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Assessment of Wisconsin's Groundwater Monitoring Plan Program for Active Non-Approved Landfills (1985-1990)

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August, 1992

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Active Non-Approved Landfills (1985-1990)**

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Secretary

Open Letter to Wisconsin State Legislators, Legislative Audit Bureau, DNR Staff, and Interested Individuals:

SUBJECT: Wisconsin's Groundwater Monitoring Plan Program (1985-1990)

The following assessment was initiated by a September 1990 audit of Wisconsin's groundwater protection program. It evaluates the effectiveness of the former program for requiring groundwater monitoring at older unlined landfills that were still active.

The groundwater monitoring data at the selected landfills were analyzed to estimate the extent of contamination for the landfills as a group. The conclusions and recommendations outline what further assessment of currently unmonitored sites may be warranted.

If you have any questions about the report, please contact Barbara Gear at (608) 267-3548 or Jack Connelly at (608) 267-7574.

Sincerely,

Lyman F. Wible, Administrator
Division of Environmental Quality

LFW:lkp

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Ken Potter

Executive Summary

In 1984, the Wisconsin State legislature set up a system for implementing groundwater protection standards, which allowed the Wisconsin Department of Natural Resources to require solid waste facilities to install groundwater monitoring systems as a condition of their relicensure. This system was known as the Groundwater Monitoring Plan (GWM) program. From 1985-1990 district solid waste investigators chose 156 solid waste facilities that were most likely to be contaminating groundwater, based on a set of criteria.

By this process, the Department of Natural Resources was able to initiate groundwater monitoring at 123 sites. The majority of the chosen sites were medium-sized (50,000-500,000 cubic yards) and at least 20 years old. Some districts chose more sites than others, but the sites were fairly well distributed throughout the State. By 1992, most of the sites were no longer accepting waste.

In this study all of the sites with sufficient groundwater monitoring data were analyzed for contamination using three methods. The percentage of wells impacted (PWI) method is a comparison of limits set for six parameters and the median and interquartile range of sample values for each well at a facility. Of the 85 sites with sufficient sampling data, 29 had a PWI of 75% or greater and 49 sites had a PWI of 50% or greater. Only ten sites showed no well impacts.

The other two methods of analysis involved identifying all sites with volatile organic compound (VOC) detections and all wells with greater than one exceedance of the Preventative Action Limit for chloride in the last four sampling periods. Twenty-seven sites had VOC detections and fifteen sites had more than ten detections. Only nine sites had greater than one well with chloride exceedance.

CONCLUSIONS

1. Application of the criteria used to choose sites changed over time as the number of potential sites decreased and district personnel increased.
2. A significant number of the sites show evidence of some type of groundwater contamination, based on the results of the three contamination evaluation methods used in this study.

EVALUATION OF GWM PROGRAM

The GWM Plan Program has had a significant effect on the amount of groundwater monitoring data collected for small unengineered landfills and the amount of data in Wisconsin's groundwater database in general. The successes of and problems with the program are listed below.

A. Successes of GWM Program

1. Approximately 26% (123 of 478) of the solid waste facilities, currently reporting groundwater monitoring data in Wisconsin, began reporting as a result of the GWM Plan Program which required monitoring as a condition of relicensure.
2. Over 75% of the 156 sites chosen to monitor as a condition of relicensure are currently monitoring or are preparing to monitor in the near future.
3. The criteria used to choose the sites were effective for identification of problem sites, given that the majority of the sites required to monitor have shown evidence of groundwater contamination problems.

B. Problems with GWM Program

1. The variation between districts in the number of sites chosen and the number of these sites that were allowed to close without monitoring suggests that implementation of the program may not have been uniform.
2. It is likely that more sites could have been chosen during the program, but staff limitations did not allow for selection and follow-up of additional sites.
3. At a number of the GWM sites where the groundwater data indicates there may be contamination, complete follow-up investigations have not taken place due to staff limitations.

RECOMMENDATIONS

A. Follow Up for GWM Sites

1. When sufficient data are available, use the PWI method to estimate the contamination at all GWM sites that have not been ranked.
2. Follow-up on all sites that have monitoring and exhibit signs of groundwater contamination. These sites should be added to the Solid Waste Management Section's Groundwater Impact List and investigated in priority order.
3. Review all sites that were included in the GWM Plan Program, that did not monitor and determine if further action is now needed.

B. Future Criteria System

1. Review closed sites without groundwater monitoring using criteria similar to those used in the past. At a minimum the review should include the following factors:
 - 1) depth to groundwater,
 - 2) soil type,
 - 3) distance to wells,
 - 4) waste types, and
 - 5) site size.

More factors may need to be included such as distance to surface water (including wetlands), distance to buildings and history of operating problems.

2. Additional factors that should be taken into account for closed sites. At a minimum they should include:
 - 1) Type of cap used and
 - 2) Time since closure.
3. Develop a more objective method for ranking closed sites without groundwater monitoring that can be applied consistently in all districts.
4. Use this method to evaluate all closed sites, and as workload permits, require groundwater monitoring at sites that rank the highest.

I. INTRODUCTION

Wisconsin was one of the first states to pass comprehensive legislation specifically for the protection of groundwater resources. The Wisconsin legislature has assigned the major role in protecting the state's groundwater to the Department of Natural Resources (DNR). In 1990, the Legislative Audit Bureau evaluated the groundwater protection programs at DNR and other state agencies. Their September 1990 report contained two recommendations regarding monitoring of closed landfills. The Audit Bureau recommended that DNR:

1. "...review and confirm that former criteria for deciding when to monitor inactive landfills are adequate and ensure that district offices use consistent criteria when deciding which landfills should be monitored."
2. "...reassess past monitoring decisions to ensure that owners and former operators of all inactive landfills which may pose a threat to groundwater quality are required to monitor groundwater quality."

In addition to responding to the Audit Bureau's concerns, this study allows the DNR's Bureau of Solid and Hazardous Waste Management to evaluate the effectiveness of one of its programs to monitor groundwater quality near landfills. The Solid Waste Groundwater Monitoring Plan (GWM) program enabled DNR to require active non-approved landfills to submit plans for groundwater monitoring wells as a condition of their operating license.

The objectives of the study were:

- to summarize facts regarding non-approved landfills required to monitor groundwater as a condition of relicensure
- to review the groundwater monitoring data from these landfills to see if any further action is needed
- to evaluate the effectiveness of the former program for requiring monitoring at non-approved landfills
- to evaluate the former criteria for choosing sites to be monitored
- to recommend criteria for assessing all landfills in the State which are not currently monitored (i.e., closed non-approved landfills)
- to help DNR respond to the recommendations that the Legislative Audit Bureau expressed in its September 1990 audit of the State's groundwater protection program

This report details the results of the study. Section II of this report describes the history of the GWM program in Wisconsin. Section III includes the criteria used to choose the facilities and the way they were applied. In Sections IV and V, the sites chosen in the GWM program are compared based on site characteristics and estimates of potential contamination at the sites. Finally, conclusions, successes and problems with the GWM program and recommendations can be found in Sections VI, VII, and VIII, respectively.

II. HISTORY OF THE SOLID WASTE GROUNDWATER MONITORING PLAN PROGRAM

Prior to 1984, the Wisconsin Department of Natural Resources (DNR) had two mechanisms for requiring solid waste facilities to monitor groundwater. One was to require monitoring as a condition of a plan of operation approval of an approved site. A nonapproved facility is defined as any solid waste disposal facility that is licensed, but has no feasibility report and no approved plan of operation. This includes most facilities in the State that were licensed before 1978. The only way to require groundwater monitoring at nonapproved landfills, was to issue an administrative order, which was time-consuming and required DNR to prove that groundwater contamination was very likely. Consequently, only facilities that had significant evidence of contamination, such as a polluted private well nearby, could be required to monitor. The DNR essentially could not require monitoring at literally hundreds of older landfills which had potential to contaminate groundwater.

The legislature recognized this dilemma, so in 1984 it passed 1983 Wisconsin Act 410, commonly known as the Groundwater Law. In addition to setting up a system for developing and implementing groundwater protection standards, the Act allowed DNR to require groundwater monitoring at nonapproved solid waste facilities as a condition of renewal of their operating license (see section 144.44(4)(f), Stats.)

The total number of solid waste facilities that were monitoring before 1985 was approximately 200 and the number of new facilities approved added about 10 sites each year to that total. With the new law, the total number of sites that could be required to monitor would have doubled or tripled.

Under the new law, the DNR began to choose nonapproved solid waste facilities that were most likely to be contaminating groundwater. The sites for each district were chosen by the DNR solid waste investigators who were most familiar with them. In 1984, every two years after that, until 1990, district staff chose a new group of sites that were required to monitor as a condition of relicensure. DNR notified the owner/operator prior to their license renewal of the proposed condition and they were required to submit groundwater monitoring plans. The plans were reviewed and approved by the DNR district staff and then the wells were installed by the owners. This process usually took approximately two years from the time the facilities were notified by letter to the time wells were installed. In this way, DNR was able to initiate groundwater monitoring at 123 sites between 1985 and 1990.

Meanwhile, with the publication of draft RCRA subtitle 'D' in August, 1988, DNR warned landfill owners and operators about the economic implications of proposed federal regulations for nonhazardous waste landfills. As a result, many of the operating sites without groundwater monitoring closed.

