



The State of New Hampshire
Department of Environmental Services



Michael P. Nolin
Commissioner

January 6, 2006

PROVENCHER ENGINEERING
6 WASSERMAN HEIGHTS
MERRIMACK NH 03054

Attn: Donald A. Provencher, P.E.

Subject: CWS TILTON; Winnisquam Village Condominiums - Project # 996082

Dear Mr. Provencher:

Our office has reviewed and hereby approves the plans and specifications, dated October 2005, for the proposed 'Winnisquam Village Condominiums' public water supply system to be located on Route 3 in the Town of Tilton.

The water supply system's new wells have the following location/descriptions: Bedrock Well 1, 88' Northwest of the Pumphouse and Bedrock Well 2, 128' West of the Pumphouse. The permitted production volumes for the wells are 14,400 and 43,200 gallons, respectively. The water quality samples numbered 509-612 and 509-616, which were taken on September 21, 2005, will be assigned to these sources.

The total number of 2-bedroom units approved is 86 and the approved design flow for the proposed water supply system at this time is 25,800 gallons per day.

Please be advised that this approval shall lapse four years from the date of this letter, if construction of the water supply system has not started. In addition, if construction of the water supply system has started at that time, but the water supply system has not begun operation; the water system's design will have to meet all then current design criteria prior to its start-up.

All construction of the water supply system is to be in accordance with NH Administrative Rule Env-Ws 372.21, 372.22, 372.23, 372.24, 372.25, and 372.32 (*Design Standards for Small Community Water Systems*). This approval is also subject to the following conditions:

1. Fuels and other regulated contaminants shall not be stored, nor shall septic tanks and leach fields, buildings, roadways, parking lots, etc. be located, within the wells' 200 foot protective radius areas as shown on the site plan. The top of each well casing must be at least one foot above the final finished grade.
2. A sampling tap shall be installed for each water supply source in order to sample each source's water quality individually. The sampling taps should be located on

each incoming source line prior to its entry to the first on-line storage tank. They should be located at least 12 inches above the floor or finished grade.

3. Each water supply source shall have a water meter installed on the incoming source line prior to its entry to the storage tanks which shall be read at least once every 30 days.
4. In accordance with Env-Ws 390.04 (*Water Conservation Rules*) and the water supply system's water conservation plan, each of the water system's residential service connections shall have a water meter installed which shall be read at least once every 90 days.
5. The water supply system shall be capable of an immediate connection of a chemical feed pump for the metered application of a disinfectant. An injection tap shall be installed on the source waterline prior to its entry to the first on-line storage tank and an electrical outlet, interconnected with the electrical circuit for the well pumps, shall be provided.
6. Each well shall have an appropriately sized tube for electronic drawdown probes or alternate provisions permanently installed in the wells which shall allow determination of the static and drawdown water levels.
7. The atmospheric storage tanks shall be equipped with a capped filler pipe (lockable, if on the exterior) to accommodate tank truck water delivery.
8. A certified operator, with the required grade(s), shall be retained in accordance with Env-Ws 367 (*Certification of Water Works Operators*) to be in responsible charge of the water supply system.
9. The water system's sources shall be wired to operate either simultaneously or to automatically alternate between pumping cycles in order to be sampled together as a blended sample.
19. All construction of the water distribution system is to be in accordance with Env-Ws 372.32 and the Water Distribution System Construction Guide that is enclosed with this letter. All piping material, valves, etc. shall conform to the most recent revision of the appropriate American Water Works Association (AWWA) Specifications. Where such a specification does not exist for the pipe size being used, the minimum pressure rating for the pipe shall be 200 psi and the pipe shall conform to the requirements of American Society for Testing and Materials

(ASTM) 2241.

11. All tees, bends, hydrants, blow-offs, etc. shall be provided with thrust blocking designed to prevent movement.
12. The separation between water mains and sewerage pipes shall be in accordance with Env-Ws 372.32.
13. All water mains installed under culverts shall be covered with sufficient earth or other insulation to prevent freezing.
14. The maximum spacing for gate valves installed on the water mains shall not exceed 1500 feet. Gate valves shall be provided at all intersecting water mains.
15. Hydrants or other means for flushing the water mains shall be provided near the ends of all water mains. The sizing of each 'blow-off' shall provide a flushing velocity of at least 2.5 feet per second in the water main.
16. All water distribution piping shall be installed and pressure tested in accordance with AWWA C-600 or C-900 as applicable to the type of pipe chosen. The quality of the workmanship for the pipe installation and adherence to the approved design plans and pipe specifications shall be documented, in writing, to DES in accordance with Env-Ws 372.31.
17. A set of 'as-built' plans or 'record drawings', in accordance with Env-Ws 372.33, shall be submitted to DES after all construction has been completed.
18. Before water service is provided, all water distribution lines and storage tanks must be flushed, disinfected with chlorine in accordance with AWWA C-651 or C-652, re-flushed, and sampled for acceptable bacteria quality.
19. The design flow for the proposed public water supply system is greater than 20,000 gallons per day. The water system's owner shall be required to register and report its water usage to DES in accordance with Env-Wr 700 (*Water Use Registration and Water Use Reporting*).
20. A final business plan, in accordance with Env-Ws 371 (*Capacity Assurance for New Public Water Systems*), must be submitted to and approved by DES before the construction of the new water supply system begins.

