Mine Dewatering

The real value of the pumps selected is in the support that comes with them

Reliable Equipment Depends on Strong Dealer Support

Challenges

Every industry has them. When specifically referring to the mining industry, the use of a specialized pumping company that not only supplies equipment, but also understands and provides the support required can play an integral component to the success of a project. This is especially true when working in remote northern areas where down time can and has had serious cost and schedule implications. Dewatering is a significant engineering design and critical path component, and represents an on-going operational cost for open pit mining operations. Dewatering an open pit mine is an important process and its implications should be thoroughly understood before selecting the pumping equipment and designing the pumping system. Reliable equipment built for mining applications, coupled with specialized and reliable dealer support, is vital to the success of a project in order to stay within budget and schedule.

Availability of Support

Sometimes this is not in your control – the quality of equipment (in a mining application), the strength of dealer support that is available to you and especially when working in remote areas. However, when it is in your control, what are the benefits of gambling when you understand the risk of working with equipment having little to no support when the pumps break down?

Pumping Equipment Needs

In an open pit mining application, the types of mine dewatering pumps you may require to successfully complete the job are high volume pumps for short horizontal discharge, medium head and high head (to 650’) in both diesel and electric powered centrifugal configurations. Perhaps you will require heavy duty dredging pumps in either hydraulic or electric configurations with cutters (sometimes called excavators) that can produce very high solid concentrations of up to 70% solids by weight, and can pump long distances.

Cost

Essentially, you get what you pay for or worse, you get what you don’t pay for. Direct costs related to equipment needs to be weighed against the cost of potential delays (down time from equipment failure, costs of repair or replacement, delays in receiving parts and service etc.). Are the potential savings in purchasing lower quality pumps worth the risk when you know the potential costs from down time? Cost – benefit analysis has to be thorough and it is not solely reflective of the cost of the pumping equipment alone. That is, equipment cost is not your only costs to consider as the equipment is only as good as its reliability and support.

Dri-Prime Centrifugal Pumps

The advantage of fully automatic, self-priming pumps means these units are always ready to perform, from dry applications up to 28’ of suction lift. These pumps are designed with flexibility in mind and excel in projects involving dirty water, wastewater or slurries while also managing solids with exceptional results. The Prime-Guard Controller can be configured for use with floats, a level transducer or pressure transducer.

The pumps feature a close-coupled centrifugal pump with vacuum priming compressor that is mounted on a diesel engine, though we also offer electric drives. Durable cast iron construction with cast chromium steel
impellers, coupled with dry-running, oil bath mechanical seals with abrasive-resistant solid silicon carbide faces ensures smooth operation, limited maintenance and an extended lifespan. These pumps are also available in stainless steel configurations.

Dredging Pumps
(Dredge Mount or Hydraulic Excavator Mount)

Available in a wide range of hydraulically-powered or electrically-powered submersible pumps, that are designed to operate in a variety of applications, from shallow seas to fresh water locations, as well as deep water jobs. The distinctive dredging cutter design of the equipment yields superior results and is able to reach an exceptional solids concentration even when conditions present exceedingly compact soil.

These pumps are suitable for a broad range of applications, including harbour dredging, beach reclamation, Geotube and Geotextile projects, marina cleaning jobs as well as tailing pond and dam cleaning efforts. Also a dependable choice for:
- High depth dredging operations (up to 100m)
- High depth foundation work for bridges, piers, docks and wharves
- Trench clean out and back-fill in pipe-cable laying projects

High Head and Jetting
HL Series Pumps

These pumps are prime choice for those applications that require high pressure and high volume demands, such as quarry pumps. With both diesel and electrically driven models available, AQUATECH carries options that range from 3” (80mm) to 10” (250mm) outlets with flows from 200 US gal/min to 4000 US gal/min and head capability to 650’. These are fully automatic, self-priming units that use the PrimeGuard feature, which allows for specific pressure control. In addition to carrying certified models that are specifically designed for underground applications, clients can also choose from open or critically silenced as well as skid or trailer mounted units. These permit the easy removal of a skid-mounted pump for those difficult to access job locations.

Strong Dealer Support

Years back we attended an equipment auction in the US. Some of the heavy-equipment being auctioned off was CAT and Komatsu. Typically, in Ontario we have found that the CAT heavy-equipment generated a higher selling price. However at this particular auction, Komatsu was consistently outperforming CAT. Curiosity took over and we had to find out the reason. Turns out, the US State that this auction took place in, had stronger recognized dealer support from Komatsu which made a significant difference in equipment value to buyers. That event stood out and has helped to shape Aquatech’s philosophy around the industry’s definition of equipment value and the need to make available the best equipment with an even stronger support behind it. Our portable diesel pumps are CAT powered which is complimented

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by Aquatech’s strong relationship with Toromont CAT in Ontario, Nunavut, Newfoundland and Labrador. Toromont is one of our strongest industry partners and strongly compliments the services Aquatech provides. This, as well as other relationships, allows us to support the equipment and dewatering services we provide to benefit our clients. Our staff is amongst the most experienced and knowledgeable in Canada, with a diverse background in surface water and groundwater control, pond dewatering, creek bypass pumping, discharge filtration systems as well as sewage bypass pumping.

Case Study

Emergency Response to Avoid Flooding in Open Pit Mine:

Faced with a failing submersible system in combination with the spring thaw, a senior design engineer for a mine in northern Ontario contacted Aquatech in search of an emergency mine dewatering system to fight off a prospective site flood. Aquatech took immediate action, designing a dewatering system that would pump at three separate locations throughout the mine using the client’s HDPE pipelines. The system designs were quickly approved and an order was placed for five HL5M Dri-Prime pumps and one CD300 Dri-Prime pump – equipment that is all designed to operate between 120’ and 300’ Total Dynamic Head (TDH) with 15’-20’ suction lifts. However, the client could not arrange trucking to their site, but Aquatech managed to source the necessary transportation and all the equipment was onsite by the following morning. Aquatech managed to deal with the immediate site needs and has since filled orders for a number of dewatering systems for the client. In fact, the client was so impressed with the results; they purchased one of the initial pumps sent to the site.

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