

Monthly Water Quality Report | April 2008

By: Corey Hanson, Water Quality Coordinator
For: May 22, 2008
RLWD Board Meeting

Clearwater River Dissolved Oxygen and Fecal Coliform TMDL

A stakeholders' advisory group meeting was held on April 3rd at the Clearbrook Community Center, with about 20 people in attendance.

- Presented 2007 monitoring results
 - Stakeholders requested that gaps in the data be filled (get a full record of DO levels in the Clearwater River during the month of June).
 - I will need to build some better structures in order to ensure that I can get a complete record. I will need to install structures that I can access from shore and/or shallower water during high flows.
- Paul Scheirer of the MPCA discussed wastewater issues in the watershed.
 - The City of Fosston needs to participate in the TMDL process.
- Is there a problem with re-suspension of phosphorus from sediment during times of low flow and low dissolved oxygen?
- Beth Kurz gave an update on the SWAT model development.
- Feedlot shapefiles are available and can be incorporated into the model.
- Delisting and reclassification may not work for Walker Brook and County Ditch 57.
 - In the TMDL Report, previous research done in the Walker Brook watershed will be used to make the recommendation that Walker Brook is not meeting standards due to natural conditions in the watershed. If it cannot be removed for being impaired by natural causes, it should be reclassified when the Tiered Aquatic Life Use standards are in place (2010 at the earliest).
 - In the TMDL Report, the case should be made that County Ditch 57 was listed in error. It is a man-made road ditch does not have a designated use of being a warm-water fishery, although it actually does support some aquatic life. This was the consensus of the group.
- The Clearwater River and Lost River impairments were “borderline” based on the 2007 monitoring data. The consensus of the group was to proceed with the TMDL for these reaches so that they can be protected.
- Next meeting on Thursday, July 31. An hour should be added to the length of the meeting.

The E. coli sampling will continue in 2008 for the months of April and May. The data from these months will help provide a complete assessment of water quality conditions and show how the E. coli levels for the impaired reaches are affected by seasonality. Five E. coli samples were collected at each of the six E. coli sampling sites on the Clearwater River, Lost River, and Silver Creek. The results were low, as expected, due to the cold weather in April.



Monthly Water Quality Report | April 2008

Ten flow measurements were done for this project in the month of April. The collection of flow measurements at different stage levels at TMDL monitoring sites has been a priority this spring. In order to proceed with writing the TMDL study report, it is necessary to create rating curves (stage/flow relationships) for each of these sites. With the rating curves, stage records can be translated into flow records. These flow records will then be combined with the values of the water quality standards to create load duration curves. The actual measured results are plotted on these curves to demonstrate the duration and timing (during high flow or low flow) of the exceedances of the water quality standard. This information can be used to determine the general types of sources that are contributing to the problem. They can also be used during the load allocation process.

Eureka Midge dissolved oxygen loggers were installed at five sites in the Clearwater and Poplar Rivers. HOBO water level loggers were also installed where needed.

RLWD Long-Term Monitoring Program

Samples and/or field measurements were collected at 13 of the 40 RLWD long-term monitoring sites in the month of April. The remaining sites should be visited during the month of May to complete the first round of district monitoring for 2008. There haven't been many remarkable results due to the tame runoff events this year. The Blackduck River and O' Briens Creek (in Beltrami County) had high E. coli levels, despite the cold temperature.



Cattle along the Blackduck River

Site establishment forms were completed for the new sites that will be monitored for the RRWMB Surface Water Assessment Grant.

Monthly Water Quality Report | April 2008

Project 60E (Brandt Channel and Grand Marais Creek Project Water Quality Monitoring)

The HOBO water level and barometric pressure loggers were installed in the early part of the month.

Turbidity logging probes have been installed. This year, they were calibrated with the same standards used for the portable Eureka Manta probe, so the numbers should be more comparable. (The Stevens TS300 turbidity probes have read higher than other units in past years).

