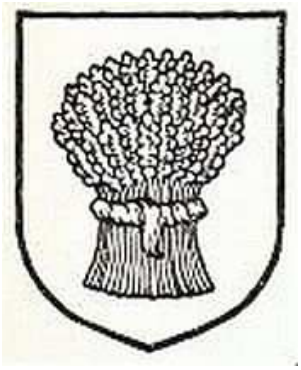
Monday, April 16, 2018



HALLGARTEN & COMPANY

Initiation of Coverage

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Thor Mining

(ASX: THR, AIM: THR, FSE: T5MB)

Strategy: LONG

Key Metrics	
Price (AUD)	$0.046
(GBP)	£0.024
12-Month Target Price (AUD)	$0.13
Upside to Target	182.6%
12mth hi-low (AUD)	$0.013 to 0.086
(GBP)	£0.725 to 4.00
Market Cap (AUD mn)	$29.83
(GBP mn)	£15.56
Shares Outstanding (mns)	648.50
Fully diluted (mns)	820.5

Thor Mining

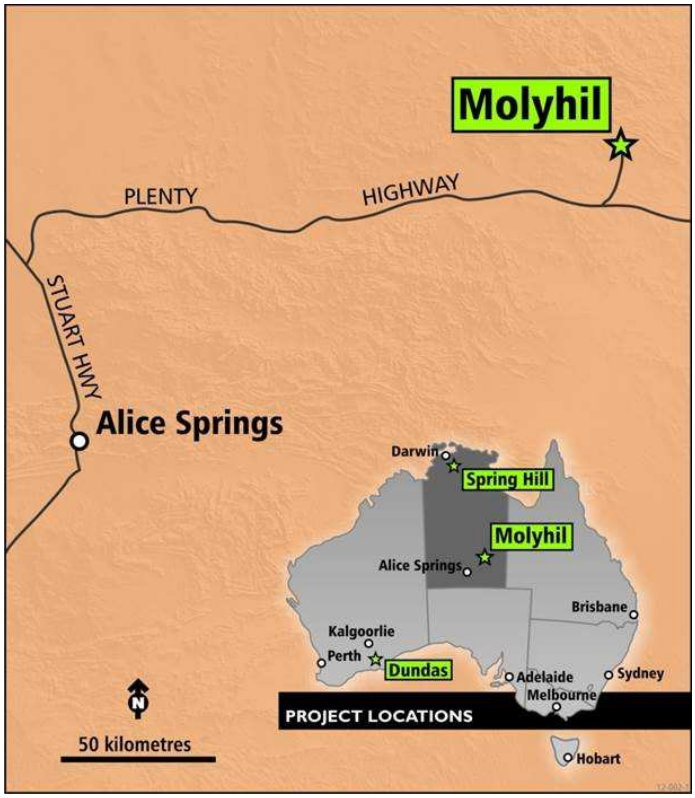
Positioned for the Tungsten Resurgence

+ Thor is one of the survivors in the Tungsten space after the ranks of explorers/developers were brutally thinned out since 2011
+ The company has two Tungsten projects under development, one in the Northern Territory of Australia and another in the state of Nevada in the US
+ Recent acquisition of further blocks in the Northern Territory are the makings of a whole Tungsten district, while bringing access to other metals of interest
+ Tungsten prices firmed up nicely in the second half of 2017 and into the current year with no auguries of possible downturn
+ Thor is one of the few explorers remaining in the Tungsten space
+ The participation in the Kapunda ISR copper project provides an interesting sideline that could be liberated to shareholders at a future date
× A number of Tungsten developers, particularly in Iberia, are moving near to production thus adding to Western output
× Raising money for Tungsten projects is still no easy task with many other projects in similarly ignored metals competing for investors' attention

Tungsten Back With a Vengeance

Persistence is paying off for Thor Mining, one of the survivors of the Tungsten slump that has ravaged the subsector since the start of the decade.

Post-2011 the slumping price of Tungsten wreaked destruction upon both the explorers AND the producers (with two major Western producers going under). The explorers largely faded into mere shadows or repurposed their vehicles as something else. Meanwhile consolidators like Almonty Industries picked up failing producers as part of its global roll-up strategy and determined explorers, like Thor, made the sacrifices necessary to remain in the land of the living.



With a pair of runners in the revived

Tungsten Stakes, Thor is much better positioned than most of the remaining explorers. Now it must make the jump to developer. In this initiation of coverage we review just where it is on the continuum at this point.

Molyhil

Molyhil is located 220 kilometres north-east of Alice Springs (320km by road) within the prospective polymetallic province of the Proterozoic Eastern Arunta Block in the Northern Territory.

The Molyhil deposit is the most significant granite-related deposit in the Aileron Province. The project consists of two adjacent magnetite skarn bodies with economic mineralisation of scheelite, molybdenite and magnetite.

Some Background

Tungsten and molybdenum mineralisation was originally discovered at Molyhil in 1973. Some 20,000 tonnes of tungsten ore was selectively mined during 1976 and 1977 yielding 100 tonnes of concentrate grading 70% WO3 (MoS2 was not extracted).

Petrocarb Exploration NL acquired the operation in 1978 and production continued until late 1981 when Tungsten prices fell below viability.

Petrocarb Exploration is believed to have extracted nearly 900,000 tonnes of ore from the mine from the late 1970s until closure. The last three months of this mining produced 12,400 tonnes at 0.78% WO_3 and 0.51% MoS_2. The mining was grade-controlled visually, the full extent of the black rock skarn being mined and milled.
The Southern ore body which was mined during the late 1970s & early 1980s via a shallow pit (measuring 150m x 120m and 13m deep) is shown at the right.

Thor acquired 100% of the Molyhil deposit during 2004 and initiated a systematic exploration programme to fully evaluate the resource zone and to investigate the local and regional exploration potential.

Work Undertaken

Over the last five years Thor has conducted resource extension drilling, metallurgical test work,

technical, environmental and social studies, secured environmental approvals, and agreements with traditional owners.

A Feasibility Study dating from 2012 demonstrated the potential for profitable production with low operating costs and early payback of Capex. The significant Molybdenum credits enhance the WO_3 Equivalent grade by 30% and the Reserve grade by 26%.

The current ore reserve provides for seven-year minelife while there is believed to be a substantial resource at depth below reserve and therefore significant exploration upside.

Geology

Tungsten mineralisation that has been identified at numerous locations within the Bonya Range area occurs predominantly in association with Kings Legend Amphibolite and Samarkand Pegmatite hosted by the Palaeoproterozoic Bonya Metamorphics.

