



MINNESOTA Closed Landfill Program

REPORT TO THE LEGISLATURE

December 2003

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2003 Annual Report to the Minnesota State Legislature on the **Minnesota Closed Landfill Program**

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An active gas extraction system prevents landfill gas migration at the Oak Grove landfill in Anoka County.

Construction activities at Pine Lane landfill in Chisago County.



Minnesota Closed Landfill Program

Executive Summary

The 1994 Landfill Cleanup Act (LCA) created Minnesota's Closed Landfill Program (CLP). The CLP is an alternative to Superfund for closed landfills. It is the first such program in the nation.

The LCA (Minn. Stat. § 115B.412, subd. 10) requires the Minnesota Pollution Control Agency (MPCA) to provide a report to the legislature on past fiscal-year activities and anticipated future work. This report fulfills the requirement and covers fiscal year 2003 (FY03), July 1, 2002, to June 30, 2003 activities and looks ahead to FY04 priorities.

The MPCA estimates that an additional \$26 million in general obligation bonding will be needed over the next four years to successfully complete remedial construction at 15 closed landfill sites.

Program Overview

The MPCA is authorized under the LCA to initiate cleanup actions, complete closures, take over long-term operation and maintenance, and reimburse eligible parties for past cleanup costs at 108 qualified closed state-permitted landfills. Before the landfills are accepted into the CLP, the requirements of a Binding Agreement (BA) must be met.

FY03 Program Accomplishments

During FY03, the CLP realized the following accomplishments:

- 14 construction projects were completed;
- 16 percent further reduction in the total amount of leachate that can reach ground water was achieved through placement of adequate covers and reduction of waste footprints;
- an additional 17 percent of landfill gas generated by CLP landfills that was economically feasible to be captured was destroyed prior to being released into the atmosphere;
- three Binding Agreements were signed;
- two Notices of Compliance were issued and
- an amended agreement with the U.S. Environmental Protection Agency (EPA) recognizing additional sites in the CLP and other considerations.

In 1999 and again in 2000, the legislature enacted amendments to the LCA which changed CLP entry qualifications to allow for additional landfills to enter the CLP. Based in part on these legislative changes, two additional landfills entered the CLP in FY03, with four more expected to enter the program in the next year or two.

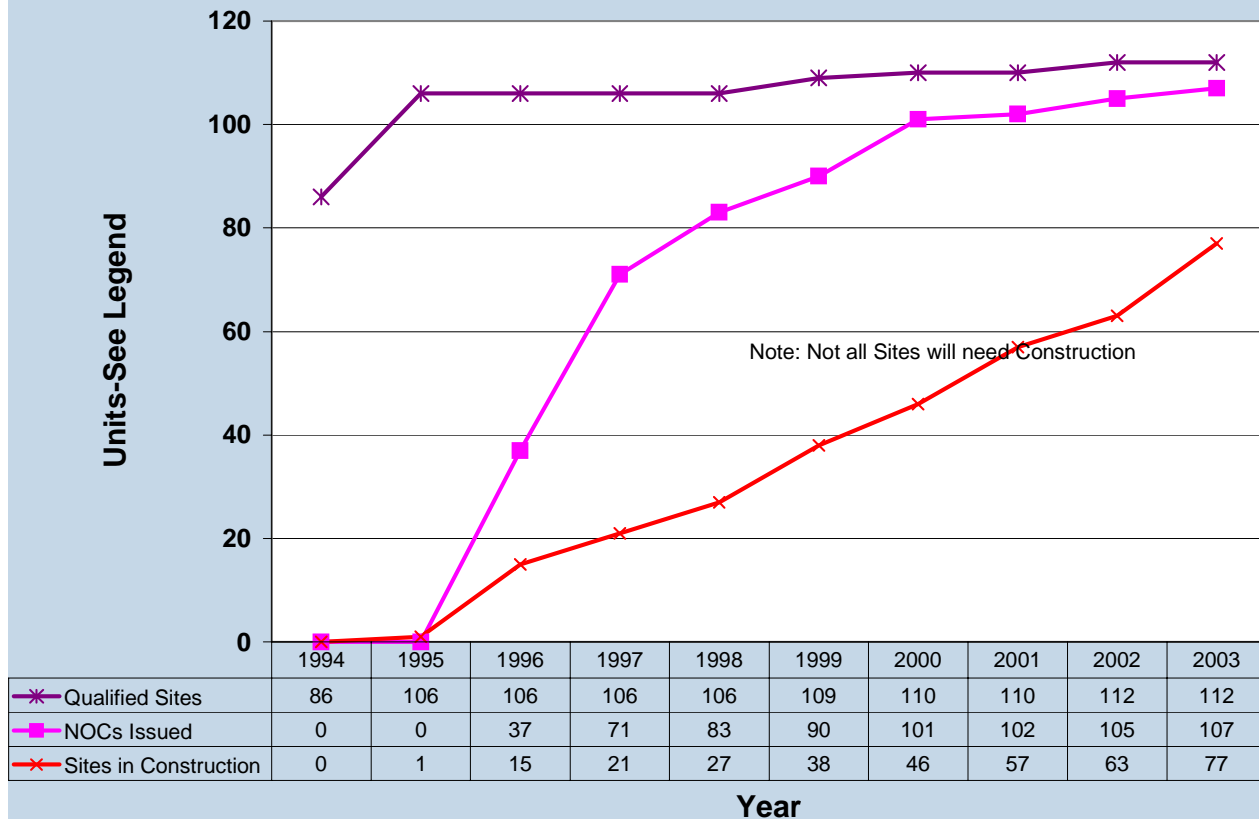
Through June 30, 2003, 108 landfill owners/operators had a signed BA and 107 had received a Notice of Compliance (NOC), the final administrative step before the state typically takes over landfill operations and maintenance.

The CLP is in its ninth year and a significant amount of construction has taken place through FY03. One of the main goals of the CLP is to bring each landfill in the program up to standards that are protective of public health and the environment. The CLP is close to reaching this goal.

The following list summarizes accomplishments from the establishment of the CLP through FY03:

- 107 Binding Agreements signed (Freeway Sanitary Landfill's Binding Agreement is no longer in effect);
- 107 Notices of Compliance issued;
- All reimbursements to landfill owners/operators and responsible parties completed, totaling \$37,883,128;
- U.S. Environmental Protection Agency (EPA) reimbursements completed, totaling \$4,014,550;
- 77 major construction projects completed;
- 80 percent of the program's goal has been achieved of limiting to the greatest extent possible leachate being generated and infiltrating to ground water; and
- 69 percent of the landfill gas generated by CLP landfills that was economically feasible to be captured was destroyed prior to being released into the atmosphere.

Closed Landfill Program Progress Report



The graph on the previous page shows the progress achieved in the CLP during the past nine years. The MPCA will need to complete construction of final covers, leachate collection and gas-extraction systems at a few remaining landfills, but a majority of the construction work has been completed. If adequate funding for construction is available, the CLP will move into an operation and maintenance (O&M) mode in the next three to four years.

Funding

In FY03, funding for the program came from four sources of revenue:

- The Solid Waste Management Tax (SWMT) and associated fees (which also fund other groundwater and solid-waste-related activities);
- General obligation bonds;
- Funds transferred from financial assurance accounts of closed landfills entering the program; and
- Settlements from landfill-related insurance coverage.

