

## Automated Remote Control for Water Systems

The Mission Tank and Well System maintains the water level in a storage tank by automatically sending commands that signal remote well or booster pumps to turn on and off. The system relies on standard Mission 800 series remote terminal units (RTUs) and a transducer to measure the tank level. There are no radio networks, computers or programmable logic controllers (PLCs) to maintain. It is low cost and easy to set up.

### How It Works

The RTU at the water tank continuously transmits level information to a nearby cellular tower. This RTU may be connected to other equipment such as chlorine monitors or other alarm inputs and can be solar powered. Status data packets are transmitted through a secure private network connection to Mission servers. When the tank level is outside the user configurable level boundaries, a command is automatically sent to output relays on the same RTU or remote RTUs to energize pumps or valves and refill the tank. The Tank and Well software supports up to five pumps.

Real-time notifications and reports inform operators of high pump starts, excessive pump runtimes, AC failure, low battery, and more. The 123SCADA web portal allows an operator with appropriate security credentials to adjust the pump on/off trigger levels and view current level readings. Trending graphs and reports are accessible on desktops and through the 123SCADA app on smart phones and tablets.

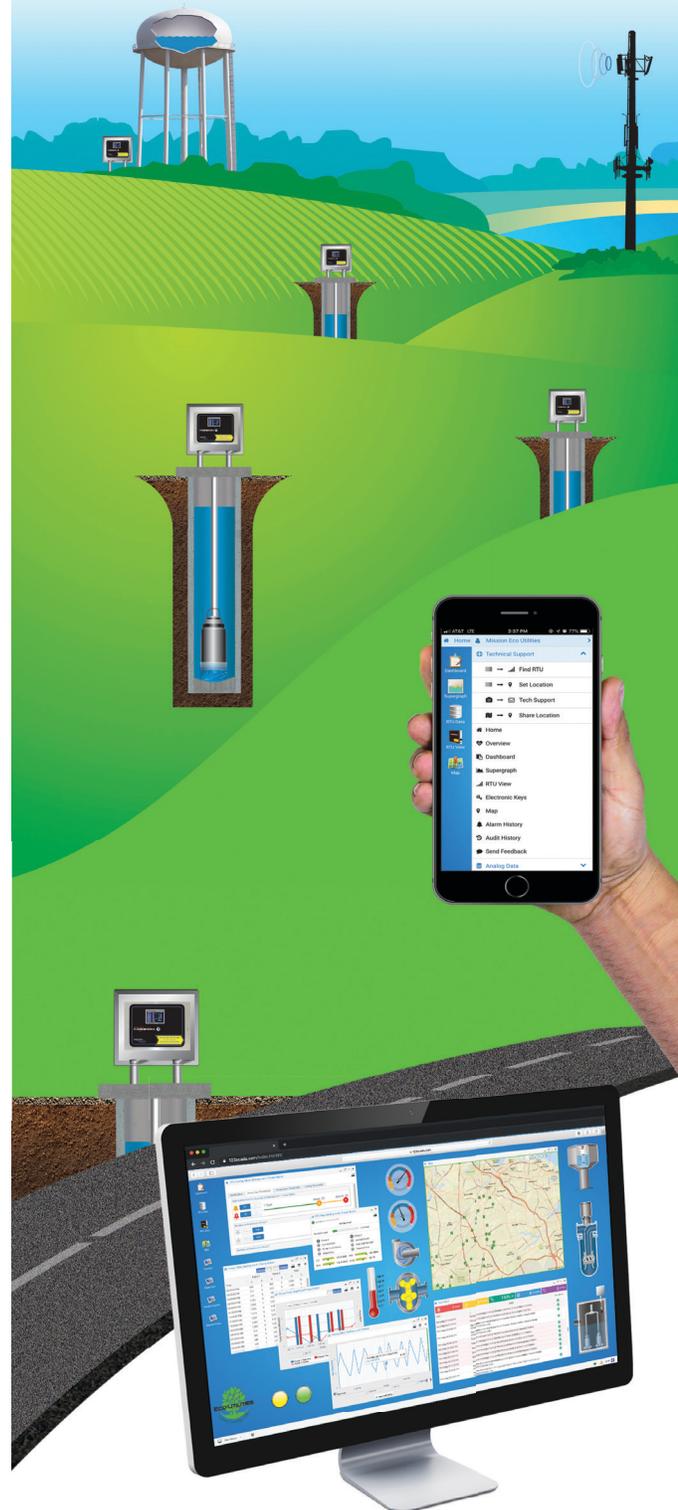
### Optimization and Money Saving Features