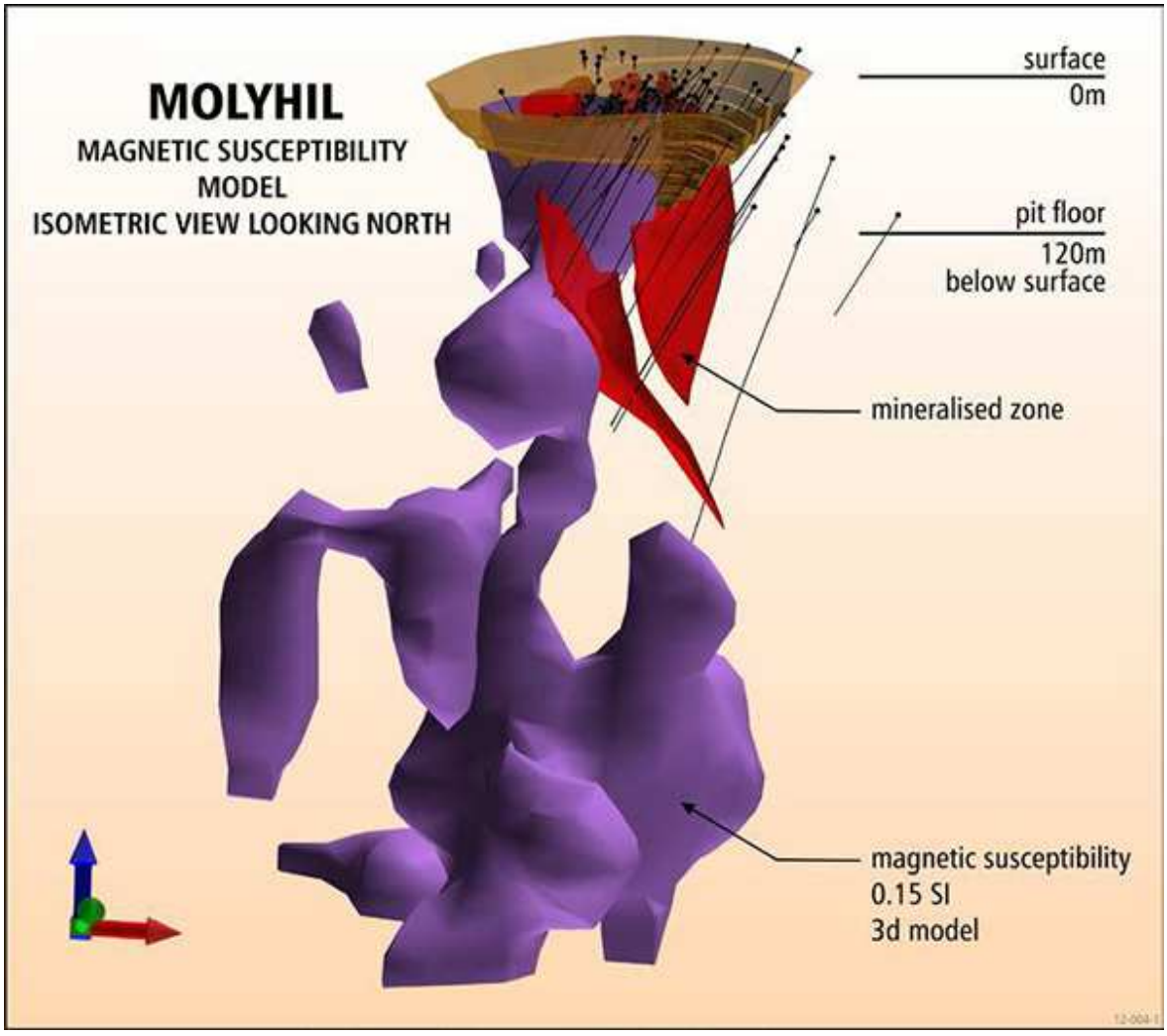
The Marshall Granite at the Molyhil deposit is a medium grained biotite granite that has been chloritised and sericitised ("green" granite) along the southern and Eastern walls of the open cut, and K-feldspar altered ("pink" granite) along the northern and western wall of the open cut.

The Molyhil deposit consists of two adjacent outcropping iron rich skarn bodies enclosed in granite, which contain scheelite and molybdenite mineralisation. Both the outlines of, and the banding within, the bodies strike approximately north–south and dip steeply to the east. The bodies are arranged in an en-echelon manner, the northeast body being named the Yacht Club and the southwest body the Southern.

Magnetite skarn boulders contain coarse-grained rosettes of molybdenite and coarse-grained scheelite. The coarse-grained character of the ore minerals has led to difficulties in estimating true ore grades.

Petrocarb published an indicated (non JORC compliant) open cut reserve of 1.8 million tonnes at 0.6% WO_3 and 0.3% MoS_2. The reserve ore grade was primarily based on statistical analysis of mining head grades. Interestingly, mining experience during the late 1970s indicated that the drill-estimated grades were low, with production head grades significantly higher.

To attempt to understand this phenomenon, Thor's exploration team drove three shafts into the Southern orebody and used analyses for these shafts to constrain the present JORC-compliant mineral resources.



Exploration

Since mid-2004 the Molyhil deposit was the subject of systematic geophysical exploration, diamond and reverse circulation drilling programs, surface and underground bulk sampling, metallurgical testwork and a geotechnical study.

Resource & Reserve

This resource is split between the larger Southern and smaller Yacht Club orebodies, which are localised within metasedimentary roof pendants within granite texturally similar to the Marshall Granite.

Thor Mining announced an updated Reserve statement for the mine in July 2014. Then an updated Reserve estimate was issued in January of 2018. The Resource estimate dates from 2014 and is shown as follows:

Molyhil - Resource Estimate

		WO3		Mo	
Category	**Tonnes mns**	**Grade %**	**Contained Metals (tns)**	**Grade %**	**Contained Metals (tns)**
Indicated	3.82	0.29	10,900	0.12	4,970
Inferred	0.89	0.25	2,200	0.13	1,250
Total	**4.71**	**0.28**	**13,100**	**0.13**	**6,220**

The long-term prices used were US$300/mtu for WO_3 concentrate and US$7.92/lb for Mo concentrate at an exchange rate of US$0.75 to AUD$1.00. The WO_3 and Moly processing recovery post-ore-sorting used was 85% and 77.8% respectively.

It's worth reiterating that the Tungsten price is currently 10% higher than these levels and that Moly is creeping up steading and at $11.79 per lb is 50% above the level used in calculating the Reserve.

Molyhil - Reserve

		WO3		Mo	
Category	**Tonnes mns**	**Grade %**	**Contained Metals (tns)**	**Grade %**	**Contained Metals (tns)**
Probable	3,500	0.29	10,200	0.12	4,300
Total	**3,500**	**0.29**	**10,200**	**0.12**	4,300

The statement of Reserves is derived from the Indicated portion of the resource estimate only, and the Inferred portion is excluded from the calculations.

The updated Reserve estimate from January of 2018 also identified portions of the Indicated and Inferred resource estimate, remaining outside the revised pit shell, which appear economic for mechanized underground mining techniques. More work must be done to substantiate this assessment.

Feasibility Study

There was an original DFS in 2007 but its conclusions were made moot by the effects of the Crash of 2008. In 2012 the company published an upgraded Feasibility Study for the Molyhil tungsten project. The DFS was updated by Proteus EPCM Engineers. This revised FS was predicated upon an earlier 3mn tonne Reserve. An updated FS is being prepared utilizing the aforementioned 3.5mn tonne Reserve.

Mining is planned using conventional open cut mining methods; contract drill & blast, followed by owner operated excavation and haulage. The pit-shell model utilized an average pit slope of 48˚ resulting in a fairly hefty stripping ratio of 5.2:1.

The key takeaways from the FS from 2012 were:

- Project payback period of 18 months after payment of royalties and taxation
- Net Present Value (NPV) of AUD$67 million with an Internal Rate of Return (IRR) of 44%, after taxation & royalty payments
- EBITDA of AUD$201mn
- Cash production cost of US$112/mtu concentrate compared with revenue of US$358/mtu
- Capital expenditure of AUD$70 million (US$56 million)
- Six-year mine life
- Simple open cut mining operation followed by standard mineral processing techniques

In the upcoming FS the company intends to pre-concentrate using ore-sorting, which should enhance the mill feed grade by around 64%. The company also intends to switch to flotation instead of gravity which reduces the Uranium content to a mere 40ppm compared to around 400ppm if gravity separation was employed. The planned operation is substantially permitted at this stage.

An Offtaker?

In October 2013 Thor received a Letter of Intent from US-based Global Tungsten & Powders (GTP) in respect of 70% to 75% of tungsten concentrate production from the proposed Molyhil operation. The offtake was for the (then) four-year LoM with a right of first refusal to a two-year extension term.

Pricing for the scheelite concentrate was to be based on discounts to the Metal Bulletin (MB) Low Tungsten APT European free-market price.

The Pilot Mountain Project

This tungsten project is situated 200km southeast of Reno in the state of Nevada in the USA. The main target until recently was the Desert Scheelite deposit, but there are several other deposits (including a past-producing area) on Thor's concessions which have potential and are being brought into the broader plan for evolving this project.

