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HALLGARTEN + COMPANY

Initiation of Coverage

Christopher Ecclestone
cecclestone@hallgartenco.com

American Tungsten

(CSE: TUNG | FSE: RK90 | OTCQB: TUNGF)

Strategy: LONG

Key Metrics	
Price (CAD)	$2.00
12-Month Target Price (CAD)	$3.25
Upside to Target	63%
12mth high-low	$0.47 to $4.90
Market Cap (CAD mn)	$97.05
Shares Outstanding (mns)	48.53
Options & Warrants	4.71
Fully diluted	53.24

American Tungsten

Leading the Tungsten Race in US

- + **American Tungsten is the only listed company that is currently rehabbing a former producing Tungsten mine in the United States**
- + **The Ima Mine in Idaho produced Tungsten between 1937 and 1958 and possesses significant infrastructure for a swift path back to production**
- + **The most recent anointing of the project by the US government was an EXIM Bank LOI for US$25.5mn to fund mining development & production**
- + **The company has just taken a strategic stake in Viking Mines, a Nevada focused Tungsten asset acquirer with past producing high grade assets**
- + **Tungsten´s essential uses in industrial and military applications is driving the resurgence of interest, particularly from Western governments**
- + **The Tungsten (APT) price initially reacted slowly to the Chinese restrictions on dual-use W exports to the US but then started to attract a strong response breaching $400 and then $500 per MTU of APT as old price ceilings crumbled**
- + **Tungsten price has recently moved above US$900 per MTU of APT in a buying frenzy after over a decade of quiescence**
- + **Molybdenum could be a further addition to the mix as a by-product**
- × **The long slack period in prices since 2014 ravaged the listed players and reduced exploration to almost nil**
- × **The particularly steep rise in Tungsten in recent weeks tempts the thought that there could be a dramatic pullback at some stage**
- × **China still has the firepower to cause damage by predatory actions (e.g. on price) to the downside**

To the Winner, The Spoils

We have often used horse-racing analogies when referring to critical metals/minerals, particularly Rare Earths, with the fate for race´s underperformance being a one-way trip to the glue factory.

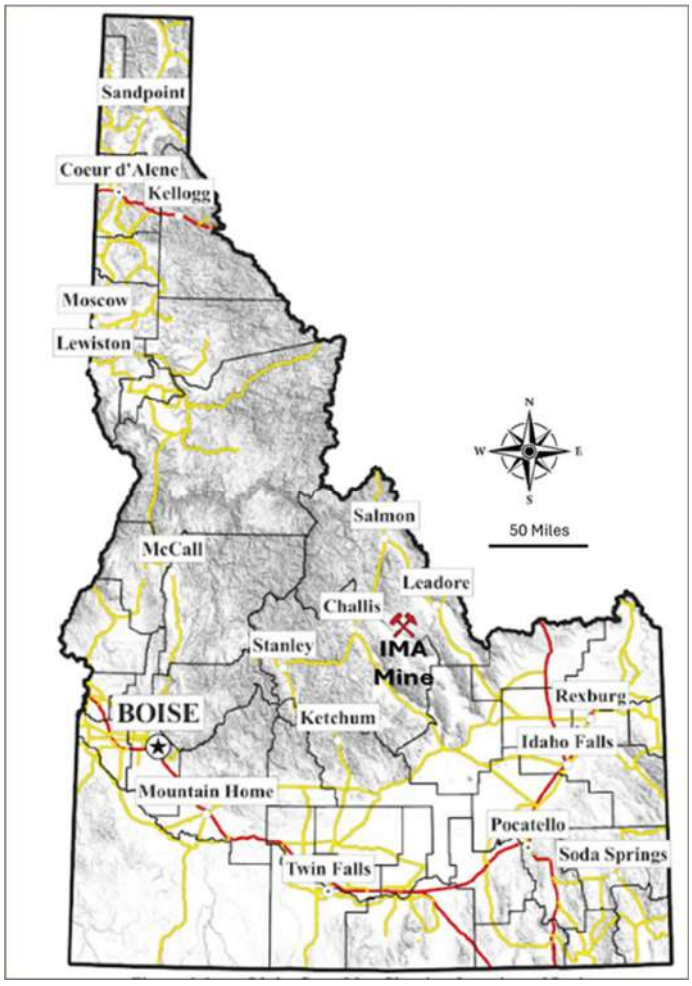
The runners in the Tungsten stakes are much fewer than the crowded field in Rare Earths in 2012 (or indeed now). The number of REE players taken out behind the barn and dispatched in the 2012-19 period was legion. However, we should remember that Tungsten itself had a dark period from 2014 until 2022. Indeed, it was one of the laggards in the revision of perspectives of strategic metals and when it did start

to move its progress was more measured. Indeed, we viewed a slower rise as more comforting as time and again the spike and dump tendency in thinly traded metals has led to a bloodbath in the wake of boomlets.

The brutal period of low prices is now behind us, and Tungsten producers are receiving now a “fair” price. Whatever fair may mean, it has to beat the price of Ammonium Paratungstate (APT) of under $300 per MTU, where it long lingered. The slow progress has allowed the existing coterie of Tungsten players to heal and slowly refire their efforts and has brought in a (mercifully) small number of new players. As it is clear to promoters that governments (read departments of defense) are not going to fund greenfield activity, but want the, relatively, instant gratification of brownfields and mine reopenings.

The announcement in November 2023 that the then Demesne Resources had deftly managed to get its hands on the IMA Mine in Idaho was shock to the system as it had secured (though few recognized it at the time) the most “oven-ready” Tungsten mining asset in the United States.

In this Initiation we shall review the company´s recent history, the assets it holds, the progress being made and the conditions, dynamics and drivers in the broader Tungsten space.



The Back Story

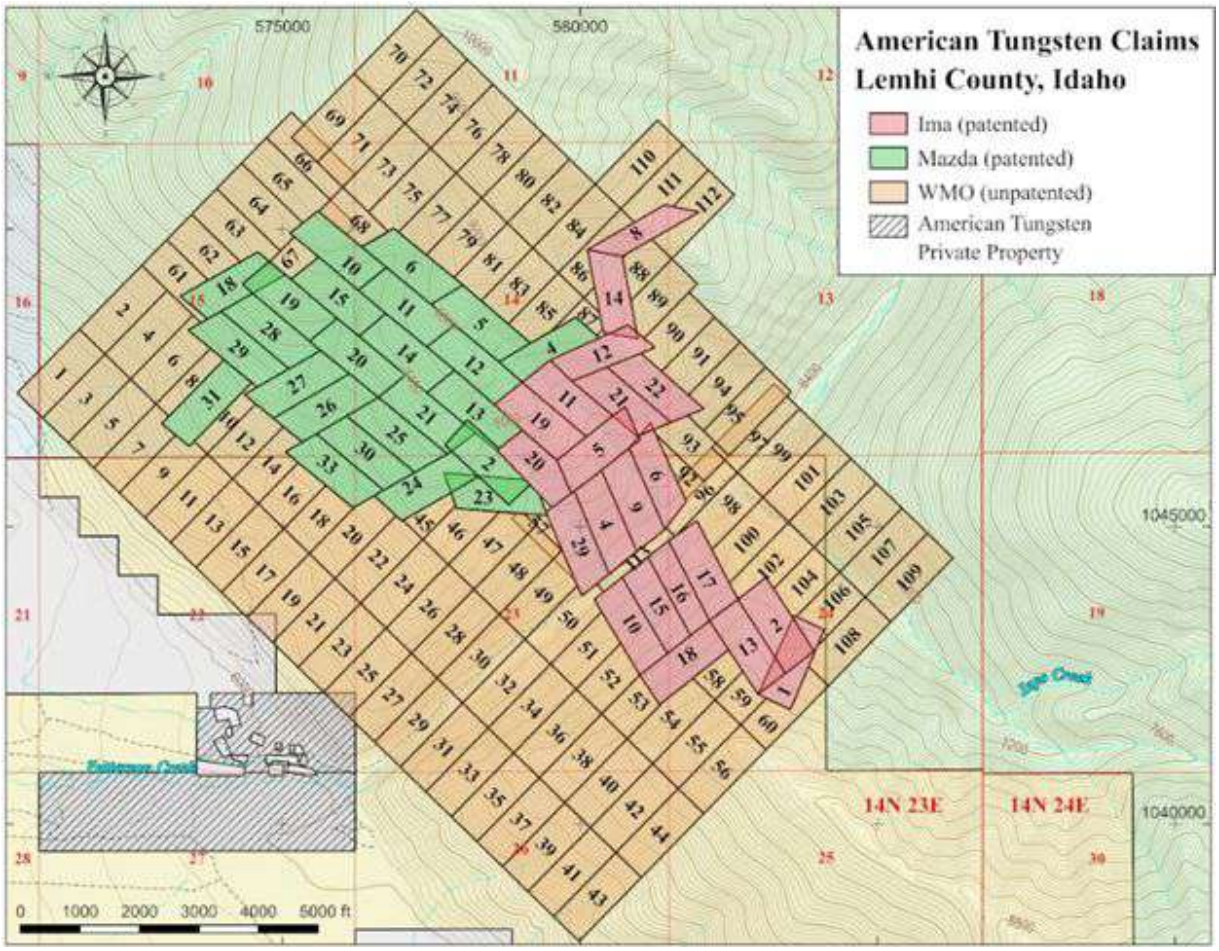
Until January of this year the company was called Demesne Resources and then changed it to the more appropriate American Tungsten. This was driven by the purchase of the historic IMA mine in late 2023. The transaction had little fanfare and did not move the dial appreciably because the Tungsten price was still barely over out of its decade long slump and governments/militaries had not awakened to their vulnerability to Chinese dominance of this prime military metal.

Transformation

The pivot of Demesne Resources to the Tungsten space started to gain traction in early November of 2024 when the company entered into an option agreement with IMA-1, LLC granting Demesne the option to acquire a 100% undivided interest in the IMA Mine project located in East-Central Idaho.

The project consists of 22 patented claims on 395.98 acres and an additional 214.4 acres of patented ground in adjacent Pahsimeroi Valley. The claim map is on the following page.

The patented claims are accessible over existing roads managed by the Bureau of Land Management.



The Deal

Under the terms of the option agreement, to acquire a 100% interest in the property American Tungsten must pay to the optionor an aggregate of US$5.8mn. The transaction is particularly interesting in the length of time that the payment schedule stretches out and is very back-end loaded.

The schedule is as follows:

- US$100,000 on the effective date
- US$50,000 on the six-month anniversary of the effective date
- US$100,000 on the first anniversary of the effective date

- US$130,000 on the second anniversary of the effective date
- US$150,000 on the third anniversary of the effective date
- US$250,000 on the fourth anniversary of the effective date
- US$250,000 on the fifth anniversary of the effective date
- US$770,000 on the sixth anniversary of the effective date
- US$1,000,000 on the seventh anniversary of the effective date
- US$3,000,000 on the eighth anniversary of the effective date

When the option has been exercised, a 100% undivided right, title and interest to the property will thereupon vest in the company free and clear of all encumbrances, subject only to the 2% royalty to the vendor. American Tungsten has the right to reduce the royalty to a 1% royalty by paying the optionor US$2mn on or before the fourth anniversary of the effective date.

The Ima Mine

One of the few mysteries with this project is whether its historic name is the Ima Mine or the acronymic Ima mine. We shall use the acronym format even though the historic material seems to indicate Ima is the correct form.

The IMA property is located in the Lemhi Range, near the community of Patterson, Idaho, located approximately 20 miles east of Challis. The Ima Mine is a past-producing underground Tungsten mine that, between 1945 and 1957, produced approximately 199,449 MTUs of WO_3 and was subsequently explored for Molybdenum by various operators between 1960 to 2008.

