

converted to steam and electricity. The process combines water, air, and sulfur to produce sulfuric acid.

The sulfuric acid plant planned for Phase 1 will be capable of producing approximately 2,900 tons per day of sulfuric acid. The Phase 2 sulfuric acid plant will be sized to double LCE production and will be capable of producing an additional 2,900 tons per day of sulfuric acid.

Sulfuric acid will be produced by burning molten sulfur with air to produce sulfur dioxide (SO₂), catalytically converting the SO₂ to sulfur trioxide (SO₃) and absorption of SO₃ in acid while generating a large amount of excess heat. This excess heat will be captured via economizers, a boiler, and a superheater to produce steam which in turn will be used to generate electrical power via the acid plant turbo generator set. Low pressure steam will be extracted from the turbo generator for use in the process plant, primarily the crystallizer evaporators.

Although the primary purpose of LNC's sulfuric acid system is to produce sulfuric acid for lithium processing, it will nevertheless generate electricity by converting excess heat to steam which, in turn, is diverted to a turbo generator to produce electricity for the lithium production process. The sulfuric acid plant will generate electrical power using double contact double absorption technology with an integrated steam turbo generator set. Electricity produced will be either distributed directly to the Project facilities or to the power grid in a buying-selling agreement, such as buy-all, sell all, with a utility authority(ies). The Project is expected to be a net exporter of electricity, not exceeding 15 megawatts (MW) in Phase 1.

The Phase 1 acid plant will have a turbo generator power output of approximately 34.5 MW based on zero steam extraction. Further energy recovery can be realized by installation of an "Alpha System" to recover heat in the form of medium pressure steam from the SO₃ absorption circuit. Installation of Alpha Systems is anticipated in Phase 2 and will allow the turbo generator sets to operate at maximum power output (LNC 2018).

An Elementary Neutralization Unit (ENU) will be constructed to neutralize equipment for maintenance activities or during equipment replacement. The ENU will be approximately 50 feet by 150 feet in size, with a one-foot high curb. Decommissioned sulfuric acid plant equipment will be neutralized with milk-of-lime or diluted caustic. The residue will be captured in a sump and sent to the neutralization circuit.

Should a leak occur within the secondary containment of the sulfuric acid plant, contaminated meteoric water will be stored in tanks until the leak is fixed.

LNC will need to shut down and conduct maintenance to the sulfuric acid plant every two years. The temporary maintenance shutdown will last approximately two weeks. LNC will utilize power from the Harney Electric line to start the sulfuric acid plant following maintenance shutdowns. During the shutdown period, mining operations will continue to take place wherever possible. Additionally, operations staff will continue to operate where needed in the process facilities. These areas include water and air systems operations. Maintenance work will also take place at this time. These activities will keep the Project running on the 365 days per year, 24 hours per day schedule.

3.16 Reagents and Chemicals Storage and Use

Reagents used for ore processing will be stored in the general plant area. Table 3-5 summarizes the annual estimated use and maximum amount stored on site.

Table 3-5 Reagents and Chemicals Storage

Reagents	Annual Estimated Use (tons)	Maximum Amount Stored (tons)
Limestone	169,036	7,165
Quicklime	126,204	1,127
Soda Ash	86,343	1,070
Molten Sulfur	340,247	13,454
SNF Hyperfloc AF-307	144	22
SNF Hyperfloc CP-624	72	22
Caustic Soda	145,668	1,409
Potassium Chloride	4,712	562
Aluminum Powder	0.9	0.9
Lithium Chloride	4,712	562

Reagents for ore processing will be stored within a concrete secondary containment area at the process plant, as appropriate. This containment area will be designed to contain 110 percent of the volume of the largest tank and the 100-year, 24-hour storm event.

Reagents will be transported by licensed vendors to the Project site via U.S. 95 from the north (Boise) and from the south (Winnemucca).

3.17 Clay Tailings Filter Stack

Lithium processing will produce tailings comprised of acid leach filter cake (clay material), neutralization filter cake, magnesium sulfate salt and sodium/potassium sulfate salts, collectively referred to as clay tailings. Limestone will be added on an as-needed basis for structural stability. LNC proposes to place the clay tailings in the CTFS which will be a permanent lined storage facility