

Report Form for
Water Conservation Plans
Small Community Water Systems

The Seasons at ATTITASH - Small Community Water System
Bartlett, NH
1612240
January 20, 2011

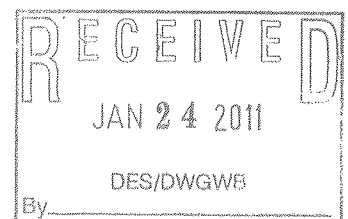
PURPOSE a community water system seeking approval for a new source of water, must meet the requirements of New Hampshire Administrative Rule ENV-WQ 2102 Water Conservation. Requirements vary depending on the type of water system as follows: Env-Dw 2101.06 Existing Small Community Water System.

This report was submitted for review to:
ATTN: Derek Bennett
NHDES - Drinking Water & Groundwater Bureau
29 Hazen drive, PO Box 95
Concord, NH 03302-0095

PROJECT/CONTACT INFORMATION

The Preliminary Well Sighting report is being submitted concurrently to the NHDES for review.

Project Contact:
Name: Raymond Seeley
Address: 93 Whittier Hwy
Company: Integrated Water Systems
Phone Number: 630 5600
Project Owner: The Seasons at Attitash



To the best of our knowledge, ownership of the water system will NOT be transferred at a future date from the homeowner's association or any other entity.

SOURCE & SYSTEM OVERVIEW

Reason for New Source: As stated in The Seasons at Attitash well Sighting Report, New Bedrock Well #3 will be used as the primary well supplemented by the existing wells one and two. During the summer 2010, The Seasons at Attitash the CWS began "running out of water" during times of peak demand. Peak demand is realized seasonally during the summer months, and the height of ski season.

- **Service Connections/Types:** The Seasons at Attitash CWS consists of 177 existing service connections, all of which are for residential use. The daily average daily consumption is forty five thousand eight hundred and sixty gallons per day. There are NO known industrial, commercial, institutional, or municipal connections. None of these service connections receive more than 20,000 gpd. The primary use of the system is as single family condos.

- **Population Trends:** The majority of The Seasons at Attitash customers are seasonal occupants. The summer and ski season months are when the system exhibits highest water use, because there is an increase in average occupancy due to the seasonal nature of the system. The average daily use is usually less than 43000 gpd, with maximum daily use of less than 46,000 gpd occurring during the peak demand periods. Maximum daily yields of each well source will be re-determined during the 48 hour pumping test to be performed following the

Preliminary Well Sighting Approval:

SYSTEM METERING

- **Water Sources:** There are two active well sources currently in use for The Seasons at Attitash CWS and one active well source that is currently in the process of approval. Each of these are drilled, bedrock wells. The active ones are named BRW #1 and BRW #2. We are currently seeking approval for newly drilled BRW #3 during the fall of 2010

Source Meters: There is one source meter for each well. The system is designed as a blended source. There are two 1.5 inch diameter meters and one two inch meter with flow ranges of 0-100 gpm. The new BRW #3 is a 2" Neptune compound meter, BRW #1 is a 1.5 " Sensus compound, BRW #2 is a 1.5" Neptune Turbine and the Master BRW is a 2" Neptune compound meter. The blended source is typically read at least once per week. We will also read the individual well meters weekly or at least once a month as required. The last meter test date was in 2006, but we will continue to test once every 4 years as required by NHPUC rules and AWWA standards. We will be testing all the meters within three months of obtaining approval for BRW #3.

Source meters will continue to be selected, 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".

Service Meters: There are no service meters installed.

WATER AUDITS & LEAK DETECTION

• **Estimated Unaccounted for Water:** Integrated Water Systems monitors for unaccounted for water at least annually, but typically about once per quarter. We review and compare source meter records, taking into account any excess kilowatt hours used by the pump station and any customer complaints or insight that is available to help us identify any potential leaks. The Seasons maintenance staff is on property daily providing observation of any system leakage. Additionally, we also perform system inspections about once a month, noting any significant changes in activity and perform leak detection as necessary.

