MINNESOTA DEPARTMENT OF AGRICULTURE

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Minnesota Department Of Agriculture

Pesticide Management Plan Status Report

2008

I. Introduction

The Pesticide Control Law (Minn. Stat. §18B.045) requires the development and implementation of a state Pesticide Management Plan (PMP) to prevent, evaluate and mitigate occurrences of pesticides or pesticide breakdown products in groundwaters and surface waters. The law also directs the Minnesota Department of Agriculture (MDA) to submit a biennial status report on the plan.

The statutory requirements and purpose for the PMP are outlined in the enabling legislation (18B.045):

> "The commissioner shall develop a pesticide management plan for the prevention, evaluation, and mitigation of occurrences of pesticides or pesticide breakdown products in groundwaters and surface waters of the state. The pesticide management plan must include components promoting prevention, developing appropriate responses to the detection of pesticides or pesticide breakdown products in groundwater and surface waters, and providing responses to reduce or eliminate continued pesticide movement to groundwater and surface water."

The following biennial status report outlines accomplishments and major activities conducted during 2007 and 2008 in support of the PMP. The PMP and additional data on many of the activities discussed in this report are available through the Minnesota Department of Agriculture (MDA) general website at www.mda.state.mn.us and at the PMP web page http://www.mda.state.mn.us/protecting/waterprotection/pmp.htm

Development of the PMP began in 1990, with a final draft published in 1996. Minor revisions were made in 1998. The United States Environmental Protection Agency (EPA) provided a formal concurrence with the original 1996 version and with the revised 1998 version. The MDA again revised the PMP in June 2005 after conducting an issues forum and several public meetings.

In February 2006, the Office of the Legislative Auditor's Program Evaluation Division recommended that "The Department of Agriculture should revise the Minnesota Pesticide Management Plan to better address issues of urban pesticide use, aquatic pesticides and product registration." The basis for the recommendation is provided on pp. 77-79 of the Auditor's report. Another recommendation of the report was that "The [MDA] should immediately develop and carry out a plan for evaluating the implementation and effectiveness of its best management practices." The basis for the recommendation is provided on p. 99 of the report. The MDA commissioner accepted these recommendations.

In September 2007, revisions to the June 2005 PMP were drafted and released for public comment. The revised PMP (November 2007) includes:

1. Descriptions of aquatic pesticide behavior and dispersion
2. Regulatory options for groundwater and surface water
3. Clarifications regarding registration and the authority to prevent unreasonable adverse effects
4. Provisions for the analysis of the benefit of registration

Information about the PMP revision process, including a copy of the November 2007 PMP and the outcomes of the issues forum and public meetings are available from the MDA website at http://www.mda.state.mn.us/protecting/waterprotection/pmp.htm

While the PMP is required by statute, it is a guidance document and has no inherent enforceable or regulatory requirements.

II. Prevention Activities

In 1998, the MDA completed development of Best Management Practices (BMPs) for Pesticide Management and Handling. These include BMPs for general pesticide distribution, storage, handling, use and disposal. Since then, the BMPs continue to be promoted by cooperators, through MDA's pesticide applicator training programs, seasonal updates. They are also periodically included in the quarterly MDA newsletter, the MDA Update, which is sent to commercial/non-commercial pesticide applicators and private/restricted use pesticide applicators. Web pages for these BMPs were updated in October 2008 in effort to continue to promote the BMPs. See http://www.mda.state.mn.us/protecting/bmps/voluntarybmps.htm

In February 2004, the MDA published voluntary BMPs that focus on the use of all agricultural herbicides, and includes specific practice recommendations for five herbicides of concern for water resources. These BMPs were developed, in part, in direct response to MDA's mandates under the state Groundwater Protection Act (Minn. Stat. 103H). Additionally, the BMPs address surface water concerns in an effort to minimize losses of herbicides to lakes, rivers and streams, and also to avoid possible impairment declarations for specific water bodies under the Clean Water Act. The herbicide BMPs and the previously-published BMPs for general pesticide distribution, storage, handling, use and disposal, together with use inspections and MDA's participation in pesticide applicator training, form the foundation of MDA's prevention efforts.

