

**New York State  
Environmental Investment Program  
Capital Project Summary  
Control Electropolishing, Inc.**

**Project Background**

Control Electropolishing is a 46-year old metal finishing company located in the Bedford-Stuyvesant section of Brooklyn, NY. Founded in 1959, it is an ISO9002-certified, woman and minority-owned business that employs 20. Control Electropolishing is wholly-owned by Ms. Nancy Zapata, who joined the company in 1981 as a receptionist and purchased it from its founder in 1991.

Control Electropolishing refines and finishes metal parts through two processes: *electropolishing* and *passivation*. In electropolishing, stainless steel parts are immersed into a chemical solution between electrified copper bars. The finished parts have a bright, mirror-like finish, an improved resistance to corrosion, and an improved capacity for sterilization. In passivation, stainless steel parts are chemically cleaned in tanks with no electrification. Although no brightening occurs, there is an improved resistance to corrosion. The business' primary customers are suppliers of stainless steel instruments to the US Department of Defense and the US Surgical Corporation, a one billion dollar per year global company.

**Project Description**

In 2002, Control Electropolishing completed an EIP-supported research, development and demonstration (RD&D) project to assess the feasibility of converting its electropolishing and passivation systems to citric acid-based solutions. Like almost all others in the metal finishing industry, the business was using nitric acid, phosphoric acid, sulfuric acid,

and hydrochloric acid in their tanks. The research project confirmed that both systems could be cost effectively converted to citric acid solutions. Furthermore, in the passivation tanks the immersion times for the citric acid-based solution were shorter than those for the nitric acid solution; the citrus solution required lower concentrations and, because of this, the citric acid-based solution retained its potency longer, incurred less evaporation, and required less frequent refills. Similarly positive outcomes resulted in the electropolishing tanks.

This project enabled the company to apply the results of the RD&D assessment and convert its passivation line to a citrus-based solution. It required that Control Electropolishing completely replace the tanks and other components that had been in contact with the nitric acid solution. The project was part of a much larger investment by Control Electropolishing to buy the building in which the business operated and undertake several necessary building improvements (eg, new sump pump pits, a new mezzanine, and a quality control system).

**Project Results**

The new passivation tanks and all associated parts were installed successfully and in a timely manner. No unanticipated events occurred. By the end of the project, Control Electropolishing had increased annual passivating revenues by \$180,000 and had eliminated the discharge of 6.5 tons per year of nitric acid into the New York City sanitary sewer system.

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**Contractor:** East Williamsburg Valley Industrial Development Corp.  
**County:** Kings  
**ESD Region:** New York City  
**ESD Contact:** 518/292-5340

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**NYS EIP Investment:** \$162,422  
**Contractor Match:** \$300,000  
**Total:** \$462,422  
**Completion Date:** May, 2007