

APPENDIX B: MEETING MINUTES

Wisconsin Groundwater Coordinating Council

Meeting Minutes – August 22, 2008

Department of Agriculture, Trade, and Consumer Protection Board Room
2811 Agriculture Drive, Madison

Members Present: Todd Ambs - Chair (DNR); Kathy Pielsticker (DATCP); James Robertson (WGNHS); Mark Werner for Henry Anderson (DHS); Anders Andren (UW-System); and Eric Scott for Berni Mattsson (Commerce).

Others Present: Lori Bowman (DATCP); Chris Babiarz and Jim Hurley (WRI); Birl Lowery and Brian Lepore (UW Madison Dept. of Soil Science); Jeff Helmuth (DNR);

- 1) **Introductions and General Business** – The meeting began at 10:00 AM. Introductions were made. The May meeting minutes were approved.
- 2) **Consideration of Draft FY 08 Report to the Legislature** – Jeff Helmuth presented suggested edits to the draft report sent to all GCC members two weeks earlier. Consensus was reached on all proposed edits. Jeff asked if the inside cover should list current members or all members from the reporting year. The consensus was to list all members and note which ones were no longer members. A question of whether a statement on property assessors considering the expense of contaminated wells was still valid after a recent WI Supreme Court decision was left unanswered. Jeff was asked to continue pursuing the answer with DNR's Legal Services and include the statement only if still applicable. [Note: Jeff later reported that DNR Legal Services opined that the recent decision applied only to property owners, not assessors. The statement was left in the report.] Contingent upon resolving the legal question, the GCC approved the report as revised. The GCC thanked Jeff for his efforts. Jeff acknowledged extra help from Laura Chern and Chris Babiarz in fine-tuning the report.

Todd Ambs plans to meet with Legislative committee chairs shortly after the November election to assure that they're aware of groundwater issues. Todd expects that there will likely be new groundwater quantity legislation and possibly groundwater quality legislation introduced next year. There is the possibility of small amounts of money for groundwater monitoring and research that Todd would like to route through the GCC' joint solicitation process. Jamie Robertson, Kathy Pielsticker, and Anders Andren all indicated an interest in accompanying Todd.

- 3) **Plans for FY 10 Joint Solicitation** – Jim Hurley was welcomed back after a year in Washington D.C. on an appointment with NOAA with whom he will continue to work part-time this fall. Chris Babiarz will continue to help out with the FY 10 solicitation. Jim distributed the timeline for the solicitation, as well as draft language, also to be reviewed by GRAC and the funding agencies. Jim, added that the UW budget should be good so he hoped to have more proposals this year. UW would like to have more proposals on socio-economic issues. Jeff Helmuth noted that the DNR priorities would be somewhat broader this year. Todd said he expected that the state budget lapse plans would impact the DNR groundwater monitoring and research budget.

There was some discussion of research needs related to ethanol production. Anders said that they would work to make the UWS priorities more explicit on ethanol impacts. Todd noted that ethanol production technology was becoming more water-efficient so efforts could be focused on dealing with economic issues. Eric Scott said that a Commerce concern is what happens when ethanol fuel is released on top of residual contamination and causes a stable plume to expand.

- 4) **Education Subcommittee Report** – Jeff Helmuth reported that the Subcommittee met on July 23rd, 2008 and discussed the following topics:
- Water reuse and conservation fact sheet - Kevin Masarik is working on this item with Tom Braun at Commerce. Jeffrey Beiriger (WI Water Well Association and WI Plumbing Heating and Cooling Contractors) is interested as the issue is increasingly important to both the organizations that he represents.
 - “What’s wrong with my water?”– With input from the subcommittee and many others, Dorie Turpin coordinated development of DNR web page: <http://dnr.wi.gov/org/water/dwg/private/waterproblems.htm>. The website: 1) answers some of the more commonly asked questions that DNR private water staff are asked; 2) helps well owners diagnose their aesthetic water quality problems; and 3) captures and preserves DNR water supply institutional knowledge.
 - Wisconsin Well Water: Planning Web-based Resources Grant: Kevin Masarik is coordinating a grant from the Medical College of WI targeted at improving the delivery of drinking water quality testing and interpretive information through the web by centralizing drinking water quality information into a user-friendly resource. The project will include a series of interviews with professionals that use and distribute drinking water quality information to citizens and compile a list of all materials that are currently in use. The subcommittee will be involved.
 - Subcommittee turnover includes Dave Lindorff retiring from DNR (not yet replaced), Jeff Ackerman moving from DATCP to DNR (no longer on subcommittee – Sarah Walling is filling in for DATCP), and new DHS and SLH representatives. The Subcommittee has reviewed its charge for the new members.
 - Karst: Avoid that Sinking Feeling brochure – After a prolonged search, Suzanne Wade has found funding for reprinting the revised brochure.
- 5) **DATCP well construction report search tool** – Cody Cook demonstrated the new DATCP application for searching and viewing scanned images of well construction reports. Cody developed the application to work in a geographic information system environment. Reports can be selected with a box or by using town-range-section locations. DATCP has set up a way for other agency staff to access the application with a username and password. Monitoring and Data Management Subcommittee members will field questions from staff from their agency.
- 6) **Monitoring and Data Management Subcommittee report** – Jeff Helmuth reported on the following July 29th meeting items:
- 2005 Water Use Report - USGS will produce an open-record-style report for 2005, not poster-style report as in past years. The report should be published in January 2009. Some findings include that water use in 2005 was somewhat more than in 2000 and it was the first year that irrigation use exceeded use for municipal supply. However, that change was influenced by the use of new water use coefficients generated by a WGNHS study of water use in Waukesha and Sauk Counties.
 - New/updated USGS Water Use web pages

