

WATER CONSERVATION PLAN

FRANKLIN PIERCE UNIVERSITY

WATER SYSTEM

EPA # 1994010

Rindge, Hampshire

January 2011

System Overview:

The Franklin Pierce University Water System provides domestic water and fire protection to the Franklin Pierce University campus in Rindge, New Hampshire. The Franklin Pierce University campus consists of classrooms, libraries, student center, athletic facilities, administrative buildings, dormitories and food service facilities. Each building has an individual central heating plant. Wood Biomass (wood pellet) heating is being implemented for the campus buildings. The school has a central wastewater treatment facility on the north side of the property. Wastewater and drinking water flows are recorded daily on weekdays; and are compared monthly.

The water system consists of 5 (five) bedrock wells, well pump house, pumping and treatment building, distribution and water storage tank. A new bedrock well was installed and tested in August 2010 to replace Well No. 9. The Final Report for Well No. 14 was conditionally approved on October 22, 2010

The plan outlined below addresses the requirements of the NHDES Water Conservation Plan.

Project Owner.

Name: **Bruce Kirsch, V.P.**
Address: 40 University Drive, Rindge, NH 03461-0060
Company: **Franklin Pierce University**
Phone Number: 603-899-4080 FAX: 603-899-6448

Project Contact

Name: **Neil W. Helberg, P.E.**
Address: 44 Stark Lane, Litchfield NH 03052
Company: **Lewis Engineering, PLLC**
Phone Number: 603-886-4985

Certified Operator

Name: **Richard Emberley**
Address: Flanders Road, Henniker, NH 03242
Company: **Water System Operators, Inc.**
Phone Number: (800) 268-2263, F (603) 428-3525

In accordance to NHDES Administrative Rule EnvWq 2101.04, Water Conservation Rules, Franklin Pierce University will conduct the following water conservation measures subsequent to approval of new bedrock Well No. 14.

1. Franklin Pierce University presently has 4 bedrock wells presently in use:

FPU Well No. 8	19.5 gpm	28,080	ON
FPU Well No. 12	38 gpm	54,720	ON
FPU Well No. 13	38 gpm	54,720	ON
FPU Well No. 14	35 gpm	50,400	ON
FPU Well No. 7	6 gpm	8,640	OFF
	130.5 gpm	187,920	

Student and staff Population while school is in session is 1700 +/-.

There are no plans for expansion of the student population over the next 5 years.

Total Source Capacity Required under Env-Ws 372 85,000 gallons = 59 gpm

Average Daily water use during the school year is 75,000 gpd.

Maximum daily water use is approximately 95,000 gpd.

Average Daily water use in the summer is 30,000 gpd.

Source Meters:

- Raw water is metered prior to reaching treatment equipment at the pump house.
- 2-inch Badger bronze disk meters are installed on Wells No. 12, 13, and 14.
- A 1-inch Neptune meter is installed for Well No. 8.
- The meter for Well No. 7 was removed when the treatment for the wells in the Serenity Well Field was reconfigured. The water meter for Well No. 7 will be replaced if the well is placed back into service.
- The finish water meter leaving the pump house for the storage tank and distribution system is a 2-inch Badger magnetic flow meter. The meter is used to record system output and to pace chemical feed pumps.
- Source meters are read daily during the work week.
- Source meters will be calibrated every 2 years.
- The source water meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (EnvWq 2101.04 (d)).

Dormitory and Building Meters:

- There are two (2) meters installed in new dormitories on the south side of the campus and none on the main campus.
- Service meters will be installed in unmetered buildings within 3 years.

- Service meters will be read monthly during the school year and at the end of June.
- Service meters will be calibrated every 5 years.
- The service water meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (EnvWq 2101.04 (d)).

Athletic Field Meters:

- Irrigation meters will be installed at athletic field connections within 3 years.
- Irrigation service meters will be read monthly while in use during the Spring, Summer and Fall.
- Irrigation meters will be calibrated every 5 years.
- The irrigation water meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (EnvWq 2101.04 (d)).

Water Audit and Leak Detection:

Franklin Pierce University will conduct an ongoing water audit and leak detection program. The water audit and leak detection program will be conducted as described in "Manual of Water Supply Practices, Water Audits and Leak Detection", document identification number AWWA M36, 1999 as required by (EnvWq 2101.04 (g)). The distribution system will consist of less than 5 miles of pipe. The University will repair all leaks found during the water audit and leak detection program within 60 days of their discovery unless a waiver is obtained as required by (EnvWq 2101.04 (h)).

Franklin Pierce University will estimate the volume and percentage of unaccounted for water in the water system once every year using methods and procedures as described in AWWA manual M36, 1999, as required by (EnvWq 2101.04 (i)). If the percent of unaccounted for water exceeds 15% of the water introduced into the water system, then Franklin Pierce University will prepare and submit a response plan to NHDES within 60 days of the completion of the estimate. This response plan will describe activities that Franklin Pierce University will conduct to reduce the percentage of unaccounted for water to below 15% within 2 years. Upon receipt of NHDES approval of the response plan, the Town will conduct the activities outlined in the response plan following the approval schedule as required by (EnvWq 2101.04 (m)).

The water system has been designed consistent with water system industry standards and regulation and consistent with other public health and safety considerations in regards to minimum and maximum operating pressures as required by (EnvWq 2101.04 (n)). Pressures range from 35 psi to a slightly less than 100 psi. The areas having pressures greater than 80 psi, are located on the south side of the campus adjacent to the athletic fields. The dormitories to the south of the fields will have increased leak detection surveillance.

The water system only serves the university campus. Water conservation measures have been implemented including the installation of low flow devices on all water fixtures installed such as shower heads, sink faucets, appliances and toilets.

Franklin Pierce University will be conducting water conservation educational programs for its students and staff customers as part of their Sustainability Program. The educational programs will include posting of literature regarding water conservation practices. Information and materials will be those available from NHDES and AWWA. The University will conduct public notification and outreach activities as required by EnvWq 2101.11 which will include posting of literature regarding water conservation practices.

Franklin Pierce University will submit a report form supplied by the NHDES once every 3 (three) years documenting how compliance with the requirements of EnvWQ 2101 are being achieved.

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

Public Notification:

Within seven days of submitting this water conservation plan; the applicant will provide a copy of the application and report **via certified mail** to the Town of Rindge Selectmen and the Southwest Regional Planning Commission located in Keene. The Town and Regional Planning Commission may provide the NHDES with written comments regarding the application within 21 days of receipt. The information provided to the Town and Regional Planning Commission will include a summary of the requirements of Env-Wq 2101 and will request that the Town of Rindge and the Southwest Regional Planning Commission amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency.