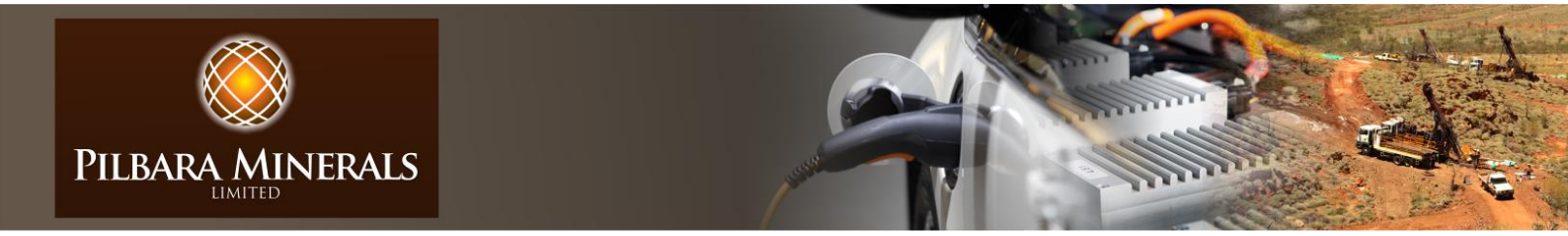

ASX/Media Announcement **22nd August 2016**

PILBARA MORE THAN DOUBLES PILGANGOORA ORE RESERVES TO 69.8MT AHEAD OF KEY DEFINITIVE FEASIBILITY STUDY

ORE RESERVE NOW CONTAINS OVER 883,000 TONNES OF LITHIUM OXIDE (2.17MT OF LCE) EXTENDING THE PLANNED MINE LIFE TO 35 YEARS AT 2MTPA, WITH SIGNIFICANT SCOPE TO INCREASE THE MINE PRODUCTION RATE

HIGHLIGHTS:

- **Substantial increase in Proved and Probable Ore Reserves for Pilbara's 100%-owned Pilgangoora Lithium-Tantalum Project to 69.8Mt grading 1.26% Li_2O (spodumene), 132ppm Ta_2O_5 and 1.04% Fe_2O_3 following highly successful drilling programs undertaken as part of the Definitive Feasibility Study.**
- **This represents a 136% increase in the total Proved and Probable Ore Reserve compared with the maiden Ore Reserve used to underpin the March 2016 Pre-Feasibility Study (29.5Mt grading 1.3% Li_2O and 134ppm Ta_2O_5).**
- **The updated Ore Reserve contains 883,000 tonnes of lithium oxide and 20.3 million pounds of Ta_2O_5, sufficient to underpin a planned mine life of approximately 35 years based on a 2Mpta operation – more than double the projected mine life in the PFS.**
- **Significant opportunities exist to further expand Mineral Resources and Ore Reserves in the future, with studies already underway on a possible future expansion of plant capacity.**
- **The upgraded Ore Reserve is based on a conservative assumed price for 6% battery grade spodumene concentrate of US$460/tonne, consistent with Pilbara's strategy to become an extremely low-cost hard-rock lithium producer, operating well into the bottom cost quartile on a long-term basis.**
- **The new Ore Reserve will underpin the Definitive Feasibility Study for the Pilgangoora Project, which is now in its final stages and on track to be released in early September 2016, following Pilbara Mineral's Board review.**

Australian lithium developer Pilbara Minerals Ltd (ASX: PLS) is pleased to report a substantial increase in the Ore Reserves for its 100%-owned **Pilgangoora Lithium-Tantalum Project** in WA's Pilbara region to **69.8 million tonnes grading 1.26% Li_2O** paving the way for the completion of a pivotal Definitive Feasibility Study (DFS) in September. The significant increase in the Ore Reserve (beyond that anticipated by the Company from PFS planning) has meant that additional work was required to finalise site footprints including waste dumps, Tailings Management Facility and surface water management designs. As a result, it is expected that the full details of the DFS results and financial model will be released in early September, following review by the Pilbara Minerals Board.

The updated Ore Reserves, which is more than double the maiden Ore Reserve announced in the March 2016 Pre-Feasibility Study (29.5Mt at 1.3% Li_2O and 134ppm Ta_2O_5), is based on the upgraded Mineral Resource announced in early July of 128.6 million tonnes @ 1.22% Li_2O containing 1,572,000 tonnes of Li_2O. The expanded resource program from February to June 2016 not only increased and upgraded the Inferred and Indicated components of the resource to expand the reserve but also substantially increased the global resource.

The overall Pilgangoora Ore Reserve now comprises **883,000 tonnes of contained lithium oxide and 20.3 million pounds of contained tantalite.**

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The DFS is being undertaken on the basis of developing a standalone operation at Pilgangoora with an annualised ore throughput rate of 2Mtpa, however the recent increases in both the global Mineral Resource and Ore Reserves will clearly support a future expansion of plant capacity. Studies are already underway to increase production capacity to 4Mtpa in the future, once operations at Pilgangoora have commenced at the initial targeted production rate of 2Mtpa (330,000tpa of spodumene concentrate).

Pilbara Minerals' Managing Director, Ken Brinsden, said the increase in Ore Reserves reinforced Pilgangoora's position as a globally significant hard rock lithium-tantalum deposit – highlighting the grade, quality and scalability of the deposit and setting the scene for the upcoming DFS, now in its final stages.

"Of particular note is the fact that the upgraded Ore Reserves have been calculated using a conservative assumed price for 6% battery grade spodumene concentrate of US$460 a tonne, which is well below the current market price and considerably below the medium term prices being forecast by most major investment banks and commodity analysts.

"One of the key attributes of Pilgangoora is that, because of its exceptional grade, scale, low stripping ratio and great location it will be one of the lowest cost hard rock lithium operations in the world. That sets us apart from many of our peers and puts us in a position where we expect to have an extremely robust operation capable of generating strong margins at all stages of the lithium price cycle.

"Moreover, the pegmatite system at Pilgangoora is huge and the deposit remains open in many areas. This offers significant further potential for growth, both in terms of the global resource inventory and ultimately future Ore Reserve growth. While we have made it clear that our strategy is to enter the market in a sensible, staged manner based initially on a 2Mtpa production rate, there is clear potential to grow the operation rapidly and we have already commenced studies to examine this potential."

2012 JORC Reserve Estimation

Mining Plus (MP) was commissioned by Pilbara Minerals Limited (Pilbara Minerals) to complete a Feasibility Level Mining study (FS) on Pilbara Minerals' 100% owned Pilgangoora Tantalum-Lithium project. This feasibility study follows the Pre-Feasibility Level (PFS) Mining Study completed by Mining Plus in March 2016, with the resulting maiden ore reserve announced by Pilbara Minerals on 10 March 2016 (See figure 1 - Pilgangoora Cross Section showing both the original PFS pit outline and the new DFS pit outline).

The project contains pegmatite deposits, with the Feasibility Study (FS) based upon an updated mineral resource geological model, completed in July 2016, with updated and new mining contractor costs and prices applied to achieve feasibility level (+/- 15%) costing. The feasibility study has involved working in conjunction with Pilbara Mineral's other selected consultants, while Mining Plus' expertise was limited to the mining section of the feasibility study.

The Ore Reserves are based on the Mineral Resource update released on the 11th July 2016, by Pilbara Minerals, competent persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited), Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd). This mineral resource is based on the current topography, as no mining has taken place for several years. The mineral resource reported with all domains (capturing material above 0.01% Ta2O5) results in the mineral resource outlined in the Table below.