Water Audits & Leak Detection: The Seasons at Attitash subcontracts leak detection to their operator Integrated Water Systems. To date there have been no leaks in the system since Integrated became its operator in June 2009 as monitored by the systems master meter. The master meter comes to a full stop for long periods of time during off peak hours. Leak detection will be conducted in accordance with "Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999." *Any identified leaks will be documented & repaired immediately or within 60 days of discovery unless a waiver is obtained in accordance with Env-Dw 2101.09.*

The Seasons at Attitash CWS is comprised of approximately 8500 feet of 4" diameter PVC pipe, which was installed in approximately 1986. At least once every 2 years, all water mains, shut off valves and customer service lines will be completely surveyed for leakage using an acoustic listening device. Ground microphones will be used in conjunction with acoustic listening device, Models HL400 and HL 90 which are manufactured by Metrotech. Each of these contact points will be field surveyed for water leakage at 5 foot intervals over the top of the pipe.

Since this system has only 8500 feet approximately of water main and an overall low consumption volume, it is not cost effective or necessary to install zone meters to assist in leak detection. At the conclusion of this assessment, any damages to the existing distribution system will be noted and replaced as soon as possible, but no later than 60 days.

Intentional Water Loss: There are no "bleeders" used within the system at dead ends to improve water quality or prevent freeze-ups because they are unnecessary. There are also no storage tanks that we allow to intentionally overflow due to unique system hydraulics or other concerns.

Pressure Management: *The Seasons at Attitash* CWS currently operates at pressures between 70 psi. and 85 psi. Pressure reduction is not necessary because there are no zones that exceed maximum operating pressures allowed by State Rules. If the pressure exceeds 100 psi, pressure-reducing valves will be installed on the service line or water main to maintain the pressure below 100 psi

Conservation Rate Structure:

There are no structured charges for water.

Educational Outreach Initiative: The educational outreach initiative will consist of two NHDES Fact Sheets (*attached*): Fact Sheet WD-DWGB-26-2: Water Efficiency Practices for Domestic Indoor Water Use. Fact Sheet WD-DWGB-26-3: Water Efficiency Practices for Outdoor Water Use.

These fact sheets are highly informative materials that will familiarize customers of simple water conservation measures that can be implemented in their individual unit. They will be distributed to each occupant and posted in the community clubhouse immediately following the department's approval of the new source. After this initial mailing, 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.

In order to document how compliance with the requirements of Env-Dw 2102 is being achieved, Integrated Water Systems will submit a "3 Year Water Conservation Compliance Report" to be supplied by the NHDES once every three years. All activities outlined in this water conservation plan will be completed by its certified water system operator.

CONSUMPTION MANAGEMENT

Public Notification: Within 7 days of submitting the final water conservation report to the NHDES for review, Integrated Water Systems Inc. will provide via certified mail:

The Final Water Conservation Report (after initial NHDES review)
Education outreach materials for review:

Water Conservation Rules Summary (Env-Dw 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 Bartlett
Planning Commission
56 Town Hall Road
Intervale, NH 03845
David Publicover, Chairperson

Town of Bartlett, Conservation Commission
Daryl, Mazzagala
56 Town Hall Road
Intervale, NH 03845

North Country Counsel Planning Commission
56 Town Hall Road
Intervale, NH 03845
Karen, Malkiewizz

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 available.

From: Integrated Water Systems Inc.
93 Whittier Hwy
Moultonborough NH
03254
Raymond Seeley
President

To whom it may concern:
Subject: The Seasons Attitash New Well Project

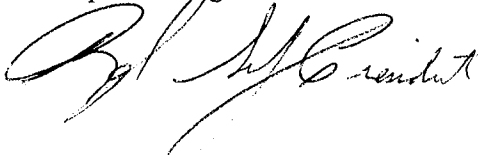
The Seasons at Attitash experienced some severe water issues during their peak demand periods in late summer and early fall of this year which required they drill an additional well. The new well produces approximately twenty five to thirty gallons per min.

We are requesting that you review the enclosed materials, comment on the water conservation plan, and promote water conservation practices within your jurisdictional area. You have twenty-one (21) days to review and provide comment to NHDES on the water conservation plan. This 21-day period commences upon the receipt date of certified mailing of this correspondence. Please communicate your comments in writing to NHDES at your earliest convenience and address all comments to:

ATTN: Derek Bennett
NHDES-Drinking Water & Groundwater Bureau
29 Hazen Drive, PO Box 95
Concord, NH 03302

In addition, if you wish to review the preliminary well sighting, you may contact the above NHDES staff at (603) 271-6685.

