MINNESOTA ENVIRONMENTAL QUALITY BOARD
MEETING MINUTES
Thursday, January 18, 2007
Pollution Control Agency, Board Room

EQB Members Present: Gene Hugoson, Randy Kramer, Jonathon Bloomberg, Susan McCarville, Dianne Mandernach, Mark Holsten, Paige Winebarger, Dan McElroy

EQB Members Absent: Dana Badgerow, Lt. Gov. Carol Molnau, Brad Moore, Glenn Wilson

EQB Staff Present: Robert Roche, Michael Sullivan, John Wells, Princesa VanBuren

Guests: Anne Kapuscinski, Dan Stoddard
The meeting was called to order at 9:00 a.m.

Commissioner Hugoson introduced himself and explained his appointment as chair of the EQB and that Commissioner Badgerow had asked the Governor to relieve her from the responsibility because of her need to focus on Administration's pending consolidation with Employee Relations. He introduced new members Mark Holsten, Commissioner of Natural Resources; Randy Kramer, Chair of the Board of Soil and Water; and Dan McElroy, Commissioner of Employment and Economic Development.

I. Adoption of Consent Agenda and Minutes

Commissioner Mandernach moved and Member Bloomberg seconded approval of the consent agenda and minutes of the November 16, 2006 EQB meeting. The motion passed.

II. Chair's Report

Commissioner Hugoson indicated that the position of Vice Chair was vacant and that the annual meeting in February is the actual time to vote for a new Vice Chair; however, given the fact that there has not been anyone in that position for some time, he requested that the Board act to vote Member Winebarger to serve as Vice Chair, and make it official at the February meeting. A motion was made and seconded to elect Member Winebarger as Vice Chair. The motion passed.

III. Executive Director's Report

Mr. Sullivan reported on the requirement for the Office of Strategic and Long Range Planning to prepare a report to the Legislature regarding the status of national efforts to establish a repository for high level nuclear waste. EQB staff is developing the report for the office this year.

IV. Legal Counsel Report

Mr. Roche explained a memo to be distributed to Board members regarding revision of environmental review rules. One of the larger issues is what, if anything, does the Board want to do in terms of clarifying how "cumulative effects" are addressed in the environmental review process. He reminded members that the MN Supreme Court issued a significant decision a year ago that addressed this issue that decision helped provide some clarity but has also generated many questions. In light of that, EQB staff proposed that the Board consider revising the rules to clarify how "cumulative effects" are addressed. At the Board's request last summer, Mr. Roche prepared a memo regarding Minnesota's regulatory scheme and case law on "cumulative effects." The Board felt that a supplemental memo addressing federal law would also be helpful. Mr. Roche indicated that he would bring both memos to the EQB retreat. His memo on federal law on cumulative effects was distributed to members. He indicated that the federal government is struggling with the issue also. Themes coming up on the federal level are similar to those in state case law. As an example, an environmental reviewing agency cannot improperly incrementalize a project to look at just the incremental effects of that project without considering projects in the surrounding area that affect the same natural resource. This is the theme of the MN Supreme Court's decision. What is the tougher question to answer, and the question that EQB staff get very often, is where do you draw the line. How far out from a project being reviewed do you have to look before saying that there is a large enough area being considered to ensure that the environmental review is adequate. There are general guidelines fleshed out by the CEQ, the federal equivalent of the EQB, but there are no straight answers that the federal government has that the state doesn't have. One question environmental reviewing agencies struggle with quite often is when is a project reasonably foreseeable such that it needs to be included in an environmental review. The federal government has a general guidance that is discussed in the memo.

V. Presentation on overview of the University of Minnesota/LCCMR project to develop a statewide conservation and natural resources protection plan.

Professor Anne Kapuscinski, University of Minnesota, and Michael McDonough, staff with the Legislative Citizen Commission on Minnesota Resources. Professor Kapuscinski introduced Chris Johnson, who is a coordinator for the Sustainability Initiative at the U of M, funded by the Bush Foundation; that initiative will contribute in substantive ways to parts of the statewide conservation plan.

Professor Kapuscinski explained that she is also representing the U of M Institute on the Environment and is one of its 12 founding fellows. The institute is an exciting development for the U, and its purpose is to corral the expertise existing on different aspects of the environment throughout the university and have it located in one place. One of the Institute's first activities was to organize the proposal to the LCCMR to

develop the statewide conservation and preservation plan. Two private consultants are part of the group working on this project: Bonestroo DSU and CR Planning.

