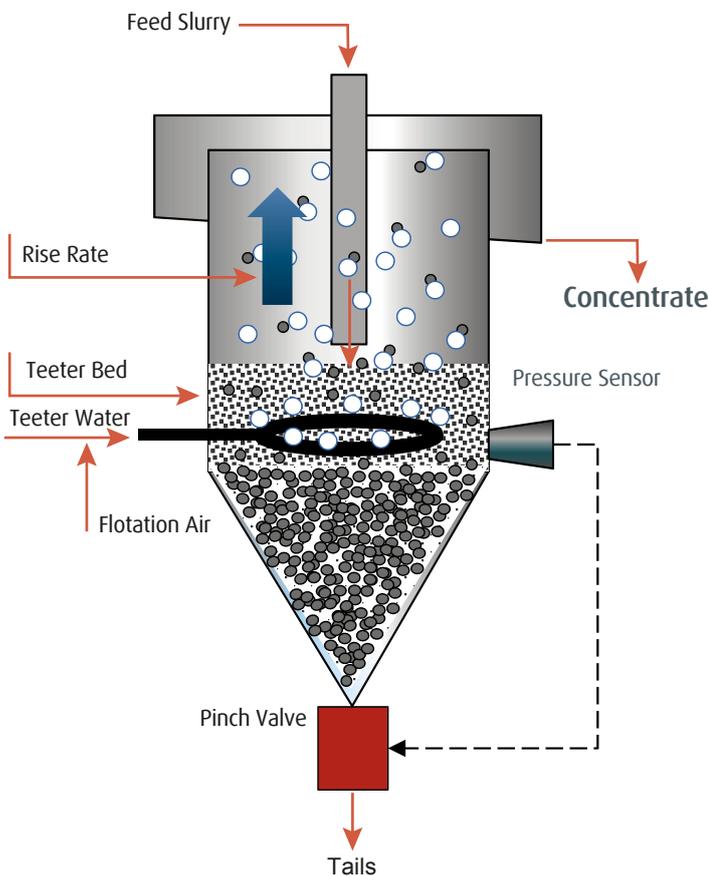
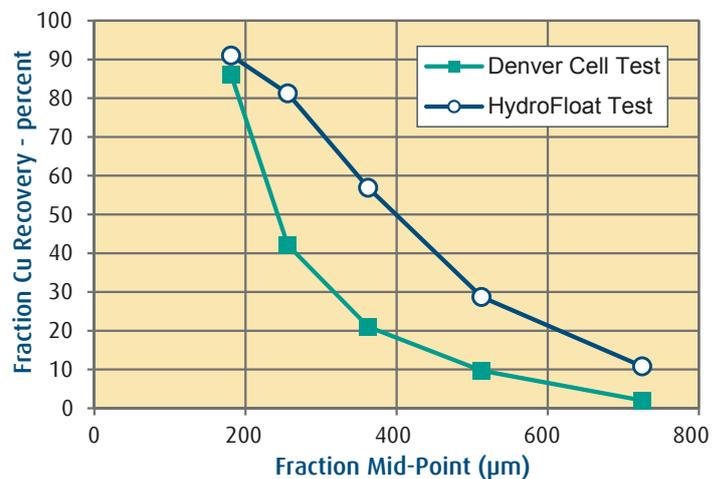




# Coarse Particle Flotation System

## HydroFloat™ Separator

ALS has developed extensive expertise in coarse particle flotation testing using Eriez HydroFloat™ technology. The HydroFloat™ separator is an aerated fluidized-bed device that combines flotation with gravity/elutriation techniques, allowing for recovery of relatively coarse particles with low target mineral exposures.



Air bubbles are dispersed by the fluidization system, percolate through the hindered-settling zone and attach to the hydrophobic component of coarse particles, rendering them sufficiently buoyant to float and report to the concentrate launder.

Testing is conducted using a 140mm diameter laboratory unit, typically fed at rate of 1-2kg/hr. The feed sample is generally ground to a coarse sizing in the range of 80% passing 600µm, and screened to remove <150µm material.

The resulting <850>150µm HydroFloat feed is then fed into the vessel in a continuous manner, establishing a stable fluidized (teeter) bed which is controlled by a pressure sensor and tailings pinch valve. Variations in operating parameters such as teeter water rate, air rate and reagent dosages can be investigated. Testing can be conducted on 20 kg of prepared feed.

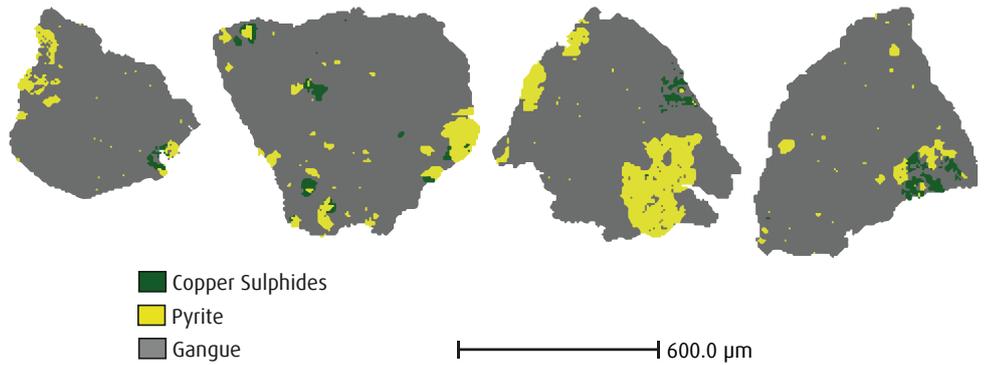
Significant recovery gains over conventional flotation technology can be achieved in coarse fractions of a flotation feed. Conventional flotation recovery often decreases significantly in fractions coarser than 200µm, whereas HydroFloat techniques can enhance recovery of base and precious metals in particles up to 600 to 800µm in size.

# Mineralogy – Surface Exposure

Mineralogical analyses of concentrate and tailings products indicate that relatively high recoveries can be achieved on particles with target mineral surface exposures as low as 15 percent, across a wide range of size fractions.

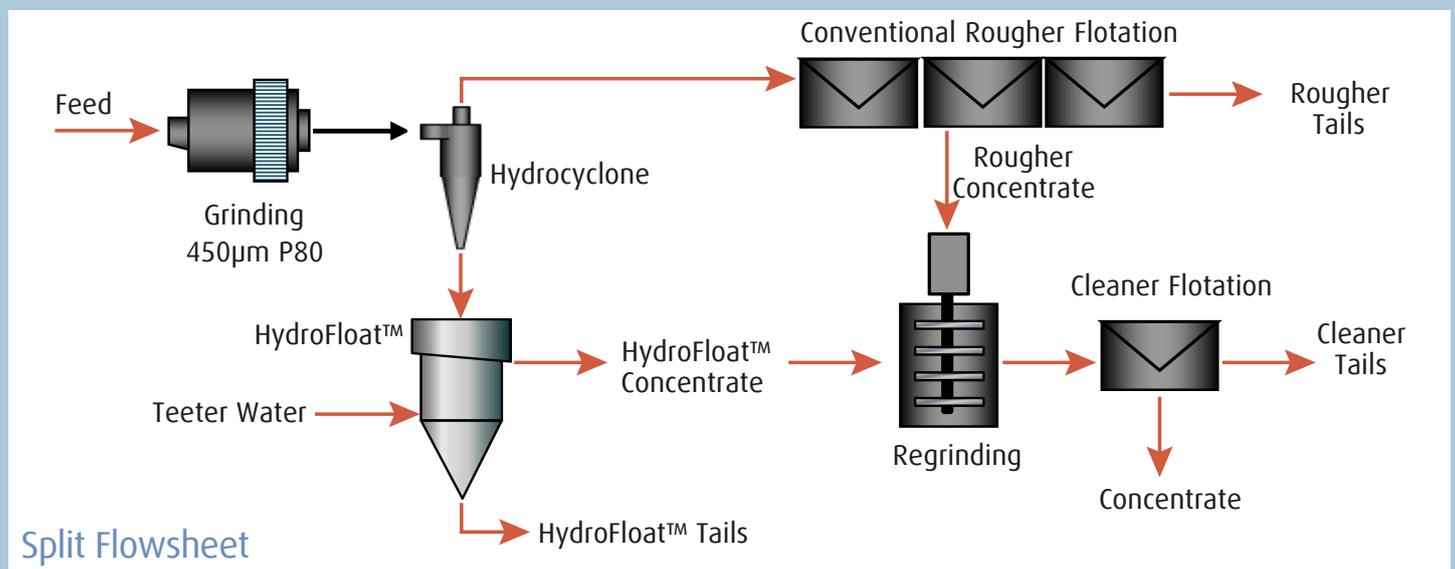
ALS Metallurgy has developed efficient techniques to assess exposure characteristics in coarse particles using QEMSCAN technology.

Examples of coarse particles reporting to HydroFloat™ concentrate

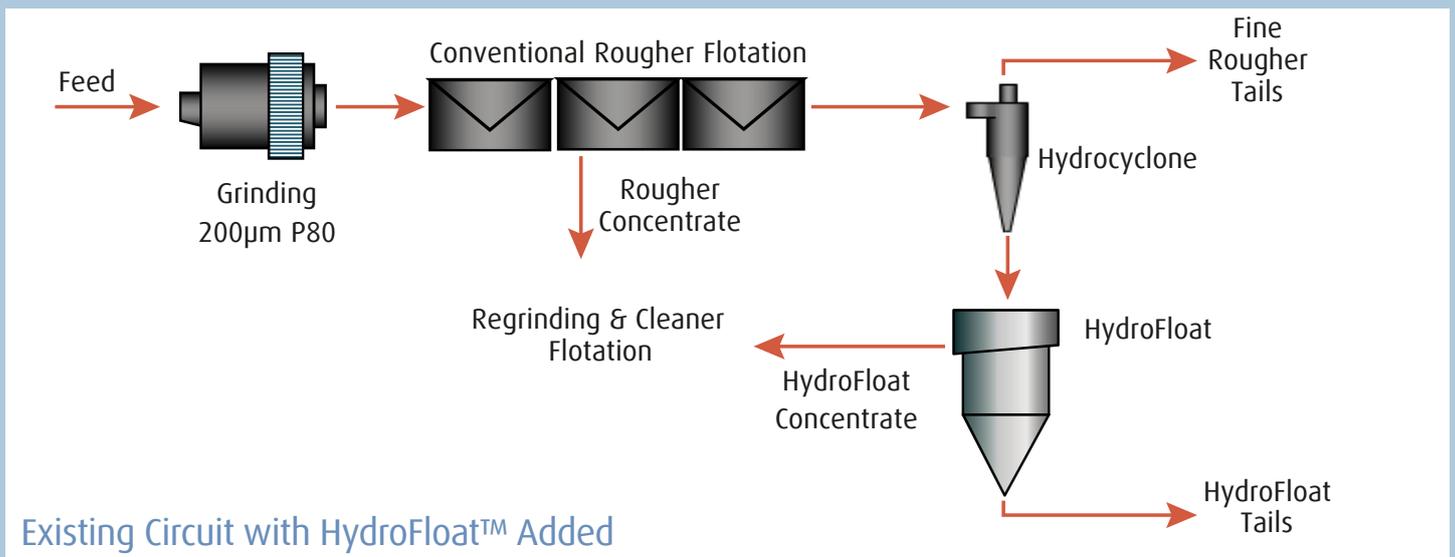


## Flow Sheet Applications

These diagrams show how HydroFloat™ could be included in a split flowsheet arrangement with a coarse primary grind sizing (top), and in a scavenging duty for an existing conventional flotation circuit (bottom).



Split Flowsheet



Existing Circuit with HydroFloat™ Added

Please contact us for any testing enquiries you may have.



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