By 1990 only a limited number of nonapproved active landfills were left in Wisconsin, and the mechanism for choosing older sites to monitor was no longer a constructive means of requiring monitoring at landfills with suspected contamination problems. In September, 1991, DNR notified all remaining landfills that they were required to install groundwater monitoring if they intended to be open after October, 1992. It is expected that only 4 sites without groundwater monitoring that accept municipal waste will remain active after October, 1992. All these will be required to install groundwater monitoring wells as a condition of relicensing.

III. CRITERIA USED TO SELECT SITES

The main factors considered in selecting nonapproved solid waste sites for monitoring were: suspected depth to groundwater, soil types, size of site, proximity to surrounding water supply wells, and waste types accepted. Other site specific criteria included remaining disposal capacity and proximity to sensitive environments. Conversations with and memos from district personnel reveal that sites were also chosen for other factors which might indicate groundwater contamination problems, such as leachate seeps, large changes in the amount of waste received due to increased summer populations and continuous operating problems. Criteria were not explicitly weighted and some criteria may have been more important to some investigators than others. However, sites chosen usually met several criteria and therefore, had greater probability of contaminating groundwater than those sites not chosen.

In 1984, the sites chosen were thought to be the most likely to be contaminating groundwater. The general criteria were finalized in 1985 after the DNR field staff chose the first round of sites. DNR then sent a letter to those sites listing the general criteria.

After 1984, when the criteria were used to evaluate and choose sites, differences over time did occur. This is because, from 1985-1990, the pool of sites to choose from and the number of solid waste personnel changed significantly. Differences among districts are also evident, such as the number of sites chosen and the percentage of those that ultimately installed monitoring. Consequently, the way in which the sites were chosen changed somewhat over time. Overall, the way sites were chosen was somewhat dependent upon the staff's familiarity with the sites and the total sites available to be chosen.

During the first round of sites (1985-1986), the number of potential sites was the largest, with several hundred non-approved sites still operating. At the same time, the number of personnel available to choose sites was much more limited. Typically a single solid waste

investigator was responsible for all the solid waste activities in their area including landfills, processing facilities, transporters, spills, and any hazardous waste responsibilities. Given this situation, the sites that had operational problems and the investigator was familiar with were more likely to be chosen. The investigators only chose the number of sites they felt they could follow through on and review based on their workload. In 1985, there were more than enough sites that could be monitored based on the criteria, so the ones needing the most attention were chosen first.

As time went on, many sites closed due to impending Subtitle D legislation, and the number of potential sites decreased. In addition, the number of district solid waste personnel increased, allowing those specializing in landfills to be somewhat more familiar with their sites. This familiarity was important for the last group of sites chosen because most of the sites with more obvious and significant problems had already been chosen. Therefore, the last sites chosen had to be scrutinized more carefully to decide which had the highest possibility for contamination.

Differences also may have existed between the districts' methods for choosing sites. One district eventually developed a ranking sheet for scoring sites, but no formal ranking procedure was developed for statewide use.

The criteria used to choose sites were not meant to rank all sites in the state. Therefore, the criteria were not explicitly weighted or set up for an objective ranking. Instead, the criteria were used by each district as a guideline to identify sites with characteristics conducive to groundwater contamination. The typical site chosen usually met several criteria and therefore, had greater probability of contaminating groundwater than those sites not chosen.

As the following sections show, the preliminary analysis of the entire group of sites revealed that a majority of the sites chosen have indicators of groundwater contamination, regardless of who chose them or when they were chosen. Although the criteria changed slightly through time, overall they seem to have been appropriate for initially choosing the sites to be monitored.

IV. SITE CHARACTERISTICS

A total of 156 sites were chosen over the period from 1985 to 1990. Appendix A is an alphabetical list of all the GWM plan sites, their district, license number, year of license renewal when chosen and whether the site is closed. Figure 1 shows the boundaries of the six districts DNR has defined in the state: Lake Michigan District (LMD), North Central District (NCD), Northwestern District (NWD), Southern District (SD), Southeastern District (SED), and Western District (WD).

WISCONSIN LANDFILLS

NONAPPROVED AND REQUIRED GWM PLANS 1985-1990

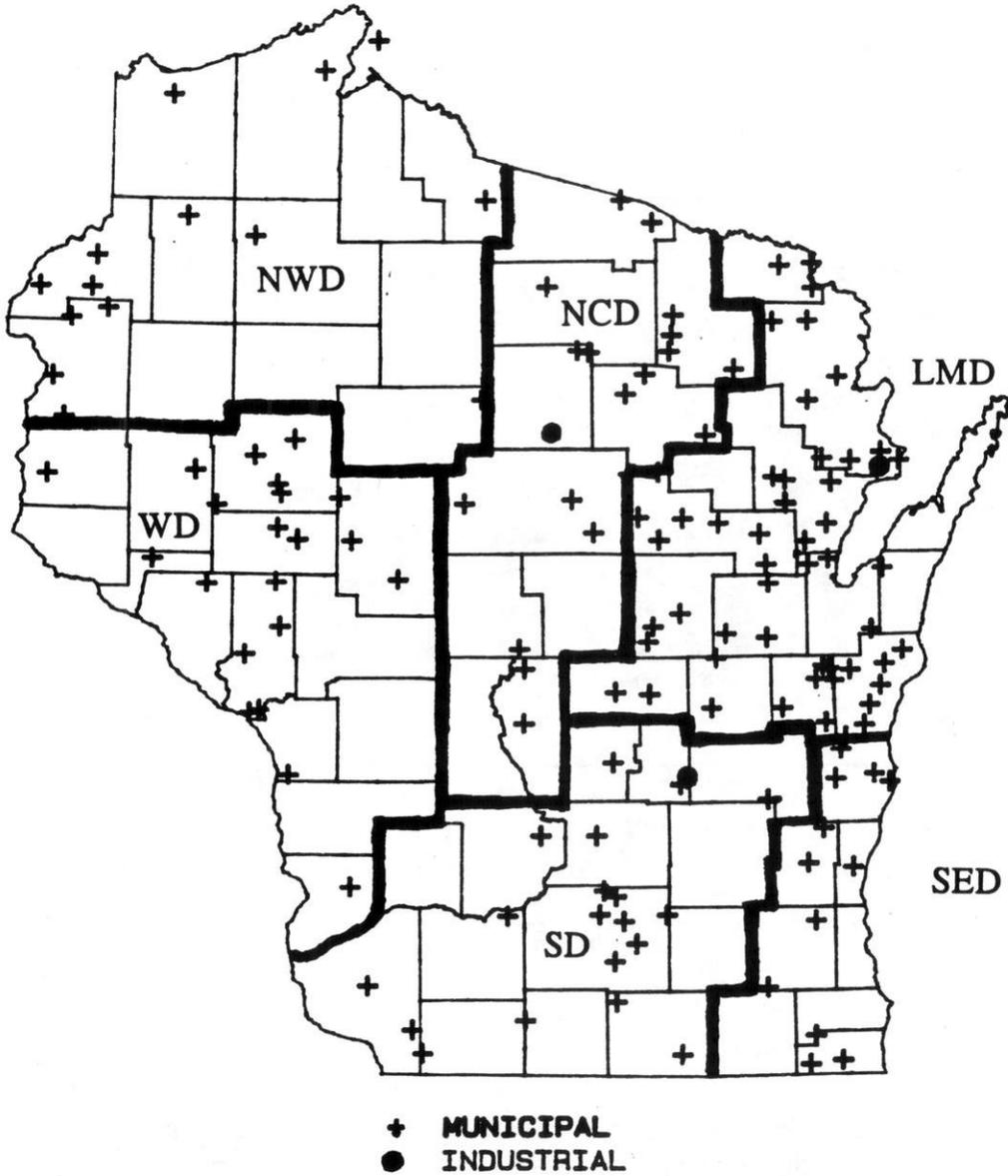


Figure 1

A. Number of Sites Chosen by District and Year

Figure 2 shows the number of sites chosen by district from 1985 through 1990 and the number chosen by each district for each year. The largest number of sites were chosen in the Lake Michigan District and the smallest number of sites were chosen in the Northwest District. Over the six years, 156 sites were required to submit groundwater monitoring plans as a condition of their relicensure.