- National Assessment of Water Availability and Use - Great Lakes Basin pilot project: <http://water.usgs.gov/wateravailability/greatlakes/>
- Wisconsin Water Use: <http://wi.water.usgs.gov/data/wateruse.html>
- Perfluorochemicals (PFCs) in groundwater – Mike Lemcke gave an update on PFCs including PFC-containing waste from a 3M factory in Minnesota impacting drinking water supplies. Discussion focused on sites in Wisconsin with the potential for PFC contamination including: the Junker landfill in St. Croix Co., Old Towne Landfill in Richmond, the Marina Cliffs Barrel Dump Superfund site, and a 3M facility in Prairie du Chien. No PFCs have been found through limited testing at the Wisconsin sites. DNR is writing a white paper on the issue.
- Wisclith - Subcommittee members are reviewing advanced copies of the WGNHS Wisclith database
- DNR's high-capacity well inventory project – So far staff have identified ownership of 7,600 wells of the 11,000 wells in the DNR data system. 2007 pumpage reporting yielded about 5,000 wells with good pumpage records and another 1,000 with questionable data. Much greater confidence in the data collected for 2007 than the approval numbers that were the only pumpage data previously available.

7) Agency Updates

DATCP – Lori Bowman reported that DATCP was looking at budget reductions. Personnel changes include Duane Klein moving to a half-time position and Stan Senger appointed Chief of the Environmental Quality Section. Three hydrogeologist positions remain vacant. Changes in Atrazine Prohibition Areas include one area near Poynette expanding. Regarding the Emerald Ash Borer (EAB), DATCP has revised ATCP 21 and created a response plan to prevent the spread of EAB. Nutrient management grants should be announced later this year. Lori is participating in a DHS planning team for public health 2020 and hoping to add safe drinking water to the discussion.

UWS – Anders Andren reported that the Water Resources Institute appropriation was again zeroed out and again added back. This time there may be a slight increase. Meanwhile, the WRI is working with UW Art Professor Henry Drewal to set up Water Matters: A Lecture Series, October 21 - November 18 at the Chazen Museum of Art (<http://aqua.wisc.edu/watermatters/>) [Note: As part of the series, Anders will give a lecture “Groundwater: Wisconsin's Buried Treasure” on November 18th.] Anders noted an article in Scientific American “Facing the Freshwater Crisis” by Peter Rogers on the urgency of action to avert a global water crisis (<http://www.sciam.com/article.cfm?id=facing-the-freshwater-crisis>).

Jim Hurley reported that the Sea Grant RFP was in preparation and that Sea Grant's comprehensive plan would be completed in late fall.

WGNHS – Jamie Robertson reported that the survey was busy with flooding and high water issues from the torrential spring rains. Consideration is being given to revisiting water table maps to show areas vulnerable to “groundwater as a natural hazard”. Madeline Gotkowitz has been evaluating a proposal for dewatering the Spring Green area and worked with John Attig to prepare a presentation on the geologic and hydrologic conditions in the Wisconsin River valley that contributed to the flooding. Slides from the presentation and a fact sheet on these conditions are presented on the WGNHS website: <http://www.uwex.edu/wgnhs/news.htm>.

Ken Bradbury is working with Mark Borchardt (Marshfield Clinic) and others on a study of the source of viruses in the Madison wells. The project findings implicate sewers and support investment in infrastructure.

Jamie also announced the creation of a new WGNHS outreach program focused on developing more digital information available on an interactive website. Plans include hiring an Outreach Program Manager to spearhead the effort.

DHS – Mark Werner reported on the split of DHFS into the Dept of Health Services and Dept. of Children and Family Services. Henry Anderson has been appointed interim State Health Officer. DHS continues to deal with flood response issues and is preparing a list of compounds to be considered for the next round of groundwater standards. DHS is also participating in the Environmental Health Tracking Program with 16 other states, developing integrated data platforms. Mark noted that a recent Wisconsin Medical Journal article titled “Measuring the Environmental Health of Wisconsin’s Counties” reported on a DHS/UW Population Health Institute study (http://www.wisconsinmedicalsociety.org/WMS/publications/wmj/issues/wmj_v107n4/107no4_athens.pdf) where water quality (% pop. exposed to nitrate > 2mg/l) is one of three contributing factors.

DNR – Todd Ambs reported that the June floods were causing more problems than did those of August 2007. The Water Division is compiling a report on flooding. In June, there were 170 sanitary sewer overflows, record flows in some rivers, problems at wastewater treatment plants, dam failures, impacted private wells and basements, but no public drinking water systems were impacted. Todd attributed this to a push years ago to move wells to higher ground. The odd weather has raised questions on how to regulate using climate statistic-based models.

A new Water Use Section was created in the Drinking Water and Groundwater (DG) Bureau with Eric Ebersberger appointed Chief. The primary functions are to implement the Groundwater Quantity Law, develop water conservation plans with Commerce and PSC, and implement the Great Lakes Compact. Eight to ten positions will be requested for the section.

