



ASX/Media Announcement

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PILBARA STRENGTHENS GROWTH PIPELINE THROUGH ACQUISITION OF MT FRANCISCO PROJECT

Landmark agreement sees Pilbara acquire an initial 51% interest in one of the most significant lithium-tantalum exploration assets in WA with the right to earn up to 80% in stages

HIGHLIGHTS:

- Agreement with Atlas Iron (ASX: AGO) to acquire an initial 51% interest in the lithium, tantalum and tin mineral rights for the Mt Francisco Lithium-Tantalum Project, located 50km south-west of Pilgangoora.
- Pilbara can earn up to an 80% interest in the Mt Francisco Project in stages by funding \$1M worth of exploration and completing a definitive feasibility study (DFS) until a decision to mine.
- Mt Francisco hosts the last remaining large occurrence of outcropping pegmatites in close proximity to Port Hedland, and is considered to represent one of the highest quality lithium exploration/development assets in the Pilbara region outside of Pilbara's world-class Pilgangoora Project.
- The acquisition of Mt Francisco represents a significant strategic addition to Pilbara's lithium growth pipeline in the Pilbara, opening up an important new front for its exploration team.
- Non-binding Memorandum of Understanding (MOU) also signed with Atlas for a proposed Infrastructure Services Agreement, under which Atlas would provide port access, processing, bulk handling and haulage services to Pilbara in respect of the Company's proposed direct shipping ore (DSO) mining operation from the Pilgangoora Project.

Australian lithium developer, Pilbara Minerals Ltd (ASX: PLS – "Pilbara" or "the Company") is pleased to advise that it has significantly enhanced its dominant landholding in the world-class Pilgangoora lithium district of WA, after entering into a binding farm-out and joint venture agreement (**Mt Francisco Agreement**) with Atlas Iron Limited (ASX: AGO) (**Atlas**) to acquire an initial 51% interest in the Mt Francisco Lithium-Tantalum Project. Pilbara may then spend a further \$1M on exploration in the first 12 months to increase its interest in the project to 70%, following which Pilbara may then earn an additional 10% upon completion of the DFS and decision to mine.

Mt Francisco Lithium-Tantalum Project

The Mt Francisco tenement is located 50km south-west of the Company's flagship Pilgangoora Lithium-Tantalum Project, and hosts the last remaining large occurrence of outcropping pegmatites located in close proximity to Port Hedland (see Figures 1, 2 and 3).

Mt Francisco is considered to represent one of the highest-quality lithium-tantalum exploration assets in the Pilbara region outside of Pilbara's world-class Pilgangoora Project and Mineral Resources' (ASX: MIN) Wodgina Project. It sits within an established zone of known lithium deposits and represents a highly attractive addition to the Company's world-class lithium portfolio, offering the potential for significant resource scale in close proximity to accessible infrastructure.

The Mt Francisco tenement (E45/4270) was previously explored for tantalum and tin prior to Atlas' acquisition. Atlas re-analysed historical exploration data to identify the Mt Francisco lithium prospect, with rock chip results from chip trays (ASX release by Atlas 23rd May 2016) including:

- 10m grading 1.21% Li₂O and 52ppm Ta₂O₅ from 60m (MFRC036); and

Pilbara Minerals Limited



- 2m grading 1.92% Li₂O and 103ppm Ta₂O₅ from 30m (MFRC037).

Pilbara plans to immediately commence a review of historical data from the Mt Francisco Project with a view to identifying drill targets using its extensive North Pilbara lithium/tantalum exploration expertise, in parallel with commencing negotiations with traditional owners to secure access for drilling.

