17th August 2017

ASX via Electronic Lodgement

San Jose Lithium-Tin Deposit
Lithium Carbonate – Processing Route and Cost Estimates

Highlights

- **Plymouth has completed an estimate of the direct processing cost parameters**
- **Selection of Sulphate calcine for processing route to battery-grade LC and open pit mining for Mining License Application (MLA) confirmed**
- **Production of by product tin under examination (tin credits)**
- **Integration and confirmation of previous feasibility study data advanced**

Plymouth Minerals Limited (ASX:PLH) (Plymouth or the Company) is pleased to announce an update on the processing test work and the integration of this work into the existing historical feasibility study for the San Jose lithium-tin deposit. Plymouth and our JV partners have selected a commercial and known sulphate calcine/roast and fresh water leach (Sulphate route) to support the technical study required in the Mining Licence Application (MLA). Selection of Sulphate Calcine allows estimation of Operating costs.

The MLA is a public document lodged with the mining authorities in Spain which encompasses mining, processing, environmental and social aspects of the proposed San Jose lithium-tin project to an advanced level.

Plymouth and our JV partner have been conducted extensive technical work supporting a proposal to produce battery grade Lithium Carbonate (LC) on site mining ~1.25mtpa to feed the beneficiation plant to produce battery-grade LC at an annual production of 15,000 tonnes LC per year.

Total Operating costs (C1) are comprised of the sum of a) mining movement and tailing storage costs (Mining costs), plus b) beneficiation, processing and packaging costs for sale (Processing costs). This is shown in Figure 1. The processing costs are significantly the largest component of total Operating costs.

As a result of integrating historical and recent test work information, the Processing cost component of total costs is estimated to be in the range of **US$3,600-4,400/t battery-grade LC**. This does not factor potential credits from by-products such as tin. This is an excellent result and broadly better than expectations based on public research and public, historic studies at San Jose (Table 1).

