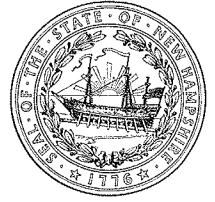


The State of New Hampshire
Department of Environmental Services

Thomas S. Burack, Commissioner



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

WATER CONSERVATION PLAN APPROVAL

July 24, 2013

Wayne Patenaude
Pats Peaks Skiing LLC
PO Box 2448
Henniker, New Hampshire 03242

**Subject: Henniker, Pats Peak Ski Area Public Water System; PWSID # 1127030
Water Conservation Plan**

Dear Mr. Patenaude:

On July 17, 2013, the New Hampshire Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau received a Water Conservation Plan (the “Plan”), signed on July 15, 2013, for the public water system at Pats Peak Ski Area located in Henniker, New Hampshire. Pursuant to RSA 485:61 and Env-Wq 2101, applicants for new surface water sources for projects that require a water quality certificate pursuant to Section 401 of the federal Clean Water Act shall submit a water conservation plan to DES. Based on review of the Plan, DES has determined the Plan complies with Env-Wq 2101.08, *Requirements for Industrial, Commercial, and Institutional Water Users (ICI)*.

Pursuant to Env-Wq 2101.11, the Town of Henniker and the Central New Hampshire Regional Planning Commission were provided the opportunity to comment on the Plan from June 10, 2013, the date of public notification, through July 1, 2013. DES received no comments.

On July 24, 2016, 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 and meter testing.

Pats Peak is a registered water user (Water Use ID # 20256). The sources serving the public water system have been added to the Water Use Registration and Reporting database under Pats Peak’s existing registration. The total monthly volume withdrawn from each source shall be reported to DES on a quarterly basis. If you have any questions about Water Use Registration and Reporting or please contact Derek Bennett at 271-6685 or derek.bennett@des.nh.gov.

www.des.nh.gov

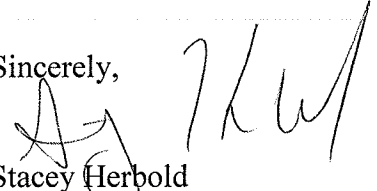
29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095

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 .

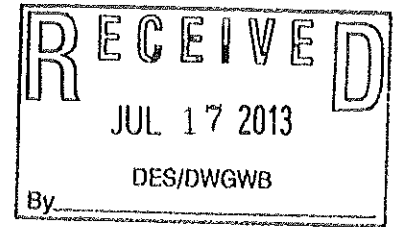
Sincerely,



Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

cc: Kris Blomback, Pats Peak
Town of Henniker
Central Region Planning Commission
Owen David, DES
Greg Comstock, DES

**Water Conservation Plan
PWS 1127030
Pats Peak Ski Area
Henniker, New Hampshire**



The following documentation presents the Water Conservation Plan for the Public Water System known as Pats Peak Ski Area, EPA # 1127030. The following information is being furnished as required as a condition in the Water Quality Certificate: # 2012-404P-003 issued to Pats Peak Ski Area. This water system is located on property at 686 Flanders Road in Henniker, New Hampshire. This Water Conservation Plan has been prepared in accordance with the New Hampshire Department of Environmental Services water conservation administrative rules as defined in Env-Wq 2101, more specifically Env-Wq 2010.08.

Introduction:

This Water Conservation Plan has been prepared for the existing water uses associated with the Public Water Supply known as Pats Peak Ski Area, EPA #1127030. Currently Pats Peak Skiing LLC is operated on the site. The existing water system consists of two bedrock wells. This Water Conservation Plan has been prepared on behalf of the following applicant:

1. 686 Flanders Road
2. 20 Craney Pond Road
3. 34 Craney Pond Road
4. 36 Craney Pond Road

The largest daily water withdrawal used by our PWS did not exceed 16,302 gallons during the three year period of 7-2008 and 6-2011 as was reported to NHDES-DWGB.

There is no future anticipated change in the current use activities for the buildings at these addresses that are connected to the PWS.

(b) ICI water users shall install and maintain water meters as described below prior to initiating a withdrawal from a new source of water:

(1) Water meters shall be installed for each groundwater and surface water source; and

(2) Water meters shall be maintained in accordance with "Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing, and Maintenance," document identification number AWWA M6, American Water Works Association, 1999.

Our PWS has two sources. Both are bedrock wells and both sources already have water meters installed. Water meters are read and recorded on a routine basis and when a meter is found to no longer be operable maintenance has been performed in a timely manner.

