

Department of Public Works

WILLIAM J. LEE MEMORIAL TOWN HALL
ONE LAFAYETTE STREET
WAKEFIELD, MASSACHUSETTS 01880

Tel. (781) 246-6301
Fax (781) 246-6266

RICHARD F. STINSON
Director of Public Works



December 29, 2009

United States Environmental Protection Agency, Region 1
PWTF GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Subject: NPDES General Permit NOI
Town of Wakefield, MA
NPDES Permit No. MA0103004

FEB 23 2010

To Whom It May Concern:

The Town of Wakefield is requesting coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for the discharge from their Potable Water Treatment Facility (PWTF). Please find enclosed the completed Notice of Intent (NOI) form and related documents for the NPDES GP.

We trust that this submittal meets all the requirements of the NOI. Please feel free to contact me with any comments or questions.

Very truly yours,

Richard Stinson
Director of Public Works

cc: Steven Fitzpatrick, Water/Sewer Supervisor
Michael Collins, Town Engineer
Jim Pescatore, CDM
Anne Malenfant, CDM

R

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Request for General Permit Authorization to Discharge Wastewater
(Notice of Intent to be covered by the General Permit (NOI))

Potable Water Treatment Facility (PWTF)
NPDES General Permit No. MAG640000 and NHG640000

A. Facility Information

1. Facility Owner:

Name Town of Wakefield, Dept. of Public Works-Water Division e-mail rstinson@wakefield.MA.US
Street/PO Box 1 Lafayette St City Wakefield
State Massachusetts Zip Code 01880
Contact Person Richard Stinson Telephone Number 781-246-6301

2. Facility Operator (if different from above):

Name Steven Fitzpatrick e-mail (optional) sfitzpatrick@wakefield.MA.US
Street/PO Box 108 Broadway City Wakefield
State Massachusetts Zip Code 01880
Contact Person Steven Fitzpatrick Telephone Number 781-246-6318

3. Facility Data (attach topographic map or other map showing facility and discharge location(s)):

Name Broadway Water Treatment Plant e-mail (optional) _____
Street/PO Box 108 Broadway City Wakefield
State Massachusetts Zip Code 01880
Contact Person Steven Fitzpatrick Telephone Number 781-246-6318
Facility Latitude 42.49841 Facility Longitude -71.06379

4. Standard Industrial Classification (SIC Codes) and Descriptions of Processes:

SIC Code(s) 4941
Description(s) Water Supply

5. Current Permitting Status (please check yes or no):

1. Has a prior NPDES permit been granted for the discharge? Yes (Permit Number: MA0103004)
No
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes No
3. Is the facility covered by an individual NPDES permit? Yes (Permit Number _____) No
4. Is there a pending application on file with EPA for this discharge? Yes (Date of submittal: _____)
No

B. Discharge Information

1. Name of Receiving Waterbody Crystal Lake
2. Type of Receiving Waterbody (e.g. stream, lake, reservoir, estuary etc) Lake
3. State Water Quality Classification: A _____ Freshwater: X _____ Marine Water: _____
4. 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 water; and the length of backwash cycle for any combination of number of filters. (attach extra sheets if necessary):

Please see Attachment 1

5. Please provide a diagram depicting the treatment methods, outfalls, and receiving water. See Figure 1,2 and 3

6. Number of outfalls: 1 Latitude and Longitude for each outfall (attach additional pages if necessary)

OUTFALL # Latitude 42.496758 Longitude -71.072274
 OUTFALL # Latitude _____ Longitude _____

For each outfall:

7. What is the proposed sampling location(s) and proposed consistent times of the month for collecting samples:

Water is only discharged into Crystal Lake in the event that the filters overflow, which rarely occurs, thus there are no sampling locations or collections taken.

C. Effluent Characteristics

1. List here and attach information on any water additives used at the facility (Including chemicals for pH adjustment, dechlorination, control of biological growth, and control of corrosion and scale in water pipes): Please see Attachment 2

2. Please report here any known remediation activities or water-quality issues in the vicinity of the discharge.

Yes, within a 1/2 mile radius there is a 21e site located at Regal Auto, on Main Street. Please see Figure 4.

3. Are aluminum-containing coagulants used at this facility? Yes ___ No

4. Does the discharge contain residual chlorine? Yes ___ No

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

6. Are phosphorus-containing chemicals added to the treated water at this facility? Yes ___ No

7. All applicants must attach a separate sheet listing all laboratory results (minimum of five) for total recoverable aluminum (in micrograms per liter) taken within the last six months. Do not include dilution when recording your results. See Section 4.4.5 of General Permit for more information.