In 2007-2008, examples of efforts to promote BMPs and the responsible, safe use of pesticides are summarized as follows:

MDA/University of Minnesota Extension and Dealer-Sponsored Applicator Training

The MDA worked cooperatively with the University of Minnesota Extension (UME) and other interested parties in training pesticide applicators. Certification or licensing of applicators requires continuing education. These annual training sessions are vehicles for the promotion of proper pesticide handling, storage and use, and help minimize the

potential risk from inappropriate management and use of pesticides. Published BMPs have been incorporated into applicator training manuals.

BMPs Reissued

In April 2008, herbicide-core and specific BMPs were reissued and mailed, along with the "Best Management Practices for Acetochlor" poster, and atrazine/acetochlor product listings, to those that focus on crop production, including pesticide dealers, commercial applicators, atrazine and acetochlor registrant staff, independent crop consultants, PMP Committee members, BMP workgroups, the BMP Education and Promotion Team (EPT), all 89 Soil Water Conservation District offices (local water planners), Board of Water and Soil Resource, MDA staff, Minnesota Department of Natural Resources (DNR), Minnesota Pollution Control Agency (MPCA) staff, Minnesota Department of Health (MDH), Natural Resource Conservation service (NRCS), United States Geological Survey (USGS), and UME Regional Extension Educators. BMP promotion has been integrated into USDA Natural Resource Conservation Service's Conservation Practice Standard "Pest Management," Soil & Water Conservation District regional update meetings, Certified Crop Advisor (CCA) continuing education programs, NRCS Technical Service Provider (TSP) certification training, annual dealer meetings, UME field day presentations, and industry pesticide updates, including the Acetochlor Registration Partnership (ARP) website.

General Education and Outreach

In conjunction with the 2007 planting season, the MDA, with assistance from the UME, commodity groups, registrants and others, developed two key posters for distribution to pesticide applicators and retailers. See
http://www.mda.state.mn.us/news/publications/protecting/bmps/bmpsacetochlor_ltr.pdf
and
http://www.mda.state.mn.us/news/publications/protecting/bmps/bmpfilterstrips_ltr.pdf
The posters provide visual and text reminders of surface water concerns for both atrazine and acetochlor. They also emphasize requirements for application setbacks from water features, and the importance of vegetative buffers around lakes, rivers, intermittent streams, and around tile inlets.

MDA staff promoted the BMPs at the FarmFest held in Redwood County, August 2008. A question-answer board was developed to engage attendees. Pesticides in common use were referenced to test knowledge of application set-backs.

In 2007-2008, atrazine and acetochlor web pages were created to provide information on use, water quality, and BMPs. See
http://www.mda.state.mn.us/chemicals/pesticides/atrazine.htm and
http://www.mda.state.mn.us/chemicals/pesticides/acetochlor1.htm.

Newsletters, Articles, Presentations and Posters

The MDA submits articles on pesticide-related issues to publications that are intended for agricultural audiences, and conducts presentations at meetings with ag producers and ag chemical dealers. Typically these focus on promotion of the herbicide BMPs, inclusion

of BMPs in UME on-farm record-keeping manuals made available to growers, irrigation newsletters, and presentations to Certified Crop Advisors, Pesticide Applicator Training sessions, and various dealer and UME "update" meetings addressing label changes and use practices.

Posters on PMP implementation and the BMPs were included in at conferences and venues that include water resource specialists and the ag industry. Examples include the Minnesota Crop Production Retail Trade Show and the Minnesota Water Resources Conference.

BMP Education & Promotion Team
The BMP Education and Promotion Team (EPT) is a component of the PMP. Membership and purpose is designed to:

1. Provide assistance with the review and design of educational and promotional activities.

2. Promote Best Management Practices (BMPs) and provide education about how the use of BMPs will prevent, minimize, reduce, and eliminate sources of water resource degradation, including through demonstration projects.

3. Identify opportunities for cooperation among state agencies, representative EPT organizations, pesticide registrants and other interested parties, including opportunities for joint grant-writing.

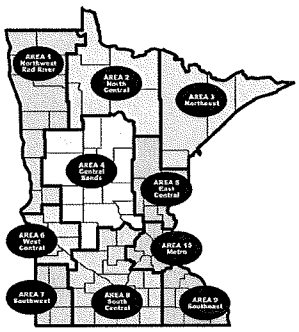
The EPT is comprised of a core membership drawn from those agencies and organizations directed in Minn. Stat. §103H to participate in BMP promotion and demonstration. Additional members from any stakeholder group are welcome to participate. The core membership of the EPT met in 2008 (see http://www.mda.state.mn.us/protecting/bmps/herbicidebmps.htm) and additional meetings of the EPT are planned for early 2009. The EPT meets at least once annually to plan and confer on BMP education and promotion opportunities.

