



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 20 2013

REPLY TO THE ATTENTION OF

Ms. Lynelle Marolf
Deputy Director, Office of the Great Lakes
Michigan Department of Environmental Quality
525 West Allegan
P.O. Box 30273
Lansing, Michigan 48909-7773

Dear Lynelle:

Thank you for your December 3, 2012 request to remove the "Restrictions on Drinking Water Consumption or Taste and Odor Problems" Beneficial Use Impairment (BUI) at the Muskegon Lake Area of Concern (AOC) in Michigan. As you know, we share your desire to restore all of the Great Lakes AOCs and to formally delist them.

Based upon a review of your submittal and the supporting data, the U.S. Environmental Protection Agency hereby approves your BUI removal request at the Muskegon Lake AOC. In addition, EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate you and your staff, as well as the many federal, state, and local partners who have worked so hard and been instrumental in achieving this important environmental improvement. This progress will benefit not only the people who live and work in the Muskegon Lake AOC but all the residents of Michigan and the Great Lakes basin as well.

We look forward to the continuation of this important and productive relationship with your agency and local coordinating committees as we work together to fully restore all of Michigan's AOCs.

If you have any further questions, please contact me at (312) 353-4891, or your staff may contact John Perrecone, at (312) 353-1149.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris Korleski".

Chris Korleski, Director
Great Lakes National Program Office

cc: Dan Wyant, Director, MDEQ
Jon W. Allan, MDEQ, Office of Great Lakes
Rick Hobrla, MDEQ, Office of Great Lakes
Stephanie Swart, MDEQ, Office of Great Lakes
Dr. Saad Jasmin, IJC
Cynthia Price, Muskegon Lake Watershed Partnership
Wendy Carney, EPA, GLNPO
Marc Tuchman, EPA, GLNPO



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GREAT LAKES
LANSING



JON W. ALLAN
DIRECTOR

December 3, 2012

Mr. Chris Korleski, Director
Great Lakes National Program Office
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (G-17J)
Chicago, Illinois 60604-3507

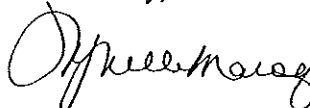

Dear Mr. Korleski:

The purpose of this letter is to request the United States Environmental Protection Agency (USEPA), Great Lakes National Program Office's (GLNPO) concurrence with the removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment (BUI) for the Muskegon Lake Area of Concern (AOC). The Michigan Department of Environmental Quality (MDEQ) has assessed the status of this BUI in accordance with the state's *Guidance for Delisting Michigan's Great Lakes Areas of Concern* and recommends that the BUI be removed from the list of impairments in the Muskegon Lake AOC.

Enclosed please find documentation to support this recommendation, including the BUI removal Briefing Papers prepared by the MDEQ's technical staff. The Muskegon Lake Watershed Partnership submitted a letter stating their support for the removal recommendations on June 22, 2012, and a public meeting was held on May 10, 2012, to obtain public input on the recommendation.

We value our continuing partnership in the AOC Program and look forward to working with the GLNPO on the removal of BUIs and the delisting of AOCs. If you need further information concerning this request, please contact Ms. Stephanie Swart, Office of the Great Lakes, at 517-335-6721, or at swarts@michigan.gov, or you may contact me.

Sincerely,



Lynelle Marolf
Deputy Director
517-335-4056

Enclosures

cc/enc: Mr. Mark Tuchman, USEPA
Mr. John Perrecone, USEPA
Mr. Jon W. Allan, MDEQ
Mr. Richard Hobria, MDEQ
✓ Ms. Stephanie Swart, MDEQ

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

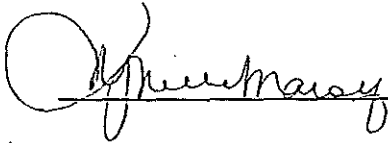
INTEROFFICE COMMUNICATION

TO: Lynelle Marolf, Deputy Director, Office of the Great Lakes
FROM: Rick Hobrta, Chief, Great Lakes Management Unit
DATE: November 21, 2012
SUBJECT: Removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment for the Muskegon Lake Area of Concern

The Department of Environmental Quality (DEQ), Great Lakes Management Unit, Area of Concern Program staff request concurrence with the recommendation to remove the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment (BUI) in the Muskegon Lake AOC. This request is made in accordance with the process outlined in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern*.