Todd added that the Great Lakes-St. Lawrence River Basin Water Resources Compact was rapidly working its way through Congress towards the President [Note: the Compact was signed by the President on October 3rd]. The Compact will go into effect on December 8th, before rules will be in place, so interim approvals will be issued. Act 227 will require general permits for all users from 100,000 gal/day to 1,000,000 gal/day and individual permits for users over 1,000,000 gal/day. New and increased users must demonstrate that they’re using current water supply efficiently.

DG continues groundwater quantity work by building a springs inventory. Plans include a 2-year project for mapping and documenting springs with a flow of over 0.25 cfs for more than 80% of the time.

- 8) Rapid Movement of Water and Contaminants in Soil Cracks** – Birl Lowery and Brian Lepore presented their UW-funded project on macropore flow. Preferential flow can occur through soil cracks and biopores (earthworm burrows and root channels). The impact of water and solutes flowing through macropores on groundwater quantity and quality is known to be significant, yet it remains poorly understood, and there are limited models available to simulate this. In addition to a lack of good simulation models, methods for real time sampling

of macroporous water and solute fluxes are limited as well. The object of the study was to make in-situ measurements of critical preferential flow parameters and improve a preferential flow model. The study was conducted at the University of Wisconsin-Madison Arlington Research Farm, Arlington, WI on a Plano silt loam soil cropped to corn. A new technique for monitoring macropore fluxes, an Automated Lysimeter Fluxmeter (ALF), was developed and used in several in-situ ponded infiltration experiments. Other measurements were made by equilibrium tension lysimeter (ETL), free drainage pan lysimeter and volumetric water content (VWC) probes. The major modeling effort concentrated on improving the Macropore-Matrix (M&M) submodel of PALMS (Precision Agricultural-Landscape Modeling System) so that it improved estimates of macropore flow. Results from field-based water and solute flux experiments led to estimates of profile macropore volume and interaggregate half-slit width, which were used to parameterize the M&M component of PALMS. The revised PALMS can better estimate water fluxes in macropores and indicates deeper and more rapid infiltration than without incorporation of the macropore infiltration model.

11) Adjourn and Next Meeting – The meeting was adjourned at 1:00. The next meeting will be held at 10:00 on November 14th at the Wisconsin Department of Natural Resources.

Prepared by Jeff Helmuth - Department of Natural Resources

**Wisconsin Groundwater Coordinating Council
Meeting Minutes – November 14th, 2008**
At the Department of Natural Resources, GEF II building
Room G09, 101 S. Webster St., Madison.

Members Present: Todd Ambs - Chair (DNR); James Robertson (WGNHS); George Kraft (Gov. Rep); Dan Scudder (DOT); Lori Bowman for Kathy Pielsticker (DATCP); and Chris Babiarz for Anders Andren (UW-System).

Others Present: Ken Bradbury (WGNHS); Mike Lemcke and Jeff Helmuth (DNR);

- 1) **Introductions and General Business** – The meeting began at 10:00 AM. Introductions were made. The August meeting minutes were approved.
- 2) **FY 10 Joint Solicitation** – Chris Babiarz reported that there had been a procedural complication for UW-Madison applicants in the automated proposal submittal process. In the past, these applicants submitted a transmittal form (T-Form) as proof of administrative approval of the proposal (all other applicants submitted a more streamlined authorization form). After the last joint solicitation (FY 09), UW-Madison discontinued the use of the T-Form in favor of a new online procedure. The new procedure (nicknamed WISPER) presented several challenges that threatened to complicate the Joint Solicitation process for FY 10. Fortunately, WRI staff were able to reach an agreement with the UW administration that allowed all applicants (including those from UW Madison) to use the same streamlined authorization form mentioned above.

Todd Ambs noted that, with the large State budget shortfall, it was too soon to tell how much funding DNR would have. Monies in General Purpose Revenue and fee accounts were being used for much-needed budget repair. George Kraft noted that funds were needed for information on streamflow, groundwater levels and modeling to support Act 310 groundwater quantity work. The UWS priorities emphasize original research so there is a need for agency support of monitoring data gathering and compilation. Ken Bradbury agreed and added that funding was needed to support local efforts in monitoring and resource characterization. Jamie Robertson emphasized the need to maintain the balance of the Groundwater Research and Monitoring Program.

Todd noted that part of the new federal economic stimulus package was directed at infrastructure. Climate change, flooding and wetland restoration are all to be targeted. Groundwater is likely to benefit from many of these projects. Todd added that groundwater quantity legislation may go through the Legislature this session but funding is problematic. Although the DNR has been spending about \$100,000 per year on groundwater quantity research and monitoring, about \$1,200,000 had been shifted from the mitigation fund to cover the budget shortfall. The money for the springs inventory is still in place but the LTEs needed to do the work can't be hired. On a hopeful note, Tim Asplund (DNR Lakes Program) is heading up a climate change workgroup that is looking at how to finance local monitoring. Todd also expressed confidence that the new legislative leadership would have a more informed perspective although they will have a lot of tough decisions to make e.g. environmental quality vs. health care for children. Jamie lamented that the emphasis on human health doesn't seem to include cleaning up a toxic environment.

Mike Lemcke suggested that more secure monitoring funding could be attained by changing

the appropriations for distributing between Act 310 mitigation and monitoring funds. Ken underscored the need for more monitoring citing numerous issues that could be better addressed with better information, notably how recent flooding near Spring Green could have been predicted if more groundwater level data had been available.

