

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

AMENDED
WATER CONSERVATION PLAN APPROVAL

March 10, 2016

Rockhouse Mountain Property HOA
c/o David Cahill
P.O. Box 407
Conway, NH 03818

RE: Conway – Rockhouse Mountain (PWS ID #: 0762010)
Water Conservation Plan, NHDES # 512240

Dear Mr. Cahill:

On June 7, 2012, the Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau approved a Water Conservation Plan for Rockhouse Mountain, located in Conway, New Hampshire. On February 25, 2016, DES received an Amended Water Conservation Plan (the “Amended WCP”). The purpose of this letter is to approve the Amended WCP signed on February 15, 2016, per the following conditions: (All conditions are effective upon the date of this approval unless otherwise stated.)

1. Source meters and distribution meters shall be read on a monthly basis - no sooner than 27 days and no later than 33 days from the last meter reading.
2. All meters shall be tested and maintained on all sources and distribution points into the system based on the schedule proposed in the WCP.
3. All meters shall be installed per the manufacturer’s instructions or American Water Works Association standards.
4. The system shall continue reporting monthly source production volumes to the NHDES Water Use Registration and Reporting program on a quarterly basis.
5. Night flow analysis shall commence at a rate of twice a year, but no sooner than 173 days after and no later than 187 days after the prior analysis.
6. Leaks shall be repaired within 60 days of discovery.
7. An outreach and education program shall be implemented as proposed in the WCP.

8. All new non-metallic pipes installed in the system shall be outfitted with detectable tracer tape or detectable tracer wire, or be GPS located and maintained in a GIS system.
9. Every three years from the date of the original water conservation plan approval, a *Water Conservation Plan Ongoing Compliance Reporting Form* shall be submitted to DES documenting how the system has maintained compliance with the WCP. The next report is due on **June 7, 2018**. The following records shall be maintained by the water system to include with the report:
 - a. A leak log including the date a leak was discovered, the date a leak was repaired, the type of leak (ex. water main, service line, hydrant, valve), the approximate size of the leak (gpm), and the nearest address to the leak.
 - b. The title of water efficiency materials distributed and the date of distribution.
 - c. Date of installation and replacement of all meters, as well as testing and calibration records; and
 - d. Data from annual night flow analysis and a brief summary of the analysis.
10. Revisions to the Plan shall not be implemented without further approval from DES.

The *Water Conservation Plan Ongoing Compliance Reporting 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.

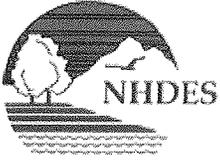
Please feel free to contact me with any questions at (603) 271-6685 or via e-mail at stacey.herbold@des.nh.gov.

Sincerely,



Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

cc: Justin Beane/Tom Mason, Lakes Region Water Company
Cindy Klevens/Leah McKenna, NHDES
Valerie Shae, HOA



AMENDED WATER CONSERVATION PLAN
Rockhouse Mountain Property Homeowners Association
Conway, NH



All community water systems in New Hampshire must prepare and implement a Water Conservation Plan (WCP) pursuant to NH Administrative Rule Env-Wq 2101 *Water Conservation*, as part of adding new well sources. The Association's original WCP was prepared January 3, 2012, and approved by DES on June 7, 2012. This amended plan includes additional details needed to comply with Env-Wq 2101. The largest change in this plan is a proposal to do night flow analysis to detect leaks rather than billing by usage and water accounting.

Activities outlined in the water conservation plan will be completed by authorized representatives under the supervision of the certified water system operator.

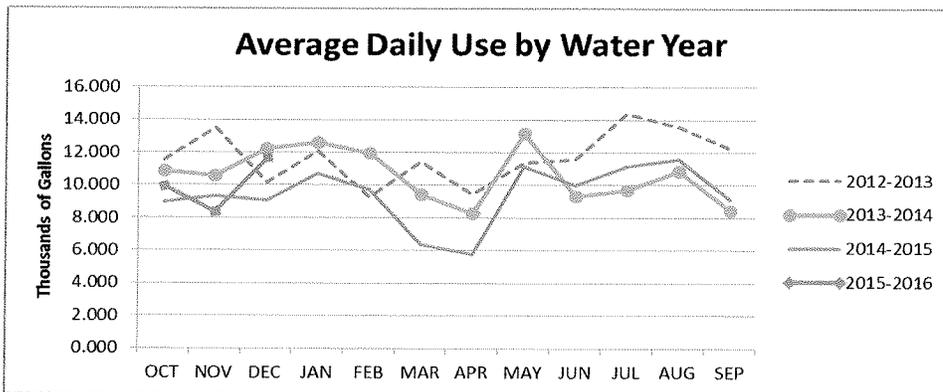
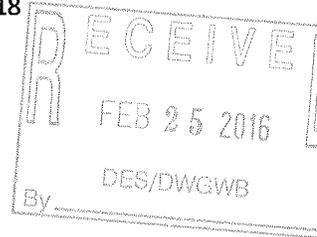
I. System Overview

