

PERMIT APPLICATION FOR WATER SUPPLY SYSTEMS
 (CONSTRUCTION - ALTERATION - ADDITION OR IMPROVEMENT) AS DESCRIBED HEREIN
 Required under the Authority of 1976 PA 399, as amended

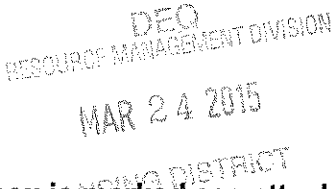


This application becomes an Act 399 Permit only when signed and issued by authorized Michigan Department of Environmental Quality (DEQ) Staff. See instructions below for completion of this application.

| | | |
|---|--|--|
| <p>1. Municipality or Organization, Address and WSSN that will own or control the water facilities to be constructed. This permit is to be issued to: Genesee County Drain Commissioner's Office Division of Water and Waste Services G-4610 Beecher Road Flint, Michigan 48532 WSSN: 2615</p> | <p align="center">Permit Stamp Area (DEQ use only)</p> <p align="center">MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY</p> <p>PERMIT NO. W 151036 MAY 14 2015</p> <p align="center">EXAMINED AND APPROVED FOR COMPLIANCE WITH ACT 399, P.A. 1976</p> | |
| <p>2. Owner's Contact Person (provide name for questions):</p> <p>Contact: John F. Obrien, P.E. Title: Director Phone: 810-732-7870</p> | | |
| <p>3. Project Name (Provide phase number if project is segmented):</p> <p>GCDC-WWS Water Supply System - Contract Genesee County Impoundment</p> | <p>4. Project Location (City, Village, Township): Oregon Township</p> | <p>5. County (location of project): Lapeer</p> |

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENT QUALITY

cc:



Issued by: Michael Proszky
 Reviewed by: Michael Proszky

If this box is marked see attached special conditions.

Instructions: Complete items 1 through 5 above and 6 through 21 on the following pages of this application. Print or type all information except for signatures. Mail completed application, plans and specifications, and any attachments to the DEQ District Office having jurisdiction in the area of the proposed construction.

Please Note:

- a. This **PERMIT** only authorizes the construction, alteration, addition or improvement of the water system described herein and is issued solely under the authority of 1976 PA 399, as amended.
- b. The issuance of this **PERMIT** does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other DEQ permits, or approvals from other units of government as may be required by law.
- c. This **PERMIT** expires two (2) years after the date of issuance in accordance with R 325.11306, 1976 PA 399, administrative rules, unless construction has been initiated prior to expiration.
- d. Noncompliance with the conditions of this permit and the requirements of the Act constitutes a violation of the Act.
- e. Applicant must give notice to public utilities in accordance with 1974 PA 53, (MISS DIG), being Section 460.701 to 460.718 of the Michigan Compiled Laws, and comply with each of the requirements of that Act.
- f. All earth changing activities must be conducted in accordance with the requirements of the Soil Erosion and Sedimentation Control Act, Part 91, 1994 PA 451, as amended.
- g. All construction activity impacting wetlands must be conducted in accordance with the Wetland Protection Act, Part 303, 1994 PA 451, as amended.
- h. Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.
- i. Where applicable for water withdrawals, the issuance of this permit indicates compliance with the requirements of Part 327 of Act 451, Great Lakes Preservation Act.

Permit Application for Water Systems (Continued)

6. **Facilities Description** – In the space below provide a detailed description of the proposed project. Applications without adequate facilities descriptions will be returned. SEE EXAMPLES BELOW. Use additional sheets if needed.

A 125 million gallon water impoundment for the storage of raw water ahead of the proposed Genesee County Water Treatment Plant. The Impoundment will be lined with a 60 mil HDPE liner with a geocomposite drainage layer on the side slopes for groundwater drainage and venting and a gravel underdrain at the bottom of the impoundment. The work will also include a concrete inlet into the impoundment and steel screens for water intake out of the impoundment to the treatment plant. Other components include water lines, air lines, chemical feed lines, and stormwater piping and structures related to the impoundment and proposed water treatment plant. Work above grade will consist of grading for the impoundment, gravel roadway, a gravel area reserved for a future electrical substation, and temporary seeding of areas ahead of final grading and landscaping, which will occur in the Water Treatment Plant project to follow.

EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES – EXAMPLES

| | |
|-----------------------|---|
| Water Mains | 500 feet of 8-inch water main in First Street from Main Street north to State Street. OR 250 feet of 12-inch water main in Clark Road from an existing 8-inch main in Third Avenue north to a hydrant. |
| Booster Stations | A booster station located at the southwest corner of Third Avenue and Main Street, and equipped with two, 15 Hp pumps each rated 150 gpm @ 200 feet TDH. Station includes backup power and all other equipment as required for proper operation. |
| Elevated Storage Tank | A 300,000 gallon elevated storage tank located in City Park. The proposed tank shall be spherical, all welded construction and supported on a single pedestal. The tank shall be 150 feet in height, 40 feet in diameter with a normal operating range of 130 – 145 feet. The interior coating system shall be ANSI/NSF Standard 61 approved or equivalent. The tank will be equipped with a cathodic protection system, and includes a tank level control system with telemetry. |
| Chemical Feed | A positive displacement chemical feed pump, rated at 24 gpd @ 110 psi to apply a chlorine solution for Well No. 1. Chlorine is 12.5% NaOCL, ANSI/NSF Standard 60 approved and will be applied at a rate of 1.0 mg/l of actual chlorine. |
| Water Supply Well | Well No. 3, a 200 foot deep well with 170 feet of 8-inch casing and 30 feet of 8-inch, 10 slot screen. The well will be equipped with a 20 Hp submersible pump and motor rated 200 gpm @ 225 feet TDH, set at 160 feet below land surface. |
| Treatment Facilities | A 5 million gpd water treatment plant located at the north end of Second Avenue. The facility will include 6 low service pumps, 2 rapid mix basins, 4 flocculation/sedimentation basins, 8 dual media filters, 3 million gallon water storage reservoir and 6 high service pumps. Also included are chemical feed pumps and related appurtenances for the addition of alum, fluoride, phosphate and chlorine. |

Permit Application for Water Systems (Continued)

| | |
|---|---|
| General Project Information – Complete all boxes below. | |
| <p>7. Design engineer's name, engineering firm, address, phone number, and email address:</p> <p>AECOM Technical Services of Michigan, Inc G-3287 Beecher Road Flint, Michigan, 48532 810-732-06712 Edward L. Tharp or Michael H. Winegard ed.tharp@aecom.com or mike.winegard@aecom.com</p> | <p>8. Indicate who will provide project construction inspection:</p> <p><input checked="" type="checkbox"/> Organization listed in Box 1. <input type="checkbox"/> Engineering firm listed in Box 7. <input type="checkbox"/> Other - name, address, and phone number listed below.</p> |
| <p>9. Is a basis of design attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If no, briefly explain why a basis of design is not needed. Provided separately in a PDF (Project Design Report)</p> | |
| <p>10. Are sealed and signed engineering plans attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If no, briefly explain why engineering plans are not needed. Provided separately</p> | |
| <p>11. Are sealed and signed construction specifications attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If specifications are not attached, they need to be on file at DEQ.</p> | |
| <p>12. Were Recommended Standards for Water Works, Suggested Practice for Water Works, AWWA guidelines, and the requirements of Act 399 and its administrative rules followed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, explain which deviations were made and why.</p> | |
| <p>13. Are all coatings, chemical additives and construction materials ANSI/NSF or other adequate 3rd party approved? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If no, describe what coatings, additives or materials did not meet the applicable standard and why.</p> | |
| <p>14. Are all water system facilities being installed in the public right-of-way or a dedicated utility easement? (For projects not located in the public right-of-way, utility easements must be shown on the plans.) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If no, explain how access will be obtained. Property Owned by GCDC-WWS, and easements</p> | |
| <p>15. Is the project construction activity within a wetland (as defined by Section 324.30301(d)) of Part 303, 1994 PA 451? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If yes, a wetland permit must be obtained.</p> | |
| <p>16. Is the project construction activity within a 100-year floodplain (as defined by R 323.1311(e)) of Part 31, 1994 PA 451, administrative rules? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If yes, a flood plain permit must be obtained.</p> | |
| <p>17. Is the project construction activity within 500 feet of a lake, reservoir, or stream? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If yes, a Soil and Erosion Control Permit must be obtained or indicate if the owner listed in box 2 of this application is an Authorized Public Agency (Section 10 of Part 91, 1994 PA 451) <input type="checkbox"/> Owner is APA.</p> | |

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit Application for Water Systems (Continued)

18. Will the proposed construction activity be part of a project involving the disturbance of five (5) or more acres of land?

YES NO

If yes, is this activity regulated by the National Pollutant Discharge Elimination System storm water regulations?

YES: NPDES Authorization to discharge storm water from construction activities must be obtained.

