JORC Code, 2012 Edition – Table 1 report template

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resources for the Keliber Oy Syväjärvi lithium deposit was reported in February 2019. The resource statement is signed by Mr Paul Payne whom is an AusIMM member with sufficient relevant experience to qualify as a Competent Person. • The Mineral Resources are inclusive of these Ore Reserves.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visits by Mr Ville-Matti Seppä was taken in June 2018 to confirm general site layout and to see Syväjärvi property. • Mr. Mikko Lamberg has visited te site in August 2017 and in September 2016, during the visits rock mechanical drill core logging was viewed and it was concluded to be conducted in to best industry practice.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• This Ore Reserve estimate is an update to the Definitive Feasibility Study which finished in February 2019. • The Mineral Resources have been converted to Ore Reserves by means of open pit optimisation and geotechnical study. The possibility to combine open pit mining with underground mining was also studied. Material, even if within the Mineral Resources that have not been planned to be mined at the LOM -plan have not been included in the Ore Reserves. Standard modifying factors as stated below were used.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• Li_2O cut-off grade of 0.40% was used in the open pit ore reserve estimation. The cut-off grade was estimated using break even cost/profit estimation based on the $LiOH.H_2O$ price of 12 433 € per tonne, estimated site operating costs and metallurgical factors.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design*	• Conventional Truck and Shovel Operation has been selected as a most suitable mining method for Syväjärvi Li- deposits. The ore bodies out crop and the need for pre stripping is small. • A Rock mechanical study has been carried out to estimate the open pit stability during the mining operation. • The waste rock dilution of was estimated from the drill core

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	issues such as pre-strip, access, etc. • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	intersections and from the block model based on the proportions of the ore solid inside the mined block model blocks. • 95% mining recovery have been used to convert the Mineral Resource contained inside the designed open pit shells to Ore Reserve. • Reserves have only been derived from Measured and Indicated Resource categories. • Inferred Mineral Resources were not considered in the conversion.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	• The production process consists of the following main functions: mining, crushing and optical sorting, grinding, enrichment, alteration of the crystal structure and leaching. • The sorter is assumed to remove partly the black country rock. • The basic reference recovery is based on geometallurgical test. As this is done in laboratory scale and in open circuit, scale-up paramters are applied to get lithium recovery for targeted concentrate grade in full scale. Also mass pull (mass proportion of concentrate compared to the ore/block/plant feed. • The concentrate with targeted grade is further processed in chemical plant. The process starts with conversion (calcination) and the conversion degree (%) is defined as mass proportion of lithium in leachable form (for soda pressure leach). This can be analysed with technique described by Outotec. • Deleterious elements are not assumed to be present or identified in tests.
Environmen-tal	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• The Regional Administrative Agency has granted Keliber a permission to initiate the preparatory work in the Syväjärvi mining area. • The Finnish Safety and Chemicals Agency has granted a mining permit for the Syväjärvi open pit mine in December 2018. The proceedings for establishing a mining area, which gives the right to use the mining area for mining operations are ongoing.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk*	• Syväjärvi deposit is located relatively close to existing infrastructure. • Skilled workforce to build missing infrastructure can be hired with

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	commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	relative ease.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	• OPEX and CAPEX costs related to mining are based on offers from Finnish mining contractors. • Exchange rate is based on data received from Keliber Oy. • Transportation charges are based on offers from contractors. • Processing costs are based on data received from Keliber Oy
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• Head grade and dilution were estimated yearly basis on the life of mine plan as the processing recovery is dependent on the ore grade % and the dilution %. • The final product selling price is received from Keliber Oy.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• Roskill Consulting Group Ltd. (Roskill) undertook a lithium market overview and outlook study. • In 2018, the USGS reported global lithium reserves to be 16 Mt Li (85 Mt LCE). The USGS also reported lithium resources at 53 Mt Li (282 Mt LCE). • Globally additional capacity will be required by the mid-/late -2020s to match demand growth later in the decade and into the 2030s. • The short, medium and long-term outlook for lithium consumption appears strong, with overall consumption growth forecast at 17.6% py to 2032. The market is forecast to reach over 1.3 Mt LCE in 2027 and 2.5 Mt LCE in 2032. • Average annual prices for the industrial grade lithium hydroxide are forecast to rise to USD15 000/t (nominal) by 2025 and USD19 000/t by 2032, although there is expected to be a weakening in prices in the period 2019 - 2022.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• The economics of the project have been evaluated with an Excel-based real-basis financial mode. • The lithium hydroxide price is based on the Roskill market report information using the real inflation adjusted base case which ranges from USD13 162 in 2021 to USD 15 742 in 2032.

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		• An exchange rate of 1.18 USD to Euro is used. • 8% Discount rate. • In general, a conservative approach has been taken in the evaluation of the Project.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• Stakeholder engagement activities are integrated into the national regulatory EIA process, applications for mining licenses, and related environmental permits and consents. • A Social Impact Assessment included a questionnaire sent to land owners, inhabitants in proximity to the mining sites and the Concentrator and along the public roads used for the transport of ore. The results of the questionnaire indicated that most respondents (60%) supported the project and 27% did not approve. The remainder of the respondents (13%) indicated that the mining project is not expected to impact them, and they did not indicate their support or opposition.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• The isthmus between Syväjärvi deposit and lake Heinäjärvi requires special attention. • Pöyry has no doubts regarding the necessary Government approvals and the timeframes.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• Ore reserves has been classified to Proven and Probable categories based on the Mineral Resource categories. • No conversion from indicated mineral resource into proven ore reserve was made. No conversion from measured mineral resource into probable ore reserve was made. • The ore reserves of the deposits appropriately reflect the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• MSc Ove Klavér (Pöyry Finland Oy) has reviewed the Ore reserve calculations and found them to be rightly estimated.

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Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• It is Competent Person's view that the quality and accuracy of the used modifying factors are in good level. • Variance in dilution and head grade has an effect to the total process recovery. The previously mentioned factors need to be considered in short term mine planning and in blast design.