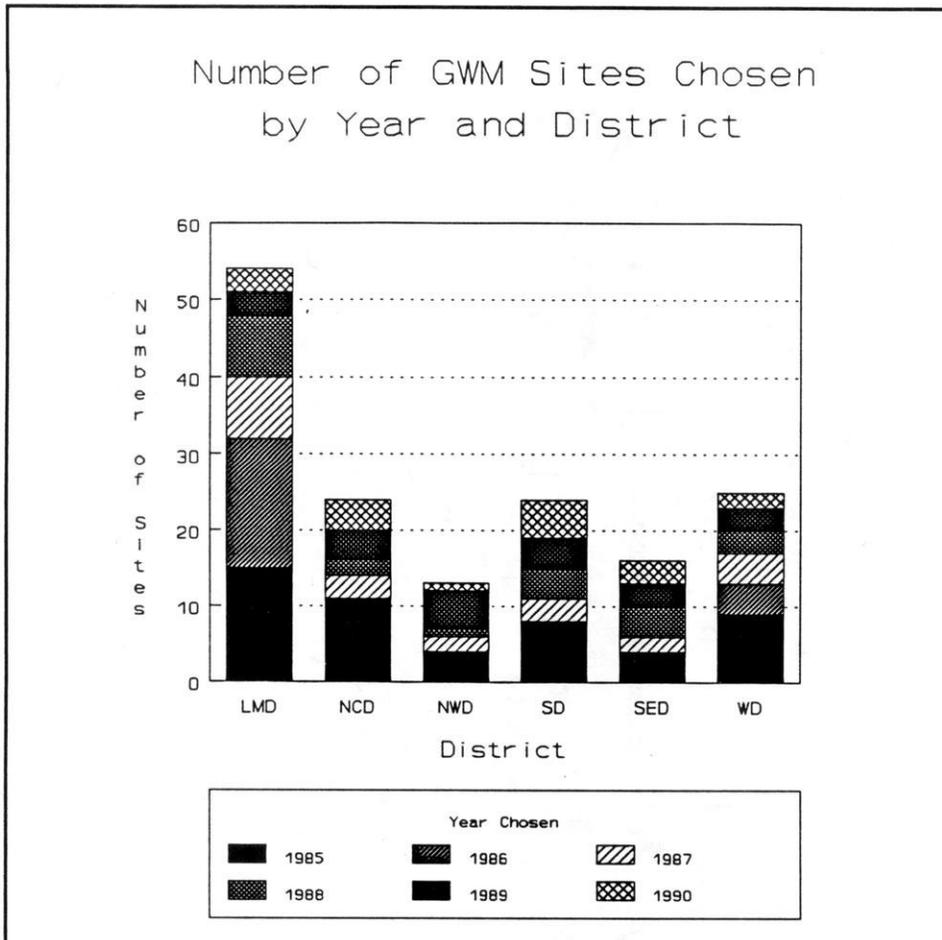


Figure 2

B. Number of Sites Monitoring

By March, 1992, 123 sites were either monitoring groundwater quality or preparing for monitoring. Many of the remaining sites closed before they were required to submit a groundwater monitoring plan, especially in the later years of the program. By that time, avoidance of the proposed Subtitle D legislation was also an incentive to

close. Typically, of the sites that chose to close to avoid monitoring, most did close within a year of the license renewal date. Figure 3 is a graph comparing the number of sites chosen in the GWM program and the number currently monitoring in each district.

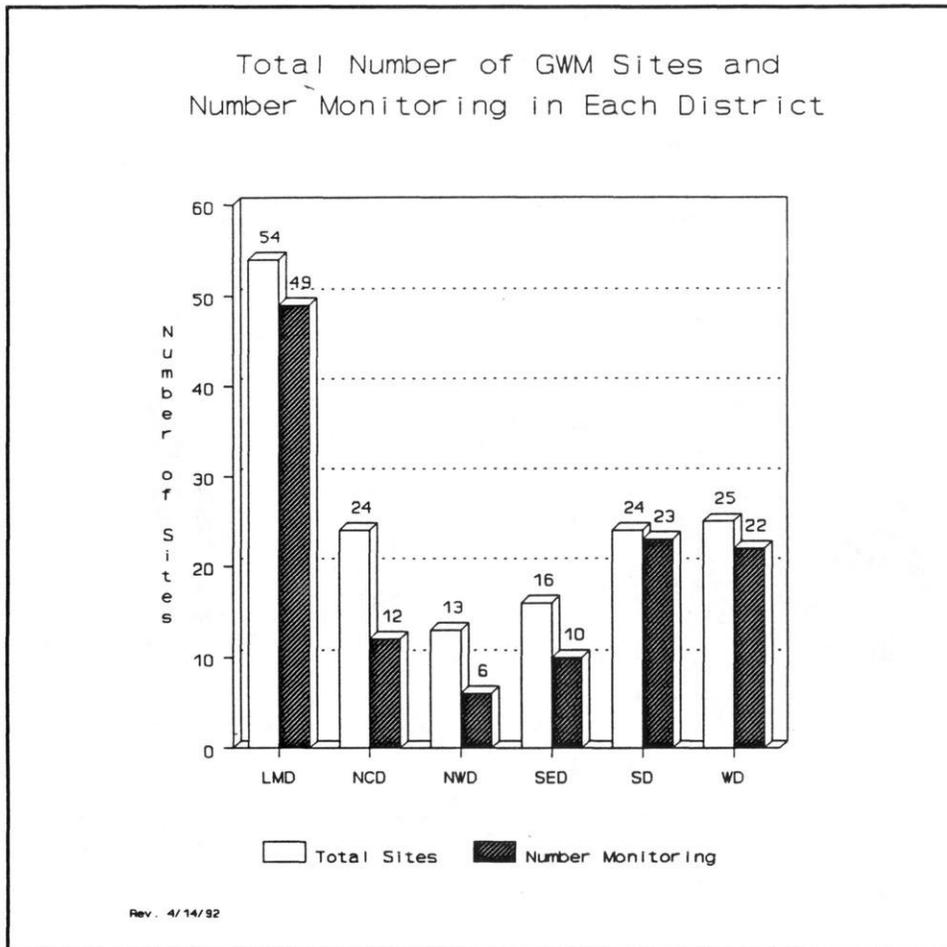


Figure 3

C. Size of Sites

The majority of the GWM plan sites are medium-sized, which DNR classifies as sites with a capacity of 50,000-500,000 cubic yards. (Figure 4) Fifty-one sites are small sites, less than 50,000 cubic yards, and only nine sites were classified as large, or licensed to take more than 500,000 cubic yards. A comparison of landfill size with

the number of monitored sites (Figure 5) revealed that smaller sites were less likely to install monitoring.

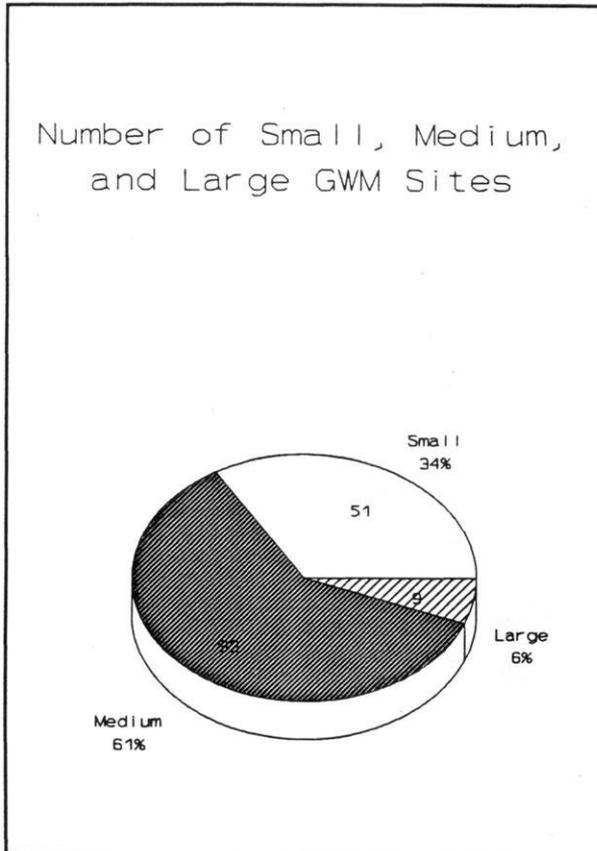


Figure 4

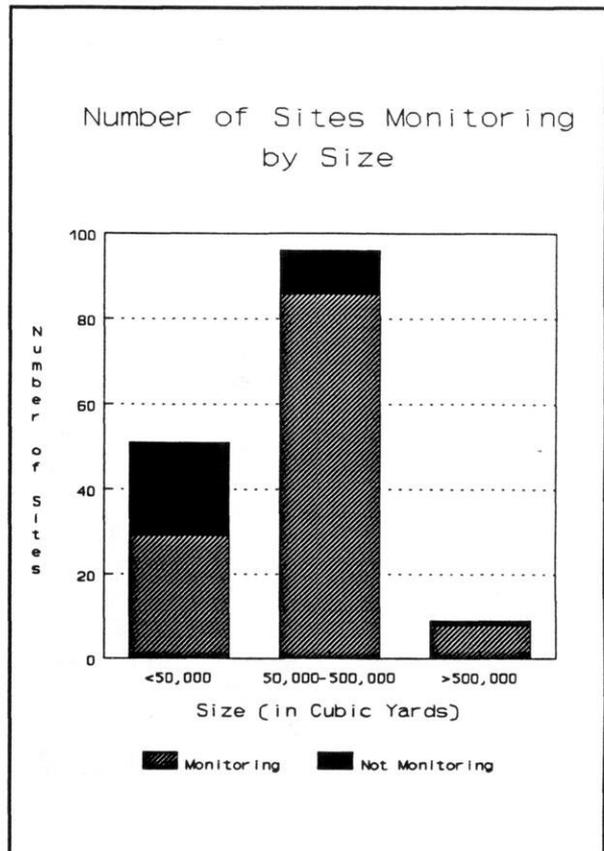


Figure 5

D. Number of Sites Closed

In addition to the group of sites that closed to avoid monitoring, many sites closed as they installed monitoring or have closed since they began monitoring. In Figure 6, the sites are listed by district and their most recent status change. DNR designates a facility's status based on whether it is accepting waste (active), not accepting waste but does not have closure completed (transitional), or not accepting waste and has closure completed (inactive).

