PLATINA RESOURCES

ASX Announcement

23 July 2020

New extraction technology could provide the key to unlocking scandium deals.

Platina Resources' (ASX: PGM) will advance its trial of vat leaching for scandium extraction at its Platina Scandium Project (PSP) in New South Wales after initial tests highlighted its potential as a cheaper alternative to high pressure acid leaching (HPAL).

Traditionally used for oxide gold and copper ores and sometimes nickel laterite ores, vat leaching of our PSP ore produced encouraging results towards a proof of concept and delivering a smaller, lower cost project better aligned to the low volumes of scandium in the current market.

While conventional HPAL may recover more metal, the technology is more complex, larger scale and requires considerably more capital than vat leaching.

Platina Managing Director Mr Corey Nolan said the establishment of a cheaper, western world supply source of scandium would support the company's international campaign to secure production offtake agreements and enable project financing.

"We have been targeting potential customers in the USA, Europe, Asia and Australia but the key to unlocking a deal is lower prices for scandium oxide that can compete with other aluminium alloys in the market," Mr Nolan said.

"As such, Platina has been assessing a number of smaller scale development options to the HPAL process that formed the basis of our 2018 Definitive Feasibility Study whilst assessing different processing options for the ability to scale up production should demand increase."

Vat Leaching Trial

Initial agglomeration tests of PSP ore were carried out in bottle rolls to establish the right measure of acid, chemical binder, and water relative to the dry ore sample to create suitable characteristics for vat leaching.

A sample of the agglomerates is show in Figure 1 overleaf. A leach column test in a 144 mm diameter column with a bed depth of 1.4 m showed that the agglomerates were stable in the leach bed after an initial slump, allowing leach solution to percolate through the ore. Scandium extraction was 22% after 31 days, with acid consumption of just over 100 kg acid/t of ore. Based on the linear leaching rate, 50% scandium extraction could be achieved in approximately 24 weeks.

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Similarly, acid consumption is linear after the initial few days of leaching, and the calculated acid consumption for 50% scandium extraction is 477 kg per tonne of ore. A counter-current vat leaching arrangement would lower the acid consumption.

A second phase of testwork is planned to confirm these preliminary results and to obtain leach solutions for further processing. The aim will be to determine whether scandium could be recovered using a solvent extraction process similar to that in use at titanium dioxide pigment plants to recover scandium from spent acid. This will provide data to enable an initial economic evaluation of the process to determine its viability.

Figure 1: A sample of the agglomerates showing samples are relatively uniform in size and shape, with good retention of fine material on coarser grains. They remained moist after curing but with negligible retention of excess moisture. A soak test determined that the agglomerates were stable in aqueous environments.

Hybrid project

Platina has also been assessing the technical and economic viability of developing a battery materials processing plant that would produce nickel, cobalt, high purity alumina (HPA) and scandium from ores sourced throughout the Australia/Pacific region and blended with PSP ore. The concept involved designing the plant size to minimise capital expenditure and generate an attractive economic return for investors. The smaller plant size would also reduce technical and financial risks compared to large scale HPAL projects.

Initial modelling of the process option based on published information and historical testwork shows that a processing operation based on a blend of 90% imported limonite rich nickel/cobalt laterite ore and 10% scandium-rich PSP ore at approximately 250 t/d could be feasible. This operation is based on using novel leach and recovery technologies from Australian suppliers. The potential products that could be produced include nickel/cobalt mixed hydroxide, scandium oxide and HPA.

Sources of the imported high-grade nickel/cobalt laterite ores have been identified. State Development Areas on the eastern seaboard with suitable shipping logistics, and access to power and natural gas are being reviewed.

Platina has commenced a process of seeking potential development partners for the concept including working with Traxys.

This announcement was authorised by Mr Corey Nolan, Managing Director of Platina Resources Limited.

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ABOUT PLATINA RESOURCES

Platina is an Australian-based company focused on returning shareholder value by advancing early-stage metals projects through exploration, feasibility, permitting and into development.

