

Concrete and Mining Industries

Juneau, AK



- pH adjustment at a Mining Facility in Alaska is required to separate lead from mine Process Stream in a flocculation basin
- Sulfuric acid was used originally; however, due to sustainability benefits and safety reasons, the mineral acid was replaced with carbonic acid. The facility is located in a rainforest where sustainability is required to be put at the forefront of production practices.
- Significant financial savings were observed since switching because of the mild nature of carbonic acid in comparison to sulfuric. In the past, the piping for the sulfuric system had to be consistently replaced due to corrosion. Carbonic acid has prevented this need for infrastructure replacement.
- The operators at the Mine have praised the PSF for being an effective “plug and play” or turnkey design that they rarely must go out and physically service since all signaling and alarms are sent back to plant SCADA for remote monitoring.
- Lead is successfully separated out from the mine Process Stream with the PSF's ability to adjust pH down below 8.5 with over 95% efficiency.

- LIME SOFTENING
- ENHANCED COAGULATION
- H₂ STRIPPING
- WASTEWATER DISCHARGE FOR EPA REGULATIONS
- CORROSION CONTROL
- ARSENIC REMOVAL
- CHROMIUM 6+ REMOVAL

Neumont, CA



- Application: pH of second stage system for precipitation & co-precipitation of heavy metals is 10.5 Solids are then removed in a clarifier that gravity flows to a clear well for storage prior to further purification with UF membranes. After clarification, pH needs to be lowered from 10.5 to 8.0-8.5 using carbonic acid to prevent post precipitation and to meet discharge permit regulations.
- Carbonic acid system provided effective pH reduction to meet EPA discharge requirements without risking overshooting the pH target due to the inherent nature of carbonic acid's buffering capacity.

Questa, NM



- Application: pH adjustment to neutralize pH for calcium carbonate removal & precipitation of aluminum hydroxide solids through the addition of carbonic acid.
- System incorporated two (2) 600 lb. liquid carbon dioxide dewar tanks to generate approximately 4 GPM of carbonic acid to regulate the effluent stream to a pH between 7 and 8.
- The carbonic acid feed panel successfully controlled the clarifier feed pH to the desired target range.

