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FS50 Activated Alumina
Latest Full Scale Study Results
November 21, 2003 Phoenix, AZ Arsenic Removal Convocation

AAFS50 is the special iron enhanced activated alumina used for contaminant removal in potable and wastewater. Some further confirmation of FS50's performance was obtained recently. Here are the facts.

- FS50 removed more As than granular ferric oxide (GFO) or granular ferric hydroxide (GFH) regardless of pH.
- The adjustment of pH is helpful to most all adsorptive technologies.
- Fs50's performance is enhanced by iron (Fe) in the feedwater while the presence of Fe diminished As removal by GFO and GFH.
- Chlorination of a feedwater prior to As removal by FS50 is helpful as As^{+5} adsorbs more efficiently than As^{+3}.
- Actually, As treatment by GFO requires that there be no iron present in the feedwater. If iron is in the feedwater, a special additional treatment system to remove iron must be installed ahead of the GFO system, according to the GFO supplier.
- As removal by FS50 requires backwashing once or twice monthly and the backwashing process does not desorb As into the effluent going to a POTW or septic system. The backwash is not considered hazardous. This safety feature is not possible with the iron salts, GFO and GFH.
- FS50 allows for 16,000-20,000 empty bed volumes (EBV) of throughput before the FS50 media should be replaced. This is a significant operating cost efficiency and the media is nonhazardous for land fill disposal.
- GFO and GFH can be damaged by as little as 0.5 ppm Fe, 0.05 ppm Mn, low levels of silica and of phosphate. It is not uncommon to find SiO_2 levels of 10-50 ppm in the West.