

Trailer-Mounted Lift Station Helps Train Operators

There is simply no replacement for hands-on training. To satisfy the demand and need for quality wastewater training, the Kansas Rural Water Association has developed a training trailer equipped with the major components and electrical controls of a vacuum prime lift station. Vacuum prime lift stations are common throughout the state and with general knowledge and the proper maintenance performed, these types of lift stations can serve communities for many years. A significant benefit of using the training trailer is that KRWA staff and the attendees can take as much time as necessary with the trailer's vacuum prime lift station without worrying about sewer backups or potential overflows.

During the training, operators will have a hands-on approach to disassembling the pump motor from the impeller and shaft seal assembly and removing and replacing the shaft seal. After replacing the shaft seal, operators will be instructed on reassembling the motor, shaft seal



During a recent five-hour training workshop sponsored by KRWA, these operators discussed how to replace reeds in a vacuum pump. The KRWA lift station training trailer is part of the hands-on training that is being provided to wastewater operators.



This is a typical motor starter relay commonly installed for lift stations.

assembly, and impeller. Then, install it back into the volute like they would with their equipment for normal operations.

Many requests for technical assistance with vacuum prime lift stations are resolved by proper maintenance and operation of the priming pump. The priming pump provides the vacuum to draw the

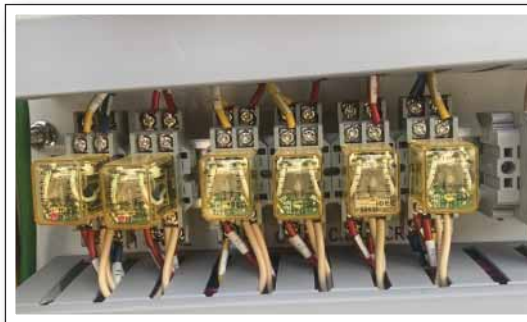
wastewater from the wet well to the pump head. Without the proper function of these shoebox-sized vacuum prime pumps, the larger above-ground sewer pumps won't be primed and able to pump.

The lift station training trailer (LSTT) is also equipped with vacuum prime pump heads for KRWA staff to demonstrate proper maintenance

Operators will receive hands-on training in disassembling the vacuum pump head to demonstrate how to properly install the reeds, inspect the ports, and reassemble the head.



Operators also learn how to pull a pump for unplugging or changing an impeller at the KRWA training sessions.



These ice cube relays, also known as plug-in relays, are used to control circuits.

techniques and how to install the reeds properly, inspect the ports, and then reassemble the pump. With the hands-on training, the operators should be able to reduce lift station downtime, after-hour call-outs, sewer back-ups, and sewer overflows.

Training involving the lift station trailer will also instruct operators to remove the check valves for replacement or clean off debris to ensure the check valves seal correctly. Additionally, operators will be trained to remove plug valves for cleaning or replacement.

The LSTT also has floats for training on how to set the floats in the wet well properly and what each float's function

is in the float ladder system. When operators are having lift station control issues, with this training, they should be able to identify the potential problems when they see a specific float tipped.

The trailer also has typical lift station electrical components inside a control panel. Operators will learn what these components do and what they control. With electrical safety always paramount, KRWA will explain the different electrical voltage and lock-out tag-out procedures. Some water and wastewater apprentices recently used the training trailer in their five-hour hands-on training requirement.



Liquid control relays are used to maintain the desired water level in a lift station.

Brian Bowles joined the KRWA staff in November 2021. Brian has 30 years of work experience in a lead or supervisory role in construction, technical and management positions. He most recently was the Public Works Superintendent at the city of Minneapolis, Kan. He is a Wastewater Tech at KRWA.



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