Table1: Pilgangoora Tantalum-Lithium Geological Mineral Resource Estimate (July 2016)

Category	Tonnage (Mt)	Li2O (%)	Ta2O5 (ppm)	Li2O (T)	Ta2O5 (Mlbs)
Measured	18.0	1.36	150	245,000	5.9
Indicated	65.6	1.24	131	812,000	19.0
Inferred	45.0	1.15	144	515,000	14.2
TOTAL	128.6	1.22	138	1,572,000	39.2

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During the FS stage of work, Mining Plus's scope of work includes the work areas outlined below:

- Mine Planning Criteria
- Optimisation
- Mine Design and Scheduling
- Mine Infrastructure
- Mine Contractor Pricing
- Cost and Revenue Modelling
- Feasibility Study Reporting
- JORC (2012) Ore Reserve Reporting
- Future Works Plan

The study consisted of an initial conversion of the mineral resource model to a mining model, then the completion of both open pit optimisation and mine shape optimisation using the mining models, with finally the development of engineered open pit designs, and then mines scheduling and costing.

The Mining method is based on open pit mining, and was evaluated for truck and hydraulic excavator (backhoe) operations utilising 4 x 2.5m flitches for 10m benches for combination waste pegmatite mining and 10 m bench mining for waste mining.

Conventional regularisation methods indicated significant dilution would be included due to the variation in width, strike and shallow dip of the pegmatites, should this method be applied. Mine Shape Optimiser evaluation, with its flexible width and slope parameters, provided a less aggressive dilution solution that will be more reflective of actual mining practices. This work supported the overall dilution study value of 5%, at a nominal 80/20 ratio of greenstone to pegmatite with an overall average Fe_2O_3 grade of 9.7%. This raises the average grade within the final pit mineral resource from 0.55% to an ore reserve estimate of 1.03% Fe_2O_3.

A Whittle optimisation was performed and a subsequent ultimate and staged pits were designed valuing only JORC mineral resource measured and indicated category materials. The optimisations utilised the PFS metallurgical test work recovery figure for Li_2O of 76.7% and the Ta_2O_5 recovery figure of 45%, as DFS estimates were still being compiled while mine optimisation work was underway.

Modifying factors are based on the work recently completed in the Pilgangoora FS and the previously released Pilgangoora Lithium-Tantalite Pre-Feasibility Study (ASX released 10 March 2016), with modifying factors such as processing recoveries and costs, financial parameters, and geotechnical design parameters provided by professionals competent in these areas.

Key parameters used as part of the pit optimisation process included (but are not limited to):

- Assumed average of 2 Million tonnes of ore processing per annum.
- A selling price of USD$460.00/t for Battery Grade concentrate, at 6% Li_2O at as provided by Pilbara Minerals,
- Mining costs derived from submissions received from mining contractors who priced the previously completed study.
- Processing costs as per the 2Mtpa rate from of the Como Engineering.

This JORC Ore Reserve optimisation results and pit designs, has been compared to recently completed FS study's optimisation results, pit design and schedules to ensure this Ore Reserve estimate is economic and practically able to be achieved based on all available information.

The JORC Ore Reserve for the final pit design is shown below. In addition, the life-of-mine strip ratio for the JORC Ore Reserve pit design's strip ratio is 4.1. It is reasonable to assume the JORC pit design is economically mineable.

Table 2: Pilgangoora Tantalum-Lithium Project JORC Ore Reserve Estimate (August 2016)

Category	Tonnage (Mt)	Li_2O (%)	Ta_2O_5 (ppm)	Fe_2O_3 (%)	Li_2O (T)	Ta_2O_5 (Mlbs)
Proved	17.5	1.31	143	0.94	230,000	5.5
Probable	52.3	1.25	128	1.07	653,000	14.8
TOTAL	69.8	1.26	132	1.04	883,000	20.3

This Ore Reserve is the economically mineable part of the Measured and Indicated Resource. It includes mining dilution and allowance for losses in mining. Appropriate assessments and studies have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified.

The FS pit and waste rock dump designs are designed and will impact the Pilgangoora Creek. It has been assumed that regulatory approval for this will continue to be progressed with the appropriate authorities. As part of the pit design an initial diversion drain and embankment has been completed.

The waste rock dump designs take into account the potential acid forming material (PAF) likely to be encountered in the Eastern and Central deposits, and are designed to meet the license requirements. Waste rock characterisations studies to determine the quantity and reactivity of the PAF have been undertaken in parallel with the mining studies.

Management of top soil material including pre-stripping prior to mining and storage for future incremental rehabilitation has been considered in the feasibility study. A Soil Characterisation review and report has been completed by environmental consultants.

Overall the mining cost inputs are based on current marketing pricing received from mining contractors' submissions, which were based on the previous completed PFS study mine design and schedule. Mining cost inputs applied in the FS have been adjusted to reflect the mine design and schedule for the recently completed feasibility study

The methodology for the completion of the mining costs and the application of the mine contractor costs, comprise creation of mining volumes per BCM for mining activities with consideration of the location of the material and type of material coded into the block model, and these results are collated per period during mining scheduling and then multiplied by the appropriate rates. Mining fleet capital has been considered by including numerous mobilisation and demobilisation costs at intervals during the mine life to consider this activity by mining contractors;

Mining Costs also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, ore rehandle and crusher feed, clear and grub, top soil management, and rehabilitation and mine closure criteria.

Drill and blast costs have been similarly evaluated from drilling costs from the recently received submissions from mining contractors. These have been further modified for the traditionally high powder factors of Spodumene blasting based on experiences of the competent person in operations with similar rock conditions.

Infrastructure requirements for open pit mining include; maintenance workshop for all mobile equipment, offices, crib rooms and amenities, fuel farm, water dams, and de-watering systems as required (See figure 2 - Pilgangoora Proposed operations and mine layout for the 70Mt reserve). It is assumed some of the mine infrastructure will be provided by a primary mining contractor, with costing also completed by Quattro Project Engineers to ensure this mine infrastructure is adequately costed within the feasibility study.

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As part of the Pilgangoora feasibility study, Pilbara Minerals commissioned Como Engineers to complete the mineral processing test-work including estimates for the capital required for construction of the processing plant. Within the mining study the metallurgical recovery assumptions used are as per metallurgical results as provided to the Competent Person from external metallurgical consultants (Como Engineers). Metallurgical test work is ongoing and further optimisation of the process is expected.

