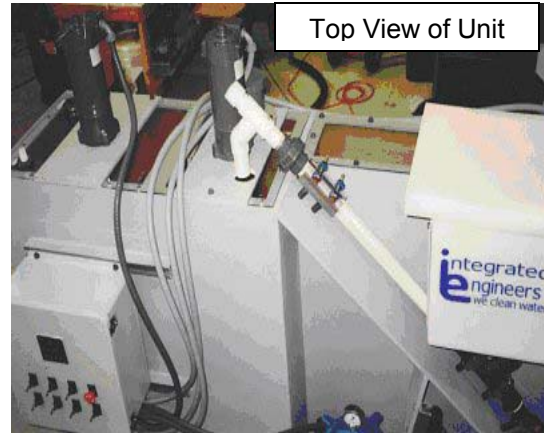


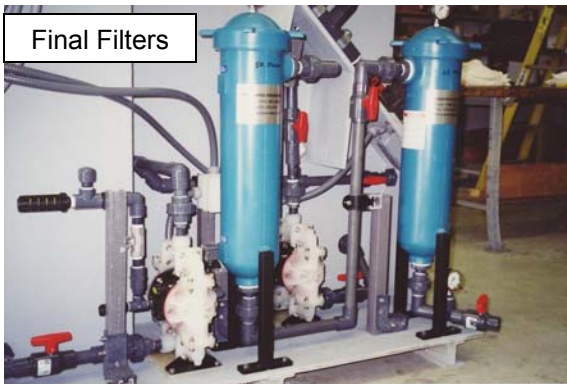


Mercury Removal from Nerve Gas Ton Container Rinse Waters

IE was retained by a United States Army subcontractor to perform a process determination with analytical verification for the treatment of the rinse water from decontaminated nerve gas agents. The Pentagon Munitions Deconstruction Committee (PMDC) fully reviewed and approved the process developed. The wastewater was generated from the rinsing of 2,000-pound (ton) containers in a punch/drain/rinse process. In addition, IE was awarded the design/build project and onsite training/operational assistance.



The wastewater contained over 4,000 ppm of mercury and 400 ppm of selenium that required the use of tight pH control and metal precipitation. The process control used a proportional ORP system in conjunction with the IE-061 metal



precipitant to meet the required ORP set point, assuring that all of the metals were precipitated. The precipitated wastewater was then flocculated using Floccin-B and then dewatered with a plate & frame press. The effluent wastewater (filtrate) was continuously online monitored by an XRF analyzer that verified metal limits to be below the discharge limits (below 1 ppm for mercury).

The skid mounted 10 gpm system was custom designed and manufactured by I.E. to fit through a standard 34-inch door opening so the unit could be located inside the sealed nerve gas containment room. The system was manufactured from fiberglass and special performance resins to withstand a low pH of 1.0 as well as high chloride levels. Operators in the facility main control room monitored operation of the unit remotely.