Attached is a Briefing Paper documenting restoration and justifying removal of this BUI. Also attached is a draft letter to Chris Korleski, Director, Great Lakes National Program Office, United States Environmental Protection Agency, requesting removal of the BUI. The removal was discussed by the Muskegon Lake Watershed Partnership (MLWP) at their regular meeting on May 10, 2012. A public meeting was held at the same time to discuss the related programs within the DEQ to address drinking water concerns. As part of their continued support for this BUI removal recommendation, the MLWP submitted a letter on June 22, 2012. Please indicate your approval of this recommendation, and we will provide a final letter to Mr. Korleski for your signature.

Approved: _____



Date: _____

11/21/12

Attachments

cc: ✓ Stephanie Swart, Office of the Great Lakes

**Removal Recommendation
Restrictions on Drinking Water Consumption or Taste and Odor Problems
Beneficial Use Impairment
Muskegon Lake Area of Concern**

Issue

The Michigan Department of Environmental Quality (MDEQ), Office of the Great Lakes, Areas of Concern (AOCs) program requests concurrence with the removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment (BUI) for the Muskegon Lake AOC. The recommendation is made with the support of staff from the United States Environmental Protection Agency (USEPA) Great Lakes National Program Office, the MDEQ Resource Management Division (RMD), and the Muskegon Lake Watershed Partnership (MLWP). This request is made in accordance with the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (Guidance) (MDEQ, 2008).

Background

Muskegon Lake is a 4,150 acre drowned river mouth located in Muskegon County. The Muskegon Lake AOC includes Muskegon Lake and portions of its tributaries: the Muskegon River, Ruddiman Creek, Ryerson Creek, Green Creek, Four Mile Creek, Little Bear Creek (including the unnamed tributary), and Bear Lake. Muskegon Lake was listed as an AOC primarily due to historic discharges of industrial process wastewater, municipal wastewater treatment plant effluent, combined storm sewer overflows, alterations of shoreline, excessive shoreline filling, and urban runoff. These discharges introduced elevated levels of PCBs, heavy metals, nutrients, oils and other contaminants into the Muskegon Lake AOC (MDNR, 1987).

Nine BUIs have been identified for the Muskegon Lake AOC: Restrictions on Dredging Activities (removed September 2011); Loss of Fish and Wildlife Habitat; Degradation of Fish and Wildlife Populations; Degradation of Aesthetics; Restrictions on Drinking Water Consumption or Taste and Odor Problems; Restrictions on Fish Consumption; Beach Closings; Eutrophication or Undesirable Algae; and Degradation of Benthos. This document pertains only to the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI.

The Drinking Water BUI was not originally identified in the 1987 Remedial Action Plan (RAP). The BUI was included in the list of BUIs in 2002 as part of the Muskegon Conservation District's RAP Update because of concerns about contamination of private groundwater supplies, and the presence of leaking underground storage tanks and National Priorities List sites in the area (Muskegon Conservation District, 2002).

Removal Criteria

The Guidance has two criteria for the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI. This BUI will be considered restored when monitoring data for 2 years indicates that public water supplies:

- meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and
- treatment needed to make raw water potable and palatable does not exceed standard methods in those supplies. In the event a public drinking water intake must be closed due to contamination of surface water, standard treatment methods are considered to have been exceeded.

The attached excerpt from the Guidance (pages 35-36) includes the rationale for the delisting criteria (Attachment A).

