

The State of New Hampshire
Department of Environmental Services

Thomas S. Burack, Commissioner

*Celebrating 25 Years of Protecting
New Hampshire's Environment*



WATER CONSERVATION PLAN APPROVAL

August 7, 2012

Richard Raisanen
NJC Realty Holding, LLC
P.O. Box 748
Nashua, NH 03061-0748

RE: Nashua – Farley Road Estates
Water Conservation Plan, April 11, 2012, NHDES # 999650

Dear Mr. Raisanen:

On August 7, 2012, the New Hampshire Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau received a Water Conservation Plan, dated April 11, 2012, for Farley Road Estates located in Nashua, New Hampshire (the “Plan”). Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from DES for new sources of groundwater shall submit a water conservation plan to DES. Based on review of the Plan, DES has determined the Plan complies with Env-Wq 2101.04, *Requirements for New Community Water Systems*.

Pursuant to Env-Wq 2101.11, the City of Nashua and the Nashua Regional Planning Commission were provided the opportunity to comment on the Plan from April 18, 2012, the date of public notification, through May 9, 2012. DES received no comments.

On August 7, 2015, and every three years thereafter, the water system shall submit a detailed and completed compliance report form to DES documenting compliance with the Plan. Required information includes contact information for the water-system owner and for the individual responsible for carrying out plan tasks; dates tasks were performed; and data relating to meter reading, water audits, leak detection, and public outreach. A copy of the *Water Conservation Plan Ongoing Compliance Form* may be located by going to the DES website, www.des.nh.gov, clicking on the “A-Z List” in the top right corner of the page, and scrolling down to Water Conservation.

Upon being assigned a Public Water System ID, Farley Road Estates shall register with the DES Water Use Registration and Reporting Program and report total monthly volume withdrawn from each source to DES on a quarterly basis. If you have any questions about Water Use Registration and Reporting or registering as a data provider please contact Derek Bennett at 271-6685 or derek.bennett@des.nh.gov.

www.des.nh.gov

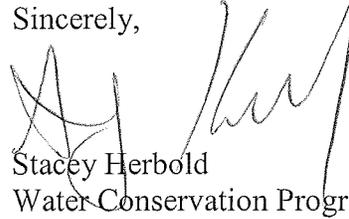
29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095

Telephone: (603) 271-2513 • Fax: (603) 271-5171 • TDD Access: Relay NH 1-800-735-2964

Revisions to the Plan shall not be implemented without further approval from DES.

Please feel free to contact me with any questions at (603) 271-0659 or via e-mail at stacey.herbold@des.nh.gov .

Sincerely,



Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

cc: Diana Morgan, NHDES
Board of Alderman, City of Nashua
Mayor, City of Nashua
Kerrie Diers, Nashua Regional Planning Commission
Neil Helberg, P.E., Lewis Engineering
Don Ware, Pennichuck

WATER CONSERVATION PLAN

FARLEY ROAD ESTATES

COMMUNITY WATER SYSTEM

NEW SYSTEM

NASHUA, NEW HAMPSHIRE

April 11, 2012

System Overview:

A Preliminary Well Siting Report was submitted to the NHDES DWGB on April 4, 2012. The single family housing development will include 15 - three bedroom homes and 15 – two bedroom homes. Two (2) bedrock wells with 175-foot sanitary protective areas are proposed for the development. Bedrock Well No. 1 will be tested at 5 gpm and Bedrock Well No. 2 will be tested at 15 gpm. The proposed community water system will provide domestic water and fire protection only. A separate system for lawn and garden irrigation is proposed. Ownership of the water system will be transferred to Pennichuck Water upon completion of the construction.

The Source Capacity required for the water system has been calculated as 22,500 gallons per day (15.63 gpm). The total water usage for the water system shall not exceed 28,800 gallons per day subject to the proposed 175-foot sanitary protective radius. The pump house will include water treatment, atmospheric storage, booster and fire pumps, and automatic controls. The water distribution system will provide domestic water and fire hydrants for fire protection.