3) Approval for modified UWS procedure to optimize funding - Christopher Babiarz requested the GCC's approval to potentially modify the procedure used to optimize federal funds from the UW Water Resources Institute base support (USGS 104b). In past years the GCC has approved the transfer of one or more projects from state to federal funds for their second year. This transfer frees additional state dollars to fund new projects in during the second year. Due to the limited size and number of continuing projects, this strategy is difficult to implement effectively in FY 10. Instead, the UW Water Resources Institute seeks approval to "forward fund" one or more proposals from the current joint solicitation. Selection of proposals would be based on external and internal reviews, the impact of potential outcomes, alignment with the UWS Groundwater Research Priorities, and GCC approval. The change in procedure was approved. [Note: WRI was able to optimize the use of federal funds without forward funding.]

3) Subcommittee reports – Jeff Helmuth reported on the following subcommittee activities

The Monitoring and Data Management Subcommittee – Due to some recent turnover on the subcommittee, the group reviewed its mission and examined several potential directions for its future work. The following directions were agreed upon:

Ongoing efforts

- Joint solicitation proposal review by Monitoring Workgroup – no changes.
- Information exchange and inter-agency issues – will remain a top priority.
- Monitoring project review – occasional presentations but no comprehensive review.
- Produce informational materials – no needs identified for the near future.

Items to provide context

- Groundwater Monitoring Strategy –DNR's Water Division Monitoring Strategy (Groundwater Chapter) will be reviewed and discussed at the next meeting.
- Process and a prioritization of potential additions and improvements to the USGS/WGNHS Observation Well Network will also be reviewed and discussed at the next meeting.

Near-term projects

- USGS Water Use database development – at the invitation of USGS the subcommittee will review a new, process model approach USGS plans to use for high-capacity well pumpage reporting, return flow, and other water use cycle data.
- Groundwater Climate Response Network – the subcommittee will also look at this network in the near future.

Education Subcommittee – Instead of their usual quarterly meeting, the subcommittee participated in the first meeting of the Wisconsin Well Water: Planning Web-Based Resources project http://www.uwsp.edu/cnr/watersheds/programs_outreach/hwpp.htm. There will be two more meetings. The purpose of the project is to: "Collaboratively develop web-based solutions that will increase the capacity for systematically providing information to Wisconsin's domestic water well users that aids in the individual determinations regarding drinking water safety."

Local Government and Planning – Jeff reported that Bob Pearson was interested in helping to reactivate this subcommittee. The chair, Dave Lindorff, retired in July. Todd Amb

encouraged this effort and noted an increased need for local government involvement with respect to the new statewide requirement for water supply plans. Ken Bradbury added that WGNHS is receiving more calls from local governments about groundwater issues than ever. Todd suggested the subcommittee explore webcam technology (available at DNR and other agencies) for getting information out to local governments. Jeff will work with Bob to explore agenda topics for this subcommittee.

4) Agency Updates

DATCP – Lori Bowman reported:

- A proposed expansion to the Poynette Atrazine Prohibition Area had gone out to public hearing and only 3 people attended.
- WGNHS/UW-System has been working with DATCP to establish a monitoring system at Arlington farms for groundwater monitoring of low use atrazine.

DOT - Dan Scudder reported that, due to vacancies, Bob Pearson has been asked to manage DOT's wetland program in addition to his existing workload.

DNR – Todd Ambs reported:

- The agency is starting to address Great Lakes Compact requirements.
 - Water supply plans are required by 2025 for all systems serving more than a 10,000 people. The agency wants these plans to be meaningful and useful to the agencies. Jamie Robertson suggested that there be a monitoring component to the plans.
 - The Compact also requires DNR to permit all wells extracting >100,000 gal/day by December 8, 2008. It is yet to be determined how the agency will handle this requirement.
- There is external and internal discussion on the next logical steps for future groundwater quantity legislation.
- An explosion in applications for CAFO permits has drawn attention to alternative manure management technologies. Regional digesters are being discussed along with carbon crediting and other new technologies and policies.
- The next list for potential groundwater standards have been sent to DHS for their determination on whether there is enough toxicological information available to propose standards. This is the beginning of roughly a two year process.

WGNHS – Jamie Robertson reported:

- Due to retirements they plan on increasing their outreach efforts and hire a new outreach position. [Note: In early January Carol McCartney was hired as WGNHS Outreach Manager.]
- Climate change, flooding, and virus work have created many education opportunities for the survey. They have more calls coming in than they have staff to serve the needs.
- Jamie and Ken Bradbury met with many of the leaders within the University System to discuss potential geosequestration of carbon in Wisconsin. By the end of the meeting it was clear that from what is known of the existing rock units, Wisconsin is not a very suitable place for carbon geosequestration.