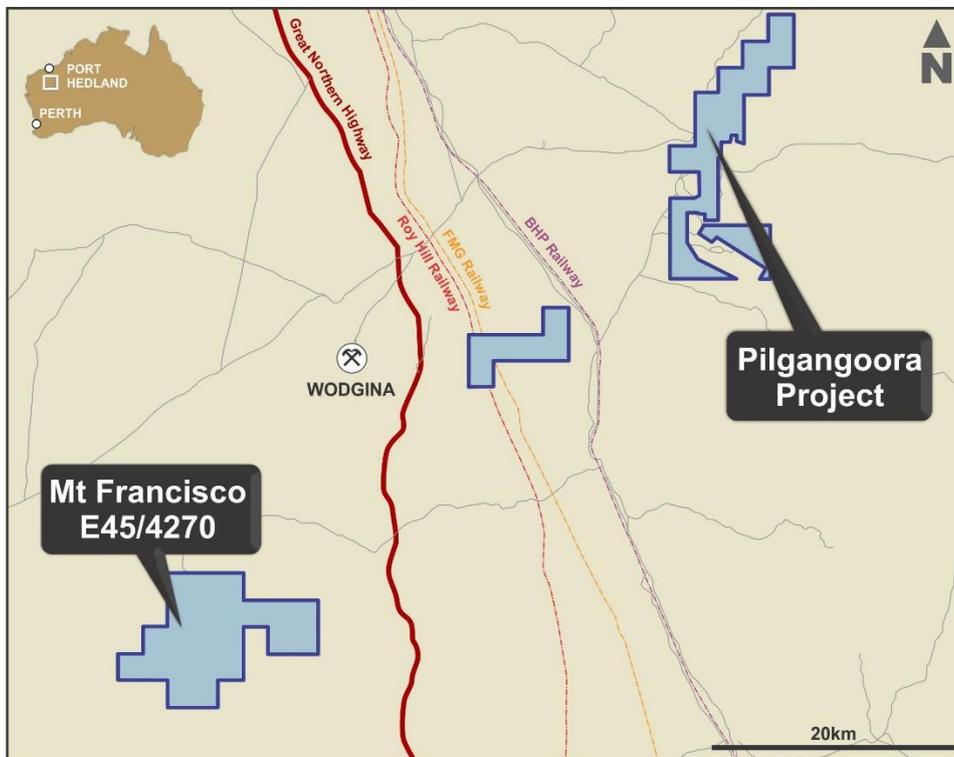


Figure 1: Mt Francisco tenement E45/4270 is located approximately 50km from Pilgangoora

