

## **SYSTEM OVERVIEW**

### **System Operator Classification: D-1**

William Capron, System Operator

#### **GENERAL:**

The Prudence Island Water District (PIWD) community water system is located on Prudence Island and is serving approximately 350 service connections. As many homes on the island are vacation/weekend homes, and there is no census data available, it is determined that the average number of people served by PIWD is 608 persons.

Total water produced by the PIWD for the year 2017 is 6.7 million gallons with an average of 17,956 gallons per day (gpd). PIWD is an un-metered system so it is not possible to determine if there are leaks. During the off season, at least 240 service connection are "winterized".

#### **SOURCES:**

**Army Well (AKA Harris Well)** is located on Army Road. This 6 in diameter well is drilled to a depth of 291 ft and extends 2 ft above grade. This well has a Goulds submersible 2 hp pump with a rated capacity of 3-11 gpm (varies depending on the time of year). This well is presently used as the primary source.

Indian Springs Wells #1 & 4, and Bristol Colony Well are considered the backup sources of water supply for the system.

**Indian Springs Well # 1** is located off Homestead Avenue east of Mill Creek. This 6 inch (in) diameter well drilled to a depth of 467 feet (ft) extends about 3 ft above grade and is located in a wooden box with a slanted roof wooden cover. This well has a Goulds Model # 10GS15-412C 2 hp submersible pump with a rated capacity of 22 gallons per minute (gpm) placed approximately 140 ft below ground surface (bgs). This well was taken out of service and surged to increase production in 2013.

**Indian Springs Well # 4** is located off Homestead Avenue 15 ft east of Mill Creek. This 6 in diameter well is drilled to a depth of 438 ft, extends 15 in above grade and is located in a wooden box with a slanted wooden cover. This well has a Goulds 3 hp submersible pump with a rated capacity of 42 gpm and the pump is placed 170 ft bgs.

**Bristol Colony Well (aka Broadway-DeWitt)** is used as a back-up supply. This 6 in diameter, 105 ft deep well extends 18 in. above the 5 ft deep cement vault with a cement metal-rimmed cover. This well is equipped with a submersible pump, a new flow totalizer with a restrictor capacity of 5 gpm. This well was to be placed on inactive status and testing would be discontinued but it was not to be abandoned.

The following wells are no longer being utilized:

**Broadway Well # 1** is not in use. Survey 1996 response stated that this well had been disconnected from the system and further correspondence dated 3/12/97 stated that the Broadway Well was to be placed on inactive status and testing would be discontinued but it was not to be abandoned.

**Indian Springs Dug Well** has been physically disconnected from the system.

**Goulet Well** is not in use and is physically disconnected. Correspondence dated 3/12/97 stated that this well has been deactivated with all equipment and structures removed. Ownership of this well has been transferred to the Prudence Island Water District.

Navy Well is owned by RIDEM and was at one time leased on a 20-year basis to Prudence Island Utility Corporation (owner of the PWS prior to the creation of the PIWD in 2004). The lease had expired prior to PIWD purchase of the PWS and the PIWD has no intention to renew the lease.

Source ID	Facility Name	Local Name	Type	Availability
WL001	W1-Bristol Colony		WL	P
WL007	W1-Army Well		WL	P
WL008	W1-Indian Spring #1		WL	P
WL009	W1-Indian Spring #4		WL	P

Type: WL=Well CC=Consecutive Connection

Availability: P=Permanent E=Emergency S=Seasonal I=Interim O=Other

#### STORAGE:

In 2003 a 100,000 gallon vertical, cylindrical atmospheric tank was constructed. The overflow for this tank is at 149 ft. mean sea level elevation and the tank discharges via a below grade valve vault (also constructed in 2003). Also, located within the Broadway Booster Station are two Well-X-Trol WX-350 pressurized storage tank. These tanks operate in conjunction with the Army Well.

Storage ID	Facility Name	Local Name	Storage Type	Construction Material	Comments
ST001	St-Storage Tank 1	BIG BLUE	Reservoir	Steel	100,000 GAL RESERVOIR STORAGE TANK, LOCATED ON ROGER WILLIAMS LN BETWEEN SUNSET HILL AVE AND ALLENS LN. OVERFLOW ELEVATION IS 149 FT ABOVE MEAN SEA LEVEL. BOLTED CARBON STEEL PLATES AND GLASS FUSED.
ST002	St-Storage Tank 2	AMTROL WELL XTROL WX-350 (2)	Hydro pneumatic	Steel	TWO WELL XTROL WX-350 TANKS LOCATED ON BROADWAY

#### PUMPS/PUMP FACILITIES:

Broadway Booster Station houses an Aeromotor 1 hp centrifugal pump with a 5 gpm capacity and a Burkes 1 hp centrifugal pump with a 5 gpm capacity. These pumps operate in a lead/lag operation; the lead pump comes on at 41 psi and off at 52 psi 2nd pump comes on at 38 psi and off at 52 psi.

#### DISTRIBUTION:

PIWD distribution system is located on the eastern side of the island. It extends as far south as the Broadway vicinity and as far north as Warner and Raphael Ave.

#### OTHER:

A new 40 kW, 440 volt, 3 phase propane generator is in place at the Indian Spring Well Site. A new 13 kW, 210 volt, single phase propane generator is in place at the Army Camp Well Site.