STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

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Commissioner

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Drinking Water Section

APPROVAL FOR CONSTRUCTION OR INSTALLATION OF WATER AND TREATMENT WORKS

DPH Project #: 2010-0090 **Date:** 5/9/13
Date of Project Submission: 3/31/2010 and updated rebid package submitted 4/30/13

Contact Name: Mayor John Rodolico
Address: Ledyard Town Hall
741 Colonel Ledyard Highway
Ledyard, CT 06339

Public Water System/Applicant: Ledyard WPCA, Gales Ferry System
PWS ID (if applicable): CT0727051 **DWSRF ID #:** 2010 0727051a
Project Location: Ledyard, CT **DPUC Docket #:**

Project Name: DWSRF- Phase 1B Booster Pump Station to Serve the Aljen Heights Water Main Extension – REBID PLANS & SPECIFICATIONS

Project Description: The following is a brief project description and is not inclusive of all project components.

The Avery Hill Trailer Park, the higher elevations of Avery Hill Road and Tuckers Run of the new Aljen Heights water main extension (Phase 1A) will be served via this booster pump station to be located at the site of the Holmberg Orchard. Water will be taken from the Holmberg Tank and boosted to the new main. Due to lack of bidders and a high bid cost estimate from a sole bidder, the original booster pump station design and specifications have been modified to reduce the overall cost for the project.

The revised pump station will include a 5,000-gallon steel hyrdopneumatic storage tank that will be completely buried and tied into the discharge side of the yard piping outside of the pump station building. The tank will be coated and equipped with sacrificial anodes. The tank will have appurtenance openings for an 8-inch water line, pressure switch, level probe, 4-inch drain, 24-inch access manway on top of tank, and air compressor piping. A 5 hp oil-less air compressor will maintain satisfactory pressure in the tank and be housed inside the booster pump station. The 24-inch manway will be surrounded by a concrete manhole and cover assembly.

Three booster pumps will make up the pump station. The two duty pumps will provide 250 gallons per minute (gpm) at 150 feet TDH equipped with 15 HP motors with variable frequency drive (VFD) controllers. The fire pump will be capable of providing 750 gpm at 145 feet TDH, equipped with a 50

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HP motor. The booster pumping equipment will automatically maintain a constant system pressure during varying flow demands within the station rating by regulating the pressure and sequencing pumps.

The pump station will also include a sodium hypochlorite injection treatment system to be used as a disinfection booster system. The system will consist of a 50-gallon day tank, and a chemical feed pump mounted with a spare on site. The chemical feed pump will be wired to a flow switch and be paced proportional to the flow, and be equipped with an anti-siphon device. Two injection corporations will be installed both prior to and immediately after the two duty pumps. The sample line for the analyzer will be taken from the main line leaving the pump station approximately 100 feet away. The system will be monitored and alarmed to indicate chlorine residual, and provide high and low chlorine, safety alarms and shutdowns. According to the Rebid specifications, the chlorination system will not operate automatically, but will be manually operated by Groton Utilities personnel should chlorine residual in the Holmberg tank decline.

The pump station will also be equipped with a permanent emergency generator, capable of operating the full load of the pump station (minimum 125 KW capacity) and diesel fueled. The fuel system for the generator is a 24-hour dual wall sub-base tank. The generator set will be installed in a weatherproof enclosure and located adjacent to the pump station.

This project is approved for construction or installation in accordance with the following terms:

1) This project is approved for construction based on the project being constructed in accordance with the plans and specifications dated December 17, 2012, and rebid specifications received April 30, 2013, and the Department of Public Health's (DPH) terms stated herein. Any substantial deviation from the approved design must be reviewed and approved by the DPH in accordance with Section 19-13-B102(d)(2) of the Regulations of Connecticut State Agencies (RCSA). Failure to do so may result in an enforcement action and possible reconstruction of the project to conform to the DPH's approved design.

2) This project approval is void 12 months after the date of this project approval if construction has not started. If no construction is started, the DPH must be notified and re-approval from the DPH must be sought and obtained.

3) All work implemented for this project must be effectively disinfected pursuant to Section 19-13-B47 of the RCSA. Upon completion of the project and prior to placing into active use, the water must be sampled and tested for at least total coliform bacteria to verify that the work completed was effectively disinfected. Additionally, since the project includes a paint system or installation of components that may release organic chemicals, testing for organic chemicals is also being required from the new hydropneumatic storage tank. Test results must be in compliance of Section 19-13-B102e of the RCSA and be submitted to the DPH.

4) It is recommended that a pressure indicator is visible within the pump station since the tank will be buried in its entirety. Additionally, the level probe should be wired back to the pump station to provide the secondary independent system to operate the booster station in the event that the Groton SCADA system is not functioning. Please provide the submittal as requested in Section 11800 page 2 for the "shop drawings, wiring diagrams, operating and maintenance manuals and parts list for all appurtenances associated with the tank" for review prior to installation of the tank appurtenances. It is further recommended that the drawings be updated to reflect these terms and the specs reviewed by DPH for this project.

5) The concrete manhole and cover surrounding the 24-inch access manway on the top of the tank shall be watertight as to not let water pond within the concrete manhole around the access hatch and other appurtenances for the storage tank.

6) The Ledyard WPCA Gales Ferry system is currently classified as a Class 1 Water Treatment Plant. Because you are adding a new treatment process to the system, a Water Treatment Plant Classification Form must be completed and returned to this office for review prior to the final inspection by the Drinking Water Section, at which time a determination will be made if the current operator assignment will still be acceptable.

7) As a result of adding a booster chlorination treatment station and the Aljen Heights water main extensions, the Gales Ferry System should re-evaluate the distribution sampling site plan to determine if the current disinfection by-product sample locations are still appropriate.

8) All system components and materials used for this project must be NSF/ANSI Standard 60 and 61 approved.

9) Secondary Containment must be provided for the chemical day tank capable of providing containment for 110% of the day tank.

10) After construction/installation is completed for this project and prior to placing the project into active use, a *Certification of Completed Water or Treatment Works Construction/Installation* form must be completed and submitted to the DPH. The form is available on the DPH's website.

11) The DPH must be contacted to make arrangements for an inspection prior to active use upon submission of the *Certification of Completed Water or Treatment Works Construction/Installation* form.

12) The project should not be placed into active service until an Acknowledgement of Project Completion and Project Closure document is received from DPH.

Notes:

1) Funding for this project is being sought through the Drinking Water State Revolving Fund (DWSRF) program.

2) This project approval is only for technical components of the Phase 1B – Booster Pumping Station project pursuant to Section 19-13-B102(d)(2) of the RCSA, and is based on the applicable regulations and DWS design guidelines. This is not an approval for non-technical components (i.e., bid advertisement, engineering agreements, procurement/bidding documents, processes, etc.).

3) This project is for Phase 1B of a multi-phase project. An approved engineering report and all necessary permits should be in place prior to the construction of this phase of the project in order to ensure full completion of the project as intended.

If you have any questions regarding this letter, please feel free to contact me.

Sincerely,

Mandy B. Smith
Sanitary Engineer 2
Drinking Water Section

DC/mbs

cc: Mr. Richard Stevens, Certified Operator, Groton Utilities
Mr. Richard Johnson, Consultant, Armory Engineers, P.C.
Mr. Baker Salsbury, Health Director, Ledge Light Health District