Integrated Pest Management (IPM)
The MDA continues to provide leadership in developing non-chemical pest management methods through implementation of several programs in integrated pest management and integrated weed management. In addition, the MDA provides leadership and applied research assistance for the biological control of insect pests and weeds. These programs are coordinated and prioritized based on the current state of science and an understanding of where integrated management is currently feasible.

Urban Activities
In 2007-2008, the MDA continued efforts to inform grocers and markets of proper pest control and pesticide product sales in their establishments. The Children's Pesticide Exposure Reduction Initiative was supported with funding from the Legislative Commissioner on Minnesota Resources, and provided outreach to urban pesticide users

on the safe use of pesticides and alternatives. Through the initiative, the MDA provided resources to families and communities on reducing exposure at home, which also serves to protect the environment and water resources.

Pesticide Management Areas and Pesticide Monitoring Regions
Pesticide Management Areas (PMAs) are areas of similar characteristics in which BMP may be promoted and evaluated. Boundaries of the PMAs also define the MDA's Pesticide Monitoring Regions (PMRs). The PMAs and PMRs were used in 2007-2008 planning to establish goals, objectives and priorities for BMP promotion and evaluation, water resource monitoring, and in computer modeling exercises to predict potential leaching and runoff potential.



Additional Staff
In 2007 and 2008 the MDA hired additional staff to assist with the promotion of water quality pesticide BMPs. Water quality and outreach specialists at MDA's St. Paul office and in offices throughout the state are able to assist in promoting and evaluating pesticide BMPs.

An urban water quality advisor was hired to address pesticide and fertilizer water quality issues in urban environments, while an urban pesticide use advisor was positioned to develop ways to track and monitor urban pesticide use.

III. Evaluation Activities

Pesticide Monitoring and BMP Evaluation
The foundation of the MDA's evaluation efforts for pesticides and water quality is an annual data report. The MDA has a statutory requirement to "determine the impact of pesticides on the environment, including the impacts on surface and groundwater" (MN Chap 18B.04). Additionally, the review of non-MDA monitoring data, and BMP evaluation efforts contribute to the MDA's understanding of how best to prevent water quality impacts from pesticides. The Pesticide Management Plan Committee (PMPC) provides diverse input on the implementation of the PMP and in assessing the appropriateness of evaluation activities. Other efforts – like identification of health and environmental toxicity reference values, development of laboratory methods, and pesticide use surveys – contribute to MDA's PMP evaluation activities.

MDA Monitoring Program and Annual Data Report
The 2007-2008 MDA monitoring program collected groundwater and surface water samples from sites throughout the state. The complete data report and related information, including new surface water monitoring design and work plan documents, are available online at http://www.mda.state.mn.us/chemicals/pesticides/maace.htm
Groundwater sampling is generally conducted where vulnerable soils serve as an indicator for potential losses of pesticides through leaching to groundwater. In southeast Minnesota, groundwater springs are sampled in lieu of direct groundwater sampling given the difficulty of installing and effectively sampling groundwater in karst geology.

Sampling of groundwater from 23 wells in urban areas has continued under a cooperative effort with the Minnesota Pollution Control Agency (MPCA).

Surface water samples are collected from semi-automated surface water monitoring stations located primarily in southern Minnesota in both small and large scale, primarily agricultural, watersheds. Surface water sampling surveys are conducted to screen the general quality of rivers and streams across Minnesota. In 2007-2008, the MDA updated its approach to reporting monitoring results in an effort to provide continual improvements to a comprehensive review of MDA data on water resource impacts. Additional monitoring and evaluation data and a direct comparison of MDA data with groundwater and surface water standards and advisory values are now standard elements of the report. Thus, the report can be used to help make informed decisions regarding frequently detected pesticides in groundwater and concentrations of concern in surface water.