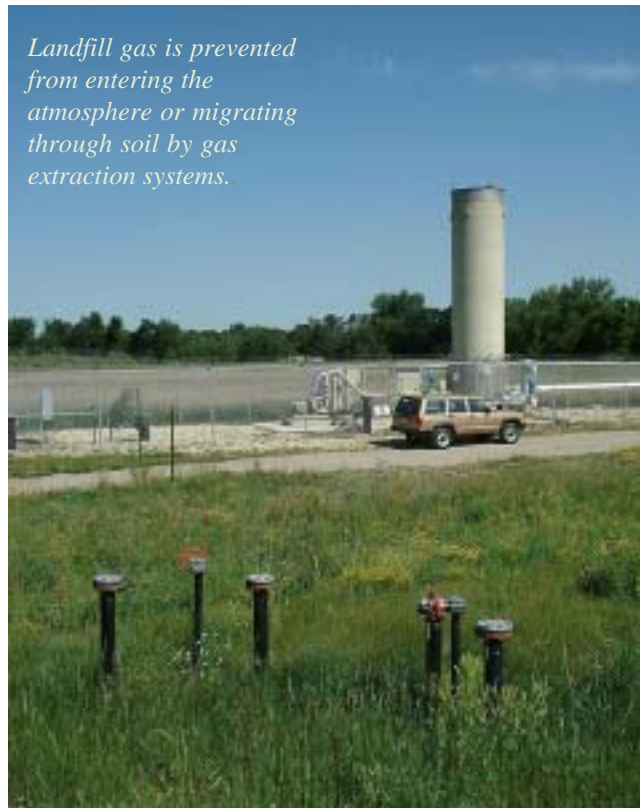
The 2003 Legislature made substantial changes to future funding for MPCA programs, including the CLP. Beginning in FY04, the CLP will be funded for non-bond activities from the Remediation Fund.

Solid Waste Management Tax and Associated Fees

Half of the revenues from the Solid Waste Management Tax (SWMT) now go into the Solid Waste Fund. The tax is composed of a 9.75 percent charge on residential-waste-collection bills; a 17 percent charge on commercial-municipal-waste-collection bills; and 60 cents per cubic yard of container capacity on industrial, demolition/construction and medical waste. Half of the SWMT and solid waste assessment (as it was called prior to January 1, 1998) collections going into the Solid Waste Fund in FY03 totaled approximately \$28,617,000.

Bond Dollars

The original legislative authorization was for \$90 million in 1994. These monies were to be used for construction of remedial systems at publicly owned closed landfills. However, Minn. Stat. 16A.642 revoked all state bonding authorizations more than



Landfill gas is prevented from entering the atmosphere or migrating through soil by gas extraction systems.

four years old, regardless of program need or original legislative intent. This resulted in approximately \$56 million of bonding authority being canceled.

In 2001, the legislature reauthorized \$20.5 million and in the 2002 session, the legislature authorized an additional \$10 million in general obligation bonds. At the present time, the total amount of bond authorization is approximately \$64 million. The MPCA is still in need of \$26 million of bonding authorization to complete construction projects.

Financial Assurance

In FY03, the owners/operators of Northeast Otter Tail landfill sent a total of \$590,996 to the Department of Revenue for deposit in the Solid Waste Fund as required for entry into the CLP. Since the inception of the CLP, including FY03, the owners or operators of 23 landfills have submitted a total of \$10,423,364 for deposit in the Solid Waste Fund.

In past fiscal years, an additional \$1,781,489 that would have been collected from Waste Management of Minnesota, Inc. (Anoka-Ramsey Municipal Sanitary Landfill) was waived because Waste Management of Minnesota, Inc. agreed to waive its

reimbursement claim from MPCA in an equal amount. As identified in Appendix A and per state statutes, a total of \$5,271,596 in financial assurance dollars have been spent on site operations and maintenance (O&M) and non-bond construction-related contractual activities.

Insurance Recovery

During the 2003 legislative session, the legislature changed the way that MPCA deposits recoveries from insurance companies under the Insurance Recovery Effort (IRE). The change appears in Minnesota Session Laws 2003, Chapter 128, Article 2, Section 30. Previously all IRE receipts had been deposited into the Solid Waste Fund. Chapter 128 repealed the statute creating the Solid Waste Fund and created a new, consolidated Remediation Fund to finance most of the MPCA's cleanup-related programs.

The new law requires that all insurance recoveries received after July 1, 2001 through June 30, 2003, (totaling \$21.6 million) be transferred to the Remediation Fund. After accounting for costs and fees due to the Special Attorneys who represent the State on the insurance claims, 50 percent of the net proceeds will be transferred into the Closed Landfill Investment Fund, which is dedicated to the long-term funding needs of the CLP.

The transfer of \$10.6 million to the Closed Landfill Investment Fund will raise the value of the fund to a total of more than \$28 million at the end of Fiscal Year 2003. Starting July 1, 2003, gross proceeds

from insurance recoveries will be deposited into the Remediation Fund and 50 percent of the net proceeds will be transferred into the Closed Landfill Investment Fund.

Expenditures

General CLP Expenditures

CLP expenditures are primarily for design, investigation, construction, operation and maintenance of landfills; reimbursements; and administration (see Table 1).

Expenditures for each landfill are itemized in Appendix B: FY03 Financial Summary on page 15.

Reimbursement

The MPCA negotiated per the 2003 Amended Landfill Agreement a one-time payment to the EPA in the amount of \$8,000 to settle a previous claim. This claim arose following negotiations of the original 1995 agreement. No other reimbursements were made during FY03.

Insurance Recovery Effort Background

The Landfill Cleanup Act authorizes the MPCA and the Attorney General's Office to seek to recover a fair share of the state's landfill cleanup costs from insurance carriers based upon insurance policies issued to responsible persons who are liable for cleanup costs under the state Superfund law. This would include insurance policyholders who owned or operated the landfills, hauled waste containing hazardous substances to the landfills, or arranged for the disposal of waste containing hazardous substances at the landfills. Under

Table 1: FY03 CLP Expenditures

Expenditures	FY03	Cumulative
Closed Landfill Program Administration	\$ 532,523	\$ 11,212,619
Design, Investigations, Construction*	\$ 14,257,884	\$ 76,170,382
Operation and Maintenance	\$ 3,441,268	\$ 21,852,554
Attorney General CLP Legal Counsel	\$ 147,779	\$ 2,101,287
Insurance Recovery (MPCA & AG)	\$ 148,619	\$ 3,384,314
EPA Reimbursement	\$ 8,000	\$ 4,014,550
Responsible Party Reimbursements	\$ 0	\$ 37,883,128
Total	\$ 18,536,073	\$ 156,618,835

*Expenditure information is based on MAPS data dated 9/4/03.

the LCA, the MPCA and Attorney General may negotiate coverage settlements directly with insurance carriers. If a carrier has had an opportunity to settle with the state and fails to do so, the state may sue the carrier directly to recover cleanup costs to the extent of the insurance coverage issued to responsible persons.

FY03 Activities

In FY03, the state completed settlements with all remaining carriers in the first insurance coverage lawsuit that was commenced in Hennepin County District Court in February 2000. The lawsuit sought to recover the state's environmental response costs for two landfills located in Anoka County (the Oak Grove and East Bethel Landfills), which were the subject of earlier settlement offers by the state.

Several important judicial decisions were handed down in this lawsuit, including a decision of the Minnesota Court of Appeals that upheld the constitutionality of the provisions of the LCA that allow the state to directly sue insurance companies for landfill cleanup-related claims, and that clarified the statute of limitations that applies to the state's landfill cleanup costs.

In September 2002, the state commenced a second insurance coverage lawsuit in Hennepin County District Court. This lawsuit seeks to recover the state's cleanup costs for the Waste Disposal Engineering Landfill in Anoka County and the St. Augusta Landfill in Stearns County. Several insurance companies that were sued in this lawsuit have settled with the state. The lawsuit is scheduled to go to trial in September 2004.

