May 2006 Water Quality Program Progress Summary

By: Corey Hanson

For: June 8, 2006 RLWD Board Meeting

Lake and Stream Monitoring:

The first round of sampling at our regular district monitoring sites for 2006 was completed in May. The other three rounds of sampling will be in June, August, and October. In addition to these sites, samples were collected from the inlets and outlets of Oak and Cameron Lakes as requested by Manager Carlson and are being analyzed for total phosphorus, orthophosphorus, and total suspended solids. Maples Lake inlet, outlet, and JD73 samples were collected in May and will be collected monthly again this summer – with analysis being paid for directly by the Maple Lake District. Red River Basin Buffer Initiative sampling (81 and Silver Creek 2 on Silver Creek and CLBK3 on Clear Brook).

The Ruffy Brook continuous monitoring sondes have been installed again this year (on May 5th). Data will be downloaded and dissolved oxygen will be calibrated every two weeks (every other Friday). Also, pH and Conductivity will be calibrated once every four weeks (every other site visit).

Clearwater, Maple, and Cameron Lakes were also sampled. Sampling at Buzzle Lake and Blackduck Lake will begin in June.

Tile Drainage Study:

Regular one to two-week interval tile sampling was continued through the month of May. A significant runoff event was sampled on May 10th that showed a major difference between surface runoff and tile drainage water quality. On the morning of the 10th, the Red Lake County surface drained monitoring site had a total suspended solids concentration of 840 mg/L compared to a concentration of <1 mg/L at the Bachand tile outlet. Nitrates at the tile site continue to average about 20 mg/L.

More Quickrete was added to the Yaggie flume to prevent backwards flow of water during high flows (like the May 10th runoff event). A couple of "exploratory" samples were collected from Polk County. Nitrate concentrations at these sites were comparable to those at other sites in the study. Total suspended solids were a little higher than our other sites but still low and conductivity was extremely high (3854 uS/cm). I also worked on analyzing the Red Lake County water level data from this year (so far) and last year.

Project 60 Monitoring

The Stevens TS300 turbidity probes and HOBO Level Loggers have been working well. They will be checked every two weeks. The probes will be cleaned and data will be downloaded during these bi-weekly site visits. I will try to get enough flow measurements to create a rating curve at each of these sites (and any other sites needed for the project – downstream of the Euclid impoundment?).

Figure 1. Stilling Wells for Turbidity and Water Level Sensors at Stream Gauge #71 on Polk County Ditch 2

Figure 2. Stilling Wells for Continuous Monitoring Equipment at B75 (Brandt Channel at Hwy 75)

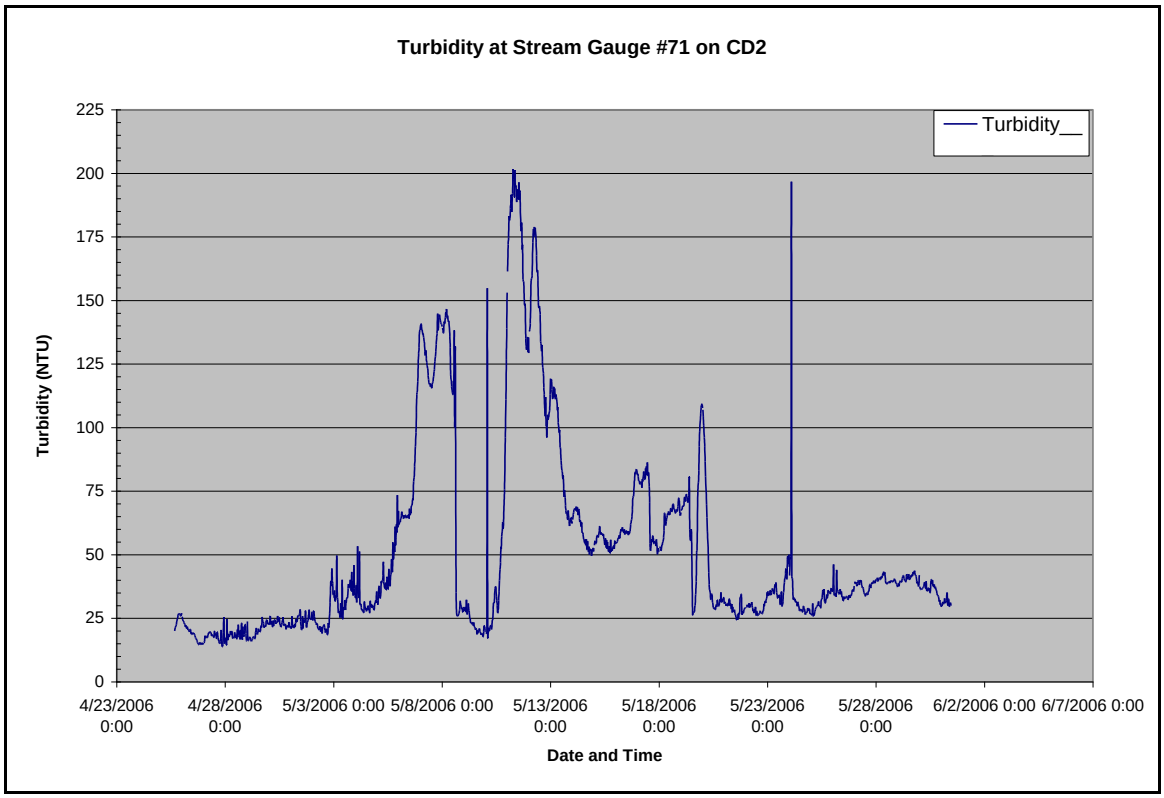

Figure 3. Graph of Readings (once every 30 minutes) from the Stevens TS300 Turbidity Probe at Stream Gauge #71.

May Meetings

- **May 11th** – Presentation: *Potential Impacts of Expanded Tile Drainage on Aquatic Ecosystems in the Red River Basin* by Kristen Blann - at the VFW in Ada from 10am to 11 am
- **May 22nd** – Red River Basin Water Quality Team Meeting in Moorhead.
- **May 26th** – Red River Basin Monitoring Advisory Committee in Fertile

Future Meetings/Events

- **June 15th** – Next Red Lake River Corridor Enhancement Project meeting – in Thief River Falls. One of the main topics on the agenda will be the River Watch Watershed Watch project which will work with the Red Lake River Corridor joint Powers Board to implement some of the aspects of the Corridor Enhancement project.
- **June 26th** - Red River Basin Water Quality Team Meeting at the RLWD
- **July 24th** - Red River Basin Water Quality Team Meeting in Moorhead

River Watch

- Jim is continuing to assist area River Watch schools with their monitoring.

Other Notes

I received a call from Cheryl Feigum of Barr Engineering on May 25th. They are working for mining companies in St. Louis County who will need to mitigate >1500 acres of wetlands over the next 20 years. Apparently BWSR is allowing them to use credits from other counties. The mining companies will pay for the costs of restoration and acquisition of wetland banking credits. They will then pay the landowner for the credits. The ideal situation Cheryl is looking for would be an area in which around 100 or so new wetland acres could be created/restored but, since they need so many credits, they might take whatever they can get.

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