History

The Pilot Mountain District (sometimes referred to as the Sodaville District) resulted from the discovery of cinnabar, tungsten, copper, and gold in the early part of the twentieth century. Many small scale mines and little mills sprang up and the town of Eddyville was formed around a gold mine in the 1930's. In 1916 tungsten deposits were also found on Pilot Mountain.

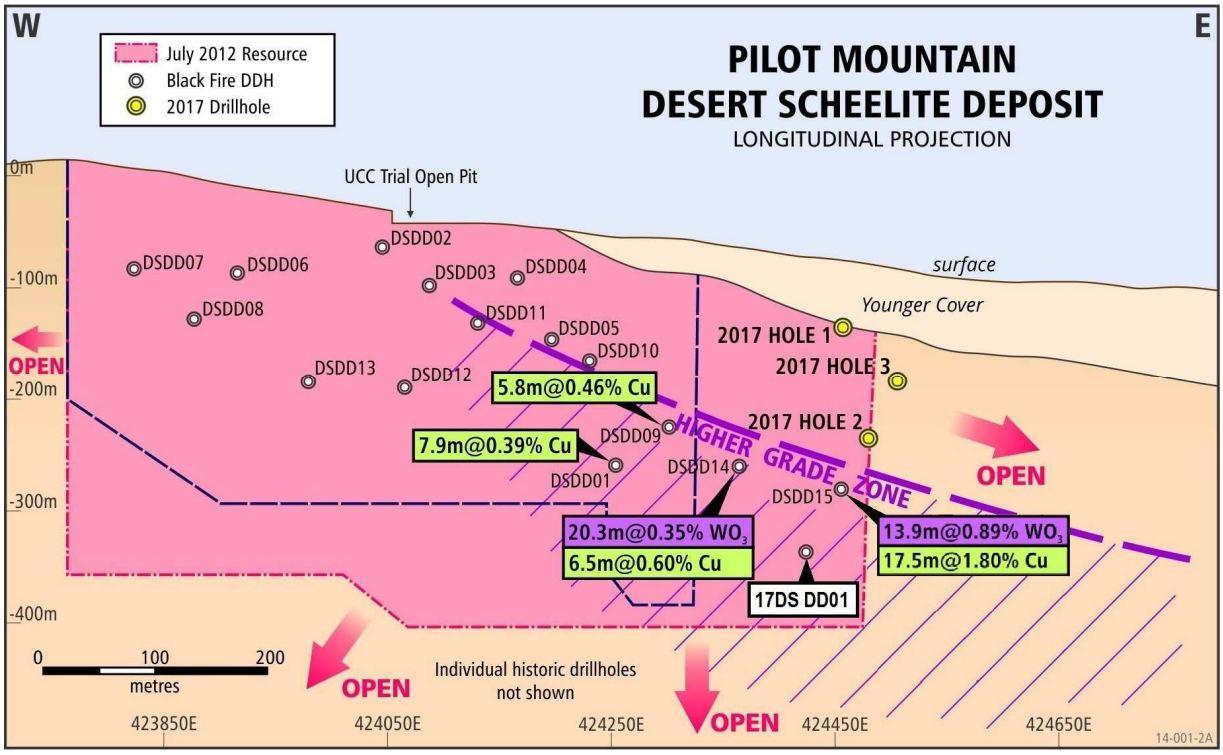
The Gunmetal Group, which is on Thor's property, was a tungsten operation active from around 1924 - 1927 and erected a 25-ton mill that used pneumatic concentration. A Lezeart mill was equipped with a small crusher, an Abbe ball mill, and two stebbins dry concentrating tables were used.

Geology

The Pilot Mountain claims consist of four known deposits, including Desert Scheelite, Garnet, Gun Metal and Good Hope. Garnet and Gunmetal dip 20 deg to NE while Desert Scheelite and Good Hope are subvertical and strike E/W.

The Desert Scheelite claims are situated on the east slope of the Pilot Mountains about 20 miles southeast of Mina. Rocks in the area consist of limestone, shale and conglomerates which have been intruded by granite. The sedimentary rocks trend southwest and dip 20° Northeast. Adjacent to the granite contact the limestone has been altered to recurring lenses of tactite that vary in lengths up to 200 ft and in width to 25 to 50 ft. Scheelite mineralisation is finely disseminated in the tactite.

Below can be seen a schematic long section of the known Desert Scheelite lode. This excludes drilling prior to 2012. A hole drilled in August 2017 (17DS DD01) confirmed the presence of a second, adjacent parallel lens to the north.

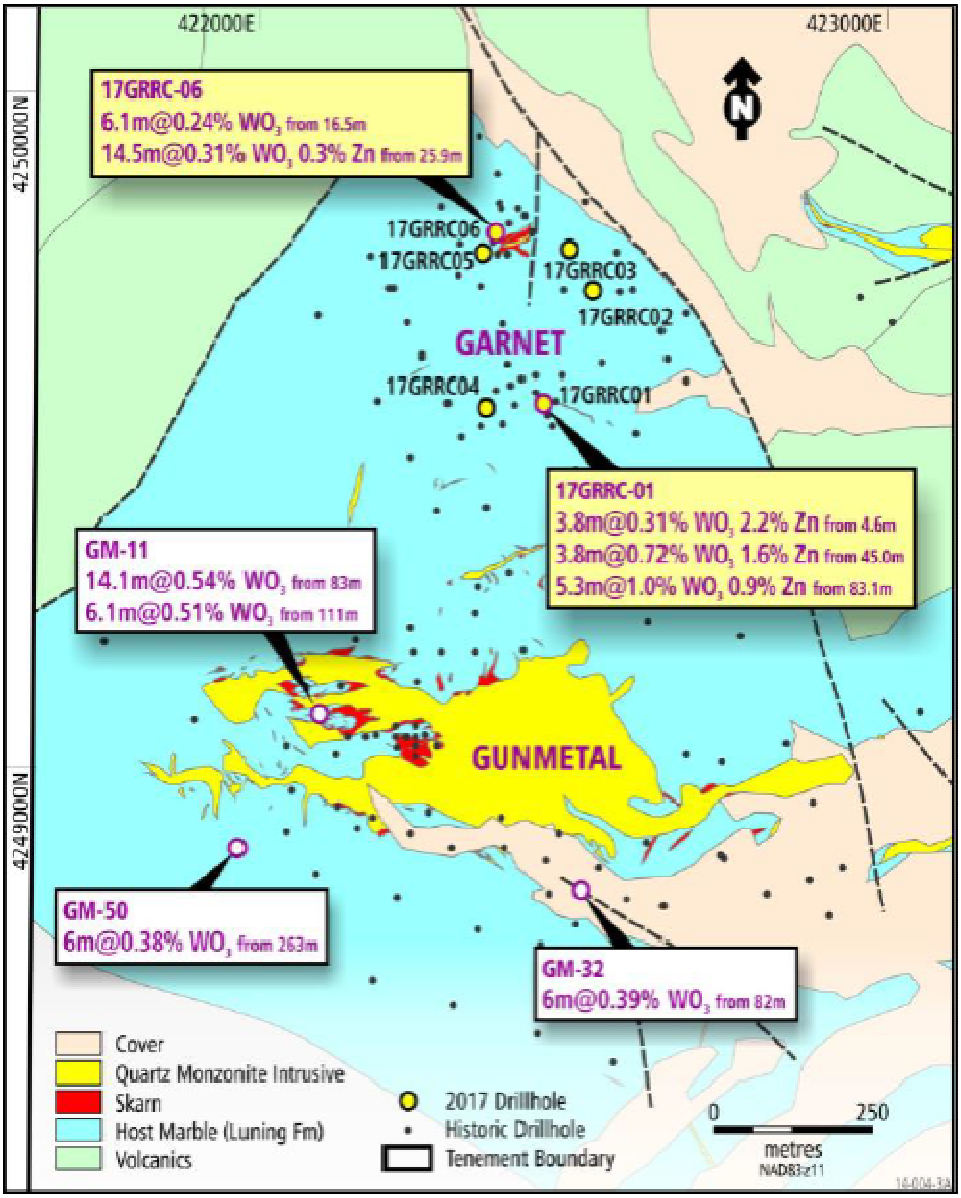


In addition to the 2014 Desert Scheelite resource, the Pilot Mountain project has significant exploration potential comprising exploration targets totaling 11mn-22.6mn tonnes at 0.3% to 0.5% WO_3.