The Ima Mine is situated close to key infrastructure items and resources, including paved county roads, tier-1 low-cost power supply, access to water rights, and a mining-oriented labour force.

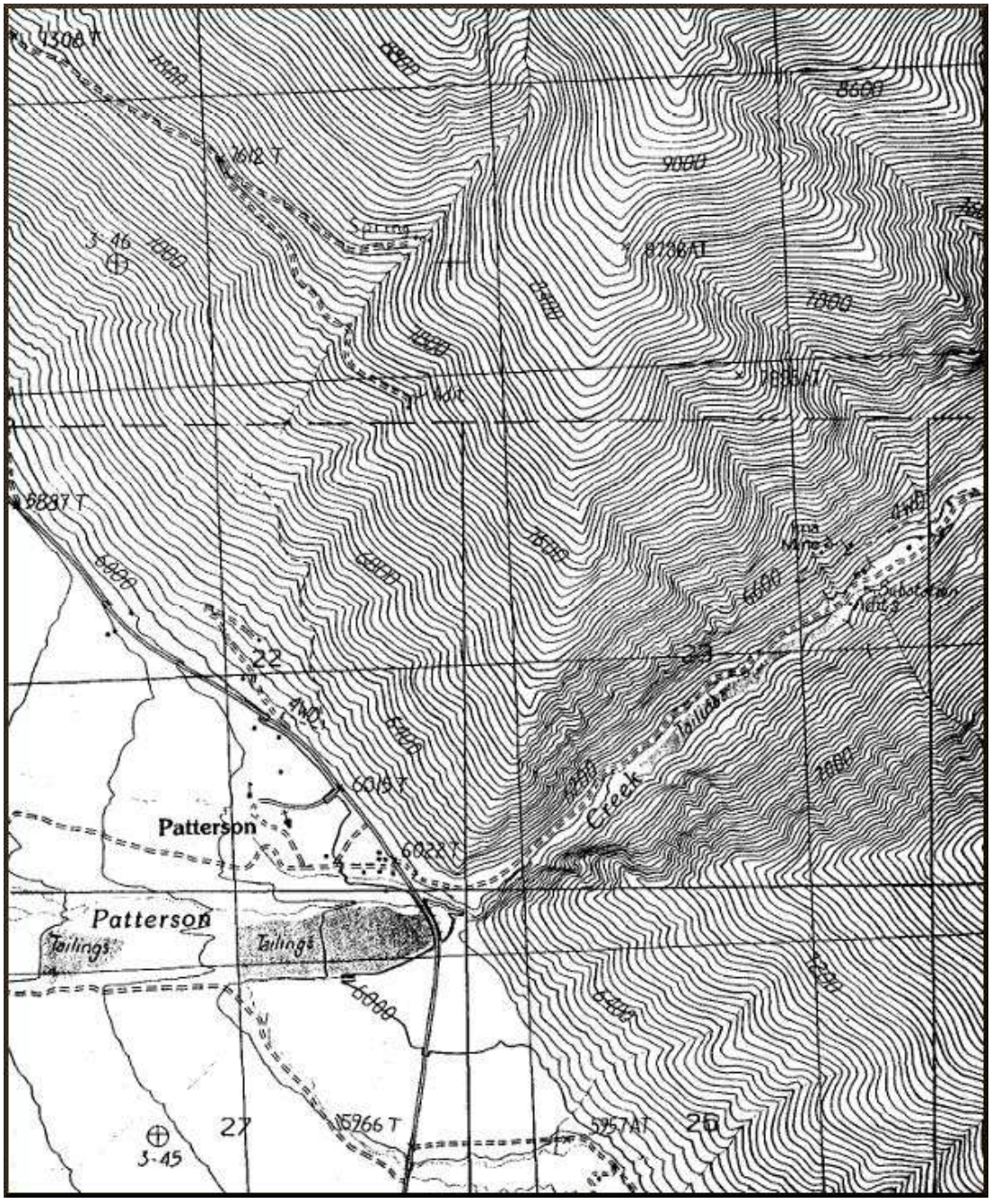
History

The Ima property has a history that goes back substantially farther than its role as a past-producing Tungsten mine as it actually began its mining “career” as a silver mine in the 1800s.

The period of war time production is the apogee of the Ima Mine. In 1934, the Ima Mines Corporation acquired the Property and began substantial production in 1937. The U.S. Bureau of Mines explored the property at the beginning of WWII and established an indicated reserve of 258,000 tons grading 0.55% WO_3.

There was a large increase in production from the mine in 1937, once the mill recoveries were sorted, and the mine became one of the largest Tungsten producers in the United States. Tungsten concentrate was shipped to eastern markets, and the copper-lead-silver concentrate was shipped to the smelter at

Midvale, Utah. The Ima mine produced 1,000 pounds of tungsten concentrate per day during at least part of the year. In 1938, the capacity of the mill was increased to 150 tons per day as the Mine became the second-largest Tungsten producer in the United States.



Between 1945 and 1957, while operated by the Bradley Mining Company, the IMA Mine produced approximately 2,198 tons of WO_3 (199,449 MTUs) from 468k tonnes of ore, with an average recovered grade of 0.434% WO_3 and also produced a sulphide concentrate yielding 1.29mn oz of silver, 1.8mn lbs of

copper, 2.92mn lbs of Lead and 0.02mn lbs of Zinc.

In 1940, the mill was enlarged to 120 tons per day and by 1942, the mine production had totaled 180,000 tons grading 0.55% WO_3 and 1.75 oz per ton silver.

In 1945, Bradley Mining Company acquired the Mine and operated it until 1957 when the United States government tungsten purchase program was terminated. During this period, production totaled 576,390 tons. The ore mined averaged 0.55% WO_3 per ton but due to waste dilution, the recovered grade was 0.43% WO_3 per ton. In 1946, Bradley also acquired a lease on the adjoining Miller (General Electric) Mine and operated the two properties together under a lease agreement until closure in 1957. The Ima Mine was the natural gateway to the Miller Mine.

The IMA mine shut down in 1958 upon cessation of the U.S. government Tungsten stockpiling program. Total documented production up to 1958 was 722,402 tons of ore that produced 2,592 tons of Tungsten oxide concentrate and 22,715 tons of sulphide concentrate that contained the Molybdenum, silver, copper, zinc, lead and gold.

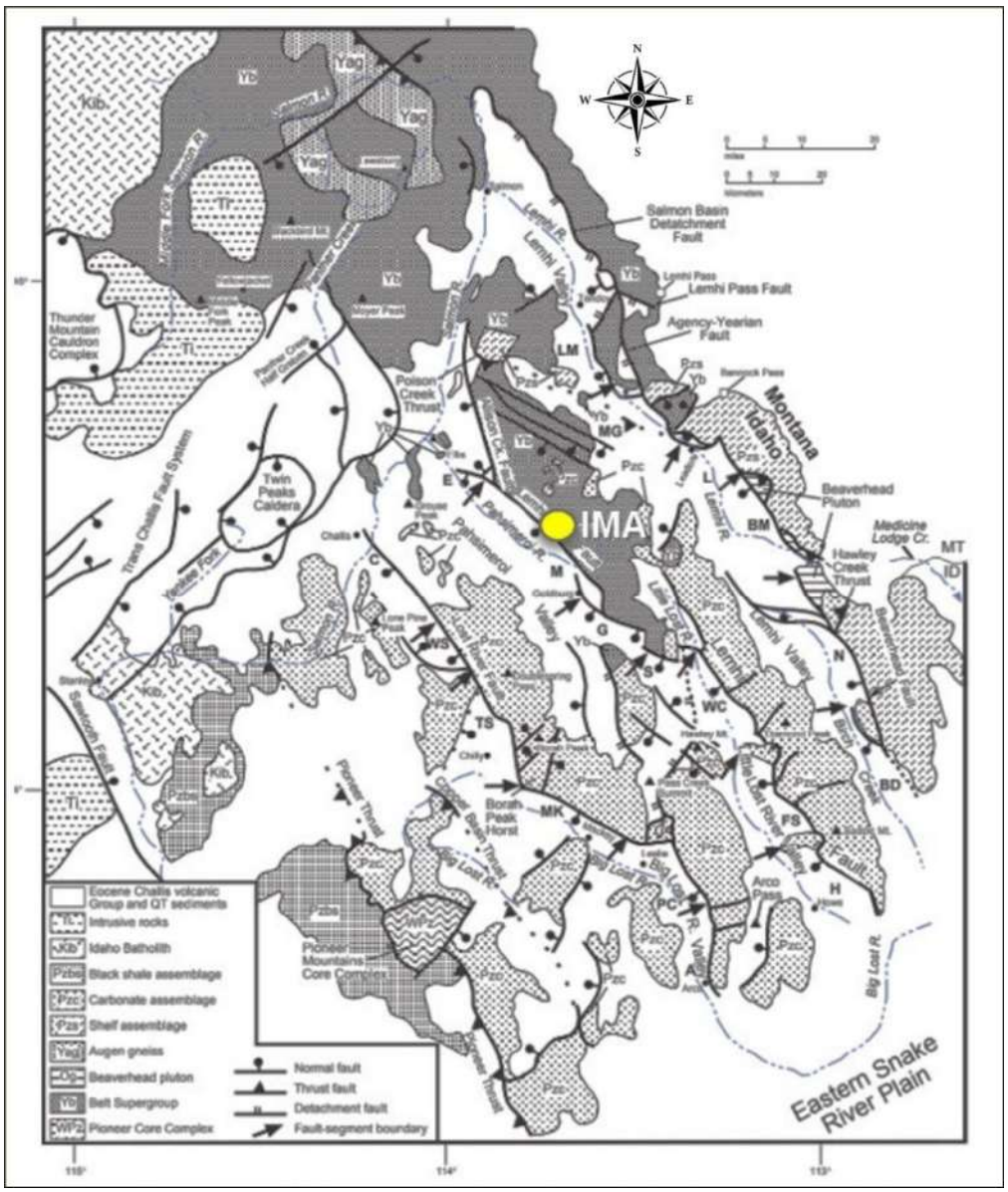
The property was subsequently explored for Molybdenum by AMAX Inc. during the period 1960-1962, owner of the renowned Climax Mine. Work was then undertaken by Inspiration Development Company (1979-1982), Gentor Resources Ltd (2007-2008), and other junior exploration companies. Inspiration ultimately focused on exploration and development of the quartz-tungsten-vein system, rehabilitating upper levels of the mine to complete underground resource delineation drilling, conducting metallurgical

work and commencing construction of a haulage adit.

Due to a decrease in Tungsten prices, development work ceased in 1982 prior to recommencement of mining.

Regional Geology

The Lemhi Mountain range of East Central Idaho, a high-relief linear mountain range uplifted during basin and range extensional faulting initiating in the Miocene. The property is located on the western margin of the range approximately 1.7kms east of the basin-bounding Lemhi fault, which forms the Pahsimeroi Valley, a broad north-northwest trending extensional basin bounded to the west by the Lost River range.



Bedrock in the area generally consists of Mesoproterozoic metasedimentary rocks, Eocene intrusive and extrusive volcanic rocks of the Challis Volcanic Group, Miocene and younger basin-fill sedimentary sequences and glacial and alluvial deposit.

Basin and range extension initiated approximately 17 Ma and uplifted the Lost-river, Lemhi and Beaverhead Ranges in East Central Idaho. Basin and Range faults here principally strike north-northwest and dip to the southwest, forming high relief ranges and broad extensional basins. Cumulative extension across the three basins is estimated at 10% to 20% (Janecke, 2007).