NO: Describe why activity is not regulated:

Please call 517-241-8993 with questions regarding the applicability of the storm water regulations.

19. Is the project in or adjacent to a site of suspected or known soil or groundwater contamination?

YES NO

If yes, attach a copy of a plan acceptable to the DEQ for handling contaminated soils and/or groundwater disturbed during construction. Contact the local DEQ district office for listings of Michigan sites of environmental contamination.

20. IF YOU ARE A CUSTOMER/WHOLESALE/BULK PURCHASER, COMPLETE THE FOLLOWING

1) Name and WSSN of source water supply system (seller) GCDC-WWS, #2615

2) Does the water service contract require water producer/seller to review and approve customer/wholesale/bulk purchaser water system construction plans?

YES NO

If yes to #2, the producer/seller approval letter must be attached when submitted to DEQ.

21. **Owner's Certification** The owner of the proposed facilities or the owner's authorized representative shall complete the owner's certification. It is anticipated that the owner will either be a governmental agency (city, village, township, county, etc.) or a private owner (individual, company, association, etc.) of a Type I public water supply.

OWNER'S CERTIFICATION

I, John F. O'Brien (name), acting as the Director (title/position) for Genesee County Drain Commissioner's Office - Division of Water & Waste Services (entity owning proposed facilities) certify that this project has

been reviewed and approved as detailed by the Plans and Specifications submitted under this application, and is in compliance with the requirements of 1976 PA 399, as amended, and its administrative rules.


Signature*

3/16/15
Date

810 732 7870
Phone

*Original signature only, no photocopies will be accepted.

PROJECT BASIS OF DESIGN – FOR WATER MAIN PROJECTS

PROJECT NAME: Genesee County Impoundment--Information provided separately and in PDF

For this PROJECT the following information must be provided per Act 399 unless waived by the Department. For projects other than water main installation, or if additional space is needed, attach separate sheet(s) with detailed Basis of Design calculations.

- A. A general map of the initial and ultimate service areas
 Included on engineering plans Attached separately

- B. Number of service connections served by this permit application _____

- C. Total number of service connections ultimately served by entire project _____

- D. Residential Equivalent Units (REUs) served by this permit application _____

- E. Total Residential Equivalent Units (REUs) ultimately served by entire project _____

- F. Water flow rates for proposed project based on REUs listed in "D" and "E" above
 - 1. Initial design average day flow (mgd) _____
 - 2. Initial design maximum day flow (mgd) _____
 - 3. Total design average day flow (mgd) _____
 - 4. Total design maximum day flow (mgd) _____
 - 5. Required fire flows: ⁽¹⁾ _____ gpm for _____ hours

- G. Actual flows and pressures of existing system at the connection point(s) ⁽²⁾
_____ gpm at _____ psi
_____ gpm at _____ psi
_____ gpm at _____ psi
_____ gpm at _____ psi

- H. Estimated minimum flows and pressures within the proposed water main system ⁽³⁾
_____ gpm at _____ psi

(1) Every water system must decide what levels of fire fighting flows they wish to provide. Fire flow should be appropriate for the area (residential, commercial, industrial) being served by the project. Typical fire flow rates can be obtained from the water supply, local fire dept., ISO or AWWA. The water system must then be designed to be able to provide the required fire flows while maintaining at least 20 psi in all portions of the distribution system.

(2) Flows and pressures at the connection points must be given to determine if the existing water main(s) are able to deliver water to the new service area. These numbers can be obtained from a properly modeled and calibrated distribution system hydraulic analysis or hydrant flow tests performed in the field. If more than one connection is proposed, list as needed.

(3) List what the estimated minimum flows can be expected in the proposed water mains based on estimated water demands, head losses, elevation changes and other factors that may affect flows, such as dead end mains.



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617

PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

March 5, 2015

Mr. Michael Prysby, PE, District Engineer
Office of Drinking Water and Municipal Assistance
Constitution Hall
525 West Allegan
1st Floor South
PO Box 30242
Lansing, Michigan 48909-7742

Re: Genesee County Water Treatment Plant Impoundment

Dear Mr. Prysby:

Enclosed please find two (2) sets of Specifications for the above referenced project for your review.

If you have any questions or concerns, please do not hesitate to contact this office directly.

Sincerely,

Matthew T. Raysin, PE
Assistant Director of Engineering
Division of Water & Waste Services

DEQ
REGULATORY SERVICES DIVISION

MAR 06 2015

LANSING DISTRICT

MTR/JMW

Enclosures

cc: John F. O'Brien, PE, BCEE, Director
AECOM Technical Services of Michigan, Inc.
Wade Trim, Inc.



