

STATE PERMIT

issued to

Aquarion Water Company
600 Lindley Street
Bridgeport, CT 06606

Location Address:

D.W. Loiselle Water Treatment Plant
(Trap Falls Treatment Plant)
Isinglass Road
Shelton, CT

Permit ID: SP0002459

Permit Expires:

Watershed: Housatonic River Watershed

Basin Code: 6026

SECTION 1: GENERAL PROVISIONS

- (A) This permit is issued in accordance with section 1421 of the Federal Safe Drinking Water Act 42 USC 300h et. seq. and section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended.
- (B) Aquarion Water Company of Connecticut, ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

- (a) Definitions
- (b) General
- (c) Inspection and Entry
- (d) Effect of a Permit
- (e) Duty
- (f) Proper Operation and Maintenance
- (g) Sludge Disposal
- (h) Duty to Mitigate
- (i) Facility Modifications; Notification
- (j) Monitoring, Records and Reporting Requirements
- (k) Bypass
- (l) Conditions Applicable to POTWs
- (m) Effluent Limitation Violations (Upsets)
- (n) Enforcement
- (o) Resource Conservation
- (p) Spill Prevention and Control
- (q) Instrumentation, Alarms, Flow Recorders
- (r) Equalization

Section 22a-430-4 Procedures and Criteria

- (a) Duty to Apply
 - (b) Duty to Reapply
 - (c) Application Requirements
 - (d) Preliminary Review
 - (e) Tentative Determination
 - (f) Draft Permits, Fact Sheets
 - (g) Public Notice, Notice of Hearing
 - (h) Public Comments
 - (i) Final Determination
 - (j) Public Hearings
 - (k) Submission of Plans and Specifications. Approval.
 - (l) Establishing Effluent Limitations and Conditions
 - (m) Case by Case Determinations
 - (n) Permit issuance or renewal
 - (o) Permit Transfer
 - (p) Permit revocation, denial or modification
 - (q) Variances
 - (r) Secondary Treatment Requirements
 - (s) Treatment Requirements for Metals and Cyanide
 - (t) Discharges to POTWs - Prohibitions
- (C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.
- (D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157 of the CGS.
- (E) No provision of this permit and no action or inaction by the Commissioner of Energy & Environmental Protection ("Commissioner") shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.
- (F) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.
- (G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- (H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the RCSA.

SECTION 2: DEFINITIONS

- (A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA.
- (B) In addition to the above the following definitions shall apply to this permit:

“Quarterly” in the context of a sampling frequency, shall mean sampling is required in the months of February, May, August, and November.

SECTION 3: COMMISSIONER'S DECISION

- (A) The Commissioner has made a final determination and found that the discharge will not cause pollution of the waters of the state. The Commissioner's decision is based on Application No. 200402760 for permit issuance received on October 25, 2004 and the administrative record established in the processing of that application.
- (B) The Commissioner hereby authorizes the Permittee to discharge a maximum flow of 4,000 gallons per day of alum residual sludge generated from the production of potable water at the Trap Falls Treatment Plant in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with this permit
- (C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Safe Drinking Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Safe Drinking Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

SECTION 4: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- (A) The Permittee shall assure that groundwater affected by the subject discharge shall conform to the Connecticut Water Quality Standards.
- (B) This permit becomes effective on the date of signature.
- (C) The discharge shall not exceed and shall otherwise conform to specific terms and conditions listed in this permit.
- (D) All samples shall be comprised of only those wastewaters described in this schedule, therefore, samples shall be taken prior to combination with wastewaters of any other type and after all approved treatment units, if applicable. All samples taken shall be representative of the discharge during standard operating conditions.
- (E) The Permittee shall perform monitoring in accordance with Tables A, B, C and D, which are incorporated into this permit as Attachment 1.

