IBAT Modular Direct Lithium Extraction Plant Performance Review Summary

SLR International Corporation (SLR) was retained by International Battery Metals, Ltd. (IBAT) for the completion of a high-level due diligence review of the IBAT Modular Direct Lithium Extraction Process Facilities in Lake Charles, Louisiana.

As the full report contains proprietary information and commercially sensitive data, this document summarizes the results of SLR's review from the report's Conclusions and Observations.

THE PLANT

IBAT has constructed and commissioned a Modular Direct Lithium Absorption Plant (the Plant) in Lake Charles, Louisiana. The Plant is in the initial operation stage and is currently being tested using a lithium-bearing oil field brine from the US. SLR visited the Plant from August 8 to August 11, 2022 to observe operation of the skid-mounted modules, speak with the design engineers, and verify the performance of the lithium extraction facility.

The Plant comprises 35 skid-mounted modules and is designed to produce 5,738 tonnes (t) LiCl in solution per year (5,000 t lithium carbonate equivalent (Li_2CO_3eq) per year), from a brine with a lithium concentration of 1,800 g/t Li (1,800 ppm Li).

MAIN OBJECTIVES

- Assess the modularity and mobility of the process plant design.
- Evaluate the ability of the selected absorption media to extract lithium, based on a mass balance from circuit sample analyses. This evaluation included:
  - Lithium extraction from the source lithium bearing brine based on brine feed and brine discharge from extraction stage
  - Desorption of lithium chloride (LiCl) from the absorbent
- Assess impurity rejection efficiency, measured directly from product LiCl solution analysis.
- Evaluate multi-cycle performance via the achievement of steady state operations.
- Measure water recovery determined from water balance calculation

CONCLUSIONS AND OBSERVATIONS

Lithium Extraction

Operation of the plant using source brine with 300ppm Li during three absorption and elution cycles was observed during the site visit:

Measurement	Range	Average
Estimated lithium extraction	72.6 – 87.5%	81.0%
Estimated lithium recovery to product	58.3 – 89.0%	68.8%
The estimated lithium loading into the absorption media	1.36 – 2.02kg	1.75kg (1.54kg/m^3)
Lithium elution from the media bed	1.09 – 1.91kg	1.48kg (1.30 kg/m^3)

Impurity Rejection Efficiency

- Lithium loading curves indicate the clear selectivity of the absorption media in favor of lithium over calcium, magnesium, sodium, and potassium. During the absorption cycle, the lithium concentration of the spent brine decreased from a fresh feed concentration of approximately 300 ppm Li to approximately 10 ppm Li while the concentrations of the impurity metals remained essentially unchanged.
- The average lithium concentration of the products from the load/strip cycles were 819 ppm Li, 2 ppm B, 75 ppm Ca, 31 ppm Mg, 8 ppm K and 135 ppm Na, indicating good rejection of impurities.

Water Recovery

- The product LiCl solution was concentrated using reverse osmosis (RO) from an average 819 ppm Li to an average 14,300 ppm Li in the RO concentrate to obtain water recovery of approximately 94% and a product LiCl solution of approximately 8.7% LiCl.
- The RO LiCl product solution will be concentrated further using a steam multiple effect evaporator to reduce the water content in preparation for transporting the LiCl solution to a Li2CO3 production plant. Permeate from the RO circuit is blended with strip buffer solution for use as eluent.
- RO water (permeate) recycle from product concentration along with condensate recycle from the transition and product solution multiple effect evaporators and heat recovery heat exchangers provides for a high degree of water conservation in the process and reduces the need for freshwater make-up.