Analysis

To assess the status of this BUI, RMD, Community Water Supply Program staff reviewed Monthly Operation Reports and the required chemical monitoring data received during 2010, 2011, and what was available from 2012 for the two water treatment plants that service the AOC. The municipal water filtration plants for Muskegon and Muskegon Heights draw Lake Michigan water as the source (Attachment B). Additionally, the water quality reports from each municipal water supply were reviewed. These reports provide the annual water quality testing data results based on all state and federal water quality standards, and are sent to citizens served by the facilities.

Established on the review of the Monthly Operation Reports, chemical monitoring data, water quality reports, and communication with technical staff, both plants have met all federal and state drinking water standards for finished water quality during the relevant time period. The review also showed that each plant employs conventional treatment (i.e., coagulation, sedimentation, filtration, and disinfection) to treat source water; treatment has not exceeded standard methods, nor have there been any incidences of intakes closing, whether voluntarily or involuntarily.

Portions of North Muskegon still contain private drinking water wells. Private drinking water supplies are outside the scope of the AOC Program. Potential issues related to private drinking water sources are addressed by the MDEQ Community Water Supply Program; MDEQ Office of Oil, Gas, and Minerals; MDEQ Remediation Division; and the local Muskegon County Health Department.

Based upon review of the data and technical input of staff from the MDEQ Community Water Supply Program; MDEQ Office of Oil, Gas, and Minerals; MDEQ Office of the Great Lakes, Muskegon County Health Department; and the U.S. Environmental Protection Agency, Great Lakes National Program Office, removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI in the Muskegon Lake AOC is recommended.

The removal recommendation was discussed with the Muskegon Lake Watershed Partnership (MLWP) at their regular meeting on May 10, 2012, and a public meeting held to discuss the recommendation with the Muskegon Lake AOC community (Attachment C). The MLWP submitted a formal letter of support for removal of the BUI, dated June 22, 2012 (Attachment D). This proposed action was public noticed via listing in the MDEQ Calendar and posting to the MLWP's email list. Supporting documents were posted on the MDEQ's AOC program web page for public review and comment from June 26 through July 26, 2012. No written comments were received during the public notice period.

Recommendation

Based upon review of the data and input from the Technical Committee, the MDEQ AOC program staff recommends removal of the Restrictions on Drinking Water Consumption or Taste and Odor Problems BUI, in the Muskegon Lake AOC.

Prepared by: Stephanie Swart, Muskegon Lake AOC Coordinator
Great Lakes Management Unit
Office of the Great Lakes
Michigan Department of Environmental Quality
August 3, 2012

Attachments

- A – Restrictions on Drinking Water Consumption or Taste and Odor Problems Activities; pages 35-36 of the Guidance for Delisting Michigan's Great Lakes AOCs
- B – Approximate locations of Muskegon and Muskegon Heights drinking water intakes
- C – Muskegon Lake Watershed Partnership May 10th public meeting announcement, agenda, and minutes
- D – Muskegon Lake Watershed Partnership letter supporting BUI removal, June 22, 2012

References

City of Muskegon, Water Filtration Department. Annual Water Quality Report.
<http://www.muskegon-mi.gov/departments/water-filtration/>

City of Muskegon Heights, Water Filtration Operation. Annual Water Quality Report.
(The link provided was broken and has been removed.)

International Joint Commission. 1987. Revised Great Lakes Water Quality Agreement of 1978.

Michigan Department of Environmental Quality. 2011. Stage 2 Remedial Action Plan for the Muskegon Lake Area of Concern. Office of the Great Lakes, Michigan Department of Environmental Quality, Lansing, Michigan.

Michigan Department of Environmental Quality. 2008. *Guidance for Delisting Michigan's Great Lakes Areas of Concern*, revised. MI/DEQ/WB-06-001.

Michigan Department of Natural Resources. 1987. Remedial Action Plan for the Muskegon Lake Area of Concern. Great Lakes and Environmental Assessment Section, Surface Water Quality Division, Michigan Department of Natural Resources, Lansing, Michigan.

