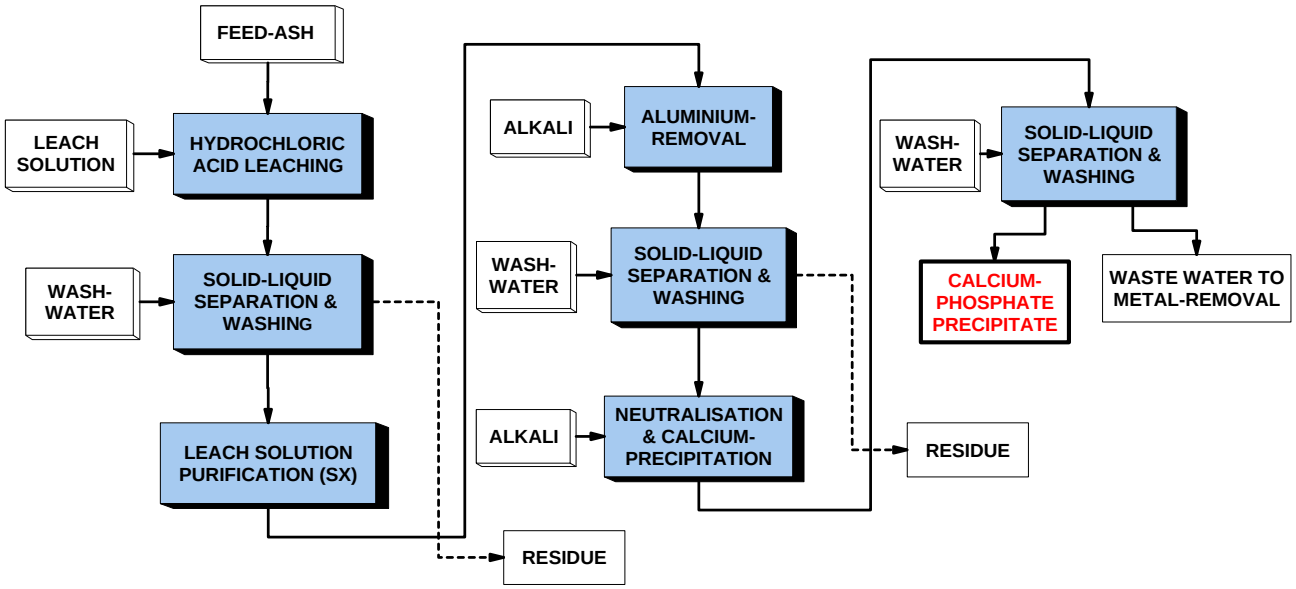
MEAB Hydrometallurgical Process Applications

The PASH Process

Phosphorus recovery from sewage sludge ash

The recovery of the phosphorus content starts with leaching the ash with diluted hydrochloric acid at ambient temperature. Elevated temperature results in an increased iron concentration in the leach solution and shall be avoided. The leach solution is filtered and the filter cake is washed with water and then carefully de-watered. The liquid filtrate, containing phosphorus, calcium and metal compounds, is treated for selective metal recovery by solvent extraction followed by phosphate precipitation.

If the aluminum content in the purified leach solution is too high, the pH is first adjusted to pH 2, were mainly aluminum phosphate is precipitated and removed. Then, the resulting filtrate is treated in the calcium phosphate recovery section were pH is raised with lime or limestone. If magnesium phosphate is required, adding magnesium sulphate precipitates calcium. In the final wastewater treatment, remaining heavy metals would be removed by addition of lime.



The conceptual flow sheet of the described process is shown below

References.

International Conference on Nutrient Recovery from Wastewater Streams, Vancouver 2009

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