SUSQUEHANNA RIVER BASIN COMMISSION
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Groundwater Withdrawal Application Summary

Source Name: Mountaintop Regional Water Authority - Well No. 1

SRBC Pending No.: 2023-072

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
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 :	0.195	0.2
Maximum Daily Water Demand :	0.393	0.253
System Capacity :	0.576	0.576

1.4 Requested Withdrawal Amount:

Estimated Daily Hours of Operation per Day (Ex. = 5):	24
Maximum Instantaneous Withdrawal Rate (gpm):	175
Maximum 24-Hour Day (mgd):	0.253
Maximum 30-Day Average (mgd):	0.2

SUSQUEHANNA RIVER BASIN COMMISSION

WELL NO. 1 PROJECT FACILITY DESCRIPTION

FOR THE

MOUNTAINTOP REGIONAL WATER AUTHORITY

PREPARED BY:

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

JULY 2023

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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 provided by two (2) groundwater supply wells located along Reservoir Road 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 located at 454 German Settlement Road and a 200,000 gallon welded steel tank known as the Snow Shoe Tank. The German Settlement Tank is located within Burnside Township. The welded steel tank is located in Snow Shoe Township at the end of West Laurel Lane.

Well No. 1 consists of a 375 feet deep bore with 129 feet of 8-inch diameter steel casing to the surface adjacent to the existing well house. Ground elevation at this well is approximately 1725 based on the North American Vertical Datum of 1988 (NAVD88), which is referenced to mean sea level (MSL). This elevation was obtained from LiDAR information obtained from the Pennsylvania Spatial Data Access (PASDA) clearinghouse. A three phase, 50 HP Franklin Electric (Model No. 2366188125) submersible pump within this well is set at a depth of 180 feet below ground level, or at an elevation of 1545.

The pump in Well House No. 1 is manually controlled in regards to the maximum rate of flow generated by the pump. Pump shutoff is controlled via cellular telemetry and is based on tank levels in the storage tanks mentioned above. 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 levels at Well No. 1 are determined via an absolute air pressure measurement. Air line tubing is placed within the well to the pump elevation and is pressurized by a Gast 1/8 HP air compressor (Model No. ROA-P151-AA, S/N 5Z669). Compressed air is then pumped through the line until all the water is expelled. A pressure gauge attached to the pressure line is read and the maximum gauge reading is recorded. The pressure reading is then converted in to pounds per square inch (PSI) by multiplying the gauge reading by a conversion factor of 2.307

feet / psi to obtain the water level in feet. This converted gauge reading is then subtracted from the ground elevation (1725) to obtain the water level within Well No. 1.

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. Please refer to Table 2.

Access to all three (3) of 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 shall be manually recorded in a log book. Recording should be preferably performed at the same time each day. Quarterly reports of the recorded information shall be 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 to be maintained by MRWA and must be held on file by MRWA for the duration of the approval by SRBC and any subsequent renewals.

3. Replacement or repair of any level sensing equipment should be 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.) should also be recorded.

4. Periodic backup measurements of each well level shall be performed every six (6) months to verify that each method of daily measurement is accurate. It is 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 shall be manually recorded in a log book. Recording should be preferably performed at the same time each day. Quarterly reports of the recorded information shall be 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 to be maintained by MRWA and must be held on file by MRWA for duration of the approval by SRBC and any subsequent renewals.

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

4. Withdrawal amounts from each well should be 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 shall be 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 shall be manually recorded in a log book which is to be maintained at the chlorination building. Recording should be preferably performed at the same time each day. Quarterly reports of the recorded information shall be 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 to be maintained by MRWA and must be held on file by MRWA for duration of the approval by SRBC and any subsequent renewals.

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

4. Withdrawal amounts from each well should be 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 shall be 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. 1 of 0.195 mgd occurred in 2018. Similarly, the peak maximum daily withdrawal from the same well (0.393 mgd) also took place in the same calendar year. These two (2) parameters are being used as the basis for the withdrawal requests to SRBC.

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 withing the distribution system with an estimated yearly consumption of approximately 44 million gallons or at an approximate daily rate of 0.12070 mgd. 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 in 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 0.200 mgd with an anticipated maximum daily withdrawal of 0.253 mgd is projected to be sufficient for future water system demands.