The goal of the project is to achieve a better future for Minnesota's natural resources. The vision of the 18-month project is to create a common understanding of the current state of Minnesota's resources and use that to guide the LCCMR in creating useful tools for short- and long-term LCCMR decisions. The vision includes creating a final environmental strategic plan to inform the LCCMR and other partners such as the EQB and individual agencies involved in managing Minnesota's resources. The project will make recommendations on how to achieve a better future for all natural resources in the state and inform on how to think about and manage the connections across resource categories. She explained that this is a point at which the EQB could provide a unique perspective.

The project emphasizes work by individual research and analysis teams, with coordination across those categories. The EQB, other agencies, and research teams will be involved as partners. Partners would be asked to help identify issues, identify data sources, consider the future if no changes are made, and help develop recommendations to develop the future envisioned. The project will use a preliminary and final plan comprised of tools and recommendations to achieve the desired future. The preliminary plan will be completed by June 2007 and the final plan by June 2008. The preliminary plan will analyze historic conditions and move to synthesize existing data to develop an understanding of current and emerging issues that will be presented in the preliminary plan by using GIS maps and text.

The project will identify key issues for each natural resource category, referred to as "drivers of change." The preliminary plan will include recommendations to inform short-term LCCMR funding priorities and set the stage for the final plan. It will identify key information gaps and make recommendations for where targeted research needs to happen to fill the information gaps.

The final plan starts with descriptions of two possible futures. First, the future if current policies and actions are maintained; the second, the preferred future if statewide conservation and preservation plan strategies are implemented. The scenarios will be created using GIS-based forecasting. The scenarios are not an academic exercise in modeling, they are a means for deciding on practical implementation strategies to achieve the preferred future. The final plan will include recommended strategies for achieving the preferred future; recommended strategies for each natural resource category, and for linkages across categories.

One simple example under scenario one, present conditions versus scenario two, changing strategies, Professor Kapuscinski talked about cold water fish populations in the state. As climate change starts to affect water temperatures, precipitation and lake levels.

Currently, there is an implicit assumption in the way fisheries are managed that the climate is going to remain the same as it has been for the last 100-200 years. But if there are going to be major changes affecting the habitat and viability of cold water fish species, the state needs to be thinking about what changes to policies and regulations need to be made. Those changes are what would be considered under scenario two; scenario one would only consider business as usual.

Another important part of the project emphasizes engaging the public. There are two public engagement goals. First, people across the state need to be engaged to gather local knowledge in order to inform the process and the products. Second, there is a need to build support for the final plan and selected strategies. Professor Kapuscinski explained that her experience with multi-stakeholder engagements has shown that if the affected people are engaged from the beginning you end up with a better product in the end. Also, people easily buy in because they feel that they were part of and are thus committed. The project is committed to comprehensive statewide outreach and a primary tool will be partnering with the Minnesota 2050 project scenario-building workshops. A broad range of people will be asked to create plausible scenarios for what Minnesota resources will look like in 2050 and the scenarios will help inform the final statewide plan. The first workshop took place a week ago in Crookston. The project will use networks to invite comments and participation by the broadest range of people and organizations, such as the Association of MN Counties, League of MN Cities, and major conservation groups. The main point is that the project will engage stakeholders in the process to the targeted outreach.

Professor Kapuscinski invited the EQB to become a partner in the project and also invited the individual agencies to be represented. Their perspective is that there is world class talent and a large repository of knowledge across the various agencies. They would like to harness that knowledge. EQB's unique structure has caused it to consider multiple aspects of environmental issues. Two ways that the EQB could participate are to actively participate on project teams, such as the land and water teams, and to serve as a discussion forum for input on the drivers of change that cut across resource categories.

Commissioner McElroy mentioned that one of the project's stated goals is to inform the LCCMR on funding priorities on a short-term basis. When the plan was discussed, one of the goals was to make the investments made by the LCCMR more strategic and on a longer-term basis. He asked for a definition of short-term basis and asked if it would inform the LCCMR's long-term strategies. Professor Kapuscinski replied that it would inform both; the short-term basis was mentioned in reference to the first 6-month preliminary plan. The timing was dictated by the LCCMR because they will be making funding decisions shortly after June. Mike McDonough explained that when the Legislature appropriated $300,000 to do the plan, it directed LCCMR to go through an RFP process. Commission members wanted to use the information to help inform their decisions and give them direction. They want to gather information that will be useful to

agencies, local units of government, non-profits, and individuals so that there is a common mission with strategies that make a difference in all dimensions.