The area is within the intermountain seismic belt and is undergoing active extension. The Patterson segment of the Lemhi Fault is approximately 40 km length and extends along the eastern margin of the Pahsimeroi Valley. The range front is characterised by triangular facets and alluvial fan deposits. The fault cuts pleistocene alluvial fan deposits and fault scarps up to 1.7 metres are preserved near Patterson.

Project Geology

The Ima deposit is a porphyry-type lead-copper-silver, tungsten, and Molybdenum deposit associated with a granitic stock that was discovered in the lower level of the mine. The deposit is zoned, with an outer zone hosted by quartzites of the Gunsight and Apple Creek Formations and an inner zone associated with the granite.

The minerals in the outer zone include pyrite, hübnerite, scheelite, tetrahedrite, galena, sphalerite, and chalcopyrite in veins of quartz, fluorite, calcite, orthoclase, and rhodochrosite. This zone is up to 900 feet wide, 2,000 feet long, and 700 feet deep. The inner zone is below the mine workings and has been explored mainly by drilling. Ore minerals include Molybdenumbdenite, hübnerite, chalcopyrite, and pyrite disseminated in sericitized and silicified granitic rock and in quartz-calcite veins. This zone is up to 800 feet wide and 2,300 feet long. Both zones trend towards the northwest.

All the ore produced to date came from the outer zone.

Molybdenumbdenite mineralisation occurs in the veins and disseminations in potassically altered Cenozoic porphyry intrusive that is exposed in the lower levels of the IMA Mine and intersected in deeper historical drilling. Mineralisation occurrence is interpreted as consistent with a sub-Climax type porphyry model with higher-level Tungsten/base metal veins.

The tungsten and Molybdenum mineralisation of the IMA Mine has similarities to a sub-type of porphyry Molybdenum deposit classified as alkali-feldspar rhyolite-granite porphyry Molybdenum deposits (formerly Climax-type Molybdenum). Tungsten occurs in these deposits as wolframite and hübnerite, paragenetically late, typically within outboard vein systems developed along the roof or margins of causative intrusions.

Historic Exploration Work

Exploration and development drilling has been conducted by numerous operators on the Ima Property

from 1939 to 2008. Assay data is currently available for some historical drilling campaigns including those from Inspiration and Gentor. Some core is available from the Gentor drilling program. Other drilling campaigns are described based on information contained in historical summary reports, drill hole logs, maps and other paper records. Much of the information for pre-1970s drilling is based on a comprehensive property summary report by Peter Joralemon (1973). Total drilling on the Property completed between 1939 and 2008 is at least 57,659 feet

Historical Drilling at the IMA Mine Site

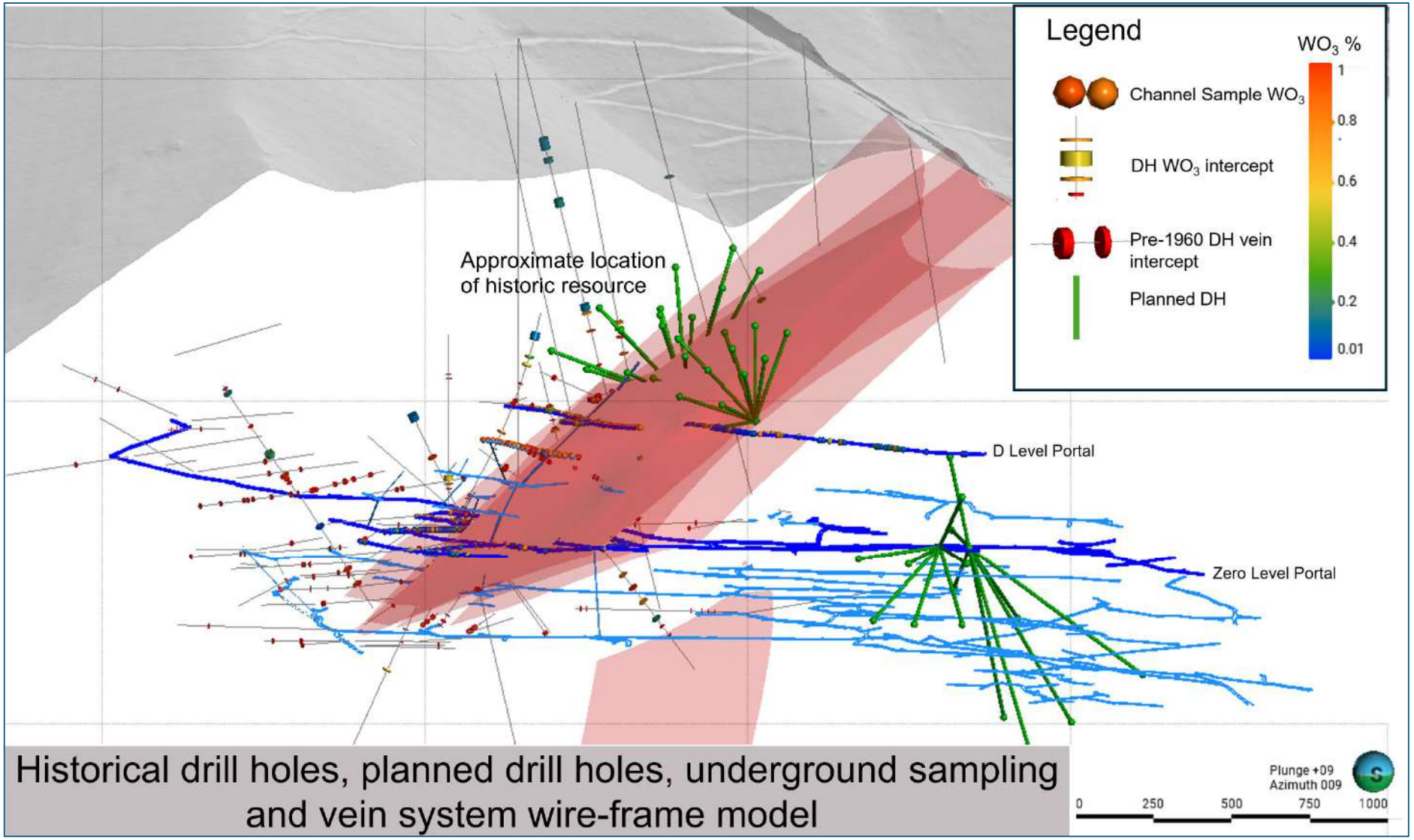
Company	Period	# of Holes	Metres
Asarco	1939	9	669.2
Bradley Mining Co.	1940s/50s	86	5252.1
US Bureau of Mines	1942	10	1625.6
AMAX	1960	2	612.2
Grim & Associates	1968	2	547.6
Midwest Oil & Gas	1970	2	247.3
Inspiration Development	1979-80	5	1890.5
Gentor Resources	2007-08	13	6734.1
Total		129	17579.0

As can be noted, the largest amount of drilling by far was conducted during times of major warfare (WW2 and the Korean War) and their immediate aftermath. The Bradley Mining Company conducted extensive small diameter underground core drilling for mine development and exploration work in the 1940s and 1950s. Drill logs are available for 86 holes completed on the Ima property totaling approximately 17,200 feet. Holes averaged approximately 200 feet in length and were selectively assayed for Tungsten within vein intercepts. Drill holes are primarily on the Zero and 360 Levels. In total, Bradley drilled 241 holes on the Ima and Mazda properties.

The exploration work conducted by Bradley was partially funded by the US Bureau of Mines under a DMEA contract through 1957.

Resource Estimate

Between 1939-1945, General Electric owned a block of claims (Mazda Claims) adjacent to and surrounded by the Ima claims. The Ima Mine, including the Mazda Claim group was operated as one property. As mentioned earlier, primary access to the Mazda Claims was through the Ima Mine. At the close of operations, Peter Joralemon, geologist, compiled the remaining reserves of the mine.



Historical drill holes, planned drill holes, underground sampling and vein system wire-frame model

Historic resources were calculated in 1957 by Peter Joralemon, a geologist for the Bradley Mining Company. These have been quoted for the property and, notably, pre-date the implementation of NI 43-101 standards. Thus, there exists a historical non-compliant resource on the claims. These resources do not use the categories specified by NI 43-101. The details, such as they are, can be seen below:

IMA MINE RESOURCE

Historic non-compliant

Claim Blocks	Tonnes	WO3	Ag g/t	Cu %	Pb %
Ima Claims	104,000	0.50%	59	0.19%	0.22%
Mazda Claims	248,000	0.50%	59	0.19%	0.22%
Total	352,000	0.50%	59	0.19%	0.22%

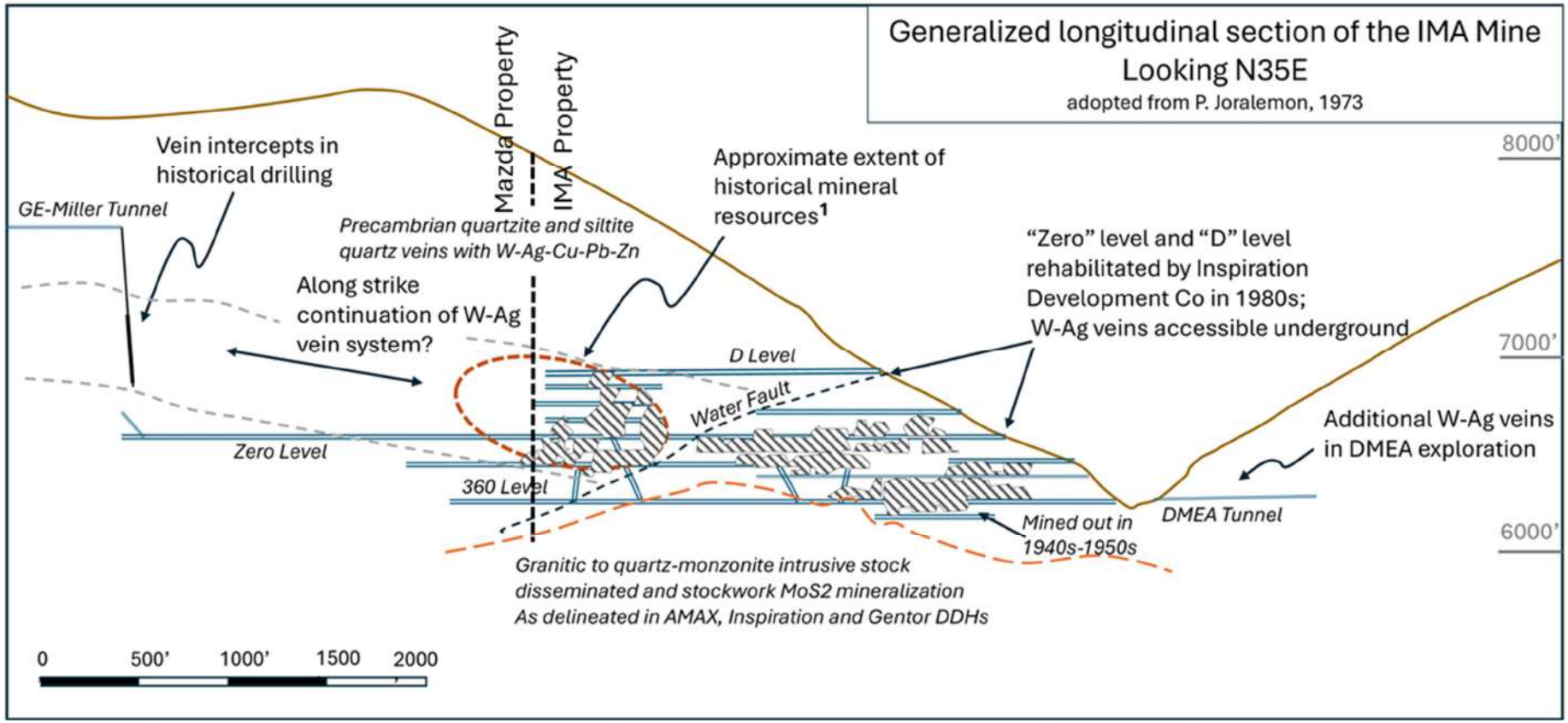
The grades for these reserves were not based on drilling and sampling results but rather were "back calculated" from the concentrate production to the tonnage milled to give a "recovered" grade to the in-situ reserves. These grades do not take into account mining dilution or mill recoveries. The Mazda Claims are currently the property of the Pierce family estate and do not comprise part of the package currently under the control of American Tungsten.

