNTY
-WADENA ARSENIC SITE, WADENA COUNTY

SITES PROPOSED FOR ADDITION TO THE DECEMBER 1991 PLP

-HOWE CHEMICAL SOIL CONTAM., MARTIN CO. (AG. DEPT.)
-KORF BROTHERS SLF, PINE COUNTY
-LINDALA SLF, WRIGHT COUNTY
-PINE STREET DUMP, HASTINGS, DAKOTA COUNTY

PLP SANITARY LANDFILLS UNDERGOING SW RULE/ENFORCEMENT/PERMIT ACTIONS

BECKER COUNTY	KLUVER
CLAY COUNTY	KOOCHICHING
CROW WING COUNTY	NORTHWOODS
DODGE COUNTY	PINE LANE
EAST MESABA	PIPESTONE
ELK RIVER	PONDEROSA
FERGUS FALLS	SALOL-ROSEAU
GRAND RAPIDS AREA	SIBLEY COUNTY
GREATER MORRISON	TELLIJOHN
HANSEN-MANKATO	WADENA
HOPKINS	WASECA COUNTY
KANABEC	W. LAKE SUP. SAN. DIST. LDFL.
KANDIYOHI COUNTY	WOODLAKE
MEEKER	YONAK

SITES DELETED FROM THE PLP

AIRCO LIME MFG. COMPANY
DNR NETT LAKE/ORR PESTICIDE SITE
ECOLOTECH INC., MINNEAPOLIS
FORMER MCKAY MFG. COMPANY
43 E. WATER STREET
LOST LAKE DUMP SITE
MAPLE PLAIN DUMP
MORRIS ARSENIC SITE
NORTHERN TOWNSHIP GROUND WATER CONTAM.
POLYMETALS PRODUCTS INC.
PORTEC - PIONEER DIVISION
SONFORD PRODUCTS ABANDONED TRAILER SITE
UNION SCRAP IRON AND METAL CO., MINNEAPOLIS

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										RI / FS		RD	RA	DRINK-ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
NUMBER OF SITES THAT HAVE INITIATED "RI'S"	118								O	27	22	14	22	11	22	48	40
NUMBER OF SITES THAT HAVE INITIATED "FS'S"	109								X	65	54	45	33	10	1	0	0
NUMBER OF SITES THAT HAVE INITIATED "RD'S"	97								C	12	10	4	0	0	0	0	0
NUMBER OF SITES THAT HAVE INITIATED "RA'S"	93								OS	6	2	3	3	2	1	3	0
NUMBER OF SITES INITIATING A DRINKING WATER "RA"	30								OF	7	6	4	0	0	0	0	1
NUMBER OF SITES INITIATING A GROUND WATER "RA"	70								XS	8	5	5	6	3	0	0	0
NUMBER OF SITES WITH INITIATED "RA" MONITORING	85								XF	10	14	7	3	2	1	0	0
NUMBER OF SITES INITIATING "RA" OPER. AND MAINT.	78								XSF	1	0	1	3	2	1	0	0
									OSF	0	0	0	1	0	0	1	1
NOTE: THESE TOTALS INCLUDE ALL "R" DESIGNATIONS FOR EACH ACTIVITY AT EACH SITE.									R	1	17	35	41	1	33	43	45
									IO	0	0	0	0	4	33	0	0
TOTAL NUMBER OF SCORED SITES	178	60	84	51	20	40	30	8.989	191.583	137	130	118	112	35	92	95	86

LEGEND

F = LISTED AS FINAL ON NPL
P = PROPOSED FOR LISTING ON NPL
N = NOMINATED FOR LISTING ON NPL

* = EPA LEAD
** = STATE LEAD
' = OFFICIALLY NOT ON THE STATE PERMANENT LIST OF PRIORITIES
'' = PRE-REMEDIAL DESIGN

LIST OF ACRONYMS

HRS = HAZARD RANKING SYSTEM
NPL = NATIONAL PRIORITIES LIST
RFRA = REQUEST FOR RESPONSE ACTION
DER = DETERMINATION OF INADEQUATE RESPONSE
CERCLA = COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT
MERLA = MINNESOTA ENVIRONMENTAL RESPONSE AND LIABILITY ACT
RI = REMEDIAL INVESTIGATION
FS = FEASIBILITY STUDY
RD = REMEDIAL DESIGN
RA = REMEDIAL ACTION
O&M = OPERATION & MAINTENANCE

RESPONSIBLE PARTY CODES

X = COMPLETED
O = ON GOING
C = COMPLETED PRIOR TO CONSENT ORDER
R = REQUIRED UNDER CONSENT ORDER, STIPULATION AGREEMENT OR RFRA
IO = INSTALLED AND OPERATING

GOVERNMENT-FINANCED CODES

OS = ON GOING-USING STATE SUPERFUND MONIES
OF = ON GOING-USING FEDERAL SUPERFUND MONIES
XS = COMPLETED-USING STATE SUPERFUND MONIES
XF = COMPLETED-USING FEDERAL SUPERFUND MONIES
XSF = COMPLETED-USING STATE AND FEDERAL SUPERFUND MONIES
OSF = ON GOING-USING STATE AND FEDERAL SUPERFUND MONIES

Minnesota Superfund

A Report on Use of the Minnesota Environmental Response, Compensation and Compliance Fund during Fiscal Year 1991

prepared by the Minnesota Pollution Control Agency and
the Minnesota Department of Agriculture

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