Muskegon Conservation District. 2002. Muskegon Lake Community Action Plan Remedial Action Plan Update. Prepared for the Muskegon Lake Public Advisory Council and the Muskegon Lake Watershed Community.

O'Boyle, Wade. Grand Rapids District Office, Community Water Supply Program, Resource Management Division, DEQ, Lansing, Michigan. May 17, 2012. Personal Communication.

Attachment A

2008 Guidance for Delisting Michigan's Great Lakes Areas of Concern

Restrictions on Drinking Water Consumption or Taste and Odor Problems

Significance in Michigan's Areas of Concern

Five of Michigan's AOCs are listed as impaired due to past restrictions on drinking water, including: White Lake, Saginaw River/Bay, Muskegon Lake, St. Clair River, and Detroit River.

For most AOCs, this BUI was designated due to the need for additional treatment of drinking water in order to meet human health standards and address taste or odor issues. In the St. Clair River, this BUI was originally designated due to closures of drinking water treatment plants to let plumes from chemical spills pass the intakes.

Michigan Restoration Criteria and Assessment

This BUI will be considered restored when monitoring data for 2 years indicates that public water supplies:

- meet the current and most stringent human health standards, objectives, or guidelines (at the point of distribution into the water system) for levels of disease-causing organisms, hazardous or toxic chemicals, or radioactive substances; and
- treatment needed to make raw water potable and palatable does not exceed standard methods in those supplies. In the event a public drinking water intake must be closed due to contamination of surface water, standard treatment methods are considered to have been exceeded.

Rationale

Practical Application in Michigan

For the purposes of restoring this impairment, standard treatment methods are those identified in the federal and Michigan Safe Drinking Water Acts. Standard treatment includes filtration, disinfection, coagulation/flocculation, sedimentation, iron removal (if necessary), well field management, new well location, and softening. Standards related to odor and taste are secondary Maximum Contaminant Levels, and are not adopted by Michigan law. Taste and odor concerns are typically tracked by citizen complaints and are investigated at the local level by county health departments.

1991 IJC General Delisting Guideline

For treated drinking water supplies: 1) when densities of disease-causing organisms or concentrations of hazardous or toxic chemicals or radioactive substances do not exceed human health objectives, standards or guidelines; 2) when taste and odor problems are absent; and 3) when treatment needed to make raw water suitable for drinking does not exceed the standard treatment used in comparable portions of the Great Lakes which are not degraded (i.e., settling, coagulation, disinfection).

The IJC general delisting guideline for the BUI is presented here for reference. The Practical Application in Michigan subsection above describes application of specific criteria for restoration based on existing Michigan programs and authorities.