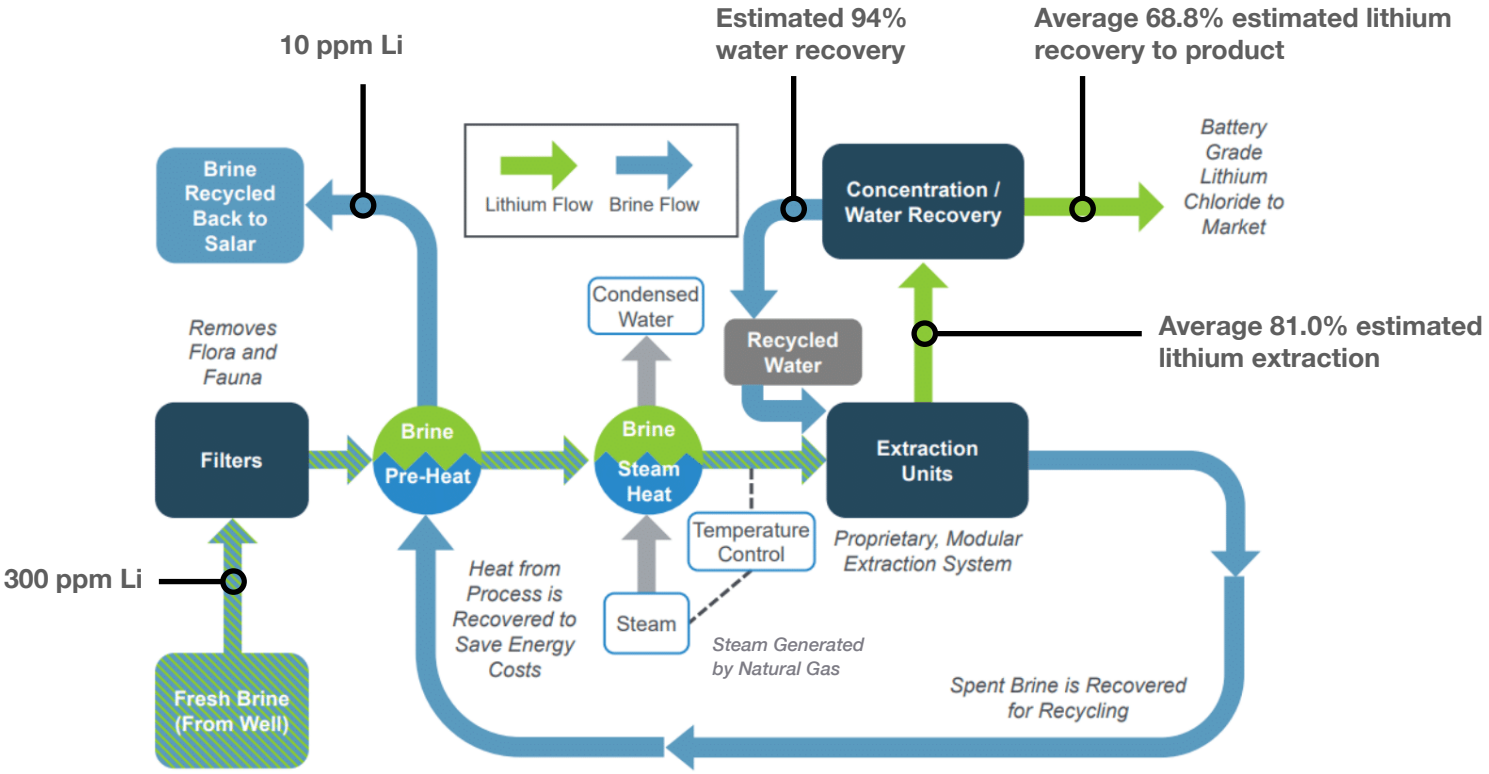
Modularity and Mobility

- The modules are robust and designed to oilfield standards of construction, comprising process, piping, and electrical equipment associated with specific process packages, access platforms for operations and maintenance, and structural steel support frames to prevent the equipment from moving during transportation.
- The modules are designed to be lifted with a crane using installed picking eyes and loaded onto trucks for transport.
- Dimensions of the modules vary depending on the process equipment package but are intended to match approximate standard tractor trailer dimensions.

Multi-cycle Performance

- The design flow rate through 12 absorption columns operating in parallel is 300 gal/min or 25 gal/min per absorption column. The volume of the absorbent bed in each column is 300 gallons, as such, the flow rate is equivalent to 0.083 bed volumes (BV) per minute.
- Operational tests consisted of continuously processing the lithium bearing brine (containing 300 ppm Li) through the Plant and monitoring the solution chemistry by sampling at regular intervals to determine the performance of the process equipment and the absorption media through multiple loading and elution cycles.

MOBILE DIRECT LITHIUM EXTRACTION PROCESS



SLR has reviewed and approved the information contained in this summary that is derived from the SLR report.

ABOUT INTERNATIONAL BATTERY METALS

International Battery Metals (IBAT) is the first company in the world to successfully design, build and operate a mobile, Modular Direct Lithium Extraction (MDLE) plant at commercial scale with lithium brine. IBAT's patented extraction technology is proven to recover more lithium from brine than traditional methods, while offering a far superior environmental performance. IBAT's technology can be built, deployed and brought on-line in a fraction of the time, and at a fraction of the cost of traditional lithium mining models.

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