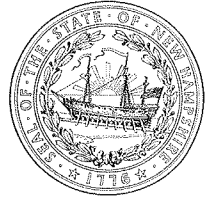




The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

AMENDED
WATER CONSERVATION PLAN APPROVAL

January 30, 2012

Tim White, Chairman
Hopkinton Village Water Precinct
c/o Suzi Calley
199 Hackett Hill Rd
Hooksett, NH 03106

**RE: Hopkinton– Hopkinton Village Water Precinct (PWS ID: 1191020)
Amended Water Conservation Plan, January 19, 2012, NHDES # 993059**

Dear Mr. White:

On August 6, 2007, the Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau approved a Water Conservation Plan for Hopkinton Village Water Precinct (“HVWP”). On January 19, 2012, DES received an Amended Water Conservation Plan for HVWP. The purpose of this letter is to approve the Amended Water Conservation Plan (the “Amended WCP”) dated January 19, 2012, per the following conditions:

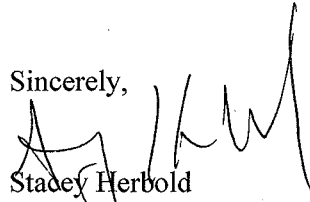
1. By **June 1, 2012**, HVWP shall complete the following:
 - a. An acoustic leak detection survey of the entire system shall be conducted by a professional with training and skills in acoustic leak detection.
 - b. Leaks identified in the leak detection survey shall be repaired.
 - c. Within a week after leak repair, water usage shall be recorded every minute for one hour between 1am and 3am using a flow meter installed on the bypass line, in order to determine a nighttime flow threshold for future leak detection.
 - d. The results of the leak detection survey shall be submitted to DES, indicating the professional’s name who conducted the survey, the number of leaks, type of leak (ex. break, valve), and estimated size of leak (gpm), as well as leaks repaired.
 - e. The results of the nighttime flow analysis, along with proposed leak detection threshold, and reasoning behind proposed threshold, shall be submitted to DES for review and approval.
 - f. Submittal of confirmation to DES that the source meter has been installed and is properly functioning.
2. Ongoing three year compliance reports shall be submitted every three years from the date of the original Water Conservation Plan Approval, August 6, 2007. The next compliance report is due on **August 6, 2013**.

3. Revisions to the Amended WCP shall not be implemented without further approval from DES.

A copy of the Amended WCP and 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.

Please feel free to contact me with any questions at (603) 271-6989 or via e-mail at stacey.herbold@des.nh.gov.

Sincerely,



Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

ec: Derek Bennett, NHDES

cc: Joe Damour, Primary Operator
Suzi Calley, HVWP

1/19/2012

**Hopkinton Village Precinct Amended Water Conservation Plan
CONSERVATION PLAN**

I. Introduction

A. Contact Information

1. Name and location of system.

Hopkinton Village Water Precinct

**Briar Hill Road (pump house is down dirt driveway on west side of road
approx. 3,000 ft north of center of Hopkinton Village)**

2. Owner of system and mailing address.

Tim White

Hopkinton Village Precinct Water Board

c/o Suzi Calley

199 Hackett Hill Road

Hooksett, NH 03106

3. Name and mailing address of designer of the water conservation plan.

Water System Operators

405 Flanders Road

Post Office Box 69

Henniker, NH 03242

B. System Overview

1. Reason for new source. **Backup well**

2. Number of connections existing and proposed for each of the following classes:

a) Residential; **90**

b) Industrial/commercial/institutional; and **10**

c) Municipal. **3**

3. Description of any connections that currently receive or will receive more than 20,000 gpd.

Although no meters current exist at service connections, we estimate that no single connection currently receives more than 20,000 gpd.