A. Contact Information

1. Name and location of system: Rockhouse Mountain, 3 Highlands Dr, Conway NH 03818
2. Mailing address: RMPOA President, PO Box 407, Conway, NH 03818

B. System Description

1. Existing water sources: 001-BRW 1, 002-BRW 2, 003-BRW 3, 004-BRW 4
2. Number of service connections:
 Residential: 103 existing homes; 160 buildout. Approx. 50% year-round / 50% seasonal
 Industrial/commercial/institutional: None
 Consecutive or wholesale customers: None
3. There are no existing or proposed connections that will receive more than 20,000 gpd.
4. Average daily water demands are 6,000 to 14,000 gpd (see below), with higher use over vacation periods and weekends. There is no consistent pattern of water usage, though use declined in the past year thanks to detection and correction of some larger leaks.



II. System Side Management

A. Water Meters

1. SOURCE METERS

- a) Source meters on each well source will be maintained and calibrated per this plan.
- b) SOURCE METERS WILL BE READ AT LEAST EVERY 30 DAYS – no sooner than 27 days from or later than 33 days after the prior reading.
- c) SOURCE METERS WERE REPLACED IN MAY 2015 as part of the water system improvements projects. Existing meters are as follows:

Source Name: BRW 1
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 1"
Source Meter Installation Date: May 2015

Source Name: BRW 2
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 1"
Source Meter Installation Date: May 2015

Source Name: BRW 3
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 1"
Source Meter Installation Date: May 2015

Source Name: BRW 4
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 1"
Source Meter Installation Date: November 2015 (Estimated)

2. DISTRIBUTION MASTER METERS

Master Meter Name: Upper Pump House
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 2"
Source Meter Installation Date: September 2015

Master Meter Name: Intermediate Storage and Booster Station
Source Meter Make: Badger
Source Meter Model: M2000
Source Meter Size: 2"
Source Meter Installation Date: December 2015 (Estimated)

3. METER SELECTION, INSTALLATION, AND MAINTENANCE

- a) All meters will be AWWA certified, with the exception of b), below.

- b) AWWA does not have standards for magnetic flow meters. If a magnetic flow meter is proposed, the meter make, model, size, and manufacturer specifications will be forwarded to the NHDES Water Conservation program for review. The meter will not be installed until receiving approval for its use from NHDES.
- c) The selected size of the meters will be based on projected flow rates.
- d) Meters will be installed as specified by the manufacturer including requirements for horizontal or vertical placement, distance of straight run of pipe upstream and downstream of the meter, and strainer installation. If the manufacturer does not supply installation specifics, meters will be installed in accordance with the "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance," (American Water Works Association, 2012).
- e) The following meter testing and calibration schedule or meter change-out schedule will be implemented. If the manufacturer's accuracy warranty extends beyond the below schedule, the meter will be tested or changed-out no later than the warranty expiration date.

Meter Size (inches)	Testing Rate (yr)
<1"	10 yrs
1" - 2"	4 yrs
3"	2 yrs
>3"	yr

f) RECORDS OF METER INSTALLATION DATES, TESTING, CALIBRATION, REPAIRS, AND REPLACEMENTS WILL BE MAINTAINED AND CALIBRATION CERTIFICATES WILL BE KEPT ON FILE.

B. PRESSURE MANAGEMENT

The design pressures of the system are from 35 psi to 80 psi. Two pressure reducing valves are installed to prevent pressures above 80 psi in low-areas of the system.

C. LEAK DETECTION AND REPAIR

1. Leak detection methodologies will be conducted in accordance with "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (American Water Works Association, 2009).
2. Leaks will be repaired within 60 DAYS OF DISCOVERY UNLESS A WAIVER IS OBTAINED in accordance with Env-Wq 2101.09.
3. A LOG OF ALL LEAKS WILL BE MAINTAINED including the date the leak was discovered, the date the leak was repaired, the type of leak (ex. service, main, hydrant, valve), the size of leak (gpm), and the nearest street address to the leak.
4. A LEAK DETECTION SUMMARY REPORT will be submitted to DES every 3 years as part of the WCP compliance report (see Section IV.A).