Governor's Representative – George Kraft reported:

- A Southwestern Wisconsin study at Platteville has generated pesticide data for baseflow and stormflow periods
- The Little Plover River stakeholders are eagerly awaiting the setting of the public right

- stage for the river.
 - The Central Wisconsin Groundwater Center has begun sifting through old USGS and other documents looking to see if social inferences on water planning were made throughout these documents.
- 5) **Consideration of future GCC meeting format** – Jeff Helmuth suggested taking a look at GCC meeting format largely because increased workload was making it more difficult for administrators to attend. Jeff asked if cutting the frequency and/or duration of the meetings would help and asked for suggestions. Jamie Robertson preferred to retain the current format but, with all due respect to Jamie, the majority favored the following changes:
- Meetings will generally be on Friday's from 10:00 – 12:00 or 12:30
 - Meetings will start with technical presentation(s).
 - Technical presentations will be limited to 20 minutes.
 - The February and August meetings will be prioritized. This is in line with State statutes which require the GCC to meet twice a year, and the timing of two of the GCC's most important functions: the joint solicitation and the annual report to the Legislature. Members are asked to contact Jeff if they find that they can't attend these two meetings and the meeting will be rescheduled if a quorum cannot attend.

Due to the absence of some members, Jeff was directed to subsequently set meeting dates, giving precedence to Kathy Pielsticker and Todd Amb's schedules. [Note: The 2009 meeting dates and locations are: February 27 at WRI, May 8 at WGNHS, August 21 at DOT, and November 13 at DATCP.]

- 7) **Assessment of Virus Presence and Potential Virus Pathways in Deep Municipal Wells** – Ken Bradbury presented results of his recently-completed study that found live viruses in six deep Madison municipal wells. Working with Mark Borchardt (Marshfield Medical Center), Madeline Gotkowitz (WGNHS), and Randy Hunt (USGS), Ken had hypothesized that the three wells cased through the Eau Claire shale would be much less likely to contain viruses than the three wells with shallow casings. Samples from the six wells and local lakes were sampled approximately monthly and analyzed for viruses, major inorganic ions, and isotopes of hydrogen and oxygen. Untreated sewage was tested for viruses. Precipitation patterns were also examined. Viruses were detected at least twice in every well, but no well was virus-positive in every sample. About 43 percent of the well samples were virus-positive. Lake samples were positive 78 percent of the time. Virus results varied significantly with time with speciation showing different virus serotypes coincident in time in wells, lakes and sewage.

Ken discussed the 4 types of sewer/groundwater configurations and noted that three of them have the potential for leakage of sewage into groundwater. Given the very high virus concentrations in sewage it would take very little sewage to contaminate groundwater to the level of pathogenicity (5-6 virus/l). Ken noted that viruses have great potential to be used as tracers because they can be quantified over a very wide range of concentration.

Since the end of the study Ken and others have worked with the Madison Water Utility, the DNR and the press to present and clarify the results and implications of the study. All have been cooperative in addressing the implications of the study. Discussion included Dan Scudder's remark that many of the same questions apply to pharmaceuticals in groundwater.

- 8) **Adjourn and Next Meeting** – The meeting was adjourned at 12:15. The next meeting will be held at 10:00 on February 27th at the UW Water Resources Institute, in the conference

room of Goodnight Hall at 1975 Willow Drive, Madison. The GRAC meeting will occur that afternoon in the same room so for those attending both, it will be convenient. WRI will send out parking passes beforehand. The timing of the two meetings means that the FY10 UWS Groundwater Research Plan will be distributed and approved by email unless issues indicate that a meeting or conference call is necessary.

Minutes prepared by Jeff Helmuth - Department of Natural Resources

Wisconsin Groundwater Coordinating Council
Meeting Minutes – February 27, 2009

UW Water Resources Institute
2nd floor Goodnight Hall Conference Room
1975 Willow Drive, Madison

Members Present: Todd Ambs - Chair (DNR); James Robertson (WGNHS); Henry Anderson (DHS); Kathy Pielsticker (DATCP); George Kraft (Gov. Rep); Anders Andren (UW-System); Eric Scott for Berni Mattsson (Commerce); and Bob Pearson for Dan Scudder (DOT);

Others Present: Jim Hurley, Stephen Wittman, Anne Moser, and Carolyn Betz (WRI); Kathleen Standon (WE Energies); Eric Ebersberger and Jeff Helmuth (DNR);

- 1) **Introductions and General Business** – The meeting began at 10:00 AM. Introductions were made. The November meeting minutes were approved.
- 2) **DNR’s Water Use Program and the Great Lakes Compact** – Eric Ebersberger, Chief of DNR’s new Water Use Section, provided information on the new section and its activities. Eric currently has 4 staff positions (1 vacant) focused on NR 820 high-capacity well reviews and approvals; developing and updating the high-capacity well database; and preliminary Great Lakes Compact work. Four positions proposed in the Governor’s budget would be targeted at implementing the Compact.

The Great Lakes Compact requires registration and reporting of basin withdrawals (>100,000 gal/d); management of basin water use water, conservation, and efficiency; and reviewing applications for diversions out of the basin. Diversions are only possible for “straddling” communities and communities in “straddling” counties. Within the basin, Wisconsin will issue general (> 100,000 GPD but < 1 MGD) and individual permits (> 1 MGD) and administer fees for large withdrawals (> 50 MGD). DNR has issued interim approvals for Great Lakes Basin withdrawals in place before the December 8, 2008 effective date of the Compact and is now considering subsequent applications. Water supply service area plans will be required for all public water supply systems serving communities with populations over 10,000 by 2026, but will be required within the Great Lakes Basin for applicants for new or increased withdrawals or diversion requests before the withdrawal or diversion is approved. New Berlin, a straddling community applying for a withdrawal, was the first water supply service area plan submittal.