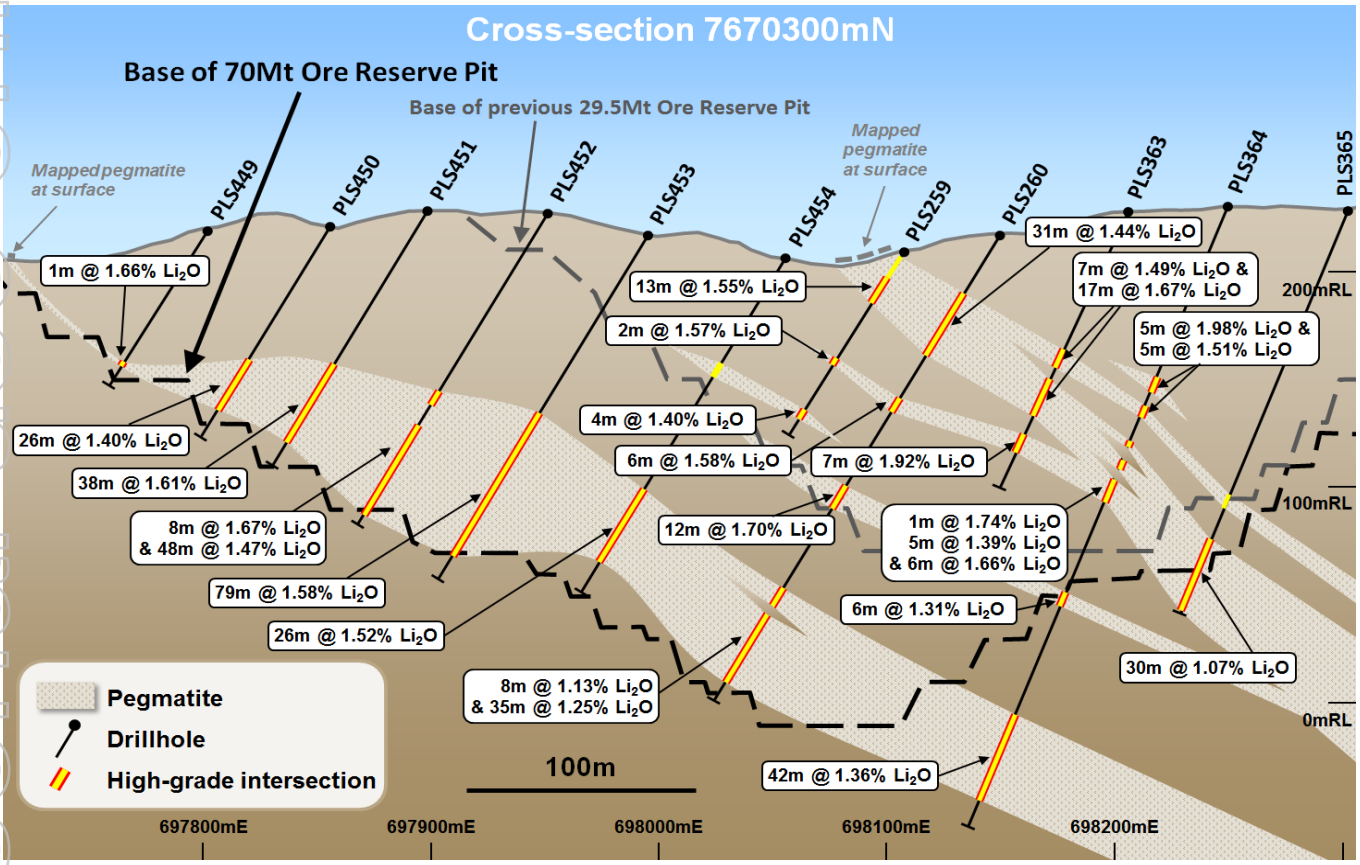

Figure 1 – Pilgangoora Cross Section showing both the original PFS pit outline and the new DFS pit outline

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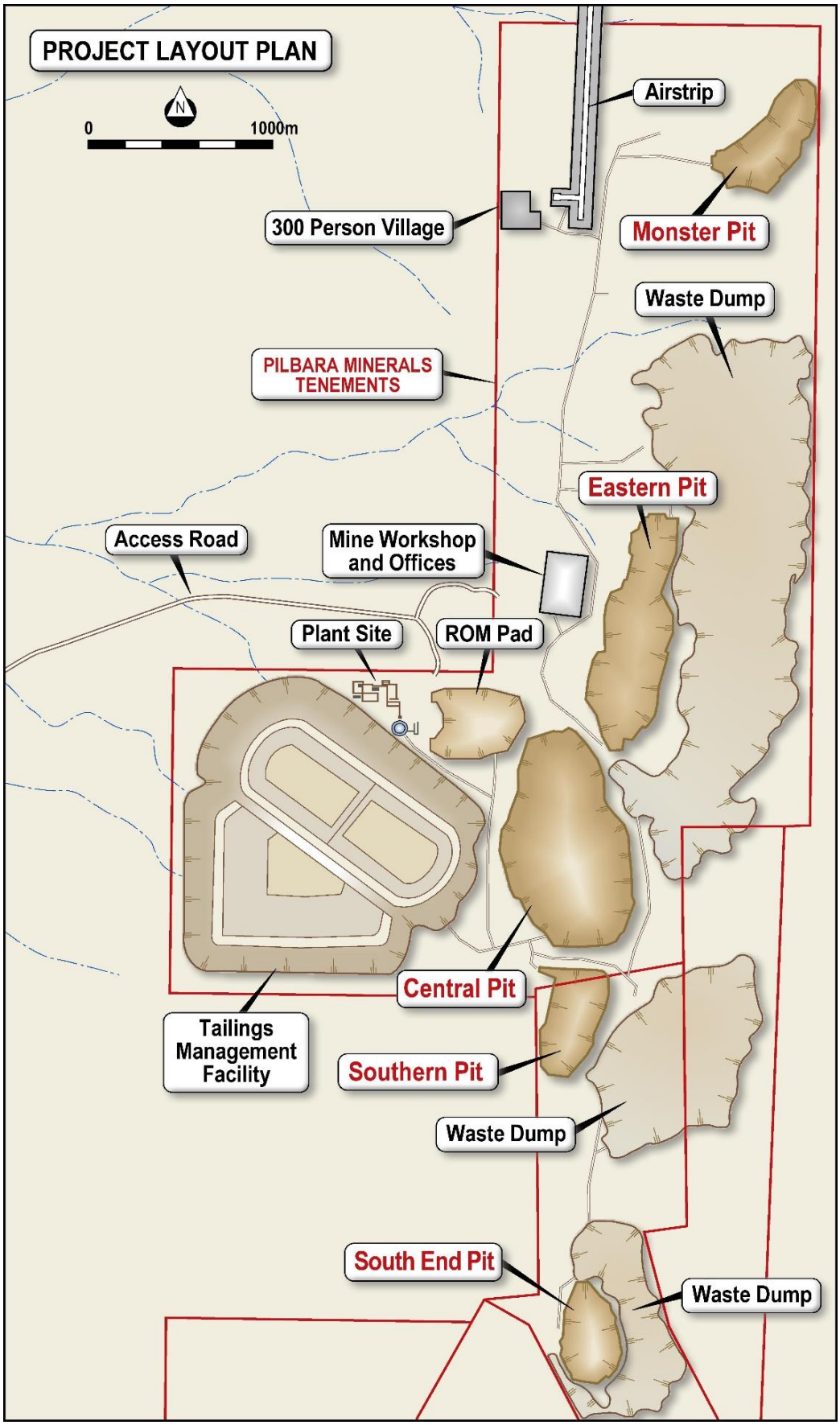

Figure 2 – Pilgangoora Proposed operations and mine layout for the 70Mt reserve.

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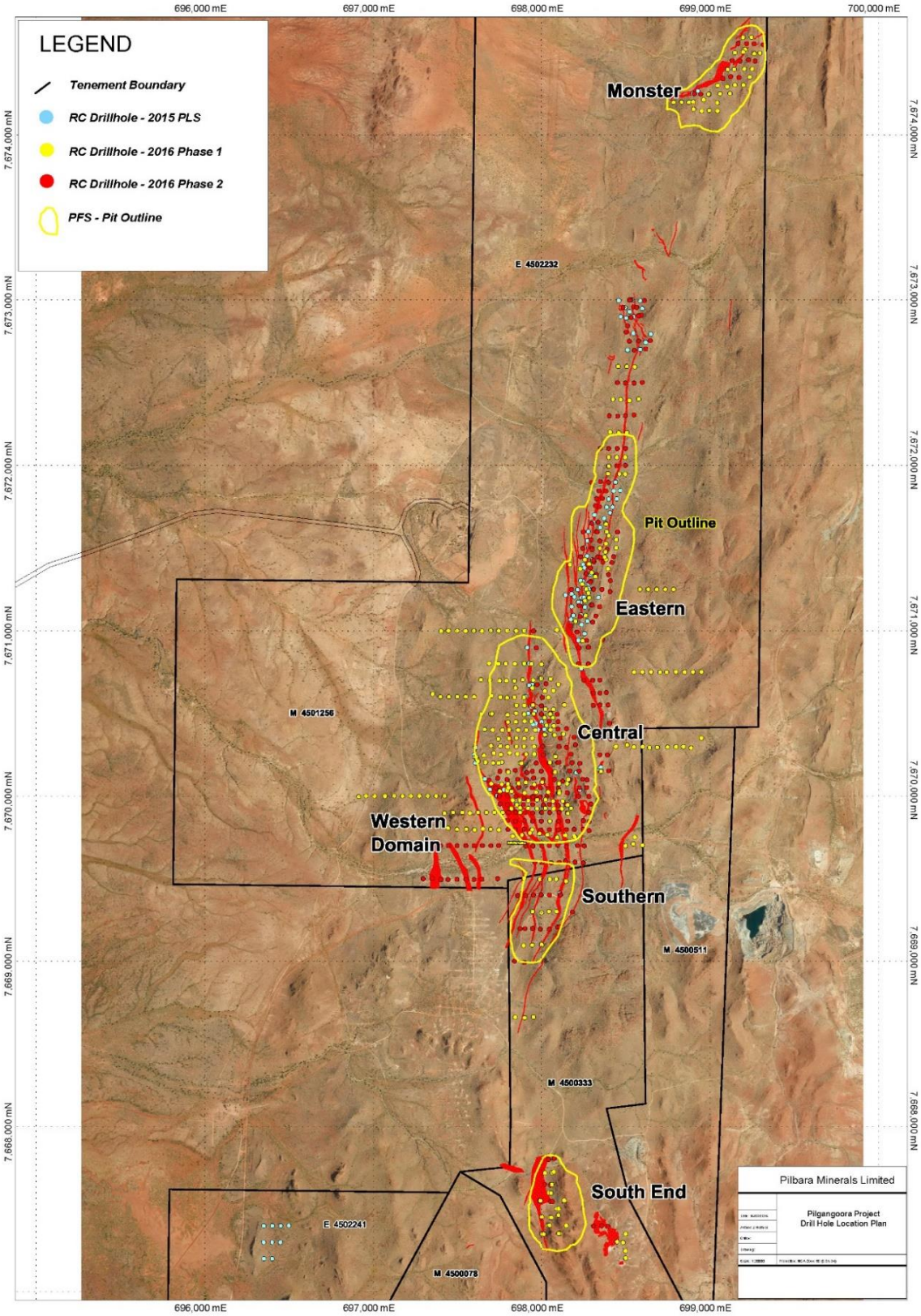