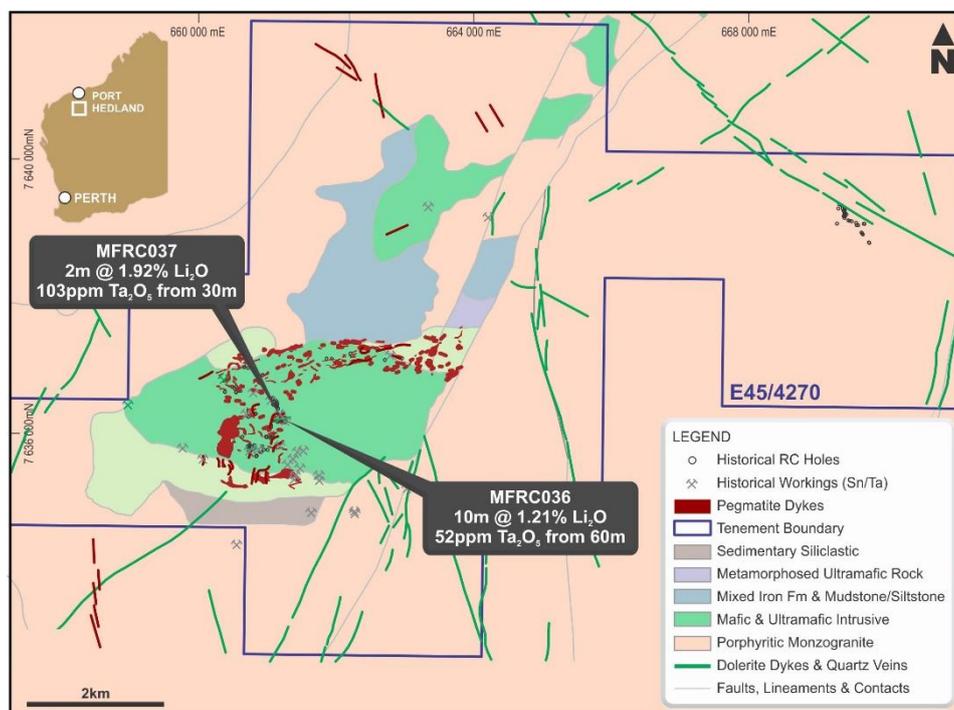


Figure 2: Location of mapped pegmatites and historical rock chip results

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Geology

The Archaean Wodgina belt is a north to northeast plunging synclinal structure 25km long and 5km wide, composed of interlayered mafic to ultramafic rocks with lesser komatiite, clastic sediments, BIF and chert preserved as a roof pendant within granitic rocks. The Wodgina pegmatite district, including Mount Francisco, contains a variety of pegmatite groups with different lithologies and structural/rheological controls. Zoned albite-muscovite-quartz pegmatites occur with beryl and tantalite-columbite mineralisation on greenstone belt margins in sheared metavolcanic to ultramafic units.

In the Pilbara Craton, there is a distinct alignment of the lithium-caesium-tantalum (LCT) type pegmatites along a major regional lineament, with the pegmatite districts of Mt Francisco, Wodgina, Pilgangoora, Tabba Tabba and Strelley occurring south to north along this structure. This lineament appears to be the major structural control for the intrusion of the parent granites.

In the Wodgina district, pegmatites occur as distinct swarms, with the main controls on the morphology of the swarm being the host rock rheology and the local stress regime. The post- orogenic 'younger' granites are most likely to be parental to the LCT type pegmatites and display a particularly distinct geochemical signature.

The bulk of the Mt Francisco historical workings are located on a hilly area of Archaean greenstones on the major north easterly trending regional shear which passes through Wodgina Mine about 20kms to the north. The greenstones are largely composed of ultramafic rocks interspersed with local metabasalts, metasediments and amphibolite schists. The swarm of irregular pegmatites has intruded the greenstones and the workings are concentrated in a zone up to 600m long and 200m wide.

There is evidence of small scale alluvial and hard rock mining within the hills although the latter appears to have been largely confined to six pegmatites.

The centre of the old Ta, Sn, Be workings seems to be on the south side of Mt Francisco where manganotantalite, beryl and minor cassiterite are found in flat-lying pegmatite veins. In the north-eastern part of the zone the pegmatites become richer in lepidolite. Gullies in the area were historically mined for alluvial manganotantalite and cassiterite. Extreme fractionation during crystallisation processes produces pegmatites containing Cs-bearing minerals and manganotantalite, as well as enrichment of Ta, Be, Cs, Li, Sn and Nb.

Historical Exploration

Talison/Wodgina Limited and Global Advanced Metals exploration activity from 2006 included first-pass non-ground disturbing surface exploration activity including litho-structural mapping and rock chip sampling. This included an interpretation of airborne geophysical and hyperspectral surveys.

Rock chip sampling conducted on the pegmatite outcrops shows areas of elevated Ta_2O_5 values (400ppm and above), and geochemical compositions suggesting the pegmatite is highly fractionated.

In 2008-2010, Talison/Global Advanced Metals focused on drilling outcropping pegmatites to define tantalum mineralization. Over two years, a total of 114 RC drill holes were completed for 7012m testing 23 pegmatite outcrops. The programs targeted areas within the Mt Francisco hills with historic workings and in particular those that had previously returned good tantalum rock chip sample results. Pegmatite units of reasonable thicknesses (+10m) were intersected that were continuous over 100-400m between holes. Assaying for lithium was not routinely completed.

Generally speaking, the Ta_2O_5 grades of the pegmatites intersected are very low with most being between 50-200ppm Ta_2O_5 . The true width of pegmatite intersections in the drill holes range from 1 to 40 metres and are generally between 2 and 10 metres thick.



Various rock chip samples were collected during mapping and ground-truthing of the prospective areas of the tenements by Talison/Global Advanced Metals during 2006. In total, 732 samples were taken for multi-element XRF analysis (no Li assays). In 2013, an additional sampling program was conducted by Global Advance Metals to establish relationships between the tantalum (Ta) concentration and other elements/minerals. In total, 52 rock samples were collected, 18 of the assayed samples returned grades above 450ppm Ta₂O₅.

Atlas applied for the tenements in 2013 and due to a previous lack of routine lithium sampling collected 23 samples from LCT pegmatites (Lithium-Caesium-Tantalum) previously identified by Talison/Global Advanced Metals, results from this work were generally low in lithium, with only two samples >0.1% Li₂O.

