



Missouri  
Department of  
Natural Resources

## **WATER QUALITY COORDINATING COMMITTEE**

Lewis & Clark State Office Building  
LaCharrette Conference Room  
1101 Riverside Drive  
Jefferson City, Missouri

March 19, 2013

10:00 a.m.

### **MEETING AGENDA**

U.S. Geological Survey: A valuable resource in assessing Missouri's past, present, and future water quality -- Miya Barr, USGS

319 Program Update -- Greg Anderson, DNR Water Protection Program

Other

Agency Activities

Meetings & Conferences



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MINUTES

**Attendees:**

Terri Brink	EPA Region 7	Ken Struempf	DNR, Soil & Water Conservation Pgm
John Johnson	DNR, Water Protection Program	April Brandt	DNR, Soil & Water Conservation Pgm
Robert Voss	DNR, Water Protection Program	Graham Freeman	DNR, Water Protection Program
Kirk Lambrecht	DNR, Water Protection Program	Trish Rielly	DNR, Water Protection Program
Bill Allen	MSD	Mark Osborn	DNR, Water Protection Program
Alan Freeman	DNR, Soil & Water Conservation Pgm	Robert Brundage	Newman Comley & Ruth, P.C.
Mohsen Dkhili	DNR, Water Protection Program	Miya Barr	USGS
Karen Westin	DNR, Water Protection Program	Shane Barks	USGS
Valerie Hentges	DNR, Water Protection Program	Darlene Schaben	DNR, Water Protection Program
Chris Riggert	MDC – Streams Unit	Greg Anderson	DNR, Water Protection Program

Introductions were made.

**U.S. Geological Survey: A valuable resource in assessing Missouri's past, present, and future water quality** -- Miya Barr, U.S. Geological Survey (USGS)

PowerPoint Presentation

Miya explained the process, techniques, and protocol for collecting and processing water quality samples. The mission of the USGS states that “The USGS provides the Nation with reliable, impartial information to describe and understand the Earth.” In 2014 USGS will be celebrating their 135<sup>th</sup> birthday. They continuously develop new methods and techniques for collecting samples. Standardized sampling techniques and procedures are used across USGS. Data is stored nationwide in a centralized database. Miya explained how surface water samples are collected and the goals. The goals are to obtain a representative sample; use clean sampling and processing techniques; measure unstable physical properties and chemical constituents at site; determine streamflow at the time of sample collection; and quality assurance practices. Typical constituents measured include physical properties, nutrients, fecal bacteria indicators, major ions, trace elements, suspended sediments and solids, and pesticides. Due to preservation time, some samples require staff to process in the field.

Miya said that each USGS office has its own quality assurance plan. They review quality assurance/quality control data and maintain databases. They participate in national reviews of field and laboratory techniques and collection methods. Each office is reviewed every three years to ensure data across the board is consistent. Equipment and techniques are updated as needed. Staff continually are trained and provided refresher courses.

The Missouri Water Science Center, in cooperation with the Missouri Dept. of Natural Resources, have the Ambient Water Quality Monitoring Network. The purpose is to meet the needs for water quality planning and management, assess quality and quantity of surface water, provide an historical database, and have consistent methodology (collection, lab analysis, and reporting). The Network started in 1964 with 18 stations and was increased to 41 stations by 1986. Currently, there are 72 stations in the network. There are eight stations with



over 40 years of record. Data is available on the USGS-NWISWeb (<http://waterdata.usgs.gov/mo/nwis/qw/>). Historical data is published in an Annual Water Data Report (<http://wdr.water.usgs.gov/>). Miya demonstrated how to find some of the records and reports available on the Internet.

Annual summary reports are available beginning from 2007 and are available on the USGS web site as well as the Department's web site. It becomes more interesting if the data is categorized by regions and land uses. You can better see the trends. Other products from the Network include water quality conditions and long-term trend report, which looks at six stations, 15 years of data, physical properties, nutrients, fecal bacteria indicators, total suspended solids, and select trace elements. This report can be found at: <http://pubs.usgs.gov/sir/2010/5078/pdf/SIR2010-5078.pdf>. Some interesting outcomes were the geometric mean of E. coli exceeded state standards at the Grand River near Sumner site; total suspended solid concentrations were greater at the northern sites; total phosphorus showed a strong downward trend at Wilson Creek near Brookline site; and nitrate+nitrite showed an upward trend at the Elk River near Tiff City site.

Within the monitoring network they also do continuous monitoring. Missouri River, Lake Taneycomo, Blue River, Taum Sauk/East Fork Black River, and select Ozark streams have sites that provide real-time data (to access data: <http://waterdata.usgs.gov/mo/nwis/rt/>). These sites update every hour.

A nitrate monitor will be placed on the Missouri River at Hermann in April. This will help identify nitrate sources and load computations and look at relationships between turbidity, TSS, and particulate nitrogen.