Figure 3 – Pilgangoora RC collar locations within licences E45/2232 and M45/333 showing the 2016 resource drilling and the proposed pit Outlines.

Competent Person's Statement

The Company confirms it is not aware of any new information or data that materially affects the information included in the 11th July, 2016 Pilgangoora Mineral Resource Estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 11th July, 2016.

The information in this report that relates to Ore Reserves is based on information compiled by David Billington who is employed by Mining Plus, is a Competent Person and a Member of The Australasian Institute of Mining and Metallurgy included in a list that is posted on the ASX website from time to time. David Billington has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Ore Reserves'. David Billington consents to the inclusion in the report of the matters based on his (or her) information in the form and context in which it appears.

More Information:

ABOUT PILBARA MINERALS

Pilbara Minerals ("Pilbara" – ASX: PLS) is a mining and exploration company listed on the ASX, specialising in the exploration and development of the specialty metals Lithium and Tantalum. Pilbara owns 100% of the world class Pilgangoora Lithium-Tantalum project which is the second largest Spodumene (Lithium Aluminium Silicate) project in the world. Pilgangoora is also one of the largest pegmatite hosted Tantalite resources in the world and Pilbara proposes to produce Tantalite as a by-product of its Spodumene production.

ABOUT LITHIUM

Lithium is a soft silvery white metal which is highly reactive and does not occur in nature in its elemental form. It has the highest electrochemical potential of all metals, a key property in its role in Lithium-ion batteries. In nature it occurs as compounds within hard rock deposits and salt brines. Lithium and its chemical compounds have a wide range of industrial applications resulting in numerous chemical and technical uses. A key growth area is its use in lithium batteries as a power source for a wide range of applications including consumer electronics, power station-domestic-industrial storage, electric vehicles, power tools and almost every application where electricity is currently supplied by fossil fuels.

ABOUT TANTALUM

The Tantalum market is boutique in size with around 1,300 tonnes required each year. Its primary use is in capacitors for consumer electronics, particularly where long battery life and high performance is required such in electronics, automotive, aerospace, chemical manufacturing and other industries.

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FORWARD LOOKING STATEMENTS AND IMPORTANT NOTICE

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars ($) and cents in this announcement are to Australian currency, unless otherwise stated.

Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.

This release has been prepared for publication in Australia and may not be released in the United States. This release does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States or any other jurisdiction. Any securities described in this release have not been, and will not be, registered under the US Securities Act of 1933 and may not be offered or sold in the United States except in transactions exempt from, or not subject to, registration under the US Securities Act and applicable US state securities laws.

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Appendix 2

JORC Code, 2012 Edition – Table 1 report

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 (e.g. 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.*	• The deposit has been sampled using a series of reverse circulation ("RC") holes and selected diamond holes for metallurgical sampling and checking of existing RC holes by drilling "twins". • Talison Minerals Pty Ltd ("Talison") conducted a 54 drill hole RC program in 2008 totalling 3,198m and 29 drill holes for a total of 2,783m in 2010. • Between 2010 and 2012, Talison changed its name to Global Advanced Metals ("GAM"). GAM completed 17 RC holes for 1,776m in 2012. • Between late 2014 & late 2015 Pilbara Minerals completed 293 RC holes for 32,354m. Between July and September 2015, Pilbara Minerals also completed 11 diamond holes for 1,193.8m. • Between March and June 2016, Pilbara Minerals completed 355 RC holes for 39,548m. During this period Pilbara Minerals also completed 35 diamond holes for 5,650.46m (including 9 tails on existing RC holes). •
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Talison/GAM RC holes were all sampled every metre, with samples split on the rig using a cyclone splitter. The sampling system consisted of a trailer mounted cyclone with cone splitter and dust suppression system. The cyclone splitter was configured to split the

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Criteria	JORC Code explanation	Commentary
		cuttings at 85% to waste (to be captured in 600mm x 900mm green plastic mining bags) and 15% to the sample port in pre-numbered, draw-string calico sample bags (12-inch by 18-inch). • Pilbara RC holes were all sampled every metre within pegmatite zones and one metre into footwall & hanging wall country rock for the 2015 drilling. Samples were collected using a cyclone and cone splitter attached to the rig with a steel brace. The cyclone splitter was configured to split the cuttings at 85% to waste (to be captured in 600mm x 900mm green plastic mining bags) and 15% to the sample port in draw-string calico sample bags (12-inch by 14-inch). • In subsequent RC drilling completed by Pilbara during 2015 & 2016 samples were collected every metre in pegmatite zones and a combination of 2 to 6 metres into footwall & hanging wall country rock for waste rock characterisation studies. • Diamond core was sampled by taking a 15-20mm fillet at 1m intervals within the pegmatite zones.
	• *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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Talison/GAM holes are all RC, with samples split at the rig sent to the Wodgina site laboratory and analysed by XRF for a suite of 36 elements. • Selected pulps from the 2008 and 2010 drilling plus all pegmatite pulps from the 2012 drilling were collected and sent to SGS Laboratories in Perth for analysis of their lithium content. Lithium analysis was conducted by Atomic Absorption Spectroscopy (AAS). • Pilbara RC samples were split at the rig and sent to the Nagrom laboratory in Perth and analysed by XRF and ICP. • Diamond core was cut at Nagrom, and then crushed and pulverised in preparation for analysis by XRF and ICP.