The state's settlement efforts have concentrated on trying to reach global settlements with insurance carriers. Global settlements resolve all of an insurance carrier's liability for all 106 landfills covered by the landfill insurance recovery law. The state reached global settlements with nine insurance carriers in FY03, resulting in a deposit of \$21,639,097

Leachate management depends upon state-of-the-art landfill liners, covers and collection



in the Remediation Fund and the Closed Landfill Investment Fund. The state is represented in all landfill insurance coverage litigation and in the settlement process by Covington & Burling, Special Attorneys appointed by the Attorney General.

Future Activities

The MPCA anticipates additional settlements with insurance companies in FY04, as the second coverage lawsuit moves toward trial.

Natural Resource Damages

Under the LCA, insurance carriers may request that the state's claims for natural resource damages (NRD) at any of the landfills in the CLP be included in settlements with the state. State statute defines NRD as damages to the following: "Natural resources" shall include, but not be limited to, all mineral, animal, botanical, air, water, land, timber, soil, quietude, recreational and historical resources. Scenic and aesthetic resources shall also be considered natural resources when owned by any governmental unit or agency. NRD payments received in FY03 as a result of settlements amounted to \$1,370,331. Total NRD settlements received through June 30, 2003, equal \$4,898,809.

The MPCA and the Minnesota Department of Natural Resources (DNR) are the state's co-trustees regarding the state's NRD claims. It is the DNR Commissioner's responsibility to rehabilitate, restore or acquire natural resources to remedy injuries or losses to natural resources resulting from a release of a hazardous substance. The DNR must, however, provide written notice to the legislature on how it plans to spend this money.

Information Dissemination

The MPCA continues to include information concerning the insurance recovery effort on its Web site at www.pca.state.mn.us/cleanup/landfill-closed.html. This allows for information to be reviewed quickly by various interested parties, including insurance carriers from around the world, consultants, attorneys and the general public.

The MPCA is convinced that the dissemination of information is critical to enabling the business community to realize the benefits the LCA provides them when they provide complete disposal and insurance policy information. The dissemination of information also keeps insurance carriers informed of activities conducted by the MPCA and the Attorney General's Office.

Program Activities

Binding Agreements/ Notices of Compliance

Through June 30, 2003, the program has successfully signed 107 Binding Agreements and issued 107 NOC. Table 2 below indicates those landfills which had documents executed during FY03.

**Table 2: FY03 Binding Agreements/
Notices of Compliance**

Landfill	Binding Agreement	Notice of Compliance
Cook Co.	Feb-03	
Killian	Feb-03	Mar-03
Northeast Otter Tail	Jul-02	Sep-02
FY03 Totals	3	2

Priority List Rescoring

According to the LCA, the MPCA must update the priority list each fiscal year to reflect any changes due to monitoring and remediation activities. Table 3 indicates the sites with revised classifications and scores in FY03. The classification and score for each landfill in the program can be found in Appendix B: FY03 Financial Summary on page 15.

In FY03, eight landfills were downgraded to a lower classification, while only the WDE landfill was upgraded to a higher classification. WDE was upgraded to a higher classification because a

contaminated ground-water plume was found to be moving off site. The site team decided that an additional ground-water extraction well would need to be installed to capture the plume and keep it from leaving the site. Whenever public health and/or environmental issues arise, sites may be upgraded to allow staff to remedy those issues, as is reflected in Table 3 below. In FY04, a number of landfills should be reclassified to a lower risk class based on anticipated completion of ongoing construction work.

Table 3: FY03 Scored and Revised Scores for Landfills

Site Name	Class/ Score	Revised Class/ Score	Comments
Anoka/Ramsey	B/15	D/3	Construction remedy completed
Eighty Acres	B/15	D/10	Construction remedy completed
Ironwood	B/25	D/9	Construction remedy completed
Land Investors	C/5	D/15	Monitoring data justified the classification and score reduction
Leech Lake	B/13	D/10	Construction remedy completed
Mille Lacs Co.	B/12	C/2	Construction remedy completed
Northeast Otter Tail	N.A.	D/3	New site
Rock County	C/16	D/7	Construction remedy completed
Tellijohn	B/30	D/15	Construction remedy completed
WDE	D/117	B/116	Ground-water contamination

* See class definitions on page 8.

FY03 CLP Design, Oversight and Construction Activity

Table 4 (on the following page) is a summary of FY03 CLP design, oversight, and construction activity. Table 5 illustrates how CLP activities have resulted in an overall reduction in relative risk to human health and the environment during the past nine years.

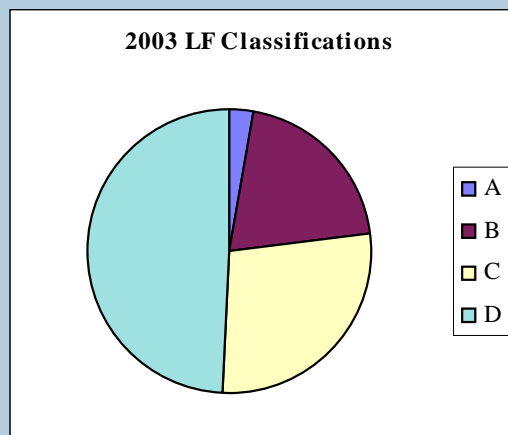
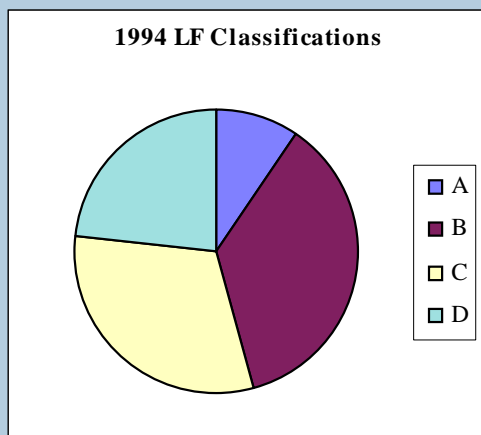
Table 4: FY03 CLP Design, Oversight, Construction and Other Activity*