The plan outlined below addresses the requirements of the NHDES Water Conservation Plan.

Project Owner

Name: **Richard Raisanen**
Address: P.O. Box 748, Nashua, NH 03061-0748
Company: **NJC Realty Holding, LLC**
Phone Number: 603-321-5549

Project Contact

Name: **Neil W. Helberg, P.E.**
Address: 44 Stark Lane, Litchfield NH 03052
Company: **Lewis Engineering, PLLC**
Phone Number: 603-886-4985

Water System Owner & Operator

Name: **Donald Ware, P. E., President**
Christopher J. Countie, Water Supply Manager
Address: P. O. Box 1947
Merrimack, New Hampshire 03054
Company: Pennichuck Water Works, Inc.
Phone Number: 603-913-2328

In accordance to NHDES Administrative Rule Env-Wq 2101.04, Water Conservation Rules, Farley Road Estates (Pennichuck Water) will conduct the following water conservation measures subsequent to approval of the new bedrock wells.

The Farley Road Estates Water System will include two bedrock wells.

- Total Source Capacity Required under Env-Ws 372 22,500 gallons (15.63 gpm)
- Average Daily water has been calculated at 11,250 gallons per day (4.20 gpm).
- Total water system pumpage per day shall not exceed 14,400 gallons (7.8 gpm).

Source Meters:

- Raw water from the wells will be metered prior to reaching any required treatment equipment at the pump house.
- The discharge water meter for water pumped from the pump house to the distribution system will be a 4-inch compound flow meter. The 4-inch compound meter will capture low flows and will also allow for fire flows.
- A data recorder shall be connected to the compound water meter. The data recorder shall record water usage leaving the pump house each day. The data recorder shall be connected to Pennichuck Water's SCADA system that is based at the Water Treatment Plant in Nashua.
- Meters will be installed prior to system startup.
- Positive Displacement Meters for the wells (5/8" or 3/4") will be tested or replaced every 10 years per AWWA/ PUC Standards.
- The Pump Station Compound Water Meter shall be tested or replaced every 4 years per AWWA/ PUC Standards. The testing schedule for the 4-inch discharge meter and the well meters will be re-evaluated after the results of the first round of testing is completed in 4 years
- The source water meters for the wells and station discharge will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (EnvWq 2101.04 (d)).

Household Meters:

- Household radio-read service meters will be installed in each home prior to system startup.
- Household service meters will be radio read every month. The Pump House source meter will be read on the same day as the house service meters are read.
- Positive Displacement Water Meters to be tested or replaced every 10 years per AWWA Standards
- The household service water meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (EnvWq 2101.04 (d)).

Water Audit and Leak Detection:

Pennichuck Water will conduct an ongoing water audit and leak detection program. The water audit and leak detection program will be conducted as described in "Manual of Water Supply

Practices, Water Audits and Leak Detection", document identification number AWWA M36, 1999 as required by (EnvWq 2101.04 (g)). The distribution system will consist of 8-inch water main with 1-inch domestic services. Pennichuck Water will repair all leaks found during the water audit and leak detection program within 60 days of their discovery unless a waiver is obtained as required by (EnvWq 2101.04 (h)).

Pennichuck Water will estimate the volume and percentage of unaccounted for water in the water system once every year using methods and procedures as described in AWWA manual M36, 1999, as required by (EnvWq 2101.04 (i)). If the percent of unaccounted for water exceeds 15% of the water introduced into the water system, then Pennichuck will prepare and submit a response plan to NHDES within 60 days of the completion of the estimate. This response plan will describe activities that Pennichuck will conduct to reduce the percentage of unaccounted for water to below 15% within 2 years. Upon receipt of NHDES approval of the response plan, the water system will conduct the activities outlined in the response plan following the approval schedule as required by (EnvWq 2101.04 (m)).

