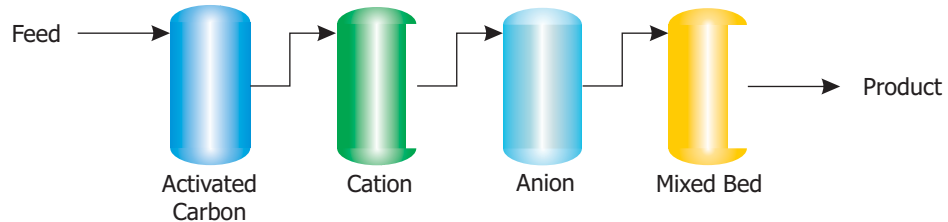




Portable granular media pressure vessels provide simple and cost effective solutions to challenging wastewater treatment applications

Filter / Demineralizers



Title: Outage Wastewater Treatment

Client: Department of Defense Contractor

Background: Wastewater is frequently generated by DOD contractors during outages and in remote locations where no treatment system exists. The wastewater typically contains suspended and soluble chemical impurities and radionuclides that make the water unacceptable for release to reuse.

AVANTech's economical pressure vessel based filter-demineralizers (EPV^(TM)) can be used in these applications because they are cost effective, easy to install and operate and they meet all the regulatory requirements for product water quality and waste disposal.

Solution: AVANTech provides complete treatment solutions that can be easily and cost-effectively integrated into customer facilities. Wastewater treatment usually requires multiple process components including filtration, adsorption and ion exchange. The EPV^(TM) are well suited to outage type applications because they can be quickly mobilized and demobilized and they can serve all these process functions.

Example 1

Wastewater generated as a result of maintenance and overhaul activities. Impurities include miscellaneous solids from cleaning activities, radionuclides generated by fission and activation, organics from sump flushing and colloidal radionuclides from sludge water associated with ion exchange media sludging. The goal of the liquid waste treatment system is to reduce organic and radionuclide concentrations to a value acceptable for release. This goal is accomplished by installing 4 EPVs with filtration media, granular activated carbon (GAC), cation and macroreticular anion resin. The filtration vessel removed suspended solids, as well as the filterable radionuclides, the GAC vessel removed organics, as well as colloidal radionuclides, the cation vessel removes soluble radionuclides, such as Co-60, Sr-90 and Cs-137, and the macroreticular resin polished colloidal radionuclides that were able to migrate through the upstream vessel, such as Co-58, Co-60, Ag-110m and Sb-125.

Example 2

The purpose of this system is to return rinse water to a quality that would be acceptable to reuse. This client had decontaminated and then replaced some of the components in a reactor system. Prior to refueling the reactor, the system had to meet cleanliness criteria. To prevent the generation of large amounts of wastewater, the EPV system is installed. The system consists of four vessels containing activated carbon, cation, anion and mixed bed resin (as shown above). The system is capable of producing very high purity water that met reuse criteria. Water from rinsing operations is recirculated through the 4-vessel system and back to the reactor until the cleanliness criteria is met and thereafter for pool maintenance.

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