Landfill	Class	Design, Construction, and Other Activities	Design, Oversight, Construction, Other	Completion Date
Albert Lea	B	Complete installation of active gas extraction system, flare, and repair settlement areas in the cover.	\$ 203,930	May-04
Anoka/Ramsey	D	Complete ground-water remediation system modification.	\$ 57,776	Jul-02
Becker Co.	A	Design ground-water treatment system.	\$ 62,487	Oct-03
Cotton	D	Complete cover maintenance.	\$ 3,335	Jun-03
Dakhue	B	Design gas collection system and flare.	\$ 2,347	Aug-03
Eighty Acres	D	Complete installation of a cover system.	\$ 1,043,486	Sep-03
Faribault	C	Re-grade access road and drainage upgrade.	\$ 15,892	May-03
Grand Rapids	B	Install active gas extraction system and flare. Complete ground-water investigation.	\$ 767,597	Oct-03
Ironwood	B	Install cover, upgrade pump-out system.	\$ 1,610,739	Mar-03
Killian	B	Site investigation and design completed in May 2003. Begin cover installation.	\$ 47,088	Oct-04
Koochiching Co.	B	Site investigation and design work completed in April 2003. Begin cover upgrade, consolidate waste, install active gas collection system and flare.	\$ 57,562	Jun-04
Kummer	B	Acquisition of buffer property.	\$ 180,594	Jun-03
Leech Lake	D	Complete passive gas venting and erosion-control system.	\$ 62,449	Sep-03
Lindenfelser	A	Complete construction of cover, active gas extraction system, and flare.	\$ 1,784,510	Jun-03
Long Prairie	D	Acquire buffer property.	\$ 90,367	Nov-02
Louisville	B	Complete construction of cover, active gas extraction system and flare.	\$ 2,940,014	Jun-03
MN Sanitation	D	Complete drainage upgrade.	\$ 69,749	May-03
Oak Grove	B	Complete installation of an active gas extraction system and flare.	\$ 864,603	Oct-02
Olmsted Co.	C	Install an active gas extraction system and flare.	\$ 109,914	May-04
Pine Lane	A	Installation of a cover, active gas extraction system and flare.	\$ 1,667,710	Oct-03
Pipestone Co.	C	Complete drainage upgrade.	\$ 33,245	Jun-03
Red Rock	D	Complete drainage upgrade.	\$ 14,067	Mar-03
Redwood Co.	C	Complete design of cover upgrade.	\$ 27,657	Apr-03
Rock Co.	D	Complete cover upgrade and passive gas venting system.	\$ 971,089	Nov-02
Sauk Centre	B	Land acquisition and easement in June 2003. Begin installation of cover.	\$ 113,055	Sep-03
St. Augusta	B	Complete installation of an active gas extraction system and flare.	\$ 717,055	May-03
Stevens Co.	B	Install passive gas venting system and drainage upgrade.	\$ 8,003	Dec-03
Tellijohn	B	Complete installation of an active gas extraction system and flare.	\$ 155,280	Nov-02
Waseca Co.	B	Oversight of contamination source identification study.	\$ 49,721	Jun-04
Washington Co.	D	Design a cascade system and study existing response actions.	\$ 62,973	Jun-03
Watonwan Co.	D	Complete installation of a cover, active gas extraction system and flare.	\$ 317,021	Mar-03
Woodlake	C	Complete cover and gas upgrade investigation.	\$ 146,571	Sep-05
TOTALS			\$ 14,257,884	32 Sites

*The costs shown in this Table are for invoices paid in FY03, not total project costs.

Table 5: Annual Changes to the Closed Landfill Priority List

Classification	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
A	9	9	9	1	2	3	4	3	3	3
B	34	39	38	38	35	33	25	28	27	22
C	29	34	34	36	34	34	34	35	31	30
D	22	24	25	31	35	36	43	41	46	53
Total Landfills	94	106	106	106	106	106	106	107	107	108



Deletion of Qualified Landfills from the National Priority List (NPL) and Permanent List of Priorities (PLP)

The EPA, under an agreement with the MPCA, has removed eight closed landfills from the NPL (federal Superfund list). Only one closed landfill, Freeway, remains on the NPL. A Binding Agreement was signed for this site during FY01, but has since been revoked due to inactivity within the specified timeframe of the BA. Before the Freeway Landfill can be eligible to be delisted from the NPL, it must once again have a valid BA and be issued a NOC.

Since its inception, the CLP has also cleared the way for the removal of 47 closed landfills from the PLP (state Superfund list). Killian will be removed from the PLP in FY04. Northeast Otter Tail was qualified during FY03. Western Lake Superior Sanitary District (WLSSD) should be qualified in FY04. At the close of FY03, only three closed landfills remain on the PLP: Freeway, Killian and WLSSD.

Definitions of Landfill Classes

- Class A = immediate public health and/or environmental concerns.
- Class B = pose no immediate public health and/or environmental threat, but require remediation to control gas migration, ground water contamination, and/or to correct a severely inadequate or nonexistent cover.
- Class C = pose no immediate public health and/or environmental threat, but lack a cover that meets current MPCA standards.
- Class D = pose no threat to public health or the environment and, in most cases, meet current standards for closure.

Site Annual Reports

Every year, the MPCA site teams (comprised of an assigned project leader, an engineer, a hydrologist and an on-site inspector) prepare an annual report for each landfill in the CLP. The annual report is divided into three major sections:

- Site Background contains basic information on the landfill;
- Site Engineering Summary discusses cover maintenance/construction, leachate management and monitoring, and landfill gas management and monitoring; and
- Site Environmental Monitoring Summary discusses ground-water monitoring, surface-water monitoring and ground-water remediation system management and maintenance.

The purpose of the landfill-specific annual report is to reflect current site characteristics, to describe landfill reclassification/rescoring up or down in priority, staff contacts, and recommendations for the future. These landfill reports are provided to local units of government and private property owners for their information and pursuant to state law. The site annual reports for landfills located in the Metro area and 18 of the larger Greater Minnesota sites are also available on the MPCA's Web site at www.pca.state.mn.us/cleanup/landfill-closed.html.

State Ownership of Landfills and Adjacent Property

The MPCA has accepted ownership of 27 landfills across the state as part of the site's entry into the CLP or via tax forfeiture. This has been done in those cases where state ownership provided the best method of controlling access, managing the facility, and providing the greatest possible environmental protection and safety for the citizens living near the facility. The MPCA accepts ownership of landfills in situations in which the landfill's past owners do not have the resources to adequately maintain the landfill. In addition, as a part of providing for adequate human health and safety, adjacent property was acquired at three landfills.

Environmental Indicators

There are two environmental indicators that are measured for the CLP, the reduction of leachate generated and the escape of landfill gas to the environment. Both have the potential to cause significant risk to public health and environmental damage. The MPCA staff uses environmental indicators to measure the progress of the CLP and better manage the program.

Each year, staff will be tracking how well the CLP is doing at reducing, to the extent possible, the generation of leachate for the landfills in the program. Totally eliminating leachate generation is impossible given current technology, knowledge, and economics. However, there are several things that can be done to reduce the amount of leachate each landfill generates and thereby minimize the potential damage leachate can cause to the state's ground water. Similarly, the total elimination of landfill gas escaping to the environment is not currently possible. However, by installing active gas collection systems at larger sites, significant reductions in landfill gas emissions directly to the atmosphere can be achieved.

Environmental Data Management System (EDMS) Database

The Environmental Data Management System (EDMS) is a database designed specifically to store relevant data for all of the landfills currently in an active status in the CLP. Development of EDMS became crucial due to the enormous volume of data coming in to the staff and the need to insure the integrity of environmental monitoring data.

The May 2003 issue of *Waste Age Magazine* highlighted the CLP's EDMS computer program in an article entitled, "Computing Landfill Data." Over a two-year period, the CLP staff worked with two different contractors to design and implement the EDMS. It's an "automated system that organizes and graphically displays environmental monitoring data, including analytical and field measurements of ground and surface water, leachate, landfill gas (LFG) condensate, LFG emissions and flare system performance."

The data are electronically submitted by contractors and are validated prior to integration into the system. The EDMS currently contains 2.5 million records for the 108 closed landfills. EDMS assists staff with reviews, reports and public inquiries in a timely and accurate fashion. The main purpose for the system is to assist the technical staff in tracking trends and identifying problems using data available on their individual computer screens.

Gopher State One Call

The MPCA staff was notified by the Office of Pipeline Safety of the requirement to register its underground utilities with Gopher State One Call (GSOC). In general, all private utilities located in public right-of-ways (PROWs) need to be registered with GSOC. Some examples of utilities MPCA owns that could be located in PROWs are electrical lines, phone/communication lines, water lines, leachate/sewage mains, pump-out forcemains and landfill gas piping. Currently, the CLP is aware of four sites that need to be registered with GSOC. The MPCA is conducting property surveys at these sites to identify utility locations.

Program Contracts

Land Management Plans

The LCA requires the MPCA to develop a Land Management Plan for each landfill in the Closed Landfill Program. Because the migration of landfill gas and the presence of ground-water contamination sometimes pose a threat to the health and safety of persons living or using land near these landfills, future use of the landfill and surrounding property needs to be planned carefully and responsibly. The LCA also requires local governments to make their local land-use plans consistent with the plan developed by the MPCA.

