

N-Pumps solve clogging problems at Vancouver Island's Victoria Hospital and improve health & safety conditions for the maintenance employees.



The hospital's pump station was built in 1979, and did not have any pre-screening before the wet well. In 2003, the pump station was upgraded and new pumps were installed. The triplex pump station gets all the discharges from

the hospital and most of the time consists of sewage and other materials that may find its way into the system. The pumps installed were conventional solids handling submersible pumps that had 15hp motors with a duty point capability of about 430 USGPM of flow at a total dynamic head of approximately 80ft.

The Challenge

The pumps were clogging continuously and had to be unclogged everyday. A pumper had to clean out the station to get rid of the solids and prevent the pumps from getting clogged. The pumper was cleaning every 6 or 7 days on average.

Another solution that was put in place was to build a couple of screens that were installed before the inlet of the station. The screen collects and prevents the solid materials from getting into the wet well thereby preventing the pumps from clogging. With the screen in place, the hospital's maintenance crew is tasked with the job of cleaning the screen twice a day, once



One of the screens collecting solid materials from getting into the wet well.

in the morning and once in the late afternoon. The materials normally removed by the baskets as experienced by the maintenance crew are:

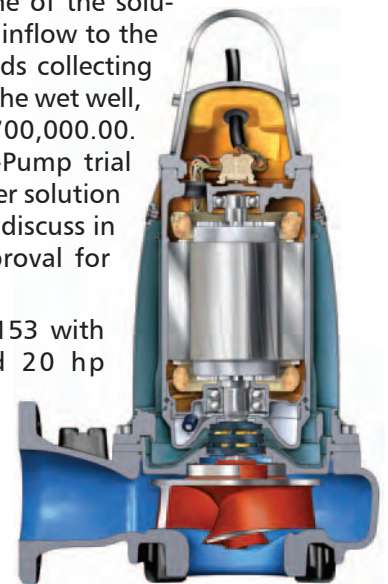
- Face Cloths: 6-8 per day, could be as high as 12;
- Small Towels: 2 or 3 per week;
- Rubber Gloves: 15-30 per day (visual estimate; not counted individually);
- Paper Towels: 50-75 per day (so many, hard to count).

The Solution

Duncan Electric Motors works with the Township of Esquimalt who has the contract with the Town of View Royal to do maintenance on all their pump stations. Harold Schoock of Duncan Electric had noticed the clogging problems and that the pumps from this station were being serviced more often than normal and had suggested they try the Flygt N-Pumps to solve the clogging.

During the same time, Stantec Consulting in Victoria, BC was being consulted by the Vancouver Island Hospital Authority (VIHA) to look into the problem. The study showed that one of the solutions in order to clean the inflow to the station, a mechanized solids collecting screen be installed before the wet well, which may cost up to \$700,000.00. Stantec learned of the N-Pump trial and considered it as another solution and contacted ITT Flygt to discuss in detail and gave their approval for the test.

The N-Pump model NP 3153 with a 455 HT Impeller and 20 hp motor was installed for trial testing at the end of September 2005. The trial test period was authorized for 2 months. To truly test the N-Pump's ability of



solids handling, it was ran as the lead pump on every pumping cycle and the collecting baskets were taken out to let the solids into the wet well.

The test N-pump was inspected a few times and showed no clogging and ran continuously without interruption or clogging.

In December 2005, Stantec reviewed the N-Pump test results and asked the municipality to replace the existing pumps with the N-Pumps. In February 2006, Emmett McCusker, Superintendent of Engineering of the Town of View Royal placed a purchase order for 3 new NP 3153 pumps.

In July 2006, a follow-up with the Town of View Royal indicates that the first N-pump is doing a "bulletproof" job, to quote Emmett's description of the N-Pump's ability to deal with the materials getting into the pump station. The other 2 N-Pumps were installed in September 2006.

The desired results are:

- 1) Elimination of the collecting baskets that required the unnecessary handling by the hospital's staff twice a day, thereby improving the health and safety conditions for the maintenance employees;
- 2) Elimination of the cost of the pumper cleaning the wet well every 6 or 7 days on average;
- 3) Lower pump operating and maintenance cost resulting from mechanical and electrical efficiency;
- 4) Maintenance personnel can now concentrate on other jobs instead of constantly cleaning the station.



Emmett McCusker doing a regular station inspection.

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