Anders Andren asked if Wisconsin was considering using a system like the Water Withdrawal Assessment Tool developed for the State of Michigan. The tool is designed as a screening mechanism to assess the likelihood of an impact to the state's water resources by a specific large quantity water withdrawal. Eric replied that DNR was starting to look into it and that it looked as though the data needed to support such an application is not available for much of Wisconsin. Jamie Robertson suggested considering developing such a screening tool to be used in areas where sufficient data are available and for future use in areas where data will be sufficient. George Kraft and Ken Bradbury were also aware of the Michigan tool and will be looking into it further. Todd Ambs will forward some key Michigan contacts to George. Todd also added that, compared to some other states, Wisconsin has many fewer staff and resources to address these issues.

- 3) **Little Plover River Flow Reduction Study** - George Kraft reported results of a DNR-funded

project conducted by Katherine Clancy, Dave Mechenich and himself on this once-productive trout stream. The project was prompted by low flows starting in 2003, partial dry-ups in 2005 and 2006 and disagreement over the relative impacts of dry weather and groundwater pumping. The project integrated a wide range of hydrologic information including local precipitation, Little Plover and reference stream discharges, and high-capacity well pumping in the vicinity. Precipitation records, the Palmer drought index, and flow in reference streams all indicate near-normal conditions and suggest that climate alone does not account for the reduced flow.

Statistical and flow modeling approaches were used to estimate the impact of groundwater pumping on flow in the stream. Overall there was good agreement between the two methods, both indicating roughly 3.2 – 5.4 cfs of potential Little Plover discharge (at Hoover Rd.) being diverted by groundwater pumping. About 40 per cent of these diversions are from wells within 0.5 miles of the river, 58 per cent within 1.0 miles and 18 per cent from over 2.0 miles. Pumping from the Village of Plover alone accounted for about 1.2 cfs flow reduction in 2004-2006 with other big pumpers Del Monte and Whiting diverting considerably less from the river. Although well-specific irrigation pumping data were spotty for the project period, the total for that category has been a major factor in Little Plover River flow depletion. George concluded that in the absence of groundwater pumping, Little Plover flows at Hoover Road would have bottomed out at about 6.5 cfs in recent years instead of the 1.6 cfs measured in 2005.

George also gave an interesting overview of the history of irrigation policy in the state and the explosion of center pivot irrigation seen since the 1960's in the Central Sands area.

Todd Ambs noted that he expected to see a second generation of groundwater quantity legislation introduced this session and that the Little Plover River situation made a good case for further action. Todd also reported that DNR was establishing a public rights stage for the river [Note: Public Rights Flows were established by the Natural Resources Board on March 23 for four locations on the Little Plover River (6.8 cfs at Hoover Rd.)]. There are a lot of questions about what to do since the public rights flow is higher than the flow most of the time. The Governor and DNR believe that the public trust doctrine applies to groundwater but the case law is not robust.

- 4) **Joint Solicitation and UWS Groundwater Research Plan** – Jim Hurley reported that the average cost of proposed projects submitted to the joint solicitation was about \$35,000 and that overall costs had increased due to tuition remission. Currently the WRI is supporting 11 projects. The following 2 projects were put on USGS funding: 1) The lethal and sublethal effects of elevated groundwater nitrate concentrations on infaunal invertebrates in the Central Sand Plains (Stelzer) and 2) Combination of Co-Precipitation with Zeolite Filtration to Remove Arsenic from Contaminated Water (Li). WRI is also co-funding a conference on flooding with this funding. The UWS expects to have \$230,000 minus a 8-12% system-wide cut. Anders added that USGS funds could be added to the UWS funds to total about \$300,000, or about \$250,000 - \$265,000 after the cuts. Steve Wittman added that they were looking at changing the required format for proposals to be consistent with the USGS format for the future.

Todd Ambs reported that DNR funding was more uncertain this year. Jeff Helmuth will relay information about DNR funding interests to WRI as it becomes available. [Note: at this writing it appears DNR will not fund any FY10 Joint Solicitation projects]

- 5) **Wisconsin's Water Library (<http://aqua.wisc.edu/waterlibrary/>)** – Anne Moser provided information on the wide array of print and electronic resources available through the Water Library (formerly known as the Water Resources Library). Its collection contains almost 30,000 volumes of water-related information about the Great Lakes and the waters of Wisconsin as well as a curriculum collection, dozens of educational videos, a children's collection, and more than 20 journals and 100 newsletters. Of special note are an online collection of Great Lakes maps from the 1600's to the present (<http://greatlakesmaps.org/>) and the new Aqualog daily blog of news, publications and resources about water in Wisconsin and the Great Lakes (<http://aqualog2.blogspot.com>).

Anne also provided information from Chris Babiarz on the new joint solicitation project report database currently in development. It will be searchable by topic, funding agency, keyword, investigator or project number and will contain as many of the 350+ reports as can be located. A beta version should be available for review in the coming months.

- 6) **Education Subcommittee Report** – Jeff Helmuth reported that the Subcommittee has a couple new members. Jason Lowery has taken over for Jeff Ackermann to represent DATCP and Carolyn Betz, the new science writer at the WRI will be participating for UWS.