8. Please include the following effluent data for each outfall: Please see Attachment 3

Characteristic (report if measured)	Average Monthly	Maximum Daily
Discharge Flow (gpd)	Not Measured	Not Measured
TSS (mg/l)	Not Measured	Not Measured
pH (s.u.)	(min) Not Measured	(max) Not Measured
Total Recoverable Aluminum (ug/l)	Not Measured	Not Measured
Total Residual Chlorine (ug/l)	Not Measured	Not Measured

(continued on next page)

8. Continued

Characteristic (report if measured)

Whole Effluent Toxicity (%) LC50 Not Measured and/or C-NOEC Not Measured

9. If the discharge contains aluminum and/or residual chlorine, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water, the dilution factor, and attach any calculations used to support stream flow and dilution calculations (See Appendix VII for dilution calculations and additional information):

7Q10 _____ cfs Dilution Factor _____ cfs Please see Attachment 3

D. Endangered Species Act Eligibility

1. Using the instructions in Appendix I of the PWTF GP, under which criterion listed in Part II are you eligible for coverage under this general permit?

A B _____ C _____ D _____ E _____ F _____ Please see Attachment 4

2. If you selected criteria D or F, has consultation with the federal services been completed? Yes _____ No _____

3. If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries 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 _____

4. Attach documentation of ESA eligibility as described below and required at Part 3.4.1 and Appendix I, Part III, Step 4, of the General Permit.

Criterion A - No federally-listed threatened or endangered species or federally-designated critical habitat are present: A copy of the most current county species list pages for the county(ies) where your site or facility and discharges are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your site or facility or discharge locations.

Criterion B - Section 7 consultation completed with the Service(s) on a prior project: A copy of the USFWS's and/or NMFS's, as appropriate, biological opinion or concurrence on a finding of "unlikely to adversely effect" regarding the ESA Section 7 consultation.

Criterion C - Activities are covered by a Section 10 Permit: A copy of the USFWS's and/or the NMFS's, as appropriate, letter transmitting the ESA Section 10 authorization.

Criterion D - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" federally-listed species or federally-designated critical habitat (not including the four species of concern identified in Section I of Appendix I): A copy of the USFWS's and/or the NMFS's, as appropriate, letter or memorandum concluding that the discharge is consistent with the general permit's "not likely to adversely affect" determination.

Criterion E - Activities are covered by certification of eligibility: A copy of the documents originally used by the other operator of your site or facility (or area including your site) to satisfy the documentation requirement of Criteria A, B, C or D.

Criterion F - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" species of concern, as identified in Section I of Appendix I: A copy of the USFWS and/or the NMFS, as appropriate, concurrence with the applicant's determination that the discharge is "not likely to adversely affect" listed species.

E. National Historic Properties Act Eligibility

1. Using the instructions in Appendix III of the PWTF GP, under which criterion listed in Part III are you eligible for coverage under this general permit?

1 2 ___ 3 ___

2. Have any State or Tribal historic preservation officers been consulted in this determination? Yes ___ No
If yes, attach the results of the consultation(s).

F. Certification

I certify that 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. 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 gather and evaluate the information submitted. Based on 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 am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature *Richard F. Stinson* Date 12/29/09
Printed Name and Title Richard F. Stinson, Director of Public Works.

- Federal regulations require this application to be signed as follows:
1. For a corporation, by a principal executive officer of at least the level of vice president;
 2. For 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 www.epa.gov/region1/mpdes/pwtfgp.html

The Broadway Water Treatment and Pumping Facility in Wakefield is a slow sand filtration facility with a peak capacity of 2.7-million gallons per day (mgd). The treatment process consists of slow sand filtration, fluoridation for control of dental caries, pH adjustment for corrosion control treatment, and disinfection using chloramines. Water is pumped into the plant from Crystal Lake by two low lift pumps, proceeds to the slow sand filters, and then enters the clearwells by gravity. Water from the clearwells is pumped into the distribution system by two high lift pumps. See Figures 1 and 2.

