

Project Profile



Confidential Client Environmental Remediation Project Delray Beach, Florida

Background

Levine Fricke Engineers (LFE), an environmental firm under contract to Blackstone Consultants LLC (Blackstone), was responsible for specifying and selecting a cleanup remedy for a former contaminated nursery site located in Delray Beach, Florida. LFE and Blackstone performed site characterization and demonstrated that site groundwater contained very high arsenic concentrations. Subsequently, LFE contacted Adedge to assist in developing a treatment remedy to address an estimated eight million gallons of groundwater from beneath the 13-acre contaminated site as part of the corrective action plan. The groundwater recovery system consisted of five extraction wells, submersible pumps, associated piping, and appurtenances. A pilot program for arsenic removal was conducted with AdEdge prior to the full scale design utilizing AdEdge's granular ferric oxide adsorption technology. The pilot testing program involved two small arsenic treatment units in a series configuration containing the adsorption media. Approximately 2 gpm groundwater flow were pumped through the arsenic pilot units for a three month period; influent concentrations into the pilot units exceeded 2,000 parts per billion (ppb) total arsenic and over 1000 ppb iron. The pilot unit performed very well and the system design was implemented to full scale upon review and approval of the corrective action plan by the Florida Department of Environmental Protection (DEP).



Treatment System

The AdEdge arsenic treatment system consists of three skid-mounted units each rated for 30 gpm and capable of removing the contaminants of concern. The initial unit in the treatment train is an AdEdge AD26 iron removal system. The AD26 iron removal unit is followed by an Adsorption Package Unit (APU) configured in series. Groundwater is pumped from the extraction wells into a 2,000-gallon equalization (EQ) tank. From the EQ tank groundwater flows through bag filters and then enters the dual vessel AD26 system. Iron is oxidized and removed via filtration. Treated effluent flows into the APU vessels containing the Bayoxide E/AD33 adsorption media.

Each of the skid-mounted systems is equipped with automatic controls, backwashing features, switches, gauges, and sample ports for complete functioning packaged units. Instrumentation is provided on a control panel to measure critical operating parameters. Total gallon throughput and flow rate for each unit is measured continuously with a dedicated flow totalizing meter. The AdEdge adsorption system does not require any chemicals or regeneration, and the process does not generate liquid or hazardous waste. Spent media will be discarded as a non-hazardous solid waste. The system was placed into operation in early December 2004 and has been operating for several months meeting all discharge requirements.

For More Information Contact

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