



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

May 20, 2011

Richard Maier
Swains Lake Village Water District
Box 429
Barrington, NH 03825

RE: Barrington – Swains Lake Village Water District (PWSID: 0151010)
Water Conservation Plan, April 5, 2011 (NHDESID: 999500)

Dear Mr. Maier:

The New Hampshire Department of Environmental Services (“Department”) has completed its review of a water conservation plan submitted by Swains Lake Village Water District (SLVWD). The plan was received on April 5, 2011 and submitted to fulfill the requirements of Env-Wq 2101, *Water Conservation Rules*.

Public notification was completed on April 12, 2011. Entities had an opportunity to provide comment on the plan until May 3, 2011. The Department received comments from the Strafford Regional Planning Commission (SRPC). The comments were primarily related to source water protection and could not be addressed through the conservation plan. The SRPC comments were forwarded to the well siting program for consideration. However, SRPC also reiterated the importance of source meter design and installation which are components of the water conservation plan.

The purpose of this letter is to conditionally approve the Water Conservation Plan dated April 5, 2011. The plan is approved with the following conditions:

1. SLVWD shall register water use with the Water Use Registration & Reporting Program. Following registration, water users are required to report measured monthly water use for all sources to the Department on a quarterly basis. A copy of the registration form is enclosed with this letter.
2. As an existing small water system, SLVWD chose to follow the metering and water accounting requirements for large systems as opposed to conducting comprehensive leak detection surveys of the distribution system every two years. This is allowed per Env-Wq 2101.06 (b). However, SLVWD did not provide a service meter maintenance plan as the district does not have the explicit authority to maintain the meters. SLVWD is investigating amending its bylaws to include a provision for service meter maintenance. SLVWD shall provide the Department with the language following adoption of the bylaw but no later than May 20, 2012.

Every three years from the date of this letter the water system shall supply the Department with documentation of compliance with the plan. This information shall be supplied on a form provided by the Department and shall include contact information for the water-system owner and the person

responsible for carrying out the tasks of the plan, all data relating to meter reading, water audits, leak detection, public outreach, and the dates these tasks were performed.

If you have any questions about this letter or any other water conservation issues please feel free to call me at **271-6685** or email me at derek.bennett@des.nh.gov

Sincerely,

A handwritten signature in black ink that reads "Derek Bennett". The signature is written in a cursive style with a large initial "D" and "B".

Derek Bennett
Drinking Water and Groundwater Bureau

Ec: Diana Morgan, NHDES
Ernst Kastning, NHDES

Cc: Barrington, NH Planning Board
Barrington, NH Conservation Commission
Strafford Regional Planning Commission

Encl: Water Use Registration Form

Herbold, Stacey P

From: Richard Maier <retire03825@yahoo.com>
Sent: Wednesday, August 27, 2014 11:22 AM
To: Herbold, Stacey P
Cc: stanandfranswier@gmail.com; Philip Treadwell
Subject: Re: Barrington_Swains Lake _ Water Conservation Ongoing Compliance Report Due

Follow Up Flag: Follow up
Flag Status: Flagged

The commissioners met yesterday and have a replacement plan decision. Starting with this year and the addition of Cedar Creek to the District with the new meters being iPerl that we have discussed earlier.

There will be 18 new homes in this addition to the District and 7 existing homes will be added to round off the number to 25 meters. Than 25 meters will be replaced each subsequent year until all meters have been replaced. With all meters being new by the end of 2017.

The plan for testing and/or replacing will be documented and added to the conservation plan.

Thanks,
Richard C. Maier
SLVWD, Chairman

On Thursday, August 14, 2014 4:14 PM, "Herbold, Stacey P" <Stacey.Herbold@des.nh.gov> wrote:

It still seems there is some communication confusion. The existing meters are 20 years old, correct?

Stacey Herbold
Water Conservation Program
NHDES Drinking Water and Groundwater Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
PH: (603) 271-0659
FAX: (603) 271-0656

From: Richard Maier [mailto:retire03825@yahoo.com]
Sent: Thursday, August 14, 2014 4:12 PM
To: Herbold, Stacey P
Cc: stanandfranswier@gmail.com; Philip Treadwell
Subject: Re: Barrington_Swains Lake _ Water Conservation Ongoing Compliance Report Due

Hi Stacey,

We are still wrestling with meters needing to be changed out every ten years when they have a 20 year warranty. Please bear with us while we continue to research this requirement.

Thanks,
Richard C. Maier
SLVWD, Chairman

On Wednesday, August 13, 2014 1:55 PM, "Herbold, Stacey P" <Stacey.Herbold@des.nh.gov> wrote:

Swain's Lake Village Water District

P. O. Box 429
Barrington, NH 03825
April 4, 2011

Water Conservation Plan for a Small Community Water System

Project Name: Groundwater Source for Swain's Lake Village Water District
Town: Barrington, NH 03825
EPA # 151010
Date: April 4, 2011

Purpose: Swain's Lake Village Water District, a Small Community Water System, in southeastern New Hampshire, is seeking approval from the Department of Environmental Services – Drinking Water and Groundwater Bureau, for new groundwater sources that must meet the requirements of New Hampshire Administrative Rule Env-Wq 2102, Water Conservation. Env-Wq 2101.06 Existing Small Community Water Systems is the specific Rule that must be adhered to.