The purpose, therefore, of each Land Management Plan is to:

- protect the integrity of the landfill's remediation systems;
- protect human health and the environment at, and in the vicinity of, the landfill;
- ensure the cleanup and future operation and maintenance of the remediation systems at these landfills are successful; and
- accommodate local government needs and desires for use of land where health and safety requirements can be met.

This can be accomplished not only through the state's cleanup efforts but also through the adoption and implementation of a site-specific Land Management Plan through local zoning and other land-use measures that are consistent with public health and safety needs.

Essentially, the Land Management Plan will compare the MPCA's land-use expectations at the qualified facility to the land-use designations prescribed by the local unit of government. If these are in conflict, then the local government's land-use designations will need to be modified to become compatible with the MPCA's land-use plans. Also, the MPCA will provide local units of government with information regarding landfill gas and ground-water problems, particularly off-site problems, and will recommend possible land-use restrictions that will protect human health and safety. Should conditions at or adjacent to the landfill change, those changes would be reflected in the annual report. The annual report will be the MPCA's tool to notify the local units of government of any changes to the have occurred at the site since the Land Management Plan had been developed and put into place.

During FY03, the MPCA selected two planning consultants to each develop a Pilot Land Management Plan. Pilot Land Management Plans at the Waste Disposal Engineering Landfill in Anoka County and the Dakhue Landfill in Dakota County are ongoing. The pilot projects will allow the MPCA to test and possibly modify the process by which Land Management Plans will be developed and to ensure that an effective product is created.

Other Contracts and Property Purchases

Once the MPCA issues a NOC at a site, all operation and maintenance activities become the state's responsibility. This includes contracting for general and technical maintenance, as well as sampling and analytical work. The CLP spent \$3,084,307 on O&M related activities. In FY03, the CLP also spent \$356,961 to acquire property at or adjacent to Long Prairie, Kummer and Sauk Centre landfills. In FY03, a combined amount of \$3,441,268 was spent on these activities.



Looking Ahead to FY04

Proposed New Projects

MPCA staff anticipates the CLP will have activities at the following landfills during FY04:

Landfill	Planned Activities
Albert Lea:	Complete installation of an active gas extraction system and flare.
Anoka/Ramsey:	Install a new flare.
Becker Co.:	Complete installation of ground-water treatment system.
Benson:	Install 12 passive gas vents.
Carlton Co. S:	Complete installation of a passive gas venting system.
Cook Area:	Complete installation of a passive gas venting system.
Dakhue:	Complete installation of an active gas extraction system and flare.
East Bethel:	Complete design for cover repair and relocation of some waste.
East Mesaba:	Complete design to relocate waste from McKinley LF, reshape and add new cover. Construction should begin in FY04.
Gofer:	Complete design of the cover and upgrade of the passive gas venting system.
Grand Rapids:	Complete installation of an active gas extraction system, flare, and ground water investigation.
Hibbing:	Complete design for new cover and an active gas extraction system. Construction scheduled to begin in FY04.
Hudson:	Complete installation of a passive gas venting system.
Iron Range:	Complete installation of a passive gas venting system.
Killian:	Complete cover installation.
Koochiching Co.	Complete cover upgrade, consolidate waste, installation of an active gas extraction system and flare.
McKinley:	Complete relocation design work.
Meeker:	Design and begin construction to upgrade a non-compliant cell.
Olmsted Co.:	Complete installation of an active gas extraction system and flare.
Pine Lane:	Complete installation of a new cover, an active gas extraction system, and flare.
Redwood Co.:	Complete installation of the cover.
Sauk Centre:	Complete cover installation.
Sibley Co.:	Complete design of the cover and upgrade of the passive gas venting system.
Stevens Co.:	Complete installation of a passive gas venting system.
Waseca Co.:	Complete installation of the cover.
Washington Co.:	Complete design for upgrade of the ground-water treatment system and begin construction.
WDE:	Install a lined treatment basin.
Woodlake:	Complete design of replacement cover, leachate and gas-collection systems and begin construction, if funding is available.

Emerging Issues

Landfill Gas to Energy

Landfill gas was discussed in the 1997 legislative report as an emerging issue for the CLP. Currently, most landfills in the CLP have some type of passive gas extraction system. Thirteen landfills currently have an active gas extraction system. Another twelve landfills have been identified as having a large enough volume of waste to support an active gas extraction system. Active landfill gas extraction systems are increasingly being considered for the following beneficial uses:

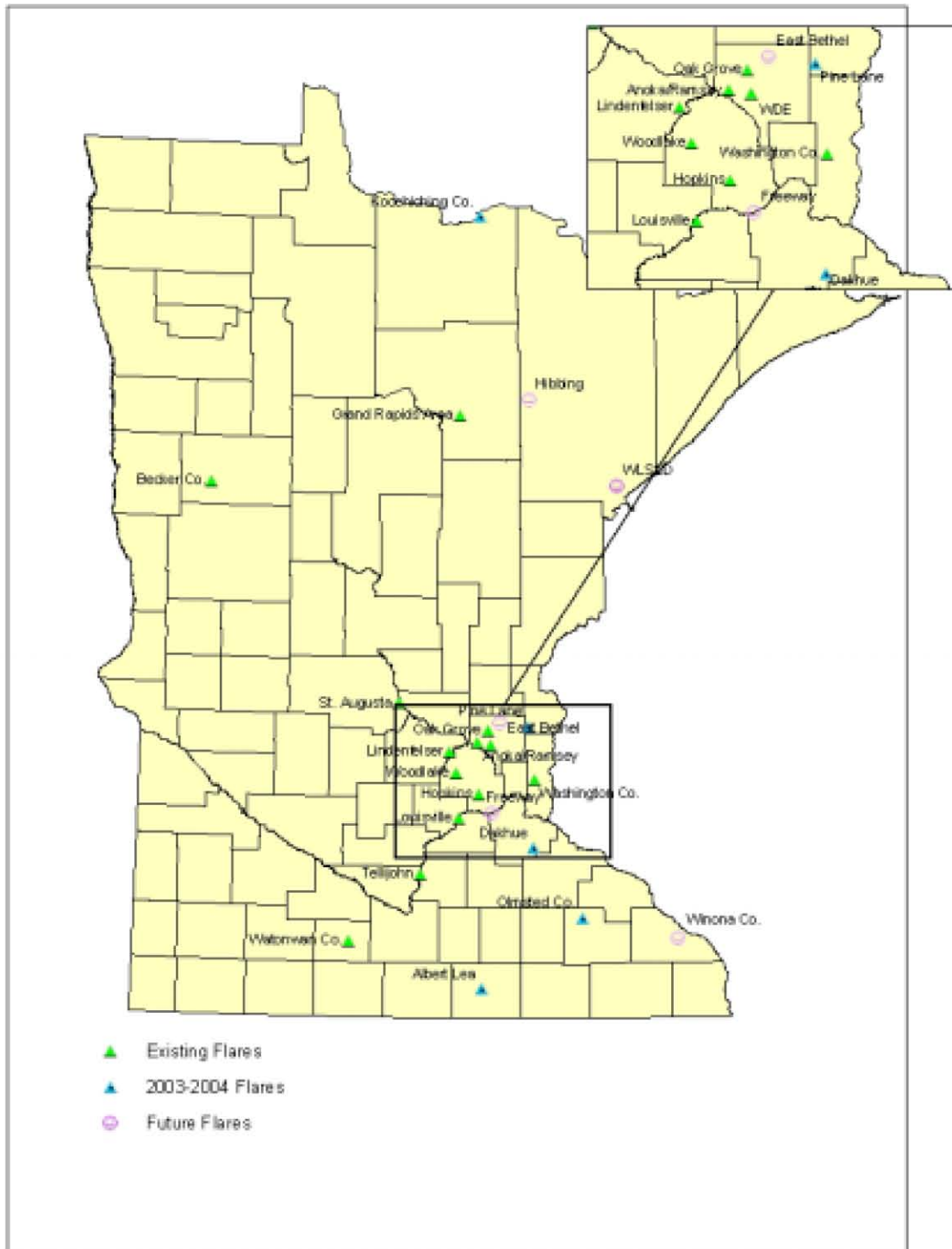
- reduction in methane migration and vegetative loss,
- greenhouse gas reduction,

- reduction of volatile organic compounds migrating to ground water, and
- for gas-to-energy use.

