Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Whitney Pond Wells Water Treatment Plant		
Street Address: 864 Lowell Road		
Municipality: Groton	Watershed: Merrimack	
Universal Transverse Mercator Coordinates:	Latitude: 42.606944 Longitude: 71.510278	
Estimated commencement date: March 2022	Estimated completion date: August 2023	
Project Type: Water	Status of project design: 30 %complete	
Proponent: Town of Groton Water Department		
Street Address: 173 Main Street		
Municipality: Groton	State: MA	Zip Code: 01450
Name of Contact Person: Chris Grillo		
Firm/Agency: Environmental Partners Group, Inc.	Street Address: 1900 Crown Colony Drive, Suite 402	
Municipality: Quincy	State: MA	Zip Code: 02169
Phone: 617-657-0977	Fax: 617-657-0201	E-mail: cpg@envpartners.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8)) ☐Yes ☐No
a Special Review Procedure? (see 301CMR 11.09) ☐Yes ☐No
a Waiver of mandatory EIR? (see 301 CMR 11.11) ☐Yes ☐No
a Phase I Waiver? (see 301 CMR 11.11) ☐Yes ☐No
(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

- 11.03(4)(b)4: Water – Construction of a new drinking water treatment plant with a capacity of 1,000,000 or more gpd.

Which State Agency Permits will the project require?

- Department of Environmental Protection: BRP WS 24 – Approval to Construct a Water Treatment Facility greater than or equal to 1 MGD.
- Department of Environmental Protection: WPA Form 1 – Request for Determination of

Applicability
- Department of Environmental Protection: BRP WS 06 Underground Injection Control Registration
- Department of Environmental Protection: Certification Form for Emergency Units (Installation Completion Certification)
- Environmental Protection Agency: National Pollutant Discharge Elimination System Construction Stormwater General Permit

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

- The project will be funded by the Town of Groton.

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	22.45		
New acres of land altered		~2.5	
Acres of impervious area	0.27	+0.19	0.46
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	490	3,456	3,946
Number of housing units	N/A	N/A	N/A
Maximum height (feet)	~10	24.5	24.5
TRANSPORTATION			
Vehicle trips per day	4	0	4
Parking spaces	0	+2	2
WASTEWATER			
Water Use (Gallons per day)	0	21,200	21,200
Water withdrawal (GPD)	750,000 (current max daily pumping rate)	0	750,000 (current max daily pumping rate)
Wastewater generation/treatment (GPD)	0	13,700 (backwash water to lagoons) + 300 (sanitary wastewater) + 7200 (analyzer waste) to tight tank)	13,700 (backwash water to lagoons) + 300 (sanitary wastewater) + 7200 (analyzer waste) to tight tank)
Length of water mains (miles)	0.25	0.10	0.35

Length of sewer mains (miles)	0	0	0

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Describe the existing conditions and land uses on the project site:

The Whitney Pond Wells site is a 22.45 acre parcel owned by the Town of Groton Water Department. The site is located at 864 Lowell Road (Map 250, Parcel 96) to the northeast of Whitney Pond. Undeveloped, wooded areas abut the site to the west, south, and east, while a residential neighborhood exists north of the site across Lowell Road. The site is located within the Public Use Zoning District, and currently contains two existing groundwater wells used for the Town's public water supply. There are two well pumping stations in the southern reaches of the site that are accessed by a paved drive. There is also an access gate at the curb cut on Lowell Road. A portion of the site adjacent to the access road is cleared and grassed, while the majority of the perimeter of the site is wooded and undeveloped.

There are several resource areas located on or near the subject site. The three resource areas identified on/in the vicinity of the site are bordering vegetated wetlands (BVW); inland bank; and land under a waterbody/waterway (LUWW). The LUWW represents the waters of Whitney Pond which are confined by the up gradient bank. A section of BVW associated with Whitney Pond and up gradient of the bank was identified and flagged (noted as WF-1 through WF-42 on the attached plans). Because the bank of the pond is encompassed by the BVW, the bank was not delineated separately. A separate BVW system located across Lowell Road from the subject site was also delineated with flags labeled WFA-0 through WFA-10.

Wells 1 and 2 have associated Zone I Wellhead Protection Areas (WPAs), and there is also a Zone II Wellhead Protection Area located on site. Wells 1 and 2 are located outside of the 100-year floodplain (Zone AE) as defined by the Federal Emergency Management Agency (FEMA) that extends onto a portion of the site.

A small portion of the western reach of the site is located within a NHESP priority habitat area and an Area of Critical Environmental Concern (ACEC).

Describe the proposed project and its programmatic and physical elements:

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

The proposed project includes the construction of a new water treatment plant to address elevated levels of manganese (Mn) at the Whitney Pond Wells. The Town entered an Administrative Consent Order with the Massachusetts Department of Environmental Protection (MassDEP) on February 8, 2020 agreeing to implement corrective actions at Whitney Pond Wells No. 1 and 2 where raw water has historically exceeded MassDEP guidance levels for Manganese (Mn). The proposed Whitney Pond Wells Treatment Plant will remove elevated levels of manganese along with iron from the groundwater and will produce a maximum flow of 1,100 gallons per minute (gpm). The proposed treatment plant will be constructed on Town-owned land adjacent to the existing Whitney Pond Wells.

