

Cyanide Treatment at Manufactured Gas Plant Sites

Overview

In May 2003, Siemens Water Technologies was contacted by a large east coast utility for assistance in treating cyanide contamination from a former manufactured gas plant (MGP) location. The residual contamination at this site contained many organic compounds and heavy metal cyanide complexes that exceeded the discharge requirements to an adjacent river.

In the early 1800 through the mid 1900's, gas for heating, cooking and lighting was produced from oil and coal at hundreds of small plants nationwide. The production and purification at MGP locations produced by-products such as tar, oxide waste, oil sludge and various hydrocarbon wastes. In many of these sites a majority of the accessible waste has been removed however, remediation still continues. The remaining residues are typically, petroleum hydrocarbons, benzene, cyanide, phenols and heavy metals.

The Siemens' solution included a 150 gpm treatment system featuring oil/water separation, carbon filtration and wastewater ion exchange (WWIX) service to remove the contamination and comply with discharge standards.

Wastewater ion exchange is a service-based option which utilizes ion exchange resins and other medias selected to remove specific ionic contaminants from groundwater, industrial wastewater, and process water for recycle. DOT approved vessels containing the selected resin or media treat the water until the capacity is reached. Once exhausted, the WWIX

vessels are removed and replaced with fresh, DOT-compliant vessels and returned to service. Exhausted vessels are returned to our processing facility where the contaminants are removed from the resin.

Siemens provided 60 cubic foot WWIX vessels in a lead-lag configuration with resin-specific for the removal of metal hydroxides and also, provided the carbon and exchange service for the permanently installed carbon filtration system at the site. Upon exhaustion, the resins and carbon are returned to Siemens' RCRA licensed facilities for waste treatment.

Significant Accomplishments

Siemens provided a fast, reliable WWIX treatment system that can be expanded or in this case, reduced as the customer's needs changed.

Siemens provided safe removal, transportation and disposal of the spent activated carbon and ion exchange resin. Thermal reactivation at Siemens' fully permitted reactivation facilities ends the liability associated with the handling and disposal of the adsorbed contaminants on the carbon. Additionally, off-site regeneration of the spent resin at Siemens' RCRA-approved facility provides a safe, compliant method for treatment and recovery of hazardous metals and eliminates the potential for recontamination onsite.

Facility	Manufactured Gas Plant
Application	Cyanide removal
Technology	Activated carbon Ion exchange
Scope of Services	- Field service - Media - Waste removal, handling and treatment
Start Date	May 2003
Project Duration	Ongoing



Siemens Water Technologies North America Service Network

North America Service Network

Our North America service network is backed by more than 80 offices staffed with certified technicians and applications experts who can solve your problems. In addition, Siemens Water Technologies provides response flexibility through either a lease or capital purchase option, and the company offers assured liability protection through environmentally safe waste destruction.

Services Available

- Activated carbon supply, removal and reactivation services
- Filter media supply and removal
- Ion exchange resin supply
- Membrane supply and cleaning programs
- Parts and expendables
- Service contracts
- Temporary/emergency water systems

Technologies Available

- Reverse Osmosis (RO) membrane filtration
- Conventional clarification and filtration
- Oil/Water separation
- Granular activated carbon adsorption
- Demineralization
- Inorganic metals removal
- Chemical addition

Siemens Water Technologies delivers cost-effective, reliable systems guaranteed for quality, safety, and compliance. Our trained service staff is available to make sure your systems is running at peak performance and to your specification. For your water treatment system, choose the partner that is committed to taking care of the world's water...and yours.

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