21. A copy of the water supply system's operation and maintenance manual, in accordance with Env-Ws 360.05 and Env-Ws 371.11, must be available prior to the water system's initial date of start-up.
22. A copy of the water supply system's emergency plan, in accordance with Env-Ws 360.15, must be available prior to the water system's initial date of start-up. The water system is required to review and update the emergency plan on an annual basis as needed. A copy of the emergency plan must also be submitted to DES every six years during the month of March.
23. At such time as the project is constructed and is ready for occupancy, the owner must contact this office (271-2513) to arrange for a system inspection and the system's water sampling schedule in accordance with Env-Ws 372.34.

Please be aware that it is possible to obtain waivers from a portion of the chemical sampling requirements by implementing a wellhead protection program. The cost savings associated with these waivers can be significant.

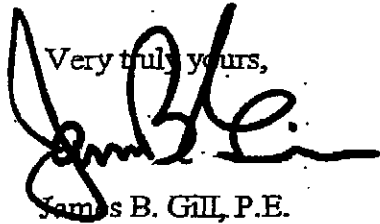
The first steps are to estimate the wellhead protection area and develop a preliminary contamination source inventory that describes existing and potential contamination sources (PCS) in the area. Existing contamination sources are sites where it is known that hazardous substances have been released to the environment. PCSs are sites where chemicals are handled, stored, or produced. Following these steps, what remains is the management of the PCSs that you have already identified in your wellhead protection area. This would require that you provide the appropriate people with the information about best management practices for handling chemicals, hazardous materials, and other substances so their activities do not result in groundwater contamination. We urge you to complete this final step, both to realize cost savings and to protect this valuable source of drinking water.

The Water Supply Engineering Bureau (WSEB) staff, at 271-7017, is available to assist you in implementing a wellhead protection program and obtaining the appropriate chemical sampling waivers that are available.

If you have any questions concerning this letter, please contact this office at (603) 271-2949 or by e-mail at jgill@des.state.nh.us.

Winnisquam Village Condominiums
Donald A. Provencher, P.E.
January 6, 2006
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Very truly yours,



James B. Gil, P.E.
Small Water Systems Section
Water Supply Engineering Bureau.

enclosure

cc: New Hampshire Public Utilities Commission
A. Clark - WVCA
Subsurface Systems Bureau - NHDES
K. Riel - NHDES
D. Morgan, P.G. - NHDES (via e-mail)
B. Gauthier - NHDES
D. McDonnell - NHDES

Exhibit
C



The State of New Hampshire
Department of Environmental Services



Michael P. Nolin
Commissioner

November 21, 2005

Allan Clark
REI Land Development
763 Chestnut Street
Manchester, New Hampshire 03104

**Subject: CWS TILTON: Winnisquam Village Condos; EPA ID: New System
New Bedrock Wells, 1, 2; NHDES #996082**

Dear Mr. Clark:

The purpose of this letter is to conditionally approve the subject wells for Winnisquam Village Condos in Tilton. This decision is based on a review of materials submitted to meet the requirements of New Hampshire Administrative Rules Env-Ws 390 & 378, *Water Conservation and Site Selection of Small Production Wells for Community Water Systems*. Approval is subject to the following.

Water Conservation:

The October 2005 Water Conservation Plan (WCP) for the subject water system is approved as proposed. Please note that the WCP referenced operational guidelines for a turf irrigation system, if such a system were to be installed at the development in the future. However, the source capacity estimates provided with the Preliminary and Final Well Siting Reports did not include an adequate assessment of volume requirements for this type of non-residential water use. If such a system is installed and an estimate of its volume requirements plus the drinking water system requirements exceeds the Permitted Production Volume (PPV) noted below, the system owner must request an increased PPV in accordance with Env-Ws 378.22.

The Plan shall be implemented at system start-up. Every three years from the date of this letter the water system shall supply the New Hampshire Department of Environmental Services (NHDES) with documentation of compliance with the plan. This information shall be supplied on a form provided by NHDES 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 leak detection, water use audits, and meter reading, if applicable, and the dates these tasks were performed.