C. Water Use Trends and Supporting Data / Population Trends

1. Existing, if applicable, and anticipated seasonal fluctuation in water use and reason for fluctuation. **Approximately 21,900 gpd winter; 32,000 gpd summer (based on 2011 data). The seasonal difference in water use is believed to be largely related to exterior water use in the summer.**
2. Anticipated growth in population and seasonal fluctuations in population. **Limited population growth is expected in the service area. Growth in seasonal fluctuations is unknown.**
3. Maximum day yield of existing sources based on 24-hour pumping. **Wells do not operate for 24-hours at a time.**
4. Average daily water use. **Approximately 27,200 gpd (2011 data)**
5. Maximum daily water use. **Approximately 62,200 gpd (2011 data)**
6. Minimum hourly flows (if available). **Approximately 300 gallons per hour, based on approximately 5 gpm measured December 2011.**

D. Source Meters

1. Name designation of each water source. **GPW 2 & GPW 3**
2. Meter make, model, size, flow range, and date of last calibration for each existing source meter.
Well 2 & 3 currently share a meter – Hersey Retro Thrust MVP 350 3” LMF 5098-0
3. Meter make, model, size, and flow range for each new water source.
Hersey meter to be replaced with Elster EvoQ4 electromagnetic water meter.
4. Frequency that source meters will be tested/calibrated.
The source meter will be tested/calibrated every 5 years by the manufacturer or a tester approved by the manufacturer. Calibration certificates will be provided to NHDES following testing/calibration.
5. Frequency that source meters will be read (at least every 30 days).
The source meter is read daily and will continue to be read at least every 30 days.
6. **Source meters will be selected, installed, and maintained in compliance with “Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance,”(American Water Works Association, 1999).**

E. System Design

1. Are pipe locations known? If not, include a statement that a pipe location survey will be conducted in order to perform leak detection.
See attached draft map indicating pipe locations.
2. Breakdown of pipe material, age, and length.

Pipe type is PVC, AC, and DI. Pipe age is unknown; however DI and AC pipe are the oldest and may date to the 1960s or perhaps earlier. PVC is expected to be newer than DI and AC pipe. Pipe locations/lengths are indicated on the attached draft map.

3. Availability of contact points and adequacy of spacing. **8 gate valves and curb stops**
4. Is pipe material non-metallic? If yes, as leaks are difficult to acoustically detect in non-metallic systems, what additional measures will be taken to detect leaks? **Areas of non-metallic piping.**

II. System Side Management

A. Leak Detection

1. Leak detection is proposed to be conducted as follows:
 - a) **An acoustic leak detection survey will be conducted as soon as snow melts in Spring 2012. Prior to the start of the acoustic survey, we will use the bypass flow meter to identify/target which branch/branches of the system the leak(s) might be located on (refer to Step H below for methodology). We will direct our acoustic surveyor to start the survey on the branch/branches where leak(s) are suspected and move outward in a stepwise fashion to identify leaks.**
 - b) **Within 60 days of leak discovery, leaks will be repaired.**
 - c) **Within a week of leak repair, water usage will be recorded every minute for one hour between 1am and 3am using a flow meter installed on a bypass line (Refer to Section II.A.2). (Nighttime usage will be recorded prior to sprinkler season if possible.)**
 - d) **Nighttime flow data will be used to establish a threshold for the triggering of additional leak detection. Nighttime flow data, the proposed threshold, and reasoning behind establishment of proposed threshold will be submitted to DES for review.**
 - e) **Once a year and within 7 days of the date which water usage was recorded to establish the threshold, water usage will be recorded every minute for one hour between 1am and 3am.**
 - f) **If flows are above the threshold, then flows will continue to be recorded for an additional hour.**

- g) If flows are still above the threshold, the previous step will be repeated again in 7 days.**
- h) If again flows are above the threshold, then further steps will be taken to identify potential leakage. As feasible, we will close valves to isolate select portions of the system and evaluate the change in flow as measured by the bypass meter. For example, we will close the valve to South Road. One person in the field (operating the valves) will then communicate with a second person observing the leak detection meter to monitor for a change in the background flow. Assuming we isolate the leak to a certain branch of the system, we will then work to further isolate the potential leak by closing additional valves, if available.**
- i) No later than two weeks from detecting potential leakage from nighttime meter readings and upon narrowing down the location of the leak to the best of our abilities, we will then have a sub-contractor accompany us with an acoustic listening device.**
- j) 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).**
- k) Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.**