Each of the two, covered slow sand filters is 108 feet wide by 108 feet long, with approximately three feet of 0.35-mm (effective size) sand, and does not require backwashing. There is no coagulant required prior to the slow sand treatment process. The filters at the Broadway WTP are manually cleaned by dewatering and then scraping off the surface. Wakefield WTP personnel clean the filters twice a year (spring and fall).

Historically, an 8-inch drain from the sand sump would discharge water at an outlet from Crystal Lake. This discharge was included under the old NPDES permit, **and is no longer active.** A 12-inch overflow from the sand filters to Crystal Lake is used to prevent surcharging the sand filters above desired operational water levels. The Broadway Water Treatment and Pumping Facility Operator monitors the filter height daily. On average, overflows to Crystal Lake from the filters occurs less than annually.

The following is a list of water additives used at the facility:

Sodium Hypochlorite -Added at the inlet to each clearwell for primary disinfection

Ammonia- Added to the finished water for chloramination

Sodium Hydroxide- Added to the finished water for corrosion control

Fluoride- Added to the water for prevention of dental decay

With the exception of fluoride, all chemicals are added to the water down stream of the slow sand filters. Therefore, if a discharge from the slow sand filters occurs the only chemical mixed with the raw water is fluoride.

The Broadway Treatment and Pumping Facility is a slow sand filtration facility, thus there is no coagulant added to the water. The 12-inch overflow discharges water in the event that the filters overflow, which rarely occurs. In the event that the water does overflow, it will have the same constituents as the raw lake water, with the addition of fluoride. Therefore, the flows do not contain residual chlorine or aluminum above any natural levels in the raw lake water. Because these overflow events are intermittent, and have not recently occurred, there is no recorded data of the discharge water.

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
 IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Raynham and Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, and Wareham
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

- Eastern cougar and gray wolf are considered extirpated in Massachusetts.
- Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
- Critical habitat for the Northern Red-bellied cooter is present in Plymouth County.

7/31/2008

Wakefield's discharge is in Wakefield, and is not proximate to any of the listed cities and towns in Middlesex County.

