

REMOVE TRACE METALS FROM WASTEWATER



arsenic
cadmium
lead
mercury



Frontier GeoSciences, Inc. (FGS) is an innovative environmental science research, consulting, and analytical services company. Since 1992 FGS has provided unmatched expertise and proven reliability in ultra-low trace metals detection and speciation to satisfy even the most demanding requirements.

FGS specializes in progressive research on the sources, fate, and effects of toxic trace metals in the environment. FGS was responsible for authoring or co-authoring many of the EPA 1600- series analytical methods for the determination of ultra-low trace metals in various media. As the referee laboratory for the EPA Method Validation of the 1600- series, FGS has the proven capabilities to provide quality data with an unparalleled reputation for accuracy.

FGS' project managers and principal investigators, in conjunction with our analytical staff, have the knowledge, skills, and experience necessary to develop, plan, and successfully complete even the most difficult projects. We provide tailored consultation for each project regarding sampling equipment requirements and procedures, quality control strategies, and expert data interpretation.



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IN-PROCESS HIGH-EFFICIENCY REMOVAL

Surface and groundwater from heavily contaminated sites and the effluents produced by most industrial processes often contain unacceptably high levels of controlled pollutants. Even in treated wastewater, many toxic trace metals persist in solution by complexing with dissolved or colloidal ligands.

Frontier GeoSciences has researched and developed a chelating agent to facilitate the easy removal of toxic trace metals from wastewater. Water Treatment Product-25 exhaustively strips and complexes most trace metals from indigenous competitive binding ligands including fulvic/humic acids, ammonium, citrate, sulphide, iodide, cyanide, NTA, and EDTA.

Upon complexation, WTP-25 is insoluble in aqueous phase and therefore precipitates extremely efficiently. Within the first minute, a majority of the metals of interest complex and precipitate out of solution. WTP-25 works with even extremely difficult solutions using only simple pretreatments such as settling, neutralization, oxidation, or digestion. This technology is easily integrated with current continuous-flow plant process equipment while maintaining a short treatment duty cycle.

Toxicity Characterization Leachability Protocol (TCLP) studies of the resultant sludge produced by WTP-25 have shown that only insignificant amounts of toxic trace metals can be released and fall well within regulated limits.

Contact FGS today to find out how you can take advantage of this innovative remediation method to quickly and efficiently remove trace metals from your wastewater.



Removal Efficiency

Trace Metal	Percentage
arsenic	>99
cadmium	>99
cobalt	>99.9
copper	>99
iron	>95
lead	>99
mercury	>99.999
nickel	>95
silver	>99
vanadium	>99
zinc	>96