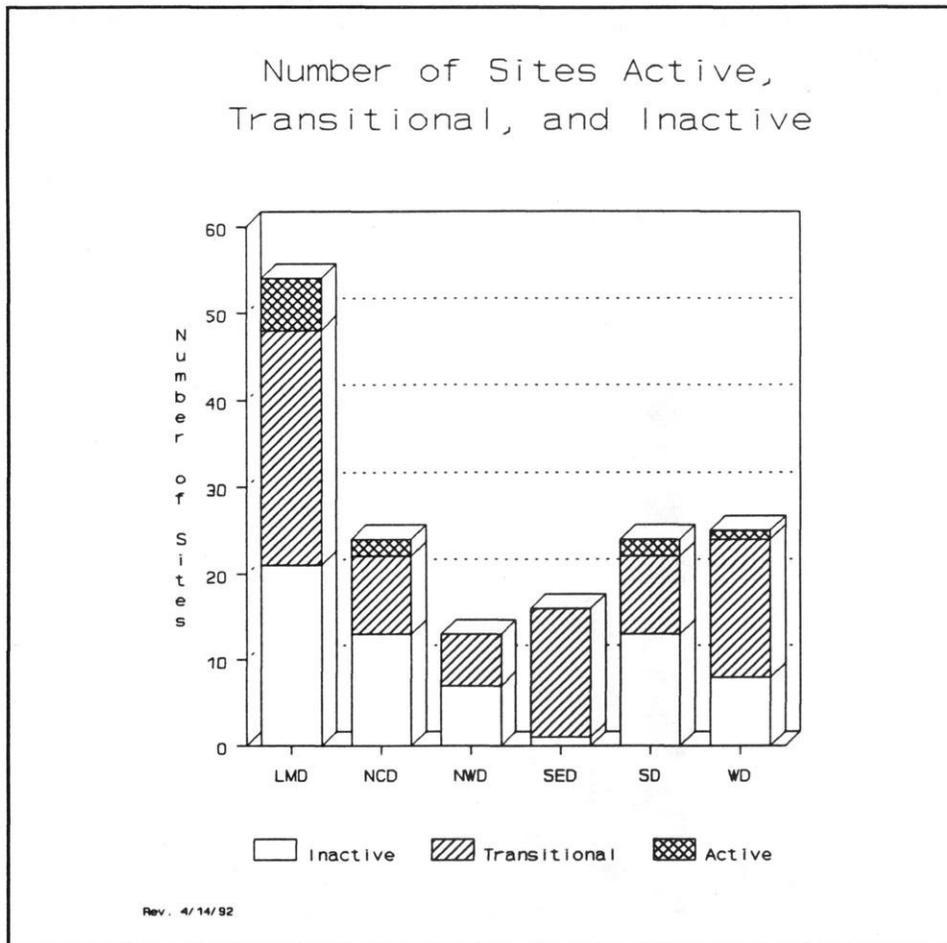


Figure 6

E. Age of Sites

Almost all of the GWM plan sites were originally licensed between 1968, the first year DNR issued solid waste disposal licenses, and 1971, when all active solid waste facilities were finally licensed. (Figure 7). Presumably most of the sites had been operating prior to obtaining their license. Records show some of the sites had been operating at least since the early 1960's, and at least one site is recorded as operating since 1946. Almost all the sites chosen had been operating at least 20 to 25 years when they were chosen to monitor, and many could have been operating longer than that.

Groundwater contamination is often a greater possibility at these sites with longer

operating periods due to a number of factors. Most of the sites were opened when regulations for solid waste disposal were much less strict or nonexistent. A number of sites are located in old gravel pits or wetlands and most have no engineering controls. Many sites were also operated as open burning sites, so that the residual concentration of inorganic contamination would be relatively high compared to sites without burning.

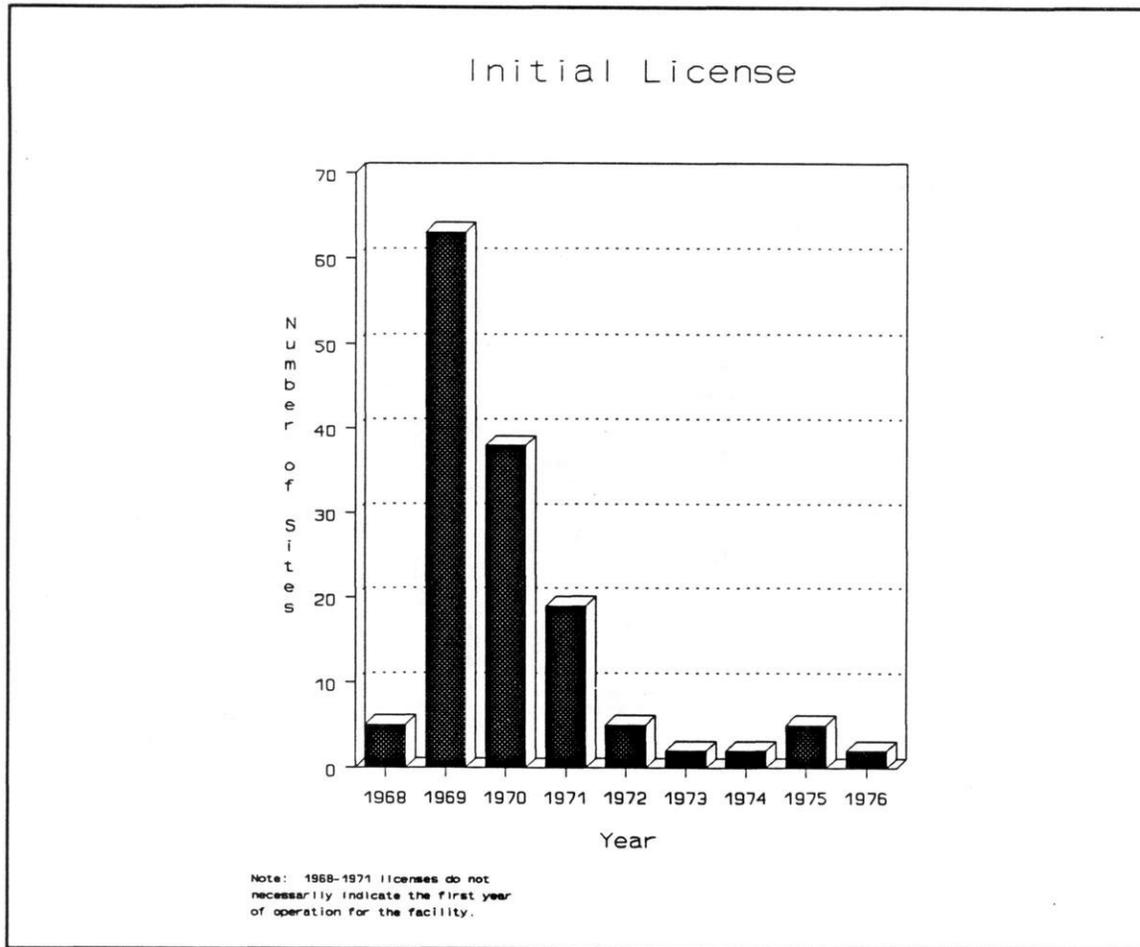


Figure 7

F. Location of Sites

The locations of the GWM sites are shown in Figure 1. The map was developed to determine if sites were clustered in areas of certain soil types or geology. As the map shows the sites are fairly well distributed throughout the state with no area showing a significant cluster of sites. A larger grouping of sites is evident in the northeast corner of the state, which is consistent with the fact that the Lake Michigan District, which encompasses most of this area, chose more sites than any other district.

V. ANALYSIS OF POTENTIAL CONTAMINATION

In addition to identifying site characteristics and criteria used to choose the sites, several analyses of groundwater monitoring data were used to identify potential contamination at the sites. The large number of GWM sites precluded an in-depth analysis of each site, so the groundwater monitoring data for the sites were surveyed to locate trends or particular contamination problems.

In order to roughly estimate the contamination for the group as a whole, three methods for examining the groundwater data were used. The following sections of the report include a description of each method and the contamination estimates from that method for the GWM plan sites.

A. Percentage of Wells Impacted (PWI) Method

In a report prepared for DNR (Fisher and Potter, 1990), Sarah Fisher and Ken Potter of University of Wisconsin Department of Civil and Environmental Engineering outlined a method for analyzing groundwater monitoring data for a large number of solid waste facilities. In their study they found that wells could be categorized as "impacted" or "not impacted" based on the monitoring data for six inorganic parameters. The sites could then be ranked based on their relative percentage of wells impacted (PWI).

In order for the data for a well to be used for the PWI method, it must include at least eight sample dates. The data from the wells with sufficient samples are used to determine the median and interquartile range (IQR) for six parameters at each well. The median and IQR basically describe the mid-point and the range of most of the data.

