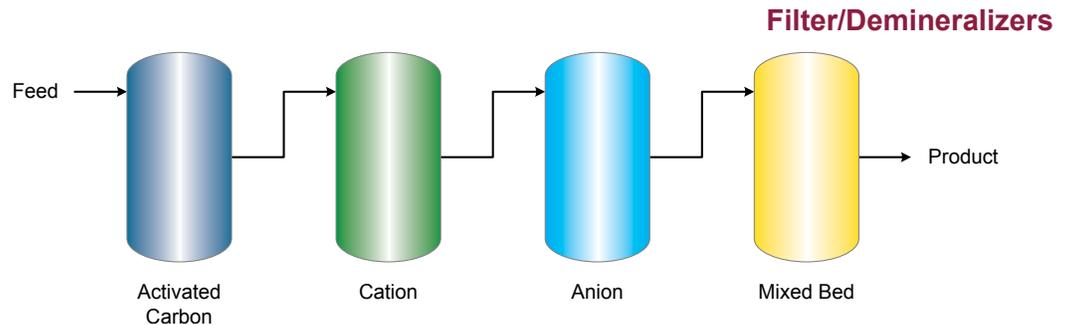


Portable granular media pressure vessels provide simple and cost effective solutions to challenging wastewater treatment applications



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 (EPV™) based filter-demineralizers 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 EPVs™ 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 sluice water associated with ion exchange media sluicing. 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 four vessels with filtration media, granular activated carbon (GAC), cation, and macroreticular anion resin. The filtration vessel removes suspended solids as well as the filterable radionuclides; the GAC vessel removes 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 polishes colloidal radionuclides that are able to migrate through the upstream vessel, such as Co-58, Co-60, Ag-110m, and Sb-125.

Example 2: Return of rinse water to a quality acceptable for 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 was 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 meets reuse criteria. Water from rinsing operations is recirculated through the four-vessel system and back to the reactor until the cleanliness criteria is met and thereafter for pool maintenance.