2. Leak Detection (Distribution) Meter

- a) An Elster C700 Positive Displacement Meter is installed on the bypass line to detect leakage.**
- b) We will coordinate with our water system operator to test this meter annually (e.g., the meter will be removed and a “bench” test performed using a range of flows recommended by the manufacturer). The data will be provided recorded on the attached worksheet and will be provided to NHDES with the three year ongoing compliance report. If we see “drift” in the meter readings in excess of the manufacturer’s guidelines, we will coordinate with the manufacturer to re-calibrate/replace the meter as necessary.**
- c) Zone meters will be considered in future system upgrades.**
- d) The distribution meter will be selected, installed, and maintained in compliance with “Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance,” (American Water Works Association, 1999).**

B. Pressure Management

1. Existing minimum distribution pressure (anticipated pressure for new landlord owned systems). **40 psi**
2. Existing maximum distribution pressure (anticipated for new landlord owned systems). **110 psi**
3. How is pressure currently monitored and how will pressure continue to be monitored? **Pressure gauge located in pneumatic house.**
4. What method will be used to reduce pressures in zones found to be in excess of 80 psi? **PRV valves could potentially be installed.**
5. What will be the timeframe for reduction (at least within 1 year of source water approval)? **Installation of PRVs will be considered in the next phase of system upgrades, which we estimate are several years in the future.**
6. If pressure reduction is not technically feasible, please explain why and describe what additional steps the water system will take to monitor and repair leakage within these zones?

Too costly right now to install PRVs, but Hopkinton will consider in 5 year upgrade/modification plan. Hopkinton will rely on annual leak detection to identify leaks in high pressure zones.

C. Intentional Water Loss

1. Are there “bleeders” used within the system at dead ends to improve water quality or prevent freeze-up? If yes, what looping opportunities exist? **No.**
2. Are storage tanks intentionally allowed to overflow because of system hydraulics or water quality concerns? If yes, what opportunities exist for the installation of altitude valves or tank mixing systems? **No storage tank.**

III. Consumption Side Management

A. Educational Outreach Initiative

1. Informational materials that will be used.

WD-WSEB-26-2 Water Efficiency practices for Domestic Indoor Water use

WD-WSEB-26-3 Water Efficiency Practices for Outdoor Water Use

WD-WSEB-26-4 Fundamentals of Xeriscaping and Water-Wise Landscaping

WD-WSEB-26-13 Water Efficiency practices for Institutions

WD-WSEB-26-15 Performing a Domestic Water Use and Conservation Audit

WD-WSEB-26-17 Water Conservation at Home

2. Rate of dissemination. **At least annually with water bill or wellhead protection mailings.**
3. Does the water system intend on becoming a WaterSense partner? <http://www.epa.gov/watersense/> **We have previously included WaterSense publications to our customers, and will consider distribution of these materials in the future.**
4. Will a rebate program be offered to replace older fixtures with WaterSense certified fixtures? **No.**

- 5. Will customer audits be offered? **No.**
- 6. Other outreach plans? **Post water conservation education materials at the Town Hall and Harold Martin School.**

IV. Zoning Ordinance / Bylaws

A. Are connections to the water system subject to any of the following water efficiency ordinances or bylaws?

- 1. Indoor
 - a) Water efficient fixtures beyond the existing plumbing code. **No.**
- 2. Landscaping
 - a) Minimum topsoil requirements. **No.**
 - b) Use of native/drought tolerant plants and grasses. **No.**
 - c) Area and slope restrictions for turf grass. **No.**
- 3. Irrigation System
 - a) Prohibition or restrictions to irrigation systems. **No.**
 - b) Require soil moisture sensors. **No.**
 - c) Require rain sensors. **No.**
- 4. Other water efficiency ordinances? **No.**

V. Water Use Restrictions

A. What is the water system's plan relative to implementing water restrictions? **There are currently no plans to implement water restrictions.**

B. Who is responsible for enforcing restrictions? **See above response.**

VI. Reporting and Implementation

A. The water system will submit a form supplied by DES once every three years documenting how compliance with the requirements of Env-Wq 2101 is being achieved.

B. Activities outlined in the water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.

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): Tim White

System Owner Signature:  Date: 1/19/12