Commissioner Holsten asked for clarification of the "other" category. Mr. McDonough explained that it references a statute on recreation systems.

Professor Kapuscinski clarified that the team that has come together to do the project is excited and passionate about it because it affords them the opportunity to help produce more strategic, long-term decision-making by LCCMR and by all of the agencies within the state that are concerned about the environment. People from UMD and all across the metro campus have come together to develop a cohesive working team with partners from the environmental consulting firms.

Commissioner Hugoson inquired about the partners, agencies, and staffs within agencies becoming involved with the project and asked for clarification on how that would proceed. Would the project make contact with the agencies or would the agencies contact the project. Professor Kapuscinski responded that they are just now getting up and running but that it would be the project's responsibility to initiate the contact. Much is already unfolding through members of the project team who have working relationships with agencies. If agencies want to make contact first, that would be fine. However it is started, the project team will make sure that contact is initiated. Mr. McDonough added that some commissioners have expressed support for the project, but project team members want to be respectful of their staff commitments and other priorities. Commissioner Hugoson suggested that there be one contact person in each agency. Mr. McDonough supported the idea. Commissioner Hugoson suggested that it be the EQB tech reps who serve in that function, at least initially, unless a commissioner identifies another point of contact.

Member Winebarger commented that EQB had been invited to participate and asked whether a formal motion was needed for that. She indicated that she supported the idea of the EQB exploring other opportunities available to work with the planning group. Commissioner Hugoson asked for updates on the project through EQB Board meetings. Professor Kapuscinski replied that they would be very happy to make those reports. She mentioned that she would inform a key coordinator of the project, Jean Coleman from CR Planning, and she would be informed of the Board's interest in remaining updated. Mr. McDonough indicated that there also is an extensive web-based process for updates. He supplied the Board with a copy of the proposal that was submitted to the LCCMR for consideration.

VI. Presentation of preliminary Water Sustainability 2030 report: "Use of Minnesota's Renewable Water Resources: Moving Toward Sustainability"

John Wells and Princesa VanBuren indicated their goal to review findings of the Water Sustainability 2030 report and to begin a conversation with members about what the report contains.

In Minnesota, water is important and affects everything from economic development, agriculture, wildlife and recreation to our general quality of life. Water quantity also has a profound influence on water quality and sometimes that is forgotten. Minnesota needs to understand and take stock of its water resources. The preliminary report includes the project mandate and need, how we look at water supply and demand, and how we assess these resources.

Mr. Wells referred members to Minnesota Statutes, section 103A.43(c). Staff have worked closely with the DNR Division of Waters and the Division of Ecological Services. Other partners include the US Geological Survey, University of Minnesota, Electric Power Research Institute (EPRI), Minnesota Department of Health, Metropolitan Council, and Minnesota Geological Survey. The project need is to understand how Minnesota is doing in using water, how much of the resource is currently being used and how much is left for the future. In the early '90s this was attempted but there were roadblocks caused by a lack of data. Some of those roadblocks still exist but there are now ways to develop viable information for a screening-level analysis. It is important to recognize the importance of water in planning for growth. There is a need to look at future implications of how much water is currently being used. All of this was highlighted by the drought last summer. Staff decided that it was important to deal with the analysis from a county level. Supply and demand were evaluated for both current (2005 data) and projected (2030) water use.

Staff was not able to address water coming into a county from upstream so, for example, Hennepin County's analysis doesn't deal with the Mississippi River coming by its doorstep. This approach was required because of the water supply estimation techniques that were used. The assessment found that four counties currently use more than 50 percent of their renewable water resource. The range of county uses in 2005 was from less than one percent to 135 percent. Only one county was over 100 percent of its use of home grown water, and that was Ramsey. The current threats are greatest in the metro area and toward St. Cloud. In 2030, seven counties are expected to be at risk of using more than 50 percent of their renewable water resource.

Ms. VanBuren discussed the methods used. Staff needed to determine current water use in the state at the county level. Then there was a need to estimate future use. Next, there was an effort to quantify sustainable supply. Finally, staff assessed permitted use, the difference between how much was used and how much was permitted to use.