The proposed project includes the construction of a 3,456 square foot pre-engineered metal building with treatment systems; site utilities; residuals management lagoon system; various areas of added gravel for site access; and best management practices for stormwater handling including construction of swales and an underground infiltration system. Proposed conditions plans are included in Attachment D. Project components are detailed below:

Proposed Water Treatment Plant (WTP)

The proposed WTP site includes a pre-engineered metal building; access road; a residuals pump station and two residuals handling lagoons; a stormwater infiltration system; and a wrap-around site access driveway sized for a WB-50 intermediate semi-trailer truck (to accommodate a fire truck or chemical deliveries). The facility will be confined to approximately 3.5 acres to limit tree clearing and maintain a vegetative buffer around the site. Some of the site modifications are within the Wells 1 and 2 existing Zone I Wellhead Protection Area. In addition, a third well, Well 3, is proposed under separate contract as discussed further below; work will occur within the future Well 3 Zone I Wellhead Protection Area (refer to Attachment D).

The WTP will be an approximate 3,500 square foot pre-engineered metal building. The building will include a “process area” and an “administrative area”. The “process area” will include vertical pressure filters; chemical feed and storage; piping; pumps and motors; and an air scour blower. The “administrative area” includes a control room/laboratory; a mechanical room; an electrical room; toilet; and break room/kitchen. The paved area around the building provides 360-degree vehicular access around the building. The paved area will include two parking spaces, including one handicap accessible space. The existing access drive off Lowell Road to the proposed WTP will continue to be utilized as the site access road.

Runoff from the building’s metal roof and the surrounding paved area will be directed to swales. All paved areas will be sloped so that runoff flows to grass swales and directed to the proposed infiltration area.

A 2,000-gallon tight tank will be installed on the north side of the building to collect all sanitary waste from the WTP, including toilet and laboratory sink. The tank waste will be pumped out periodically and hauled off for proper disposal. The tank will be pre-cast with manholes to provide access for cleaning and inspection.

Underground electric will be installed to the WTP, originating from an existing utility pole. Two new standby generators will be installed on east side of the WTP, adjacent to the gravel driveway to provide standby power. Standby power service shall extend from the generator and enter the WTP building via an underground conduit. Propane tanks will be installed adjacent to the generators for fuel source.

The WTP is designed to operate at a maximum hydraulic capacity of 1.584 MGD. The treatment plant will receive blended raw water from Wells 1 and 2, and from future Well 3 when constructed. The treatment plant will include potassium hydroxide and sodium hypochlorite chemical feed systems and three greensand media pressure filters. Sodium hypochlorite will be added to the blended raw water for enhanced metals removal/chemical oxidation/disinfection, while potassium hydroxide will be utilized for pH adjustment. Potassium hydroxide and sodium hypochlorite will be dosed pre-filtration and also added after filtration and prior to entering the Town’s drinking water distribution system, as necessary, to maintain the required finished water pH and chlorine residual, respectively.

Finished water will exit from the east side of the WTP building. The new finished water main will reconnect to the existing 12-inch ductile iron finished water main and then continue into the distribution system on Lowell Road. The Town will also have the ability to send treated water into an existing 12-inch ductile iron main that conveys water towards the southeast away from the WTP

building.

Proposed Residuals Management Lagoon System

Two lined lagoons will be constructed on the site to facilitate drying of WTP iron and manganese residuals generated during pressure filter backwashing. The two lagoons are identical in size, material, and functionality. Each lagoon can store a total of approximately 210,000 gallons of residual backwash waste. A single lagoon can accommodate a volume ten times the total quantity of backwash water discharged during any 24-hour period in accordance with the MassDEP Guidelines for Public Water Systems, Chapter 5 – Treatment. The residuals management lagoon systems include: an underground cast-in place concrete backwash waste pump station; backwash waste piping inlets with plug valves; inlet dissipation; rip rap side slopes; sand drainage layer; underdrain system consisting of polyvinyl chloride piping and crushed stone bedding, high density polyethylene liner, and drywells.

A 4-inch ductile iron force main will convey residual backwash waste from the backwash waste pump station to each lagoon. The Town divert flow to each lagoon by operating valves located within the gravel area northwest of the WTP. Each waste pipe discharges residual backwash from the pump station to the lagoons at an invert 3-feet below grade. A 6-inch air gap between the inlet elevation and the maximum residuals backwash elevation provides cross connection control.