D. Leak Detection: Night Flow Methodology

1. Distribution Meter

A meter capable of measuring low flows will be installed on the distribution line and located after treatment, any other water consuming processes, and storage. The existing meter is a Badger M2000, 2" size, installed September 2015.

2. Night Flow Analysis

- a. Night flow analysis will be conducted 2X/YEAR and no sooner or later than 6 months apart.
- b. Two separate Night Flow analyses will be conducted for each exercise, one for system supply by BRW4 only, the second for system supply from BRW1-3 only. For the BRW4 exercise, isolation valves from the Upper Pumphouse will be closed. For BRW1-3 exercise, the isolation valve from the Intermediate Pumphouse will be closed.
- c. Nighttime flow analysis will be conducted prior to sprinkler season.
- d. All residents will be informed regarding the purpose of the exercise and will be requested to refrain from water uses between 1 am and 3 am on the date of the night flow analysis.
- e. Night flow analysis will be performed by recording water usage EVERY MINUTE for one hour between 1 am and 3 am using the distribution MASTER METER.
- f. On November 9, 2015, night flow analysis was conducted to determine a baseline flow. Baseline flow was established at **2.2 gpm**.
- g. If low flow is above **above 2.2 gpm**, then flows will continue to be recorded for an additional hour.
- h. If low flow is **4.2 gpm or more**, a leak will be suspected and the following actions will be taken:
 - i. All residents will be asked to check their homes for leaks including running toilets. A new Night Flow analysis will then be repeated again in 3 days. If leaks remain above 4 gpm, step ii. will be taken.
 - ii. If the leak continues, portions of the system will be evaluated by closing available isolation valves, while evaluating the change in flow as measured by the distribution meter. For example, when one valve is closed, one person in the field (operating the valves) will then communicate with a second person observing the distribution meter to monitor for a change in the background flow.
- i. No later than two weeks from isolating the leak to a certain branch of a system, a sub-contractor skilled in acoustic leak detection will be retained and assist with pinpointing the leak.
- j. Records will be maintained for each night flow analysis, including recorded flows and leak detection results.

III. Consumption Side Management

A. Educational Outreach Initiative

1. The system has posted water efficiency outreach materials on its community website <http://www.rockhousemountain.net/>
2. The system will distribute water conservation guidelines and reminders at least 2x/yr to residents. Communications to residents are via EMAIL and links to the community website. "Water Ban" postings on main access roads may also be used.
3. The system will maintain a log indicating how the system has complied with III. A, above. The log will include dates the outreach and education actions were taken and what was done.

IV. Reporting and Implementation

A. The water system will submit a form supplied by NHDES once every three years from the date of the original water conservation plan approval, June 7, 2012, documenting how compliance with the requirements of Env-Wq 2101 *Water Conservation* are being achieved.

B. The data collected with each night flow analysis from the previous three years, as well as a statement as to whether a leak was suspected or not, will be submitted with the report form in IV.A, above.

C. The water system will continue to report monthly production volumes, quarterly to the NHDES Water Use Registration and Reporting Program. The water system's Water User Id is 20928. Monthly means once every calendar month, but not sooner than 27 days after and no later than 33 days after the previous reading.

=====

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): David Cahill

Owner Signature: David Cahill Date: 2/15/16

Appendix A Definitions

Authorized metered consumption: billed metered water plus unbilled metered water.

Community water system (CWS): a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Consecutive water system: a public water system that buys or otherwise receives some or all of its finished water from one or more wholesale systems for at least 60 days per year.

Final Source Approval: the date of final well siting approval or the date of issuance of the large groundwater withdrawal permit.

Large community water system: a community water system that serves more than 1,000 persons.

Privately owned redistribution system (PORS): A system for the provision of piped water for human consumption which does not meet the definition of a public water system and meets all of the following criteria:

(1) Obtains all of its water from, but is not owned or operated by a public water system; (2) serves a population of at least 25 people, 10 household units, or 15 service connections, whichever is fewest, for a least 60 days per year; and (3) has exterior pumping facilities, not including facilities used to reduce pressure, or exterior storage facilities which are not part of building plumbing.

Public water system (PWS): a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Small community water system: a community water system that serves 1,000 people or less.

Source activation date: the date the source is placed into use.

System input volume: the volume of water input to the water supply system after treatment, analysis, and storage.

Water balance: the difference between the system input volume and authorized metered consumption.

Water conservation: any beneficial reduction in water losses, waste, or use.

Wholesale system: a public water system or an industrial, commercial, or institutional (ICI) water user that treats source water and then sells or otherwise delivers finished water to a consecutive water system or privately owned distribution system.