Compilation of Non-MDA Water Quality Data

The Groundwater Protection Act directs the MDA to review relevant pesticide-related water quality monitoring data in Minnesota. Recent groundwater pesticide data from the U.S. Geological Survey (USGS) and Dakota County Environmental Services were compiled as part of the MDA's annual tracking of pesticide impacts to water resources. Any such information is routinely reviewed in the evaluation of pesticide impacts to state water resources. A summary of recently reviewed data is available at http://www.mda.state.mn.us/news/publications/protecting/waterprotection/pmpc/07-09-08-datasummaries.pdf

BMP Evaluation

There are a range of options available to evaluate the adoption (i.e., use) and effectiveness of pesticide BMPs. Rates of BMP adoption can be measured through surveys and other means such as field audits, mail survey, applicator and dealer surveys, direct interviews(including FANMAP), and focus groups. BMP effectiveness can be measured through plot and small watershed scale projects where specific pesticide use practices can be correlated with water monitoring and pest control data. Many of these options carry a relatively high cost if they are to be conducted in a meaningful manner. The actual implementation of options will be tied directly to the availability of funding and other resources. At a minimum, a sufficient level of groundwater and surface water monitoring will be conducted at key locations in Minnesota to determine concentration trends over time sufficiently to evaluate, at a broad level, the need for additional protective actions.

In 2007, a BMP Evaluation Plan was completed (available at http://www.mda.state.mn.us/news/publications/protecting/waterprotection/pmpc/07-17-07_effectiveness.pdf) which continues to guide BMP evaluation.

MDA contributed to a national database system established by the EPA to track state performance in identifying and managing pesticides in water resources. In 2008, data for

57 pesticides were entered along with management activities for Minnesota's five pesticides of concern, alachlor, acetochlor, atrazine, metolachlor, and metribuzin.

In 2007, evaluations of computer modeling tools to predict pesticide impacts to water resources were conducted for the MDA by the University of Minnesota department of Soil, Water and Climate. The models were assessed using MDA pesticide water quality and pesticide use data, along with other available soils, landscape, and climate data. The surface water report offers an initial comparison of two models to predict pesticide losses in surface runoff in a test watershed for which MDA had significant water quality data. Because surface water impacts are driven by local or regional topography and climate events, assessments of potential losses and vulnerabilities are best done on a watershed level rather than statewide. The surface water report is available at: http://www.mda.state.mn.us/news/publications/protecting/waterprotection/pesticiderunoffrisks.pdf .

Effectiveness of acetochlor BMPs is being evaluated through tile water contamination studies and SWAT computer modeling. A request for proposal for research into the effectiveness of BMPs for addressing water quality impairments has been announced. The tile studies are joint projects with the University of Minnesota and the Acetochlor Registration Partnership. The SWAT computer modeling is a joint project with the University of Minnesota.

Pesticide Management Plan Committee

The Pesticide Management Plan Committee (PMPC) provides informed diverse comment to the Commissioner of Agriculture on significant water quality evaluation activities and decisions, such as whether to determine that a pesticide meets the statutory definition of "common detection" for groundwater, or the PMP's definition of a "surface water pesticide of concern." The committee's structure and process preserves the commissioner's statutory authority to make such determines while engaging important stakeholders in the process of reviewing and commenting on water quality, pesticide use, climatic and other data. The PMPC membership includes the MPCA, the DNR, the Minnesota Department of Health (MDH) along with a representative from industry, farmers and farm organizations, environmental groups, UME personnel and other technical experts. The PMPC meets at least one time per calendar year. The PMPC met on February 15 and July 17, 2007, and on July 9, 2008, to discuss recent and historical MDA pesticide water quality monitoring data, as well as other elements of MDA's pesticide management activities related to water quality (see http://www.mda.state.mn.us/protecting/ waterprotection/pmpcommittee.htm). According to the statutory authority under which the PMPC was created and is convened (Minn. Stat. § 15.0597), the PMPC expires every two years and must be re-established. Therefore, in 2008, the MDA sought applications for the PMPC for the 2009-2011biennium.

Standards Development

The MDH is responsible for developing health risk standards or advisory values for pesticides (and other contaminants) in groundwater and the MPCA is responsible for

developing regulatory standards or other risk guidance (e.g., benchmarks) for pesticides and other contaminants in surface waters. Both agencies are active participants in PMP implementation and are members of the PMPC. Both are fully informed regarding MDA monitoring efforts and results.

In 2007-2008, the Minnesota Legislature passed legislation linking state drinking water standards for alachlor and atrazine to their federal Safe Drinking Water Act values for public waters supplies until further review by MDH. The MDH proceeded to prepare draft state-specific values for acetochlor and alachlor, but deferred development of a state-specific atrazine value until further review is conducted.