In 1980, Inspiration Development Company, after two years of drilling, published their own resource on the property, which expanded the limits of mineralisation to the north and west. As it is unlikely that these resources can be validated, as no core or pulps are available, and the resources do not differentiate between the Ima claims and the Mazda Claims.

Due to these factors the older reserve statement published by Peter Joralemon, in an internal company report, was referred to the historic resources for the property in the NI 43-101 summary of June 2025 that was prepared by Brian LeBlanc of A-Z Mining Professionals Limited.

These polygonal estimates by Inspiration, applying a minimum-width criteria and supported by ~12,000 ft of additional drilling and extensive underground sampling, and inclusive of BMC reserves calculated 1.023mn tons of "Probable" and "Highly Probable" material grading 0.63% WO_3, 0.042% MoS_2, and 1.79 oz/t Ag, and an additional 419k tons of "possible ore". As the estimates pre-date NI43-101 the categories are shown in quotation marks as they are not apples to apples with the current understanding of these categorisations. The proportion of historical resource identified by Inspiration occurring on the Ima property is unquantified.

In 2009, Gentor Resources reported a NI 43-101-compliant MRE prepared by Wardrop Engineering for the Molybdenum ore body occurring below the IMA mine. The estimate does not include the area encompassing mineral reserves reported in historical estimates. The estimate is supported by limited information including only 13 drillholes. The estimate reports inferred Mineral Resources of 5.7mn tons grading 0.15% Mo. No Mineral Resources were classified as Indicated.


Generalized longitudinal section of the IMA Mine
Looking N35E
adopted from P. Joralemon, 1973
Mazda Property
IMA Property
Vein intercepts in historical drilling
GE-Miller Tunnel
Precambrian quartzite and siltite quartz veins with W-Ag-Cu-Pb-Zn
Approximate extent of historical mineral resources[1]
"Zero" level and "D" level rehabilitated by Inspiration Development Co in 1980s; W-Ag veins accessible underground
Along strike continuation of W-Ag vein system?
D Level
Water Fault
Zero Level
360 Level
Additional W-Ag veins in DMEA exploration
Mined out in 1940s-1950s
DMEA Tunnel
Granitic to quartz-monzonite intrusive stock
disseminated and stockwork MoS2 mineralization
As delineated in AMAX, Inspiration and Gentor DDHs
8000'
7000'
6000'
0
500'
1000'
1500
2000

Strategy & Choices

The mine reboot at Ima can be viewed in two ways and the company refers to it in both ways. In the first case it is seen as an avenue for underground drilling, secondly as a short path to a DSO mining operation that might very well make it as the first Tungsten story in North America to return to production in this current Tungsten upcycle.

The company is actively evaluating options for small- to medium-scale underground mining of the tungsten-quartz vein systems in the upper levels of the mine.

The ongoing rehabilitation and drilling programs are supporting this objective with the goal of confirming and expanding the historical mineral reserves and assessing their economic potential through an engineering evaluation. The company is also investigating both on-site and off-site processing (DSO), and also on-site concentrating.

As can be noted from the cross-section of the old mine on the preceding page there is an enormous infrastructure in place. The company is already off and running on the refurbishment, while many others in the space talk of what they might do.

The Direct Shipping Ore (DSO) mining scenario is definitely interesting as it would show to the markets and the powers-that-be in Washington that the rubber is hitting the road, so to speak, in Idaho. This would obviate the need for a mill in the short-term. The DSO option is what it says on the box and has some drawbacks. Usually, DSO shipments are of minerals such as iron ore, manganese or chromite where the DSO ore is 40-70% mineralised. With Tungsten grades around 0.5%, the company would have to move 200 tonnes of ore, an uncertain distance, to glean one tonne of WO_3. Silver, copper, lead and zinc and Molybdenum may provide by-product credits if they can be extracted. This is clearly a different equation.

One clear advantage of DSO is reduced facility footprint (e.g. no tailings storage facility required) and streamlined permitting.

We have no delusions though that this is a scenario that the company would pursue more than momentarily, as Tungsten concentration circuits (crush/grind/float) are simple (but large, depending on volumes of throughput) as we noted after our visit to Almonty's Los Santos mine in 2015 which we wrote up here. Thus, the company could implement a starter strategy with a small concentration and grow by bolting on capacity.

We can merely speculate here as there is no PEA thus far but the need for expensive tailings facilities can be obviated by the use of paste-backfill for tailings disposal. This can be a massive savings and immediately instituted while requiring no lead-time.

Production is production in our book and American Tungsten have got the jump on the slow-pokes of the

Tungsten space that talk a good game but then freeze up when it comes to actual mine-building.

The Mine Rehab

It is first useful to note that, while in production, approximately 36,907 feet of lateral development was completed on about 12 levels with 6,764 feet of raises completed to mine the Tungsten-rich quartz veins. The mining method appeared to have been open stoping or a similar method with the development drifts and access raises following the veins to the top of its economic limits or between sub-levels and then mining down to the level where the ore was hauled out to the portal to be processed. Ore was scraped down transfer raises where they were loaded on to small ore cars of about four to six tons capacity, on light rail. During mining and development, approximately 19,483 feet of diamond drilling was completed to outline and search for reserves.

American Tungsten is focusing rehabilitation efforts on two of the mine levels, the middle “Zero Level” and the upper “D Level”. Below can be seen the D- Level Portal as at October of 2025.

The late October update from management reported the successful completion of rehabilitation work on the D Level adit at the Ima Mine, alongside the commencement of underground development in preparation for diamond drilling. Drilling commenced in December, after construction of a new 200 ft crosscut and underground drill station.

As of December 2025, the company has successfully rehabilitated approximately 300 feet of the Zero Level access tunnel, measured from the portal entrance. The rehabilitation efforts are now past the main

collapsed zone and have reached areas with good ground conditions. Management described the anticipated work on the Zero Level tunnel as being approximately 80% complete, at that time. Below can be seen the Zero Level Portal on the left before rehab and on the right after rehab.

Access roads and switchbacks to access both the D Level and Zero Level have been further improved and all services have now been installed to support the underground excavation work and diamond drill program.

Actual & Planned Exploration

Rockhead Consulting LLC was awarded the underground drilling contract, which would include an initial 5,000 feet of diamond drilling on the D level. At that time (i.e. late October) mobilization of the diamond drill rig was in progress.

The company initiated exploration drilling in December of 2025. The technical team has identified five priority vein system exploration targets for Phase 1 drilling, consisting of the No. 5 and No. 7 Vein systems, the Ima West Vein, the Eastern Vein, and the Main Ima Vein. Drilling initiated on the D level of the mine following significant underground rehabilitation and construction of new drill stations in the footwall of the vein system.

The company plans to complete approximately 10,000 feet of drilling under the Phase 1 project. The objective of the Phase 1 program is to further delineate these historically identified tungsten vein systems and address compelling low-risk targeted areas for expansion of known mineralisation by the end of 1Q26.

Engineering & Metallurgical Studies

The company announced that it will be contracting Minetech USA, LLC, a private engineering firm based in Butte, Montana, to provide mine planning and geotechnical engineering expertise on the tungsten development plans. This work will include a maiden Mineral Resource Estimate for the tungsten vein system, engineering trade-off studies, and preparation of a PEA engineering scoping study.

- Tradeoffs will include:
  - Mining Methods,
  - On-site vs Off-site processing,
  - Power and water requirements,
  - Infrastructure and facility layouts

American Tungsten has also engaged the engineering firm WSP, to initiate a metallurgical testwork and process design program to support design of a mill onsite to process mineralized materials from the Ima Mine. The program includes:

- Metallurgical testwork, which may include:

  - Comminution testwork
  - Recovery of Tungsten by gravity methods (knelson concentrators, jigging, spirals, HMS, etc)
  - Sulfide and tungsten flotation
  - Application of X-Ray sorting technology

- Initial engineering, which may entail:

  - Preliminary mass balance calculations
  - Development of a preliminary Process Flow Diagram (PFD)
  - Compilation of a preliminary equipment list
  - Estimation of preliminary process related capital expenditures (CAPEX)
  - Technical reporting

These deliverables will guide the next phase of development, which may include additional testing and piloting to validate recovery and grade assumptions, followed by detailed engineering for the proposed onsite processing facility.

Infrastructure

The area has road access and airports that can accommodate small to medium-sized aircraft. The necessary infrastructure needed to support an integrated mining operation is not in place. However, there

is electrical power nearby and enough water to supply an exploration program.

There is a tailings site spread out in three areas down the valley from the Mine site, all the way to Patterson. The tailings are benign and not toxic or acid generating, as reported by the BLM Challis, Idaho office via the web on the BLM website, however this needs to be validated. Parts of the tailings have been re-vegetated with straw over some areas, and a storm fence to prevent wind-born particles blowing away has been installed. The lower area of the tailings, near Patterson, has been excavated possibly as a source of sand and fill by the local residents.

There are large areas of arid land that could be suitable for building sites, potential tailings or waste rock storage in the valley west of the mine site that are covered by the company's option agreement.

The Offtake Agreement

In late September of 2025, the company announced that it had entered into a Letter of Intent (LOI) with a prominent U.S-based offtake partner, Global Tungsten & Powders (GTP).

Global Tungsten & Powders Corp (GTP) is a division of Germany's Plansee Group (since 2008), and one of the largest Tungsten processors in the world. It is a supplier of Tungsten and Molybdenum powders and specialty products. It is headquartered in Towanda, Pennsylvania and has an additional production site in Bruntál, Czech Republic. It was formerly owned by OSRAM, the lighting company and this is reflective of the long history of Tungsten as a key ingredient in lightbulb filaments.

GTP has a long history of "talent-spotting" in the Tungsten space so most of the advanced players have inked deals with GTP at some time or another.