Active gas extraction systems and flares were completed and went on-line during FY03 at Grand Rapids, Lindenfelser, Louisville, Oak Grove and St. Augusta. Additional active gas extraction systems and flares should be completed and go on-line in FY04 at Albert Lea, Dakhue, Olmsted County and Pine Lane. All active gas systems completed and proposed can be found on the map on page 12.

With advancement in electrical generation technology, such as microturbines, and maturation of the Closed

Closed Landfill Program Active Gas System Locations



Landfill Program, it has become evident that direct use of this flared landfill gas as a boiler fuel or for production of electricity may provide beneficial use for this renewable energy source.

Currently, it is estimated that if all landfills where active gas extraction systems are either completed or planned were developed for electrical generation, these landfills would have the capacity to produce as much as 8-10 MW of electricity. This would provide sufficient electricity for the annual needs of more than 9,300 homes.

Table 6: FY03 Landfill Gas Data for the CLP

Landfill	Gas Flow (cfm)	Estimated Pounds of Methane Destroyed
Anoka	840	9,401,420
Becker Co.	70	444,690
Grand Rapids	120	385,410
Hopkins	70	457,060
Lindenfelser	70	218,560
Louisville	400	5,620,000
Oak Grove	100	351,250
St. Augusta	110	73,390
Tellijohn	100	819,580
Washington Co.	150	1,399,700
Watsonwan Co.	90	948,380
WDE	160	1,495,750
Woodlake	880	7,240,390
Total (lbs/yr)		28,855,580

The CLP is currently exploring several options to maximize development of this renewable energy resource. The CLP has begun working with consultants to define the economic and technical feasibility of developing various landfill gas-to-energy projects at those landfills for which those projects are best suited. Subsequent to the feasibility study results, the CLP intends to develop several projects to demonstrate the feasibility of landfill gas-to-energy.

On November 4, 2003, the MPCA co-hosted a conference with the EPA promoting landfill gas-to-energy use. This conference was held in conjunction with the EPA's Landfill Methane Outreach Program (LMOP).

This conference brought together federal and state representatives, legislators, landfill operators and other affected members of the business community to discuss the benefits and impediments to developing landfill gas-to-energy in Minnesota. One benefit discussed is the potential use of funds resulting from such projects to defray remediation costs.

Table 6 shows the estimated amount of methane destroyed at CLP sites that currently have active gas extraction systems and flares in place. Currently, it is estimated that the CLP is destroying about 10 percent of methane produced by all closed and open solid waste landfills in Minnesota.

Fire Retardant Research

In recent years, scientists have observed undesirable consequences from the widespread use of flame retardants such as Polybrominated Diphenyl Ethers (PBDEs). PBDEs are used as additive flame retardants in plastics, textiles, coatings and electrical components in products such as computers, TVs, electrical appliances, furniture, building materials, carpets and automobiles. These chemicals have been found to persist in the environment and bioaccumulate in humans and wildlife. Their properties are similar to PCBs and dioxins, so there is concern regarding their environmental occurrence and potential toxicity.

During 2001, an MPCA research scientist conducted a study, "Occurrence and Concentrations of Polybrominated Diphenyl Ethers (PBDEs) in Minnesota's Environment." This was the first study to investigate PBDE contamination in different environmental matrices in Minnesota. The targeted systems were landfill leachates, wastewater treatment plant sludges and effluents, as well as fish and sediment collected from main rivers below wastewater treatment plant effluent discharges.

The MPCA staff will oversee the sampling of various landfill constituents in 2004, looking for the presence of PBDEs at two closed landfills and one open landfill (Pine Bend). Samples of leachate and/or condensate, air (particulate and gas after flare), and ground water at one up- and two down-gradient wells will be analyzed for PBDEs. Additional sampling of leachate to a wastewater treatment plant and its effluent both up and down stream from the discharge point may also be analyzed. If the origins and prevalence of PBDEs can be determined, measures can be devised to remove it from the environment.

Program Contacts

For more information about the CLP, contact:

- Doug Day, Supervisor, Landfill Cleanup Program, (651) 297-1780, toll-free/TTY (800) 657-3864.
- Michael Kanner, Manager, Remediation Programs, (651) 297-8564.

Appendix A: Financial Assurance

Site Name	Financial Assurance Received	Amount Spent in FY03	Total Amount Spent	Financial Assurance Balance
Anoka-Ramsey*	\$1,781,489	\$0	\$1,781,489	\$0
Cass Co. (L-R)	\$84,497	\$6,567	\$29,744	\$54,752
Cass Co. (W-H)	\$84,497	\$18,083	\$51,279	\$33,218
Chippewa County	\$362,516	\$8,821	\$82,494	\$280,022
Dakhue	\$150,411	\$0	\$150,411	\$0
Dodge County	\$1,189,672	\$6,336	\$117,535	\$1,072,137
East Mesaba	\$696,244	\$8,015	\$207,071	\$489,173
French Lake	\$14,931	\$0	\$14,931	\$0
Grand Rapids	\$1,750,000	\$806,702	\$1,139,374	\$610,626
Hibbing	\$468,020	\$11,460	\$114,320	\$353,700
Isanti-Chisago	\$333,839	\$0	\$333,839	\$0
Lindenfelser	\$400,827	\$0	\$400,827	\$0
Long Prairie	\$72,973	\$24,245	\$72,973	\$0
Louisville	\$337,130	\$0	\$337,130	\$0
Meeker County	\$378,002	\$13,125	\$132,626	\$245,376
Northeast Otter Tail	\$590,996	\$3,868	\$3,868	\$587,128
Paynesville	\$111,641	\$0	\$111,641	\$0
Pipestone County	\$16,622	\$0	\$16,622	\$0
Redwood County	\$81,689	\$0	\$81,689	\$0
Sun Prairie	\$10,725	\$0	\$10,725	\$0
Tellijohn	\$351,406	\$21,213	\$351,406	\$0
Winona	\$1,586,726	\$74,261	\$161,090	\$1,425,636
Woodlake	\$1,350,000	\$335,203	\$1,350,000	\$0
Total	\$10,423,364	\$1,337,898	\$5,271,596	\$5,151,767

*An additional \$1,781,489 that would have been collected from Waste Management of Minnesota, Inc., (Anoka-Ramsey Municipal Sanitary Landfill) was waived because Anoka-Ramsey Municipal Sanitary Landfill agreed to waive its reimbursement claim from MPCA in an equal amount.