This deposit has been worked before. In addition to the numerous surface cuts and trenches the principle working is a 65ft shaft from which a 35 ft cross-cut was extended north from the bottom of the shaft. The Desert Scheelite Mine is on a pediment about two miles east of the base of the Pilot Mountains and 15 miles east of Mina. The property, originally a copper-silver prospect, was located by

G. F. Thompson of Mina in 1935.

A 1988 report from the Nevada Bureau of Mines noted that the first tungsten production was not until 1941-43. About 1,000 tons of Tungsten ore was mined during this period and treated in the Desert Scheelite mill, also known as the Oromonte mill, about 3 miles northeast of the mine. A small additional amount of ore was mined during 1952-57.



The New Areas

In the map above can be seen a map of the Garnet and Gunmetal prospect area. The 2017 Garnet drill

holes tested less than a third of the total historic drill data over the entire Garnet and Gunmetal area.

The **Gunmetal** Tungsten property is, as mentioned earlier a past-producer and is situated on the eastern flank of the Pilot Mountains, about 20 miles southeast of Mina, which in the past operated as the shipping point and distribution centre.

Geologically, the country rocks consist of limestone which has been intruded by granodiorite. The sediments strike northeast and dip at 20^{o} NW. Adjacent to the granite contact the flat lying limestone beds have been altered to tactite in bands varying from a few feet to 35 feet or more. Scheelite mineralisation in the tactite bands occurs where the beddings are cut by multiple west-trending faults. Most of the ore bodies are within 200 feet or less of these faults.

The Gunmetal Mine is on the east flank of the Pilot Mountains, about 20 miles by road east of Mina. It was first worked during World War I. The mine was operated intermittently by many different owners and lessees during the 1920's and 1930's, again from 1940 to 1943, and from 1951 to 1956. This property was included in Union Carbide's Pilot Mountain Project and was extensively sampled and drilled by them in 1977-83. Workings consist of three open pits, several adits, and more than 1,000 feet of underground workings.

The **Garnet** mine is on the east side of the Pilot Mountains, about 21 miles by road east of Mina and ½ mile northeast of the Gunmetal Mine. The property was operated intermittently from 1941 to 1943 by the Victory Tungsten Co., and the ore was treated in a dry mill, moved in 1941 to the Garnet Mine from Oak Spring, Nevada. About 210 MTU of WO_3 was produced from an estimated 1,050 tons of ore treated. In 1953 an additional 75 tons of ore yielded 5 MTU of WO_3. Mine workings consisted of several small open pits and a shallow inclined shaft.

Union Carbide undertook extensive exploration on the property between 1977 and 1983.

Resource

In May of 2017 the company announced a new resource estimate for Pilot Mountain showing a 55% increase in the Tungsten resource. This included a maiden resource estimate for the Garnet prospect, and an increase in the resource estimate at Desert Scheelite. This new Resource estimate is shown in the table on the following page.

Following drilling in August 2017 an inferred resource estimate for the Garnet deposit has been completed comprising 1.83mn tonnes at an average grade of 0.36% WO_3 (using cut-off grade of 1,000 ppm WO_3).

Further, a re-evaluation of the Desert Scheelite deposit has resulted in an upgrading of the resource estimate to 9.9mn tonnes at an average grade of 0.26% WO_3, 19.39 g/t Silver (Ag), and 0.14% copper (Cu)(using cut-off grade of 1,500 ppm WO_3, previously 2,000ppm).

Pilot Mountain - Updated Resource

			WO3		Silver		Copper	
	Category	Tonnes mns	Grade %	Contained Metals (tns)	Ag g/t	Contained Metals (tns)	Cu %	Contained Mateal (tns)
Garnet	Indicated							
	Inferred	1.83	0.36	6,590				
	Sub-Total	**1.83**	**0.36**	**6,590**				
Desert Scheelite	Indicated	8.41	0.27	22,700	21.3	179	0.14	11800
	Inferred	1.49	0.23	3,430	9.07	13	0.17	2500
	Sub-Total	**9.90**	**0.26**	**26,130**	**19.39**	**192**	**0.14**	**14300**
Summary	Indicated	8.41	0.027	22,690				
	Inferred	3.32	0.30	10,020				
Pilot Mountain	**Total**	**11.73**	**0.28**	**32,720**				

The total Pilot Mountain resource inventory now stands at 11.73mn tonnes at 0.28% WO_3.

Tungsten

Tungsten is one of those metals where the fluctuating price makes it hard to plan a company's trajectory for more than a couple of years. The wild ride in pricing since 2008 made it particularly difficult to chart these waters. Now the trend is turning positive again with a firming price meeting a marketplace that has been deprived of new projects and seen most of the explorers vaporize. Even though the recovery is now in place Tungsten is a metal that has failed to capture the market's interest due to generalized ignorance of Tungsten and its supply/demand dynamics.

Tungsten, in theory, should be a bellwether of industrial activity, more than virtually any other metal, as it is directly levered into machine-tool manufacturing as the swing factor in its demand (the relatively non-variable part being lighting uses). However, the "spoiler" here is China which distorts the Tungsten market much as it has distorted so many others.

Now we have a situation where industrial demand is recovering making it harder for China to maintain low prices (to maintain its dominance). Moreover China's attempts to overrun the machine tool sector through its Tungsten dominance have put Western manufacturers of this equipment on notice that they need guaranteed non-Chinese supplies to evade predatory Chinese manouevres.

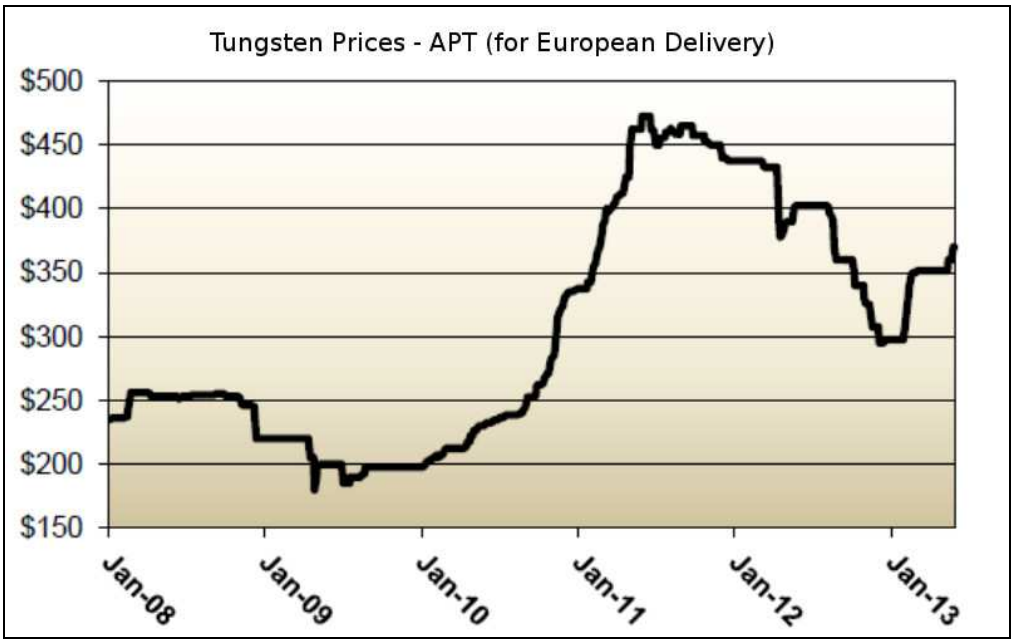
Pricing

The average annual price of tungsten since 1950 fluctuated between a nadir of US$10 per metric ton unit in 1963 and a peak of US$175 in 1977. After that point it sagged back to trade in a $50-75 band for several decades before its revival in the new century.