They also have nitrate sensors with the National Stream Quality Accounting Network (NASQAN) to assess surface water quality on the Missouri and Mississippi rivers. This is used for identifying status and long-term trends within the river basin. There are three NASQAN sites in Missouri. Other water quality programs USGS has been working on include a fecal bacteria indicator study at Lake of the Ozarks, focusing on the recreational period trying to identify possible sources of contamination. Another program is a Big River sediment and lead transport study to assess and determine daily suspended-sediment concentrations and loads. They collect event-driven sediment samples to get chemical constituents and look at mainly lead and zinc. Streambed sediment was collected in Washington County to try to determine if it was a source of contamination in Big River. Other programs include a groundwater assessment program to determine quality and quantity; geophysical logging; display of MDNR well data in real-time to the public; modifying techniques for core collection near streams (also called freeze core); Eagle Bluffs Wetland Complex groundwater-quality assessment; a Superfund site of Vienna's public drinking water; and a macroinvertebrate study in Independence.

Future endeavors include participation in the Midwest Stream Quality Assessment (MSQA), a federal funded study with USGS and EPA, looking at ecological contaminants, relationships within those contaminants, evaluate if natural or sources, and develop a predictive model. The study area is north of the Missouri River in Missouri. This study is a subset of the National Rivers and Streams Assessment (NRSA). There are 44 NRSA sites. They will look at ecological trends and biological data.

### **319 Program Update -- Greg Anderson, DNR Water Protection Program** PowerPoint Presentation

Greg said the Section 319 Nonpoint Source Program is a pass-through program where funding comes from EPA to Missouri. The funding is passed through for 319 program implementation and projects. Recently, the program has gone through a review. Some national concerns included grant funding not spent as scheduled; nonpoint source management plan (NPSMP) goals not being achieved; guidance not followed; reporting not showing achievements; and admin-salary costs vs. environmental results. Office of Management and Budget (OMB), Government Accountability Office (GAO), and EPA Region 7 conducted or will be conducting reviews. Areas identified for enhancement include improving the use of funding. The recommendations



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include increased leveraging and partnership; improved program management; improved tracking, progress and outcomes; and additional measures of success. As a result, EPA expects 50% of the states to have a new updated NPSMP in 2013. In order to receive annual grant funding, states are expected to improve progress and performance determinations and must have a written statement from EPA stating progress has been made. Other 319 program reform recommendations are to revise the funding structure; develop new program guidance; have more effective subgrants; and revised measures to show more emphasis on integrating TMDL and 303(d) programs.

Greg said Missouri is looking to change their program. The focus will be narrowed to aquatic life use impairment. The tentative 319 Nonpoint Source Program Mission is to achieve aquatic life usage in 50% of nonpoint source polluted water bodies by 2030. Greg has been discussing this plan with EPA Region 7. In order to make program changes, the Department of Natural Resources is working on an internal process mapping to look for improvements to streamline processes. EPA did a Kaizen review for efficiency and consistency. Greg mentioned that Missouri has had a steady decline in 319 funding over the last four years.

More consideration will be on restoration and protection projects. They will look at using alternative plans, like having a TMDL in place, and having effective projects with specific practices, location and schedules. Project should show measurable water quality improvements. Applicants should have a successful history, fiscal policies and capabilities in place, track and report load reductions, be cost effective, and have committed partners. The Our Missouri Waters Initiative will be used to identify priorities, targets and collaboration.

Examples of projects include restoring hydrologic modifications in streams; riparian corridor/habitat/wetland restoration; policy and ordinance development; agriculture nonpoint source – specific riparian related practices; urban and development nonpoint source demonstrations; abandoned mine land nonpoint source; dam and/or stream obstruction removal; and stream and wetland protection. The vision for the 319 Nonpoint Source Program is to play a defined role in the Our Missouri Waters Initiative and the department's strategic goals. For more effective projects they will look for a high ratio of implementation to admin costs; better determine and measure environmental outcomes; cease funding ineffective practices; improved project oversight; and better reporting. Greg explained steps they plan to use for improving grant and subgrant administration. If more projects are approved than available funding, a wait list will be kept for when funding does become available. Greg showed maps of tentative project areas. The priority areas include the 303(d) nonpoint source impaired streams and lakes and those having a TMDL. Having an updated and adequate watershed plan is one of the weighting criteria. Funding will be available statewide for stormwater projects. If that project is within a priority area, additional weighting will be applied. The Request for Proposals should be coming out soon. Conference calls will be held.

Terri Brink mentioned that EPA has approved these changes to the program and a letter from EPA should be coming soon.

### **Agency Activities**

Trish Rielly informed the group that since John Ford retired in February, she became the Monitoring and Assessment Unit Chief effective March 25. She is expecting John to return part time for a year.

Meeting adjourned.