Atlas in 2016 selected and re-assayed 876 samples preserved in chip trays from drilling completed by Global Advanced Metals in 2008-2010, anomalous lithium results (*ASX release by Atlas 23rd May 2016*) were received from two holes in the central area:

- 10m grading 1.21% Li₂O and 52ppm Ta₂O₅ from 60m (MFRC036); and
- 2m grading 1.92% Li₂O and 103ppm Ta₂O₅ from 30m (MFRC037).

Pilbara intends to use its extensive North Pilbara lithium/tantalum exploration expertise to reassess all of the previous work and identify priority exploration areas.

Key Terms of Mt Francisco Agreement

Under the terms of the Mt Francisco Agreement, Pilbara will acquire an initial 51% interest in the lithium, tantalum and tin mineral rights within the Mt Francisco tenement for total consideration of A\$2.3 million, which may be paid in cash or shares at the Company's election. If the Company elects to pay shares, the shares will be issued at a 5% discount to the 5-day volume weighted average price (VWAP) in the three business days after signing the agreement.

The agreement also provides:

- Pilbara has the right to spend a further A\$1.0 million in exploration over a 12 month period to increase its interest in the Mt Francisco Tenement to 70%.
- Over a further 2 year period, Pilbara may develop the project to a DFS and decision to mine. Upon completion of the DFS and decision to mine, Pilbara will increase its interest in the lithium, tantalum and tin mineral rights in the Mt Francisco Tenement to 80%.
- Atlas is free carried for its share of expenditure up to when a decision to mine is made. At this point, Atlas will be entitled to contribute to the costs of the mining project in accordance with its 20% participating interest, elect to dilute, or elect to take a 2% gross revenue royalty. If Atlas dilutes below 10%, it will exchange its joint venture interest for a 2% gross revenue royalty.

MOU for Infrastructure Services Agreement

In addition to the Mt Francisco Agreement, Pilbara is also pleased to advise it has entered into a non-binding Memorandum of Understanding (**MOU**) with Atlas for a proposed Infrastructure Services Agreement, under which Atlas would provide access, processing, bulk handling and haulage services to Pilbara in respect of the Company's run-of-mine (**ROM**) ore operation from the Pilgangoora Project.

The MOU is a pre-cursor to reaching a final binding agreement with Atlas, under which Pilbara could undertake ROM ore mining at the Pilgangoora Project by utilising Atlas' existing infrastructure, including haulage, storage and crushing infrastructure held at its Mt Dove Project and its port access and capacity at the Port Hedland Port Facilities.



Importantly, an Infrastructure Services Agreement with Atlas would facilitate Pilbara being able to deliver the direct shipping ROM ore project in a relatively short timeframe, providing early cash flow and enabling the Company to meet its scheduled delivery commitments under the Shandong Ruifu Offtake Agreement (*see ASX Announcement 10 November 2016*), or any other customer pursuing ROM ore deliveries.

The parties intend to negotiate a formal binding Infrastructure Services Agreement upon both being satisfied that there are no restrictions on using the Port Headland Port Facilities for the ROM ore operation and subject to the Offtake Agreement with Shandong Ruifu becoming unconditional and binding. This is expected to occur on receipt of an offtake prepayment and satisfaction of other remaining conditions precedent, including regulatory approvals in Australia and China, Pilbara securing appropriate access to port facilities and a final investment decision being made by Pilbara for the development of the ROM ore mining operation.

The final agreed terms of the Infrastructure Services Agreement would be subject to Board approval from both Pilbara and Atlas.

Management Comment

Pilbara's Managing Director and CEO, Ken Brinsden, said the acquisition of the Mt Francisco Lithium-Tantalum Project provided the Company with an outstanding addition to its lithium exploration and growth portfolio in the Pilbara region.

"With the addition of Mt Francisco to our portfolio, we believe Pilbara now has ownership of the two best lithium exploration assets in the world-class Pilgangoora district," he said.

"The north Pilbara pegmatite swarms have proven to be richly endowed, with significant resource bases now established at Pilgangoora, and now Wodgina. Mt Francisco represents the last remaining major occurrence of outcropping pegmatites in this region which has not yet been comprehensively explored, and therefore presents an exceptional exploration target.

