Project Overview
This project is an outgrowth of the Public Service Program of the Center for Groundwater Science (CGS) at the Illinois State Water Survey. For over 50 years, the CGS has provided groundwater information to any requesting individual, commercial facility or public water facility. Groundwater resource assessments have been an integral part of this public service and have been undertaken for thousands of individuals and facilities throughout its history. Community groundwater supplies that have been identified as potentially “deficient” are the targets for this project. The criterion used for determining community deficiency were; 1) Water Supply and Demand (operating time), 2) Aquifer Limitation, 3) Well Specific Capacity, and 4) Facility History. The Village of Mount Pulaski has been identified as a target community for groundwater assessment through this project.

Project Goal
To provide a resource tool of pertinent groundwater information to each target facility. This document describes a summary of historic information, current conditions and the potential for expansion of the water supply within 5 and 10 miles of Mount Pulaski.

Mount Pulaski (Logan County)
The Mt. Pulaski Public Water Supply (Facility Number 1070400) utilizes three active community water supply wells. Well Nos. 4, 5 and 6 (Illinois EPA Nos. 50221, 50222 and 50223, respectively) combine to produce approximately 175,000 gallons per day delivered to 850 service connections and serve an estimated population of 1,800. Major Consumers include The Nursing Home, Fertilizer Plant and Mt. Pulaski Products, Inc.

Mt. Pulaski was determined to be "Adequate" by the project criteria and this report serves as a summary of information should they need to increase their current supply.

**Historic Information**

**Background Well Information**

**Well No.4 (#60-1)**
Finished in shallow sand and gravel deposits associated with Salt Creek which is located about 2 miles north of town in Section 35, T.19N., R.2W., Logan County. The well was drilled to a depth of 34 feet in 1960 and, upon completion, was pumped at 100 gpm for 3 hours with 2.2 feet of drawdown. Calculated specific capacity from this test was 45.5 gpm/ft. Static water level was reported as 14 feet below land surface.

**Well No.5 (#63-2)**
Finished in shallow sand and gravel deposits associated with Salt Creek which is located about 2 miles north of town in Section 35, T.19N., R.2W., Logan County. The well was drilled to a depth of 32 feet in 1963 and, upon completion, was pumped at 100 gpm for 4 hours with 2.1 feet of drawdown. Calculated specific capacity from this test was 47.2 gpm/ft. Static water level was reported as 12.52 feet below land surface.

**Well No.6**
Finished in shallow sand and gravel deposits associated with Salt Creek which is located about 2 miles north of town in Section 35, T.19N., R.2W., Logan County. The well was drilled to a depth of 38.5 feet in 1976 and, upon completion, was pumped at about 200 gpm for 3 hours with 10.15 feet of drawdown. Calculated specific capacity from this test was 19.9 gpm/ft. Static water level was reported as 8.25 feet below land surface.
**Background Pumpage Information**

![Mount Pulaski Pumpage Graph](chart)

Source: ISWS Illinois Water Inventory Program

**Historic Population Information**

![Mount Pulaski Population Chart](chart)

Source: ISWS Illinois Water Inventory Program
Regional Information

Resources within 5 miles of Mount Pulaski (Figure 1).

*Domestic Groundwater Supplies*

The available regional data indicate that groundwater for domestic and farm use in this part of Illinois is obtained from large-diameter bored wells and from small-diameter drilled wells finished in the unconsolidated materials above bedrock. The large-diameter bored wells tap stringers or lenses of silt, sand, or gravel only a few inches thick contained in the unconsolidated materials above bedrock. They range in depth from about 26 to 65 feet. The yield of this type of well is limited to a few hundred gallons per day and may be only barely adequate for normal household uses.

The small-diameter (4- to 6-inch) drilled wells are finished within sand and gravel deposits found within the unconsolidated material above bedrock. These wells range in depth from 37 to 93 feet. Upon completion, these wells were pumped at rates of 3 to 60 gallons per minute for short periods of time.

