

Case Study

Hazleton specialty slurry pumps continue to be an industry leader in engineered-to-order slurry solutions

Application

Gypsum Return Water Pump
Slurry

Gypsum Slurry with a max
particle size 1.825 inches

Flow Rate

3100 gpm (704 m3/hr)

Head

105 ft (32 m)

Pump

Hazleton® VNB 10GN -
Vertical Cantilever, Twin Volute
Design - 10 ft. pump setting
(Bottom of Pump - Bottom of
Motor Plate)

Pump Materials

High Chrome Iron

Motor

125 hp (90 kw) 1200 rpm

Features

Pumps mounted on floating
304L Stainless Steel barges
built to customer specs.



1. Overhead view of
the generating station's
Gypsum slurry pond. The
large pond next to the
GSP is the Bottom Ash
Pond that is undergoing
expansion.

2. Power generation
station

Specialty slurry pump solutions for power and general industry

Hazleton® specialty slurry pumps have a long history of providing power and general industrial customers with engineering solutions for their most critical pumping services. One of these customers, near the Kentucky-Ohio border, operates what is considered one of the most environmentally sound and technologically advanced coal-fired power plants in the nation. Its pollution-control equipment includes a high-efficiency electrostatic precipitator and a state-of-the-art wet limestone scrubber that removes more than 90 percent of the sulphur dioxide from the flue gas. The plant burns up to 1.5 million tons of coal per year and produces over 160,000 tons of gypsum, a scrubber by-product, per year.

Poised for the addition of a new 750-megawatt generating unit that will be powered by an advanced super-critical pulverized coal boiler, the client was looking to expand its bottom ash pond. Existing piping and electrical lines needed to be moved to expand the walls of the dyke. In order to prevent any interruption in service, a barge needed to be constructed and installed in the gypsum slurry pond to suspend two new Gypsum Return Water pumps that could be connected via temporary piping while the expansion work was being completed. The customer came to Weir Minerals Hazleton because of their experience in engineered-to-order slurry solutions.

Hazleton specialty slurry pumps will provide a custom, built-to-specification floating barge constructed of 304L stainless steel mainframe and handrails with fiberglass floor grating. The barge is situated on an approximately 45 acre pond exposed to the elements and the weather with pond water that ranges from freezing to 100 degrees F.



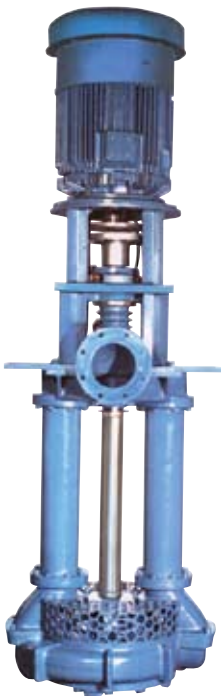
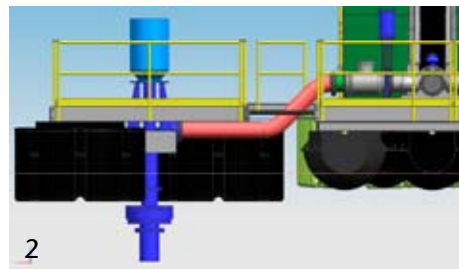
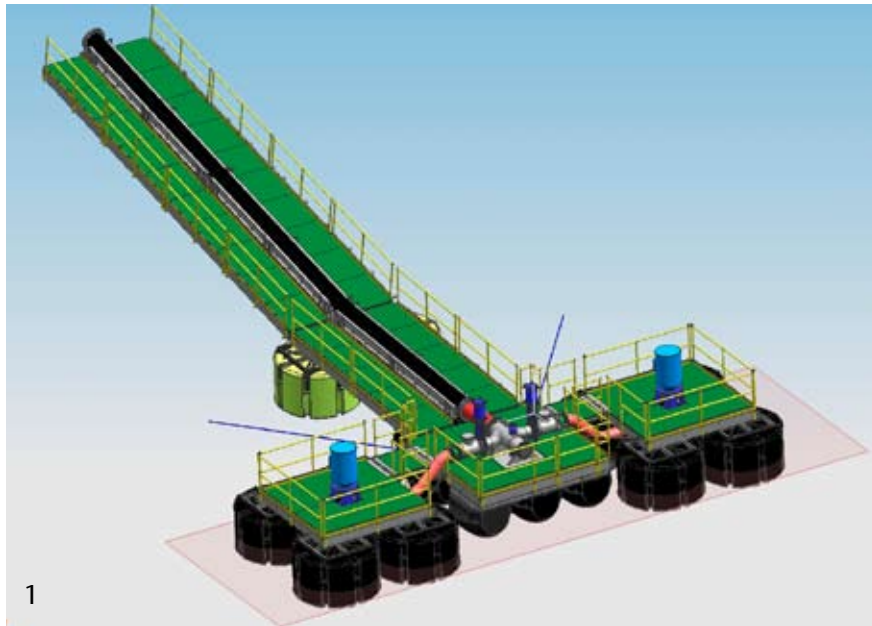
Two vertical cantilever, high chrome VNB pumps, ten foot long and mounted on the rear of the barge, handle the job of pumping the gypsum slurry water back to the cooling tower blowdown system. These pumps utilize the patented Hazleton® twin volute casing design that balances radial loads, resulting in reduced vibration and extended wear life not seen in standard single volute design. Each pump discharges into a 16 inch 304 L stainless steel manifold. The barge and manifold are arranged to accommodate the addition of a future barge and pump to provide additional capacity. Floating, hinged walkways suspend the self-draining pump discharge line and cable trays necessary for the pump's operation. The total package also includes Weir Minerals ISOGATE® knife gate valves and auxiliary piping and instrumentation.

Hazleton® specialty slurry pumps are the world's most comprehensive range of engineered-to-order centrifugal slurry pumps with a proven track record of excellence in the power industry. Weir Minerals is renowned for their world leading wear and corrosion resistant products through many industrial processes. In applications where the cost of ownership often outweighs capital cost as a priority, we help our customers address issues such as longevity and capacity, efficiency of operation and ease of maintenance. Through continuous improvement to materials, product design, engineering and manufacturing, we minimize downtime and maximize productivity.

1. A model of the barges supporting two Hazleton VNB pumps. Note the hinged walkways and stainless steel pump manifold designed to accommodate future expansion.

2. An up-close view of the Hazleton VNB 10 GN pump's mounting arrangement.

3. Hazleton model VN vertical slurry pump.



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