Carolyn is taking the lead on the WRI Groundwater fact sheets on Arsenic, Nitrate, Manure and Quantity and has distributed the arsenic and nitrate sheets to the subcommittee for final review. The subcommittee, after numerous discussions, has not been able to develop a consistent message related to manure and groundwater. Jeff suggested a couple options and asked the GCC for advice on how to proceed. One option would be to hold off work on the manure fact sheet until recent/current relevant studies are completed and, in the meantime, proceed with the other fact sheets. Consensus on groundwater quantity and pesticide messages is more certain and the group should be able to make progress quickly. Another option would be to end subcommittee involvement on the manure fact sheet and allow WRI to complete it (or not) without further GCC involvement. Kathy Pielsticker strongly supported the subcommittee moving on to quantity and pesticide fact sheets. Todd Ambros encouraged further work on the manure issue and suggested that it could be characterized as the improper land spreading of nutrients which would also include land application of municipal and industrial waste. Another avenue would be to address pathogens, rather than manure as the issue. Suggestions for other topics included radon (Andren) and climate change (Anderson). Jeff will take these ideas back to the Subcommittee for discussion and will report back on progress in May.

Kevin Masarik and others have continued work on the Wisconsin Well Water Web-based Resources project to coordinate information on the Internet. An initial meeting in December was well-attended by various state and local agencies as well as some industry representatives and resulted in identification of some specific areas where emerging web technologies could improve communication with residential well owners regarding their well and drinking water quality. A second meeting to be held in March was to focus on overcoming technological barriers.

Other subcommittee activities include updating Groundwater Information Network membership, drafting a UWEX Water reuse and conservation fact sheet, and Groundwater Awareness Week (March 8-14th). For Groundwater Awareness Week Kevin put together a series of news releases/short articles that are typically picked up by a few local papers around the state and Stephen Wittman arranged a groundwater spot on the Larry Meiller show for March 25th featuring DNR Drinking Water and Groundwater expert Steve Ales and Kevin

Masarik.

7) Agency Updates

DNR – Todd Ambs reported:

- DNR will take General Program revenue cuts across the board. DNR has about 300 vacancies, with the Watershed Management Program holding over 20% vacancies. Although new positions are proposed for the Great Lakes Compact and ballast water programs, no more are expected for some time. The UWEX Basin Educator positions are likely to be cut. Although the Wisconsin budget looks very tight, some other states are much worse off. For example California has laid off about 20,000 employees.
- About \$140,000,000 is available for wastewater and drinking water infrastructure funding from federal economic stimulus sources but there is only a 3-week window to identify projects.
- The President's federal budget for 2010 contains a 34 per cent increase for EPA, almost \$4 billion for the Clean Water and Safe Drinking Water State Revolving Fund loans, and \$475 million for the Great Lakes Initiative. Consequently federal money is becoming much more important.

Commerce - Eric Scott reported:

- The Storage Tank Regulation Section has completed the revision of Comm 10 (Flammable, Combustible and Hazardous Liquids) which went into effect February 1, 2009.
- The Safety & Buildings Division continues efforts relating to subsurface infiltration to minimize surface runoff.

DOT – Bob Pearson reported:

- DOT is working with DNR on hydrology studies for some Portage Area Dams
- Construction contractors involved with dewatering operations have been informed of DNR's new high-capacity well requirements

UWS – Anders Andren reported:

- Kevin Reilly, UWS President, initiated work on applying the Wisconsin Idea in China on water issues. A white paper is being developed and will go to the agencies.

DHS – Henry Anderson reported:

- Budget problems are of concern agency-wide.
- A new round of groundwater standards will be sent to DNR in the next month or so. Public hearings should be in summer or fall of 2009.

DATCP – Kathy Pielsticker reported:

- Due to budget problems, the Clean Sweep program has been eliminated, Agricultural Chemical Clean-up staff are being cut, and there will be major lapses.
- Although manure hauler registration and groundwater research funding had been proposed, neither made it to the proposed budget.
- The lead arsenate initiative is now stalled due to no staff.

WGNHS – Jamie Robertson reported:

- Retirements are still impacting the Survey
- A new outreach manager position was recently created and hired. Carol McCartney brings a wealth of experience and knowledge to the position.

- Projects on flooding, and viruses in groundwater are continuing.
- 8) **Adjourn and Next Meeting** – The meeting was adjourned at 12:25. The next meeting will be held at 10:00 on May 8 at WGNHS, 3817 Mineral Point Road, Madison.

Minutes prepared by Jeff Helmuth - Department of Natural Resources

Wisconsin Groundwater Coordinating Council
Minutes from meeting held May 8, 2009
Wisconsin Geological & Natural History Survey
3817 Mineral Point Road, Madison.

Members Present: James Robertson (WGNHS); Henry Anderson (DHS); Anders Andren (UW-System); Bob Pearson for Dan Scudder (DOT); Rick Graham for Kathy Pielsticker (DATCP); and Mike Lemcke for Todd Ambs (DNR). By conference phone: George Kraft (Gov. Rep);

Others Present: Jim Hurley, (WRI); Ken Bradbury (WGNHS); Steve Loheide and Rich Deitchman (UW-Madison); Steve Gaffield (Montomery Assoc.); and Jeff Helmuth (DNR);

- 1) **Introductions and General Business** – The meeting began at 10:00 AM. Jamie Robertson chaired the meeting. Introductions were made. The November meeting minutes were approved.