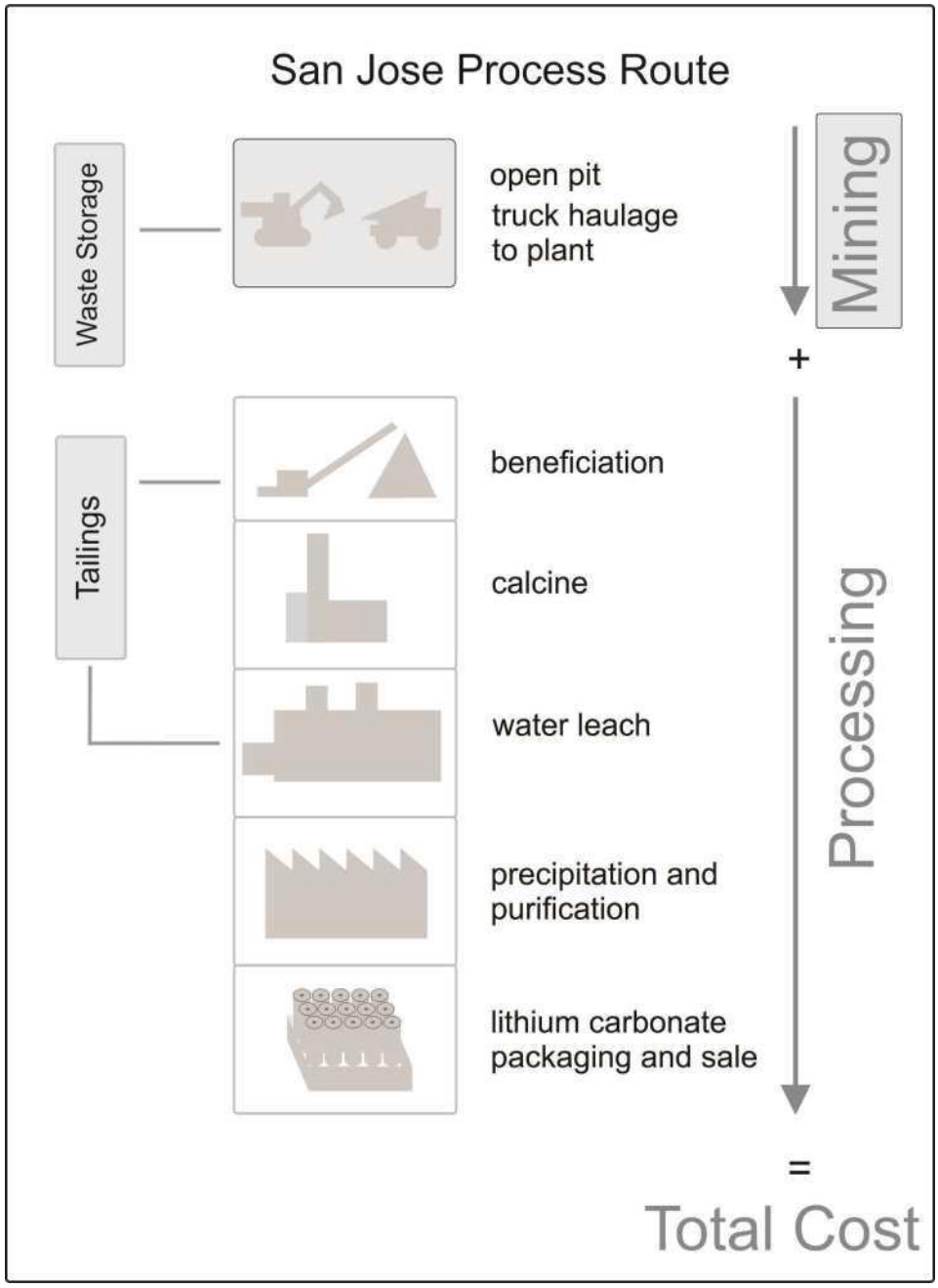

Figure 1 Sulphate calcine flowsheet to battery-grade lithium carbonate.

This will be outlined in detail within this document. The Processing costs estimated in this release are based on this scale of operation. All material assumptions in relation to the estimated operating costs are reflected in Appendix 1.

Mining is proposed to be conducted using open pit mining techniques. The deposit lends itself to large, bulk movements due to its outcropping nature, large size and grade distribution. The deposit contains in excess of 1.3 million tonnes of LC and has a large component of Indicated resources (See ASX announcement 25th May 2017). An update on total mining and tailings storage costs can be provided when final selection of preferred storage facility locations in the area and type are made. This is expected to be completed prior to the submission of the MLA and Plymouth expects to provide an update at that point.

These results are based on work being completed for the submission of the Mining Licence Application (MLA) for San Jose which is progressing well and will be lodged in early October 2017. Plymouth continues to advance technical, environmental and social aspects of the project towards lodgement of the MLA with our Joint Venture (JV) partners in Spain, Valoriza Mineria (a subsidiary of major Spanish group, Sacyr S.A.). Other process options were considered by Plymouth that had been identified in the historical feasibility study. These options, which included acid leach and gypsum roast process routes, delivered acceptable outcomes but were not selected by Plymouth.

TABLE 1: COMPARISON OF LITHIUM SOURCES

	 Brine	 Mica incl. Lepidolite	 Pegmatite
Established Grade Range Low v High	*0.1 - 0.2% Li_2O*	*0.4 - 0.6% Li_2O (San Jose 0.6 – 1.6%)*	*0.9 - 1.5% Li_2O*
End Sale Product	*Lithium Carbonate (Li_2CO_3)*	*Lithium Carbonate (Li_2CO_3)*	*Spodumene Concentrate (5-6% Li_2O)*
Intermediate product price (US$/t)	*N/A*	*N/A*	*500-600 (For 6% Li2O concentrate)*
Long Term Price (US$/t)	*10,000 – 11,000 Lithium carbonate*	*10,000 – 11,000 Lithium carbonate*	*Market less convertor margin*
Est. Cash Cost Range (US$/t LI_2CO_3)	*2,000 – 3,500*	*3,000 – 6,000*	*5,000 – 7,000+*
Dominant High-Grade & Scale Location	*South America*	*Europe, China, USA, Mexico*	*Australia / Africa*

Lithium Mica deposits can provide a shorter lead time to production that brine deposits and also produce lower unit costs than other hard rock (i.e. Spodumene) when the conditions enable processing onsite, this allows some mica projects to have operating costs in the lowest quartile of the cost curve (Table 2). Plymouth is pleased to be developing a large scale lithium mica project close to infrastructure in Spain.

Sulphate Calcine/Roast

Plymouth intends to produce battery grade LCE on site and not to ship concentrate to a separate facility. Several process methods are commercially available to Plymouth and were studied in the historical feasibility study to produce LCE on site (ASX release 21st July 2016). Plymouth has worked with supporting metallurgical consultants and reviewed all data available and has selected sulphate calcine/roast with water leach for lithium instead of acid leach for lithium.