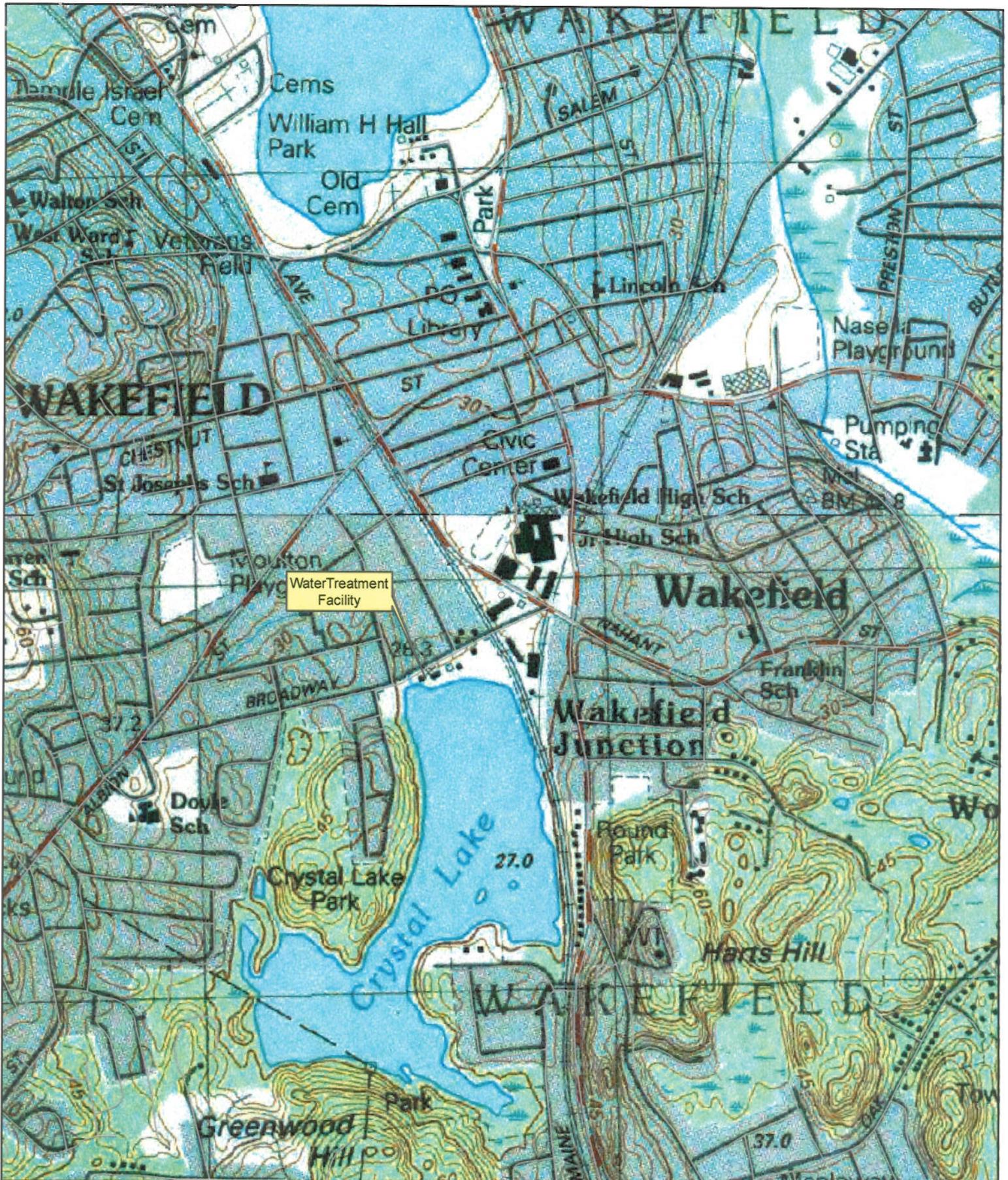
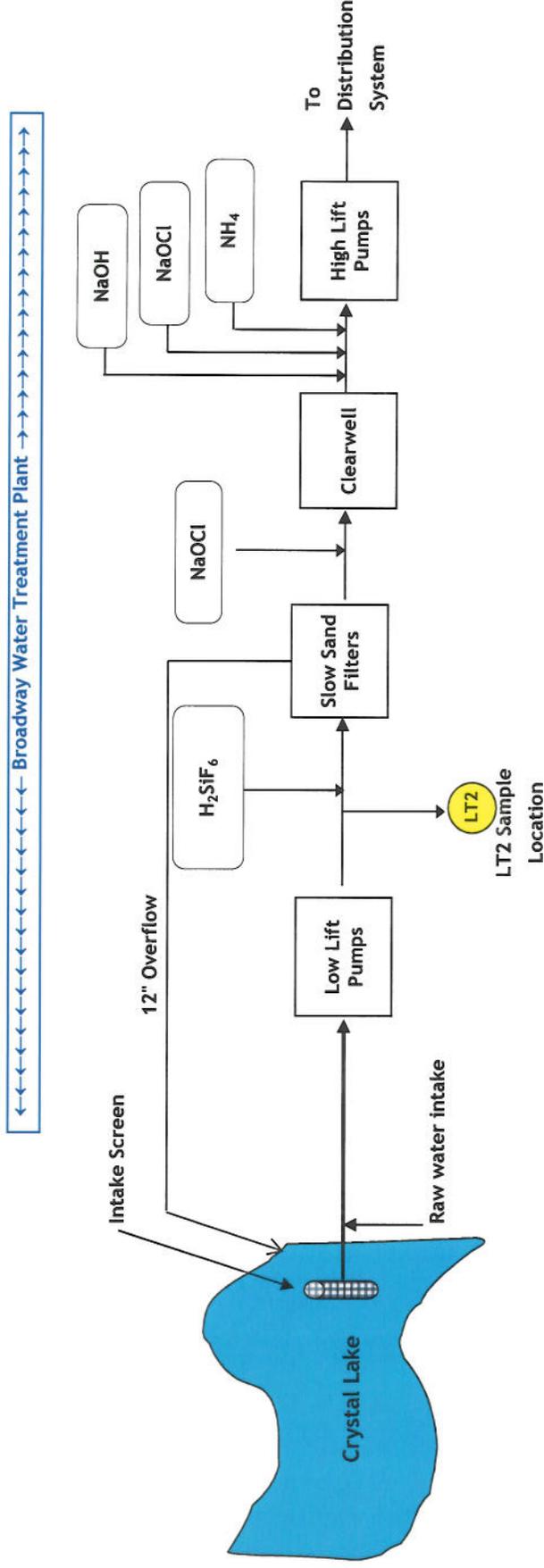


Figure 1
Site Location
Wakefield, MA

Basemap: 7.5-Minute USGS Topographic Quadrangle
 Source: Mass GIS
 Coordinate System: NAD83 Mass. State Plane Mainland
 Units: meters