SECTION 5: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES AND REPORTING REQUIREMENTS

- (A) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall employ methods approved by the Environmental Protection Agency pursuant to 40 CFR 136 unless an alternative method has been approved in writing in accordance with 40 CFR 136.4.
- (B) The Permittee shall enter the results of chemical analysis and treatment facilities monitoring and maintenance required by Section 4 on a Discharge Monitoring Report (DMR), provided by this office, and shall submit such DMR to the Bureau of Materials Management and Compliance Assurance by the end of the month following the month in which the samples are taken.
- (C) **Electronic Reporting:**
Unless otherwise approved in writing by the Commissioner, no later than one-hundred-twenty (120) days after the issuance of this permit, the Permittee shall report chemical analysis, monitoring and maintenance data using the Department's Onsite Wastewater Reporting System, a web-based tool that allows Permittees to electronically submit DMRs **and other required reports** through a secure internet connection. The Permittee shall subscribe to and submit such data using the Onsite Wastewater Reporting System in accordance with subsection 5(E) below.
- (D) **Subscription to the Onsite Wastewater Reporting System:**
On or before sixty (60) days after the issuance of this permit, the Permittee shall contact the Department and subscribe to the Onsite Wastewater Reporting System for electronic submission of DMR information **and other required reports**. Such subscription shall be by a person authorized to sign the Permittee's DMR and other reports as prescribed by RCSA Section 22a-430-3(b)(2) ("Signatory Authority"). To obtain a copy of the Subscriber Agreement form, please contact the Department at 860-424-3018.
- (E) **Submittal of Reports Using the Onsite Wastewater Reporting System:**
On or before one-hundred-twenty (120) days after issuance of this permit, the Permittee shall through its Signatory Authority electronically submit DMRs and reports required under this permit to the Department using the Onsite Wastewater Reporting System in satisfaction of the DMR submission requirement of subsection 5(B) above, except that the Permittee shall still be required, in response to a permit limitation violation, to submit to the Department a hard-copy report in accordance with subsection 5(G) below. Such report shall include a detailed explanation of such violation, corrective actions performed and a schedule for the completion of any corrective actions remaining. The Onsite Wastewater Reporting System is accessed from: <http://www.ctdeponsitereporting.org>.
- (F) **Submittal of Onsite Wastewater Reporting System Opt-Out Requests:**
If the Permittee demonstrates in writing to the Department's satisfaction that use of the Onsite Wastewater Reporting System is not reasonably possible ("opt-out request") because of a factor such as technical or administrative infeasibility, the Commissioner may grant such request and approve the submission of DMRs and other required reports in hard-copy form. Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date the Permittee would be required under this permit to begin filing DMRs and other reports using the Onsite Wastewater Reporting System. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and shall thereupon expire. On or before one-hundred-twenty (120) days after such expiration, the Permittee shall electronically submit DMRs and other reports to the Department in accordance with subsections 5(D) and 5(E).

Unless otherwise indicated by the Department, all opt-out requests and subscriber requests for the Onsite Wastewater Reporting System shall be sent to the following address:

Attn: Onsite Wastewater Reporting System Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(G) **Non-Electronic or Hard-Copy Submission:**

The results of chemical analysis and treatment facilities monitoring that are not required to be submitted electronically under Section 5 shall be submitted in hard-copy form on a DMR provided by this office. Such DMRs and other reports not required to be submitted electronically shall be reported to the Bureau of Materials Management and Compliance Assurance, at the following address. The DMR shall also include a detailed explanation of any violations of the limitations specified and corrective actions performed, and a schedule for the completion of any corrective actions remaining.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

This permit is hereby issued on

Macky McCleary
Deputy Commissioner
Department of Energy and Environmental Protection

cc: DMR

ATTACHMENT 1

TABLE A			
Discharge Serial No. 301-1			
Wastewater Description: Alum residual sludge generated from the production of potable water at the Trap Falls Treatment Plant			
Monitoring Location Description: Discharge hose from vacuum truck			
Maximum Daily Flow: 4,000 gallons per day			
PARAMETER	UNITS	INSTANTANEOUS MONITORING	
		Sample Type	Sample Frequency
Aluminum-Total	mg/l	Grab	Quarterly
Arsenic-Total	mg/l	Grab	Quarterly
Iron-Total	mg/l	Grab	Quarterly
Manganese-Total	mg/l	Grab	Quarterly
Nitrogen, Ammonia	mg/l	Grab	Quarterly
pH	mg/l	Grab	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Total Iron	mg/l	Grab	Quarterly
Total Solids	mg/l	Grab	Quarterly
Total Zinc	mg/l	Grab	Quarterly

