

## SUPERFUND GROUNDWATER

# Ion Exchange Design for Superfund Site

Industry: USEPA/Metals Working Site  
System: 900 gpm Superfund Groundwater Treatment Plant Design  
Location: Kansas  
Goals: Removal of Hexavalent Chrome <17 ppb, Total Chrome <100 ppb

### Project Overview:

SAMCO's state-of-the-art Groundwater Treatment Plant (GWTP) process design at a Superfund Site utilizes Ion Exchange (IX) process to treat contaminated groundwater & meet stringent discharge levels per USEPA consent order. SAMCO worked closely with the consulting engineering firm who was contracted by USEPA to execute the project, to develop the groundwater treatment process.

### Critical Issues:

Complex contaminants & varied flow  
Budget Constraints & Maximize ROI

Stringent USEPA discharge limits  
Fast-Track, Concept to Completion

### Vision for Solution:

- Onsite Regenerable IX & Offsite Regenerable IX in lieu of Offsite Regenerable IX only for reduced O&M costs and maximized ROI
- Prepackaging of system on skids in lieu of field piping to reduce overall project execution time by 50% and cost by 30%
- Utilize our standard products & pre-packaged system design for fast-track turnkey project delivery and performance guarantee
- PLC w/ Remote Telemetry for minimum onsite operator attention
- Modular design with expansion capability for future needs

### Project Scope:

Treatability Studies  
Project Estimation

Concept Development  
Process Design/Project Engineering

### Equipment Description:

Equalization Tanks  
Chemical Feeds  
Onsite Regenerable IX  
Regeneration System  
Sludge Handling  
Effluent Pumps

Influent Pumps  
Filtration System  
Offsite Regenerable IX  
Precipitation/Clarification  
Filter Press  
PLC/Remote Telemetry

### Special Features:

- PLC controlled system enables supervisory control & data acquisition from a remote site
- Regulatory Reports are auto-generated by the SCADA system
- Process monitoring include flow, level, pressure, pH, etc
- Special ion exchange resins allow varied feed contaminants & concentrations
- Design incorporates a modular expandability and future add-on capability for changing needs