During the same period, the MDA and MPCA worked jointly to assemble the necessary toxicity data required for defensible acetochlor and metolachlor surface water standards to protect aquatic plant and animal life. State standards for these two compounds were promulgated in 2007. The MDA-MPCA effort represents the first comprehensive review in the nation for acetochlor and metolachlor for the purposes of establishing rule-based surface water standards.

During the biennium, the MDA (along with other U.S. EPA Region 5 states) was awarded EPA special project funds to support a pilot project exploring methods for the establishment of surface water non-regulatory pesticide benchmarks when regulatory values are unavailable or are not a priority for state rule-making. The project continues into 2009-2010.

MDA Laboratory Analyses for Pesticide Breakdown Products

The Groundwater Protection Act and the Pesticide Control Law contain references to the need for evaluation of groundwater or surface water for pesticide breakdown products, and the PMP acknowledges this need. During 2007-2008, MDA equipment and analytical methods have continued to provide the MDA with the ability to analyze for breakdown products of acetochlor, alachlor, dimethenamid, metolachlor, and metribuzin. Considerable effort was put into development of methods for degradates of cyanazine, a banned herbicide whose degradates, including deisopropylatrazine (DACT), have been detected at concentrations of concern in vulnerable aquifers of Dakota County. Funding was granted in 2007 to MDA & MDH from Legislative-Citizen Commission on Minnesota Resources (LCCMR) for liquid chromatographic/mass spectrometric method (LCMS) equipment to accommodate analyzing large number of samples including DACT. Degradate analysis provides MDA with a big picture of their environmental fate. Because of capacity limitations and public health priorities, only groundwater samples are being analyzed for degradates of acetochlor, alachlor, metolachlor, metribuzin and dimethenamid.

Pesticide Use Information

In order for the MDA and its stakeholders to evaluate the source of pesticide detections and concentrations in water resources, information on pesticide use is frequently needed or requested.

To better document relationships between water quality and overall pesticide use and use rates and BMP adoption, the MDA continues to work with the National Agricultural Statistics Service (NASS) and its Minnesota office (MASS) to collect basic pesticide use and use rate information via phone surveys. Separate surveys are conducted in a two-year cycle. In the first year, a survey is conducted in the majority of crop-producing counties, yielding thousands of responses about pesticide usage (e.g., active ingredients used, acres treated, and application rates) on commodity crop acreage. In the second year, a statewide survey is conducted to capture information about pesticide use practices (e.g., use of Best Management Practices, timing of application, utilization of application setbacks). Results of recent surveys were published in May 2007 and May 2008. See http://www.mda.state.mn.us/chemicals/pesticides/pesticideuse.htm

A variety of sources publish information related to pesticide use in Minnesota. Each source has a particular reason for collecting information and a set of assumptions underlying its collection and reporting methods. In 2007-2008, data from some of these sources were available through the MDA's website. Examples of sources and related information include:

1. 2007-2008 MDA pesticide sales data for pesticide active ingredients based on pesticide registrant reporting requirements. See http://www.mda.state.mn.us/chemicals/ pesticides/useandsales.htm

2. MDA's occasional surveys of farms in localized areas (several hundred acres) where community water supplies exhibit vulnerability to land use impacts or where other water quality concerns exist. Survey results are published by the MDA or other cooperators.

    - In 2007-2008, pesticide use information for the Middle and South Branches of the Whitewater River was published in a report summarizing surveys conducted using the Farm Nutrient Management Assessment Process (FaNMAP). See http://www.mda.state.mn.us/news/publications/protecting/soilprotection/fanmapwhitewater.pdf
    - In 2007, a FANMAP study included the collection of pesticide use information from farmers located in the south branch of the Root River. See http://www.mda.state.mn.us/news/publications/protecting/soilprotection/fanmaprootriver.pdf

3. A 2007 study was conducted in collaboration with the Acetochlor Registration Partnership (ARP) and Stone Environmental, Inc. to identify likely entry points for acetochlor into the surface waters of the Beauford Ditch and the Middle Branch of the Whitewater River. MDA-ARP Watershed Evaluation determined acetochlor use, application practices, and BMP implementation in these two watersheds. See http://www.mda.state.mn.us/news/publications/chemfert/mda-arpwatershedevals.pdf

