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TECH TALK

THE RISE OF SMART TRUCKFILL STATIONS

BY GARY BEERS • FOR ENERGY PIPELINE

FIRE HYDRANTS - THE ORIGINAL, INEFFICIENT, AND HIGH-RISK TRUCKFILL STATIONS

While hydrants connected to public water distribution systems originally serve to provide emergency water for fighting fires and a means for flushing out unwanted aged water, there has been widespread expansion of hydrants as a temporary water supply (truckfill stations) for a variety of users (i.e., city departments, city contractors, utility contractors, subdivision developers). In oilfields neighboring urban areas, the demand for water to hydro-fracture oil/gas wells has resulted in tanker trucks lining up at hydrants in the nearest residential neighborhoods to access water - which is not without objections from local residents.

The growth in the use of this temporary water supply system generally has out-paced the practices that control water withdrawal, and significant problems can result. For example, backflow contamination can result from materials contained in connecting hoses; excess water can be withdrawn or wasted since many withdrawals are recorded based on a "honor system"; actual identity of the customer is not verified; and there is a time lag between actual water withdrawals and billings for water. Not a small concern is the vagueness of the water withdrawal operations and compliance with legal rights to use water, especially in states such as Colorado, where essentially all water is appropriated to identified uses.

SMART TRUCKFILL STATIONS

During the past 15 years, smart truckfill stations have been developed to support the continued operation of the above temporary water system,

while reducing the problems, and they are used in hundreds of locations. Many are located in and near the oilfields in the Western states.

The smart truckfill station is a stand-alone, automated bulk-water dispensing system with key capabilities supported by monitoring software: to receive water, users must enter an access code and report the volume of water; water heating and screening is available; backflow prevention devices are present at the connection; water usage reports and invoices can be rapidly produced and sent to the customer. Also, onsite payment with a credit card is an option; customers with unpaid accounts can be locked out; and operations are monitored in real time at location of station owner. The latter includes visual monitoring of activities at the truckfill station. One state requires that all records of dispensed water be concurrently transmitted via the Internet to their state water engineer for evaluation of compliance with water use laws.

There are many types of smart truckfill stations - ranging from larger units in city utility yards to small units located to provide a temporary service. For example, a portable, skid-mounted, smart truckfill station can be



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installed over a fire hydrant. The power source is a solar panel on top of the unit.

Likewise, a unit could be installed over a domestic water well and provide water to authorized users. For example, this arrangement is in place in remote areas of tribal lands in New Mexico.

While most smart truckfill stations provide access to water, other liquids can be dispensed through these units. For example, dust suppressants and de-icing liquids can be withdrawn from storage

tanks; and treated produced water can be withdrawn for storage tanks for reuse in hydro-fracturing wells. The operation of the station can be expanded to provide for chemical addition, from onsite tanks, to the dispensed liquid.

A limited version of the smart truckfill station can be a valuable asset to rural firefighting.

The siphon load-out can provide access to a water supply upon receiving correct authorization codes.

SMART TRUCK LOAD-OUT STATIONS

The above operation can be reversed and trucks can unload liquid into the smart unit, which can have add-on features (i.e., screens to remove solids). The most common example is unloading wastewater into municipal sewer pipeline. In southwestern Colorado, trucks can unload produced water to an injection well system through a smart unit. ♣

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