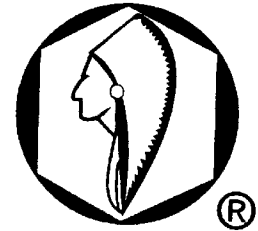


Piston Pumping Solutions - DNAPL Recovery

Difficult Pumping Applications from Blackhawk Environmental Company



Three Years and 11,000 Gallons Later, Anchor Piston Pumps Keep on Removing Manufactured Gas Plant Tar In Quantity from Depths to 32 Ft. Below Grade

Thick, viscous, oily, and sticky coal tar tops the list in the field of contaminated site remediation and source recovery when it comes to being the ugliest and most stubborn substance to clean up in quantity. Due to the difficult nature of coal tar, initial recovery efforts at the 30-acre Calhoun Park Area Superfund Site in the historic harbor district in Charleston, SC, which began in 1998, were skimpy and sporadic until March 2001, when a Blackhawk Electric Piston Pump was brought in to do the job. This pump worked so well at removing coal tar, three additional Blackhawk Electric and Pneumatic Piston Pumps were put to work. Where once only a few gallons of gunk could be collected or skimmed away, more than 11,000 gallons of coal tar have been pumped out from the substrate at depths to 32 ft. below grade.

The coal tar being removed is the byproduct from a manufactured gas plant (MGP) that operated at the Calhoun Park Area Site from 1855 to 1957. Prior to the use of natural gas and electricity, coal gas was used first for lighting, then for cooking purposes. Coal gas was created by heating or “cooking” coal in large airtight ovens. As the gas cooled in the piping and large gas holders, substantial amounts of coal tar as a byproduct were generated. The use of coal gas became obsolete with the widespread availability and lower cost of natural gas. The aboveground MGP facility was demolished, yet the coal tar residues below surface remained. These were assessed for remediation in the early 1990s for removal by South Carolina Electric & Gas (SCE&G), the principal subsidiary of SCANA, an \$8 billion (assets) energy holding company serving customers in North Carolina, South Carolina and Georgia.

“The first area we tackled for coal tar recovery was the gas holder area. An electric Blackhawk Anchor 101 pump with electrical controls was used in this area, where at 32 ft. underground, the coal tar is extremely thick and heavy. An automated controller was utilized and adjusted to ensure a slow and controlled recovery rate of one minute every hour around the clock. A second automated electric pump was added to a coal tar recovery trench. These pumps have worked for us very well given the conditions, and we have recovered on average three 55-gallon drums of coal tar per month from both wells,” said Thomas Effinger, who manages SCANA’s MGP remediation program.



An average of three 55 gallon drums of coal tar are pumped each month from these two wells using Blackhawk electric Anchor 101 pumps at the South Carolina Electric & Gas Superfund site in Charleston, SC.



This Blackhawk electric Anchor 101 pumps extremely thick and heavy coal tar from 3 feet underground at a controlled rate of one minute every hour around the clock.

"We're also pleased with the results we've had with our two Blackhawk Trident Pneumatic Piston pumps. In order to tackle other areas of the site, our contractor, Management and Technical Resources (MTR), excavated as much of the coal tar as possible, then dug a trench around the perimeter of the site, which is where we move the pneumatic pumps from well to well to recover coal tar from 15 to 20 feet below the ground surface."

Blackhawk Pumps are ideal for use in urban environments, such as this one in Charleston, S.C., because they do not emit any fugitive emissions. Therefore there is no smell or stink in the city air from the pumped coal tar. The top head drive motors of the Blackhawk Pumps ensure that an operator has minimum contact with any liquid being pumped and that the pump discharge air is free of contaminants, providing a safe, clean and healthy working environment.

Effinger continued, "We've had impressive, consistent and reliable pumping results with Blackhawk pumps, and a challenge or two along the way. When cold weather hits, coal tar is practically impossible to pump. By placing heat tape on the pump along with a drum heater, this problem has been alleviated. We've also learned that because the tar is so thick, oily and sticky, the pneumatic pumps have to be cleaned every night for top performance the next day and, due to the viscosity of the coal tar, the seals have to be replaced frequently. The great news is that despite encountering a few glitches here and there, we've got everything under control and when there is not enough tar material left in the well to fill the pipe, we'll have a job well done."

Blackhawk Environmental's Anchor Electric and Trident Pneumatic Piston Pumps act like a syringe to extract product from the bottom of the well with every stroke. Because the pump inlet is at the bottom of each pump, liquid is pulled into the pump intake, and the pump operates consistently whether the pumping action is clean or dirty. The positive displacement action resists slowdown or stoppage even in the most sticky or oily situations. There are few moving pump parts in the well to cause problems. The pump drive mechanism is positioned on top of the wellhead, so each pump is easy to install, inspect, trouble shoot, and maintain.

SCANA Corporation is headquartered in Columbia, SC. Its businesses include regulated electric and natural gas utility operations, telecommunications and other non-regulated energy-related businesses. SCANA's subsidiaries serve nearly 571,000 electric customers in South Carolina and more than one million natural gas customers in South Carolina, North Carolina, and Georgia.

Blackhawk Environmental Co. specializes in manufacturing quality pumps and controls for demanding pumping applications. Blackhawk pumps can be powered pneumatically or electrically and can work in hazardous or potentially hazardous environments. For more than a decade, Blackhawk pumps have been successfully operating in a wide range of pumping applications across the United States. Blackhawk's pumps are custom manufactured in a variety of sizes and designs depending on the application.



Because the coal tar is so thick, oily and sticky, the Blackhawk Trident pneumatic piston pumps are cleaned every night for top performance the next day.



Gordon O'Toole, MTR Consultants (Management & Technical Resources, Inc.) opening one of the 55 gallon drums of thick, viscous, oily and sticky coal tar that was pumped from 32 feet underground using Blackhawk's electric Anchor 101 pump.



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