4. The MDA cooperates with the DNR on aquatic pesticide permitting and practices; the DNR publishes an annual report on the use of aquatic pesticides permitted under its authority. See http://www.dnr.state.mn.us/eco/apm/index.html

IV. Mitigation Activities

Education and Awareness

Educating and raising a pesticide user's awareness of environmental concerns is one of the most important activities necessary to protect the state's water resources from the potential for leaching and runoff of pesticides. For this reason there is considerable overlap between prevention and mitigation activities. Those activities listed under prevention, although not repeated in this section, may be considered important mitigation steps.

All of the applicable BMPs can reduce point and nonpoint sources of pesticide contamination. Production of agricultural crops in wellhead protection (WHP) areas may pose contamination risks to public drinking water sources. The MDA continues to work with the Minnesota Department of Health in its implementation of the Source Water Protection Program. Several resources and tools are available to help communities protect drinking water sources from impacts of ag chemicals, including pesticides.

Based on the newly established surface water quality standard, and the fact that two Minnesota rivers were listed on the state's 2008 TMDL list of impaired waters (303(d) list), MDA is working with MPCA to develop an approach for TMDL planning.

Pesticide Best Management Practices Development

The development and promotion of pesticide Best Management Practices (BMPs) is both a prevention activity (see above) and a mitigation activity. See the *Prevention Activities* section of this status report for background information on MDA BMPs.

In December of 2007, the Minnesota Pollution Control Agency (MPCA) adopted surface water standards for acetochlor. Evaluations of MDA water quality monitoring data demonstrated exceedances of the standard in several agricultural watersheds, and resulted in proposed impairment listings (water body cannot meet its "designated use" for aquatic life) under the federal Clean Water Act for two southern Minnesota rivers. The documented exceedances occurred early in the growing season, after acetochlor application and subsequent to rainfall events in specific years. The proposed impairment listings, along with work conducted by the Acetochlor Registration Partnership indicating potential causes of acetochlor losses from fields to surface water, led the MDA to consider revising the BMPs. In May 2008, the MPCA determined that the LeSueur River and the Beauford Ditch were impaired due to acetochlor. The MDA responded in part by announcing that it will revise the February 2004 "Water Quality Best Management Practices for Acetochlor," as well as those portions of the February 2004 "Water Quality Best Management Practices for Agricultural Herbicides" affected by such revisions in cooperation with its main registrants, U of MN, and other agencies. The revision process

will also be used to generally update all water quality pesticide BMPs with respect to references, product lists, technical terms and other information. The revision is intended to reduce acetochlor impacts to surface water in these impaired waters and prevent impairments in all rivers, streams and lakes.

The MDA assembled a "Big Book of Acetochlor"; a reference for use during the BMP revision process. It has acetochlor water quality information, product use information, and hard copies of labels for all acetochlor products registered in the state.

V. Other Pesticide-Related Environmental Activities

Pesticide Registration
In 2007, MDA responded to three separate citizens' petitions requesting the preparation of an Environmental Assessment Worksheet (EAW) for the MDA's 2007 registration of all pesticide products containing acetochlor, atrazine, or chlorpyrifos. After extensive consideration, the MDA concluded that the pesticide product registration was not a "project" as defined in Minnesota Rules, and thus respectfully denied to prepare the EAW's.

In 2007-2008, MDA staff attended the EPA Pesticide Regulatory Education Program training courses at UC Davis that focused on water quality protection and on product registration issues.

In collaboration with the MDH and the MPCA, the MDA drafted "Scoping an Interagency review of Atrazine Use, Impacts, and Registration in Minnesota" in September 2008. In general, it proposes actions for Minnesota-specific interagency review of pesticides, at the time of state registration, to identify their potential to contaminate groundwater or surface water resources at levels that might exceed relevant standards or guidelines, or at levels that might present unreasonable adverse effects on the environment or human health in Minnesota. A final draft is expected to be complete in 2009. This effort is responsive to Legislative Audit recommendations for additional, programmatic registration review.