As noted earlier, the trade in concentrates diminished and the market relied more and more upon the APT quotation as a price guide since APT is the product traded in the largest quantity. Prices are mainly

based on the quotations published twice a week by London's "Metal Bulletin", although other trade journals also publish quotations or indicative prices.

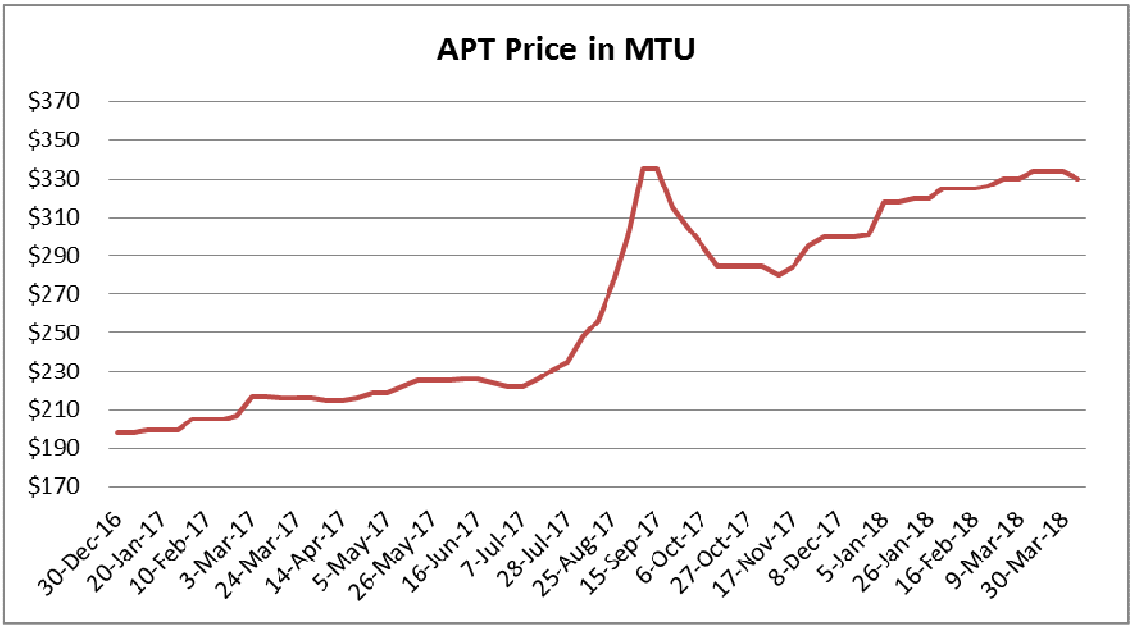
The chart below shows the price trends for APT during its "boom" period post-2009.



This produced a flurry of activity with companies outside of China realizing that they urgently needed to find and secure long-term supply of tungsten and its products from sources outside China. This led to increased investment in exploration and mine development activities outside of China, particularly in Vietnam, Australia and the Americas. Three former tungsten mines were reopened: CanTung (owned by North American Tungsten) in Canada in 2005, the aforementioned Panasqueira (which was acquired by Sojitz) in Portugal in 2005 and Pasto Bueno (owned by Malaga Mining) in Peru in 2006.

Tellingly, since that time, North American Tungsten and Malaga went bust and Sojitz sold its Portuguese operation to Almonty Industries (which was run by the management group that had sold the mine to Sojitz previously).

As can be seen in this more recent chart on the following page, prices have risen 50% over the last year, after having spent the previous three years doodling about just below $200 per MTU of APT.



Source: Almonty Industries

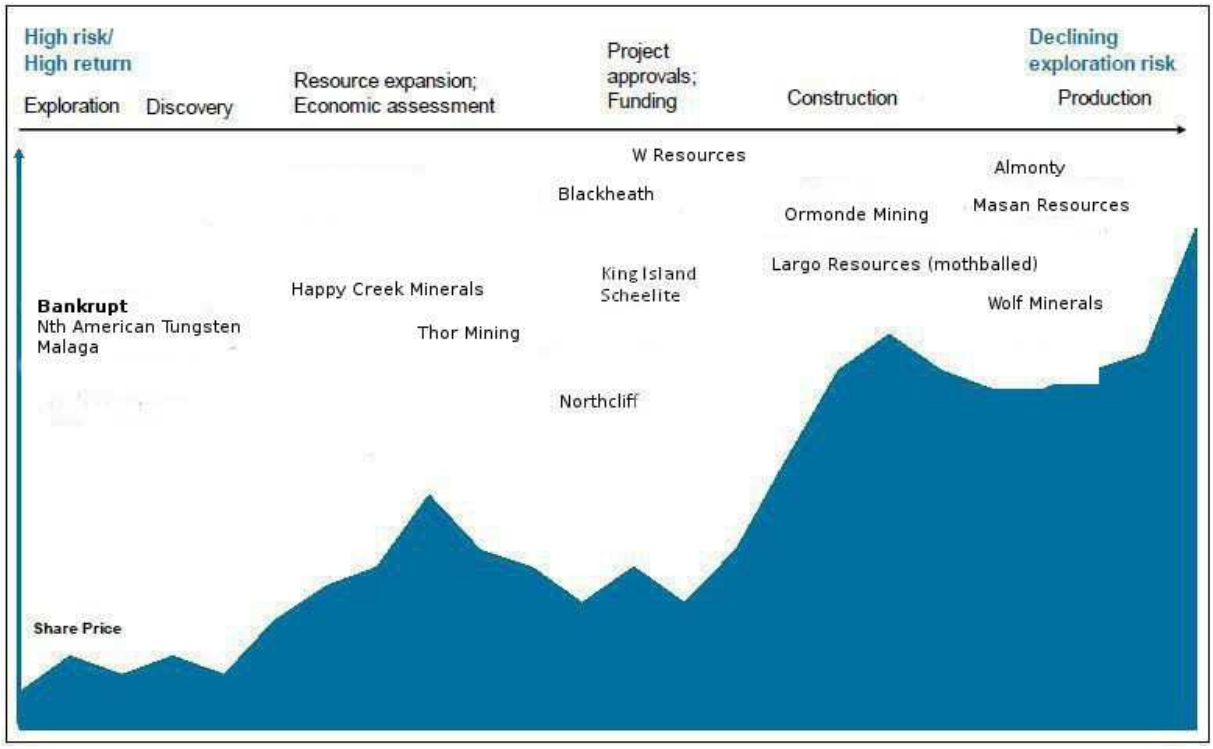
Our latest projections are shown in the table below.

Tungsten APT Pricing Projections	MTU (US$)
2016	$198
2017	$301
2018e	$345
2019e	$395
2020e	$415

The Tungsten Lifecycle Chart

Our all-purpose Lifecycle chart, on the following page, serves particularly well, in the case of Tungsten, to show the state of progress of the various players vis-à-vis each other on the exploration-production continuum.

Unlike past charts where some of the players were not serious about getting to production the culling of the ranks has left only the most devoted Tungsten players.



The Outlook

For the first time since 2010 there now exists a window of opportunity for Tungsten developers to catch the attention of investors, as end users scramble to secure alternative, more reliable sources of supply. The broader economic recovery should lead to increased competition for Tungsten concentrates in the global market between Chinese and non-Chinese processors and consequently result in an improving price structure for Tungsten and its products in the future. A jump in prices of APT to over $400 would not be unthinkable.

Creating a Tungsten District?