	Brine Salars	Mica Concentrate	Spodumene Concentrate
Uses a Mining Process to Create Li_2O	✓	✓	✓
Can be Brought into Production Quickly	✗	✓	✓
Resource Sensitive to Minerology, Location, Strip Ratio etc.	✓	✓	✓
Usually Treated Onsite not Trucked + Shipped to Foreign Conversion Destination	✓	✓	✗
Low Energy Conversion Requirements	✓ (Solar Evap.)	✗	✗
Requires Purification Process of Li_2O to LCE Chemicals for Battery Use	✓	✓	✓
Production is Not Sensitive to Weather/ Ambient Conditions	✗	✓	✓
Lower C1 (based on complexity and transport)	✓	✓	✗

Sulphate calcine/roast utilises the mixing of mined/upgraded lithium-bearing material with a sulphate (either sodium sulphate or potassium sulphate) and then undergoing heating to approximately 830°C. Lithium is leached into solution using fresh water and this lithium-bearing liquor is then processed using evaporation, precipitation and purification to produce a refined battery-grade LCE. In comparison commercial production from spodumene concentrates requires heating to in excess of 1,100°C and then baked in acid to 200°C prior to leaching lithium into solution. This is followed by purification and precipitation of lithium carbonate.

The advantages of sulphate calcine (Sulphate) process over acid leach include;

- Cleaner precipitate and filter product (LCE)
- Ability to recycle a greater amount of reagents
- Use of fresh water to leach the lithium from calcined feed material
- Reduction in road transport (particularly of sulphuric acid) and related social impact
- More benign environmental impact at a project level
- Effect recycling of key reagents

ASX-listed European Metals (ASX.EMH) released a Pre-Feasibility Study in April 2017 based on this method of production from its Cinovec deposit in Czech Republic. European Metals has a lithium-mica deposit with substantial tin credits with similar grade tin. The San Jose has a very similar mineralisation style and benefits from open pit mining and higher grades.

Plymouth is continuing with detailed metallurgical testwork which will refine the cost range estimates currently available. This work is largely focussed on beneficiation test work and selection of ratios of sodium and potassium in the sulphate addition. The final selection of processing facility sites, and tailings storage method and location will allow accurate estimate of Mining costs and the provision of an all-in Operating cost.. Plymouth is confident of the range provided based on work conducted and the dominance of processing costs in the overall Operating cost price. Capital cost estimates will be completed upon final selection of the above processing and Mining cost parameters. This is expected to be completed by October 2017 as part of the MLA submission.

Mining licence Application and permitting

Plymouth and Valoriza Mineria are committed to an aggressive development timeframe for San Jose. This is endorsed by the regional government of Extremadura. As a key part of the criteria used by the Extremadura government to evaluate applicants of the public tender for San Jose (awarded May 2016) expedited development particularly in submission of the MLA was specifically detailed. The rationale is to bring the benefits of development to the region. Plymouth is on track as previously announced to submit the MLA in October 2017 and earn its 50% interest in San Jose under the terms of the JV with Valoriza Mineria.

Currently Plymouth and Valoriza Mineria are compiling documents from the studies that have been carried out as part of the JV which include resource, optimisation, mine planning, processing, waste management and marketing in order to produce the first draft of the MLA document. As per the JV agreement, Plymouth will earn its 50% interest in San Jose at this point (MLA submission) assuming expenditure of at least €1.5 million. Plymouth is on track to fulfil its obligations and enjoys a good relationship with its JV partner.

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About Plymouth Minerals' Lithium Project

Plymouth has partnered with the large Spanish company Sacyr and its wholly owned subsidiary Valoriza Mineria in an earn-in JV over a large, lithium-tin project (San Jose) in central Spain. Plymouth can earn up to 75% of San Jose by completing a Feasibility Study within 4 years (approximately A$6 million in spend in staged increments of 50% and 75%). Plymouth also retains an 80% interest in the Morille tungsten project in Spain which was extensively explored by Plymouth in 2013-2015.

