xylem
Let's Solve Water

Mining Case Study
Hydraulic Engineering, Water Transfer, Wash Down, Dust Control, Processing

# Integrated Water Management System Supports 15% Increase in Production at Aggregates Processing Plant

## TURNKEY, EFFICIENT PUMPING SOLUTION FACILITATES PLANT'S GREATER WATER NEEDS

**Challenge**

One of the largest U.S. producers of construction aggregates decided to relocate their processing plant to facilitate increased production capacity. However, the new location was further away from the plant's water supply. As the new plant would house all of the site's crushing, washing and sorting applications, the customer needed a single-source provider who could design and install a comprehensive and integrated water management system to meet all the necessary applications, including wash down, dust control, truck wash, pugmill and slurry.

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Two Goulds Water Technology 3756M end suction pumps with 40HP motors provide water to the plant's truck washes. Each truck must cross through the washes to keep the exit roads clean. The two end suction pumps supply 430GPM of water that spray the sides and wheels of each vehicle. Water is pumped at a rate of 80PSI to the nozzles which ensures a thorough clean for vehicles. Runoff water from the wash runs into a sump and water collected here is pumped up to the plant by a vertical sump pump with a 25HP motor.


Installing a Goulds Water Technology vertical turbine to provide water for the plant's rock wash. This pump is powered by a 250 horse power (HP) motor and provides 3500 gallons per minute (GPM) of water. A customized stand was designed for the turbine so that it could sit above the high-density polyethylene (HDPE) water tank. This eliminates the need for a pond and saves valuable space on site.

### Project Highlights

- Supporting 15 percent increase in production at the site
- Provided a turnkey solution for wash down, dust control, truck wash, pugmill and slurry applications
- Designed and installed an integrated system including new pumps, piping and fittings
- The new solution is compatible with a plant-wide SCADA system for remote, proactive monitoring and control and operational efficiency

### Products Used

- Goulds Water Technology Short Set Lineshaft Turbine Pump
- Goulds Water Technology 3756M single stage end suction pumps
- Goulds Water Technology e-SV stainless steel multistage pumps
- 20,000 gallon poly tank
- 10,000 gallon poly tank
- Piping and fittings

## Solution

Having been a trusted partner for years, we were very familiar with this aggregate producer's operations, confident in the reliability of our products and the depth of our hydraulic engineering experience. After an extensive site audit, our engineers worked closely with the customer to develop a comprehensive plan to improve operational efficiency and increase the required water supply. This included evaluating the existing pumps and recommending modifications and replacement of some equipment. To support the demands of the new processing plant and to ensure future capacity, we engineered and installed an integrated system of new pumps, piping and fittings.

## Result

Our broad portfolio and extensive experience meant that we could design and install an efficient and reliable turnkey water management system that enables the plant to process 15 percent more aggregate than it could previously. Also, as the entire solution can be connected to the plant-wide SCADA system for remote, proactive monitoring and control, minimal downtime and maximum efficiency is ensured. Just one person can monitor and control the entire system which provides operational savings.

### Customer benefits of our solution include:

- 15 percent increase in production
- A turnkey water management system that supports the plant's unique needs
- Solution installed on time as scheduled
- Enhanced operational efficiency

A Goulds Water Technology e-SV 5 stage stainless steel multistage pump provides water to the 200 trees planted by the customer to create a sustainable barrier between the road and plant, complementing the local environment.

As part of our turnkey solution, a slurry pump was installed to pump 3000GPM of water and fine material through 1600 feet of 12 inch SDR11 HDPE. This pump is robust and reliable, capable of pumping this harsh material with minimum maintenance required.