Other MDA Pesticide Programs
The MDA has a number of pesticide-related programs designed to ensure the safe and proper use of pesticides and to reduce the risk from pesticides to human health and the environment. These programs address virtually every aspect of pesticide use and management in Minnesota. These include the following:

- Waste pesticide collection
- Empty pesticide container collection
- Pesticide applicator licensing & certification
- Permitting and inspection of pesticide storage and chemigation activities
- 24-hour emergency response to pesticide spills
- Environmental cleanup of contaminated pesticide sites and facilities
- Rapid cleanups to facilitate property transfers and development of rural brownfields through the Agricultural Voluntary Investigation and Cleanup (AgVIC) program
- Partial reimbursement of costs for environmental cleanup of pesticide releases through the Agricultural Chemical Response and Reimbursement Account (ACRRA)
- Pesticide use inspection to ensure compliance with pesticide labeling

- Pesticide misuse investigations
- Pesticide use data collection
- Enforcement of violations of pesticide law

Activities Coordinated with Other State Agencies

Other state agencies have statutory responsibilities related to the protection of the Minnesota's water resources. These inter-agency activities provide a forum for the discussion and coordination of many PMP-related issues. During 2007-2008:

- The MDA worked closely with other state commissioners and their staff through the Water Resources Committee and interagency workgroups on groundwater and surface water monitoring.
- The MDA continued to work with the Governor's Clean Water Cabinet, which includes the Commissioners of MPCA, DNR, MDA, MDH and the Board of Soil and Water Resources.
- The MDA, MPCA, and MDH continued to cooperate on the implementation of agreements on groundwater and surface water monitoring. These agreements have been published as the *Integrated Ground Water Quality Monitoring Strategy* and the *Cooperative Surface Water Quality Monitoring System* signed by the commissioners of applicable agencies. The agreements represent the Agencies' joint plan for conducting water quality monitoring on a statewide basis in Minnesota. The agreements can be reviewed at http://www.mda.state.mn.us/chemicals/pesticides/maace.htm
- The MDA continued to facilitate communications between the EPA's Office of Pesticide Programs and MDH toxicologists in order to obtain the necessary data for establishment of drinking water standards for pesticides.
- The MDA continued to work with MPCA on issues related to the development of surface water standards, and on improving coordination between surface water monitoring methods and MPCA's data needs for making surface water impairment decisions and implementation of its Total Maximum Daily Load initiatives.
- The MDA collaborated with many individuals, agencies and organizations, including the MPCA, MDH, and DNR to prepare the Minnesota Nonpoint Source Management program Plan (NSMPP). This plan was submitted to the USEPA in September 2008 as required to remain eligible for NPS grant funds under Section 319 of the CWA, and to set goals and layout a statewide multi-year (2008-2012) approach for addressing water quality problems from NPS pollution.
- The MDA assisted U of M researchers with a survey of Belle Creek located in Goodhue County as part of the LiDAR targeting Clean Water Legacy project. Preliminary findings suggest a good relationship between mapped and field verified features near the stream.
- MDA explored some background information on the type of "inert" ingredients included in aquatic herbicides that are approved for use under DNR grants for aquatic invasive species.
- A summary review of pesticides (both ag and non-ag) and their sales figures was conducted in response to a request from MDH for MDA biomonitoring candidates to support ongoing Environmental Public Health Tracking (EPHT) Program planning. The biomonitoring component of the EPHT seeks to measure contaminants in human body fluids and tissues as an indicator of potential health impacts. The MDH will assess the

candidates against a variety of criteria in order to select chemicals for future biomonitoring projects, the results of which will further inform concerns about the impact of chemicals on human health.

VI. Conclusion

There continues to be a great deal of activity at the MDA in support of the PMP. Groundwater and surface water monitoring and surveying continues and has been expanded in critical areas; groundwater samples continue to be analyzed for additional pesticide degradation products; MDA monitoring data is being managed, reported and shared efficiently and effectively; the MDA actively promotes Best Management Practices for all herbicide use in the state, and for five herbicides have been determined to be a concern groundwater or surface water; and the MDA has begun responding to the recommendations of a legislative audit of its pesticide programs. In addition, there have been many other MDA pesticide related projects and activities that are further described in this report. These many activities indicate that the MDA has continued to effectively implement the PMP during the 2007-2008 timeframe.

For additional information regarding this status report, the MDA's PMP and other MDA pesticide-related programs, please contact Gregg Regimbal, Environmental Section Manager, Pesticide and Fertilizer Management Division, by phone at 651-201-6671 or by email at gregg.regimbal@state.mn.us