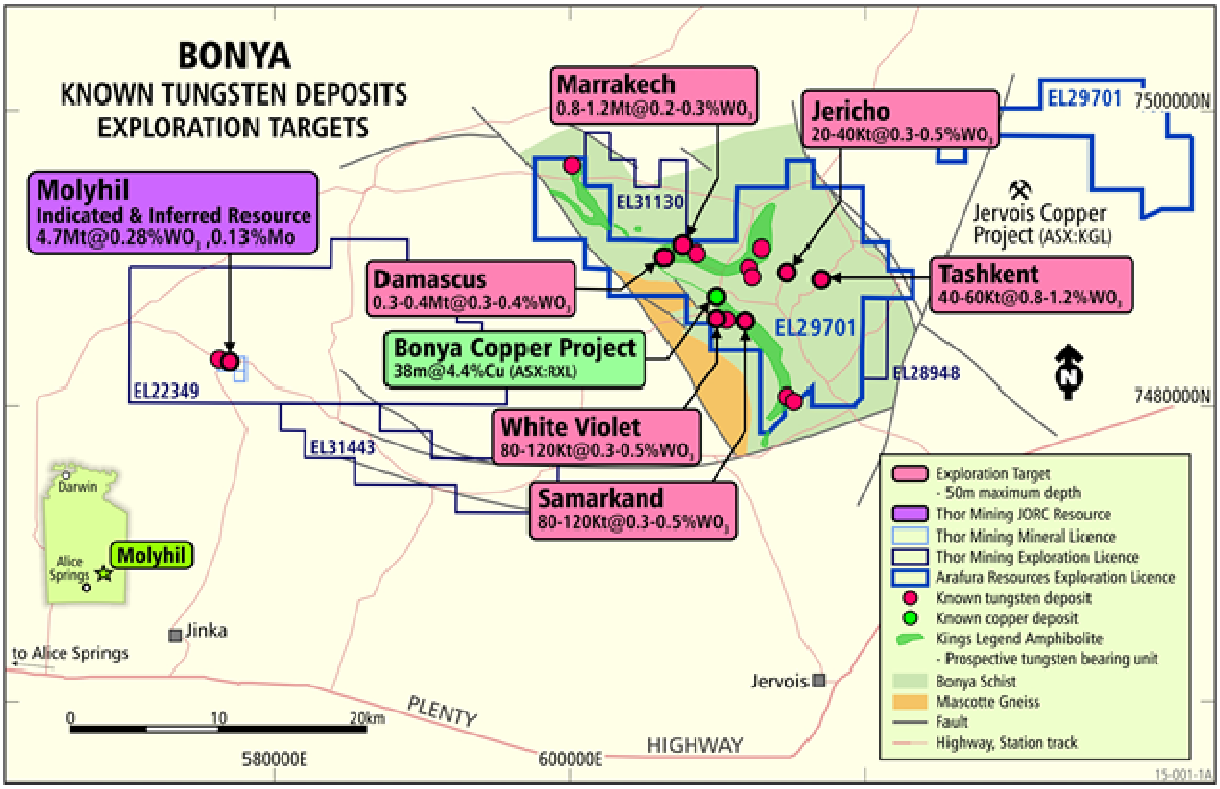
In late-March the company announced the execution of a binding term sheet for Thor to acquire from Rox Resources Limited (ASX: RXL) an interest in tenements hosting outcropping tungsten deposits in the Bonya Creek area, along with a high grade copper deposit, approximately 30 kilometres from Molyhil.

Key features of the transaction are:

- Thor to acquire 40% interest in exploration licence EL29701 which hosts 13 outcropping tungsten deposits, plus 1 copper deposit with exciting previous drilling results
- Thor to acquire 100% interest in exploration licence EL29599 considered prospective for copper exploration
- Project area exploration target of 3.0 - 4.9 million tonnes @ 0.3% - 0.5% WO_3
- Multiple substantiated walk up drill targets

- Project area boundary approximately 20kms from Molyhil
- No tungsten exploration on the project area over 35 years

Below can be seen a district map. The existing Thor licences at Molyhil being to the left and the new acquisition bordered in bright blue to the centre right. The block EL29701 is in two parts. The eastern blocks host a large Titanium/Vanadium deposit.



Under the terms of the agreement, Thor can for consideration of A$550,000 in fully paid Thor shares, acquire:

- a 40% interest in Exploration Licence EL29701
- a 100% interest in Exploration Licence EL29599

The consideration shares are to be valued according to the average of the 5 day VWAP (volume weighted average price) on ASX for the 5 days preceding execution of the terms sheet and the 5 day VWAP for the 5 days preceding satisfaction of all conditions precedent to the sale.

The acquisition agreement is subject to a 45-day pre-emptive right by Arafura Resources Limited (ASX:ARU) the 60% holder of EL 29701 to match the offer by Thor. Other conditions precedent include normal approval and stamping provisions of the Northern Territory government.

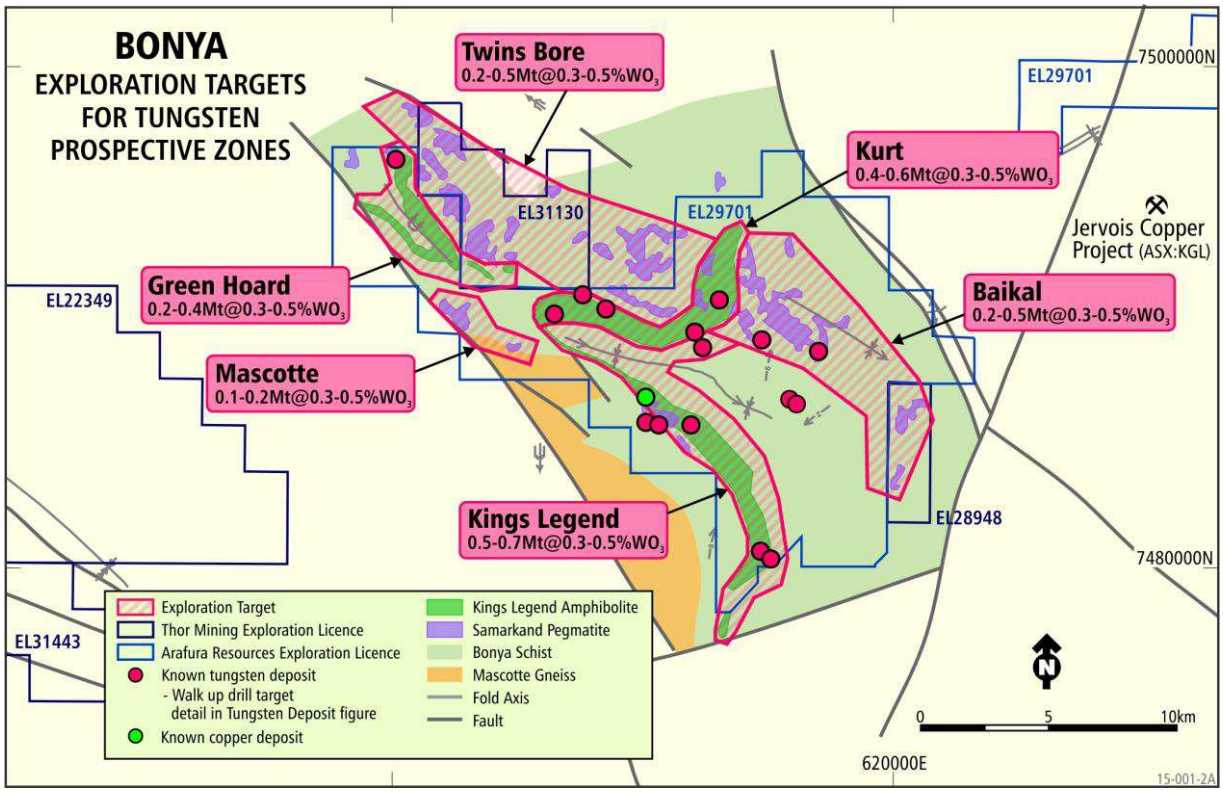
Under the terms of the existing Joint Venture Agreement between Rox and Arafura, Rox is the manager

of the Joint Venture with both parties required to contribute to exploration activities. In the event that one party elects not to contribute to agreed exploration programs then normal dilution provisions apply.