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Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	• The drilling rig used in 2008 is not noted in any reports. • The 2010 drilling was completed by Australian Drilling Solutions using an Atlas Copco Explorac 220 RC truck mounted drill rig with a compressor rated to 350psi / 1200cfm and a booster rated to 800psi, with an expected 600psi down-hole. An auxiliary booster/compressor was not required at any point during the drilling. • The 2012 drilling was completed by McKay Drilling using an 8x8 Mercedes Truck-mounted Schramm T685WS rig with a Foremost automated rod-handler system and on-board compressor rated to 1,350cfm/500psi with an auxiliary booster mounted on a further 8x8 Mercedes truck and rated at 900cfm/350psi. Drilling used a reverse circulation face sampling hammer. The sampling system consisted of a trailer mounted cyclone with cone splitter and dust suppression system. • The Pilbara Minerals 2014 drilling was completed by Quality Drilling Services (QDS Kalgoorlie) using a track mounted Schramm T450 RC rig with a 6x6 truck mounted auxiliary booster & compressor. Drilling used a reverse circulation face sampling hammer with nominal 51/4" bit. The system delivered approximately 1800cfm @ 650- 700psi down hole whilst drilling. • The 2015 RC drilling was undertaken by Orbit Drilling (200 holes), Mt Magnet Drilling (44 holes) and Strike Drilling (11 holes). Orbit used two track mounted rigs; a Schramm T450 RC Rig, and a bigger Hydco 350 RC Rig. Mt Magnet also used a track mounted Schramm T450 RC Rig; Strike drilling used an Atlas Copco X350 RC Rig mounted on a VD3000 Morooka rubber track base with additional track mounted booster & auxiliary compressor. • Diamond drilling during 2015 was completed by Orbit Drilling,

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Criteria	JORC Code explanation	Commentary
		using a truck mounted Hydco 1200H rig, drilling HQ sized core. • The 2016 resource RC drilling was completed by 4 track mounted RC rigs & 2 diamond rigs. 2 Atlas Copco X350 RC rigs mounted on a rubber track mounted Morooka base were used by Strike drilling together with track mounted booster & auxiliary compressor. 2 track mounted RC rigs were also used by Mt Magnet Drilling, a Schramm T450 rig and a UDR250 rig. • Diamond drilling during 2016 was completed by 2 Mt Magnet Drilling rigs drilling a combination of PQ, HQ & NQ size core. A truck mounted Hydco 650 rig and support truck and a TR1000 track mounted rig & track mounted support vehicle was used.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	• Recoveries for the majority of the historical holes are not known, while recoveries for 2012 GAM holes were overwhelmingly logged as "good." • Recoveries for Pilbara RC and diamond holes were virtually all dry and overwhelmingly logged as "good."
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• Whilst drilling through the pegmatite, rods were flushed with air after each metre drilled (GAM and Pilbara holes). In addition, moist or wet ground conditions resulted in the cyclone being washed out between each sample run. • Loss of fines as dust was reduced by injecting water into the sample pipe before it reached the cyclone. This minimises the possibility of a positive bias whereby fines are lost, and heavier, tantalum bearing material, is retained.
	• *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.*	• No material bias has been identified.

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Criteria	JORC Code explanation	Commentary
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.*	• 1m composites were laid out in lines of 20 or 30 samples, with cuttings collected and geologically logged for each interval, and stored in 20 compartment plastic rock-chip trays annotated with hole numbers and depth intervals (one compartment per 1m composite). Geological logging information was recorded directly into an Excel spreadsheet using a Panasonic Toughbook laptop computer. • The GAM rock-chip trays were later stored onsite at Wodgina in one of the exploration department sea containers. • The Pilbara rock-chip trays were transported back to Perth and stored at the company storage facility in North Fremantle. • Diamond core was transported to Nagrom laboratories for cutting, sampling and detailed logging in 2015. • During the 2016 drilling program diamond core was logged in detail on site & dispatched to ALS laboratories in Perth for cutting, sampling & assaying
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	• Logging has primarily been quantitative, using RC chips. • Detailed logging has been undertaken on diamond core by a mineralogical consultant.
	• *The total length and percentage of the relevant intersections logged.*	• The database contains lithological data for all holes in the database.
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.*	• RC samples collected by Talison/GAM were generally dry and split at the rig using a cyclone splitter. • RC samples collected by Pilbara were virtually all dry and split at the rig using a cone splitter mounted directly beneath the cyclone. • A 15 to 20mm fillet of core was taken every metre from half cut core.

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Criteria	JORC Code explanation	Commentary
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• Talison/GAM/Pilbara samples have field duplicates as well as laboratory splits and repeats. • 110 sample pulps were selected from across the pegmatite zones for umpire checks with ALS Laboratory Perth.
	• *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.*	• For the Talison/GAM/Pilbara RC drilling, field duplicates were collected every 20m, and splits were undertaken at the sample prep stage on every other 20m. • Talison/GAM/Pilbara RC samples have field duplicates as well as laboratory splits and repeats. • Pilbara diamond holes have laboratory splits and repeats.
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The Talison/GAM/Pilbara drilling sample sizes are considered to be appropriate to correctly represent the tantalum mineralization at Pilgangoora, based on the style of mineralization (pegmatite), and the thickness and consistency of mineralization.
Quality of assay data & laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• The Talison/GAM samples were assayed by the Wodgina Laboratory, for a 36 element suite using XRF on fused beads. • During late 2014 &2015 the Pilbara samples were assayed at the Nagrom Perth laboratory, using XRF on fused beads plus ICP to determine Li_2O, ThO_2 and U_3O_8. • All the 2016 Pilbara samples were assayed by ALS laboratories in Perth using equivalent assay methods to the previous Nagrom work.
	• *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.*	• No geophysical tools were used to determine any element concentrations used in this resource estimate.
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable*	• GAM Wodgina laboratory splits of the samples were taken at

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Criteria	JORC Code explanation	Commentary
	levels of accuracy (i.e. lack of bias) and precision have been established.	twenty metre intervals with a repeat/duplicate analysis also occurring every 20m and offset to the lab splits by 10 samples. In total one field duplicate series, one splits series and one lab duplicate/repeat series were used for quality control purposes assessing different stages in the sampling process. This methodology was used for the samples from the 2010 and 2012 drilling programs. Comparison of these splits and duplicates by using a scatter chart to compare results show the expected strong linear relationship reflecting the strong repeatability of the analysis process. • The GAM and Pilbara RC drilling contains QC samples (field duplicates and laboratory pulp splits, GAM internal standard, selected CRM's for Pilbara), and have produced results deemed acceptable. • 110 sample pulps (10% of the June 2015 resource composite samples) were selected from across the pegmatite zones for umpire checks with ALS Laboratory Perth. All closely correlated with the original Nagrom assays. Further samples will be selected for additional checks.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.*	• Infill drilling completed by GAM in 2012 and Pilbara in 2014 to 2016 confirmed the approximate width and grade of previous drilling. • Eight of the diamond holes were drilled as twins to RC holes, and compared to verify assays and lithology during 2015. • Additional diamond holes were drilled as twins to RC holes to verify assays & lithology during 2016. The remainder were drilled for metallurgical testwork.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• An electronic database containing collars, surveys, assays and geology was provided by GAM. • All GAM assays were sourced directly from Wodgina internal

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Criteria	JORC Code explanation	Commentary
		laboratory files. • All Pilbara assays were sourced directly from Nagrom as certified laboratory files during late 2014 and 2015. • All Pilbara assays were sourced directly from ALS as certified laboratory files in 2016.
	• *Discuss any adjustment to assay data.*	• Tantalum was reported as Ta_2O_5 %, and converted to ppm for the estimation process. • A two-step adjustment has been applied to the Fe_2O_3 assays to account for (i) contamination of pulps by the steel bowl at the grinding stage, and (ii) contamination of RC chips with the drill bit. Step one is to subtract 0.15% from all Fe_2O_3 assays, step 2 is to subtract a further 0.26% from all Pilbara Minerals RC samples, and 0.10% from all historic RC samples. No second factor has been applied to the Pilbara diamond core Fe_2O_3 assays.
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.*	• Talison/GAM holes were surveyed using a DGPS with sub one metre accuracy by the GAM survey department. • Pilbara drill hole collar locations were surveyed at the end of the program using a dual channel DGPS with +/- 10cm accuracy on northing, easting & RL by Pilbara personnel. • No down hole surveys were completed for PLC001-039 (Talison). • Gyro surveys were completed every 5m down hole for PLC040-068 (Talison). • Eastman Single Shot surveys were completed in a stainless steel starter rod approximately every 30m for PLC069-076 & PLRC001-009 (GAM). • Reflex EZ-shot, electronic single shot camera surveys were