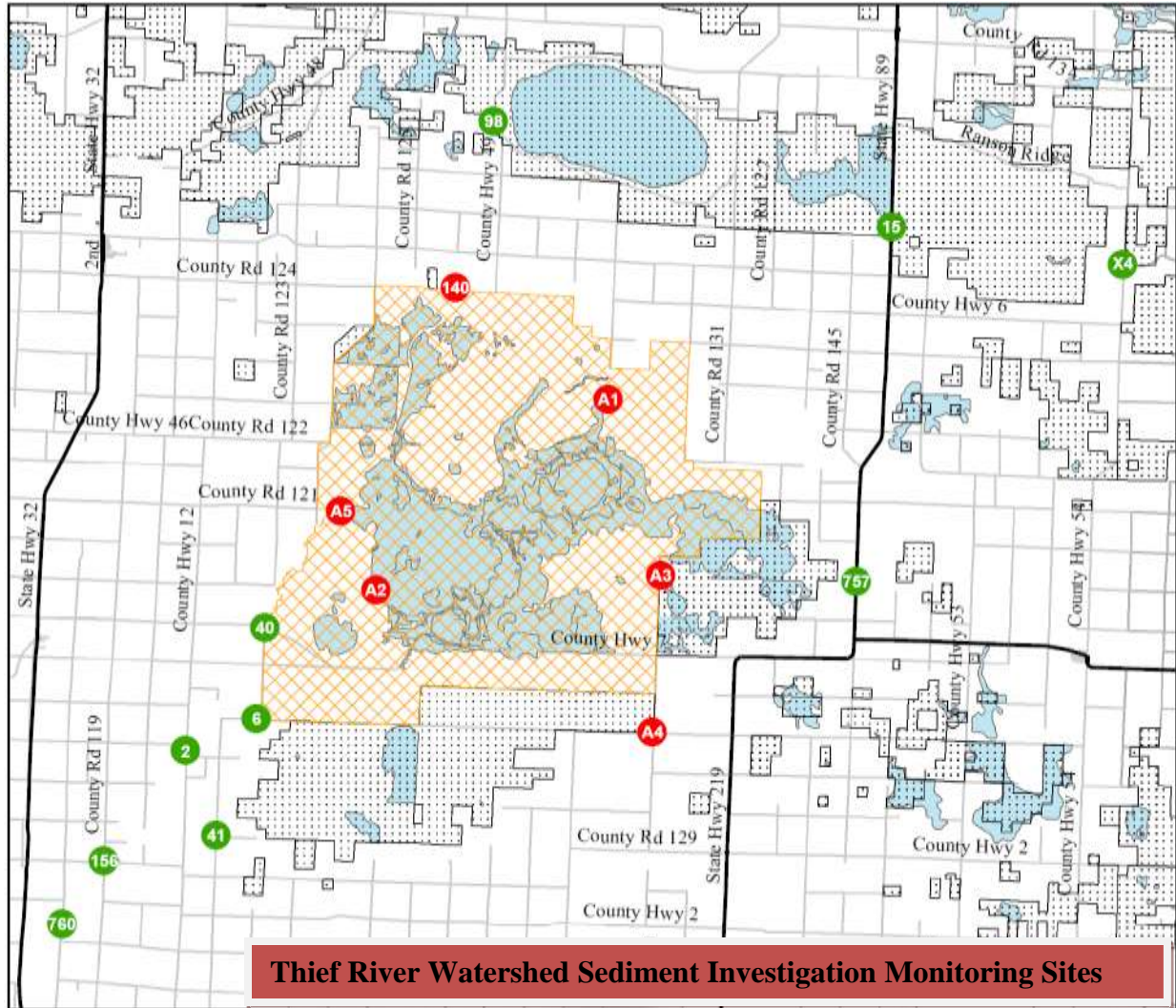
Flow measurements were taken at both monitoring sites on April 25th.

Thief River Watershed Sediment Investigation

On April 4th, Gary Lane let me know about a green discharge from a ditch near the CR7 (Agassiz Headquarters Road) crossing of the Thief River (SD83). This discharge also had a strong odor. The turbidity of this water was very high (99 NTU). There wasn't supposed to be any discharge from Parkers Pool into this ditch at the time, so this may have been water that was sitting somewhere along the ditch over the winter.



Monthly Water Quality Report | April 2008



- HOBO water level loggers were installed at sites 98, X4 (SG 43), 6, 2, and 156.
- Nine flow measurements were made during the month of April for this study.
- The USGS began collecting flow and water quality data from sites A1 through A5 and from stream gauge #140.
- Several paired flow and water quality samples were collected at site number 6.
- I helped Agassiz National Wildlife staff with setting up their new equipment.
- I trained the USGS and USFWS staff on using the Eureka Manta probes and on calibration procedures.
- I helped Gregg Knutson install several structures for housing Eureka Manta logging multi-parameter sondes.

