

PROCESS FILTRATION / SEPARATION

Pressure Leaf for Groundwater Remediation

Industry: Remediation

Goals: Filtration of particulate for process protection and discharge

Project Overview:

Standards are typically more stringent at a remediation site than those required for an industrial discharge to a POTW. Thus it is important for these sites to have a very efficient and reproducible method to ensure removal of contaminants such as lead, mercury, metals and other colloidal solids.

Pressure leaf filters are able to filter at a sub-micron level and have the added advantage of flexible precoat materials. Thus one can tailor a system to address specific metals such as mercury in order to remove them much more effectively than conventional technologies. Unlike membrane systems, these filters are very forgiving when upsets and fouling conditions occur.

Critical Issues:

Able to remove metals and residual solids often to PPB levels

Vision for Solution:

- Special attention to pH and other parameters to ensure that removal is optimized.
- Precoat to ensure sub-micron filtration.

Typical Project Scope:

Complete system design
Fabrication / integration
Commissioning & start-up
Detailed design engineering

General Equipment Description:

Equalization
Chemical feed systems
PLC controls
Precoat system
Pressure leaf system
Carbon Filtration
Air Stripping

Special Features:

- No changing of bags or cartridge filters.
- Wide range of media and filtration options.
- Choice of discharge methods - Dry cake, sludge.
- Complete containment of filtration process containing vapors and minimizing operator exposure.



Technical Data:

Application - Pre-filtration to carbon, air stripper, ion exchange, replace clarifier / filter press with more effective technology for metals removal.

Equipment - Pressure leaf filter, either vertical or horizontal tank configuration; dry cake or wet sludge discharge; manual or automated.

Materials of Construction - Any commercially available metal alloy or rubber lined steel.

Filtration Data:

Flow Rate ----- 0.2 GPM/sq.ft. to 0.5 GPM/sq.ft.

Suspended Solids ----- Metal hydroxides or sulfides, colloidal solids.

Cycle Length ----- 8 hours to 1 week.

Precoat / Bodyfeed ----- DE, perlite, cellulose, carbon and others.