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Criteria	JORC Code explanation	Commentary
		completed in a stainless steel starter rod for each hole for the Pilbara November-December 2014 RC drilling completed by QDS Drilling. Reflex instruments were also used by Mt Magnet Drilling for the Pilbara RC and diamond drilling completed in 2015 and 2016. Measurements were recorded at 10m, 40m, 70m and 100m (or EOH) for each hole. • Camteq Proshot, electronic single shot cameras were completed in a stainless steel starter rod for each hole from the Pilbara 2015 RC and diamond drilling campaigns completed by Orbit drilling. Camteq down hole survey equipment was also used for each hole for the Pilbara RC drilling by Strike. Measurements were recorded at 10m, 40m, 70m and 100m (or EOH) for each hole. • Down hole survey information was also collected using a Gyro instrument for selected RC holes completed in 2016.
	• *Specification of the grid system used.*	• The grid used was MGA Zone 50, datum GDA94.
	• *Quality and adequacy of topographic control.*	• The topographic surface used was a 50cm resolution Digital Surface Model (DSM) derived by stereoscopic photogrammetric processes from 5cm resolution imagery. • Surveyed DGPS drill hole collar elevation data was then compared to this surface, and found to have an average difference of -0.7m.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• Talison completed 54 RC drill holes in 2008 • GAM completed 46 RC drill holes between 2010 and 2012 • Pilbara completed 293 RC holes between 2014 and 2015. • Pilbara completed 11 diamond drill holes in 2015. • Pilbara completed 335 RC holes from March to June in 2016. • Pilbara completed 35 diamond holes from March to June in

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Criteria	JORC Code explanation	Commentary
		2016 (including 9 diamond tails on RC holes). • Drilling spacings vary between 25m to 50m apart
	• *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.*	• The continuity of the mineralization can confidently be interpreted from the geology of the pegmatite sheets, which can be mapped on surface as extending over several hundred metres in strike length.
	• *Whether sample compositing has been applied.*	• No compositing was necessary, as all samples were taken at 1m intervals.
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.*	• The mineralisation dips between 20 and 60 degrees at a dip direction between 050 and 115 degrees for the majority of the domains. The Monster zone strikes 040 to 045 degrees and dips moderately to the south-east. • The drilling orientation and the intersection angles are deemed appropriate.
	• *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.*	• No orientation-based sampling bias has been identified.
Sample security	• *The measures taken to ensure sample security.*	• Talison sampling security measures are unknown, but assumed to be equal to industry standards since the drilling is as recent as 2008. • Chain of custody for GAM holes were managed by GAM personnel. Samples were delivered to the Wodgina laboratory by GAM personnel where samples were analysed. • Chain of custody for Pilbara holes were managed by Pilbara personnel. Samples for analysis were delivered to the Regal Transport Depot in Port Hedland by Pilbara personnel. Samples were delivered from the Regal Transport Depot in Perth to the Nagrom laboratory in

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Criteria	JORC Code explanation	Commentary
		Kelmscott by Regal Transport courier truck during late 2014 and 2015. • Samples were delivered from the Regal Transport Depot in Perth to the ALS laboratory sites Perth by Regal Transport courier truck during 2016.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The collar and assay data have been reviewed by compiling a new SQL relational database. This allowed some minor sample numbering discrepancies to be identified and amended. • Drilling locations and survey orientations have been checked visually in 3 dimensions and found to be consistent. • All GAM assays were sourced directly from the laboratory (Wodgina laboratory). It has not been possible to check these original digital assay files.

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*	• The Pilgangoora resource is located within E45/2232 and M45/333 which are 100% owned by Pilbara Minerals Limited. The E45/2232 area is also part of a mining lease application (M45/1256).
	• *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.*	• No known impediments.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Talison completed 54 RC holes in 2008 • GAM completed 46 RC holes between 2010 and 2012.

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Criteria	JORC Code explanation	Commentary
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Pilgangoora pegmatites are a distal final phase of intrusion of Archaean granitic batholiths into Archaean greenstones. Tantalum, tin and lithium mineralisation occurs in zoned pegmatites that intrude a sheared Archaean greenstone sequence.
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, including easting and northing of the drill hole collar, elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar, dip and azimuth of the hole, down hole length and interception depth plus 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.*	• Refer to Appendix 1 in this announcement.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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.*	• Length weighed averages used for exploration results are reported in Appendix 1 of this announcement. Cutting of high grades was not applied in the reporting of intercepts. • No metal equivalent values are used.
Relationship between	• *These relationships are particularly important in the reporting of Exploration Results.*	• Downhole lengths are reported in Appendix 1 of this announcement.

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Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	• *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 (e.g. 'down hole length, true width not known').*	• It is noted in previous sections that not all samples analysed for Ta_2O_5 have also been analysed for Li_2O. All pegmatite pulps from the 2012 drilling were analysed for Li_2O but only selected pulps from the 2008 and 2010 drilling were. As noted in Appendix 1, there are 7 intervals reported for Ta_2O_5 that were only partial analysed for Li_2O – see Note 2 for Appendix 1.
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.*	• See Figures 2 to 7
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.*	• Comprehensive reporting of drilling details has been provided in Appendix 1 in this announcement.
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.*	• All meaningful & material exploration data has been reported.
Further work	• *The nature and scale of planned further work (e.g. 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.*	• Further planned drilling aims to test extensions to the currently modelled pegmatites zones and to infill where required to convert Mineral Resources to high confidence classification (i.e. Inferred to Indicated and Indicated to Measured).

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Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• The original database was compiled by GAM and supplied as a Microsoft Access database. • The data have then been imported into a relational SQL Server database using DataShed™ (industry standard drill hole database management software). • The data are constantly audited and any discrepancies checked by Pilbara Minerals personnel before being updated in the database.
	• *Data validation procedures used.*	• Normal data validation checks were completed on import to the SQL database. • Data has not been checked back to hard copy results, but has been checked against previous databases supplied by GAM. • All logs are supplied as Excel spreadsheets and any discrepancies checked and corrected by field personnel.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	• John Young (Executive and Chief Geologist - Pilbara Minerals and Competent Person) has visited the site numerous times.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.*	• The confidence in the geological interpretation is considered robust. Tantalum (occurring as tantalite) and lithium (occurring as spodumene) is hosted within pegmatite dykes intruded into basalts & sediments of the East Strelley greenstone belt. The area of the Pilgangoora pegmatite field within E45/2232 and M45/333 comprises a

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Criteria	JORC Code explanation	Commentary
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	series of extremely fractionated dykes, sills and veins up to 65m thick within the immediate drilling area. These dykes and veins dip to the east at 20-60° and are parallel to sub-parallel to the main schistose fabric within the greenstones. • The geological interpretation is supported by drill hole logging and mineralogical studies completed by GAM (previously Talison) and Pilbara Minerals. • No alternative interpretations have been considered at this stage. • Grade wireframes correlate extremely well with the logged pegmatite veins. • The key factor affecting continuity is the presence of pegmatite.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The main modelled mineralized domains have a total dimension of 4,100m (north-south), ranging between 50-600m (east-west) in multiple veins and ranging between -50m and 220m RL (AMSL). The Monster and Southern areas each have a modelled strike of approximately 700m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• Grade estimation using Ordinary Kriging (OK) was completed using Geovia Surpac™ software for both Ta_2O_5 and Li_2O. Note that there were insufficient samples analysed to allow populating of Li_2O into 1 of the 35 domains. • Drill spacing typically ranges from 25m to 50m. • Drill hole samples were flagged with wire framed domain codes. Sample data was composited for Ta_2O_5, Li_2O and Fe_2O_3 to 1m using a best fit method. Since all holes were sampled on 1m intervals, there were no residuals. • Influences of extreme sample distribution outliers were reduced