Preparer's Signature:

A handwritten signature in black ink, appearing to read 'Raymond Seeley', written over a horizontal line.

Date: 1/20/2011

ATTACHMENTS

Integrated Water Systems
Moultonborough, NH 03254
Telephone: 603-253-6830, Fax: 603-253-6149
Hours: Monday through Friday, 9:00am to 4:00pm
December 10, 2010

Re: Water Conservation Plan for: The Seasons at Attitash Water System, Bartlett, NH. 03812

Dear Derek Bennett
NHDES-Drinking Water & Groundwater Bureau
29 Hazen Drive, PO Box 95
Concord, NH 03302

Applicants applying for approval of new drinking water sources for Community Water Systems are subject to the requirements of Env-Dw 2101: *Water Conservation Rules*. As part of the application process we must complete a water conservation plan for the new water source and submit it for review by the New Hampshire Department of Environmental Services (NHDES). We must also perform the following Public Notification tasks:

- Provide a summary of Water Conservation Rule Env-Dw 2101 and the proposed water conservation plan for the water system to the governing board of the municipality in which the water system is located and the regional planning commission established for the area where the water system is located.
- Request that the governing board of each municipality review the water conservation plan for consistency with Env-Dw 2101 and amend the local site planning requirements to promote water conservation landscaping practices within the service area of the new water system.
- Request that the regional planning commission review the water conservation plan for consistency with Env-Dw 2101 and promote water conservation landscaping and other conserving water use practices among its member towns.
-

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Draft Cover Letter to Governing Boards

Water Conservation Rules-

Env-Dw 2101 (formerly Env-Ws 390)

Applicants applying for permits to develop new sources of water need to be aware that they are subject to new water conservation requirements required by RSA 485.61 which became law in July 2002. The law requires that the Department of Environmental Services (Department) adopt and administer water conservation rules for applicants developing the following type of new water sources:

1. New sources of groundwater for community water systems subject to RSA 485:3;
2. New sources of groundwater for bottled and bulk water operations subject to RSA 485:3;
3. New sources of groundwater that exceed 57,600 gallons over any 24-hour period subject to RSA 485C;
4. New sources of surface water associated with projects that require a water quality certification
- 5.

Pursuant to Section 401 of the Federal Clean Water Act.

The Department met with an advisory committee consisting of representatives of municipalities, Community water systems, environmental organizations, and business and industry to develop the water conservation rules. The rules were formally adopted by the Department in May 2005. A general summary of the requirements of the water conservation rules-is provided below.

Requirements for All Large Community Water Systems and All New Small Community Water Systems Developing New Sources of Water

Install and maintain meters for all water withdrawals and service connections.

Implement a water audit, leak detection and leak repair program in accordance with the "Manual of Water Supply Practices, Water Audits and Leak Detection", document identification number AWWA M36, American Water Works Association, 1999.

When applicable, development and implementation of response plans to reduce unaccounted for water to less than 15%.

Implement a rate structure that encourages efficient water use.

Implement a water conservation educational outreach initiative.

Water Conservation

Resources

Woodinville, WA Water District. In-depth water-saving tips, how to check for leaks.
<http://www.woodinvillewater.com/Conservation/District%20Program/District%20Program.htm>
US EPA. Listing of Energy Star rated washing machines. www.energystar.gov

References:

New England Interstate Water Pollution Control Commission (NEIWPCC) *MRI Water Conservation Technical Bulletin #5, Water Conservation Best Management Practices for Domestic/Sanitary Water Use*; NEIWPCC, Lowell, Mass.; 1996.
US Dept. of Defense, *MIL-Handbook-1165, Water Conservation*; US Dept. of Defense; 1997; pp 25-37.
Vickers, Amy; *Handbook of Water Use and Conservation*; Water Plow Press, Amherst, Mass.; 2001; pp 23-75, 87-133.
Note: This fact sheet is accurate as of May 2010. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.

