



Missouri Department of Natural Resources

Water Quality Coordinating Committee Water Protection Program

Minutes

February 21, 2006

WATER QUALITY COORDINATING COMMITTEE

USGS Columbia Environmental Research Center
4200 New Haven Road
Columbia, Missouri

February 21, 2006
10:00 a.m.

MEETING AGENDA

“Effects of Riverbank Filtration on Water Quality of Induced Recharge from the Missouri River to the Independence Well Field, 2003-2004”

Brian Kelly, USGS

Other

Agency Activities

Meetings & Conferences

Facilitated Discussion of Missouri’s Nonpoint Source Management Plan

This Plan is now over 5 years old and needs to be evaluated by partners for its appropriateness and usefulness. This discussion is to seek input on how to make this Plan more useful throughout the state, so please bring suggestions.

You may view the Plan at

<http://www.dnr.mo.gov/env/wpp/nps/mgmtplan/index.html>.

The Nutrient Criteria Stakeholders will meet at 1:00 p.m. following this meeting at this location.

MISSOURI WATER QUALITY COORDINATING COMMITTEE

February 21, 2006

USGS Columbia Environmental Research Center
4200 New Haven Road
Columbia, Missouri

MINUTES

Attendees:

David Ahlemeter	Earth Tech Inc.	Roy Williford	WPCB, Water Protection Program
Karen Bataille	MO Dept. of Conservation	Mary Clark	WPCB, Water Protection Program
Mike McKee	MO Dept. of Conservation	Wayne Maresch	DNR, Environmental Services Pgm.
Dale Blevins	USGS	Chris Riggert	MDC, Stream Unit
Brian Kelly	USGS	Pete Davis	EPA Region 7
Caitlyn Peel	HBA of St. Louis & Eastern MO	Priscilla Stotts	WPCB, Water Protection Program
Steve Mahfood	MO Nature Conservancy	Theresa Libbert	WPCB, Water Protection Program
Buffy Santel	MSD	Darlene Schaben	WPCB, Water Protection Program
Randy Lyman	City of Springfield, Public Works	Greg Anderson	WPCB, Water Protection Program
John Waitman	City of Springfield, Public Works	Claire Baffaut	UMC, FAPRI
Randy Sarver	DNR, Environmental Services Pgm.		
Karen Rouse	DNR, Water Resources Center		

Greg Anderson chaired the meeting. Introductions were made.

“Effects of Riverbank Filtration on Water Quality of Induced Recharge from the Missouri River to the Independence Well Field, 2003-2004” - Brian Kelly, USGS

PowerPoint Presentation

Brian said he works with Dale Blevins at the USGS Missouri Water Science Center in Kansas City. This study began in 2003 and was done in cooperation with the city of Independence. Brian explained that riverbank filtration is the filtering of river water that's intended for public water supply through alluvial deposits due to infiltration. The pumping wells are located beneath rivers. Processes of filtration include mechanical filtration, adsorption, biodegradation, ion exchange, chemical reactions and ground water. Collector wells have lateral streams that extend underneath the river. Independence collector wells can pump ten million gallons per day (gpd). The typical scenario of the Missouri River alluvial aquifer is silt clay, silt sand, clay sand cap over silt sand, gravel, and bedrock. As a collector well pumps water, it is cleansed and filtered. Most filtration occurs within the first meter or two of transport from the riverbed. The alluvial aquifer is located just below the USGS's location of their downstream flow gage in Kansas City. Brian showed a map of the locations studied and explained how the study of riverbank filtration began. In 1991, they constructed a ground water flow model for the Missouri River alluvial aquifer in the Kansas City area. He showed some model results and an animation of how groundwater flowed in the alluvial aquifer. No matter what the water stage is, the wells are constantly drawing water. From the groundwater model, he was able to figure out the contributing recharge area in the well fields, which is the area of land surface from which the wells get their water. The model allows for calculation of how long it takes the groundwater to get to the wells. In 1993, the Independence Water Department installed collector wells. The model was used to help design the groundwater monitoring well network based on travel time. Using the model Brian helped them figure out how much time they would have to respond to a potential contamination hit. Once the wells were installed they needed to have a groundwater monitoring plan. He gave a list of contaminants they sampled for. He explained the initial sampling and the detects found, but none were over the maximum contaminant level (MCL).

To determine the percentage of water received from the river versus rainfall or groundwater, he used the groundwater flow model and available water quality information. Regardless of the method used, results showed over 50% of the water came from the Missouri River. Because of hydrology of the area and the complexity of the hydrology, the particle tracking results showed 80% of the water ultimately coming from the Missouri River. This left questions from Independence regarding their water treatment process.