Night Flow Analysis

The new water system will only be accepted by Pennichuck Water after the water main has been pressure tested in accordance with AWWA standards. As-built drawings will be prepared for the new water system showing the location of the water mains, valves, hydrants and water services.

- During the first year of water system operation; an initial baseline flow will be determined at the new pump house by recording water usage between the nighttime hours of 1 AM and 3 AM for a week at a rate of at least 1 reading every 5 minutes.
- For the first year; the nighttime water usage (7 day period) will be measured, downloaded and analyzed monthly for any abnormality. The 12 consecutive months of nighttime flow data for the water system will be analyzed to determine the baseline for comparison.
- Once baseline flows are established, values triggering further leak detection efforts will be established for nighttime water usage for the water system above the first year's nighttime baseline.
- Once 1 year (12 consecutive months) of data for the system has been obtained, readings will continue at a rate of at least 1 reading every 15 minutes between 1AM and 3AM. Data will be downloaded and analyzed quarterly. Baseline flows will be compared to actual flows to determine if the difference falls within leak detection trigger values and further analyzed for patterns of flow.
- If analysis indicates that a leak may be present, a visual inspection will be completed first. If the leak is not found; Pennichuck Water will send out a leak detection team to find the leak. Leak detection will be conducted in accordance with "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (American Water Works Association, 2009).
- Any leaks located by the leak detection team will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.

Pressure Management:

The water system will be designed consistent with water system industry standards and regulation and consistent with other public health and safety considerations in regards to minimum and maximum operating pressures as required by (EnvWq 2101.04 (n)). Pressures in the system will range from 50 to 80 psi.

Intentional Water Loss:

The water system will not intentionally allow for water loss using bleeders or the intentional overflow of atmospheric storage tanks.

Water Use Restrictions:

The proposed community water system will provide domestic water and fire protection only. Lawn and garden watering will not be allowed from the domestic water system owned and operated by Pennichuck Water.

A separate source and distribution system for lawn and garden irrigation is proposed. The irrigation system will be owned by the Farley Estates Homeowners Association. The irrigation system will be provided with weather based controls. Odd and even day watering shall be considered as part of the Association Bylaws.

Educational and Outreach Initiative:

Pennichuck Water will be conducting water conservation educational programs for its customers in Farley Road Estates. The educational programs will include distribution of literature regarding water conservation practices. Information and materials will be those available from NHDES and AWWA. Pennichuck Water will conduct public notification and outreach activities as required by EnvWq 2101.11 which will include distributing conservation literature at least twice a year with the Consumer Confidence Report.

Conservation Rate Structure and Billing:

Pennichuck Water will bill their customers within Farley Estates at the rates approved by the PUC for the Nashua Core Systems. The current water rates for the Nashua Core are available for viewing on the Pennichuck Water web site. At the present time; monthly water usage trends in gallons are not shown on customer bills.

Reporting and Implementation:

Pennichuck Water will submit a report form supplied by the NHDES once every 3 (three) years documenting how compliance with the requirements of Env-Wq 2101.05(o) are being achieved.

Activities outlined in this water conservation plan will be completed by Pennichuck Water under the supervision of its certified water system operator.

Public Notification:

Within seven days of submitting this water conservation plan; the applicant will provide a copy of the application and report via certified mail to the City of Nashua and the Nashua Regional Planning Commission located in Merrimack. The City of Nashua and Regional Planning Commission may provide the NHDES with written comments regarding the application within 21 days of receipt. The information provided to the City and Regional Planning Commission will include a summary of the requirements of Env-Wq 2101 and will request that the City of Nashua and the Nashua Regional Planning Commission amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency. Signed copies of the Certified Mail Return Receipts (the green card) will be forwarded to NHDES.

I certify that I have read this Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Signature Owner Name (print): Donald L. Ware

System Owner Signature: Donald L. Ware Date: 8/7/12