SUSQUEHANNA RIVER BASIN COMMISSION
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Groundwater Withdrawal Application Summary

Source Name: Mountaintop Regional Water Authority - Well No. 2

SRBC Pending No.: 2024-107

This summary is only a portion of the application materials and is meant to provide general information about the proposed project.

1.1 Project Sponsor

Company Name:	Mountaintop Regional Water Authority
Mailing Address Line 1:	209 West Nectarine Street
Mailing Address Line 2:	PO Box 294
City:	Snow Shoe
State:	PA
ZIP Code:	16874

Contact Person:

First Name:	Dayne
Last Name:	Morgan
Title:	Head of Maintenance / Operator
Telephone:	(814) 360-6362
Fax:	
Mobile:	
E-mail:	mtrwa@verizon.net

1.3 Existing and Projected Facility Water Use

The usage should be entered in million gallons per day (mgd) and rounded off to the nearest one thousand gallons (three decimal places).

Projected Design Year:
2039

Total Project Water Usage	**Existing Usage (mgd)**	**Projected Usage For Design Year (mgd):**
Maximum 30-day Average Water Demand :	0.442	0.442
Maximum Daily Water Demand :	0.785	0.785
System Capacity :	0.75	0.75

1.4 Requested Withdrawal Amount:

Estimated Daily Hours of Operation per Day (Ex. = 5):	24
Maximum Instantaneous Withdrawal Rate (gpm):	200
Maximum 24-Hour Day (mgd):	0.288
Maximum 30-Day Average (mgd):	0.225

SUSQUEHANNA RIVER BASIN COMMISSION

WELL NO. 2 PROJECT FACILITY DESCRIPTION

FOR THE

MOUNTAINTOP REGIONAL WATER AUTHORITY

PREPARED BY:

GWIN, DOBSON & FOREMAN, INC.
3121 FAIRWAY DRIVE
ALTOONA, PA 16602-4475

OCTOBER 2024

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A. General Description of Project Facilities

The Mountaintop Regional Water Authority (MRWA) operates a public water supply system under PWS ID No. 4140090. Source water is primarily provided by two (2) groundwater supply wells located in Snow Shoe Township.

The groundwater supply wells were placed into service in 1999. A third test well was drilled near the supply wells and is not currently in use. At the time of drilling, Well No. 1 acted as an artesian source, while Well No. 2 was semi-artesian. Upon completion of the wells, the Pennsylvania Department of Environmental Protection (DEP) permitted the combined withdrawal of a maximum 400 gallons per minute (GPM) from the aquifer. In 2005, a gas well was constructed in the vicinity of the water supply wells. This gas well detrimentally affected the yield for the supply wells due to a loss in static head of the groundwater within the aquifer. It is believed that the loss in static head was caused by the puncturing of the bottom confining layer of the aquifer by the gas well and improper sealing of the gas well bore. As result of this loss in static head, the actual yield from Well No. 2 was reduced from 300 GPM to 200 GPM.

The raw water from the wells is treated with liquid sodium hypochlorite and a sequestering agent prior to entry into the distribution system. After chemical addition, the water is then directed to two (2) storage tanks. These two (2) tanks consist of a 500,000 gallon bolted steel tank land a 200,000 gallon welded steel tank known as the Snow Shoe Tank.

Well No. 2 consists of a 491 feet deep bore with 82 feet of 8-inch diameter steel casing to the surface adjacent to the existing well house. Ground elevation at this well is 1749 based on the North American Vertical Datum of 1988 (NAVD88), which is referenced to mean sea level (MSL). The ground elevation was obtained from a field instrument survey in the vicinity of Well No. 2 that was performed by Gwin, Dobson & Foreman, Inc. on March 8, 2022. A three phase, 50 HP Franklin Electric (Model No.2366188125) submersible pump within this well is set at a depth of 193 feet below ground level, or at an elevation of 1556.

The pump in Well House No. 2 is manually controlled in regards to the maximum rate of flow generated by the pump. The rate of flow is measured by a 4” Krohne magnetic flow meter (Enviromag 2000 F CSA) and displayed on a panel mounted display (Krohne Altometer Model No. IFC 100).

Groundwater level measurement at Well No. 2 was previously performed manually via a Solinst Model 102 water level sensor. The sensor probe was lowered into the well manually until the probe activated an alarm, at which point the depth indicated on the sensor line was recorded and compared to the ground elevation to determine the water level within Well No. 2. Manual measurement of the water level in Well No. 2 has been replaced with a Keller America Levelgage (S/N 197898) submersible level transmitter which has been set at a depth of 188 feet within the well. The output reading from level transmitter is then added to the placement elevation (1561) of the transmitter to obtain the water level within Well No. 2. Output from the level transmitter

is continually directed to a Sensaphone Sentinel cloud based monitoring system (S/N SCD-1200-4GVZSD) which allows real time remote access to the groundwater level in Well No. 2 via an internet based user interface.

A summary of all metering instrumentation located within each well house is listed in Table 1. The well houses structures consist of two (2) prefabricated shed that are approximately 12 feet x 10 feet in dimension. All metering and monitoring equipment is readily visible in this small area.