The study approach was to calculate time- and discharge-related changes in water quality; to see if high discharges impacted water quality in the well field above the discharge; to see if there were any seasonal variation; determine the cross-sectional distribution of organic wastewater compounds and other water quality parameters in the Missouri River; determine upstream discharges they may have any effects; determine changes between the Missouri River and water quality and pumping well; calculated THM and haloacetic acid formation to see if they correlate with any precursors in the river or groundwater; and dissolved oxygen.

The report is now in review so these are only preliminary conclusions. Riverbank filtration has decreased the average values for most water quality parameters sampled in Missouri for alluvial wells. Moderate influence by south bank inflows on water quality. Rates of groundwater flows from the bottom of the river to the wells are lower than slow sand filters, which are typical of water treatment. This indicated removal of more pathogens. No indicators for haloacetic acid or THM were found in groundwater. Also, no detects were found of total coliform bacteria, cryptosporidium, Giardia, and total culturable viruses that were analyzed.

Other

Greg mentioned the FY06-07 Request for Proposals (RFP) was mailed last week. Information is on the department's nonpoint source Web site. This funding is for larger projects costing \$5,000 to \$400,000 and generally for four years in length. A grant training is also being provided to assist with the application. The deadline for applications is June 19, 2006. Greg explained the application review process.

Greg said that ten projects from 2005 were recommended for funding but the list is not final until it is approved by EPA. In answer to a question regarding certain priority areas being targeted, Greg said this was being discussed within the department. He said that locally-led groups are being targeted. Groups are required to develop a Watershed Management Plan before receiving the incremental funding. He said they would also be targeting areas that already have a Watershed Management Plan developed, under development, or have an active group that could develop a Plan.

Greg talked about a meeting held in Kansas City last week with EPA and others discussing better coordination needed between agencies. Agencies could share data, share information, combine money on project, etc. There was also preliminary discussion regarding prioritizing watersheds by agency. There was also discussions on how to get groups to apply for funding to develop a Watershed Management Plan.

Greg said that last year EPA discussed with the U.S. Fish & Wildlife Service about biological opinions, critical habitat and endangered species in conjunction with the 319 grant implementation.

Pete said that a big hurdle with incremental funding is establishment of a Watershed Management Plan.

Pete mentioned the availability of a Watershed Improvement Grant that could complement 319 funding and handed out information on this. This funding could be used for demonstrations on the ground in conjunction with efforts to develop watershed management plans. Information was also distributed through the WQCC list serve.

Greg mentioned that watershed groups are also eligible for the Watershed Planning Grant to develop a nine-element Watershed Management Plan. These are for the amount of \$15,000 each and awarded quarterly.

Priscilla Stotts mentioned that a watershed planning manual with a video is available from EPA's Web site. It was produced by EPA Headquarters. It is currently draft and comments are still being accepted.

Discussion was held regarding eligible uses of 319 funding.

Agency Activities

Dale Blevins mentioned they are putting in continuous real time water quality monitors on the Missouri River in mid-March and May in connection with monitoring of the spring rise. They will be located in St. Joseph, Waverly, Booneville, and Hermann. In the Kansas City office, they are continuing work in the urban areas characterizing water quality in the Blue River and Little Blue River basins. They are looking at emergent contaminants, bioassessment, bacterial source tracking, and nutrient analyses. The Kansas City project has been in the process for several years but the Independence project is now in its second year. A report will be coming out soon on the Kansas City project.

Caitlyn Peel said HBA in St. Louis is doing sediment erosion control local seminars to focus on larger municipalities in St. Charles and St. Louis county areas. These will be held within 2-3 weeks and the public works directors will be speaking on compliance with ordinances. They have been involved with St. Louis Earth Day celebrations. This year the focus is again on low impact development. MSD is talking about working with the group to do training on new design standards. The HBA green building council is moving ahead to have some homes that are verified under their voluntary guidelines within a month.

Steve Mahfood said The Nature Conservancy (TNC) in Missouri is working on the imminent domain issue on Padre Island in Texas. The county has condemned 2400 acres of property owned by TNC, which effects the conservation easement that adjoins the USFWS refuge on the island to put in a ferry facility. The issues will be going to the Texas Supreme Court. It calls into question any ability of not-for-profits or private organizations of holding conservation easements. Two appeals have upheld the ability of the county to condemn the property and remove a conservation easement. Steve will keep the group informed with the issue. He mentioned that the joint rules by COE/EPA 404 Wetland Mitigation rules were published at the end of February. This could affect conservation easements and voluntary actions by citizens to protect their land.

Randy Lyman said he and John have been involved with workshops with the consultant on CSOs. There are no CSOs in Springfield. He said the SSO regulations were withdrawn but they are planning to proceed with the Capacity Maintenance Operation and Management (CMOM) process. They hired a consultant and did a self-assessment of their wastewater utilities. They felt they were doing good in all but 3-4 areas. They are trying to be proactive on the fat, oil, and grease system from food services so they involved other departments in the city, brought in a pumper, representative of the restaurant association, etc. They are trying to build a consensus and know what each agency is doing. They developed a program manual that they plan to take to the regulated community and hope to get city council approval. Randy talked about a laterals program that will look at the ins and outs for residential areas regarding sewer systems. This will also be taken to the city council.

Also, Randy and John are working on a SSO Response Plan. They are developing a reference book so others will know what to do if they are not available.

He said the Northwest Wastewater Treatment Plant will start using UV disinfection on April 1 and on October 1 they will be going to nitrogen and phosphorus removal.

John Waitman said the largest plant they have is designed to pump 42 million gpd. Last January, 137 million gpd was clocked at coming in during a rain event. Wet weather SSOs are a concern but they worry more about the dry weather SSOs.

Claire Baffaut attended a National Water Quality Conference in San Antonio organized by USDA. She said they showed two different directions: attempts to figure out what makes people do the right thing and keep doing it (to implement BMPs); and, targeting hot spots (implementing BMPs without the need).

Effective February 1, 2006, Roy Williford said he is phasing into work as the storm water coordinator. He has been working in the 401/404 area. He will help cities with greater than 10,000 population to meet their Phase II requirements. With the available people, time, and money, his plan now is to provide education/information. Let Roy know if you have any other ideas on how to accomplish this. He is looking into working with Stream Teams to have them help the cities who have the Phase II requirements to meet the first two categories of public information and public participation. He also plans to talk with EPA to get their perspective.

Pete Davis said EPA is developing their next 5-6 year strategic plan to identify goals and priorities. This will effect most, if not all, EPA programs. They will be rated on performance and various program measures in the plan. One goal is to develop measures for watershed improvement for restoration. This may involve identifying a number of watersheds in the state, if not specific watersheds, to pursue the restoration goals. The Plan is due to be released in a month or so for the state to comment.

The 2007 National Water Program guidance will be out March 1 for review. It contains the program measures. It also drives EPA efforts in collaboration with the state.

Pete handed out information on an RFP from EPA Headquarters that is now available for a Community for a Renewed Environment (CARE) Program. This information was also distributed through the WQCC list serve. A Web cast will be on Internet on February 21 and 23.

Greg asked about the 2007 nonpoint source guidance. Pete thought the only difference may be in the numbering scheme on measures. Some may be discontinued. The watershed measures will be included and the delisting of water bodies.

Priscilla Stotts said the Stream Team Volunteer Water Quality Monitoring Workshops have been set up around the state. Three of those are already full. She is excited about the new chloride testing pilot project that volunteer have taken on. She has been receiving some data (baseline) even though the roads haven't been getting salted.

Greg Anderson mentioned that the National Program Guidance is critical to the direction the department takes. The Office of Management and Budget is scrutinizing the environmental grants and programs. They want to see the measures. The 319 Annual Report will be on the Web site once it is approved. Reporting was done on HUC 8 watershed levels. Stream Team information is also included.

Nonpoint Source Management Plan – Greg Anderson, DNR

Greg said the current Nonpoint Source Management Plan was written five years ago. EPA requires various sections to be revised each year with a total revision done in the fifth year. The Plan was a cooperative effort with several agencies. The Nonpoint Source Management Plan is an EPA requirement.

The questions to answer regarding what the nonpoint source issues are in the state are: Where should we be directing our activities? What do you feel the priorities should be? Greg asked everyone to write down on a sheet of paper what they felt were the three most important nonpoint source issues in the state. He thought Becky would continue this topic at a later meeting.

Greg said the timeline for the Plan would be to have a draft in final form to present to the Clean Water Commission at the October or November meeting. The current plan is available on the nonpoint source Web site (<http://www.dnr.mo.gov/env/wpp/nps/mgmtplan/index.html>). He said the priorities for the state in the past have been nonpoint agricultural issues, nonpoint source urban issues, and abandoned mine lands. The document should be useful to all agencies.

Pete said the Annual Report is a progress report on the current Plan and is interesting updated information on what's going on in each of the HUC 8's. Greg said the milestones will need to be reviewed and updated for goals of the next five years.

Randy Lyman said they would like to be involved if a stakeholder group is formed. Greg said there are several other agencies that he would like to see involved as well.

Darlene said any information regarding the Nonpoint Source Management Plan would be distributed through the WQCC list serve.

Randy Sarver mentioned that MoRAP was approved for a 104 grant to work with Iowa, Nebraska and Kansas for a human stressors project. This project will complement their 2005 319 application if it was approved. This project will identify not only good watersheds but impacted watersheds.

Greg thought UMC was working on another GIS system for prioritizing watersheds, for providing various types of data and information sources that groups could use in watershed planning.

Randy suggested that MoRAP should be involved in the Nonpoint Source Management Plan discussions.

Meeting adjourned.