*Municipal Groundwater Supplies*

There is one town located within five miles of the Mount Pulaski well field; the Village of Lake Fork to the Southwest. Lake Fork does not report a public water supply system and it is assumed that private domestic well supplies furnish the residents with their current water needs.

Resources within 10 miles of Mount Pulaski (Figure 2).

*Municipal Groundwater Supplies*

Towns within 5 to 10 miles of Mount Pulaski include: Broadwell, Chestnut, Cornland, and Latham all within Logan County. Cornland does not report a public water supply system and it is assumed that private domestic well supplies furnish the residents with their current water needs.

The Village of Broadwell uses two water wells for its supply. Well No.1 is finished in sand and gravel at a depth of 48 feet. Well No. 2 is within 300 feet of Well No. 1 and is finished at a depth of 53 feet. These wells are located about 2 mile east of town in Section 33, T.19N., R.3W., Logan County. Each well reportedly pumps around 45 gpm.

Chestnut is part of the Beason-Chestnut Public Water District. This supply uses one well, located in Section 26, T.19N., R.1W., Logan County, for its main supply. Well No.1 is finished in sand and gravel at a depth of 50 feet. It reportedly pumps about 125 gpm. Well No.2, located in the same section, provides their backup supply. It was completed at a depth of 48 feet and reportedly pumps about 120 gpm when needed.
The Village of Latham, located about 7 miles southeast of Mt. Pulaski, currently uses three wells for its supply. Their main well (Well No. 6), is located in Section 10, T.17N., R.1W. Logan County. This well is pumped at around 100 gpm to secure the village needs. The other two wells (Nos. 2 and 4), are used as backups and are both located in Section 35, T.18N., R.1W., Logan County. These wells, when used, are pumped at a total rate of about 50 gpm and are used only when Well No. 6 requires service. All three wells are finished in alluvial sand and gravel deposits associated with South Fork Creek. Well No. 6 if finished at a depth of 75 feet, Well No. 2 at a depth of 74 feet, and Well No. 4 at a depth of 67 feet below land surface. Upon completion, these wells were pumped at rates of 70 to 100 gpm for short periods of time.

Figures 3 and 4 picture the ISWS Potential Yield maps for sand and gravel and bedrock aquifers in Illinois, respectively. The pertinent counties for Mount Pulaski are highlighted. Figure 3 indicates that sand and gravel deposits are variable throughout the local Mount Pulaski area with some major buried bedrock aquifers to the north and west of the town. The bedrock map (Figure 4) indicates poor availability of groundwater from the bedrock throughout the Mount Pulaski area. Figures 5 and 6 present the probability of occurrence of the sand and gravel and the water-yielding character of the shallow bedrock for the Mount Pulaski area as depicted in the Illinois State Geologic Survey Circular 248, *Groundwater Geology in East-Central Illinois* (Selkregg, et al., 1958). Figure 5 indicates “Fair to Good,” variable and discontinuous sand and gravel deposits and the possibility of thicker sequences of sand associated with a buried bedrock valley, to the west of town. Figure 6 indicates only small supplies are available from the shallow bedrock units. The domestic well construction records verify these map outlooks.

**Groundwater Availability Summary**

The City of Mt. Pulaski currently uses three wells for their water supply. These wells are finished within the alluvial deposits of Salt Creek at depths ranging from 32 to 39 feet below land surface. These wells are pumped at rates of 75 to 150 gpm for their supply. The available information indicates that these sands, although shallow, are capable of supplying the village with its current groundwater needs. Should the village need to expand, development within the Salt Creek bottoms should be considered. These deposits appear to be high-yielding sands that have been a good source of groundwater for the village for many years. Proper spacing between any new wells should be determined through well and aquifer testing, should any new well be planned.
Figure 3.
Estimated Potential Yields of Shallow Bedrock Aquifers in Mount Pulaski Area

Figure 4.
Figure 5.

Figure 6.
References


ISWS publications list for the Mount Pulaski and surrounding areas.

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