Amesbury Water Department
Water Treatment Facility
12 Newton Rd.
Amesbury, MA.
01913
PWSID: 3007000
Contacted: Thomas Rogers
(978) 388-0853
tom@amesburyma.gov

January 9, 2018

To Whom It May Concern:

Below is the Notice of Intent (NOI) and attachment (supplied separately) that are being submitted by the City of Amesbury for it's potable water treatment facility feneral permit (PWTF GP) for discharge from the Amesbury Water Treatment Facility.

Discharge consists of backwash effluent residuals and centrate from the centrifuge that processes the solids effluent from the Dissolved Air Flotation (DAF) system. It is discharged into a designated Class A water body within the Merrimack River Watershed.

Sincerly,
Thomas S. Rogers
Asst. Chief Operator

A. Facility Information

1. *Indicate applicable General Permit for discharge* MAG64000065

2. *Facility Data*

Facility Name Amesbury Water Treatment Facility

Street/PO Box 12 Newton Rd. City Amesbury

State MA Zip Code 01913

Latitude 42^0 51' 36.73" N Longitude 70^0 58' 21.14" W

SIC Code(s)

Type of Business Municipal Drinking Water Facility

3. *Facility Mailing Address (if different from Location Address, above)*

Facility Name Amesbury Water Dept.

Street/PO Box 39 South Hunt Rd. City Amesbury

State MA Zip Code 01913

4. *Facility Owner:*
Legal Name City of Amesbury

Email mayor@amesburyma.gov

Street/PO Box Cityhall, 62 Friend St. City Amesbury

State MA Zip Code 01913

Contact Person Mayor Kenneth Gray Tel # (978) 388-8121

Owner is (check one): Federal _____ State _____ Tribal _____ Private _____

Other (describe)
City

5. *Facility Operator (if different from above):*
Legal Name_____

Email_____

Street/PO Box _____ City _____

State _____ Zip Code _____

Contact Person _____ Tel # _____

6. *Currently (Administratively) Covered Under the Expired PWTF General Permit? (Please check yes or no):*

Yes No

a) Has a prior NPDES permit (either individual or general permit coverage) been granted for the discharge that is listed on the NOI? Yes X No If Yes, Permit Number MAG640065

b) Is the discharge a "new discharger" as defined by 40 CFR Section 122.22? Yes No X

c) Is the facility covered by an individual NPDES permit for *other* discharges? Yes No X

If yes, Permit Number: _____

d) Is there a pending NPDES application (either individual or general permit) on file with EPA for this discharge? Yes No X

If yes, date of submittal: _____ and Permit Number, if available _____

7. *Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water.* **Map attached?** X

B. Discharge Information (Attach additional sheets as needed):

1. *Name of receiving water into which discharge will occur*: Powwow River 3007000-01S

Check Appropriate Box: Freshwater X Marine Water

State Water Quality Classification Class A

Type of Receiving Water Body (e.g., stream, river, lake, reservoir, estuary, etc.) River

2. *Indicate the frequency of the discharge:*

Emergency Only Infrequent (Once/Twice a Year) Intermittent*** X Continuous

Other***

***If Intermittent (i.e., occurs sometimes but not regularly as in batch discharge), provide # of days per year the discharge occurs Discharge occurs during once per day backwash or once per week
***If Other, explain centrate

3. Describe the discharge activities for which the owner/applicant is seeking coverage, including process discharges not specifically authorized in the PWTF GP which need to be authorized for discharge (and which attain the effluent limits and other conditions of the general permit.)
(This description should include all treatment methods used on the wastewater prior to discharge including lagoons, baffles, filter presses, etc. If lagoons are used at the facility, please include the number and size of lagoons; the size and elevation of the entry pipe; the time of travel from the entry point of the discharge into the lagoon to the entry point to the receiving waters; and the length of backwash cycle for any combination of filters.)

See attachment A

4. Attach a line drawing or flow schematic showing water flow through the facility including sources of intake water, operations contributing to flow, treatment units, outfalls, and receiving water(s).

Line drawing or flow diagram attached? See attachment A

5. Identify the source of the water being discharged:

Surface water X Groundwater Other (describe)

6. Number of Outfalls 2 Latitude and Longitude to the nearest second for each Outfall. Attach additional pages if necessary.

Outfall # 1 Latitude 42^0 51' 39.60" N Longitude 70^0 58' 24.37" W

Outfall # 2 Latitude 42^0 51' 40.08" N Longitude 70^0 58' 22.44" W

Outfall # Latitude _____ Longitude _____

7. For each outfall, indicate the proposed sampling location(s) for both effluent and ambient water (when applicable) and proposed consistent times of the month for collecting samples:

Outfall # 1

Sampling location on the effluent side (north) A composite sample of 4 grab samples of 250 ml each are collected at approximately equal intervals on a flow weighted basis during the time when discharge is entering the recieving water.

Outfall # 2

Sampling location on the effluent side (north) A composite sample of 4 grab samples of 250 ml each are collected at approximately equal intervals on a flow weighted basis during the time when discharge is entering the recieving water.