San Jose is a highly advanced lithium project which is hosted in lithium-mica that hosts of JORC of lithium carbonate equivalent (LCE). A feasibility study completed in 1991 defined an open pit mining operation and a process flow sheet which produced lithium carbonate through acid-leach or sulphate calcine processing. This drilling, mining and processing study work highlights the advanced status and inherent advantages enjoyed by San Jose in relation to many other hardrock deposits. The resource estimate for San Jose is shown below in Table 1;

TABLE 2 SAN JOSE MINERAL RESOURCE, REPORTED ABOVE 0.1% LI CUT-OFF

Classification	Tonnes (Mt)	Li (%)	Li_2O (%)	Sn (%)
Indicated	23.9	0.31	0.67	0.02
Inferred	68.3	0.26	0.56	0.02
TOTAL	**92.3**	**0.27**	**0.60**	**0.02**

Estimated using Ordinary Kriging methodology. Note: Small discrepancies may occur due to rounding

Snowden Mining estimated the total Mineral Resource for the San Jose lithium deposit using Ordinary Kriging interpolation methods and reported above a 0.1% Li cut-off grade. Full details of block modelling and estimation are contained in the ASX announcement dated 25 May 2017.

Lithium (Li) mineralisation is commonly expressed as either lithium oxide (Li_2O) or lithium carbonate (Li_2CO_3) or Lithium Carbonate Equivalent (LCE)
Lithium Conversion: 1.0% Li = 2.153% Li_2O, 1.0%Li = 5.32% Li_2CO_3

Plymouth is not aware of any new information or data that materially affects the information included in this ASX release, and Plymouth confirms that, to the best of its knowledge, all material assumptions and technical parameters underpinning the resource estimates in this release continue to apply and have not materially changed.

About Plymouth Minerals' Potash Projects

Plymouth owns 100% of the Banio and Mamana Potash Projects, which are drill proven, high-grade, shallow potash deposits. Both Banio and Mamana enjoy good access to infrastructure being located on the coast of Gabon or on major transport river ways (barge) with direct access to export ports. Banio has a multi-billion tonne Exploration Target of carnallite and sylvinite based on historical seismic and drilling data. Plymouth is drill testing this Exploration Target.

Brazil is a major consumer of potash and South America is the largest consumer of sea-borne potash (MOP) in the world. The West African coast and potash deposits there enjoy a significant shipping advantage over other major potash producing regions.

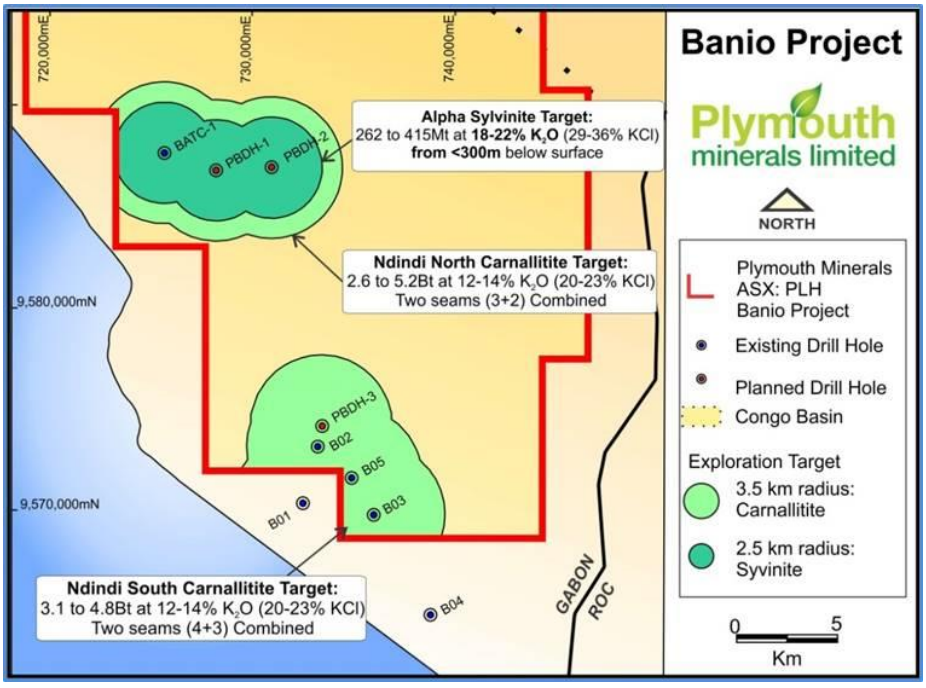
Exploration Targets for potash mineralisation at its 100% owned Banio Project in Gabon (Table 1).