The Fisher-Potter study established limits for the median and IQR for six inorganic parameters (Table 1). The median and IQR for each well was compared to the PWI limits and if two or more parameters exceeded the limit for the median and/or IQR the well was considered impacted. The number of impacted wells was then divided by the total number of wells at the site that have had eight samples taken, or "analyzed wells". This percentage of impacted wells could then be compared with the percentage for all the other sites.

Table 1
Concentration Limits Used for
Percentage of Wells Impacted Method

PARAMETER	MEDIAN (mg/l)	IQR (mg/l)
Alkalinity	339	141
Specific Conductance*	589	282
Total Hardness	427	126
Chloride	26	19
Chemical Oxygen Demand	39	56
Iron	0.40	2.10

* Units are micromhos/cm

In the Fisher-Potter study, a representative group of sites was chosen and each well was analyzed more stringently using all the hydrogeologic and monitoring data to identify them as impacted or not. They were then compared with the results using the established limits for the same sites. Overall, the limits identified impacted wells as impacted in 84% of the cases and only mislabelled wells not impacted as impacted wells in 9% of the cases. Therefore, this method is fairly conservative for identifying impacted wells, but it is best used as a way to roughly prioritize a group of sites based on groundwater contamination.

Limitations

The main limitation of the PWI method is that it does not provide any information about the overall problem at a site. The method does not distinguish between upgradient and downgradient wells, and it only compares data values to the limits. A site will not get a higher percentage for particularly high concentrations or proximity of private wells that are not being sampled.

Another problem is that well placement is not taken into account. Sites with contamination may come up with a score of only 20-30%, or even 0%, if downgradient wells are not properly located. Well location is particularly important for these sites since most only have from three to five wells. Finally, the six parameters used are not sufficient as indicators for all types of groundwater problems.

Given these limitations and the fact that the PWI method is fairly conservative, it is best to use the results only as a guideline. Estimating contamination problems with

the PWI method is a good first cut for prioritizing follow-up at sites, but further investigation is needed at each site before deciding that a site has no contamination problems.

PWI Results

The PWI method was used to rank all the GWM sites that had enough data available in October, 1991. Appendix B is a list of the GWM plan sites according to decreasing percentage of impacted wells. The number of wells is the total number of wells at the site. Analyzed wells are the number of wells that have been sampled eight or more times and impacted wells are the number of wells predicted to be impacted based on the limits. As of October, 1991, only 85 sites had sufficient sampling data at one or more of their wells to allow a percentage to be calculated. Thirty-eight additional sites have wells planned or installed and the percentage of wells impacted can be calculated as soon as eight samples have been taken at each site.

Of the 85 sites, 29 had a PWI of 75% or greater and 49 sites had a PWI of 50% or greater. Only ten sites showed no well impacts.

B. VOC Screen

Two other methods for screening the groundwater monitoring data use VOC and chloride sampling results. The VOC screen identifies all VOC detections that have been found at a site. Appendix B has a column with the number of VOC detections found at each of the GWM sites.

Fifteen sites have more than 10 VOC detections and three of those had insufficient data to be ranked by the PWI method. This screen is not appropriate for ranking all sites since VOC samples have not been taken at all of the GWM sites with groundwater monitoring.

C. Chloride Screen

The chloride screen identifies all wells that have more than one exceedance of the preventative action limit (PAL) over the last four sampling periods. The last column in Appendix B has the number of wells for that site that had more than one chloride exceedance.

The number of wells exceeding the chloride PAL tended to be low with only nine sites showing more than one well with chloride exceedances.

VI. CONCLUSIONS

- 1. Application of the criteria used to choose sites changed over time as the number of potential sites decreased and district personnel increased.**
- 2. A significant number of the sites show evidence of some type of groundwater contamination, based on the results of the three contamination evaluation methods used in this study.**

VII. EVALUATION OF GWM PROGRAM

The GWM Plan Program has had a significant effect on the amount of groundwater monitoring data collected for small unengineered landfills and the amount of data in Wisconsin's groundwater database in general. The successes of and problems with the program are listed below.

A. Successes of GWM Program

- 1. Approximately 26% (123 of 478) of the solid waste facilities, currently reporting groundwater monitoring data in Wisconsin, began reporting as a result of the GWM Plan Program which required monitoring as a condition of relicensure.**
- 2. Over 75% of the 156 sites chosen to monitor as a condition of relicensure are currently monitoring or are preparing to monitor in the near future.**
- 3. The criteria used to choose the sites were effective for identification of problem sites, given that the majority of the sites required to monitor have shown evidence of groundwater contamination problems.**

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- 1. The variation between districts in the number of sites chosen and the number of these sites that were allowed to close without monitoring suggests that implementation of the program may not have been uniform.**
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3. At a number of the GWM sites where the groundwater data indicates there may be contamination, complete follow-up investigations have not taken place due to staff limitations.

VIII. RECOMMENDATIONS

A. Follow Up for GWM Sites

1. When sufficient data are available, use the PWI method to estimate the contamination at all GWM sites that have not been ranked.
2. Follow-up on all sites that have monitoring and exhibit signs of groundwater contamination. These sites should be added to the Solid Waste Management Section's Groundwater Impact List and investigated in priority order.
3. Review all sites that were included in the GWM Plan Program, that did not monitor and determine if further action is now needed.

B. Future Criteria System

1. Review closed sites without groundwater monitoring using criteria similar to those used in the past. At a minimum the review should include the following factors:
 - 1) depth to groundwater,
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More factors may need to be included such as distance to surface water (including wetlands), distance to buildings and history of operating problems.

2. Additional factors that should be taken into account for closed sites. At a minimum they should include:
 - 1) Type of cap used and
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REFERENCES

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APPENDIX A
Groundwater Monitoring Plan Program Sites

Facility Name	Dist.	FID Number	License Number	Year Required	Status*	Date
Area Sanitary LF-Osseo	WD	6200970	1768	1985	INACT	12/19/90
Badger Mining Corp-Fairwater	SD	2401931	2645	1985	ACTIVE	
Badger Paper Mills, Inc.	LMD	3803925	1344	1990	ACTIVE	
Central WI LF, Inc.	NCD	5003291	2485	1985	TRANS	03/01/90
Chicago NW RR	WD	0901346	1682	1985	TRANS	03/31/86
City of Adams-Village of Friendship	NCD	0100822	1721	1985	INACT	08/21/91
City of Arcadia	WD	6201003	1858	1989	TRANS	09/30/89
City of Augusta	WD	1800937	226	1988	INACT	12/20/90
City of Baraboo LF	SD	5705019	162	1985	TRANS	09/30/86
City of Bayfield	NWD	0401057	953	1985	INACT	12/31/89
City of Bloomer	WD	0900906	187	1986	INACT	12/20/90
City of Boscobel	SD	2202718	35	1985	INACT	11/07/85
City of Brillion	LMD	0800661	1368	1985	TRANS	08/10/87
City of Cornell	WD	0900928	1422	1987	TRANS	08/30/91
City of Durand	WD	4700735	126	1986	TRANS	07/01/90
City of Galesville	WD	6201047	2738	1989	TRANS	09/01/89
City of Gillette	LMD	4300674	1115	1985	TRANS	01/01/88
City of Hudson	WD	5601173	110	1990	TRANS	08/30/91
City of Lancaster	SD	2202795	1170	1988	INACT	07/16/91
City of Markesan-Town of Mackford	SED	2400798	301	1990	TRANS	10/01/90
City of Marshfield	NCD	7204446	462	1985	TRANS	09/30/85
City of Menawa	LMD	6900843	731	1986	TRANS	01/02/91
City of Mondovi	WD	0600760	134	1985	INACT	12/20/90
City of Montello	SD	3900846	820	1989	TRANS	03/08/90
City of Neillsville	WD	1000929	1759	1985	INACT	12/14/89
City of New Holstein	LMD	0800705	148	1987	TRANS	02/01/91
City of Omro	LMD	7101406	1903	1986	INACT	11/11/87
City of Plymouth	SED	6001571	1181	1988	TRANS	02/24/90
City of Seymour-Town of Cicero	LMD	4501347	319	1985	TRANS	01/02/91
City of Sheboygan	SED	6001593	946	1985	TRANS	08/26/88
City of Sheboygan Falls	SED	6001615	1167	1989	TRANS	12/01/91
City of South Milwaukee	SED	4120877	232	1989	TRANS	04/01/90
City of St. Croix Falls	NWD	4900935	504	1987	INACT	11/11/91
City of Stanley/Chippewa County	WD	1000973	1746	1988	ACTIVE	
City of Stevens Point	NCD	5003170	1705	1985	INACT	01/01/89
City of Sun Prairie-Bird St. Site	SD	3300639	231	1989	TRANS	10/01/90
City of Washburn	NWD	0800727	2129	1985	TRANS	06/14/90

