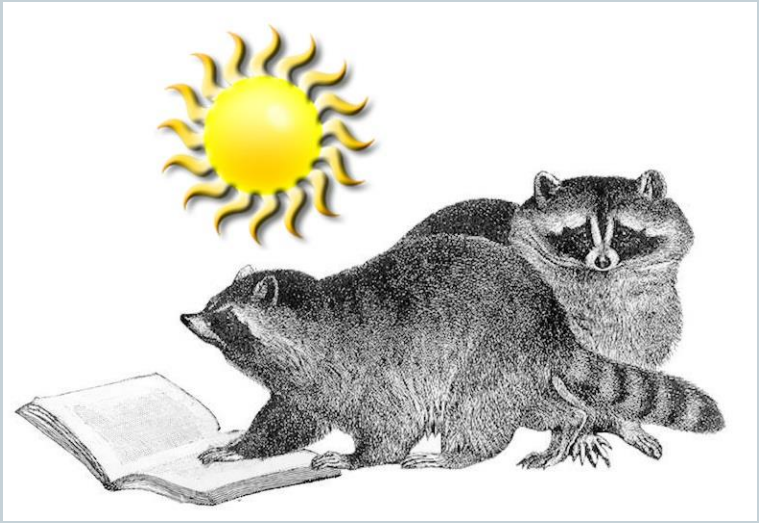
Amesville Water System



Amesville Water System

- Water system timeline
- System built in 1960's
- Tank telemetry failed 1970's
- June 2012 duracho and electric outage
- May 2013- 29 EPA citations (see copy)
- June 2014 started consultation with Triad Engineering
- September 2014 Sunday Creek Approached
- November 2014 seeking funding for upgrades
- April 2015 check valve failure, well pump fail, chlorination failure
- April 2015 Aerator failure
- May Steve Adams hired as Water Operator
- May Check valve replaced, well pump replaced, wells cleaned, chlorinator tied to pump circuit, bad pipes/valves replaced, service pump float installed, lines flushed

Amesville Water System 2013

Amesville Water System 2014

Amesville Water System 2014

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- Consideration of upgrades to Amesville water began after 2013 Report from Ohio EPA with 29 violations. The village was not fined on any of the items.
- Examples:
- Drawdown of the wells is not currently being measured. Drawdown measurements give you important information about your wells. You can combine drawdown data with well yield to evaluate the efficiency and performance of a well. It is recommended that drawdown measurements be taken at least annually and compared with historic values. Measurements should be taken in the driest part of the year.
- The chemical feeders have not been calibrated to ensure consistent feed rates. Chemical feeders should be regularly calibrated to ensure proper chemical dosing and to monitor their conditions.
- There is no valve exercising program to help maintain the system components in an operable condition. A valve exercising program should be developed to ensure that line breaks can be isolated and drained for repair.
- There is no secondary containment for the calcium hypochlorite. Liquid storage tanks must have a receiving basin capable of receiving accidental spills or overflows without uncontrolled discharge.
- The tank is showing signs of deterioration. This tank should be repaired as needed and painted to protect the integrity of the tank. Tanks should be inspected inside and out every five years.

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- In 2014 Triad Engineering was brought in to make recommendations on the Amesville system.
- Overall: The Village of Amesville currently serves approximately 84 water customers. The number of customers fluctuates minimally throughout the year. The present water treatment facility was constructed in approximately 1950. A project was completed in 1989 to replace the filter and chlorinator, and rebuilt the aerator and detention tank. It is a ground water system with a design capacity of 43,200 gpd (gallons per day) with a
- maximum usage of 37,000 gpd.

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- Current operations

- The Village has two (2) existing wells (6 and 7). Raw water is supplied by the two (2) wells presently in service. Well No. 6 was drilled on September 3, 1985. Well No. 7 was drilled on November 26, 1987. Both wells have a pumping capacity of 30 gallons per minutes each. There is no existing SCADA system. The village does not own the property the wells are located on.

- Water treatment consists of aeration and calcium hypochlorite to remove iron and manganese. Disinfection is achieved by the means of chlorination at the filter. Filtration consists of sand and gravel media. The Village Water Treatment Plant (WTP) has one (1) 3,242 gallon detention tank and one (1) 100,000 gallon steel ground water storage tank.

- The water distribution system consists of approximately four (4) miles of cast iron and limited amounts of PVC water lines. The lines range in size from four to eight inches. It is unknown when the water distribution system was originally constructed.

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- Two of the main Triad recommendations
- The 100,000-gallon water storage tank is located on a hill 1,850 east by northeast of the water treatment plant. There is no access road to the tank, decreasing the likelihood of frequent inspection and maintenance. An interview of the operator indicated the interior of the tank has not been inspected or painted during the last 27-years. This tank lacks proper security (fencing) and has no level indictor. Further, the tank's overflow is not sealed, increasing the risk of insects, rodents, birds, or other animals entering the tank and contaminating the water supply.
- The water treatment plant needs significant improvement. The structure of the building is in fair condition, however it lacks proper ventilation and security. As a result, a corrosive environment exists in the interior of the building that houses the treatment system. Additionally, the structure lacks proper security, making it susceptible to vandalism and a compromise to the safety of the Village's water supply.

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- Other recommendations:
- The detention tank is in poor condition, with extensive heavy corrosion on the exterior. This tank has reached the end of its useful life, and may begin to experience structural failures and significant leaks in the near future. The tank is also open to the atmosphere, increasing the risk of accidental or intentional water supply contamination.
- The filter tank, like the reaction vessel, has reached the end of its useful life. The exterior of the tank is corroded, and the tank itself is obsolete, making replacement parts difficult to locate. The system has no means of measuring pressure drop. Piping associated with the treatment process is corroded, and several valves are in poor condition. One valve had a significant leak during two separate visits to the plant.
- The plant's chemical feed system is inadequate, consisting of an open-top drum and an unmetered feed pump. Chemical storage lacks secondary containment. Like other components of the treatment system, the aeration system (located on the roof of the treatment system building) is deteriorated and may experience failure in the near future.

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- What next:
- Capacity tests to see if extra well is needed
- Repair items where Village can take lead: detention tank, filter, pipes, valves, aerator, etc
- Scale down unnecessary items in PER
- Seek more funding: USDA, ARC, OWDA
- Bid out contracts