Staff looked at current water use values between 1995-2005, summarizing the DNR permit database for that 11-year period, and then compiling population by county in order to calculate per capita usage.

During that period there has been an increase in use of Minnesota's water resources amounting to 18 percent in statewide use and 6 percent in per capita use. Staff also looked at un-permitted water use. Un-permitted use is generally residential use from a private water system. To determine how much is un-permitted, staff evaluated Department of Health data to determine who is being served by municipal water sources. Using an average of consumption, staff developed an estimate of un-permitted use.

The resultant 2005 baseline is an average for the 11-year period, multiplied by the population of 2005 to achieve gross water use in that year.

In terms of net water use, staff looked at the 1,600 surface water permits to determine what was imported to the county and also what isn't being consumed. Imported waters are waters such as the Mississippi, Minnesota, and St. Croix rivers and large lakes where a large portion of the water flowing through an area is imported or shared with other communities. Staff looked at surface waters that originate outside of a county and removed them from the analysis. It also removed non-consumptive uses from the analysis. A non-consumptive use includes industries that return used surface water back to surface water systems. An example is the Minneapolis steam powered cooling plant, where only 2 percent is consumed. Of the 1,600 surface water permits issued, consumption was analyzed and the portion of the water left unconsumed removed from the analysis. The resultant net use is gross use, minus what has been imported, minus what wasn't consumed.

In looking forward to 2030, staff assumed per capita consumption would remain constant to 2030. The Metropolitan Council, which is doing a similar analysis, assumed a decrease due to water use efficiencies and industry changes. Given the lack of evidence of a decrease, staff determined that the best course was to assume that per capita growth would be flat. Staff used population estimates for 2030 from the State Demographer for out-state and the Metropolitan Council for the metropolitan area. Gross water use in 2030 uses the same per capita analysis: per capita 1995-2005 multiplied by the population in 2030. To gain net water use for 2030, imported waters and non-consumptive use were again subtracted.

Staff also assessed permitted use, based not only on how much water is being used but how much is allowed to be used. Net permitted totals equal gross permitted use less imported waters and non-consumptive use.

"Sustainable" use of water is defined as the use providing for the needs of society, now and in the future, without unacceptable social, economic or environmental consequences.

This report used the definition: the quantity of water that could be removed from the system on a renewable basis without drawing down the resource.

To determine renewable resources, staff assessed published supply estimation methods that look at characteristics of water flow and systems to characterize how much is there. These incorporated soil, precipitation, watershed discharge, evapotranspiration, ecoregion, hydrology, and other factors. Sources used include the University of Minnesota Watershed Characteristics method, the net available precipitation method, the regional regression recharge method, and the fractional precipitation method. On a statewide basis, these methods produced estimates ranging from 4 trillion gallons a year to 10.7 trillion gallons per year, a good amount of agreement. Staff used the median value generated for each county.

In looking at the data from 2005, Ramsey County is at 135% of use and is the only county above the 100% threshold. There are four counties using more than 50 percent. The metro range is from 10 percent to 135 percent. Greater Minnesota ranged between less than 1 to 46 percent. In 2030, Washington County joins Ramsey County in using more than 100 percent of its threshold. Seven counties are expected to be using more than half of their resource. The metro area is expected to range between 23 and 177 percent, while Greater Minnesota is expected to range from less than 1 percent to 81 percent. Staff then looked at permitted water volume as a percent of the renewable resource. Ramsey County is permitted to use 310 percent of its renewable resource. Five counties are permitted at more than 50 percent. The metro range is 5 percent to 310 percent, and greater Minnesota is less than 1 percent to 43 percent.

Staff also analyzed how to use the information gathered. A fictitious (typical) county was generated. It comprises 717 square miles, has a renewable water resource of 54,722 million gallons per year (MGY), gross water use of 2,111 MGY, net water use of 1,823 MGY. At its current level, it uses about 3.3 percent of the county's renewable water resource. A hypothetical high-use industry was added using 750 MGY and an extrapolation was made to determine the effect. This new industry would use 1.4 percent of the county's supply, 36 percent of the county's current gross water use (41% of the net use), and the industry would draw all the renewable water from a 10 square mile area. This planning tool could be used to identify how much of a resource might be dedicated to a new use. The tool provides a tool for putting a proposed use in perspective.