The company has interests in the following projects:

- Challa Gold Project (100% interest – on completion) – Platina has entered into a conditional agreement to acquire a 100% interest in the Challa Gold Project located in-between the prolific Mt Magnet and Sandstone gold districts in Western Australia, 500km north-east of Perth.
- Platina Scandium Project – located in central New South Wales, the project is one of the largest and highest-grade scandium deposits in the world, which has the potential to become Australia's first scandium producer with cobalt, platinum and nickel credits.
- Skaergaard (100% interest) – One of the world's largest undeveloped gold deposits and one of the largest palladium resources outside of South Africa and Russia, located in Greenland; and
- Munni Munni (30% interest) – Situated in the Pilbara region of Western Australia, the project is one of Australia's most significant Platinum Group Metal occurrences. Munni Munni also has potential for conglomerate hosted gold and is a joint venture with Artemis Resources Limited.
- Blue Moon (to earn 70% interest) – Located in California, USA. The project has a NI43-101 resource which is open at depth and along strike and has favorable metallurgy.

DISCLAIMER

Statements regarding Platina Resources' plans with respect to its mineral properties are forward-looking statements. There can be no assurance that Platina Resources' plans for development of its mineral properties will proceed as currently expected. There can also be no assurance that Platina Resources will be able to confirm the presence of additional mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of Platina Resources' mineral properties or that Platina will achieve any of the valuation increases shown by the peer group zinc companies.

References to previous ASX Releases

The information in this Director's Report that relates to the Mineral Resources and Ore Reserves were last reported by the Company in compliance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves in market releases dated as follows:

- Platina Scandium Project - Positive Definitive Feasibility Study, 13 December 2018; and
- Platina Scandium Project Ore Reserve, 13 December 2018.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the market announcements referred above and further confirms that all material assumptions underpinning the production targets and all material assumptions and technical parameters underpinning the Ore Reserve and Mineral Resource statements contained in those market releases continue to apply and have not materially changed.

Competent Person Statement

Information in this announcement relating to the VAT leaching testwork is based on technical data compiled by Mr Boyd Willis, an Independent Consultant trading as Boyd Willis Hydromet Consulting. Mr Willis is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Willis has sufficient experience which is relevant to metal recovery from the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as a Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. This includes over 20 years of experience in metal recovery from Laterite ore and over 8 years of experience with Scandium hydrometallurgy. Mr Willis consents to the inclusion of the technical data in the form and context in which it appears.

JORC CODE, 2012 EDITION – TABLE 1 REPORT TEMPLATE

SECTION 1 SAMPLING TECHNIQUES AND DATA

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The sample was a left over from the pilot test sample used for the December 2018 Definitive Feasibility Study. The sample was representative of the Ore Reserve feed. The results of the pilot plant program are available in an ASX release dated 12 June 2018 • Approximately 200 kilograms was removed, packed in plastic bags and sent to the Core Metallurgy facility in Brisbane.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• N/A
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• N/A
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• N/A

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• N/A
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The test work was completed at the Core Resources laboratory in Brisbane.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• N/A
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• N/A
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	• N/A

Criteria	JORC Code explanation	Commentary
	• *Whether sample compositing has been applied.*	
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• N/A
Sample security	• *The measures taken to ensure sample security.*	• N/A
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• N/A

SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• N/A
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• N/A
Geology	• *Deposit type, geological setting and style of mineralisation.*	• N/A
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth*	• N/A

Criteria	JORC Code explanation	Commentary
	o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• N/A
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• N/A
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• N/A
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• N/A
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Initial agglomeration tests of PSP ore were carried out in bottle rolls to establish the right measure of acid, chemical binder, and water relative to the dry ore sample to create suitable characteristics for vat leaching. • A leach column test in a 144 mm diameter column with a bed depth of 1.4 m showed that the agglomerates were stable in the leach bed after an initial slump, allowing leach solution to percolate through the ore. Scandium extraction was 22% after 31 days, with acid consumption of just over 100 kg acid/t of ore. Based on the linear leaching rate, 50% scandium extraction

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		could be achieved in approximately 24 weeks. • Similarly, acid consumption is linear after the initial few days of leaching, and the calculated acid consumption for 50% scandium extraction is 477 kg per tonne of ore. A counter-current vat leaching arrangement would lower the acid consumption.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• A second phase of testwork is planned to confirm these preliminary results and to obtain leach solutions for further processing. The aim will be to determine whether scandium could be recovered using a solvent extraction process similar to that in use at titanium dioxide pigment plants to recover scandium from spent acid. This will provide data to enable an initial economic evaluation of the process to determine its viability.