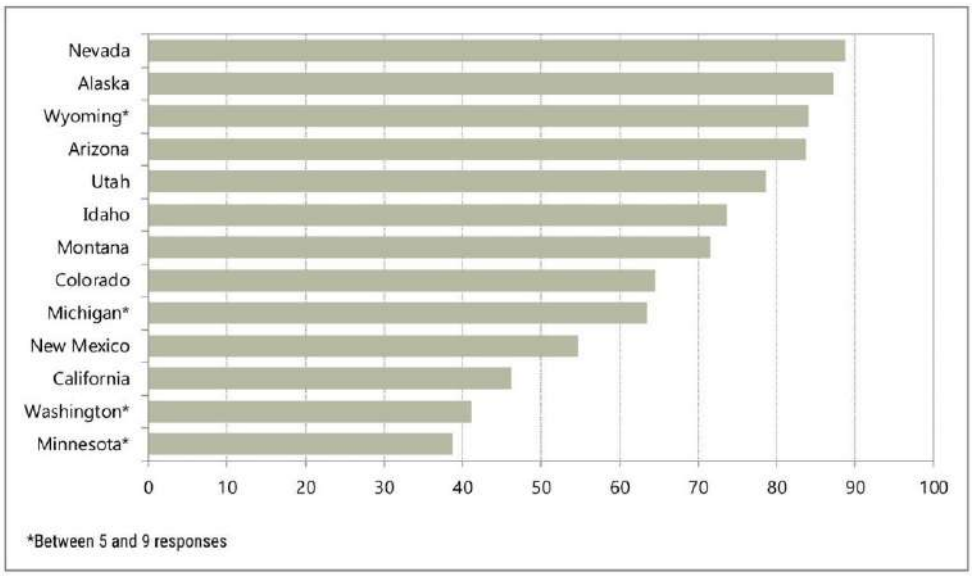
On Idaho as a Mining Jurisdiction

Nevada is finally encountering some competition to its long ascendance in the mining firmament. Utah recently pipped it to the post and other states like Idaho are rising in the ranks of the likes of the well-quoted annual Fraser Institute survey of mining metrics for various global jurisdictions.

The most recent Fraser Institute Survey is for the year 2024, which was published in August of 2025.

In 2024, Idaho's Investment Attractiveness Index score decreased slightly by 1.76 points, and in the latest survey it ranked 21st out of 82 jurisdictions.

Below is the ranking of investment attractiveness for US jurisdictions:



However, Idaho increased its score on policy alone by 3.11 points and went from ranking 25th (out of 86) in 2023 to 21st (out of 86) in 2024. The Fraser Institute Survey noted that respondents had expressed increasing concerns over uncertainty related to disputed land claims (+18 points), infrastructure, and security (both +9 points).

As to the legal framework surrounded mining rights on federal lands in Idaho, including those managed by the BLM and USFS, these allow for the staking of both lode and mill site claims under United States mining laws. Lode claims are used to secure mineral deposits occurring within solid rock formations, including classic mineralised veins and lodes. These claims typically take the shape of parallelograms, extending up to 1,500 feet (455 metres) in length and 600 feet (183 metres) in width. Under federal regulations (43 CFR 3832, Subpart B), extralateral rights apply to lode claims, allowing miners to extract mineralised material that extends beyond claim boundaries at depth, provided that the claim's end lines are parallel.

To maintain unpatented claims, claim holders must comply with annual filing and fee requirements. As of January 2025, each lode claim requires an annual maintenance fee of $200, payable by September 1, of each year.

The Ima project is largely situated on patented mining claims administered by the state. The Idaho Department of Lands (IDL) administers key legislation such as the Mined Land Reclamation Act and the Dredge and Placer Mining Protection Act, ensuring streamlined oversight across nearly 1,600 active mining permits. Idaho Code Title 47 – Mines and Mining provides a comprehensive legal foundation for mineral rights, lease arrangements, locatable minerals, and financial guarantees for reclamation. Executive Order 2025-02, known as the SPEED Act, was signed by Governor Brad Little in January of 2025

to accelerate and coordinate state permitting for large-scale projects—including mining—through a new multi-agency SPEED Council. The Council is chaired by the state's Office of Energy and Mineral Resources and supported by top-level leadership, facilitating faster permit reviews, reducing duplication, enhancing transparency, and promoting inter-agency collaboration.

There are other mines operating or under development in the state nearby, such as the Thompson Creek Molybdenum open pit, approximately 50 miles west of this area, the fully-constructed Jervois Cobalt project outside of Salmon, the mines in the Coeur 'd Alene area, as well as the mining centres at Butte and Anaconda in Montana. Unfortunately, operations at the Idaho Cobalt Mine, near Salmon, are currently suspended as Jervois has fallen into adminsitration.

The Viking Deal

In mid-December the company announced that it had entered into a letter of offer agreement with GTT Ventures Pty Ltd and Viking Mines Limited (ASX: VKA). Under the terms of the Letter Agreement, American Tungsten will subscribe for 150,000,000 ordinary shares in VKA at a price of AUD$0.005 per share, representing an investment of AUD$750,000.

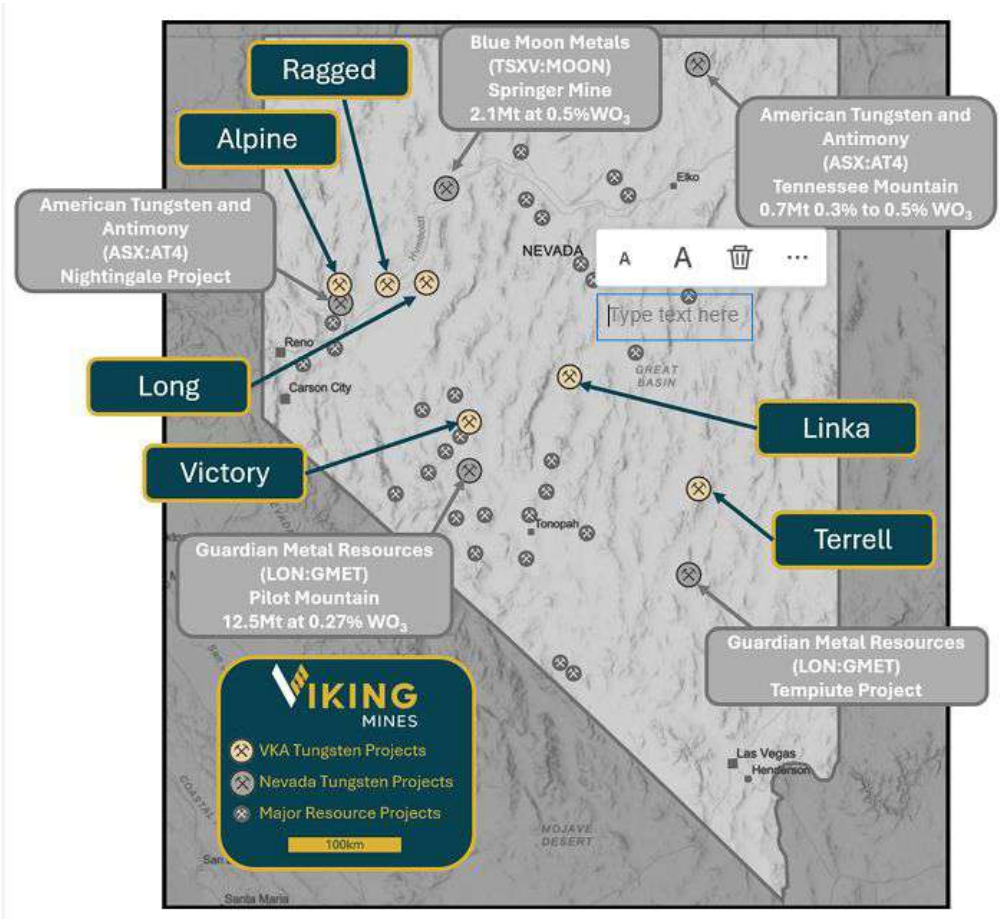
VKA intends to use the proceeds from its planned AUD$3.8mn placement to acquire a 100% interest in a portfolio of six tungsten projects in Nevada, USA. These six mines are the are Linka, Alpine, Long, Terrell, Ragged and Victory mines. Historical production from these properties is reported at approximately 123,000 tons, at an average grade of 0.54% WO_3.

The flagship Linka Project reports significant historical assays including underground channel sampling of 6.1m at 1.50% WO_3 and drillhole results including 10.1m at 0.79% WO_3 (DDH-8) from 39.6m, both demonstrating the exceptional high-grade intercepts which can be attained from the project. Mineralisation has been extracted from three historical mines occurring over ~820m strike length with significant opportunity to identify and define resources across the project.

Viking Mines has commenced with due diligence and has recently completed a field visit including on-ground assessment of the US projects, which included sampling and claim verification.

The Linka site encompasses three of the historic mines: Linka, Hillside and Conquest with recorded production of ~65kt at 0.49% WO_3 mined.

The location of the Viking projects in Nevada *vis a vis* the assets of the similarly named, but ASX-listed, American Tungsten & Antimony (ASX: AT4, formerly Trigg Minerals) and Guardian Metals (AIM: GMET) in the same state is shown on the map that follows:

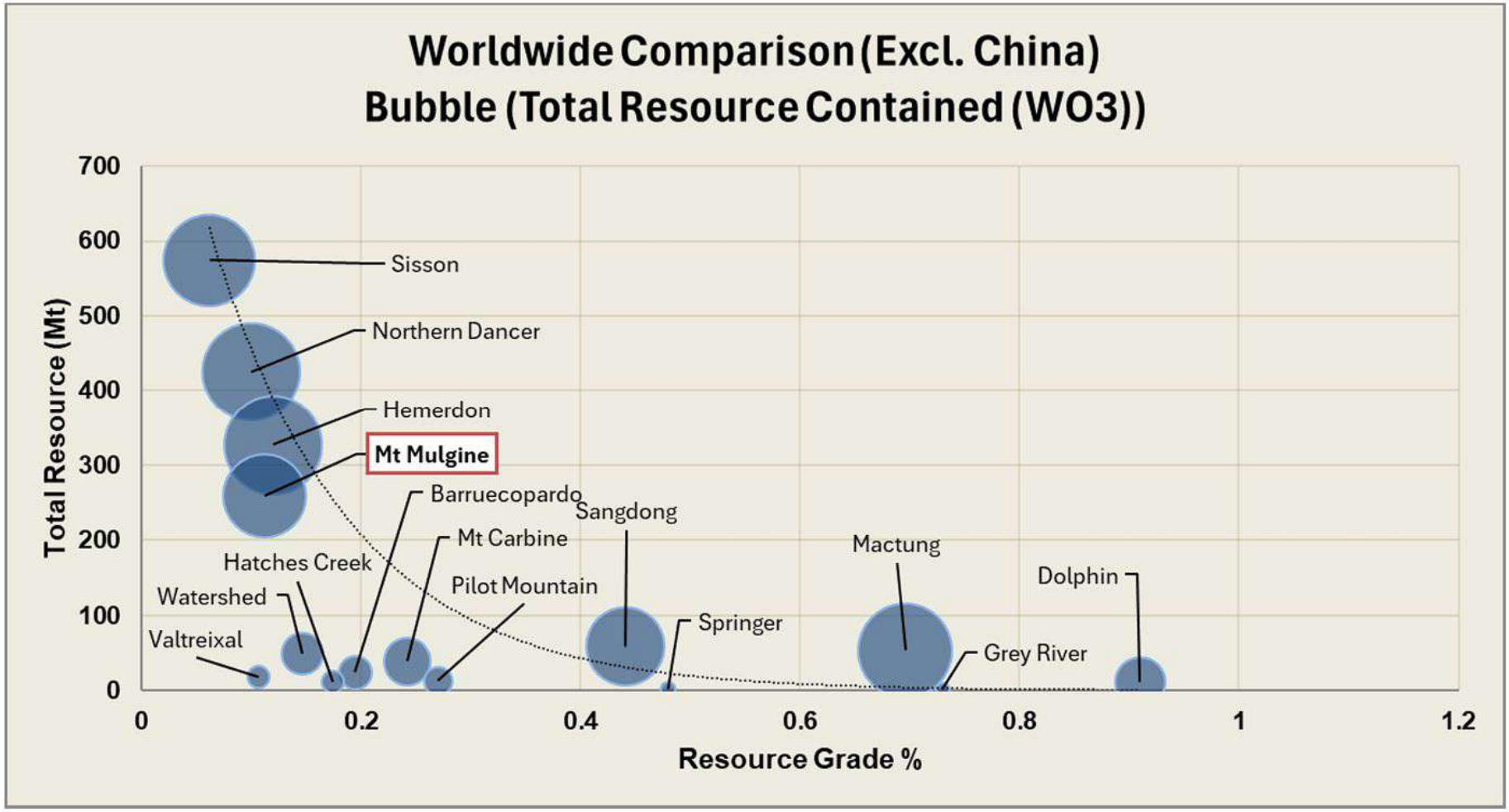


Tungsten mineralisation occurs as scheelite and is exposed intermittently for ~820m strike length along the northeasterly trending contact zone. Extensions to the NE and SW remain open and are covered by alluvium and Tertiary age tuffs. Linka Mine Underground mapping completed in 1955 and 1977 confirmed the Linka historical orebody as being some 470ft (~143m) long with an average width of 40ft (~12.1m).