This report and Plan was submitted for review to:

Attn: Derek Bennett

NHDES- Drinking Water and Groundwater Bureau

29 Hazen Drive, PO Box 95

Concord, NH 03302-0095

prior to submitting it for Public Notification and has given his departments approval for distribution.

Well sites for the new groundwater sources have been selected and drilled, bedrock wells have been produced. Attached is a map of the approximate locations where the wells were sited. A Preliminary Hydrological Report, prepared by Emery and Garret Groundwater, Inc. (EGGI) will be submitted to NHDES concurrent with this Water Conservation Plan.

Introduction

System Overview

- Swain's Lake Village Water District presently uses Swain's Lake as its water source. In the past few years it has become increasing more difficult to disinfect the water and meet EPA/NHDES standards for water quality, with the present treatment process. In 2009 the District employed Underwood Engineers, Inc. of Portsmouth, NH (UEI) to study ways to improve this condition. Their findings included two major upgrades to the treatment process or develop a new source of water.
- In the 3rd quarter of 2009 the annual running average for trihalomethanes exceeded the maximum contaminate level (mcl) established by EPA/NHDES. Trihalomethanes are byproducts of the disinfection process interacting with normal organic matter (NOM) in the water. The District has not been able to correct this condition and subsequently Halocetic acids, also a disinfection byproduct, have exceeded the annual running average for its mcl. The District is now out of compliance, for these two contaminants as required by EPA/NHDES regulations governing water quality.
- Swain's Lake Village Water District, established in 1986 to provide water to residents and local establishments, by the EPA, to supply the needs for water in the area of the Tibbetts Road Superfund Site. The District consists of 70 residential properties, 2 commercial properties, one of which is a seasonal campground with ~150 sites, including some cabins. There are also 10 properties in the District that have available curbstops but are not connected to the District at this time. These are mostly seasonal camps.
- No service connection receives more than 20,000gpd at this time and we do not anticipate any in the future.
- The present filtration and treatment system design was for 60,000 gpd of continuous pumping. Water source availability is not the controlling yield factor, the lake is capable of supporting more.
 - The system was designed with redundant capabilities for most of the functional components. Based on full capacity and complete process cycle (including backwash and rinse cycles) the system daily capacity could produce in excess of 60,000 gpd.
 - There are two components of the daily use based on seasonal demands on the system. During the Winter season, after Labor Day (September) and through April the average usage is ~7,000gpd. During the Summer season, May through Labor Day the average daily usage is ~14,000 gpd, with July peaking at ~25,000 gpd around the July 4th holiday.
 - Some years the July 4th weekend has exceeded 28,000 gpd for that period.
 - System average daily run times for the Winter Season normally do not exceed 3.0 hours to produce the required demand for water including rinse and backwash cycles. Minimum process time in the winter is typically over 2.0 hours of process time. The Summer Season system average daily run time does not exceed 8.0 hours with daily times between 5.0 hours and 7.0 hours being the norm, including the rinse and backwash cycles.
- The District present population is estimated at 175 permanent residents, with the normal fluctuations for births, deaths and change of address population. The seasonal influx is on average 25 during the summer season, which does not include the patrons of the campground or friends, relatives and normal lake front traffic.

- Three additional connections are anticipated in 2011 from new construction. These properties are included in the available curbstops properties leaving an additional 7 potential new users. The boundaries of the District are a limiting factor for growth and would require expansion by voter approval, for any change in the Districts users.

System Side Management

Source Meters

- The present water source is Swain's Lake, in Barrington, NH and is anticipated to be abandoned when the new wells are permitted and proven to produce compliant quality water for long term future consumption.
 - The future wells/new water source are anticipated to be the two drilled, bedrock wells designated SWL 6 Alt and SWL 7, as depicted on the attached Emery and Garret Groundwater, Inc. map.
- It is assumed that during the infrastructure change over to the groundwater wells there will be upgrades to the source water metering design and installation.
 - The District will instruct the infrastructure design engineers UEI to select Source Meters that can be installed, tested, and maintained in accordance with the procedures and protocols described in the American Water Works Association (AWWA) 1999 document identification number M6, "Manual of Water Supply Practices, Water Meters- Selection, Installation, Testing, and Maintenance".
 - District Operators will be required to maintain the meter protocol described in M6 of the AWWA document and the requirements of NHDES.
- All source water meters will be read and recorded at least once every 30 days.