TABLE B GROUNDWATER MONITORING			
DISCHARGE SERIAL NO. 301-A		MONITORING LOCATION: west of the sludge drying lagoons	
GROUND WATER MONITORING WELL NO: MW-1		DESCRIPTION: monitoring well upgradient of the sludge drying lagoons	
PARAMETER	UNITS	MINIMUM FREQUENCY OF SAMPLING	SAMPLE TYPE
Groundwater Depth (Standard depth below grade)	Ft, in	Quarterly	Instantaneous
Arsenic-Total	mg/l	Quarterly	Grab
Aluminum-Total	mg/l	Quarterly	Grab
Manganese-Total	mg/l	Quarterly	Grab
pH	S.U.	Quarterly	Instantaneous
Nitrogen, Ammonia	mg/l	Quarterly	Grab
Total Dissolved Solids	mg/l	Quarterly	Grab
Total Iron	mg/l	Quarterly	Grab
Total Solids	mg/l	Quarterly	Grab
Total Zinc	mg/l	Quarterly	Grab
Remarks: Quarterly samples must be collected during the months of February, May, August, and November and reported annually during the month of May.			

TABLE C GROUNDWATER MONITORING			
DISCHARGE SERIAL NO. 301-B		MONITORING LOCATION: north of the sludge drying lagoons	
GROUND WATER MONITORING WELL NO: MW-2		DESCRIPTION: monitoring well downgradient of the sludge drying lagoons	
PARAMETER	UNITS	MINIMUM FREQUENCY OF SAMPLING	SAMPLE TYPE
Groundwater Depth (Standard depth below grade)	Ft, in	Quarterly	Instantaneous
Arsenic-Total	mg/l	Quarterly	Grab
Aluminum-Total	mg/l	Quarterly	Grab
Manganese-Total	mg/l	Quarterly	Grab
Nitrogen, Ammonia	mg/l	Quarterly	Grab
pH	S.U.	Quarterly	Instantaneous
Total Dissolved Solids	mg/l	Quarterly	Grab
Total Iron	mg/l	Quarterly	Grab
Total Solids	mg/l	Quarterly	Grab
Total Zinc	mg/l	Quarterly	Grab

Remarks:

Quarterly samples must be collected during the months of February, May, August, and November and reported annually during the month of May.

**TABLE D
GROUNDWATER MONITORING**

DISCHARGE SERIAL NO. 301-C		MONITORING LOCATION: south of the sludge drying lagoons	
GROUND WATER MONITORING WELL NO: MW-3		DESCRIPTION: monitoring well downgradient of the sludge drying lagoons	
PARAMETER	UNITS	MINIMUM FREQUENCY OF SAMPLING	SAMPLE TYPE
Groundwater Depth (Standard depth below grade)	Ft, in	Quarterly	Instantaneous
Aluminum-Total	mg/l	Quarterly	Grab
Arsenic-Total	mg/l	Quarterly	Grab
Manganese-Total	mg/l	Quarterly	Grab
Nitrogen, Ammonia	mg/l	Quarterly	Grab
pH	S.U.	Quarterly	Instantaneous
Total Dissolved Solids	mg/l	Quarterly	Grab
Total Iron	mg/l	Quarterly	Grab
Total Solids	mg/l	Quarterly	Grab
Total Zinc	mg/l	Quarterly	Grab
Remarks: Quarterly samples must be collected during the months of February, May, August, and November and reported annually during the month of May.			

DATA TRACKING AND TECHNICAL FACT SHEET

PERMIT #: SP0002459 **APPLICATION #:** 200402760

DISCHARGER NAME AND ADDRESS DATA

Permittee: Aquarion Water Company of Connecticut			
Mailing Address:		Location Address:	
Street: 600 Lindley Street		Street: Isinglass Road, D.W. Loiselle Water Treatment Plant, (Trap Falls Treatment Plant)	
City: Bridgeport	ST: CT	City: Shelton	ST: CT
Contact Name: Ian Karasik		Contact Name: Ian Karasik	

PERMIT DURATION

5 YEAR () 10 YEAR (X) 30 YEAR ()

DISCHARGE CATEGORIZATION

POINT() NON-POINT(X)

NPDES() PRETREAT() GROUND WATER(UIC)() GROUND WATER (X)

MAJOR() SIGNIFICANT MINOR() MINOR(X)

COMPLIANCE SCHEDULE YES ____ NO X

POLLUTION PREVENTION() TREATMENT REQUIREMENT() WATER CONSERVATION()

PERMIT STEPS () WATER QUALITY REQUIREMENT() REMEDIATION() AUDIT LANGUAGE()

OTHER()

OWNERSHIP CODE

Private(x) Federal() State() Municipal(town only)() Other public()

