

*January 2012*

## Demonstration Report - HY24 Hydraulic Submersible Pump

**Challenge:** Identify if the Dragflow HY24 Hydraulic Submersible Pump and pumping system could remove the slime build-up in the two consecutive underground dams, Dirty Dam and Clean Dam, quickly and more efficiently than the conventional piston pump slime removal system currently being used.

**Purpose:** The slime removal process results in a critical increase in the water holding capacity at the two dams which is relied upon to reduce the amount of sediment reaching the permanently installed high head multistage pumps.

**Demonstration Location:** Gold mine near Timmins, Ontario.

### Customer Objective:

To quickly remove the slime build-up from the two main underground dams while minimizing the need for service personnel and equipment supporting and maintaining this operation. Customer supplied a manual hoist to assist in the raising and lowering of the pump. Dams are on the 240 metre level underground.

Clean Dam: 6m W x 15m L x 2.0m H

Dirty Dam: 6m W x 30m L x 2.5m H



### **Aquatech Engineered Solution:**

Aquatech successfully met the customer's objective by using the Dragflow HY24 Pump, water jet ring attachment and a 100mm x 30m long discharge hose. A 25mm water hose was attached to the jet ring to convey water under 110 psi of pressure, which assisted in the breakup of the hardened slime at 1.5m depth. Discharge was sent to a 7 cubic metre low profile transit mixer/truck located 30m away from the Dirty Dam location.



### **Result:**

Shown here is the HY24 pump initially being installed inside the Dirty Dam, which was full of "mine slime". The first 1.5m depth had "mine slime" consisting of 30 – 60 percent solids by weight with a Specific Gravity anywhere between 2.30 to 2.75. After 1.5m, the slime medium was packed hard and devoid of water. The HY24 successfully removed the 1.5m (42 cubic metres) of varying density "mine slime" resulting in a 67% efficiency improvement from the current conventional piston pump that was being used.



### **Summary:**

The customer was impressed with the speed and improved efficiency that the slime was removed. After 42 cubic metres of material was removed from the inside of the Dirty Dam; the total pump time for 6 loads x 10 min/load was 60 minutes; with the piston pump method it would have taken 6 loads x 30 minutes = 180 minutes (3x longer).



For more information on the demonstration or the Dragflow pump line, please contact one of our representatives.

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