Outfall #

C. Effluent Characteristics

1. List here and attach additional information (on separate sheet) on any water additives used at the facility. This includes chemicals (including aluminum, iron, or phosphorus-containing chemicals) for pH adjustment, dechlorination, control of biological growth, and control of corrosion and scale in water pipes.

Potassium permanganate, sodium hypochlorite, sodium hydroxide, aluminum sulfate, blended polyphosphate and chlorine dioxide.

2. Report any known remediation activities or water quality issues in the vicinity of the discharge

none

3. Are aluminum compounds or polymers used as coagulants at this facility?*

Yes_ X No

*If answer is "Yes" and the facility was *not* covered under the PWTF GP that expired on

10/2/14, additional monitoring data and information is required. **Please complete Item III.C.12.**

4. Does the facility use any alum-based products for algae control?*

Yes_ No X

*If answer is "Yes" and the facility was *not* covered under the PWTF GP that expired on 10/2/14, additional monitoring data and information is required. **Please complete Item III.C.12.**

5. Are iron-containing coagulants used at this facility? Yes_ No X

6. Does the facility's discharge contain residual chlorine? Yes No X

[If Yes, EPA will calculate a Total Residual Chlorine effluent limit for your facility]

7. Does the facility provide treatment to remove arsenic from the raw water source? Yes No X

8. a. Are phosphorus-containing chemicals added to the treated water at this facility? Yes X No

b. If answer to 8.a. is Yes, does the facility discharge to Phosphorus-Impaired waters? Yes No X

c. If answer to 8.b. is Yes, provide name of P-Impaired waterbody: _____

9. Does the facility remove radium or other radioactive substances from raw water sources to comply with drinking water standards? Yes No X

10. Provide the reported or calculated seven day- ten year low flow (7Q10) of the receiving water 7Q10: _____ cfs

NOTE: For facilities that discharge in New Hampshire, the state permitting authority **must** be contacted at the address listed in Appendix VI of the PWTF GP to determine and/or confirm the 7Q10 and/or dilution factor. For facilities that discharge in Massachusetts, it is highly recommended to contact the relevant state authority (MassDEP) to determine and/or confirm the 7Q10 and/or dilution factor. Attach any calculation sheets used to support the stream flow and dilution factors. See Appendix VII for equations and additional information.

11. For *each* outfall, provide the following discharge information:

Outfall # 1 or 2 (only one lagoon operates at a time. Rotation is conducted once every 4 or 5 years)

a) *Design Flow of Facility (in million gallons per day, MGD):* 4.5 mgd
This value will determine the facility's daily maximum flow limit, up to a maximum of 1.0 MGD.

b) Discharge Flow (in gallons per day, GPD):

Maximum Daily Flow 272,195 GPD Average Monthly Flow 75,326 GPD

c) TSS (mg/l): Number of samples: _____(Minimum of 10 samples)

Maximum Daily _____mg/l Average Monthly _____mg/l

d) *pH (s.u.)* : Number of samples: _____ (Minimum of 10 samples)
Minimum _____s.u. Maximum _____s.u.

e) *Total Residual Chlorine (ug/l)*: Number of samples: _____ (Minimum of 10 samples)
Maximum Daily _____ug/l
NOTE: TRC is only required for discharges which have been previously chlorinated or contain residual chlorine

12. The following section must be completed for any facility that answered "Yes" to Question III.C.3 or III.C.4 (e.g. adds an aluminum-containing chemical to the water being treated and/or discharged) **AND** was not covered under the previous PWTF GP (which expired on 10/2/14).

a) Collect, analyze and submit **12 effluent samples and 10 ambient surface water samples** from a location upstream of and not affected by the discharge. For facilities in New Hampshire and Massachusetts, each sample should be analyzed for total recoverable Al in micrograms per liter. All laboratory results shall be submitted on a separate sheet.
   - **a.** The samples shall be composite samples consisting of four grab samples taken at approximately equal intervals on a flow weighted basis during the time at which the discharge is entering the receiving water after the start of the backwash cycle.
   - **b.** For each sampling event, the effluent and surface water samples shall be collected on the same day and during a representative discharge event. The samples shall be no more frequent than weekly and, if time allows in completing the NOI, at monthly intervals and at different flow conditions. If taking the ambient water quality sample from lakes/reservoirs, the 10 samples should be composited vertically.
   - **c.** Discharge flow at the time of effluent sampling should be recorded. Flow conditions at the time of ambient water sampling should be recorded (or estimated from nearest gaging station).
   - **d.** Do not include dilution when recording the results.
   - **e.** See Section 2.1.2.3 and Footnote 12 of Section 2.1.1 for MA facilities (or Section 3.1.2.3 and Footnote 10 of 3.1.1 for NH facilities) for key information on minimum level for analysis and sufficiently sensitive test procedures.
   - **f.** Sampling data that was collected within one year of the effective date of this general permit AND that adheres to all of the requirements above may be submitted in lieu of new samples. This must be denoted with the submitted data.

b) Provide a description of control measures, chemical substitutions, waste handling methods, and operational changes evaluated and/or used by the facility to minimize the discharge of aluminum to surface waters. (Include additional sheet(s), if necessary)

_____

_____

_____

_____

_____

D. Endangered Species Act Eligibility Information

Using the instructions in Appendix III of the PWTF GP, which of the following criteria apply to your facility?