PERMIT FEES

DISCHARGE CODE 3060000 REPRESENTING DSN 301-1 ANNUAL FEE \$660.00

DRAINAGE BASIN

Drainage basin Code: 6026 Present/Future Water Quality Standard: GAA

DEEP STAFF ENGINEER/ANALYST Olimpia Brucato

PERMIT TYPE

New(x) Reissuance() Modification() Subsection-e()

NATURE OF BUSINESS GENERATING DISCHARGE

Aquarion Water Company of Connecticut is a private water utility that operates the D.W. Loiselle Water Treatment Plant (Trap Falls Treatment Plant) located in Shelton, CT (500 feet north of Saranor Drive, in the northwestern portion of Trap Falls Reservoir site). The plant draws surface waters from the Trap Falls Reservoir for treatment prior to being distributed as a potable water supply. Since 1993, alum sludge generated in the process has been routed to nearby outdoor lagoons for dewatering. Water from the residuals evaporates or infiltrates to the groundwater.

PROCESS AND TREATMENT DESCRIPTION (by DSN)

DSN 301-1 – Alum residual sludge generated from the production of potable water at the Trap Falls Treatment Plant. Residuals are placed in the six outdoor drying lagoons.

Aluminum sulfate is mainly used as a flocculating agent in the purification of drinking water. Residuals are placed in the lagoons to a depth of two to three feet. Each lagoon is mixed by driving a pay loader through the lagoons once a month. This increases the surface area of the residuals exposed to the atmosphere and sunlight and increases drying potential. Residuals are placed in the lagoons over the course of a month then allowed to dry for several months.

Lagoons 4, 5 and 6 are used for dewatering for the first six months of the year, while lagoons 1, 2 and 3 are used during the last six months. Each lagoon receives the treatment residuals during one-month intervals. Lagoons 4, 5 and 6 receive residuals in January, February and March and then this cycle is repeated in April, May and June. Beginning in July, under the same procedure, lagoons 1, 2 and 3 will receive treatment residuals, while lagoons 4, 5 and 6 are allowed to dry.

Aquarion is authorized under an annual Special Waste Disposal Authorization to haul up to 1,100 cubic yards per year of alum sludge to Hyponex Corporation in Lebanon, CT where they take Aquarion's dried sludge and mix it with virgin soil, then bag it for distribution to the public.

RESOURCES USED TO DRAFT PERMIT

x Department File Information

x Connecticut Water Quality Standards

The Connecticut Ground Water Quality Standard for GAA Ground Waters states: "The Commissioner does not issue permits authorizing a discharge to class GAA ground water unless such discharge is of treated domestic sewage as defined in Section 22a-430-1 of the Regulations of Connecticut State Agencies, waste generated by certain agricultural practices, certain water treatment waste waters from public water supply treatment systems, or certain minor cooling waters or clean waters." This discharge of water treatment waste waters is therefore consistent with the WQS.

x Anti-degradation Policy

Based on the constituents of alum sludge, this discharge may contribute iron, aluminum, and manganese to the groundwater. The groundwater in the vicinity of these lagoons would migrate towards Trap Falls Reservoir. Due to the fact that alum sludge is chemically stable, and has a low potential to leach metals, along with soil attenuation, it is unlikely that these constituents would travel far from the lagoons. A dilution analysis was conducted to estimate the concentration of these metals in the groundwater at the edge of the reservoir. The conclusion was that the groundwater would meet drinking water standards. In addition, Staff reviewed data from the Connecticut Water Company E.P. Williams Water Treatment Plant site in Chester, Connecticut where alum sludge has been land applied since 1983. Extensive groundwater monitoring data from that site shows that the groundwater meets drinking water standards.

Therefore, this discharge would not be reasonably expected to significantly lower water quality in high quality waters (Trapp Falls Reservoir).

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

- x Case by Case Determination (See Other Comments)
Residuals contain low concentrations of dissolved metals such as Iron, Manganese and Aluminum.

OTHER COMMENTS

On April 12, 2012, Ian Karasik of Aquarion Water Company electronically filed a Scope of Work for monitoring well installation near the sludge drying lagoons at the Trap Falls Treatment Plant. The company proposes to install a total of three wells; one upgradient and two downgradient of the sludge drying lagoons, to be completed at a depth of approximately twenty feet below grade. The purpose is to assess the likelihood of pollutant mobilization and the probability of pollution leaching from lagoons and posing a water quality threat to surface or groundwater. The results from monitoring conducted at this site will be used to evaluate the potential pollution threat posed by alum sludge lagoons, and to evaluate whether monitoring should be considered at similar facilities in other locations.