State of Michigan Programs/Authorities for Evaluating Restoration

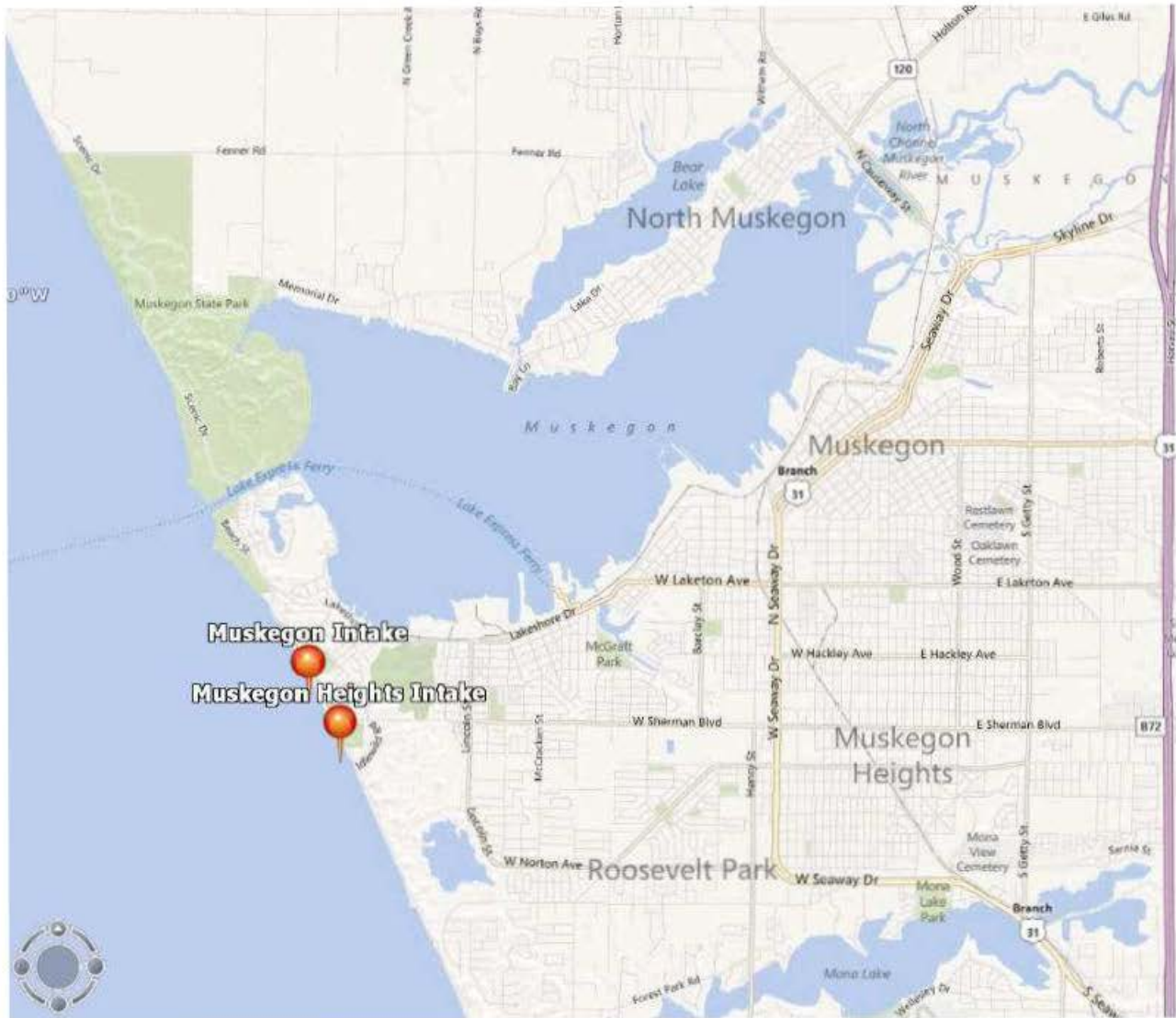
The U.S. EPA establishes and enforces drinking water standards nationwide. The state adopts and enforces those standards under the Michigan Safe Drinking Water Act (Act 399, 1976 as amended). The MDEQ carries out the community public water supply program directly, and contracts with local health departments to issue construction permits, oversee the monitoring, and carry out enforcement for non-community public water systems.

Under the Michigan Safe Drinking Water Act, public water suppliers in Michigan must submit regular reports of treated water quality to the MDEQ. The MDEQ will use these reports to evaluate whether this BUI has been restored.

Some local AOC communities also have programs for monitoring water quality and related parameters which may be applicable to this BUI. If an AOC chooses to use local monitoring data for the assessment of BUI restoration, the data can be submitted to the MDEQ for review. If the MDEQ determines that the data appropriately addresses the restoration criteria and meets quality assurance/quality control requirements, they may be used to demonstrate restoration success.