NHDES Fact Sheet, Domestic Indoor Use

28 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov
WD-DWGB-26-3

Water Efficiency Practices for Outdoor Water Use

2010

Outdoor water uses increase water consumption during spring and summer by an average of 50 percent. Landscape watering and car washing are the two main outdoor water uses responsible for this demand for water. This increase in demand comes at a time of year when there is less water naturally available in the environment due to warmer temperatures and plant uptake.

By implementing just a few minor changes in how you use water outdoors, you will find that you can maintain your existing outdoor activities using much less water. This will save money on your water and electric bill, and protect the environment by leaving more water for New Hampshire's rivers, wetlands and aquifers. In the case of outdoor lawn watering, using water more efficiently will actually improve the durability of your grass, reduce the need for chemical amendments, and decrease lawn mowing frequency. The following sections address conservation for landscape and garden irrigation and other outdoor uses.

Landscape and Garden Irrigation Conservation:

Use water-wise and region-appropriate landscape plantings. Visit the fact sheets webpage at www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm and scroll to WD-DWGB26-4, "Fundamentals of Xeriscaping and Water-Wise Landscaping."

Watering frequency should be based on soil moisture, weekly precipitation and plant/turf conditions. Typically, established landscape plants and turf grass require one inch of water per week, and this amount may be applied in one application. You may see golf courses' watering lush greens almost continuously; however, these are often exotic grasses that must be cooled from the heat of the day. Do not copy the watering practices of these types of operations.

Use a rain gauge to calculate your lawn and garden water needs. A rain gauge allows you to measure how much rain has fallen. These devices are available for a minimal cost at your local garden/hardware store and are easy to use. Mature lawns only require about one inch of water a week. The amount of water you

Rule Summary

(Env-Dw 2101)

Requirements for Existing Small Community Water Systems

Developing New Sources of Water

1. Either: a) Install source and service connection meters and implement a water audit, leak detection and leak repair program in accordance with the "Manual of Water Supply Practices, Water Audits and Leak Detection", document identification number AWWA M36, American Water Works Association, 1999; Q! b) Complete system wide leak detection once every two years.
2. Repair all leaks within 60 days of identification.
3. Implement a water conservation educational outreach initiative.
- 4.

Requirements for Applicants Developing New Sources of Water for Industrial, Commercial, or Institutional Water Uses

1. Install water meters for all water sources.
2. Retrofit or replace single pass water-cooling systems when feasible based upon an economic analysis that includes a four-year payback period.
3. Install controls to stop the overflow or discharge of water to waste when feasible based upon an economic analysis that includes a four-year payback period.
4. Identify water conservation best management practices or best available technologies that may be applicable to the types of water-using processes at the subject facility, and implement these measures when feasible based upon an economic analysis that includes a four-year payback period.
5. For all new lawn areas, install six (6) inches of loam and devices to shut-off automatic irrigation systems when not needed.

For more information about the water conservation rules, contact Derek Bennett at 271-6685 or derek.bennett@des.nh.gov.

**Water Conservation
Rule Summary**

(Env-Dw 2101)

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-DWGB-26-2

Water Efficiency Practices for Domestic Indoor Water Use

2010

Only 1 percent of the earth's water is available for drinking. The average American uses 100 Gallons of water a day. Our excessive water use habits deplete potable drinking water supplies, and return trillions of gallons of wastewater to streams and coastal waters. The following indoor water efficiency practices can save as much as 25,000 gallons of water per person per year. Water efficiency practices not only save water, they save money. For a description of how to determine water use in your home, see the following fact sheets at www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm and scroll to WD-DWGB-26-15, "Performing a Domestic Water Use and Conservation Audit." To save water on outdoor use, see fact sheet WD-DWGB-26-3, "Water Efficiency Practices for Outdoor Water Use" at the same website.

General Water Efficiency Practices

The following water efficiency practices apply to general domestic water use. Bathroom, kitchen and laundry water use are addressed in later sections. Look for the Water Sense label when considering water using fixtures, appliances, and services. Water Sense, sponsored by the U.S. Environmental Protection Agency (EPA), labels water-efficient products that have been independently tested to ensure water savings without sacrificing performance or quality.

Shut off water when not in use, such as when you brush your teeth or shave. Never put water down the drain when you can use it for something else, such as watering plants. Insulate water pipes and hot water heaters. This retains heat so that water doesn't need to run as long to get hot. It also saves on energy costs.