U.S. Fish and Wildlife Service (USFWS) Criteria: A X B C

1. If you selected USFWS criteria B, has consultation with the U.S. Fish and Wildlife Service been completed?

   Yes No

2. If consultation with US Fish & Wildlife Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received?

   Yes No

3. Attach documentation of ESA eligibility for USFWS as required at Part 1.4 and Appendix III of the General Permit. **Documentation attached? _____**

4. For facilities seeking coverage under the Potable Water Treatment Facility General Permit for the *first* time, respond to the following questions to assist in ESA eligibility for NMFS:
   a) Indicate if the facility discharges into any of the stretches of the following rivers which can support or provide habitat to either Shortnose or Atlantic Sturgeon:

Merrimack River (from Essex Dam in Lawrence, Downstream (including Haverhill) to mouth of River)	Yes	No
Connecticut River (from Turner's Falls, downstream through Holyoke (including Holyoke Dam region)	Yes	No
Taunton River	Yes	No
Piscataqua River (in NH)	Yes	No

   b) Has the facility had any previous formal or informal consultation with NMFS?

   Yes No

   If yes, attach the results of the consultation(s). **Documentation attached? _____**

E. National Historic Properties Act Eligibility

1. Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes No X

2. Have any State or Tribal Historic Preservation Officers been consulted in this determination?

Yes No X

If yes, attach the results of the consultation(s). **Documentation attached? _____**

3. Which of the three National Historic Preservation Act scenarios listed in Appendix II, Section III have you met?

1 2 3

F. Supplemental Information

Please provide any supplemental information, including antidegradation review information applicable to new or increased discharges. Attach any analytical data used to support the application. Attach any certification(s) required by the General Permit.

G. Signature Requirements

The NOI must be signed by the operator in accordance with the signatory requirements of 40 CFR § 122.22 (see below) including the following certification:

I certify under penalty of law that (1) the discharge for which I am seeking coverage under the general permit consists solely of a surface water discharge from a potable water treatment facility; (2) any chemicals used to treat the discharge have been identified in this NOI; and (3) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature _____ Date_____

Printed Name and Title _____

Federal regulations require this application to be signed as follows:

1. For a corporation, by a responsible corporate party;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

Note: Permits No. MAG640000 and NHG640000 may be found at http://www3.epa.gov/region1/npdes/pwtfgp.html

H. "Opt-Out Request" from NetDMR Requirement

1. Check the box if you **are** applying for an "opt-out request." ☐

2. Provide a detailed explanation of the technical or administrative factors that support your request to "opt-out" from the requirement to submit DMRs and reports electronically. (Add additional lines, if necessary.)

_____

_____

_____

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_____

Attachment A

Description of Treatment Methods Used Prior to Discharge

The Amesbury Water Treatment Facility process consists of a series of physical and chemical steps designed to produce a safe quality drinking water supply. A description of the current treatment process and methods used prior to discharge are described below.

The Powwow River is the source of water for Amesbury, which is supplied by 52 sq miles of watershed. Should water pumped from the Powwow River is drawn into the water treamt plant, which treats millions of gallons of raw water daily.

The Raw Water room pumps in around 490 MGY of river water.

The next step is aeration to remove volatiles and oxidation.

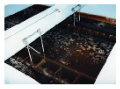
After aeration, raw water enters the Pre-Ox tank in which Potassium Permanganate is added seasonally for manganese oxidation. Additionally, on the effluent side of the Pre-Ox tank; Chlorine Dioxide is added for oxidation of manganese.

Leaving the Pre-Ox tank, the raw water is injected with Aluminum Sulfate and Sodium Hydroxide for coagulation at the influent side of the floc basin. The water is flocculated in the Flocculation basin and exits to the next treatment in the Dissolved Air Flotation (DAF) tank.

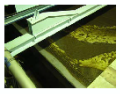
In the DAF tank, the flocculated particles are removed. Clarified water goes on to the filters and the solids are pumped to an equalization tank.

The Gramular Activated Carbon (GAC) filters remove any remaining particulates from the DAF effluent. Also, organics are adsorbed by the GAC.

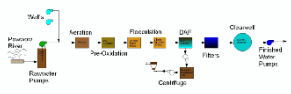
The filtered product is stored in a 300,000 gallon clearwell and then pumped to the distribution system. Sodium Hypochlorite is added for disinfection in the clearwell. Effluent of the finished water pumps; sodium hydroxide and a blended phosphate are added for corrosion control.



Once per day, one of three GAC filters is backwashed. A daily total of 100,000 gal of backwash water flows to one of two lagoons.



About 6,000 gallons a day of solids are removed from the DAF system and pumped to the equalization tank.

A centrifuge processes the solid slurry from the DAF effluent stored in the equalization tank. Approximately, 29,000 gal of centrate on weekly centrifuge run flows into one of two lagoons.

Lagoons are labelled with annotation of locations of the outfall into the adjacent river.