The lagoons have a total depth of 10.0 feet and surface area of 10,200 sf (42-feet wide x 168-feet long). The lagoon depth includes 7 feet of usable storage; a 6-inch air gap; and 3 feet of freeboard. The additional one foot of freeboard, along with the standard 2-foot freeboard, ensures the backwash waste pipe has sufficient coverage depth. A flapper check valve will be installed at the end of the backwash waste pipe, and prevents debris and vectors from entering the inlet pipe. Rip rap at the pipe inlet dissipates backwash waste flow.

Each lagoon is earthen in material with 2:1 (H:V) side walls. Side walls are comprised of 12-inch graded rip rap lined with 60-mil textured HDPE liner to prevent infiltration.

Residual backwash shall pool uniformly along the base of the lagoon, allowing for solids to settle and liquids to infiltrate through a 12-inch sand drainage layer. A series of perforated PVC underdrains captures water that infiltrates to the base of the lagoon and discharges to a series of drywells. The lagoon drywells will be sized based on the hydraulic conductivity of sand and an estimated infiltration rate.

A vinyl-coated chain linked fence surrounds the entire lagoon area to prevent intrusion. A 15-feet wide access gate is located along the east side of the fence near the access drive. Fifteen-foot wide gravel access ways surround the lagoons to provide adequate space for sludge removal equipment. Rubber tracked excavators shall enter the lagoon via a 15-foot wide gravel access ramp with a 5:1 slope on the east side of the lagoons.

Segmentation—Whitney Pond Well #3

Whitney Pond Well #3 is a future on-site groundwater supply proposed under a separate contract. The proposed Whitney Pond Well #3 will provide additional capacity at the Whitney Pond Wells site, and will reduce the extent of groundwater drawdown associated with each well since the entire withdrawal would be spread over three wells. Well #3 is not required to meet the Town's average daily demand and will provide resiliency and redundancy to the Town's water supply. The proposed location of Whitney Pond Well #3 is shown on the Civil Existing Conditions Plan denoted as "TW-3" in Attachment C. Pump testing of Well #3 is proposed for later this summer, and then will be permitted through MassDEP as a public water supply. Although the work for Well #3 is in the preliminary design and permitting phase, the WTP will be designed with the ability to treat water from the well. The proposed WTP can operate without Well #3; should the future well not receive approval, construction and operations of the WTP can continue as described.

As outlined in 301 CMR 11.01 (2) (c), the entirety of a project, including separate phases or segments, must be considered in determining whether the project meets or exceeds any review thresholds. Therefore, the intent of this section is to analyze the level of MEPA Review required by the combined work at the proposed Whitney Pond Wells site which includes both the WTP and the potential construction of Well #3. Based on our understanding of the proposed Well #3 project, the combination of Well #3 and the WTP would not trigger a level of MEPA review beyond the standard ENF, such as an Environmental Impact Report (EIR). The initial approved maximum daily withdrawal of Well #3 is yet to be determined, but is estimated to be approximately 430,000 gallons per day (gpd). This would trigger review threshold 301 CMR 11.03(4)(b)1: New withdrawal or expansion in withdrawal of 100,000 of more gpd from a water source that requires new construction for the withdrawal. This review threshold requires an ENF and other MEPA Review if the Secretary so requires, which is identical to the level of MEPA review required by the proposed WTP. Therefore, the proposed Whitney Pond Well #3 does not expand the level of MEPA review beyond this filing. However, another consultant intends on filing a separate ENF for the Proposed Whitney Pond Well #3 work. As noted previously, the WTP can operate and function as intended without Well #3.

Drought and Resiliency

With the increasing threat of climate change, assessing the risks and resiliency of the proposed project has important implications. The proposed Whitney Pond WTP and Well #3 will improve Groton's ability to endure severe drought conditions by expanding the public water supply capacity and redundancy. As outlined in the Site Screening Alternative Analysis (refer to Attachment H), a combination of dry weather and heavy groundwater pumping resulted in lower-than-average groundwater levels at the Groton Water Department's Wells in June 2020. Public water demand is only expected to increase given Groton's goal of economic development, and therefore the proposed project at the Whitney Pond Wells site will improve public water supply capacity and quality.

The proposed project at the Whitney Pond Wells site also addresses water treatment in addition to the public water capacity concerns. The Town entered an Administrative Consent Order with Massachusetts Department of Environmental Protection (MassDEP) on February 8, 2020 agreeing to implement corrective actions at Whitney Pond Wells No. 1 and 2 where raw water has historically exceeded MassDEP guidance levels for manganese (Mn). The proposed Whitney Pond Wells Treatment Plant will remove elevated levels of manganese along with iron from the groundwater and will produce a maximum flow of 1,100 gallons per minute (gpm).

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

NOTE*: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

Comprehensive Environmental, Inc (CEI), acting as the Town of Groton's Owner's Project Manager for the Whitney Pond Wells Water Treatment Plant project, has prepared an alternatives analysis. Refer to Attachment H for the document "Site Screening Alternative Analysis".

As outlined in the Site Screening Alternative Analysis, the proposed project at the Whitney Pond Wells site addresses the need to increase public water supply capacity and remove iron and