APPENDIX A
Groundwater Monitoring Plan Program Sites

Facility Name	Dist.	FID Number	License Number	Year Required	Status*	Status	Date
City of Waupaca	LMD	6900887	783	1986	TRANS		01/02/91
City of Wautoma	LMD	7000701	1228	1985	TRANS		01/07/91
City of Whitehall	WD	6201080	596	1986	TRANS		01/01/90
City of Wisconsin Rapids	NCD	7204523	1049	1985	TRANS		10/01/90
Dressel Landfill	WD	0900972	1902	1985	TRANS		03/31/86
Faherty Well Drilling	SD	2202839	949	1989	TRANS		10/22/90
Inter-Community Incinerator District	SED	6001725	2567	1987	TRANS		06/27/89
Junker Sanitary LF, Inc.	WD	5602680	1972	1985	TRANS		01/05/88
Leadfree Enterprises-Riverland	WD	1200810	1954	1985	TRANS		09/12/86
Majerus Landfill	SD	2001443	7	1985	TRANS		10/04/88
Merrill Gravel and Const.	NCD	3504925	1928	1985	TRANS		09/30/87
Minong Area Disposal	NWD	6601240	102	1989	INACT		01/09/91
Sadoff and Rudoy Industries	SD	2001828	1554	1988	ACTIVE		
Spielvogel Landfill	SED	6001835	472	1985	TRANS		08/30/90
Town of Abrams	LMD	4300828	257	1987	INACT		08/05/91
Town of Alden	NWD	4901012	97	1989	TRANS		10/10/88
Town of Aniwa	LMD	5901196	566	1986	TRANS		03/01/90
Town of Aurora	LMD	1900485	776	1985	INACT		08/06/91
Town of Bevent	NCD	3705786	1850	1990	INACT		07/23/91
Town of Brillion	LMD	0800771	279	1985	ACTIVE		
Town of Bristol Landfill	SED	3005510	732	1987	TRANS		01/29/90
Town of Burke	SD	1311322	1127	1989	INACT		08/07/91
Town of Burlington	SED	5207578	277	1988	TRANS		03/01/90
Town of Chase	LMD	4300905	192	1986	INACT		09/04/91
Town of Clam Falls	NWD	4901067	1556	1989	TRANS		10/01/88
Town of Cottage Grove	SD	1311344	585	1985	INACT		09/29/87
Town of Crandon	NCD	2100919	320	1989	TRANS		01/07/89
Town of Dayton	LMD	6900997	1169	1986	TRANS		03/10/90
Town of Dunn	SD	1311388	1871	1988	TRANS		02/01/90
Town of Eagle	SED	6815085	1089	1988	INACT		10/03/89
Town of Elcho-Post Lake site	NCD	3401108	199	1989	INACT		08/08/91
Town of Farmington	SED	6706130	87	1985	TRANS		11/15/89
Town of Fern	LMD	1900518	633	1990	INACT		10/11/89
Town of Florence	LMD	1900529	761	1985	INACT		09/18/91
Town of Foster	WD	1001039	1404	1987	INACT		02/01/91
Town of Frankfort/Town of Hull	NCD	3705852	1675	1989	INACT		07/23/91
Town of Gillett LF	LMD	4300927	206	1988	TRANS		10/01/91

APPENDIX A
Groundwater Monitoring Plan Program Sites

Facility Name	Dist.	FID Number	License Number	Year Required	Status*	Status Date
Town of Goodman	LMD	3801285	357	1985	INACT	08/06/91
Town of Grafton	SED	4604800	1133	1990	TRANS	12/31/88
Town of Grand Chute	LMD	4501853	23	1987	INACT	05/31/88
Town of Grand Rapids	NCD	7204853	693	1985	INACT	07/05/91
Town of Grover	LMD	3801307	1114	1988	INACT	08/06/91
Town of Harrison-Jeffris site	NCD	3501197	1077	1987	TRANS	10/01/89
Town of Harrison-Mail Route Site	NCD	3501208	1078	1988	TRANS	10/01/88
Town of Hayward	NWD	5801232	1544	1985	TRANS	06/02/90
Town of Hazelhurst	NCD	4406640	908	1985	INACT	08/02/88
Town of Hiles	NCD	2100941	2687	1990	TRANS	10/01/89
Town of Hortonia	LMD	4501567	215	1987	INACT	02/12/88
Town of Kossuth	LMD	3601393	787	1986	TRANS	04/14/90
Town of Lafayette	WD	0901203	1731	1986	TRANS	08/01/90
Town of Land O' Lakes-East site	NCD	6418332	1246	1985	INACT	01/15/86
Town of Leon	LMD	7000778	555	1988	TRANS	01/17/91
Town of Lessor	LMD	5901130	1396	1986	TRANS	03/30/90
Town of Liberty	LMD	3601404	400	1988	INACT	04/30/91
Town of Manitowoc Rapids	LMD	3601415	298	1985	TRANS	03/05/90
Town of Maple Valley	LMD	4301004	1496	1990	INACT	09/17/91
Town of Meeme	LMD	3601437	300	1986	TRANS	04/03/90
Town of Mercer-Mercer site	NWD	2601145	330	1985	TRANS	03/01/90
Town of Mishicot-Vil Mishicot	LMD	3601448	939	1985	INACT	10/01/87
Town of Nashville-North Site	NCD	2100996	870	1988	INACT	07/08/89
Town of Pacific	SD	1104038	836	1990	INACT	10/31/90
Town of Parkland	NWD	1604457	1475	1990	TRANS	06/13/90
Town of Peshtigo-Heath Lane	LMD	3801406	432	1987	INACT	09/17/91
Town of Peshtigo-Kozuzek Road	LMD	3801417	433	1986	INACT	09/17/91
Town of Phelps	NCD	6408453	2624	1989	ACTIVE	
Town of Pittsfield	LMD	0501967	427	1987	TRANS	02/01/90
Town of Pound LF	LMD	3801450	816	1988	INACT	09/17/91
Town of Randall	SED	3005521	461	1990	TRANS	02/01/90
Town of Rantoul	LMD	0800848	2660	1985	INACT	05/23/85
Town of Red River	LMD	3100772	643	1986	INACT	11/07/87
Town of Richmond	LMD	5901130	710	1986	TRANS	09/30/91
Town of Rome	NCD	0100987	131	1987	INACT	08/20/91
Town of Saratoga	NCD	7205194	655	1985	INACT	08/30/91
Town of Schleswig	LMD	3601481	482	1987	TRANS	03/01/90

APPENDIX A
Groundwater Monitoring Plan Program Sites

Facility Name	Dist.	FID Number	License Number	Year Required	Status*	Status Date
Town of Seneca	LMD	5901416	698	1985	TRANS	10/01/90
Town of Seymour	WD	1801135	238	1985	TRANS	08/01/90
Town of Shelby	WD	3201347	843	1985	TRANS	11/01/89
Town of Stephenson-Twin Bridge LF	LMD	3801483	599	1988	TRANS	01/17/91
Town of Stockbridge	LMD	0800914	578	1986	INACT	12/06/89
Town of Suamico	LMD	0502000	1444	1985	TRANS	03/31/90
Town of Turtle	SD	5405225	1980	1985	TRANS	12/30/89
Town of Union	SD	5405236	2463	1990	INACT	08/05/91
Town of Upham	NCD	3402978	724	1990	INACT	08/15/91
Town of Wabeno	NCD	2101029	915	1990	TRANS	07/09/89
Town of West Bend	SED	6706185	1160	1989	TRANS	09/24/88
Town of Weston	NCD	3706039	1703	1985	INACT	08/30/91
Town of Westport	SD	1311564	509	1987	INACT	06/02/88
Town of Wheaton	WD	1901269	123	1988	TRANS	03/15/90
Town of Wilson	SED	6002011	758	1985	TRANS	05/28/88
Town of Winchester	LMD	7101890	558	1988	TRANS	09/14/90
Town of Windsor*	SD	1311575	519	1988	INACT	08/08/91
Vil-Town of Arena	SD	2501995	1944	1985	INACT	06/29/90
Village of Argyle, Lafayette Cnty	SD	2301663	942	1990	TRANS	03/09/90
Village of Bonduel	LMD	5901262	59	1985	TRANS	05/01/90
Village of Colfax	WD	1701068	309	1989	TRANS	09/30/90
Village of Deforest	SD	1311751	1835	1987	INACT	08/09/91
Village of Denmark	LMD	0502011	54	1988	ACTIVE	
Village of Fall Creek	WD	1801190	1259	1987	INACT	07/11/88
Village of Frederic	NWD	4901232	1801	1989	INACT	11/05/91
Village of Grantsburg	NWD	0701214	362	1987	INACT	10/01/87
Village of Hilbert	LMD	0800881	218	1986	TRANS	11/24/87
Village of Lake Delton	SD	5705195	21	1990	INACT	09/06/91
Village of Lena LF	LMD	4301103	405	1987	INACT	09/19/91
Village of Luxemburg	LMD	3100794	55	1989	ACTIVE	
Village of Marshall*	SD	1311795	961	1987	INACT	04/16/87
Village of Mattoon	LMD	5901372	769	1985	TRANS	10/01/90
Village of Menomonee Falls-Mill Rd.	SED	6815173	1163	1988	TRANS	06/28/88
Village of Reedsville Munic. LF	LMD	3601536	459	1986	TRANS	05/12/90
Village of Siren	NWD	0701225	1481	1988	INACT	11/13/91
Village of Stoddard/Town of Bergen	WD	6301268	1485	1987	INACT	10/01/88
Village of Suring	LMD	4301125	1189	1989	ACTIVE	

APPENDIX A
Groundwater Monitoring Plan Program Sites

Facility Name	Dist.	FID Number	License Number	Year Required	Status*	Status Date
Village of Tigerton	LMD	5901328	151	1986	TRANS	10/01/91
Village of Trempealeau	WD	6201245	2099	1990	TRANS	09/01/89
Village of Wausaukee	LMD	3801560	534	1989	INACT	10/11/89
Village of Webster	NWD	0701236	1480	1989	INACT	10/02/91
Village of White Lake	NCD	3402868	520	1987	INACT	08/08/91
Village of Wittenberg	LMD	5901350	27	1986	ACTIVE	
Village-Tn of Spring Green	SD	5705371	485	1990	INACT	11/07/90
Wiederholt Sanitation Engr	SD	3301475	1918	1985	TRANS	10/26/90

* Status based on records up to March, 1992.