Monthly Water Quality Report | April 2008



A2 Eureka Manta Multi-parameter sonde and HOBO Water Level Logger pipes.



A5 outlet (new Thief River/SD83 outlet structure).

Monthly Water Quality Report | April 2008

Other Notes

- Ice-out didn't begin until after the second week of April. This delayed a lot of the monitoring and equipment installation work that needed to be done in April.
- Damaged In-Situ TROLL 9000 equipment was shipped back to the company so they can be upgraded to TROLL 9500s.
- In tracking the 2008 budget for the Water Quality Coordinator's time, the time/money allotted to sick leave, revising of the Standard Operating Procedures for Water Quality Monitoring, and for other (unbudgeted) projects has been used up.
- Wrote a letter of support for the Clearwater County SWCD's grant application for Agricultural Watershed Restoration money for the Silver Creek watershed.
- I put together a binder of stream gauging information to guide other staff that may have time to get some measurements. I included a worksheet with a list of sites that need rating curves that where users can keep track of which stage levels have been measured. I also included the stream gauging section of the SOP (step-by-step instructions), maps of site locations, descriptions of how stage is measured at each site, and information on which projects to charge time to.



Sites that need flow measurements in 2008.

Monthly Water Quality Report | April 2008

May and June Tasks

- Incorporate comments into the *Standard Operating Procedures for Water Quality Monitoring in the Red River Watershed* to create a final draft version that can be approved at the May RRBMAC meeting.
- Continue working on a comprehensive water quality report for the RLWD long-term monitoring program (originally scheduled for 2006)
- Accelerate progress on the Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study Report.
- Provide information and data to the EERC for calibration of the SWAT model.
- Complete the Clearwater River Habitat and Bioassessment Project Report
- Analyze the data collected in 2007 for the Thief River Watershed Sediment Investigation and get a start on writing the final report for the project.
- Compile the continuous water level data collected with HOBO Water Level Loggers in 2007 for the Clearwater TMDL Study.
- Bi-weekly maintenance of continuous water quality monitoring equipment.
- Monthly maintenance of continuous stage monitoring equipment.
- Finish the first round of district monitoring.
- Flow measurements (and training other staff on the use of new equipment).
- TMDL E. coli sampling (5/month at 6 sites in May, 3 sites in July).

April Meetings and Events

- **April 2, 2008** - Marshall County Water Resources Advisory Committee, 9:30am
 - Cost share support was approved for a grade stabilization structure in Section 9 of Excel Township on the Dallmann property. This cost share funding will cover some of the landowner's costs that are not covered by the RLWD.
 - Jan was able to purchase a YSI multi-parameter sonde for water quality monitoring.
- **April 3, 2008** – Clearwater Dissolved Oxygen and Fecal Coliform TMDL Study stakeholders' meeting
- **April 16, 2008** – Clearwater County Water Plan Task Force meeting, 10am, Clearwater County Court House
 - Top Priorities (from the voting done at the last meeting)
 1. Finding and implementing solutions to water quality problems
 2. Agricultural activities
 3. Coordination between agencies, government, associations, etc.
 4. Buffers for shoreland development
 5. Local awareness/education to solve water problems
 6. Maintain a high quality of life and economic viability.
 - Survey results: Dec
 - Next meeting in September
- **April 22, 2008** – Presentation on current projects to the RLWD Overall Advisory Committee.

Monthly Water Quality Report | April 2008

Future Meetings/Events

- **June 23rd, 2008** - Red River Basin Water Quality Team Meeting at the RLWD, 10am
- **June 30th, 2008** – Red River Basin Monitoring Advisory Committee Meeting, Fertile, 9:30 am
- **July 9th** - Marshall County Water Resources Advisory Committee, 9:30am
- **July 28, 2008** - Red River Basin Water Quality Team Meeting in Moorhead, 10am
- **August 25, 2008** – Red River Basin Water Quality Team Meeting at the RLWD, 10am
- **September 22, 2008** – Red River Basin Water Quality Team Meeting in Moorhead
- **October 8, 2008** – Marshall County Water Resources Advisory Committee.
- **October 24, 2008** – Red River Basin Water Quality Team Meeting at the RLWD, 10am
- **November 5, 2008** - Marshall County Water Resources Advisory Committee, 9:30am
- **November 24, 2008** – Red River Basin Water Quality Team Meeting in Moorhead, 10am
- **December 22, 2008** - Red River Basin Water Quality Team Meeting at the RLWD