



Flygt

## New Supavac<sup>®</sup> solids transfer pump restores full holding capacity to critical drainage sump

Sudbury, Ontario, Canada

CVRD Inco Limited's South Mine is a hard rock mine in the heart of the Sudbury mining basin. Presently, this mine extracts just over one million tons annually of ore deposits, comprised primarily of nickel and copper base metals. Access to South Mine's underground is gained through both a ramp system and a 4100 foot deep shaft. Present reserves will allow for another 8 years of operation, with a future expansion expected to push the mine's life to 30 years.

As in most hard rock underground mines there is always a substantial amount of water used for drilling, cutting, washing and regular maintenance not to mention the normal seepage of ground water. In all cases this water is pumped or gravity fed back to a holding areas or drainage sumps. In this harsh environment there are always a large amount of fine rock cuttings, residual slimes and mud that build up in the sumps eventually decreasing the sumps holding capacity for mine waste water. If the sumps are not cleaned of these solids on a regular basis, the material becomes a very dry hard mud referred to as "mine slimes". The only way to clean out the sumps at this point is by using a scoop tram.

In the case of South Mine, a particular sump located on 4130 level was too small to facilitate a scoop tram for cleaning. Mark Moffatt,

Planner for Division 2 has not been able to use this sump to its fullest capacity for over a year because of slime build up. Mark was looking for way to clean the solids from this sump to regain its holding capacity.

At the same time, Dan Adams from ITT Flygt Sudbury's location introduced the Supavac. A Guzzla Model SV60 pneumatic displacement vacuum recovery pressure discharge solids transfer pump was just the right pump to complete this job. The setup time, once on site, was less then one hour and removal of the hard mud like material began. Discharging of the material was through 150 feet of 4 inch bull hose and vacuuming of the material was done using two 20 foot lengths of 3 inch suction hose with a Guzzla pickup nozzle.



*Guzzla SV60 in operation at 4130 level at CVRD Inco in Sudbury.*

Mark Moffatt, Division 2 Planner reports "I have lots of positive responses to the new Supavac. When we did the test on 4130 level, I was totally amazed at how thick the slimes were and that pump sucked it up and out. At the suction end, the slimes where so thick, I was waiting for the line to fill up and plug, but when you

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looked at the discharge it was spitting out water. I was very impressed with the Supavac. I think it has a bright future in the mining industry.”



Mark Landry and Curt Northfield of ITT Flygt with Guzzla SV60 pump in transport cage.

The sump clean out process was quickly completed removing over 40 cubic meters of mine slimes, restoring the full holding capacity back to Mark’s sump. The patented vacuum recovery and pressure discharge technology is the key to

### Guzzla SV60 specifications and performance data

Configuration	Horizontal Cigar
Solids size passing up to	2-3/8"
Recovery vacuum generation of up to	25" Hg.
Compressed air consumption required	105 to 160 cfm
Compressed air pressure required	85 to 100 psi
Suction head (liquid flow) from up to	28 feet
Vertical vacuum lift (airflow) from up to	75 feet
Horizontal recovery from up to	180 feet
Horizontal discharge of up to	1,600 feet
Suction hose diameter	3"
Discharge hose diameter	3"
Compressed air hose diameter	1"
Volume transfer rate of up to	10 m3/h
Equivalent liquid flow rate of up to	44 usgpm
Unit dimensions (L x W x H approx.)	55" x 26" x 31"
Unit weight (empty - approx.)	484 lbs
Mounting	2-wheel site trolley

Transfer rates for sludge/slurries estimate only. Actual results based on site conditions, layout and operator. Complies with CRN/ASME regulations.

the operation of these pumps. With no rotating parts or electricity and with no moving parts in contact with the flow, extremely high reliability is the experience. All that is required is a supply of compressed air.

Supavac pumps are designed to reliably handle any flowable sludge and slurry and are ideally suited where submersible, centrifugal and diaphragm pumps are not a viable option. Supavac pumps can also be used as an effective high lift vacuum for most flowable bulk solids including underwater applications of up to 75 feet vertical lifts.

Installations include snake pit sumps; digesters and tank cleanout; underwater pipeline cleaning; oil and gas exploration; horizontal drilling; conveyor spillage; lagoons and ponds; bypass pumping; tunneling; pneumatic excavation and conveyance and on site transfers of over 2,000 feet.



Guzzla SV60 mobile solids transfer pump cleaning up muck underground.

Applications include abrasive and corrosive slurries; hazardous waste; drilling mud waste and cuttings; rock, sand and ballast; mine tailings and muck; horizontal drilling; intrinsically safe operation for underground and x-p areas; hydrocarbon and viscous sludge; raw effluent; and all types of wet and dry spills.

ITT Flygt Canada is an authorized distributor and rental source for Supavac solids transfer pumps. For more information, please contact your nearest ITT Flygt sales office. Video clips, installation photos and specifications are available on our web site at [www.flygt.ca/dewatering](http://www.flygt.ca/dewatering)

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