Town of Wakefield Water Department
 PWS ID: MA 3305000
 Broadway Water Treatment Plant
 Facility ID: 00009



Legend:

- H₂SiF₆ = hydrofluosilicic acid (fluoride)
- NaOCl = sodium hypochlorite (chlorine)
- NaOH = sodium hydroxide (caustic soda)
- NH₄ = aqua ammonia (to combine with chlorine to form chloramine)

Figure 2
 NPDES General Permit NOI
 Broadway Water Treatment Plant Schematic



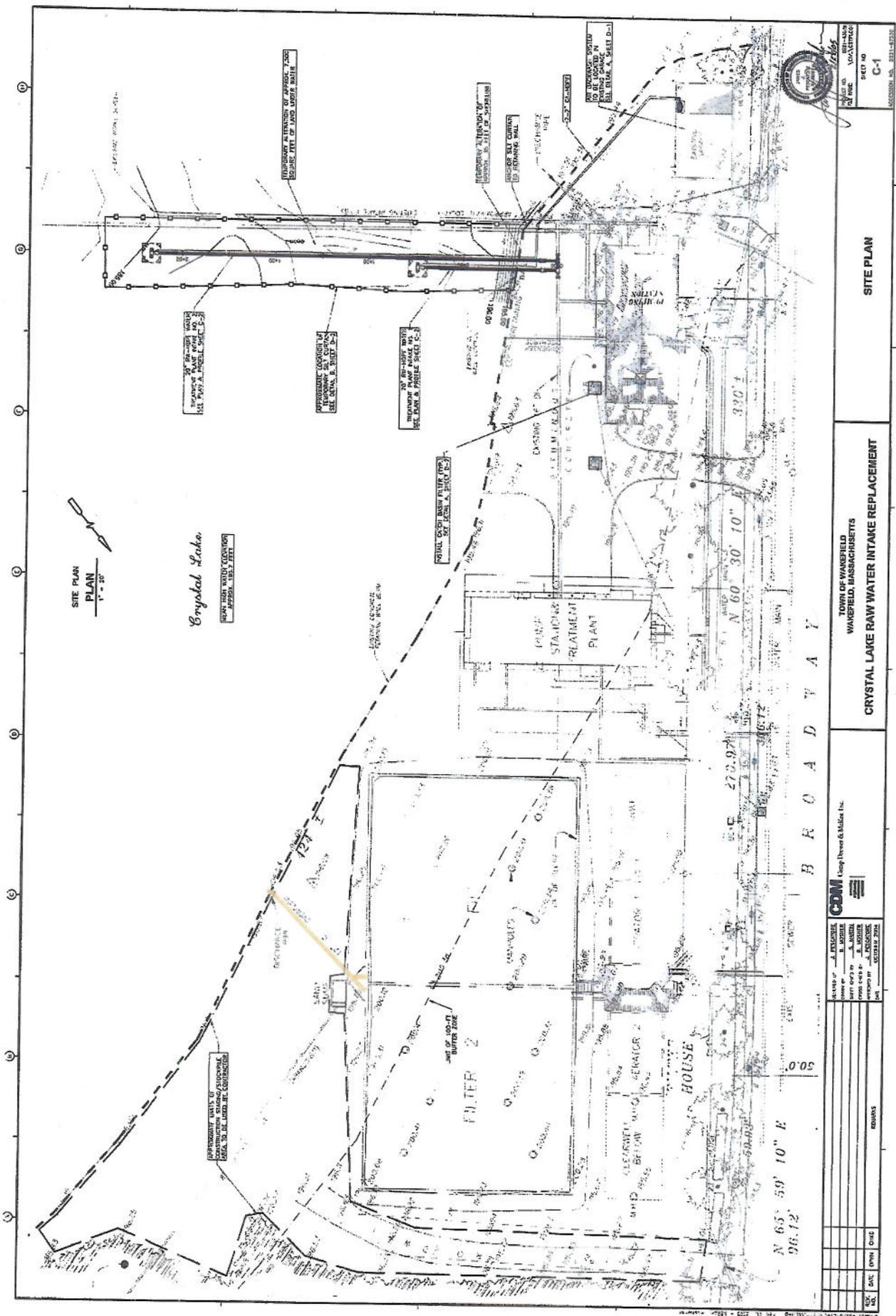