Arafura have held this ground for quite a long time. They have not spent any money on it however for at least 5 years.

Tenement expenditure commitments have been met in the first instance by one of the ephemeral uranium explorers, then more recently by Rox who explored for copper around the historic Bonya copper mine.

We have been trying to access this since late 2012, but have been frustrated by Arafura not wanting to complicate a project which already had a couple of other parties exploring for different commodities.



The most extensive reporting on the potential dates back to a study by Dave Ransom (ex-Acorn Capital), who did some work on the tungsten prospects back in the 1970's.

All of the Tungsten prospects (Tiers 1 & 2) identified so far in the Bonya region have outcropping mineralisation discovered by surface prospecting between 1929 and 1972. Beyond this the potential exists for the discovery of blind deposits by application of contemporary exploration practices in the Tier 3 prospect areas. For the moment though we shall look at the prime targets:

White Violet comprises a 150 metre long outcrop of scheelite mineralised calc-silicate, amphibolite and

marble (Ransom, 1978). The prospect was trenched and sampled (Paine, 1971) and subsequently drilled (Central Pacific Minerals, 1972) by a shallow (<30m) open hole percussion program which had limited success due to poor sample return as a result of broken ground. The average prospect grade was estimated to be 0.4% WO3 however the one successful drill hole WV-PH24, recovered 3 metres at 0.77% WO3 from 10 metres down hole and a further 3 metres at 1.85% WO3 from 18 metres down hole.

Depth extension was considered to present the best growth opportunity for the prospect as the strike potential is constrained by lensing out at either end observed in good outcrop (Ransom 1978).

The Exploration Target for this prospect is derived from the historic mapping and sample data which using bulk density of 2.8 t/m^3 results in 3,330 tonnes per vertical metre (TVM). A depth of 30 metres was used based on robust mineralisation intersected at 21 metres by WV-PH24.

This Exploration Target is considered very conservative as there is no indication that mineralisation does not extend to considerable depth.

Samarkand is comprised of variably mineralised calc-silicate 10 to 20 metres wide over 3,000 metres strike length (Ransom, 1978). Central Pacific undertook a trenching and open hole percussion drill program in 1972 which targeted a 60 metre section referred to as Lens 1 and a separate 150 metre section referred to as Lens 1A. The following intersections were reported from that program:

- Trench Cut 2: 8.8 m @ 0.65% WO3
- SAM-PH100: 2m @ 2.77%WO3 from 6 metres down hole
- SAM-PH59: 4m @ 0.81%WO3 from 30m down hole
- SAM-PH63: 3m @ 0.59%WO3 from 17m down hole and,
- SAM-PH63: 1m @ 0.63%WO3 from 37 metres down hole
- SAM-PH67(B): 1m @ 2.77%WO3 from 5 metres down hole

The Exploration Target is based on 800 tonnes per vertical metre (tvm) for Lens1 and 1,700 tvm for Lens1A projected to a depth of 40 metres.

Jericho is situated to the north of Bonya Creek. The prospect is crosscut by an east west trending pegmatite intrusion with the southern section being smaller and higher grade than the northern section. In 1972 Petrocarb undertook a trial mine in the southern section of the prospect and some drill results are reported from this time. The southern mineralised zone is reported to have a 40 metre strike length with an average width of 5 metres. Three of the drill holes (SJ 1, 3, & 6) each had 1 metre intervals of 1% WO3 within broader lower grade zones. Ransom reported an estimated overall grade of approximately 1% WO3. A range of 0.5 – 0.6% WO3 has been used for the Exploration Target grade and a tonnage range of 20,000 – 40,000 tonnes is based on 600 tvm to a depth of 50 metres (Hole SJ6 intersected mineralisation at 40 metres).

Tier 2 Prospects comprise known tungsten mineralisation but where the existing data is of a qualitative nature. Tier 2 prospects are still considered amenable to inclusion in the Molyhil project by way of proximity to the existing resource and or ease of mining via shallow depth of mineralisation.

There are seven Tier 2 targets. All of them outcrop at the ground surface providing good exposure for mapping and grade estimation. Someone in the past was in a veritable Middle Eastern frenzy when naming these prospects. The following descriptions are taken from Ransom's 1978 report:

Marrakesh is the largest of the Tier 2 targets with an estimated 21,000 tvm based on a surface expression of 50 x 150 metres and bulk density of 2.8 tonnes per cubic metre.

Damascus comprises variably mineralised calc-silicate similar to Samarkand. The prospect zone is 5 to 10 metres wide over 300 metre strike length.

Tashkent is currently a smaller target but appears to be of high grade. It is described as two calc-silicate units with disseminated scheelite mineralisation. The first unit is over 70 metre strike length with and overall estimated grade of 1% WO3 and large patches of very rich coarse grain scheelite. The second unit is 2 metres wide and extends over 150 metres disappearing under cover to the east. In one location the grade appears to average better than 1.5 % WO3.

Jericho North lies adjacent to Jericho South separated by an east west trending pegmatite intrusion. They are essentially the same prospect but are dealt with separately as the northern half is larger, lower grade and does not have the same level of data. The target size has been taken from historic mapping and a nominal low grade applied.

The remaining prospects in the Tier 2 are City of Medina, Asmara and Negev.

Next Steps?

More recently, the uranium explorer went away, and Rox and Arafura restructured their percentage interests, which made it possible for Thor to come in. In light of Arafura's focus on its Nolan's Bore REE project it is difficult to envision Arafura contributing to exploration work therefore dilution of their holding might result. If Arafura do not exercise their pre-emptive right, Thor will move to spend ~AUD$250K on the drilling several of the more attractive outcropping targets which would then put Thor at around 50% of the equity in the blocks.

Other Side Benefits

The copper potential at Bonya is of interest as the flotation process at Molyhil requires that it floats out all the sulphides prior to the scheelite float. Thus to produce a copper concentrate from there would be a relatively low-cost exercise. There is also potential to exploit oxide copper mineralisation on the tenements.

There are other Tungsten deposits around Jervois, a little further east, that are under consideration, however the cartage cost of ore may be an issue there.

As mentioned, the eastern block of EL29701 hosts a large titanium/vanadium deposit which if it were much closer to infrastructure may become interesting. Our bullish stance on Vanadium is well-known.

Our sources suggest that this deposit might be larger and of a higher grade than the Mt Peake deposit (currently being worked up by TNG). However Mt Peake is much closer to gas/rail/roads.

Kapunda

The Kapunda Copper Mine is located on block EL5626 in the northern Mount Lofty Ranges, South Australia approximately 35km north of Gawler and 80km from Port Adelaide. Thor is earning up to a 60% interest in Environmental Copper Recovery SA Pty Ltd (ECR), which in turn is earning, from Terramin (ASX:TZN), up to a 75% interest in the mineral rights and claims over the leachable portion of Kapunda. Subject to full earn in, Thor would therefore hold an effective 45% interest in Kapunda.

The Kapunda Mine, discovered in 1842, was the first copper mine in Australia, yielding about 13,500t from 68,000t of ore. Low copper prices, the apparent depletion of easily accessible high grade ore and excessive in-flows of water led to the closure of the mine in 1877. Minor operations continued sporadically until 1912.

The deposit features substantial near surface oxidized copper mineralisation, transitioning at depth to readily leachable chalcocite then primary chalcopyrite.

The joint venture is investigating the potential to extract copper through In Situ Recovery (ISR) from the shallow mineralised halo around the historic Kapunda Mine workings.

In February of 2018 a new inferred resource was published. This had been commissioned by ECR and undertaken by Terramin and relates to the part of the resource that is recoverable by way of in-situ leaching techniques.