**NOTICE OF TENTATIVE DETERMINATION INTENT TO
ISSUE A STATE PERMIT
FOR THE FOLLOWING DISCHARGE INTO THE
WATERS OF THE STATE OF CONNECTICUT**

TENTATIVE DETERMINATION

The Commissioner of Energy and Environmental Protection hereby gives notice of a tentative determination to issue a permit based on an application submitted by **Aquarion Water Company of Connecticut** ("the applicant") under section 22a-430 of the Connecticut General Statutes for a permit to discharge into the waters of the state.

In accordance with applicable federal and state law, the Commissioner has made a tentative determination that the discharge will not cause pollution of the waters of the state and the Commissioner proposes to issue a permit for the discharge to the groundwaters in the Housatonic River Watershed.

The proposed permit, if issued by the Commissioner, will require periodic monitoring to demonstrate that the discharge will not cause pollution.

APPLICANT'S PROPOSAL

Aquarion Water Company of Connecticut presently discharges a maximum flow of 4,000 gallons per day of alum residual sludge generated from the production of potable water at the D.W. Loiselle Water Treatment Plant (Trap Falls Reservoir) into six drying lagoons.

The name and mailing address of the permit applicant are: Aquarion Water Company of Connecticut, 600 Lindley Street, Bridgeport, CT 06606.

The activity will take place at: off Isinglass Road, 500 feet north of Saranor Drive, Shelton, in the northwestern portion of the Trap Falls Reservoir site.

REGULATORY CONDITIONS

Type of Process

DSN 301-1: Alum residual sludge is dewatered in six drying lagoons.

Effluent Limitations

This permit contains effluent monitoring requirements consistent with a Case by Case Determination using the criteria of Best Professional Judgment and which will protect the waters of the state from pollution when all the conditions of this permit have been met.

COMMISSIONER'S AUTHORITY

The Commissioner of Energy and Environmental Protection is authorized to approve or deny such permits pursuant to section 22a-430 of the Connecticut General Statutes and the Water Discharge Permit Regulations (section 22a-430-3 and 4 of the Regulations of Connecticut State Agencies).

INFORMATION REQUESTS

The application has been assigned the following numbers by the Department of Energy and Environmental Protection. Please use these numbers when corresponding with this office regarding this application.

APPLICATION NO. 200402760

PERMIT NO: SP0002459

Interested persons may obtain copies of the application from Ian Karasik, 600 Lindley Street, Bridgeport, CT 06606 (203) 337-5908.

The application is available for inspection by contacting Olimpia Brucato 860-424-3018, at the Department of Energy and Environmental Protection, Bureau of Materials Management and Compliance Assurance, 79 Elm Street, Hartford, CT, 06106-5127 from 8:30 - 4:30, Monday through Friday.

Any interested person may request in writing that his or her name be put on a mailing list to receive notice of intent to issue any permit to discharge to the surface waters of the state. Such request may be for the entire state or any geographic area of the state and shall clearly state in writing the name and mailing address of the interested person and the area for which notices are requested.

PUBLIC COMMENT

Prior to making a final decision to approve or deny any application, the Commissioner shall consider written comments on the application from interested persons that are received within 30 days of this public notice. Written comments should be directed to Olimpia Brucato, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT, 06106-5127. The Commissioner may hold a public hearing prior to approving or denying an application if in the Commissioner's discretion the public interest will be best served thereby, and shall hold a hearing upon receipt of a petition signed by at least twenty-five persons. Notice of any public hearing shall be published at least 30 days prior to the hearing.

Petitions for a hearing should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. Original petitions must be *mailed or delivered* to: DEEP Office of Adjudications, 79 Elm Street, 3rd floor, Hartford, CT 06106-5127. Petitions cannot be sent by fax or email. Additional information can be found at www.ct.gov/deep/adjudications.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action and Equal Opportunity Employer that is committed to requirements of the Americans With Disabilities Act. To request an accommodation call 860-424-3194, or deep.hrmed@ct.gov.

Oswald Inglese, Jr.
Director
Water Permitting and Enforcement Division
Bureau of Materials Management and Compliance Assurance

8/24/2012