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Criteria	JORC Code explanation	Commentary
	• *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	by top-cutting on a domain basis. Top-cuts were decided by using a combination of methods including grade histograms, log probability plots and statistical tools. Based on this statistical analysis of the data population, top-cuts of between 2.0% and 3.8% for Li_2O, 110ppm to 1000ppm for Ta_2O_5 and 1.0% and 4.8% for Fe_2O_3 were applied. Some domains did not require top-cutting. • Directional variograms were modelled by domain using traditional variograms. Nugget values are moderate to low (between 20 and 30%) and structure ranges up to 260m. Domains with more limited samples used variography of geologically similar, adjacent domains. • Block model was constructed with parent blocks of 5m (E) by 25m (N) by 5m (RL) and sub-blocked to 2.5m (E) by 12.5m (N) by 2.5m (RL). All estimation was completed to the parent cell size. Discretisation was set to 5 by 5 by 2 for all domains. • Three estimation passes were used. The first pass had a limit of 75m, the second pass 150m and the third pass searching a large distance to fill the blocks within the wire framed zones. Each pass used a maximum of 12 samples, a minimum of 6 samples and maximum per hole of 4 samples. The exceptions to this were domains with less than 20 samples, which used a maximum of 10 samples, a minimum of 4 samples and maximum per hole of 3 samples for the second pass. • Search ellipse sizes were based primarily on a combination of the variography and the trends of the wire framed mineralized zones. Hard boundaries were applied between all estimation domains. • Validation of the block model included a volumetric comparison of the resource wireframes to the block model volumes. Validation of the grade estimate included comparison of block model grades to the

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Criteria	JORC Code explanation	Commentary
		declustered input composite grades plus swath plot comparison by easting, northing and elevation. Visual comparisons of input composite grades vs. block model grades were also completed. • As a potential deleterious element, Fe_2O_3 has been estimated for this resource, both as raw and factored Fe_2O_3. Identification of contamination during both the sample collection (steel from drill bit and rod wear) and assay phases (wear in the steel pulverisation containers) has resulted in a detailed statistical analysis and co-located data comparison between diamond core and RC twin hole assays. Factors have been applied to the raw Fe_2O_3 assays in two steps. Firstly, all Fe_2O_3 assays have been reduced by -0.15% to account for additional iron introduced by the steel pulverisation containers in the sample preparation phase. Secondly, Pilbara RC sample Fe_2O_3 assays have been reduced by -0.26% to account for additional iron introduced by wear on drill bits and rod in the drilling process, -0.1% to the historic RC for the same reason. No second factor has been applied to the Pilbara diamond core Fe_2O_3 assays.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnes have been estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Grade envelopes have been wireframed to an approximate 100ppm Ta_2O_5 and 1% Li_2O cut-off allowing for continuity of the higher-grade zone. Based on visual and statistical analysis of the drilling results and geological logging of the pegmatite zoning, this cut-off tends to be exactly the same or very close to the natural geological contact between the pegmatite and host mafic rocks.
Mining factors	• *Assumptions made regarding possible mining methods,*	• Based on the orientations, thicknesses and depths to which the

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Criteria	JORC Code explanation	Commentary
or assumptions	*minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	pegmatite veins have been modelled, plus their estimated grades for Ta_2O_5 and Li_2O, the potential mining method is considered to be open pit mining.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Historical mining operations and the presence of a tin-tantalum separation plant adjacent to a large tailings dump indicates that the assumption for potential successful processing of Pilgangoora ore is reasonable. • Nagrom Pty Ltd, Anzaplan, ALS/Ammtec and Como Engineering have all completed scoping metallurgical test work and have recovered both Ta_2O_5 and Li_2O of marketable qualities. (see ASX release ''Pilbara Testwork Confirms Potential" released 25/05/2015, "Quarterly Activities and Appendix 5B, released 24/04/2015). Further testwork is planned for early 2016.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an*	• Appropriate environmental studies and sterilisation drilling would be completed prior to determination of the location of any potential waste rock dump (WRD) facility.

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Criteria	JORC Code explanation	Commentary
	explanation of the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Previously bulk density has been assigned on the basis of weathering state, based on a specific gravity study carried out in 2006 by the project holders at the time, Sons of Gwalia. Previous consultants as well as GAM personnel have referred to this study and used these figures for the previous resource estimations which were carried out in-house. • Pilbara Minerals completed specific gravity test work on nine samples across the deposit using both Hydrostatic Weighing (uncoated) on surface grab samples and Gas Pycnometry on RC chips which produces consistent results. Geological mapping and rock chip/grab sampling has not observed any potential porosity in the pegmatite. • Pilbara Minerals conducted hydrostatic weighing tests on uncoated HQ core samples to determine bulk density factors. A total of 207 core samples were tested. Measurements included both pegmatite ore and waste rock. • The bulk density factors applied to the current resource estimate are 2.53 g/cm^3 in the (minimal) oxide, and 2.72 g/cm^3 in fresh/transition zone material.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resource has been classified on the basis of confidence in the geological model, continuity of mineralized zones, drilling density, confidence in the underlying database and the available bulk density information. • All factors considered; the resource estimate has in part been assigned to Indicated resource with the remainder to the Inferred category.

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Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Whilst Mr. Barnes (Competent Person) is considered Independent of PLS, no third party review has been completed.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource 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 resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that 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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. • The statement relates to global estimates of tonnes and grade.

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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 Ore Reserve Estimate is based on the Mineral Resource released on the 11th July 2016, by Pilbara Minerals, competent persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited), Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) • The Minerals Resources are reported inclusive of the 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.*	• Two Site Visits were conducted, initially on 14th January 2016 and also on 16th May 2016 by the Ore Reserve Competent Person in order to ensure the data used for the study matches the field observations.
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.*	• Mining Plus conducted a Feasibility study on the Pilgangoora project based on the Measured & Indicated Resources released as part of the Mineral Resource on the 11th July 2016 • As part of the Pilgangoora Feasibility study, a mine plan was developed that was technically achievable and economically viable. This mine plan considered material Modifying Factors such as mining, processing, metallurgy, infrastructure, economic, marketing, legal, environmental, social and regulatory.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• The Mineral Resource provided was a geologically domained resource; this geological model was evaluated to determine which block produced cash surplus when treated as ore. • The costs included: differential plant feed mining costs

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		(AUD0.84/dry t), processing plant costs (AUD20.22/dry t), state and third party royalties (7.5%), concentrate transport costs (USD25/concentrate wet t). The revenue was determined from both the recovery of Li_2O concentrate (USD460/dry t@ 6% Li_2O) and Tantalum products (USD60/dry lb). The resultant cut-off grade was determined to be 0.46% Li_2O or 445ppm Ta_2O_5 on a standalone basis. • An exchange rate of USD:AUD of 0.75:1.00 has been used for the study
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 issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (e.g. 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.*	• The Ore Reserves estimate resulting from this Feasibility study are based on the Mineral Resource released on the 11th July 2016, by Pilbara Minerals, competent persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited), Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd). • The Mining method is based on open pit mining and was evaluated for truck and hydraulic excavator(backhoe) operations utilising 4 x 2.5m flitches for 10m benches for combination waste pegmatite mining and 10 m bench mining for waste mining. • A Mine Shape Optimiser analysis was run on the Mineral Resource model to provide a dilution solution that is more reflective of actual mining practices than conventional regularisation. This resulted in an overall dilution study value of 5%, at a nominal 80/20 ratio of greenstone to pegmatite with an overall average Fe2O3 grade of 9.7%, raising the final pit mineral resource from 0.55% to an ore reserve estimate of 1.03% Fe_2O_3 • The 2.5m benches in combination with the application of hydraulic excavator (backhoe) to selectively mine the pegmatite from the waste allowing the selection mining loss values of 5%.

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		• Drilling and blasting has been considered to be completed by track mounted top of the hole rigs with sufficient mobility to access the pit from surface contour to pit bottom • Initial Geotechnical advice from Geotechnical Consultants provided of 20m of 50 degree batters and subsequent 75 batters and 10m wide berms nominally every 20m vertical m, was using during the optimisation and design phase of the study. • The pit design was not limited to the south by the Pilgangoora Creek. It is assumed that the approvals will be gained prior to project execution and implementation. • The pit design recovered 3.3Mt of inferred material with in the pit designs, this material was treated as waste for the purposes of the Feasibility study. There is no inferred material used in the Ore-Reserve estimation. • Assumed average of 2 Million tonnes of ore processing per annum. • Recovery 76.7% as per metallurgical results as provided to the Competent Person from external metallurgical consultants (Como Engineers). • Infrastructure requirements for open pit mining include; maintenance workshop for all mobile equipment, offices, crib rooms and amenities, fuel farm, water dams, and de-watering systems as required. It is assumed some of the mine infrastructure will be provided by a primary mining contractor, with costing also completed by Quattro Project Engineers to ensure this mine infrastructure is adequately costed within the feasibility study.