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617
PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

March 18, 2015

Mr. Michael Prysby, PE, District Engineer
Office of Drinking Water and Municipal Assistance
Constitution Hall
525 West Allegan
1st Floor South
PO Box 30242
Lansing, Michigan 48909-7742

DEQ
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
MAR 24 2015
LANSING DISTRICT

Re: Genesee County Water Treatment Plant Impoundment

Dear Mr. Prysby:

Enclosed please find an executed Act 399 Permit Application relative to the above referenced project for your review.

If you have any questions or concerns, please do not hesitate to contact this office directly.

Sincerely,

Matthew T. Raysin, PE
Assistant Director of Engineering
Division of Water & Waste Services

MTR/JMW

Enclosure

cc: John F. O'Brien, PE, BCEE, Director
AECOM Technical Services of Michigan, Inc.
Wade Trim, Inc.



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617

PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

March 3, 2015

Mr. Michael Prysby, PE, District Engineer
Office of Drinking Water and Municipal Assistance
Constitution Hall
525 West Allegan
1st Floor South
PO Box 30242
Lansing, Michigan 48909-7742

DEO
RESOURCE MANAGEMENT DIVISION
MAR 05 2015
LANSING DISTRICT

Re: Genesee County Water Treatment Plant Impoundment

Dear Mr. Prysby:

Enclosed please find three (3) sets of full-size plans for the above referenced project for your review and permitting.

If you have any questions or concerns, please do not hesitate to contact this office directly.

Sincerely,

Matthew T. Raysin, PE
Assistant Director of Engineering
Division of Water & Waste Services

MTR/JMW

Enclosures

cc: John F. O'Brien, PE, BCEE, Director
AECOM Technical Services of Michigan, Inc.
Wade Trim, Inc.



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617

PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

April 8, 2015

Mr. Michael Prysby, PE, District Engineer
Office of Drinking Water and Municipal Assistance
Constitution Hall
525 West Allegan
1st Floor South
PO Box 30242
Lansing, Michigan 48909-7742

Re: Genesee County Water Treatment Plant Impoundment
100% Plans & Specifications

Dear Mr. Prysby:

Enclosed please find three (3) sets of full size plans and specifications for the above referenced project for your review and permitting.

If you have any questions or concerns, please do not hesitate to contact this office directly.

Sincerely,

Matthew T. Raysin, PE
Assistant Director of Engineering
Division of Water & Waste Services

MTR/JMW

Enclosures

cc: John F. O'Brien, PE, BCEE, Director
AECOM Technical Services of Michigan, Inc.
Wade Trim, Inc.

DEQ
REGULATORY MANAGEMENT DIVISION
APR 09 2015
LANSING DISTRICT

Prysbym, Mike (DEQ)

From: Matt Raysin <mraysin@gcdcwws.com>
Sent: Monday, May 11, 2015 1:36 PM
To: Prysbym, Mike (DEQ)
Subject: RE: Raw Water Impoundment - MDEQ comment

Mike is this response acceptable?

From: Matt Raysin
Sent: Monday, May 04, 2015 8:31 AM
To: prysbym@michigan.gov
Subject: FW: Raw Water Impoundment - MDEQ comment

Let me know if this is sufficient.

From: Tharp, Ed [mailto:Ed.Tharp@aecom.com]
Sent: Friday, May 01, 2015 9:22 PM
To: Matt Raysin
Subject: Fwd: Raw Water Impoundment - MDEQ comment

Sent from my Verizon Wireless 4G LTE smartphone

----- Original message -----

From: "Weaver, Bill" <bill.weaver@aecom.com>
Date: 05/01/2015 12:06 PM (GMT-06:00)
To: "Chu, Hsing" <Hsing.Chu@aecom.com>, "Tharp, Ed" <Ed.Tharp@aecom.com>, "Winegard, Mike" <Mike.Winegard@aecom.com>, "Laucamp, Chad" <Chad.Laucamp@aecom.com>
Subject: RE: Raw Water Impoundment - MDEQ comment

The entire bottom of the impoundment is sloped. The bottom is comprised of a 1 foot thick gravel blanket that is sloped in all locations towards the side slopes. The underdrain pipes are in trenches that are below the blanket and those pipes are also sloped in every location. Where the blanket meets the bottom of the impoundment slope, a geocomposite gas vent is embedded into the edge of the gravel underdrain blanket. This vent extends all the way to the top of slope where there are a number of vents to the atmosphere.

Bill

