Skyline Improvement and Service District

Standard Operating Procedures- Water

 (September 16, 2021)

**Weekly**:

**Read source water meter and record water production**.

You should have a working, properly calibrated master water meter at each source of supply to accurately measure and record production. Take routine source-water meter readings and record them in a log. Calculate the amount of water used during a time period, usually weekly, by subtracting the previous meter reading from the current meter reading. You can use data on your water system’s water use throughout the year to evaluate source capacity, water rights, unusually high or low flows, excessive leakage, reduced pump output, and unauthorized water use.

**Record level of water in sight glass and psi on pressure gauge on top of tank.**

When the pressure tank reaches about 59 psi, it will signal to the wells to start. The well will run until the pressure gauge reaches about 64 psi.

If sight glass is completely full, then make adjustments to timer on air compressor. Increase air compressor run time to introduce more air into the tank. Ideally, the well cycle will start at 10-30% on the sight glass and rise to 60-90%. Make adjustments as needed to achieve these parameters.

**Check for leaks and fix them immediately.**

Excess moisture in a well house or pump house can lead to premature failure of electrical control systems and create unsafe conditions for operators. Fix any leak you see as soon as possible.

**Make sure the heating and cooling systems are working.**

Check heaters weekly throughout the winter to ensure they work properly. Check ventilation and cooling systems during the hottest portion of the year to be sure there is proper ventilation in the pump house. Extremely high temperatures may damage electric motors.

**Check and record water levels in hydro-pneumatic pressure tanks.**

Maintaining pressure in these tanks is important for maintaining adequate pressure to the consumers. Hydro-pneumatic tanks can overfill, or waterlog, at times affecting overall system pressure. Monitoring pressure can help an operator identify leaks, open valves, and even well pump problems. Hydro-pneumatic tanks should have a sight tube installed so you can visually check the water level in the tank. Often, condensation that forms where water cools the metal on the lower portion of the tank makes the water level obvious. You can also detect this temperature difference by touch.

Record the pumping rate for each well or source water pump.

Record the pumping rate from your well or source water pumps. You can do this if your system has a meter that registers flow. A change in pumping rate can indicate a pump problem. Remember, pumping rates will vary based on the water level in the well. For example, the pump produces less when the well is drawn down from the static water level to the deepest pumping level or the pump is pumping against a high head.

**Ensure fire hydrants are accessible**.

Fire hydrants provide water for fire fighting and are a means to flush the system. The hydrants should be easy to get to and highly visible. This includes removing snowdrifts during the winter.

**Monthly**:

Total Coliform sampling.

Take total coliform sample at residence as indicated in RTCR site sample plan approved by EPA. Submit sample to Teton County Public Health Water Lab.

**Check generator.**

Record run hours on generator and check oil and fuel levels.

**Check wells**.

Run each well in hand briefly to check operation. Listen for contactor that starts well pump motor.

**Bi-Annually**:

**Inspect and test standby power generation systems.**

You should test your emergency power generators and transfer switch controls periodically to ensure they are in proper operating condition.

**Fire Hydrant Flags**.

Install hydrant flags in late fall to keep hydrants visible in deep snow. Remove hydrant flags in spring and store in pump house.

**Operate gate valves**.

Use a gate key to operate all gate valves on system. Do not leave gate valves fully open, always back off a quarter turn from fully open to prevent seizure. Operate gate valves slowly. Record the number of turns to open valve and date of operation.

**Air Relief Valves**.

Check operation of air relief valve in vault to east of tank building.

**Pressure Reducing Valve**.

Check pressure reducing valve and vault for leaks. Check pressures on upstream and downstream gauges.

**Well Vaults**.

Check well vaults for leaks and groundwater infiltration.

**Annually**:

**Flush hydrants**.

Flush all hydrants in system (4 total currently) in the spring for at least 5 minutes or until water runs clear. If operator notices sediment or it takes an unusually long time for water to clear, flush bi-annually (Spring and Fall).

**Water testing**.

Conduct water testing as required by EPA for radionuclides, nitrates, asbestos, Inorganic chemicals, volatile organic chemicals, synthetic organic chemicals, and lead and copper.

Clean tank house.

Remove leaves, dirt, and debris from pump house floor.

**Generator**.

Schedule oil change and generator service.

**Leak Detection**.

Conduct a water audit and leak detection program. You should determine water loss by comparing water production records to water use. Water loss isn’t always a physical leak in the system. It can result from main breaks, inaccurate or broken meters, theft, and errors in the billing system. Undetected water main leaks create conditions that put a water system’s capacity to supply safe and reliable drinking water at risk.

**Inspect wellheads**.

Wellhead covers, or seals, keep contaminated water and other material out of the well. Visually inspect all well covers and pump platforms. They should be elevated above the adjacent finished ground level, sloped to drain away from the well casing, and free of cracks or excessive wear. Check for and remove any potential microbiological or chemical contaminant threats from within 100 feet of the well.