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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?*	• As part of the Pilgangoora Feasibility study, Pilbara Minerals commissioned Como Engineers to complete the mineral processing test-work including estimates for the capital required for construction of the processing plant • The essential elements of the process plant design utilise a combination of heavy media separation and flotation, to produce a 6% Li_2O concentrate. • Processing metallurgical consultants have conducted sufficient testwork to indicate that Battery Grade Lithium concentrate can be produced at 6% Li_2O with a suitable Fe_2O_3 quality for sale in this market. Similarly, preliminary Tantalum concentrate products have been produced for third party sale. • Li_2O metallurgical recovery is a straight line 76.7%. • Ta_2O_5 metallurgical recovery is a straight line 45%. • Mineralisation analysis and liberation estimates of the product and tails have been completed to support the design and the process flow with mass balances. • Metallurgical test work has shown that Fe_2O_3 and deleterious elements are within acceptable range within the concentrate
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.*	• Appropriate environmental studies and sterilisation drilling should be continued and completed prior to the confirmation of the location of the proposed potential waste rock dump (WRD) facility. • The waste rock dump designs take into account any consideration for potential acid forming material (PAF) and are designed to meet the license requirements. Waste rock characterisations studies

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		have been completed • Management of top soil material including pre-stripping prior to mining and storage for future incremental rehabilitation has been considered in the Feasibility study • A Soil Characterisation review and report has been completed by environmental consultants, which will facilitate further detailed work regarding top soil management • The Mining Lease Application (MLA45/1256) has commenced the Section29 Right to Negotiate process, submissions by the affected native title party are to be completed by the 26th of April 2016. These submissions set out the potential effect that the grant of M45/1256 will have on the native title party's rights and interests (as per section 39 of the NTA) and form the basis of the future negotiations between the parties. PLS expected no issues with the process that will affect the grant of MLA45/1256. Also exploration leases are held in the area • Hydrology studies are underway for both surface and ground water flows, with no significant impacts on the proposed mining operations • A Permit to interfere with bed and banks application for diversion of Pilgangoora creek to allow for southern pit development will be submitted to the regulator following the completion of the Surface Water Management Study during DFS stage.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• The current waste land form designs are designed to be north of Pilgangoora Creek, however the pit design crosses the Pilgangoora Creek, Pilbara Minerals have advised they have commenced the process for approval of this and see no reason for objection to gaining approval. Cost allowance has been made for a diversion of the creek.

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		• The project has been evaluated on a nominal 12 hour shift basis • At this stage the project is not with in a daily commute distance of suitable supporting community, hence the project has been evaluated as a fly in fly out operation • An existing historical airstrip is within close proximity to the project • The project will be accessed of the Great Northern highway, which is accessible approximately 30km from site • Potable water will be provided by a reverse osmosis plant. Power is expected to be supplied by contract diesel power generation.
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.*	• Load and Haul mining costs have been based on current marketing pricing from mining contractors submissions recently received, which were based on the previous completed PFS and scoping study mine design and schedule. Mining cost inputs applied in the FS have been adjusted to reflect the mine design and schedule for the FS. • Drill and blast costs have been based on current marketing pricing from mining contractors submissions recently received, which were based on the previous completed PFS study mine design and schedule. These have been further modified for the traditionally high powder factors of Spodumene blasting based on experiences of the competent person in operations with similar rock conditions. • Concentrate transport costs are based indicative prices provided by Pilbara Minerals of US$25/wmt at 6% moisture for Lithium and US$0.55/lb Tantalum concentrate. For simplicity these were converted to a $/Li unit and applied as a selling cost

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		• The methodology for the completion of the mining costs and the application of the mine contractor costs, comprise creation of mining volumes per BCM for mining activities with consideration of the location of the material and type of material coded into the block model, and these results are collated per period during mining scheduling and then multiplied by the appropriate rates. Mining fleet capital has been considered by including numerous mobilisation and demobilisation costs at intervals during the mine life to consider this activity by mining contractors • Mining Costs also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, ore rehandle and crusher feed, clear and grub, top soil management, and rehabilitation and mine closure criteria • Allowance has been made for state royalties at 5% in accordance with prevailing legislation • Allowance has been made for a third party royalty • No allowances were made for deleterious elements as Pilbara Minerals has shown in metallurgical test work that they are unlikely to exist in any significance way.
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.*	• Li_2O prices are provided by Pilbara Minerals for Battery Grade material at prices sourced form a report commissioned by Pilbara Minerals by Roskill February 2016 • Ta_2O_5 prices are provided by Pilbara Minerals for Tantalum concentrates for prices to a third pa source from current information supplied by Metal Pages / Argus Media for Tantalum concentrates for prices to a third party

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		• The study evaluated Li_2O through the project on a recovered dtm unit basis. • An exchange rate of USD:AUD of 0.75:1.00 has been used for the optimisation phase of the study
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.*	• Pilbara Minerals have had preliminary discussions with third parties regarding potential demand for Pilgangoora Li_2O and Ta_2O_5 concentrates, • These discussions have been used for the scaling of the project • Price forecasts for the key commodities are detailed in the "Cut-off grade parameters" section above
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.*	• Lerchs-Grossman analysis of the deposit, via Whittle software, has been conducted to focus development around the economic portion of the deposit • Discounting interest rate of 8% has been utilised • Sensitivities conducted indicate the project is most sensitive to direct revenue factors such as price, metallurgical recovery, dilution, mining cost, and processing cost were completed +/- 20% stand alone, Net Present Value (NPV) for the project is positive and is outlined in associated company ASX announcement.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The project is sited within a couple of kilometres of the historic Lynas Find Open Pit Gold Mine, confirm historic social acceptance to open pit mining • The project is also located in the Pilbara region of Western Australia, one of the most significant mining regions of the globe

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		• Pilbara Minerals confirm at this stage they see not obstruction to gaining a social licence to operate
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 current project nominally is situated inside the current and proposed mining leases. However small sections of the projected abandonment bunds for monster and South pits extend beyond the current and proposed leases. These pits represent 11% of the Reserve and the areas affected by the leases, represent the vast minority of these pits. Hence the affected tonnes are not material to the Reserves. • Pilbara is in discussions with neighbouring tenement holders regarding land access. • The Company has engaged with potential customers and signed Memorandums of Understanding (MoU's) with key users and agents for Spodumene concentrates in China, Korea/Japan, North America and Europe
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).*	• The Measured and Indicated Mineral Resource has been converted by application of mining factors to Ore Reserve Estimate • The Ore Reserve Estimate reflects a reasonable expectation of selective mining from a Spodumene pegmatite deposit from 10 years of similar mining experience • The Mineral Resource included both Measured and Indicated hence the Reserve contains both Proved and Probable
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• At this stage no formal audit or review has been completed of the Ore Reserve Estimate, however Geoff Davidson (consulting Mining Engineer) participated in review on behalf of Pilbara Minerals. • The appropriateness of the Ore Reserve calculation was peer reviewed by peers within the Mining Plus group during the completion of the Feasibility study. No material flaws have been identified, and it is

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		considered appropriate ore reserve at a feasibility level
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.*	• The Feasibility study has been completed with a relative accuracy of +/-15%, • All mining estimates are based on Australian costs • There are no unforeseen modifying factors at the time of this statement that will have any material impact on the Ore Reserve estimate. • Where practical and possible, current industry practices have been used to quantify estimations made • As part of ongoing works, it is recommended that further work is completed in mine scheduling and waste rock dump design in particular focussing on the first 10 years of the project to optimise project value while ensuring IWL/TMF and PAF management requirements and preparation of detailed volume and cost schedules for the PAF encapsulation, including clay pit locations and quantities or HDPE linings.