



Meeting Minutes

If information contained herein is thought to be inaccurate or incorrect, please contact writer at once for resolution.

PROJECT: Black River and Paw Paw River Watersheds Pathogen Monitoring **MEETING DATE:** 12-1-2011

SUBJECT: MDEQ Guidance for Monitoring **MEETING START:** 10 am
MEETING ADJOURN: 1 pm

MEETING SITE: MDEQ Kalamazoo Office **DISTRIBUTION DATE:**

PREPARED BY: E. Wendy Ogilvie, LEED AP **PROJECT No.:** G110766
MDEQ TC#2011-0502

ATTENDING: Chris Bauer, MDEQ
Jerrod Sanders, MDEQ
Bruce Washburn, MDEQ
Wendy Ogilvie, FTC&H
Marcy Colclough, SWMPC
Molly Rippe, MDEQ (by phone)

DISTRIBUTION: Attendees

Attachments Yes No — Individuals in the distribution list will receive all attachments unless noted otherwise.

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1. **Objectives** - The discussion began with an overview of the objectives for each watershed.
 - a. Black River: What are the levels of *E. coli* in the various tributaries and what are the sources?
 - b. Pine Creek: We know the *E. coli* is there, but is it from the City or the Dairy? If it is from the Dairy, are they in compliance with their permit? If so, are the standards out of line?
 - c. Mill Creek: How does *E. coli* respond to flows in the system? Is *E. coli* impairing the City Park where kids play in the creek? How does the hydrograph correlate to contamination levels?

 2. **Potential Sources of Pathogens in Watersheds**
 - a. MDEQ provided maps of the watersheds, illustrating fields where manure is applied. Discussion centered on farms in Hartford and Keeler Townships, in the Pine Creek and Mill Creek Watersheds, Van Buren County, and Geneva Township in the Black River Watershed, also Van Buren County.
 - b. The Hartford Dairy in the Paw Paw River Watershed and the Stamp Farm in the Black River Watershed are the largest farms and spread on many of the nearby fields. Crops are mostly corn, using conventional tillage practices. The fields receiving manure were located on the larger aerial maps. A map showing tile lines entering Pine & Mill Creeks is available from limited MDEQ field observations.
 - c. M. Colclough presented the Pine and Mill Creeks Watershed Inventory Plan for review. An inventory was performed to identify tile lines, septic systems and lack of buffers as potential pollutant sources. The following information is available:

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- Locations of known tile lines identified by MDEQ site visits (limited) - identified on map
 - General areas connected to sanitary sewers in Hartford
 - Houses within 100 feet of waterbody – identified on map (Need to look up zoning requirements for setbacks in watersheds), to show potential high risk areas for failing septic systems
 - Windshield survey of areas that need buffers – example of aerial photo with lack of buffer circled
- d. Pine and Mill Creeks TMDL states suspected sources are:
- Agricultural
 - Land applied manure (direct runoff)
 - Land applied manure on fields with drain tiles
 - Septic Systems
 - Estimated 5%-10% failure (how many is that?)
 - No inspection or maintenance requirements
 - Wildlife
 - Ponds attracting waterfowl
 - Large deer population
 - Stormwater
 - City of Hartford has small storm sewer system
 - Potential for illicit connections
 - Look at hydrographs and exceedence flows

3. Labs for Analysis

- a. W. Ogilvie reviewed the information collected from different labs to help with developing the sampling regime.
- Hope College professors have been sampling waters in the area and are analyzing them for percent contribution of sources of *E. coli*. It might be possible for them to take samples and then freeze them for later DNA analysis, after the enumeration results are received to see which sites should be analyzed. Hope is able to perform qPCR for Human, Cow and Pig.
 - Helix Lab, Warren, MI, performs MST analysis for a larger variety of sources, including horse, dog, deer, and gull. Their pricing structure is higher than typical health department analyses, but the results would be available in a much shorter timeframe.
 - W. Ogilvie will contact Great Lakes Scientific to see how to verify some of the tracking results with caffeine test, and ask what other methods they might suggest.
 - MDEQ reiterated that for all of these labs, their QA/QC procedures would have to be verified and methods approved as stated in the QAPP before grant funding could be used for their services.
 - M. Colclough will contact Purdue University about the possibility of using their laser technology to identify sources of *E. coli*.

4. GIS Information

- a. Existing GIS layers for Pine Creek and Mill Creek:
- Sanitary layers of municipalities (M. Colclough checking for availability)
 - Crops and schedules for manure spreading and other spreading plans for identified fields (coordinate with MDEQ in spring)
 - Previous sampling locations and results

5. Sampling Parameters

- a. Due to limited funding and desire for additional samples, the Committee might want to consider collecting one sample at each site since we are not trying to establish compliance with water quality standards, just looking for sources. After discussion with the Committee, we will follow up with Joe Rathbun and Molly Rippke, MDEQ to ask for advice. Also with limited funding, it was discussed to hold (freeze) all samples

taken and at the end of the sample collection period, decide which samples to run the BST or other analysis for E. coli tracking.

- b. Black River – Previous monitoring sites in the City of South Haven were discussed and areas of concern were documented on the maps. A total of 8 sites were proposed for sampling during wet weather events: 1 on the Phoenix and Peterson Drain, 1 on the North Branch of the Black River, 2 on the South Branch of the Black River and 4 on the main stem.
- c. Pine Creek – A total of 4 sites were proposed for sampling. One at I-94, one at Red Arrow (upstream and downstream of the City of Hartford) for both dry and wet weather. Two on upstream tributaries on 68th Street for just wet weather.
- d. Mill Creek – One site at Flaherty Park in Watervliet for wet weather sampling. J. Sanders suggested collecting samples from one location through the course of a wet weather event rather than taking snapshots throughout the watershed. Samples would be collected at some interval, (1-2 hours, for example) at that location throughout the hydrograph (or at least through the time of concentration) of the wet weather event. This information could provide an insight to what and where the sources are based on when the concentration changes. Hydrologic backtracking could be one way to provide scientific validity to those results. This approach will be further discussed with MDEQ Hydrologic Studies Unit to identify potential limitations to this approach and help design and implement the program.
- e. MDEQ suggested using level loggers to measure stage of water at as many sites as possible. This will be explored. If level loggers are not available, taking water depths with each sample might prove helpful.

6. Next Steps

- a. Project partners will propose the sampling parameters and sites for the watersheds to MDEQ for review and discussion.
- b. Draft QAPP will be presented to Steering Committee in January 2012.

7. Adjourn