The assessment used the best information available to date; developed information based on a "most likely" scenario; chose median values for population, use, and supply; and did not include a "safety factor." The product is helpful in planning, but not okay for site-specific permitting or allocation.

Mr. Wells noted that Minnesotans have considered themselves to be water rich, but there are parts of the state where that needs to be qualified. Water has limitations throughout

the state; water may exist but be hard to find, which is why the Legislature has asked EQB to take the pulse every two years of how the state is doing regarding water use and what supplies may be available for future needs.

There are opportunities for improving data collection and management, including aligning state and federal use categories and addressing gaps in reported use. There are situations where a water user under permit hasn't reported any use for 5 years. If they report they may be assessed a further fee and it is unclear if they are not reporting on purpose or are dormant. Member McCarville asked why staff doesn't know. Mr. Wells responded that there is not sufficient staff to check all 6,500 ground and surface water permits. One thing staff could do to help DNR is to streamline the reporting of water use so that the reporter can do it electronically. Some DNR programs use that system, currently DNR Waters doesn't. Part of the reason is transitional costs. With tight budgets and staffing, making a switch can be difficult to do. How DNR manages these opportunities is open at this time.

For the next report, imported waters should be incorporated so that a big component of the water system does not have to be excluded. In addition, it will be important to address how water quality may affect availability. Surfical aquifers near Rochester, for example, are not considered safe by the public utility, which has written off that top layer as a potential source of public water supply. Another area for improvement would be to develop the analysis on a seasonal or monthly basis. Permit data is available on a monthly basis now. Supply data becomes less reliable on a monthly basis, but it could be developed in the next report.

The message staff would like to convey is that this is an opportunity for the state to benefit and help people understand that there is a need for more information about the availability of the state's water resources. Our laws have been constructed under the assumption that Minnesota is a water rich state and perhaps that is no longer the case. If so, what needs to be shifted in those laws to account for today's reality. It is hoped that this report will help bring that to light.

Member Bloomberg asked for a clarification of the math. The notion of renewable resource on an annual basis versus water use on an annual basis and the percent. If the number is less than 100 percent of the draw on an annual basis, and issues of quality aside, does that mean we are not drawing down the resource? Ms. Van Buren responded that he was correct. One-hundred percent would suggest that the threshold is being crossed and the supply would be drawn down. Mr. Wells replied that it can be thought of as partially opening the drain in a water filled bathtub and leaving the spigot on. In fact, nature may, in effect, open the spigot wider to compensate for increased withdrawals. The sustainable level is the amount one can pump out without drawing down the tub permanently and without taking too much from surface features as the "spigot" opens further. Mr. Wells quoted the head of the Minnesota Geological Survey, Dr. Harvey

Thorleifson, “We are currently appropriating every drop of water in the state for something,” “we” meaning people and nature. It’s just a matter of making trade-offs that are acceptable to all concerned.

Member McCarville asked who would be receiving a copy of the report besides the EQB and who is responsible for taking some kind of action to enhance data and reporting. Mr. Wells replied that once approved, the report can be used to aid its biggest partner, DNR, in securing the change level request that the governor has approved for getting more information about ground water in certain parts of the state. This report will help make that argument. State law does require that the report be sent to the chairs of the natural resources committees of the Legislature.

Mr. Kelly asked about county based water assessment versus the watershed unit and the rationale behind not using the latter. Mr. Wells replied that people identify with the political unit, and that groundwater doesn’t follow watershed boundaries. Either approach has merits and drawbacks and staff considered it a matter of going with one that most people would identify with. Perhaps in the next edition there will be a way to move seamlessly between the two. Population numbers were generated at the cities and towns level, so a city could be allocated to a watershed if it is on the boundary. Staff wanted to keep it simple and not complicate the message. Ms. VanBuren added that the county level is also a planning and local management unit.

Commissioner Hugoson asked why surface water that could be imported was not figured but ground water was and aquifers can also be considered imported by counties. Mr. Wells agreed that you could have a county or a city in a county appropriating water a mile from the county boundary and that would not be seen or called imported for the exercise. It brings up the issue of everyone having their fair share of the reasonable use doctrine that the state operates under. When does that get out of hand? That’s a permitting issue that DNR deals with all the time as they facilitate water use conflict resolution. That is a limit to the study. Ms. VanBuren responded that recharge methods look at groundwater recharge of that county to that county’s aquifers. The aquifer bridges the county boundary but we looked at recharge just within that county. In the case of Ramsey, which appears to be using more than its sustainable supply levels, it is likely drawing on resources adjacent to it. In all cases, staff looked at uses in a county and recharge to the aquifers in the county.