Table 1: Exploration Target, Banio Project (Alpha and Ndindi Prospects)

Prospect	Potash Mineralogy	Depth to Potash (m)	Tonnage Range (Mt)	Grade Range (K_2O%)	Grade Range (KCl%)
Alpha	Sylvinite	290	262-415	18 - 22	28.5 - 34.8
Ndindi Northern	Carnallite	360	2,600-5,200	12 - 14	19.0 - 22.2
Ndindi Southern	Carnallite	500	3,100-4,800	12 - 14	19.0 - 22.2
Combined			6,000-10,400	12.3-14.4	19.4-22.7

*Disclaimer: The potential quantity and grade of the Banio Exploration Target is conceptual in nature. There has been insufficient exploration completed to date to estimate a Mineral Resource in accordance with the JORC 2012 Edition Guidelines. It is uncertain if further exploration will result in the delineation of a Mineral Resource.

Grade expressed as either units (%) K_2O or KCl. Ratio K_2O x 1.58 = KCl



Competent Persons Statement

The information in this report that relates to Exploration Results, Exploration Targets, Mineral Resources or Ore Reserves is based on the information compiled or reviewed by Mr Adrian Byass, B.Sc Hons (Geol), B.Econ, FSEG, MAIG and an employee of Plymouth Minerals Limited. Mr Byass has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Byass consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Exploration Targets and Mineral Resources for the San Jose project is based on the information compiled by Mr Jeremy Peters, FAusIMM CP (Mining, Geology). Mr Peters has sufficient relevant professional experience with open pit and underground mining, exploration and development of mineral deposits similar to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of JORC Code He has visited the project area and observed drilling, logging and sampling techniques used by Plymouth in collection of data used in the preparation of this report. Mr Peters is an employee of Snowden Mining industry Consultants and consents to be named in this release and the report as it is presented.

Disclaimer:

This announcement contains certain statements that may constitute "forward looking statement". Such statements are only predictions and are subject to inherent risks and uncertainties, which could cause actual values, results, performance achievements to differ materially from those expressed, implied or projected in any forward looking statements.

Forward-looking statements are statements that are not historical facts. Words such as "expect(s)", "feel(s)", "believe(s)", "will", "may", "anticipate(s)" and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to statements regarding future production, resources or reserves and exploration results. All of such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: (i) those relating to the interpretation of drill results, the geology, grade and continuity of mineral deposits and conclusions of economic evaluations, (ii) risks relating to possible variations in reserves, grade, planned mining dilution and ore loss, or recovery rates and changes in project parameters as plans continue to be refined, (iii) the potential for delays in exploration or development activities or the completion of feasibility studies, (iv) risks related to commodity price and foreign exchange rate fluctuations, (v) risks related to failure to obtain adequate financing on a timely basis and on acceptable terms or delays in obtaining governmental approvals or in the completion of development or construction activities, and (vi) other risks and uncertainties related to the Company's prospects, properties and business strategy. Our audience is cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and we do not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.

The Company projects are considered to be at an early development stage and will require further regulatory approvals and securing of finance and there is no certainty that these will occur.

The Company believes that it has a reasonable basis for making the forward looking Statements in the announcement, based on the information contained in this and previous ASX announcements.

Appendix 1

Operating Cost assumptions:

The operating costs have been developed for the planned San Jose Lithium Project processing plant which is expected to treat approx. 1.25m tonnes of ore a year. The following main components have been included in the overall plant operating cost.

Labour

The labour costs have been estimated using an organisation chart for a typical mine and hydrometallurgical refinery. The organisation chart has been populated with personnel to cover specific roles within the plant operation.

Electrical power

The process plant electrical power load has been estimated from the mechanical equipment list. Electric drive sizes have been estimated from an in house data base for specific equipment packages or calculated on the mass balance flow data.

Reagents

Reagent consumptions have been based on the process mass balance with the criteria for each reagent backed up by the testwork conducted as part of the study where available. Where testwork was incomplete reagent consumptions have been derived based on known or expected chemistry.

Consumables

Consumables consumptions have been based on the process mass and energy balance and the in house data base to suit equipment specific requirements calculations. The gas requirement for the kiln is the highest consumable cost. The gas requirement has been estimated by a specialist thermal processing engineer based on assumed data of concentrate mass flow, concentrate composition, and the required kiln temperature and residence time. It is stressed that this is a high level assumption and more detailed calculations will be undertake in the next phase of the study.

Maintenance

Maintenance costs for the process plant equipment have been based on a fixed percentage of the equipment capital cost for each area. The maintenance percentage varies depending on the type of equipment and process conditions of operation in each area. These percentages have been developed from experience with similar operations and equipment.

General and administration

A number of general and administration costs have been allowed for in the operating cost estimate.