Mineralisation remains open to depth and Viking is trying to obtain historical drilling records from exploration drilling completed in the late 1970's. Exceptionally high tungsten grades over significant widths up to 6.1m occur within the Linka underground on the 150ft level, including:

- 6.1m at 1.5% WO_3
- 6.1m at 0.96% WO_3
- 6.1m at 0.84% WO_3
- 1.5m at 2.11%WO_3

The closure of the financing is still some way off and expected to close in February 2026 after VKA shareholder approval is obtained.



Source: Tungsten Mining N.L.

Comparisons

The graphic on the preceding page is illuminating in that it shows projects ranked by grade in both open pit and underground manifestations. It might be noted that the Ima Mine's grade is historically comparable to that of Sangdong, with both being underground operations.

As we have noted elsewhere, Tungsten is the only metal we know of where the listed developers/producers far outnumber the explorers. This makes for a pipeline to production but little pipeline to development. This particularly favours those with the most advanced brownfield mines, like American Tungsten.

The two largest projects stuck in the explorer category are Northcliff with its eye-watering capex at the Sisson project in New Brunswick and Fireweed with its extremely isolated Mactung project in the Northwest Territories. If anything, these seem to be forced into remaining explorers as they cannot do much else with their projects.

The Royalty

As noted earlier, the IMA Mine is subject only to the 2% royalty to the vendor. American Tungsten has the right to reduce the royalty to a 1% royalty by paying the optionor US$2mn on or before the fourth anniversary of the effective date.

EXIM Bank Line

In early November of 2025 the company received a letter of interest from the US Export-Import Bank (EXIM) for a loan worth up to US$25.5mn, to potentially fund the mining development and milling facilities associated with the Ima Tungsten Mine.

In a letter dated October 17th, 2025, American Tungsten has met initial requirements to apply for the US$25.5mn EXIM loan and, if approved, would have a 15-year repayment term, longer than the Company would expect with public debt financing.

The Export-Import Bank of the United States (EXIM) is the official export credit agency of the United States.

Shareholders & Financing

In mid-October of 2025 the company announced a non-brokered Listed Issuer Financing Exemption (LIFE) private placement offering for gross proceeds of up to CAD$10mn by issuing up to 2,857,142 common shares at a price of CAD$3.50 per share.

However, demand was such that the company closed the first tranche of the private placement for gross proceeds of CAD$16,770,510 from the sale of 6,500,198 common shares of the company at a price of $2.58. Then on the 31st of October the company announced that it had completed the second tranche of

the private placement for further gross proceeds of $1,189,380 from the sale of 461,000 common shares of the company at a price of $2.58 per share.

Insiders currently hold around 1.1% of the stock, institutions hold ~14.8% and the broader market has ~84.1%. The institutional mix includes Lowell Resources Fund Management, Pala Investments and Terra Capital.

Board & Management

Ali Haji, CEO & executive director, has more than 20 years of leadership across the metals and mining sector, investment management, and publicly listed capital markets. His career spans senior roles at Invesco, where he led transformative M&A initiatives and contributed to global portfolio strategy.

He currently serves as CEO and Director of ION Energy Ltd., where he has advanced a portfolio of lithium assets, raised significant capital, and executed multiple strategic transactions. He also advises Steppe Gold and several other public and private resource companies and sits on the boards of several listed entities.

Duncan Blount, non-executive director, is a seasoned natural resources executive with over 15 years of global experience spanning investment management, mining, and energy. He currently serves as Chairman, President & CEO of Chilean Cobalt Corp., where he leads corporate strategy and development across the company's critical minerals portfolio.

Previously, he was CEO and Director of Decklar Resources Inc., a TSX-V listed oil and gas company with operations in Nigeria, and earlier held senior roles at RWC Partners Ltd., where he focused on frontier-market commodities investing.

He holds an MBA from the Thunderbird School of Global Management and a bachelor's degree from Samford University.

James Whittaker, non-executive director, is a mining executive with more than 35 years of experience across operations, strategic development, and organizational transformation in the mining and metals industry. He currently serves as Chief Operating Officer & Senior Vice President at Capstone Copper Corp., having previously led the company's Chilean operations.

A metallurgical engineer by training, he has held senior roles at Barrick, including General Manager of the Lagunas Norte mine and President of the Escondida Technical Centre. His expertise spans project development, operational excellence, risk management, and community relations.

He was appointed to the Board of American Tungsten in 2025.

Carolyn Loder, non-executive director, has extensive experience in mineral rights, permitting, and stakeholder engagement, having served in senior roles across both private and public sectors. She currently serves as a director for Integra Resources (NYSE: ITRG) and K2 Gold (TSXV: KTO) and is a Board Advisor to Kodiak Copper. In 2023, she became the first woman in more than a century to be inducted into the U.S. National Mining Hall of Fame.

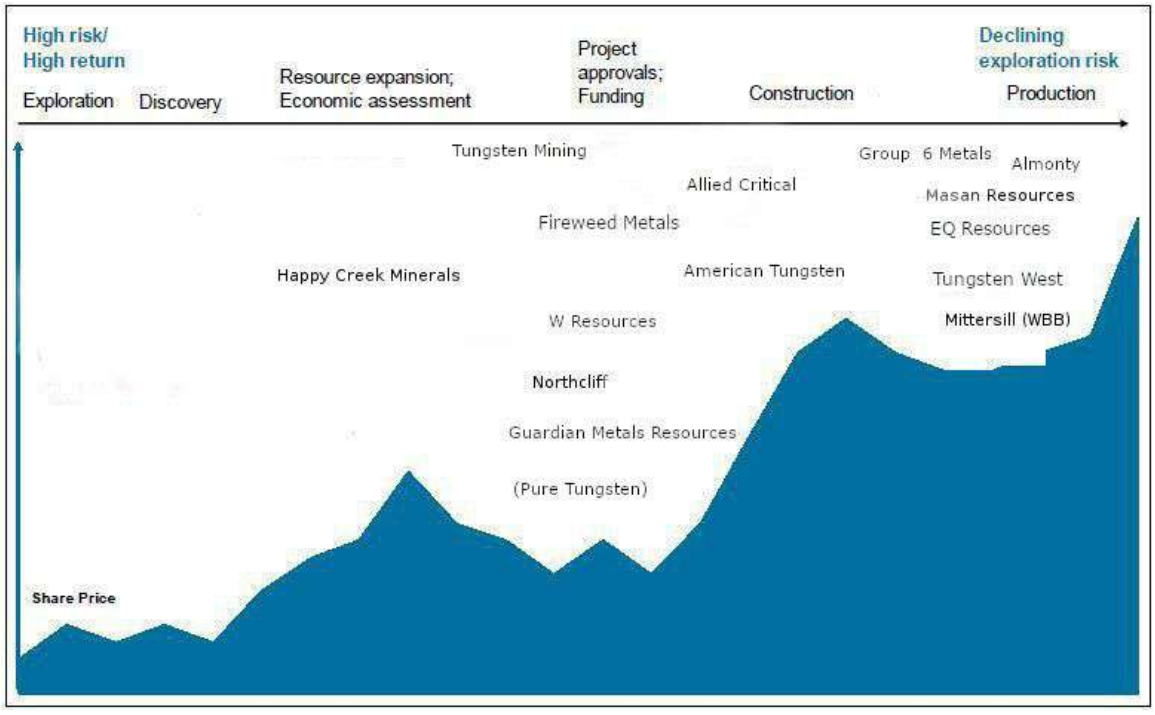
Daniel Nicholas, non-executive director, is currently a Senior Advisor to Ernst & Young. He joined EY in early 2021 to assist EY and its clients in obtaining funding from US federal government sources. He advises EY clients in navigating the numerous sources of capital that are available through federal government programs and grant funding opportunities. Prior to joining EY, he was responsible for the USD$40 billion investment portfolio of the United States Department of Energy's (DOE) Loan Program Office (LPO) – including both the Advanced Technology Vehicles Manufacturing Loan program (ATVM) and the Title XVll program. At LPO, he oversaw and structured investments in energy, infrastructure, and transportation sectors.

Before his appointment to the DOE, he had an over 30-year career in finance, at several firms including Morgan Stanley, Pali Capital, and Salomon Brothers, Inc. At Morgan Stanley, he launched several flagship funds for Morgan Stanley's Investment Management's Private Equity and Credit group. He has also worked as a public company Chief Financial Officer for several portfolio companies. He is a graduate of Cornell University.

Tungsten Players Arise from the Dead

The (listed) Tungsten space suffered somewhat of an "extinction event" during the early part of last decade. Several producers, a handful of developers and almost all pure explorers went to their demise. American Tungsten, as related, is a relatively new entrant into the fray. Its shareholders didn't have to transit the valley of death that the older participants experienced. However, because it managed to get its hands on a past producing asset with a relatively short time to reactivation thus advancing itself up the rankings faster than many other players.

In the chart below can be seen our perception of where various projects are on the evolutionary timeline:



There are a couple of factors to note here. Tungsten West is mothballed (in our understanding) and can be switched on, so we place it in the production zone. Pure Tungsten, an unlisted entity of a highly promotional character that claimed to be producing in Brazil and now claims to have a larger mine than Sangdong in South Korea, is afforded some parentheses to reflect its unworldly nature and would be afforded an **AVOID** rating if it had a listing.

W Resources (or Iberian Resources) with its mothballed (since 2022) La Parrilla mine in Spain is not in the ranks of public companies anymore having delisted from the AIM so its direction of travel is not clear. As to why it has not reopened with Tungsten's price surge is not clear.

The strong advantage that having a past-producing asset brings in the current context where governments want (relatively) immediate satisfaction is that there has been almost negligible insertion of pure explorers (i.e. pure promotions) into the space while greenfield projects (e.g. Mactung or Sisson) come with eye watering capex numbers.

An interesting feature of the Tungsten resurgence is that the producers/developers are looking to hold multiple producing assets (e.g. Almonty, EQR and Guardian Metals). This in some minds makes American Tungsten a potential target, but we would also not be surprised to see the company acquire a second asset itself.

Risks

The risks for the Tungsten space in general are (or might be):

- ✕ A reduction in global geopolitical instability (e.g. Ukraine)
- ✕ A reversal in the Tungsten price trend
- ✕ Weakened global industrial demand (particularly in tools) that would soften price & volumes
- ✕ China manipulating the market in some way to again create distortions in price and trade patterns
- ✕ A return tough financing market for junior explorer/developers

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

Global conflicts (both actual and potential) have played a significant role in spurring Tungsten demand (and perception change) in recent times.

Can Tungsten prices go down? Absolutely, it has happened before and might happen again, but to what extent the price might retreat and for how long are interesting subjects to consider.

