

Pumping In Winter's Wonderland

Winter Park, CO uses self-priming pumps to handle fluctuating demands



The Pump People®

As the name indicated, Winter Park, Colorado is a haven for winter weather fanatics. The city occupies 7.5 square miles about an hour's drive northwest of Denver. Located in the heart of the Rocky Mountains, Winter Park provides visitors and residents a picturesque opportunity for skiing, snowboarding, sledding, snowshoeing and more. In the warm summer months, the mountains entertain hikers, mountain bikers and fishers.

The town also features more than 30 restaurants for people looking to dine out, with warm, comforting cuisine to serve the bundled masses. Specialty stores and small niche shops line the streets, offering shoppers souvenirs and other travel essentials.

Serving a Quickly Changing Area

The Winter Park Water & Sanitation District (WPWSD) provides water and sewer services for the Winter Park Ski Resort and a few additional resorts, a residential area just outside the resort and a handful of subdivisions in the surrounding area. The area that WPWSD serves is located in the upper half of the Frasier River Valley. Mike Wageck, the District Manager of WPWSD, is responsible for oversight of the entire water and sewage operation in the area.



Mike Wageck, District Manager of WPWSD, with the pumps that handle the fluctuating sewage flow from Winter Park, CO.

The area has seen tremendous growth throughout the last few years as corporations have created several large projects and multi-million dollar homes in the subdivisions that WPWSD serves. As a result, the resort area is frequently subject to dramatic changes in usage and need for water and sewer services. "The type of domestic wastewater we deal with is pretty typical," Wageck offers. "However, demand changes quickly over the course of a ski week. On a busy weekend, we will have 10,000 people in the skiing areas, even though the area contains fewer than 200 permanent residents. This causes frequent changes in the demands put on the wastewater pumps that serve our facility."

Making the operation even more challenging is the fact



The Gorman-Rupp 3" Super T Series® pumps are, in the words of Wageck, "...efficient, reliable pumps that just don't break."

that the city of Winter Park is located at an altitude of 9,000' – more than 1.7 miles above sea level. Suction head on an industrial wastewater pump derates at around one foot per thousand feet of elevation. This meant that the team at WPWSD has been forced to be more creative in the way that they position the pumps in their facility – in order to achieve the required power to service the plant.

Higher Ground Means Higher Needs

The elevation of the plant posed significant challenges to the line of pumps that was originally installed in the Winter Park facility. The pumps were in an above-grade configuration with an excessive horizontal run of suction pipe. This setup led to countless operational issues. "At random times, the pumps in the facility would just stop working or they would lose their prime overnight," says Wageck.

Gragg White, President of Canyon Systems, a Gorman-Rupp authorized distributor, provides consultation, parts and service to the WPWSD plant. "When the initial pumps would lose their prime, it would take 8-12 minutes for them to reprime and become operational again," says White. "The result of this was that the pumps were not properly returning wastewater sludge back to the head of the plant as intended – an issue that threatened to cause the entire pumping system to fail."

A New Pumping Approach

These issues demanded immediate attention in order to maintain the operational efficiency needed to deal with ever-changing demands placed on the plant. Wageck and WPWSD worked with Canyon Systems on a solution for the problem. In the end, they determined that the best solution for the pumping issues was to replace the plant's pumps with new Gorman-Rupp 3" Super T Series® pumps.

Super T Series pumps incorporate a large volute design, allowing the technology to re-prime automatically in a completely open system – without the need for suction or discharge check valves and with the pump casing only partially filled with liquid and a completely dry suction line. They also feature a two-vane, semi-open, solids-handling impeller which can accommodate small solids that enter the pump, an exclusive double-floating, self-aligning, oil-lubricated mechanical cartridge seal and a removable coverplate providing quick and easy access to the pump interior without disconnecting piping. In total, the WPWSD facility installed three of the self-priming, centrifugal pumps – one for each of the two basins and one to serve as a standby pump – allowing the facility to seamlessly pump a half million gallons of water per day.

On the additional recommendation from Canyon Systems, the Gorman-Rupp pumps were installed below-grade – creating flooded suction and eliminating the possibility of lost priming due to trapped air in the pumps' suction pipe. Wageck took time during the period of expansion and construction in the plant to make the appropriate changes – successfully resolving any lingering concerns about the plant's pumps losing their prime and suffering downtime.



Making Maintenance Routine

With the elevation issues resolved, Wageck and his team have been left to deal only with standard pump maintenance. Part of that maintenance involves solids that pass through the pump. "Currently, the water in our system goes through a pre-treatment process that removes the majority of solids," Wageck explains. "Overall, the Super T Series pumps do a fantastic job pumping solids. They have the ability to pass a soda can or a tennis ball if they need to. However, from time to time, rags or string come down the line and can get built up inside."

The technology is designed to allow for a quick fix in these types of situations. "What I appreciate most about the pumps is how easy they are to clean out," says Wageck. "With the removable cover plate we can open the pump up, clean it out and get it back in operation in about twenty minutes."

Another benefit of the Super T Series innovative construction is the intuitive design of the pump package's controls. "The Gorman-Rupp pumps are very easy to operate. In fact, they are probably the

most user-friendly pieces of equipment in the plant," Wageck says.

Spare parts and rebuild packages for the parts are provided by Canyon Systems, as well. However, as Wageck explains it, there isn't typically a demand for them. "I will always go back to Gorman-Rupp pumps if we ever have a wastewater application that requires pumping. Put simply, they are efficient, reliable pumps that just don't break."

About The Gorman-Rupp Company

The Gorman-Rupp Company is a leading manufacturer of pumps and pumping systems for the municipal, water, wastewater, sewage, industrial, construction, petroleum and OEM markets. The company's Engineered Systems operation also manufactures a full line of water pressure booster stations including pumps, motors, valves and controls – all housed in weather-proof fiberglass enclosures – meeting about any municipal water supply need.

Ultimately, Gorman-Rupp prides itself on manufacturing and delivering the right pump for the job.



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