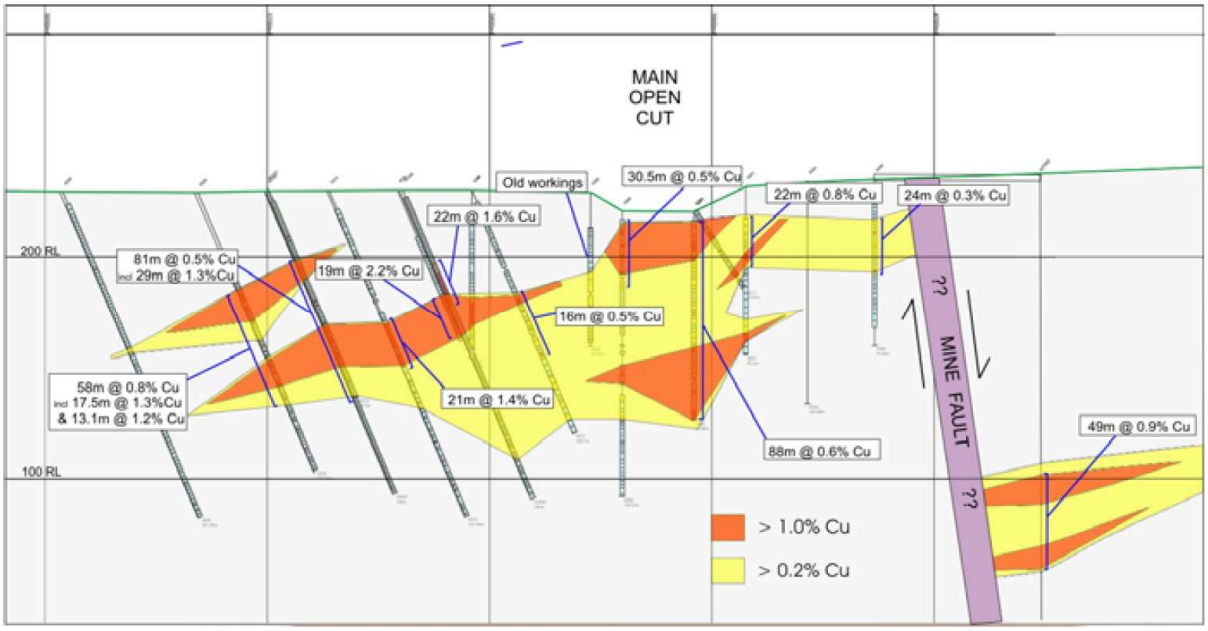
Following an extensive review of historical drill data, historical mining records along with additional test work, Terraminand ECR have estimated a combined Resource of 47.4Mt at 0.25% copper using a 0.05% copper cut off

Type	Mt	Copper (%)	Copper tonnes
Copper oxide	30.3	0.24	73,000
Secondary copper sulphide	17.1	0.27	46,000
Total	**47.4**	**0.25**	**119,000**

That resource grade is well within the recommended ranges for in-situ recovery of copper and preliminary investigations of hydro geological parameters appear favourable.

The resource includes a high-grade core of 29 mn tonnes at 0.32% Cu containing 91,200 tonnes of Copper.

Above can be seen the historic Kapunda pit with the exposed copper oxide mineralisation and copper-enriched water in the flooded pit.



Because in-situ recovery processes are not burdened by the normally high capital and operating cost activities of mining, crushing, grinding, and flotation, there is a general expectation that production from shallow deposits amenable to in-situ techniques may be at relatively low cost.

As an aside we would note that back in February 2014 Terramin announced the discovery of significant REE mineralisation (with Scandium) at Kapunda following the identification of unusually high concentrations of REE and scandium in quartz veins at the historic Kapunda Mine. Our enthusiasm for Scandium is undimmed and we regard REEs as a turnaround story.

Board & Management

Mick Billing, is the executive Chairman and CEO. He has over 40 years of mining and agri-business experience and a background in finance, specialising in recent years in assisting in the establishment and management of junior companies. His career includes experience in company secretarial, senior commercial, and CFO roles including lengthy periods with Bougainville Copper Ltd and WMC Resources Ltd. He has worked extensively with junior resource companies over the past 15 years. He was appointed to the Board in April 2008. He is also a director of ASX listed company Southern Gold Limited.

David Edward Thomas is a non-executive director. He is a mining engineer who trained at the Royal School of Mines, London, with experience in all facets of the mining industry having worked for Anglo American in Zambia, Selection Trust in London, BP Minerals, WMC and BHP Billiton in Australia in senior positions in mine and plant operational management, and is experienced in project management and completion of feasibility studies. He has also worked as a consultant in various parts of the world in the field of mine planning, process plant optimisation, business improvement and completion of studies.
His most recent role was as Deputy Project Director for BHP Billiton's proposed expansion at Olympic Dam, South Australia.

Paul Johnson is a non-executive director. He was previously the Chief Executive Officer of Metal Tiger Plc, a company quoted on the AIM market of the London Stock Exchange, and is Non-executive Director of Metal NRG Plc, a company quoted on the ISDX Growth Market.

He is a Chartered Accountant, and an Associate of the Chartered Institute of Loss Adjusters and of the Chartered Insurance Institute. He holds a BSc (Hons) in Management Science from UMIST School of Management in Manchester.

Alastair Middleton is a non-executive director. He is a mining industry executive with more than 27 years of international experience, in both underground and open pit operations. He is a geologist and has a Master of Science Degree in Mineral Exploration from the Royal School of Mines, Imperial College. He worked for four years as a Mining Geologist with Goldfields of South Africa in the early 1990s before joining Datamine International (UK) where he worked for 14 years as a Mining Consultant. In 2008 he joined Standard Bank as a Technical Advisor where he had overall responsibility of technical approvals and "signing off" mining finance deals. He worked on a number of deal transactions involving debt finance, corporate finance, off-takes, equipment finance, M&A, advisory and business recoveries.

Richard Bradey is a director and also the Exploration Manager. He holds a Bachelor of Science in Applied

Geology and a Masters' Degree in Natural Resource Management. His recent career includes exploration, resource development, and mine geology, with Hillgrove Resources Limited, Xstrata Zinc, and Aditya Birla Minerals Limited, at senior levels.

Risks

The risks for the Tungsten space in general. These are:

- A return to a weakening Tungsten price
- Failure of the Tungsten story to reignite when mining market returns to general interest
- Weakened global industrial demand (particularly in tools) that would soften prices and volumes
- China skewing the market in some way to again create distortions in prices and trade patterns

Most of these risks are different sides of the same price prism, with the exception of the market's perception/ disinterest in Tungsten.

Financing remains difficult and dilutive when it takes place. The only way to harvest the more attractive price is to be in production and the only way to do that is to finance mine-builds/reactivations.

Conclusion

Thor Mining has managed to survive the Tungsten downturn and progressed and expanded its project portfolio despite the grim environment and general investor disinterest. Now it stands as one of the few explorers in the sub-space with, despite the strong rise in the Tungsten price, little sign of newcomers joining the fray.

Tungsten is one of those metals where the fluctuating price makes it hard to plan a company's trajectory for more than a couple of years. The slump in prices post-2011 left the space devastated with a meagre group of survivors in the producer, developer or explorer categories. With the slow steady recovery in the price since mid-2017 there now exists a window of opportunity for Tungsten plays as end users look to secure alternative, more reliable sources of supply than China.

The broader economic recovery should lead eventually to increased competition for Tungsten concentrates in the global market between Chinese and non-Chinese processors and consequently result in an increasing price structure for tungsten and its products in the future. A rise in prices of APT to near $400 is no longer unthinkable.

With a relatively low CapEx at Molyhil, and enhanced Moly credits now that metal also has awoken, the time seems right to expand the resource base, to further enhance the economics, then move towards development. Fortunately Tungsten offtakers are proactive participants in the development of producing assets in this metal in a way that is not evident in other specialty metals. GTP's past commitment at Molyhil is a good augury for getting this project across the financing line. Then there are the other prospects across the Bonya district in the Northern Territory, plus the Pilot Mountain project,

which should make Thor into a geographically diversified producer.

Therefore we have rated Thor Mining as a **Long** position with a 12-month target price of AUD 13cts.

Important disclosures

I, Christopher Ecclestone, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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