Appendix B: FY03 Financial Summary

Landfill Name	Class & Score	MPCA Salary & Expenses	Attorney General Support	Operation & Maintenance	Design/ Construction Non-Bond	Design/ Construction Bond	Landfill Totals
ADAMS (Relocated)	D/00	\$ 745					\$ 745
AITKIN AREA	D/26	\$ 1,815		\$ 3,261			\$ 5,076
ALBERT LEA	B/25	\$ 15,649		\$ 19,383		\$ 203,930	\$ 238,962
ANDERSON-SEBEKA	D/02	\$ 903		\$ 8,745			\$ 9,648
ANOKA-RAMSEY	D/03	\$ 21,872	\$ 10,424	\$ 464,675		\$ 57,776	\$ 554,747
BARNESVILLE	C/01	\$ 204	\$ 28	\$ 3,843			\$ 4,075
BATTLE LAKE	D/01	\$ 498		\$ 7,736			\$ 8,234
BECKER COUNTY	A/29	\$ 4,324		\$ 178,903		\$ 62,487	\$ 245,714
BENSON	D/03	\$ 456		\$ 2,600			\$ 3,056
BIG STONE COUNTY	D/02	\$ 848		\$ 4,310			\$ 5,158
BROOKSTON AREA	C/02	\$ 1,121		\$ 1,618			\$ 2,740
BUECKERS #1	D/04	\$ 1,320		\$ 2,546			\$ 3,866
BUECKERS #2 (Relocated)	D/00						
CARLTON COUNTY #2	D/05	\$ 6,167	\$ 147	\$ 13,137			\$ 19,451
CARLTON COUNTY SOUTH	B/10	\$ 679		\$ 4,193			\$ 4,872
CASS COUNTY (L-R)	D/05	\$ 98		\$ 6,567			\$ 6,665
CASS COUNTY (W-H)	D/02	\$ 130	\$ 9	\$ 18,083			\$ 18,222
CHIPPEWA COUNTY	D/11	\$ 611		\$ 8,821			\$ 9,432
COOK (AREA)	D/04	\$ 1,430		\$ 5,986			\$ 7,416
COOK COUNTY	NEW	\$ 155	\$ 1,712				\$ 1,867
COTTON	D/05	\$ 1,299		\$ 3,336		\$ 3,335	\$ 7,969
CROSBY	D/02	\$ 539	\$ 543	\$ 6,360			\$ 7,442
CROSBY PROPERTY	B/07	\$ 3,301	\$ 18	\$ 45,582			\$ 48,902
DAKHUE	B/11	\$ 12,680	\$ 193	\$ 32,189		\$ 2,347	\$ 47,410
DODGE COUNTY	D/30	\$ 2,821	\$ 414	\$ 6,336			\$ 9,571
EAST BETHEL	B/40	\$ 10,536	\$ 166	\$ 97,006			\$ 107,708
EAST MESABA	C/18	\$ 840		\$ 8,015			\$ 8,855
EIGHTY ACRE	D/10	\$ 5,514		\$ 11,423		\$ 1,043,486	\$ 1,060,424
FARIBAULT COUNTY	C/15	\$ 5,094		\$ 9,319		\$ 15,892	\$ 30,305
FIFTY LAKES	D/04	\$ 667		\$ 8,324			\$ 8,991
FLOODWOOD	C/05	\$ 373		\$ 4,379			\$ 4,751
FLYING CLOUD	C/12	\$ 4,326	\$ 175	\$ 61,153			\$ 65,653
FREEWAY	B/100	\$ 3,268	\$ 20,176				\$ 23,444
FRENCH LAKE	D/03	\$ 2,318		\$ 14,246			\$ 16,565
GEISLERS	D/02	\$ 291		\$ 2,578			\$ 2,870
GOFER	C/17	\$ 533		\$ 8,576			\$ 9,109
GOODHUE COOP	C/11	\$ 143		\$ 4,578			\$ 4,721
GRAND RAPIDS	B/36	\$ 3,085	\$ 74	\$ 39,105	\$ 95,897	\$ 671,700	\$ 809,861
GREENBUSH (Relocated)	D/00	\$ 62					\$ 62
HANSEN	C/14	\$ 564		\$ 3,321			\$ 3,885
HIBBING	D/07	\$ 848		\$ 11,460			\$ 12,308
HICKORY GROVE	D/02	\$ 461		\$ 3,020			\$ 3,481
HIGHWAY 77	C/02	\$ 368		\$ 3,739			\$ 4,107
HOPKINS	B/22	\$ 6,349	\$ 18	\$ 126,670			\$ 133,038

Landfill Name	Class & Score	MPCA Salary & Expenses	Attorney General Support	Operation & Maintenance	Design/ Construction Non-Bond	Design/ Construction Bond	Landfill Totals
HOUSTON COUNTY	D/25	\$ 1,237		\$ 19,299			\$ 20,536
HOYT LAKES	C/03	\$ 306		\$ 3,680			\$ 3,986
HUDSON	C/05	\$ 225		\$ 10,013			\$ 10,238
IRON RANGE	C/04	\$ 988		\$ 4,189			\$ 5,177
IRONWOOD	D/09	\$ 21,784	\$ 156	\$ 55,153	\$ 1,610,739		\$ 1,687,831
ISANTI-CHISAGO	D/11	\$ 3,623	\$ 18	\$ 73,549			\$ 77,191
JACKSON COUNTY	C/06	\$ 464		\$ 2,917			\$ 3,381
JOHNSON BROS.	C/11	\$ 412	\$ 184	\$ 7,271			\$ 7,867
KARLSTAD	C/04	\$ 392		\$ 1,278			\$ 1,670
KILLIAN	B/05	\$ 1,005	\$ 2,889	\$ 7,438	\$ 47,088		\$ 58,419
KLUVER	B/15	\$ 483	\$ 230	\$ 13,528			\$ 14,241
KOOCHICHING COUNTY	B/24	\$ 4,507	\$ 193	\$ 179,055		\$ 57,562	\$ 241,317
KORF BROS.	D/15	\$ 987		\$ 8,306			\$ 9,293
KUMMER	B/17	\$ 1,302	\$ 4,775	\$ 23,965	\$ 180,594		\$ 210,636
LACRESCENT	NEW	\$ 5,141	\$ 74	\$ 1,216			\$ 6,430
LAGRAND	C/06	\$ 138		\$ 1,972			\$ 2,110
LAKE COUNTY	C/15	\$ 387	\$ 138	\$ 4,863			\$ 5,388
LAKE OF THE WOODS COUNTY	C/08	\$ 617		\$ 8,214			\$ 8,831
LAND INVESTORS, INC. (Relocated/GW monitoring)	D/15	\$ 1,384		\$ 5,517			\$ 6,901
LEECH LAKE	D/10	\$ 2,789	\$ 221	\$ 3,117		\$ 62,449	\$ 68,575
Leslie Benson Dump	NEW	\$ 5,478	\$ 1,509				\$ 6,987
LINCOLN COUNTY (Relocated)	D/02	\$ 68					\$ 68
LINDALA	D/11	\$ 1,805		\$ 13,787			\$ 15,592
LINDENFELSER	A/38	\$ 22,185		\$ 22,936	\$ 98,802	\$ 1,685,708	\$ 1,829,632
LONG PRAIRIE	D/07	\$ 434	\$ 6,845	\$ 1,208	\$ 90,367		\$ 98,854
LOUISVILLE	B/40	\$ 30,487	\$ 55	\$ 15,002	\$ 2,940,014		\$ 2,985,558
MAHNOMEN COUNTY	C/10	\$ 1,152		\$ 9,991			\$ 11,143
MANKATO	D/23	\$ 632		\$ 3,310			\$ 3,942
MAPLE	D/23	\$ 504		\$ 7,011			\$ 7,515
MCKINLEY	C/04	\$ 195		\$ 1,394			\$ 1,589
MEEKER COUNTY	C/13	\$ 753		\$ 13,125			\$ 13,878
MILLE LACS COUNTY	C/02	\$ 795		\$ 1,927			\$ 2,722
MN SANITATION	D/07	\$ 3,562		\$ 3,200	\$ 69,749		\$ 76,511
MURRAY COUNTY	D/105	\$ 2,178		\$ 15,889			\$ 18,067
NORTHEAST OTTER TAIL	D/03	\$ 522	\$ 672	\$ 3,868			\$ 5,061
NORTHOME	D/03	\$ 783		\$ 6,178			\$ 6,962
NORTHWEST ANGLE	B/02	\$ 327		\$ 2,151			\$ 2,477
NORTHWOODS	D/09	\$ 2,036		\$ 10,375			\$ 12,411
OAK GROVE	B/16	\$ 16,815		\$ 25,717	\$ 98,979	\$ 765,624	\$ 907,135
OLMSTED COUNTY	C/13	\$ 22,523	\$ 1,472	\$ 81,037	\$ 109,914		\$ 214,945
ORR	B/05	\$ 129					\$ 129
PAYNESVILLE	D/07	\$ 1,572	\$ 28	\$ 2,846			\$ 4,445
PICKETT	B/03	\$ 904	\$ 37	\$ 16,236			\$ 17,176
PINE LANE	A/20	\$ 43,545	\$ 598	\$ 14,911	\$ 97,896	\$ 1,569,814	\$ 1,726,763
PIPESTONE COUNTY	C/08	\$ 2,815		\$ 2,092	\$ 33,245		\$ 38,151