Service Meters

- There are 70 existing service metered connections in the system, 69 are metered with the Sensus SR ¾", which are considered residential services and 1 Sensus SR1" meter that records the campground water use and is considered a commercial service user.
- There is one unmetered service which was brought to the District attention this year and will be terminated below the frost line, in the near future.
- All new service/residential connections are supplied a meter from the District and installed according to District specifications. The installation is inspected by a District Operator, before the water service is turned on.
- Customer service meters are read using a handheld Sensus Touch Reader II every quarter, ~90 days.
- Service meters will be selected, installed and maintained in accordance with "Manual of Water Supply Practices, Water Meter-Section, Installation, Testing, and Maintenance," document identification number AWWA M6, American Water Works Association, 1999.

Water Accounting

- Unaccounted for water for the year 2010 and the first quarter of 2011 at 11.75% and 8.35% respectively are considerably below the benchmark of 15% established in the Manual of Water Supply Practices, Water Audits and Leak Detection document of AWWA M36, American Water Works Association, 1999.
- Unaccounted for water measurement based are on readings from the NHDES Monthly Operating Report for Filtered Surface Water Systems and total quarterly readings from every metered service.

- The District will continue to annually estimate unaccounted water and submit a response plan to the NHDES-Drinking Water and Groundwater Bureau within 60 days if the percentage of unaccounted water in the water system exceeds 15% of the total water introduced into the system. The response plan shall identify how the water system intends to reduce the percentage of unaccounted water to below 15% within two years.
- As a small community system, the District will continue to annually estimate unaccounted water. This procedure will be utilized for water auditing and the determinant for pursuing a leak detection process for recovering water loss.

Pressure Management

- Water is pressurized into the hydropneumatic vessel, at the treatment plant in a controlled range of 60 psi to 85psi.
- Certain homes within the District that experienced issues with high pressure had pressure control regulators installed during the initial system turn on.
- With the new source of water, system pressure will be monitored and adjusted as required, consistent with water industry standards and regulations. However, it is not anticipated to be any different that operations over the last 24 years.

Intentional Water Loss

- Storage tanks are not allowed to overflow and there are no “bleeders” used in the system which would account for water loss.
- Water is intentionally “blown off” twice annually once in the spring and once in the fall to flush the main lines of unwanted sediment in the distribution system.
- Flushing consumption will be recorded based on the effluent readings of the distribution meter, for the flushing period. The water volume of water use during flushing will be used in accounting for unaccounted water. It is understood that there will be some consumption during this time.

Consumption Side Management

Conservation Rate Structure

- The present rate structure per residency per quarter is \$50.00 for up to 1,000cf of water and an overrun charge of \$4.00/100cf used after the initial first 1,000cf. The overrun charge is believed to be an incentive to conserve water and encourages judicious use of water.
- Commercial user (campground) is charge at a rate of \$.30/100 gallons of water use regardless of quantity.
- There are no seasonal rate structures in place, but it is anticipated that a seasonal rate will be instituted. The quarterly residential rate increases to support the bond requirements will not be justifiable for seasonal customers.

Educational Outreach Initiative

- The District will use the two NHDES Fact Sheets for the outreach program to educate the public on good water conservation practices.
 - Initial mailing of Fact Sheet WD-DWGB-26-2: Water Efficiency Practices for Domestic Indoor Water Use will be enclosed in the 2011 1st Quarter billing. This will occur in the month of April, during the permitting process for the new water source.

- When the new water source is approved for use, that opportunity will be used to send out Fact Sheet WD-DWGB-26-3: Water Efficiency Practices for Outdoor Water Use.
- These fact sheets are highly educational material that can familiarize customers of the simple water conservation measures that can be implemented at home. After the initial mailings, they will be distributed annually along with the Consumer Confidence Report (CCR), which must be sent to each customer by July 1st of each year.

Documenting Compliance

- Compliance will be documented in accordance with the requirements of Env-Wq 2101 by submitting a “3 Year Water Conservation Compliance Report” from Swain’s Lake Village Water District to NHDES, once every three years.
- All activities outlined in this water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.

Public Notification

- Within 7 days of submitting the final water conservation report to NHDES for review, Swain’s Lake Village Water District will provide via certified mail the following documentation:
 - The Final Water Conservation Report (after initial NHDES review)
 - Educational outreach materials:
 - Water Conservation Rules Summary (Env-Wq 2101)
 - NHDES Fact Sheet WD-DWGB-26-2: Water efficiency Practices for Domestic Indoor Water Use
 - NHDES Fact Sheet WD-DWGB-26-3: Water Efficiency Practices for Outdoor Water Use

The materials listed above will be sent to the following governing boards:

- Town of Barrington Planning Board
Administrator: Connie Brawders
Province Road
Barrington, NH 03825
- Town of Barrington, Conservation Commission
Province Road
Barrington, NH 03825

Copies of the cover letters to be sent to the governing boards along with all pertinent attachments are enclosed for NHDES review. Certified mail receipts will be provided when they become available.