"While our exploration team still has plenty of unfinished business at Pilgangoora, the acquisition of Mt Francisco gives them another outstanding early stage project to get their teeth into. We believe the scale and potential of the pegmatite swarms at Mt Francisco is enormous and opens up an exciting new growth front for Pilbara as we continue to advance Pilgangoora towards development and first production."



Figure 3: Outcropping pegmatites at Mt Francisco

“We are also pleased to have signed an MOU with Atlas for a future Infrastructure Services Agreement,” Mr Brinsden said. “This provides a potential framework under which we can deliver on our strategy to commence a near-term Direct Shipping ROM ore mining operation at Pilgangoora to provide early cash flow for the Company.”

“We are delighted to have established a strong working relationship with Atlas, both through the Mt Francisco acquisition and through this MOU – a great example of two mid-tier Pilbara miners working together to unlock the value of undeveloped resources in the region and to share infrastructure and services for the benefit of all key stakeholders.”

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 as smart phones, tablets and laptops.

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

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Appendix – Atlas RC Rock Chip results from its ASX release dated 23 May 2016*

Hole ID *	Collar Location (MGA94 Zone 50)			Sample ID	Depth From	Depth To	Li2O ppm	Ta ppm
	Easting	Northing	RL					
MFRC036	661267	7636188	310	MFA178	52	54	418	4
MFRC036	661267	7636188	310	MFA179	54	56	515	90
MFRC036	661267	7636188	310	MFA180	56	58	3,853	86
MFRC036	661267	7636188	310	MFA181	58	60	227	20
MFRC036	661267	7636188	310	MFA182	60	62	10,057	32
MFRC036	661267	7636188	310	MFA183	62	64	15,513	40
MFRC036	661267	7636188	310	MFA184	64	66	16,761	61
MFRC036	661267	7636188	310	MFA185	66	68	7,155	55
MFRC036	661267	7636188	310	MFA186	68	70	11,237	26
MFRC036	661267	7636188	310	MFA187	70	72	625	15
MFRC036	661267	7636188	310	MFA188	72	74	303	25
MFRC036	661267	7636188	310	MFA189	74	76	176	51
MFRC036	661267	7636188	310	MFA190	76	78	733	47
MFRC036	661267	7636188	310	MFA191	78	80	1,277	80
MFRC036	661267	7636188	310	MFA192	80	82	371	87
MFRC036	661267	7636188	310	MFA193	82	84	283	168
MFRC037	661178	7636202	308	MFA194	4	6	96	66
MFRC037	661178	7636202	308	MFA195	6	8	243	16
MFRC037	661178	7636202	308	MFA196	8	10	234	18
MFRC037	661178	7636202	308	MFA197	10	12	207	33
MFRC037	661178	7636202	308	MFA198	12	14	195	41
MFRC037	661178	7636202	308	MFA199	14	16	147	7
MFRC037	661178	7636202	308	MFA200	16	18	570	10
MFRC037	661178	7636202	308	MFA201	18	20	284	24
MFRC037	661178	7636202	308	MFA202	20	22	392	29
MFRC037	661178	7636202	308	MFA203	22	24	785	20
MFRC037	661178	7636202	308	MFA204	24	26	596	29
MFRC037	661178	7636202	308	MFA205	26	28	1,544	37
MFRC037	661178	7636202	308	MFA206	28	30	1,711	16
MFRC037	661178	7636202	308	MFA207	30	32	19,197	103
MFRC037	661178	7636202	308	MFA208	32	34	2,527	21
MFRC037	661178	7636202	308	MFA209	34	36	1,356	8
MFRC037	661178	7636202	308	MFA210	36	38	1,234	7
MFRC037	661178	7636202	308	MFA211	38	40	219	13
MFRC037	661178	7636202	308	MFA212	40	42	620	83
MFRC037	661178	7636202	308	MFA213	42	44	344	82

*Competent Person's Statement included in 23 May 2016 Atlas Investor Presentation. The information required by Table 1 of JORC 2012 was included in Atlas 23 May 2016 Investor Presentation.

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