Attachment B

Approximate Locations of Muskegon and Muskegon Heights Water Filtration Plant Intakes





May 10, 2012
6:00 p.m. – 8:00 p.m.
Laketon Township Hall
2735 W. Giles Road, Muskegon, Michigan

Welcome and Introductions:

Kim Arter, Laketon Township Supervisor and Vice Chair of the Muskegon Lake Watershed Partnership

**Historic Oil & Gas Exploration and
Groundwater Drinking Water Resources in the Muskegon Lake Watershed**

Presenters will discuss the Restrictions on Drinking Water Taste and Odor Problems Beneficial Use Impairment as it relates to the Muskegon Lake Area of Concern, State of Michigan Guidance Criteria, private drinking wells. The Office of Oil, Gas and Minerals and Drinking Water Section Department staff will discuss the state process regarding private wells and if a well becomes contaminated.

Presenters:

- Kathy Evans, MLWP Staff Support/West Michigan Shoreline Regional Development Commission
- Stephanie Swart, Office of the Great Lakes
- Stafford Dusenbury and Janice Smith, DEQ Office of Oil, Gas, and Minerals
- Dave DeYoung, DEQ Drinking Water
- Vicki Webster, Muskegon County Health Department

Muskegon Lake Watershed Partnership Meeting

- 1) Minutes
- 2) Treasurer's Report
- 3) Next Steps on Drinking Water BUI
- 4) Web Site Update
 - a) Recommendation: www.muskegonlake.org to partner with *(The link provided was broken and has been removed.)* for three years
- 5) Public Input/Comment
- 6) Adjourn

Optional Networking / Brief Updates and Announcements

MLWP Technical Team Updates

1. Restrictions on Fish Consumption BUI – Results of DEQ/AWRI Fish Tissue Analyses – Report to be Released Soon
2. **Division Street Outfall - EPA Media Event for Completion of the Division Street Outfall Great Lakes Legacy Act Cleanup, May 14, 2012, 2:00 p.m. at YMCA**
3. Zephyr – EPA sediment sampling: Completed in Bear Creek and Muskegon River in April, 2012
4. Ryerson – Public/Private Partnership Next Steps: Input on Development of EPA 2012 Sampling Plan
5. Paper Mill – Discussions ongoing with EPA, DEQ, Landowner on Cleanup and Redevelopment Options

MLWP Habitat Committee Updates

6. Pending Land Acquisitions for Restoration: Muskegon County – Muskegon River and Bear Creek wetlands
7. Current Restoration and Engineering & Design grants: WMSRDC/NOAA Engineering and Design for Bear Creek Hydrologic Reconnection/Wetland Restoration and Sawmill Slabwood/Mill Debris Restoration projects; NOAA ARRA and NOAA GLHRP shoreline habitat restoration projects ongoing/to be completed in 2012

MLWP Non Point Source Committee Updates

8. Bear Creek 319 Watershed Implementation Project Continuing to Work Toward Removal of Eutrophication BUI
9. Ruddiman Creek AWRI GLRI Biota TMDL Project Continuing; Final Storm Sampling Completed
10. Efforts Underway to Identify Sources of E.Coli in Main Branch Storm Drain System
11. AWRI Pending Proposals for Muskegon Lake Urban Area 319 Plan and EPA Urban Waters grant projects
12. **May 11 – Grand Trunk Restoration Partnership, 9:00 a.m. – 2:00 pm:** Hands on habitat restoration opportunities and a new volunteer, stormwater management project with the City of Muskegon

Muskegon Lake Watershed Partnership Meeting Summary – May 10, 2012, 6:00 p.m.

Laketon Twp. Hall

Submitted by Lea Markowski, Secretary

Attendance (23)

Ross Aden, Lou Archer, Kim Arter, Thomas Berdinski, Sara Damm, Tom DeMumbrum, David DeYoung, Stafford Dusenbury, Kathy Evans, Mark Evans, Dave Fisher, Mary Hester, AliceAnn Inskeef, Heather Kenney, Dennis Kirksey, Brenda Moore, Sara Pearson, Matt Preisser, Bob Schalow, Janice Smith, Stephanie Swart, Vicki Webster, Chuck Woods

Welcome and Introductions

Introductions were made by all in attendance.