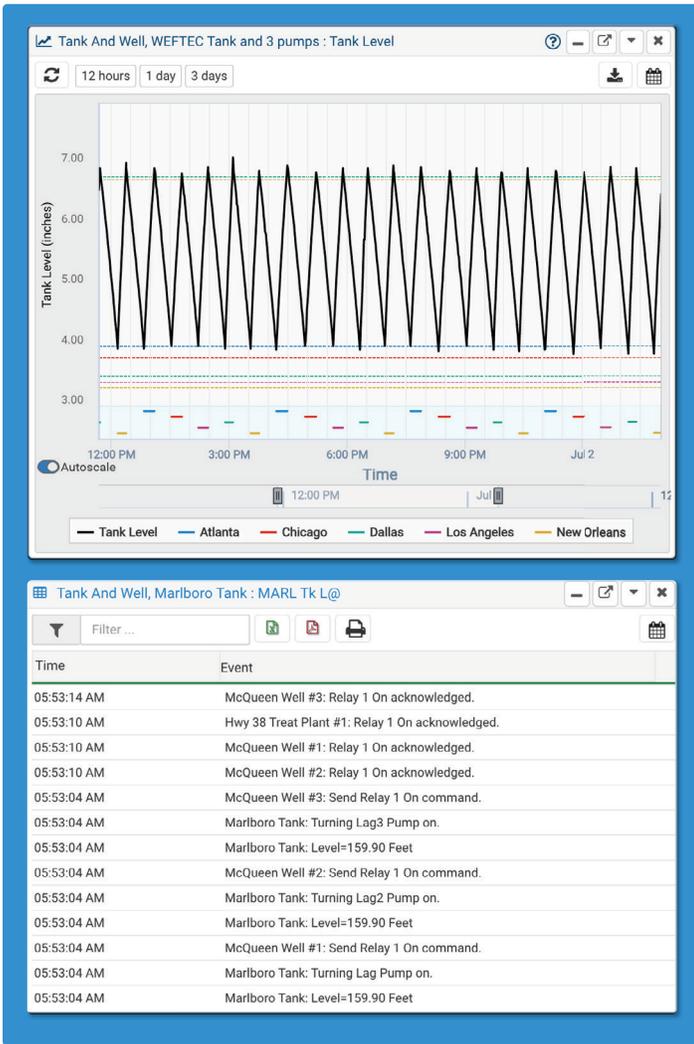
The software includes a virtual pump alternator feature which cycles through each well pump connected to a Tank and Well system. It can be set up to evenly distribute pump runtimes across all wells or alternate the lead pump to favor the well that has had the least water production in the last one to seven days.

Maximum runtimes can be set for each pump, and the system will alternate to the next pump once the maximum runtime is reached. This reduces the risk of damaging the water table by over pumping.

An off-peak force fill feature is available to save money by filling a tank when electricity rates are lower than peak hour rates.

Behind-the-scenes business logic is available to notify of abnormal situations that can affect system performance. For example, a “call-to-run fail-to-run” alarm notification can be dispatched by the system if the well pump does not run when instructed. This could happen if the well is without AC power, an operator has locked the pump out locally — typically with the hand-off-auto (HOA) switch, or the pump requires service (motor burnt out). More information is available in our document Best Practices for Remote Control, which can be found on the 123SCADA web portal.





On the 123SCADA web portal the customer can view:

- Current and historic tank levels
- Real-time well call and run status

With administrator credentials the operator can:

- Set well control points
- Enable and disable alternation
- Manually run or lock out individual wells via virtual HOA switch
- Set high and low alarm points

What is needed:

At the tank

- MyDro 850 RTU (PN M851, M852, M852L, M853)
- 800 Series Service Package for real-time alarms and streaming data (PN SP850–12/24/36)
- Tank and Well Control Package (PN SW587)
- 4–20 mA or 0–5 V analog level sensor, various PSI ranges (PN IT47X)
- Level sensor surge suppressor (PN IT482)
- Antenna extension kit, various lengths, optional (PN RF41X)

At each well

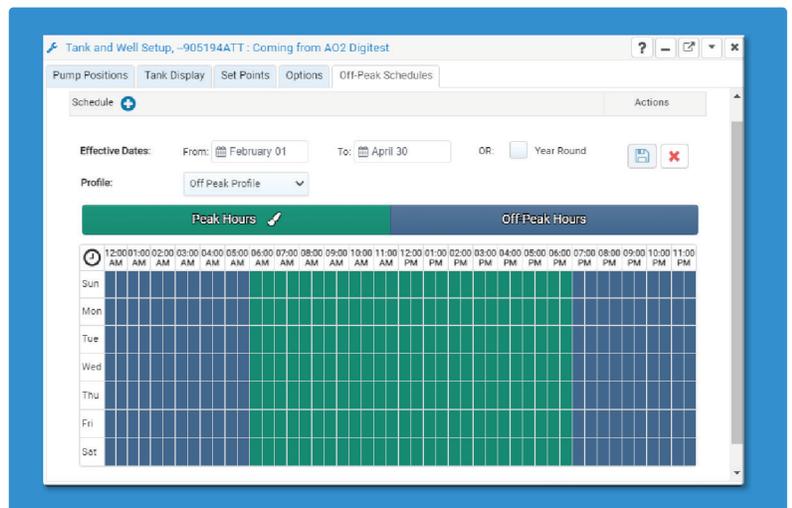
- MyDro 850 RTU (PN M851, M852, M852L, M853)
- 800 Series Service Package for real-time alarms and streaming data (PN SP850–12/24/36)
- Interposing relays (PN PW479 or PW480)
- Antenna extension kit, various lengths, optional (PN RF41X)

Refer to the MyDro data sheet, the accessories catalog, and Best Practices for Remote Control document for more information.

## Off-Peak Schedules

Off-Peak Schedules allow users to control the filling of their tanks to a different level during off-peak hours to take advantage of lower utility costs. By keeping the levels high during the off-peak period the tank will be nearly full at the start of the peak period where energy costs are higher. Depending on the size of the tank and demand for water the pumps may not need to run at all during the peak period.

Configure off-peak schedules from the 123SCADA web portal using the following navigation path: Start Menu > Applications > Tank and Well > Wrench > Off-Peak Schedules



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