The water meters are Neptune 1" T-10 meters. These are positive displacement meters utilizing a nutating disc measuring chamber and a floating chamber design that is unaffected by meter position, with magnetic drive and low torque registration to ensure accuracy. Neptune T-10 water meters are time proven for accuracy and dependability. While other mechanical-type and static-type meters are limited in low flow registration due to the technology type or through the use of an electronic low flow cutoff, the Neptune T-10 – with its nutating disc technology - can detect flow rates below 1/32 of a gallon.

The most common type of displacement flow meter is the nutating disc meter. The movable element is a circular disc which is attached to a central ball. A shaft is fastened to the ball and held in an inclined position by a cam or roller. The disc is mounted in a chamber which has spherical side walls and conical top and bottom surfaces. The fluid enters an opening in the spherical wall on one side of the partition and leaves through the other side. As the fluid flows through the chamber, the disk wobbles, or executes a nutating motion. Since the volume of fluid required to make the disc complete one revolution is known, the total flow through a nutating disc can be calculated by multiplying the number of disc rotations by the known volume of fluid. To measure this flow, the motion of the shaft generates a cone with the point, or apex, down. The top of the shaft operates a revolution counter, through a crank and set of gears, which is calibrated to indicate total system flow. A typical nutating disc is shown below.

The AWWA M6 manual states that a meter maintenance program needs to attain a reasonably proper economic balance. If meters are not adequately maintained then the utility will lose revenue. Conversely if the cost of the program of meter maintenance is more than the cost of the loss of revenue that would occur if the meters were not tested than the overall result is economic waste.

NH Administrative Rule Puc 601.01 states that the rule Puc 600 applies to utilities as defined in rule Puc 602.13. Rule Puc 602.13 states that these utilities are defined in RSA 362. NH RSA 362:4 states that in order to be deemed a public utility the water system shall have more than 75 service connections. Pats Peak Ski Area PWS #1127030 would not fall under the regulation of NH Administrative rule Puc 600 as this water system only has 18 service connections.

In conclusion our research has shown that the AWWA M16 manual for testing of water meters was not intended to apply to our water system as we do not have any customers purchasing water and the entire cost of operating our water system is funded by ourselves. The State of NH Puc 600 administrative rule was not intended to apply to our water system as we do not have enough service connections to qualify for the regulation.

It is our feeling that NH Administrative rule Env-Wq 2101.08(b)(2) asks us to comply with regulations that were never intended to apply to our water system when those regulations were written.

NH administrative rule Ws 373 titled Design Standards for Non-Community Water Systems provides the rules that do apply to our PWS. No where in that rule does it ask for our source water meters to be calibrated and tested.

Therefore we propose testing our source water meters using a procedure not defined in the AWWA M6 manual or the Puc 600 administrative rule as those regulations were never intended to apply to our system. We suggest field testing our two source water meters at only the normal flow rate they encounter from the source water pumps. The purpose of the AWWA standard of three flow rates during testing is to test that the meter will be accurate under varying flow rates. As our source meters are connected to fixed rate discharge pumps they encounter very little variation in the flow rate while they are metering. This is why we feel testing them in the field with only the flow rate they normally see should be an adequate indication that the meters are accurate.

AWWA M6 Table 5-3 states that 1" meters shall have a test quantity of 100 gallons when tested at 40 gallons per minute and a test quantity of 10 gallons when tested at 4 gallons per minute. These two requirements have the same ratio. Our source water pumps flow about 15 gallons per minute so at the same ratio the test quantity at 15 gallons per minute would be 37.5 gallons.

AWWA M6 Table 5-3 states that 1" meters being tested between 4 and 40 gallons per minute shall have an accuracy limit of 98.5 to 101.5 percent.

(2) Sensors that optimize the use of water shall be installed for all processes identified in (d), above.

There were no processes identified in (d) above therefore (e) above is not applicable.

(f) Water conservation practices not described in paragraphs (a) through (e), above, shall be implemented as described below:

- (1) The water user shall provide the department a description of water conservation best management practices or best available technologies that might be applicable to the types of water-using processes at the facility;***
- (2) The water user shall develop a plan and schedule to implement the plan that demonstrates these processes will be implemented within 5 years; and***
- (3) The water users shall implement the plan according to the schedule upon obtaining approval from the department pursuant to Env-Wq 2101.12.***

Pats Peak Ski Area has identified the following water uses of our PWS not described in paragraphs (a) through (e) above:

- Toilets and Urinals
- Faucets and Showerheads
- Boiler Systems
- Commercial Kitchen Equipment
- Lawn Irrigation

The following paragraphs will describe our best management practices for these water using processes.