Avoid water softening systems unless absolutely necessary. Backwashing these systems uses large quantities of water. If you do use a water softener, run the minimum amount of recommended regenerations to maintain softness.

Turn off pumps, water softeners, and other water-using equipment while on vacation. Check for and repair leaks. Not only will you save water but you will save energy and money. A large percentage of energy costs can be attributed to pumping, treating, heating, and cooling water.

If you are on municipal water and have a meter at your house, check the meter over a period of time when no one is using water. If the meter moves, you have a leak. If you have a well, the pump shouldn't run at times when no water is being used.

NHDES Fact Sheet Domestic Indoor Use

Water Efficiency Practices in the Bathroom

More than one fourth of all domestic indoor water consumption is used in the bathroom. The following water efficiency practices will help you save water in the bathroom.

- Install ultra-low flow toilets (ULF) that use a maximum of 1.28 gal/flush (4.8L/flush) or retrofit existing toilets with displacement bottles or dams. Dual flush toilets offer a choice between the 1.6-gallon flush for solid wastes and a 1.0-gallon flush for liquid only. Never put bricks in toilet tanks; they disintegrate over time. Use a squat, fat glass jar, like a pickle jar, no more than 6" high, filled with water. Glass is heavier than plastic and less apt to shift around in the tank.
- Install low-flow bathroom faucets that use no more than 1.5 gallons per minute or install low-flow faucet aerators or laminar flow restrictors. These devices are readily available at most hardware and building supply stores.
- Install low-flow showerheads that use no more than 2.0 gallons per minute. Low-flow shower heads are designed to use less water and still provide the same invigorating spray as their water-wasting counterparts.
- Don't use the toilet as a garbage disposal. Avoid unnecessary toilet flushing by disposing of tissues, cigarette butts and other items in the trash, and composting vegetable food waste.
- Replace or repair toilet flush handles that stick in the flush position.
- Avoid using automatic bowl cleaners in your toilet tank. These chemicals rapidly degrade flapper valves and other tank components, causing the toilet to leak.

- Adjust the toilet tank float level so that water fills no higher than 0.5"-1.0" below the top of the overflow pipe. At higher levels water can flow down the pipe and leak through to the bowl. The refill valve then tops off the tank, causing a continuous cycle of drain and fill.
- Detect leaks in toilet tanks by dropping food coloring in the tank (12 drops). Do not flush the toilet for at least an hour~ If the tank leaks the dye will show up in the bowl.
- Fill bathtubs no more than half full.
-

Water Efficiency Practices in the Kitchen

The following water efficiency practices can be applied to routine kitchen chores.

- Operate dishwashers with full loads only. Use the water-save cycle if your dishwasher is equipped with one.
- If washing dishes by hand, rinse them in a basin rather than under running water.
- Store drinking water in the refrigerator rather than running the tap for cold water.
- Compost food scraps rather than using a garbage disposal. Not only do disposal units waste water; the fine particles they produce can clog a septic system.
- Consider installing an instant water heater on the kitchen faucet. This reduces the time needed to run water until it becomes hot.
- Do not run water to melt ice or thaw frozen foods. Defrost them in a microwave or in the refrigerator overnight.
- Rinse vegetables in a pan of water rather than under running water.

NHDES Fact Sheet Domestic Indoor Use

Water Efficiency Practices in the Laundry

The laundry is usually the second highest domestic indoor water use. The following water efficiency practices are designed to save water in the laundry.

- Wash full loads only. If unable to wash a full load, set your washer to the appropriate water level setting.
- Consider replacing your top, loading, vertical-axis washer with a more efficient horizontal-axis washer. Most of these are front-loading, but some newer models are also top-loading. These washers rotate clothes rather than agitating them and use much less water, an average of 20 gallons per load compared to an average of 43 gallons for conventional washers. See the EPA's Energy Star website listed at the end of this document for a catalog of Energy Star-approved washing machines.

For Additional Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at <http://des.nh.gov/organization/divisions/water/dwgb/index.htm>. All of the bureau's fact sheets are on-line at <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm>. More information about the DES Water Conservation Program can be found at <http://des.nh.gov/organization/divisions/water/dwgb/waterconservation/index.htm>.