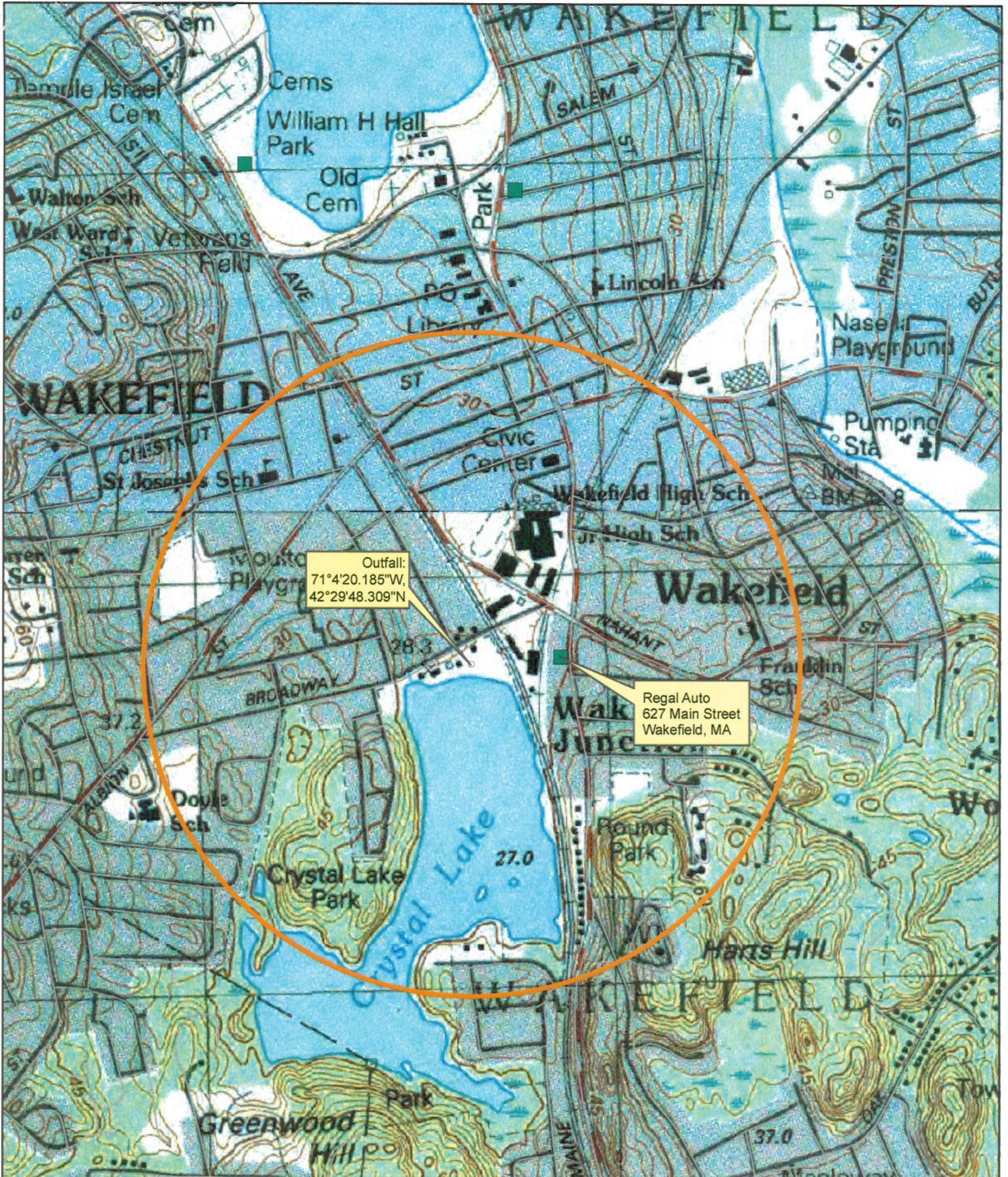


Figure 3
 NPDES General Permit NOI
 Town of Wakefield, MA
 Site Plan





■ MassDEP Tier Classified Oil and/or Hazardous Material Sites (MGL c. 21E)



0 500 1,000
Feet

Figure 4
MassDEP Chapter 21E Sites
Wakefield, MA

Basemap: 7.5-Minute USGS Topographic Quadrangle
Source: Mass GIS
Coordinate System: NAD83 Mass. State Plane Mainland
Units: meters