Kathy Evans provided a background summary of the Muskegon Lake Watershed Partnership (MLWP) efforts to improve drinking water/groundwater resources under the Area of Concern Program. The MLWP Target for the “Restriction on Drinking Water” Beneficial Use Impairment (BUI) included local criteria to address private groundwater resources threatened by a historic and abandoned oil and gas exploration field. The BUI criteria also identified the need for the City of Muskegon public water supply to consistently meet water quality standards, which it does. The DEQ State Criteria applies only to public water supplies, and therefore, the Local Criteria portion of the MLWP’s Drinking Water Target was not approved.

Stephanie Swart, MDEQ Office of the Great Lakes presented an overview of the DEQ’s State Criteria for the Drinking Water Beneficial Use Impairment (BUI). She explained that, although the groundwater/drinking water resources do not fit under the State’s AOC Program, the DEQ has other resources that are available to address this problem. Stephanie introduced the staff of the DEQ Drinking Water and Office of Geological Survey to provide information on these resources.

Drinking Water Presentations

- Janice Smith (DEQ/OOGM) explained the site review process for the Orphan Well Program. This is a \$1million/year program to plug abandoned, leaking wells. Every year they submit a report w/ a listed of wells of the legislature. Category III sites have not yet been prioritized. A scoring system has not yet been finalized. Geo Webface is a program available online from the DEQ.
- Dave DeYoung (DEQ/Drinking Water) explained the water withdrawal program.
- Vicki Webster presented regarding how to determine if you have drinking water issues at home and how to contact the health department regarding any concerns.

Following the presentations, Kathy Evans facilitated public input on the residents’ desires for information regarding the groundwater/drinking water issue and resources available to address it. the information will be used to educate the potentially affected residential communities.

Minutes

April 2012 minutes were tabled.

Treasurer’s Report

No activity.

WMSRDC \$20,142.51 beginning/ending balance

MRWA \$7,835.14 beginning/ending balance

Woods motioned to approve, Seconded by Fisher

Bills to be approved by officers via email

Drinking Water BUI

Markowski: Motion to remove the Drinking Water BUI because Local Criteria to address groundwater as a drinking water resource was not approved by the DEQ, and the public water supply meets the State Criteria. The motion was made with the expressed understanding that the MLWP and DEQ will continue to focus on preserving and maintaining clean groundwater as a drinking water supply, and to educate the watershed community regarding resources available to address historic oil well and other contamination sites. Motion Seconded by Woods. Motion passed.

Fisher suggested a new watershed plan to inventory concerns of the MLWP, regardless of AOC relevance. Evans noted that MLWP provided a letter of support for an AWRI/WMSRDC Muskegon Lake 319 Watershed Plan grant application and we are waiting to hear from DEQ on their funding decisions.

Staff Report/Committee Updates

Website update

The officers have discussed and recommended to partner with *(The link provided was broken and has been removed)*. Arter motioned to become a partner of the *(The link provided was broken and has been removed)* website. Seconded by Kirksey. Approved.

Fenner's Ditch

DEQ/OOGM is attempting to get an electromagnetic survey completed to test the area for brine, per Dusenbury.

Zephyr

Sara Pearson/DEQ Remediation Division reported that the EPA sediment sampling of the Muskegon River and Bear Creek is done. The US Army Corps of Engineers budget is approximately \$800,000 for surveying the upland soils and groundwater areas. An abandoned oil tank battery was discovered and will be removed. Two technologies may be piloted, one of which is in-situ incineration of petro chemicals with treatment of vapors.

Funding

Moore gave updates regarding intents of potential donor and suggested contacting him with further plans of action, and suggested that a community training be provided regarding fracking.

Additional updates provided on the agenda.

Announcements/Upcoming Events

Grand Trunk Annual Clean-up Day May 11th, 9-3

DSO Sediment "Tada" May 21, 2pm.

Area of Concern Conference (May 29-31) info and survey distributed.

Adjourn