Commissioner Hugoson asked about drainage and what staff considered, whether it was agricultural, storm sewers and sump pumps. Ms. VanBuren explained that the team had discussions with the University of Minnesota and others who advised that wide ranging land use issues, including development as well as drainage, might affect water supply long term. Mr. Wells added that climate change is also an issue and ongoing research needs to be done to determine how that is going to affect supply and demand.

Commissioner Hugoson asked about the county-by-county map and that there was concern for southwest Minnesota, but those counties are only using less than 1 percent and Ramsey County is at 135 percent. Why is there no concern or shock to take action in the metropolitan area to stop development? Mr. Wells explained that the metropolitan area is blessed with the Mississippi River that acts as a safety valve. The big issue is not in rural Minnesota but rather in the growth corridor in the metro area. Some geologists at DNR were not surprised, and they are concerned that even though we have a huge resource underground in the metro area, that it was laid down there about 10,000 years ago and it is unclear how easily recharged those deep aquifers may be. That is an area where attention needs to be focused. The Legislature did direct that the Met Council do a master plan of the region's water supply and they are scheduled to issue a preliminary report to the Legislature this month. They have another two years before they have to complete the master plan. DNR, PCA, Health and Agriculture are all on the steering committee to participate in that process.

Mr. Sullivan emphasized that this report and the data discussed are not meant to be a substitute for the permitting process, which focuses on a specific request in a certain place. What the report tries to do, given the limited availability of tools to undertake this analysis, is to get a broader picture of what might be happening. It is a preliminary attempt to begin to get a sense of the larger scale of what's happening. This is one of the few instances where an attempt has been made to get the big picture. This is not for immediate planning purposes, but only to suggest that there may be areas where additional information and research needs to be generated to make that information more reliable. Mr. Wells replied that if the report is off by 100 percent on supply estimates, and some of the southwest counties are not less than 1 percent but are less than 2 or 3 percent, it still puts it into perspective that the issues require more local analysis of supply and demand. The numbers give a good check across the state and add significant value.

Commissioner Hugoson asked if there were any federal restrictions or requirements as they relate to the Mississippi River and water consumption out of it? He explained that he knew there were restrictions between rivers in some states. Mr. Wells replied that in areas where you have Western water law there are compacts that define how much each state gets, but that doesn't exist for the Mississippi River.

Commissioner Hugoson added that information is always valuable and can be helpful. Sometimes a little information with the wrong assumptions can be dangerous. He indicated that he knew the intention of this report was not to be used as a basis for decision making but that he would be surprised if facts and figures from this report were not quoted or attempted to be used by various factions.

Mr. Sullivan acknowledged that staffs are busy. As we look to future improvements of this analysis, he hoped interagency the relationship will be even tighter and more engaged.

VIII. Presentation regarding status of monitoring and assessment of agricultural chemicals in Minnesota waters.

Dan Stoddard, Assistant Director for Environmental Programs, MN Dept. of Agriculture. Mr. Stoddard, a hydrogeologist by training, presented an overview on the water quality monitoring program at the Department of Agriculture. Agriculture is the lead agency for organic fertilizer regulation in Minnesota. It is the delegated state agency for enforcing the federal pesticide law. Under the pesticide control law, Minnesota Statutes, Chapter 18B, the Agriculture commissioner must determine the impact of pesticides on the environment, including impacts on surface water and ground water in the state. The department's monitoring program measures the occurrence and concentration of pesticides in use in the state, provides analysis of land use and pesticide use and hydrologic attributes resulting in water resource degradation, and evaluates pesticide impact.

Most of the program is built around pesticides, which includes herbicides, insecticides and fungicides. Herbicide degradants, for example, result from herbicide use. In the past, it has been difficult to analyze for these degradants because the methods were extremely expensive and complicated. Cooperation between the Department of Agriculture and other departments, agencies, and private citizen/farmers is also key to the success of the program. Farmers allow the department to place wells on their land to sample spring water. Counties and local governments cooperate in this monitoring also.

Ground water monitoring takes place in all areas of the state with some concentration in the southeast part of the state. This area is harder to monitor because of the karst topography that is predominant in the region.