China is not alone in creating scenarios in which prices will move higher (or lower). US tariffs are being

used to make non-Chinese production of Tungsten more attractive. After having imposed restrictions on so-called dual-use exports of Tungsten for strategic reasons as they did with Antimony, Rare Earths, Gallium and Germanium, the Chinese have managed to "juice up" the markets for these more or less not mainstream and in some cases obscure minerals/metals. What has been done can be undone at will. To some extent, the Ga/Ge bans have been somewhat elective with "leakage" of products having damped down expected price surges in these elements. One should not be surprised to see selective easing or nuancing of the dual-use bans as a negotiating token in trade talks with the US.

Likewise, price-signalling could be employed in the larger volume metals, Antimony & Tungsten, to place prices lower, much as be seen over the last 15 years where the Chinese have played the REE space like a fly-fisherman attempting to delude the trout or salmon into submission.

Financing remains difficult and dilutive when it takes place. The only way to harvest the most attractive price on a financing is to be in production and the only way to do that is to finance mine-builds/reactivations. The ease with which Almonty Industries (TSX: AII) and Guardian Metal Resources (AIM: GMET) have been able to raise funds in the last year (contrasting strongly with the tough times for even producers gleaning funds pre-2024) shows the market´s receptiveness to production stories.

Royalties also exist as a means to fund stories that have production in prospect as evidenced by two recent deals by EQ Resources (ASX: EQR).

Investment Theses

Tungsten is a favoured space these days and unlike Rare Earths or Lithium, when in sought-after mode, has not seen a massive surge in players.

Historically, 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 failed to capture the market's interest due to generalized ignorance of Tungsten and its supply/demand dynamics. With the recovery in the price since mid-2017, initially slowly and now steeply, there now exists a window of opportunity for Tungsten developers to move their projects forward faster as governments and end-users look to secure alternative and more reliable sources of supply than China.

The mantra now though is Production, Production, Production. Having projects that are on the drawing board, and unlikely to leave it, does not charm funding out of the military in ANY country. This sets up a scenario where the non-serious will hopefully be relegated to a distant second place in the attentions of the markets.

The brutal market over the last decade with the result that, despite the strong rise in the Tungsten price, there are few projects in the pipeline and scant sign of pure explorers joining the fray.

The potential eclipse of China as the lead producer, combined with the expenditure of Tungsten reserves

and *materiel* consuming the metal in events such as the Ukraine War, is leading to increased competition for Tungsten concentrates in the global market between Chinese and non-Chinese processors and has resulted in an increasing price structure for Tungsten and its products in the future. Our prediction of a rise in prices of APT to over $600 per MTU in 2025 has been left in the dust by events, with Chinese restrictions on dual-use Tungsten exports having propelled the price to over US$800 in just the last two months.

Fortunately, Tungsten offtakers are proactive participants in the development of producing assets in this metal in a way that has not been evident in other specialty metals.

In light of the attractive, and most probably lasting, confluence of events in the Tungsten space and its lead in reopening a mine in the United States, American Tungsten finds itself in the right metal, in the right place at the right time, a rare occurrence.

Rating & Target

We are unashamedly biased towards underground mining, over open pit, and the advantages here are even more evident. Extensive historical records, prior drilling programs, 1980s underground rehabilitation work, and the project's location on patented claims in mining-friendly Idaho should allow accelerated advancement of the project and a low-cost production scenario.
The share price trajectory over the coming year will be driven by two major factors. The two important drivers will be how the company projects its production plans to the market. These do not need to be detailed but they do need to be cogent and with a relatively short-fuse to development. The second factor is, of course, the Tungsten price. We had not expected its rise to be as steep as it has been of late and certainly this tempts fate with scope for a pullback. Our year-end target for 2026 is now US$750, and yet prices have recently well-exceeded that level and powered even higher. Prices at US$600 or above should make for handsome profits and an attractive scenario for increased capacity.

The producers/developers are many, many miles ahead of the madding crowd. The race will go to the swift and the swift in the Tungsten space are those companies with brownfield assets with a short timeline to production, such as American Tungsten.

Thus, we are initiating American Tungsten with a **LONG** rating and a 12-month target price of **CAD$3.25** though this is subject to upward revision dependent on the progress towards production and the actions/support of the US government towards the project.


Historic Chart for Cdn:TUNG by Stockwatch.com 604.687.1500 - (c) 2026
Mon Jan 12 2026 Op=2.04 Hi=2.30 Lo=2.04 Cl=2.28 Vol=546,958 Year hi=4.90 lo=0.47
Cdn:TUNG
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Tuesday, January 13, 2026

APPENDIX I:

Tungsten – The Military Angle

Tungsten as THE Military Metal

Long known for its role in lighting filaments, drill bits and cutting and machining tools, the military side of Tungsten´s usage has been seldom trumpeted… that is, until now.

If we had to choose a metal to crown as the military metal *par excellence* it would undoubtedly be Tungsten for its usage in shells and in armour-plating to resist said shells. Tungsten's essential industrial and military place has been well known since the 1940's. During WW2, Iberia (Spain & Portugal), Sweden and the US were important producers of the critical military metal.

While Tungsten means "heavy stone" in Swedish, its main source since its rise to industrial usage has been the Iberian peninsula. This produces an interesting history which has relevance today because it is the back-story to the massive tug of war over Portugal and to a lesser extent Spain during WW2. In this story lies some good examples of our "supply & deny" watchwords.

Following the invasion of the Soviet Union, Germany became dependent on Portugal and Spain for their Tungsten supplies, due to its value in producing war munitions. To maintain its neutrality, Portugal set up a strict export quota system in 1942. This concept of neutrality through equal division of products supplied to belligerents was different from that of the Northern European neutrals who worked on the basis of "normal pre-war supplies". However, in January 1944, the Allies began pressuring the Portuguese dictator Salazar to embargo all Tungsten sales destined for Germany. Portugal resisted, defending their right as a neutral state to sell to anyone and fearing that any reduction in their German exports would prompt Germany to attack Portuguese shipping.

Despite the seeming closeness of Franco to Hitler, he was also a fence-sitter and had to do an even more perilous balancing act, thinking forward to what might happen if he was unequivocally seen as tied to the Nazis should they not win. At the top end of Europe, Hitler had neutral Sweden blackmailing him over iron ore supplies and to the East he had to contend with a "friendly" Romania over oil supplies. Such is the dilemma, writ small, that China will have if it ever decides to go ballistic (pardon the pun).

What makes Tungsten, the key military metal?

- It is used in making bulletproof vehicles, armored tanks, and other kinds of protective equipment

designed to withstand the high-speed impact of bullets. This is due to the hardness of Tungsten. And this property, as well as others, can be enhanced through alloying to yield stronger composite materials.

- It is used in making armor-piercing rounds. These are designed to pierce through protective armor and vehicles designed to be bulletproof. Tungsten can tolerate high levels of shock and does not easily shatter.
- It is used in making high-speed cutting tools. These tools are usually made of high-speed steel, and they cut much quicker than ordinary carbon steel. Tungsten's ability to withstand high temperatures makes it indispensable in fabricating these tools and when cutting at such high speeds.
- Tungsten is also used in the manufacturing of rocket and aircraft parts. It is instrumental in manufacturing parts like engines because of the high temperatures they have to withstand. Tungsten has a high thermal resistance and can withstand high temperatures without defect.

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.

The US – Back into the Fray

The sad state of the Tungsten space in the US is evidenced by the fact that the metal has not been mined commercially in the United States since 2015.

According to the USGS's latest publication on Tungsten, approximately six U.S. companies had the capability to convert Tungsten concentrates, ammonium paratungstate (APT), Tungsten oxide, and (or) scrap to Tungsten metal powder, Tungsten carbide powder, and (or) Tungsten chemicals.

As for applications, an estimated 60% of the Tungsten consumed in the United States was used in cemented carbide parts for cutting and wear-resistant applications, primarily in the construction, metalworking, mining, and oil- and gas-drilling industries. The remainder was used to make various alloys and specialty steels; electrodes, filaments, wires, and other components for electrical, electronic, heating, lighting, and welding applications; and chemicals for various applications. The percentage of those two categories that ultimately end up in military-linked applications was not revealed.

The worm has turned though and the Department of Defense (DoD) in the US has seen the error of its ways in allowing its suppliers to become China-dependent in their sourcing. The war in the Ukraine and Chinese sabre-rattling over Taiwan and the South China Sea have accentuated the concern.

This has prompted a funding program for the development of onshore Tungsten sources. The funding has taken the form of grants and loan guarantees. There have been direct investments by the Trump Administration into MP Materials in Rare Earths and Trilogy Metals in Copper so we view it as only a matter of time before a strategic stake is taken in a Tungsten player or players.

Riding the Washington Express

Developers in the specialty and critical metals spaces (and even in some base metals) now talk more of Washington D.C. than they do of Perth and Vancouver. One of the most propitious sources of funding these days is not the likes of private equity funds in mining, but rather the DPA III program of the U.S. DoD which is developing a policy of supporting worthy critical minerals projects.

The problem for pure promoters though is that the DoD is, careful, technical and diligent. They see through a pure promoter with night vision goggles.

As we noted in our Initiation of coverage of Guardian Metal Resources, its Pilot Mountain project, as one of the few Tungsten projects in North America that has attracted Washington interest (and funding). It eventually received a grant of US$5mn for completion for a PFS on the Pilot Mountain project.

Loosening China´s Grip on Tungsten

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 has long distorted the Tungsten market, much as it has distorted the pricing mechanisms in so many other metals.

Now we have a situation where military and 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 put Western manufacturers of this equipment on notice that they need guaranteed non-Chinese supplies to evade predatory Chinese manouevres. New protection measures such as tariffs and import restrictions by the U.S. should help protect domestic production.

Paradoxically, aggressive Chinese waving of the “big stick” of export controls shall probably backfire in heightening Western awareness that it needs to proactively counteract these malign actions.

The History of the US Government & Tungsten

In 1939, the United States Congress enacted the Strategic and Critical Materials Stock Piling Act, a federal law providing for the acquisition and retention of stocks of certain strategic and critical materials that supply the military, industrial and essential civilian needs of the United States for national defense.

Then in 2021 the US government announced plans to recapitalise and restore the National Defense Stockpile of critical minerals and materials, following findings from the reviews directed under Executive Order 14017. In March 2022, the Departments of Energy, State and Defense executed a memorandum of

agreement to launch an effort to include critical minerals necessary for the transition to clean energy alongside those needed for defense purposes.

The Tungsten Tariff

On the 14th of May 2024, the Biden Administration announced a 25% tariff on Chinese Tungsten imports with effect from the 1st of August 2024.

This measure resulted in a bifurcation of viewpoints. One school of thought (to which we pertain) saw the measure as further increasing the attractiveness of U.S.-mined and processed Tungsten and as a further prod to reboot Tungsten production outside of China.

However, industrial interests (and permacritics of the President Biden) saw the decision "to slap a steep 25% tariff on Tungsten and its products from China…… as nothing short of disastrous". Of course, this latter group of the "Cheap Rules!" school of thinking have been in the ascendancy for 40 years and have singularly done nothing to encourage or fund Tungsten supply chains independent of China.

The difference is poignant, between those in the tool industries in Europe that paid over the market rates for W to sustain a non-Chinese supply chain in this critical metal, and those industrial users in the US that pandered to China's hegemonic tendencies in this and other strategic metals due to solely "bottom-line" considerations.

Wielding the Big Stick – the Dual-Use Ban

The latest Chinese measures have roiled sentiments, but not necessarily prices, in the Tungsten market. Certainly, compared to the Antimony measures, the Chinese feint in Tungsten may be seen as rather a damp squib. When the history books are written the measures may be seen as a longer-term driver of Tungsten prices (yet having flopped in the first instance) and may also be seen as a catalyst for the eclipse of China as the sole decisive factor in the Tungsten.