INACT - Inactive--Cover system has been installed

TRANS - Transitional--Not accepting waste, in the process of installing cover system

ACTIVE - Active--Accepting waste

APPENDIX B Groundwater Contamination Ranking Data

Facility Name	Dist.	License Number	Number of Wells	Predicted Wells	Impacted Wells	Percent Impacted	No. of Total VOC Hits	Wells with >1 Cl exceedance
Badger Mining Corp-Fairwater	SD	2645		5	5	100.0%		
City of Galesville	WD	2738	2	1	1	100.0%		
City of Wisconsin Rapids	NCD	1049	5	5	5	100.0%		4
Town of Brillion	LMD	279	5	5	5	100.0%		5
Town of Bristol Landfill	SED	732	5	5	5	100.0%	3	3
Town of Cottage Grove	SD	585	3	3	3	100.0%		1
Town of Grand Chute	LMD	23	5	5	5	100.0%		3
Town of Hortonia	LMD	215	3	3	3	100.0%		1
Town of Pittsfield	LMD	427	4	3	3	100.0%		1
Town of Schleswig	LMD	482	5	5	5	100.0%		1
Town of Shelby	WD	843	8	5	5	100.0%	22	1
Town of Westport	SD	509	3	3	3	100.0%		
Town of Windsor	SD	519	5	5	5	100.0%		1
Wiederholt Sanitation Engr	SD	1918	9	5	5	100.0%	6	5
City of Baraboo LF	SD	162	13	11	10	90.9%	>100	
City of Boscobel	SD	35	6	6	5	83.3%	>100	
Village of Bonduel	LMD	59	8	6	5	83.3%	1	4
Central WI LF, Inc.	NCD	2485	5	5	4	80.0%		
City of Menawa	LMD	731	5	5	4	80.0%		1
Inter-Community Incinerator District	SED	2567	5	5	4	80.0%		1
Spielvogel Landfill	SED	472	13	5	4	80.0%	47	
Town of Chase	LMD	192	5	5	4	80.0%	1	1
Town of Dayton	LMD	1169	5	5	4	80.0%		1
Town of Manitowoc Rapids	LMD	298	5	5	4	80.0%		1
Village of Reedsville Munic. LF	LMD	459	5	5	4	80.0%		1
Village of Wittenberg	LMD	27	5	5	4	80.0%		
City of Sheboygan	SED	946	8	8	6	75.0%		3
Town of Farmington	SED	87	4	4	3	75.0%		1
Town of Turtle	SD	1980	5	4	3	75.0%		
Sadoff and Rudoy Industries	SD	1554	7	7	5	71.4%	19	1
City of Bloomer	WD	187	3	3	2	66.7%		
City of Cornell	WD	1422	3	3	2	66.7%	8	1
Junker Sanitary LF, Inc.	WD	1972	10	3	2	66.7%	68	
Majerus Landfill	SD	7	11	6	4	66.7%	31	
Town of Dunn	SD	1871	3	3	2	66.7%		
Town of Red River	LMD	643	3	3	2	66.7%		
City of Seymour-Town of Cicero	LMD	319	5	5	3	60.0%		1

APPENDIX B
Groundwater Contamination Ranking Data

Facility Name	Dist.	License Number	Number of Wells	Predicted Wells	Impacted Wells	Percent Impacted	No. of Total VOC Hits	Wells with >1 Cl exceedance
City of Waupaca	LMD	783	5	5	3	60.0%		
Town of Florence	LMD	761	5	5	3	60.0%		1
Town of Grover	LMD	1114	5	5	3	60.0%		
Town of Mishicot-Vil Mishicot	LMD	939	5	5	3	60.0%		
Town of Weston	NCD	1703	10	5	3	60.0%		
Village of Marshall	SD	961	5	5	3	60.0%		
City of Adams-Village of Friendship	NCD	1721	4	4	2	50.0%	7	1
City of Stanley/Chippewa County	WD	1746	4	4	2	50.0%		
Merrill Gravel and Const.	NCD	1928	4	4	2	50.0%		
Town of Aniwa	LMD	566	4	4	2	50.0%		
Town of Meeme	LMD	300	3	2	1	50.0%		
Town of Wilson	SED	758	6	6	3	50.0%	19	2
Area Sanitary LF-Osseo	WD	1768	5	5	2	40.0%	42	2
City of Durand	WD	126	6	5	2	40.0%	33	
Town of Kossuth	LMD	787	5	5	2	40.0%		
Town of Leon	LMD	555	5	5	2	40.0%		
Town of Saratoga	NCD	655	5	5	2	40.0%	9	
Village of Lena LF	LMD	405	5	5	2	40.0%		1
City of Augusta	WD	226	3	3	1	33.3%		
Faherty Well Drilling	SD	949	3	3	1	33.3%	11	
Town of Mercer-Mercer site	NWD	330	3	3	1	33.3%		
Town of Richmond	LMD	710	3	3	1	33.3%		
Town of Seneca	LMD	698	3	3	1	33.3%		1
City of Gillette	LMD	1115	7	7	2	28.6%		
City of Mondovi	WD	134	5	5	1	20.0%	5	
City of Neillsville	WD	1759	5	5	1	20.0%		
City of St. Croix Falls	NWD	504	5	5	1	20.0%		
City of Whitehall	WD	596	5	5	1	20.0%		
Town of Abrams	LMD	257	5	5	1	20.0%		1
Town of Aurora	LMD	776	7	5	1	20.0%	11	1
Town of Grand Rapids	NCD	693	5	5	1	20.0%	3	
Town of Lafayette	WD	1731	5	5	1	20.0%	4	
Town of Rome	NCD	131	5	5	1	20.0%		1
Town of Seymour	WD	238	5	5	1	20.0%		1
Town of Suamico	LMD	1444	5	5	1	20.0%		
Vil-Town of Arena	SD	1944	5	5	1	20.0%		1
Village of Tigerton	LMD	151	5	5	1	20.0%		

APPENDIX B Groundwater Contamination Ranking Data

Facility Name	Dist.	License Number	Number of Wells	Predicted Wells	Impacted Wells	Percent Impacted	No. of Total VOC Hits	Wells with >1 Cl exceedance
City of Wautoma	LMD	1228	6	6	1	16.7%		1
City of Bayfield	NWD	953	3	3	0	0.0%		
City of Washburn	NWD	2129	3	3	0	0.0%		
Town of Foster	WD	1404	6	4	0	0.0%		
Town of Goodman	LMD	357	3	3	0	0.0%		
Town of Hayward	NWD	1544	3	3	0	0.0%		
Town of Hazelhurst	NCD	908	3	3	0	0.0%		
Town of Lessor	LMD	1396	3	3	0	0.0%		
Town of Stephenson-Twin Bridge LF	LMD	599	4	4	0	0.0%		
Village of Mattoon	LMD	769	4	4	0	0.0%		
Village of White Lake	NCD	520	3	3	0	0.0%		
City of Sheboygan Falls	SED	1167	13	0	--	--		
City of New Holstein	LMD	148	10	0	--	--		
Town of Burke	SD	1127	8	0	--	--		
Town of Pound LF	LMD	816	8	0	--	--		1
City of Plymouth	SED	1181	7	0	--	--		
Village of Argyle, Lafayette Cnty	SD	942	7	0	--	--		
Badger Paper Mills, Inc.	LMD	1344	6	0	--	--		
City of Brillion	LMD	1368	6	0	--	--		
City of Lancaster	SD	1170	6	0	--	--	12	1
City of South Milwaukee	SED	232	6	0	--	--		
Chicago NW RR	WD	1682	5	0	--	--		
City of Sun Prairie-Bird St. Site	SD	231	5	0	--	--		
Leadfree Enterprises-Riverland	WD	1954	5	0	--	--		
Town of Burlington	SED	277	5	0	--	--		
Town of Peshtigo-Heath Lane	LMD	432	5	0	--	--		
Town of Wheaton	WD	123	5	0	--	--		
Town of Winchester	LMD	558	5	0	--	--		
Village of Deforest	SD	1835	5	0	--	--		1
Village of Luxemburg	LMD	55	5	0	--	--		1
Village of Suring	LMD	1189	5	0	--	--		
Village-Tn of Spring Green	SD	485	5	0	--	--		
City of Arcadia	WD	1858	4	0	--	--	36	1
Dressel Landfill	WD	1902	4	0	--	--		
Town of Peshtigo-Kozuzek Road	LMD	433	4	0	--	--		
Town of Randall	SED	461	4	0	--	--		
Town of Union	SD	2463	4	0	--	--	11	1