The department employs a formal effort to define how it approaches monitoring, cooperating with the University of Minnesota to ensure that surface water and ground water is monitored in all regions. Based on the results, specific practices have been developed. There are ground water testing wells in most regions. Wells in the metro area are monitored by the PCA; the Department of Agriculture works with PCA to identify concerns uncovered by this monitoring. Monitoring wells serve as an early warning system in vulnerable areas and the consolidated information is posted on the department Website.

For surface water, there is a three-tiered approach in which the department tries to cover the whole state. In tier one, samples are taken in the spring over an 8-week period, one sample every two weeks. When pesticides are applied, the highest concentration in surface water occurs after the rainfall event. If a farmer applies a pesticide to a field and it rains the next day, pesticide concentrations will be high. If a sample is gathered that

shows an elevated concentration, tier two doubles the sampling. In tier three monitoring, stations record when storm events occur and automatically collect samples.

Sampling is done in all major agricultural watersheds across the state. Other entities collect samples and data is stored data. Most automated state sites are in southern Minnesota because sampling has taken place there previously and those are areas of greatest concern. All results are printed in the annual report and are available on the department's Website and freely shared with everyone. No one has yet challenged or questioned the data collected or reported.

The department handles questions on Atrazine. Since the mid-1980s, changes in agricultural practices have led to changes in the use of Atrazine. Atrazine and its degradates are common in vulnerable wells and detected in 65 percent of them. Concentration levels of Acetachlor are non-detectable or very low; if you compare that to Atrazine and its degradates, levels are .08 ppb at the 50th percentile. In the 90th percentile rates have gone up more but are still not that high. Degradates frequently exceed the parent in terms of measurement and at times the parent does not even register.

In alternating years, the department does survey maps on pesticides and they work with the University of Minnesota in producing models of pesticide use. These models help the department in focusing its monitoring efforts.

During last year's legislative audit, it was determined that the department did a good job of monitoring the use of agricultural pesticides and its effects on ground water and surface water.

Key issues facing the program include impaired waters where efforts will be focused more on monitoring and collecting data. One key issue is to evaluate pesticide and herbicide contamination. Pesticide degradates are a concern for ground water. With current standards, the levels are not considered a danger, but if health standards change or activity and use around those chemicals changes there could become a health issue.

A current project is using LIDAR to target high risk locations. LIDAR provides very high resolution topographic data and with that data creating with models having greater precision in targeting locations that are of concern for ground water. Increased statewide monitoring concerning pesticides and aminoacetates is under way.

Member Kramer asked how many compounds are being checked for and if the department is only checking for compounds that are known to be applied. Mr. Stoddard replied that the analytical approaches used at the labs have a standard list of compounds that include current and historical uses. Specific compounds are looked for and other detected compounds are followed up on.

As a point of information, Chair Hugoson mentioned that the Department of Agriculture issues licenses each year for pesticides that are used in Minnesota. The Minnesota Center for Environmental Advocacy petitioned late last year to request preparation of Environmental Assessment Worksheets on three pesticides, Atrazine, Acetachlor, and a third chemical that is an insecticide before permits are reissued. The EQB turned that over to the Department of Agriculture for a response. The Department is currently pulling information together on that request and the Commissioner will issue a response to that. Updated information will be available at the next EQB meeting.

Chair Hugoson reminded members and technical representatives that the Board retreat was scheduled for January 31, starting at 9 a.m. at Dodge Nature Center. Staff was trying to shorten the retreat in the hopes of being done by 1 p.m. Chair Hugoson indicated that he had conversations with the Governor's office and that they believe that consideration should be made to expanding deliberations regarding EQB with input pursued from a broad audience. The plan for the retreat was that Ryan Church would go over the results of the survey and provide an opportunity for verbal additions and discussion from members in terms of what the EQB is about. Suggestions and input for improvements and changes were to be sought. There was also to be an opportunity for members to understand what the purpose of the EQB was originally and some of the history of the EQB. No conclusions were to be reached that day; the retreat was to be considered a first step in terms of determining where the EQB goes. It was expected that this look at EQB and its future will not be concluded until later in the year, with the idea being that if there is a need or suggestion for legislative changes that they would come back to the session next year. In the meantime, conversations with key legislators will begin to determine how they wish to be engaged in the process. It was hoped that members would leave the retreat with enough material to begin discussions on concerns that are raised.

The meeting was adjourned.