Toilets and Urinals: Pats Peak's buildings have been built between 1963 and 1996. Obviously with the exception of the 1996 building these toilets were installed prior to the 1994 standard for 1.6 gpf toilets.

In 2004 4 of the 6 Ski Lodge public bathrooms were updated. This update replaced most of our toilets in public bathrooms with models that meet the 1994 standard. In 2011 we updated the other 2 Ski Lodge public bathrooms. At that point all the toilets and urinals in the public bathrooms had been replaced by models that meet the 1994 standard with the exception of 5 toilets that presented plumbing retrofit incompatibilities.

We have consulted with 3 different licensed plumbing companies at three different times about replacing those 5 toilets and there are not replacement toilets manufactured that will fit on the wall brackets that exist. In addition there are not replacement wall brackets that will discharge into the existing drain line. To replace these 5 toilets would require ripping out the tile wall and moving it into the bathroom and then installing a new waste line down two floors to the basement. We can not make these bathrooms any smaller as they were built over 40 years ago and currently don't have enough space to meet any applicable codes.

consumers tend to remove them even though we are using a vandal resistant unit that requires a special tool to remove the aerator. Therefore we don't consider a completion date for these faucets, we just consider the maintenance as on-going.

In 2012 we replaced the shower valve and shower head in 70% of our residential showers. These new shower valves combined with shower heads that have a maximum flow rate of no more than 2.0 gpm will reduce the water used in our residential units. There are currently only 2 showers in residential units that still require updating.

Boiler Systems: Our facility has a total of 5 boilers used for heating. We have always had a boiler tuning program that is completed a minimum of once per operating year. In 2003 while updating and expanding the Valley Lodge we insulated all pipes that were part of the boiler system.

Commercial Kitchen Equipment: In 2006 we replaced our commercial dish washer with a new more efficient model. We also changed to a lease program that automatically provides monthly tune-ups to the dishwasher. With this system a manufacturer trained service technician checks and adjusts the dishwasher for proper temperatures and water flows once a month to keep the machine working properly all the time.

All of our ice machines have been replaced at some point after 2002 with Energy Star rated machines. In addition we turn off 60% of our ice machines during our banquet season when less ice is required for daily operations. This saves both electricity and water.

Both of our pre-rinse spray valves were replaced after January 2006 so they have a maximum flow rate of 1.6 gpm. When they require maintenance they will be updated to 1.25 gpm units.

Lawn Irrigation: Pats Peak's property consists of more than 400 acres of which over 100 acres are developed into lawns. We only irrigate less than 2 acres in the immediate vicinity of our banquet center. This equates to only 2% of our lawn areas are irrigated. The area we irrigate is where wedding ceremonies are held and wedding pictures are taken. There are no current plans to increase the irrigated area of our facility.

Our lawn irrigation was installed carefully to provide even watering of the irrigated areas. Every spring we test, adjust, and repair this system to insure it is working at maximum efficiency. The system has an automated timer so that the watering can be tightly scheduled for minimum run time early in the day before the sun will be out to evaporate the water. We do have a rain sensor that stops the system from running if rain has or is providing the irrigation.

While this control system might be described as a simple clock timer with rain shut off sensor that description would not be accurate for how we operate. We do not set the timer and then forget about it. We have a full time in house landscape crew to keep the grounds around our banquet center at their best on a daily basis through spring,

(2) Is accurate.

It is not anticipated that the economic analysis will be performed therefore item 2101.08(i) is not applicable at this time.

(j) If an ICI water user is establishing new lawns, it shall immediately implement the following water efficiency processes:

(1) All new automatic watering devices used to irrigate the lawns, shall be equipped with technology that will prevent the systems from starting automatically and that will shut down the systems when not needed;

(2) All automatic watering systems installed after the effective date of this document shall be audited at no less than once every 3 years to ensure the technology required by (1), above, is functioning properly; and

(3) All new lawn areas shall be underlain by 6 inches of loam.

Pats Peak Ski Area's existing lawn irrigation already utilizes automatic detection of rain and automatically interrupts watering if it is not necessary, This automatic shutdown system is tested for proper operation every spring and adjusted or repaired as needed.

It has been standard practice in the past to establish new lawn areas with more than 6" of loam material. This will remain the standard practice in the future.

(k) The requirements of (j), above, shall not apply to lawns associated with golf courses or agriculture uses.

2101.08(k) is not applicable to Pats Peak Ski Area.

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.

Owner Name (print): WAUNE PATENAUE - PATS PEAK SKIING LLC.

Owner Signature: Waune Patenaue Date: JULY 15, 2013