TABLE 1 – WELL HOUSE METERING EQUIPMENT SUMMARY

Well No.	Meter Manufacturer	Meter Size (in.)	Meter Model Number	Meter Serial Number	Meter Display Manufacturer	Meter Display Model Number	Meter Display Serial Number
1	Krohne	4	Enviromag 2000 F CSA	C12505441	Krohne	IFC 100	C12505441
2	Krohne	4	Enviromag 2000 F CSA	C12505447	Krohne	IFC 100	C12505447

Raw water is pumped from both wells to a separate chlorination building for the addition of chemicals for disinfection and sequestering of metallic ions within the raw water. The combined flow from the supply wells is delivered to the chlorination building via a 6-inch ductile iron (DI) main. The flow through this main is directly metered by a 6" Sensus OMNI compound meter. The meter has an integrated register that displays flow in the meter and there is no separate display.

Access to all three (3) of groundwater withdrawal facilities listed in this section can be provided to SRBC staff for inspection by contacting the Mountaintop Regional Water Authority at least forty-eight (48) hours in advance of the anticipated inspection.

B. Meter and Groundwater Level Recording Procedures

Groundwater Levels

1. Daily recordings of the groundwater level in both Well No. 1 and Well No. 2 are manually recorded in a log book. Quarterly reports of the recorded information is also submitted to SRBC's Monitoring Data website. All quarterly reports are due within thirty (30) after the close of the preceding calendar quarter. The end of each quarter is defined as March 31, June 30, September 30 and December 31 of the calendar year.

2. Recordings are maintained by MRWA and held on file for the duration of the approval by SRBC and any subsequent renewals.

3. Replacement or repair of any level sensing equipment is indicated in the log book on the date when said replacement or repair occurs. Information regarding the replacement (manufacturer, model, serial number, installation depth, etc.) is also recorded.

4. Periodic backup measurements of each well level are performed every six (6) months to verify that each method of daily measurement is accurate. It has been recommended that a manual level sensor is kept at one of the well houses for this purpose.

Well House Raw Water Meters

1. Daily recordings of the rate of flow and amount of raw water pumped are manually recorded in a log book. Quarterly reports of the recorded information are submitted to SRBC's Monitoring Data website. All quarterly reports are due within thirty (30) after the close of the preceding calendar quarter. The end of each quarter is defined as March 31, June 30, September 30 and December 31 of the calendar year.

2. Recordings are maintained by MRWA and held on file for the duration of the approval by SRBC and any subsequent renewals.

3. Replacement or repair of any meter or display is indicated in the log book on the date when said replacement or repair occurs. Information regarding the replacement (manufacturer, model, serial number, installation depth, etc.) is also recorded.

4. Withdrawal amounts from each well are totalized at the end of each month for comparison to the amount of flow recorded in the chlorination building meter.

5. Flow meters and displays are tested for accuracy and calibrated, if needed, on a yearly basis.

Chlorination Building Water Meters

1. Daily recordings of the rate of flow and amount of raw water received from the well houses is manually recorded in a log book which is to be maintained at the chlorination building. Quarterly reports of the recorded information are submitted to SRBC's Monitoring Data website. All quarterly reports are due within thirty (30) after the close of the preceding calendar quarter. The end of each quarter is defined as March 31, June 30, September 30 and December 31 of the calendar year.

2. Recordings are maintained by MRWA and held on file by MRWA for the duration of the approval by SRBC and any subsequent renewals.

3. Replacement or repair of any meter or display is indicated in the log book on the date when said replacement or repair occurs. Information regarding the replacement (manufacturer, model, serial number, installation depth, etc.) is also recorded.

4. Withdrawal amounts from each well are totalized at the end of each month for comparison to the amount of flow recorded in the chlorination building meter.

5. Flow meters and displays are tested for accuracy and calibrated, if needed, on a yearly basis.

C. Reasonable Foreseeable Need Analysis

The maximum calculated 30-day average withdrawal from Well No. 2 of 0.225 mgd occurred in 2017. The peak maximum daily withdrawal from the same well (0.392 mgd) also took place in the same calendar year. Well No. 2 is currently permitted by DEP with a maximum instantaneous withdrawal rate of 200 gallons per minute (gpm) or 0.288 mgd.

Regarding the potential for future growth of the service area, the residents of Snow Shoe Borough, Snow Shoe Township and Burnside Township are by and large the greatest users of water within the distribution system. The estimated yearly consumption is approximately 42.7 million gallons or at an approximate daily rate of 0.1170 mgd based on the meter readings for 2023. Information from the decennial censuses for the Years 2000, 2010 and 2020 for each of the municpalities revealed the following populations:

Census Year	Snow Shoe Borough	Snow Shoe Township	Burnside Township
2000	778	1,744	419
2010	765	1,746	439
2020	670	1,621	411

The population of all three (3) municipalities has remained relatively consistent or has dropped slightly, as is the case of Snow Shoe Borough, over the past 20 years. As such, it is anticipated that there will be little population growth during the 15 years from the time of renewal. A 30-day average withdrawal of 0.225 mgd with an anticipated maximum daily withdrawal of 0.392 mgd from Well No. 2 is projected to be sufficient for future water system demands when considering the combined withdrawal from Well No. 1.