



# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

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### Valentine museum leads rescue of rare 19th-C pump



Valentine museum crew (L-R: Lyle Browning, Gregg Kimble, and Greg Galer) removes muck from around the larger of two 1852-53 archimedes screw pumps found in a drained section of the James River & Kanawha Canal, Richmond, Va. Later, the wood-stave pump was lifted out by a Chinook helicopter provided by the U.S. Army Corps of Engineers, whose personnel also had helped dig out the rare 38-ft. artifact. *Photo courtesy of Kathy Franz, Valentine Museum.*

When the City of Richmond drained a section of the James River & Kanawha Canal to repair a lock, the metal-detector buffs arrived in droves. Luckily, members of the Virginia Canal & Navigation Society were keeping an eye on things. They contacted me at The Valentine in Richmond when they found an archimedes screw pump buried in the canal basin in July. Realizing that the city might be unwilling to drain the canal again, I decided to attempt the pump removal.

Three weeks later, the pump was out. Significant help came from Lyle Browning, president-elect of the Archaeological Society of Va. With cooperation and donations from local firms and with the aid of Fort Lee U.S. Army personnel and a Chinook chopper, the rare pump was removed and stored submerged until conservation can begin.

The screw pump dates from 1852-53 and was used as a trash pump during the construction of the canal's Great Ship Lock. In fact, during the dig, another pump was uncovered, but it was reburied in the canal basin. Large rocks found at the ends of the pump appear to have been carefully placed for support, evidence that the pumps were floated about 250 yards from the lock where they operated and sunk to the bottom. Over the years, silting covered the pumps with about two to six feet of dense mud and sand, which preserved them in a near pristine state.

The cylindrical pump is 38' long, 3½' in diameter, and weighs about 8 tons. The cylinder is formed of wooden staves and iron bands, with an iron pulley at one end. Running through the center of the hollow cylinder is a central shaft with a cup bearing on one end and an iron journal on the other. Between the shaft and inner surface of the cylinder are two wooden augers that run the length of the shaft, 180 degrees counterposed. When operating, the pump would sit at an angle with its base in water, and be rotated by steam or animal power via the iron pulley. As the cylinder rotated, the water would be carried up the augers and flow out the top.

The pump may be the oldest and largest of its type extant in the U.S. An 1890s screw pump near San Francisco and a 1913 New Orleans pump have been designated Mechanical Engineering Landmarks by the American Society of Mechanical Engineers. Info: Greg Galer, The Valentine, Museum of the Life & History of Richmond, 1015 E. Clay St., Richmond, VA 23219 (804-649-0711). *G.G.*

*CORRECTION: The cover of the Summer 1989 Newsletter was numbered incorrectly. The correct designation for the Summer 1989 issue is Vol. 18, No. 2.*