Conditions of Well Siting Approval:

- Total coliform bacteria were detected in the water withdrawn from Bedrock Well 1 (BRW 1). Upon connection of the new well to the water system; but prior to serving customers, disinfect the well per the requirements of Water Well Board Rule We 602.03, and provide water quality sampling results that indicate total coliform bacteria is absent from the well.
- Toluene was detected in the water withdrawn from BRW 1. Upon connection of the new well to the water system; but prior to serving customers, provide water quality sampling results that indicate toluene is absent from the water withdrawn from the well.
- If toluene is not absent from the water withdrawn from BRW 1, you must submit sampling results on a monthly basis until the concentration of this constituent drops below detection limits. If the

concentration of toluene increases, then the source of contamination must be identified and controlled or an alternate supply of water must be developed.

- Water quality sample results for total coliform bacteria and toluene must be submitted to Diana Morgan at Water Supply Engineering Bureau.

Within 60 days of receipt of this letter an emergency plan must be prepared for the water system in accordance with New Hampshire Administrative Rule Env-Ws 360.14. This plan must continue to be updated and submitted to New Hampshire Department of Environmental Services in March once every 6 years. This regulation also requires the plan to be reviewed annually by the system and updated as needed. Additionally, the plan will be a checklist item during each sanitary survey and lack of one will be a survey deficiency. Guidance documents and other emergency planning information are available at the following website: <http://www.des.state.nh.us/wseb/EmergencyPlanning/index.asp>. You may contact Johnna McKenna at 603-271-7017 or jmckenna@des.state.nh.us for more information or assistance in completing emergency planning for your water system.

A copy of this letter should be kept on file with the water system's records for future reference and as an aid to meeting the NHDES source water protection requirements.

Please note that the well must be connected to a distribution system in accordance with Env-Ws 372, *Design Standards for Small Public Drinking Water Systems*. Contact Jim Gill at 271-2949 for further information about system design and connection requirements for new community water systems.

Source Specifications:

Well Number	Well Status	Permitted Production Volume	Sanitary Protective Area Radius	Wellhead Protective Area Radius	Source Description
BRW 1	New Well on New System	14,400 gallons	200 feet	3,600 feet	BRW 1, 128' W of pumphouse
BRW 2	New Well on New System	43,200 gallons	200 feet	3,600 feet	BRW 2, 88' W of pumphouse

The previous table outlines the specifications for the new wells. The Permitted Production Volume is the maximum volume that may be pumped from a well in any 24-hour period. The PPVs for the wells are as shown above. The combined volume for the system may not exceed 57,600 gallons in any 24-hour period. This volume includes water designated for irrigation water use.

The sanitary protective areas for the new wells are circles, centered on each well, with the radii listed above. The sanitary protective areas shall remain in a natural state and under the water system's control at all times. Please note that NHDES may initiate enforcement action if the system does not maintain the SPAs in a natural state.

The Wellhead Protection Areas for the new wells are circles, centered on each well, with the radii shown above. This is the area within which educational materials must be periodically distributed as part of the wellhead protection program. The first round of educational materials must be distributed within 90 days of system startup.

Allan Clark
Winnisquam Village Condos/Tilton
November 21, 2005
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Chemical Monitoring Program:

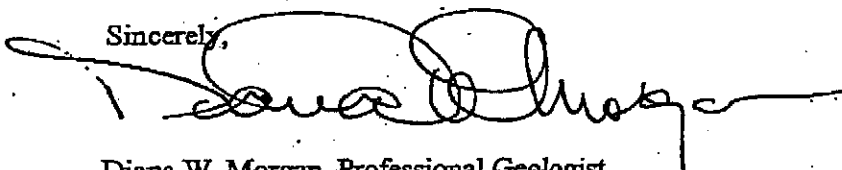
Well Number	Well Status	Laboratory Name and Sample Numbers
BRW 1	New Well on New System	Granite State Analytical: 509-612-2, 3, 4, 5
BRW 2	New Well on New System	Granite State Analytical: 509-616-1, 2, 3, 4

The September 21, 2005 water quality sample results for the new wells will be forwarded to the NHDES Chemical Monitoring Program. The sample identification numbers are listed in the table above. Chemical Monitoring staff will be contacting you shortly with a Master Sampling schedule. You must add sampling taps to the new wells and you must contact staff so that the schedule will accurately reflect the correct sampling locations.

If you have any questions about the Chemical Monitoring requirements, contact Allyson Gourley at 271-0655 or by email at agourley@des.state.nh.us. Please note that NHDES may initiate enforcement action if the system fails to implement a chemical monitoring program that includes the new well.

If you have any questions about this approval or any other well siting issues feel free to call me at 271-2947 or email me at dmorgan@des.state.nh.us.

Sincerely,



Diana W. Morgan, Professional Geologist
Water Supply Engineering Bureau

Cc: Allyson Gourley, Laurie Cullerot, Johanna McKenna, NHDES
Kimon Koulet, LRPC

Electronic Copies:
Jim Gill, Kevin Riel, Deb McDermott, Ben Gauthier, NHDES