APPENDIX B
Groundwater Contamination Ranking Data

Facility Name	Dist.	License Number	Number of Wells	Predicted Wells	Impacted Wells	Percent Impacted	No. of Total VOC Hits	Wells with >1 Cl exceedance
Village of Colfax	WD	309	4	0	-	-		
Village of Frederic	NWD	1801	4	0	-	-		
Village of Trempealeau	WD	2099	4	0	-	-		
City of Montello	SD	820	3	0	-	-	6	
City of Omro	LMD	1903	3	0	-	-		1
City of Stevens Point	NCD	1705	3	0	-	-		
Town of Harrison-Jeffris site	NCD	1077	3	0	-	-		
Town of Liberty	LMD	400	3	0	-	-		
Town of Maple Valley	LMD	1496	3	0	-	-		
Town of Pacific	SD	836	3	0	-	-		
Village of Denmark	LMD	54	3	0	-	-		
Town of Gillett LF	LMD	206	2	0	-	-	1	1
City of Hudson	WD	110	NA	-	-	-		
City of Markesan-Town of Mackford	SED	301	NA	-	-	-		
City of Marshfield	NCD	462	NA	-	-	-		
Minong Area Disposal	NWD	102	NA	-	-	-		
Town of Alden	NWD	97	NA	-	-	-		
Town of Bevent	NCD	1850	NA	-	-	-		
Town of Clam Falls	NWD	1556	NA	-	-	-		
Town of Crandon	NCD	320	NA	-	-	-		
Town of Eagle	SED	1089	NA	-	-	-		
Town of Elcho-Post Lake site	NCD	199	NA	-	-	-		
Town of Fern	LMD	633	NA	-	-	-		
Town of Frankfort/Town of Hull	NCD	1675	NA	-	-	-		
Town of Grafton	SED	1133	NA	-	-	-		
Town of Harrison-Mail Route Site	NCD	1078	NA	-	-	-		
Town of Hiles	NCD	2687	NA	-	-	-		
Town of Land O' Lakes-East site	NCD	1246	NA	-	-	-		
Town of Nashville-North Site	NCD	870	NA	-	-	-		
Town of Parkland	NWD	1475	NA	-	-	-		
Town of Phelps	NCD	2624	NA	-	-	-		
Town of Rantoul	LMD	2660	NA	-	-	-		
Town of Stockbridge	LMD	578	NA	-	-	-		
Town of Upham	NCD	724	NA	-	-	-		
Town of Wabeno	NCD	915	NA	-	-	-		
Town of West Bend	SED	1160	NA	-	-	-		
Village of Fall Creek	WD	1259	NA	-	-	-		

APPENDIX B
Groundwater Contamination Ranking Data

Facility Name	Dist.	License Number	Number of Wells	Predicted Wells	Impacted Wells	Percent Impacted	No. of Total VOC Hits	Wells with >1 Cl exceedance
Village of Grantsburg	NWD	362	NA	--	--	--		
Village of Hilbert	LMD	218	NA	--	--	--		
Village of Lake Delton	SD	21	NA	--	--	--		
Village of Menomonee Falls-Mill Rd.	SED	1163	NA	--	--	--		
Village of Siren	NWD	1481	NA	--	--	--		
Village of Stoddard/Town of Bergen	WD	1485	NA	--	--	--		
Village of Wausaukee	LMD	534	NA	--	--	--		
Village of Webster	NWD	1480	NA	--	--	--		

* Percentage dirty wells based on data available 9/91.

Number of Wells--Number of wells identified for monitoring at the site

Predicted Wells--Number of wells used for percentage calculations

Impacted Wells--Number of wells impacted

Percent Impacted--Number of wells impacted/number of wells used for percentage calculation

Wells with >1 Cl Exceedance--Number of wells with more than one chloride exceedance over the last four sampling periods

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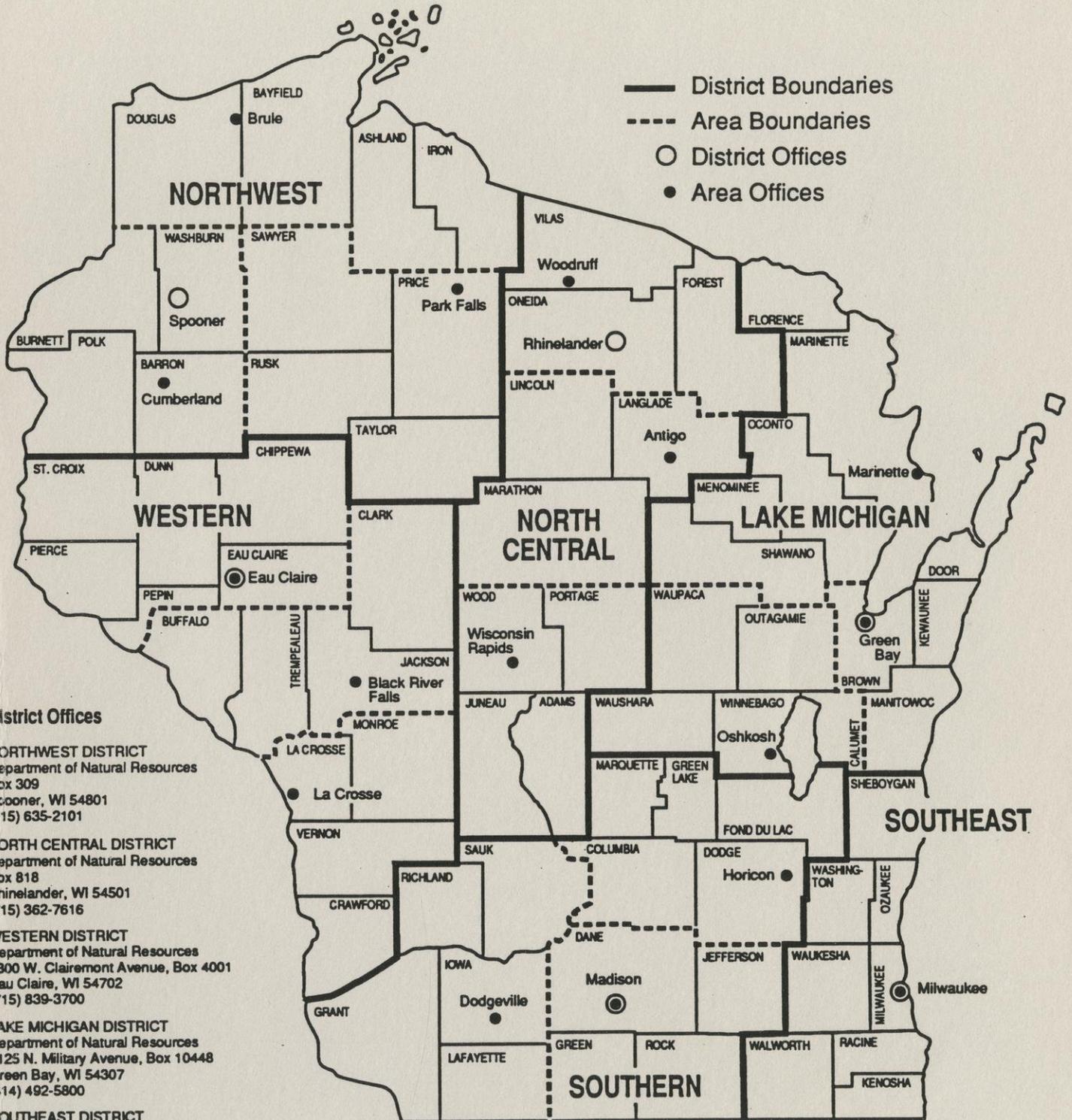


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050994 Assessment of Wisconsin's
c.1 Groundwater Monitoring
(dup1) Plan Program for
Active Non-Approved
Landfills (1985-90)

DNR Field Districts and Areas

- District Boundaries
- - - Area Boundaries
- District Offices
- Area Offices



District Offices

NORTHWEST DISTRICT
 Department of Natural Resources
 Box 309
 Spooner, WI 54801
 (715) 635-2101

NORTH CENTRAL DISTRICT
 Department of Natural Resources
 Box 818
 Rhinelander, WI 54501
 (715) 362-7616

WESTERN DISTRICT
 Department of Natural Resources
 1300 W. Clairmont Avenue, Box 4001
 Eau Claire, WI 54702
 (715) 839-3700

LAKE MICHIGAN DISTRICT
 Department of Natural Resources
 1125 N. Military Avenue, Box 10448
 Green Bay, WI 54307
 (414) 492-5800

SOUTHEAST DISTRICT
 Department of Natural Resources
 2300 N. Dr. Martin Luther King, Jr. Drive
 Box 12436
 Milwaukee, WI 53212
 (414) 263-8500

SOUTHERN DISTRICT
 Department of Natural Resources
 3911 Fish Hatchery Road
 Fitchburg, WI 53711
 (608) 275-3266

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OUR MISSION:

To protect and enhance our Natural Resources —
our air, land and water;
our wildlife, fish and forests.

To provide a clean environment
and a full range of outdoor opportunities.

To insure the right of all Wisconsin citizens
to use and enjoy these resources in
their work and leisure.

And in cooperation with all our citizens
to consider the future
and those who will follow us.