Landfill Name	Class & Score	MPCA Salary & Expenses	Attorney General Support	Operation & Maintenance	Design/ Construction Non-Bond	Design/ Construction Bond	Landfill Totals
PORTAGE MOD. (Relocated)	D/00			\$ 1,836			\$ 1,836
RED ROCK	D/26	\$ 3,909		\$ 19,957		\$ 14,067	\$ 37,932
REDWOOD COUNTY	C/08	\$ 25,851		\$ 11,521		\$ 27,657	\$ 65,029
ROCK COUNTY	D/07	\$ 18,200		\$ 14,672		\$ 971,089	\$ 1,003,962
SALOL/ROSEAU	D/04	\$ 800	\$ 276	\$ 12,997			\$ 14,072
SAUK CENTRE	B/22	\$ 7,293	\$ 6,284	\$ 7,378	\$ 86,281	\$ 26,775	\$ 134,009
SIBLEY COUNTY	C/07	\$ 337		\$ 6,892			\$ 7,229
ST. AUGUSTA	B/21	\$ 9,160	\$ 74	\$ 14,321	\$ 95,270	\$ 621,785	\$ 740,610
STEVENS COUNTY	B/30	\$ 3,038		\$ 8,589	\$ 8,003		\$ 19,630
SUN PRAIRIE	D/22	\$ 2,403		\$ 31,372			\$ 33,776
TELLIJOHN	D/15	\$ 9,844	\$ 175	\$ 65,134	\$ 155,280		\$ 230,433
VERMILLION DAM (Relocated)	D/00						
VERMILLION MOD.	D/11	\$ 847		\$ 5,150			\$ 5,997
WABASHA COUNTY	D/11	\$ 938	\$ 754	\$ 12,837			\$ 14,529
WADENA	D/05	\$ 131		\$ 7,439			\$ 7,569
WASECA COUNTY	B/20	\$ 8,561		\$ 30,981	\$ 49,721		\$ 89,263
WASHINGTON COUNTY	D/05	\$ 13,411		\$ 154,029	\$ 62,973		\$ 230,413
WATONWAN COUNTY	D/06	\$ 5,236		\$ 55,313		\$ 317,021	\$ 377,571
WASTE DISPOSAL ENG (WDE)	B/116	\$ 16,662	\$ 3,376	\$ 372,282			\$ 392,320
WINONA COUNTY	C/23	\$ 2,119	\$ 55	\$ 74,261			\$ 76,435
WLSSD	NEW	\$ 13,321	\$ 3,744	\$ 556			\$ 17,621
WOODLAKE	C/08	\$ 38,782	\$ 37	\$ 404,283	\$ 120,611	\$ 25,961	\$ 589,673
YELLOW MEDICINE COUNTY	D/20	\$ 1,395		\$ 6,789			\$ 8,184
Program Administration/Maint		\$ 14,609	\$ 78,815	\$ 148,827	\$ -	\$ -	\$ 242,251
GRAND TOTALS		\$ 532,523	\$ 147,779	\$ 3,441,268	\$ 6,051,421	\$ 8,206,463	\$18,379,454

Appendix C: CLP State Ownership of Landfills and Adjacent Property

SITE NAME*	County	Landfill (Acres)	Adj Property (Acres)	Donated (Y/N)	When Acquired
ANDERSON/SEBEKA	WADENA	27		Y	in process
ANOKA/RAMSEY	ANOKA	320		Y	6/30/1998
Anoka/Ramsey Buffer	ANOKA		23.26	N	12/7/2001
BUECKERS #1	STEARNS	17	13	Y	9/23/1994
DAKHUE	DAKOTA	40		Y	11/1/1996
EAST BETHEL	ANOKA	60		Y	7/22/1999
EAST MESABA	ST LOUIS	128		Y	12/31/1996
FRENCHLAKE	WRIGHT	11		N	8/16/1996
French Lake Buffer	WRIGHT		69	N	5/24/1996
ISANTI/CHISAGO	ISANTI	40		Y	8/25/1997
Kummer Buffer	BELTRAMI		7.45	N	12/3/1996
Kummer Buffer	BELTRAMI			N	6/1/2003
LA GRANDE	DOUGLAS	80		Y	6/25/1997
LAND INVESTORS	BENTON	8.6		Y	6/30/1998
LEECHLAKE	HUBBARD	60		Y	6/17/1997
LINDALA	WRIGHT	60		Y	3/6/2000
Lindala Buffer	WRIGHT		23	Y	5/28/1999
LINDENFELSER	WRIGHT	60		Y	4/12/2000
Lindenfelser Buffer	WRIGHT		10.8	N	4/12/2000
Long Prairie Buffer	TODD		80	N	11/1/2002
OAK GROVE	ANOKA	160		Y	1/27/2000
Oak Grove Buffer (3 properties)	ANOKA		5.71	N	9/26/1996
OLMSTED	OLMSTED	290		Y	2/27/1996
PAYNESVILLE	STEARNS	56		Y	in process
PICKETT	HUBBARD	16.17		Y	5/31/2002
PINE LANE	CHISAGO	44.3		Y	12/20/2001
Pine Lane Buffer	CHISAGO		22.35	N	12/20/2001
PIPESTONE	PIPESTONE	40		Y	9/13/1996
RED ROCK	MOWER	80		Y	12/26/1996
Red Rock Buffer	MOWER		80.52	N	6/18/1997
SALOL	ROSEAU	101.5		Y	12/23/1996
Sauk Centre Buffer	STEARNS		10.81	N	6/26/2003
Sauk Centre Buffer	STEARNS		3.19	N	7/8/2003
STAUGUSTA	STEARNS	48		Y	6/30/1998
St. Aug. Buffer/McConnell	STEARNS		35	N	12/21/1996
SUN PRAIRIE	LESUEUR	80		Y	6/30/1998
WABASH COUNTY	WABASHA	29		Y	in process
Washington Co. Buffer	WASHINGTON		20	N	in process
WDE Buffer	ANOKA		5.5	N	1/2/2002
WOODLAKE	HENNEPIN	85		Y	5/11/2000
Woodlake Buffer	HENNEPIN		110	Y	5/17/2000

TOTALS: 1,941.6 519.6

*(Site names in upper case include landfill permitted areas. Site names in lower case are buffer areas adjacent to or surrounding the landfill.)



Minnesota Pollution Control Agency

Regional Offices

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- MPCA Duluth Office
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- MPCA Mankato Office
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- MPCA Marshall Office
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