- 2) **Technical Presentation: Thermal Remote Sensing of Stream Temperature and Groundwater Discharge: Applications to Hydrogeology and Water Resources Policy in the State of Wisconsin** – Rich Deitchman talked about the study he did under Steve Loheide on using heat as an indicator of groundwater discharge to surface water. Three case studies were completed:
 - a) Ground-based, ultra-high-resolution, 24-hour observations at the UW Arboretum showed that heterogeneity in hydraulic conductivity has marked effects on seepage and so preferential pathways control flow. Summer and winter are the best times to do this as the groundwater/surface water temperature contrast is greatest.
 - b) A single-engine airplane was used to construct longitudinal profiles of the East Branch of the Pecatonica River. One-dimensional modeling of temperature using climate change scenarios indicated potential harm to fisheries under some scenarios.
 - c) An unmanned aerial vehicle (UAV) avoids the expense of airplanes and can provide lower altitude, higher resolution data. A wireless ethernet bridge to a laptop computer provides real-time data. An unexpected wrinkle was the time spent getting an FAA permit for the UAV and dealing with concerns related to security and private property. This technique was found to be useful in assessing groundwater input and potential fishery health.

Discussion centered on complicating factors including variability of hydraulic conductivity, variability of recharge, and higher runoff rates under climate change scenarios.

- 3) **FY 10 Joint Solicitation update** – Jim Hurley reported that the UWS would fund 5 new projects out of the 18 proposals submitted. UWS budget cuts so far have been 4% (permanent). Two projects were moved on to USGS 104(b) funding. Mike Lemcke reported that DNR was unable to find funding for any new projects in 2010 but would try to fund one continuing project. Jamie Robertson asked about the number and quality of the projects submitted. Jim Hurley stated that the number was relatively low but the quality was relatively high. Jim also noted that there was significant overlap between projects ranked highest for UWS and DNR funding.

- 4) **Monitoring and Data Management Subcommittee report** – Jeff Helmuth reported that the subcommittee had met on April 22nd and discussed the Groundwater Monitoring Strategy. The Groundwater Monitoring Workgroup, including several subcommittee members, developed the strategy several years ago and targeted updating the Observation Well Network

as the highest priority task. The network has been underfunded and consequently has shrunk in numbers of wells and many wells are lacking needed maintenance. The workgroup also developed a process for prioritizing additions and improvements to the network. The subcommittee will pursue funding for the network and will share information on potential “wells of opportunity” that may come available.

5) **Education Subcommittee report** – Dave Hart reported that the subcommittee met on April 29th. Carol McCartney will use the groundwater fact sheets on nitrate and arsenic at two events at the Capitol. Next, the subcommittee will work with WRI staff on fact sheets on: 1) Groundwater Quantity; and 2) Pathogens. GCC discussion on pathogens and manure issues focused on data gaps. Manure application tonnage and acreage are known but incidence of contamination and related health problems are not.

6) **Plans for 2009 GCC Report to the Legislature** – Jeff Helmuth noted that he had sent out requests for agency staff to update appropriate sections of the GCC’s Report to the Legislature. He shared a timeline for the preparation and review of 2 drafts and the final report to be completed in August. Jeff also shared a copy of the Directions for Future Groundwater Protection section of the report and asked for input on this key section. Suggestions included:

- Revising the statement on protecting the funding and moving it to the introduction
- Emphasizing the need to define and delineate the resource
- Work with Wisconsin Initiative on Climate Change Impacts (WICCI) to update and refine the priority on that topic
- Try to further define how the research and monitoring projects have benefitted the State

Bob Pearson added that the agencies histories of groundwater protection efforts should be captured to preserve institutional memory and provide a context for proactive resource management. Jeff Helmuth added that the GCC webpage would be the ideal place to capture those histories but that it would take considerable time to undertake such an effort. Jamie Robertson asked that Bob work with the Education Subcommittee to explore the idea further.

7) Agency Updates

DATCP – Rick Graham reported:

- The agency is struggling with budget problems.
- DATCP, DNR and DHS are working on advisory language for private well owners with samples >10 ppm nitrate .

DNR – Mike Lemcke reported:

- The agency is struggling with budget problems.
- Substantial progress has been made on the high-capacity well inventory and pumpage reporting though there are still challenges to overcome.

WGNHS – Ken Bradbury reported:

- WGNHS will have a booth on groundwater at Economic Development Day at the Capitol
- Survey staff have visited the historic observation well at the Capitol. There may be an opportunity to log the well with a downhole camera.
- The project on viruses in Madison’s wells is continuing.

UWS

- Anders Andren reported that Jim Hurley received the Distinguished Service Award from the American Water Resources Association – Wisconsin Section for his exceptional contributions to enhance the quality of water resources in Wisconsin.
- Jim Hurley noted that the Wisconsin Initiative on Climate Change Impacts (WICCI) is forming a water resources working group. The group will meet this summer to determine research gaps. After the needs assessment the group will try to prioritize research areas. Jamie Robertson asked Jim to continue to keep the GCC apprised of this effort.

DHS – Henry Anderson reported:

- Response to the Novel H1N1 Influenza (swine flu) virus outbreak has consumed huge amounts of staff time.
- Budget problems are of concern
- The next round of groundwater standards are still under review.

- 8) Adjourn and Next Meeting** – The meeting was adjourned at 12:10. The next meeting will be held at 10:00 on August 21 at the Department of Transportation at 4802 Sheboygan Ave. Madison.

Minutes prepared by Jeff Helmuth – Department of Natural Resources