On the 3rd of December 2024, China announced stringent export restrictions on "dual-use" technologies for both civilian and military use, specifically targeted at the United States, including Tungsten, Gallium, Germanium, and Antimony.

The latest Chinese export bans extend to super-hard materials, including Tungsten, which is indispensable for weapons manufacturing, cutting tools, and aerospace technologies.

The new restrictions had two notable aspects:

- It was the first time Chinese critical minerals export restrictions were targeted at the United States rather than all countries
- It was the first time restrictions on critical minerals were a direct response to restrictions on advanced technologies

These restrictions have significantly disrupted global supply chains, amplifying the urgency for Western nations to secure independent sources of critical minerals. China's dominance in critical mineral production, bolstered by subsidies and control over key raw materials from Africa, and to a lesser extent Latin America, continues to pose challenges for nations reliant on these essential resources for advanced technologies, including semiconductors, defense applications, and clean energy solutions.

Some interpreted the export bans/restrictions as a sign that critical mineral security was now intrinsically linked to the intensifying tech trade war. However, we regarded the Gallium/Germanium measures in 2023 as specifically linked to tech (namely semi-conductors), while we have interpreted the dual-use ban on Tungsten as distinctly military-linked.

Interestingly though the most recent USGS Tungsten Review states that import sources (2019–22) for the US of ores, concentrates, and other forms were: China at 27%; Germany at 12%; Bolivia at 9%; Vietnam at 8%; and others at 44%. In light of rising non-Chinese production, the dual-use ban might only serve to accelerate the erosion of China´s market share and thus dominance.

The EU (and UK) – Where Circularity becomes Reality

The EU categorized Tungsten as a "critical raw material" and yet it did the same with a swathe of other metals. The rubber rarely meets the road in Brussels as there is, too often, a triumph of form over content. The sourcing of such critical metals was overlaid by the delusion of the "circular economy" and pandering to rampant NIMBYism.

The irony is that Europe is way ahead of the US in Tungsten production with mining operations in Portugal, Spain and Austria. None of this is by design, we might note, but rather historical momentum. The potential to turn back on substantially more production in the Iberian Peninsula (and the UK) is particularly poignant. One might almost say that the closest that Europe comes to achieving a circular economy in any critical metal is in Tungsten.

The US – Back into the Fray

The sad state of the Tungsten space in the US is evidenced by the fact that the metal has not been mined commercially in the United States since 2015.

According to the USGS's latest publication on Tungsten, approximately six U.S. companies had the capability to convert Tungsten concentrates, ammonium paratungstate (APT), Tungsten oxide, and (or) scrap to Tungsten metal powder, Tungsten carbide powder, and (or) Tungsten chemicals.

As for applications, an estimated 60% of the Tungsten consumed in the United States was used in cemented carbide parts for cutting and wear-resistant applications, primarily in the construction, metalworking, mining, and oil- and gas-drilling industries. The remainder was used to make various alloys and specialty steels; electrodes, filaments, wires, and other components for electrical, electronic, heating,

lighting, and welding applications; and chemicals for various applications. The percentage of those two categories that ultimately end up in military-linked applications was not revealed.

The worm has turned though and the Department of Defense (DoD) in the US has seen the error of its ways in allowing its suppliers to become China-dependent in their sourcing. The war in the Ukraine and Chinese sabre-rattling over Taiwan and the South China Sea have accentuated the concern.

This has prompted a funding program for the development of onshore Tungsten sources.

The DoD Strikes Back

From the start of January 2027, the Department of Defense (DoD) will implement a final rule under Section 844 of the FY 2021 National Defense Authorization Act (NDAA) and Section 854 of the FY 2024 NDAA. This rule expands existing restrictions on sourcing critical materials like Tungsten, tantalum, and certain magnets from “covered countries,” including Iran, Russia, North Korea and China. These restrictions will prohibit not only the melting and production of such materials in covered countries but also their mining, refining, and separation at any stage of the supply chain. This marks a significant shift, aligning with US efforts to bolster the domestic industrial base for critical minerals and reduce dependency on adversarial nations.

The rule also tightens exemptions for commercially available off-the-shelf items, reducing flexibility for the private sector in sourcing these critical materials.

Adding to these challenges, the United States announced mid-September 2024 the finalized Section 301 tariff increases on imports from China, further complicating the supply chain landscape for critical materials.

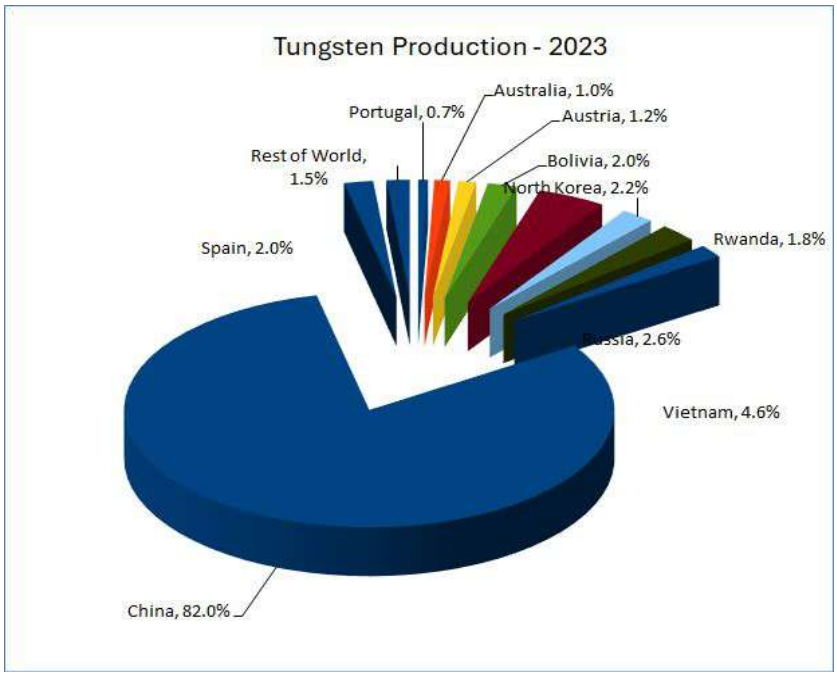
APPENDIX II:

The Supply & Demand Dynamics

Shifting Production

In the past we have focused where production has been with some mentions of the stalled projects for the future (maybe). Now we can see that there is potentially a major sea-change in the balance between China and ROW, and where in the ROW the production comes from, particularly as China was expected to be a net Tungsten importer by the mid-2020s (which did not occur).

For the last decade primary supply has lagged some way behind demand, enabling large stockpiles to be drawn down and also requiring considerable supply of secondary Tungsten to meet demand. China accounts for a substantial proportion of primary supply, accounting for ~82% in 2023. A number of large state-owned mines were facing depleting ore grades, which is likely to lead to lower output from existing operations over the next decade. When they still existed, the consultants Roskill anticipated that China's market share to drop to below 72% by 2029, unless new operations can come online to offset the fall from depleted assets.



Source: USGS

Countries that have faded long ago, like Australia and South Korea have the potential to become major producers, while some that produced in recent times, like Canada and Peru are sidelined, and major producers from further back, like Spain and Portugal, are getting a second wind. Indeed, the latter two countries should dominate non-Chinese production for at least the next couple of years.

This moving feast means that, besides China and Russia, other principal producing countries are Austria, Bolivia, Portugal, Spain, Rwanda and Vietnam whilst mines have closed since the turn of the century in Australia, Brazil, Canada, France, Japan, Peru, South Korea, Sweden, Thailand and the USA. The price slump post-2011 knocked players like Canada, Peru and Australia out of the running. The UK has been sometimes producing and sometimes not due to the travails of Hemerdon.

The recovery of production (though still in planning stages) in the US is one of the truly stunning outcomes of the current supply squeeze.

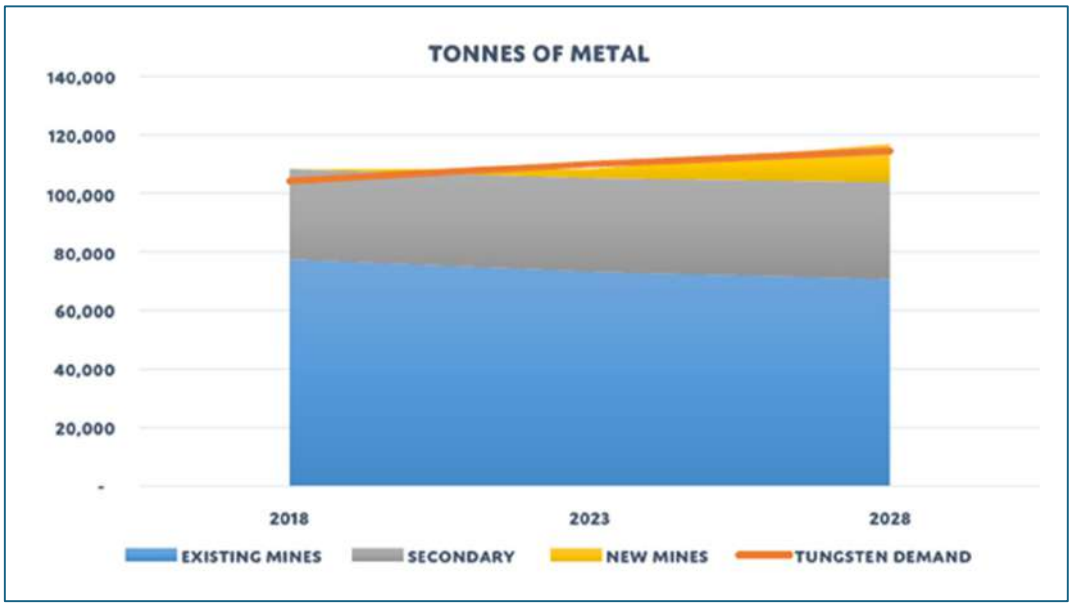
Reserves

The latest assessment of the USGS (from 2023) is that China has 52% of global Tungsten resources (down from 61% in 2016), Canada had 9% in 2016 and now is not even shown, while Australia is credited with 13% lately and Russia with 9%. However, it is not which country currently has the resources that matters but the country that gets into production first. Thus, Portugal currently has more going on in the Tungsten space than Canada does, while South Korea currently has no production but when Almonty get their Sandong operation going it should return to the producers' table. Curiously Korea does not figure in the USGS's ranking of major resource holders (despite its putative mine once being the world's largest).

Two large-scale Tungsten mines in Spain came online in 2019, these were La Parrilla (controlled by W Resources) and Barruecopardo (then owned by Ormonde and later controlled by Saloro). The former came to grief and the latter is now owned by EQ Resources. Both were looking to ramp up production in the following years, with output expected to peak in the mid-2020s. Production from both operations was scheduled to contribute over three thousand tonnes per annum of contained Tungsten. But reality intervened and the Grim Reaper cast these aspirations aside.

Factors militating against a ramp up in production included:

- ✕ long lead times between exploration and new mine openings
- ✕ the steep rise in mine development and operating costs
- ✕ the very limited availability of high-grade deposits (i.e. greater than 0.4% WO_3)



Source: Northcliff

The rising tide of new producers (mainly in Iberia) and, in particular, Almonty's Sangdong mine in South Korea are toppling Chinese dominance in this metal that they had hoped to use to clobber the West German machine tool industry with. Before mid-2024 there was little sign of action in North America, but now American Tungsten is advancing, Guardian Metals has the chance to add two past-producers to the mix and even Almonty has come into ownership of a past producing mine.

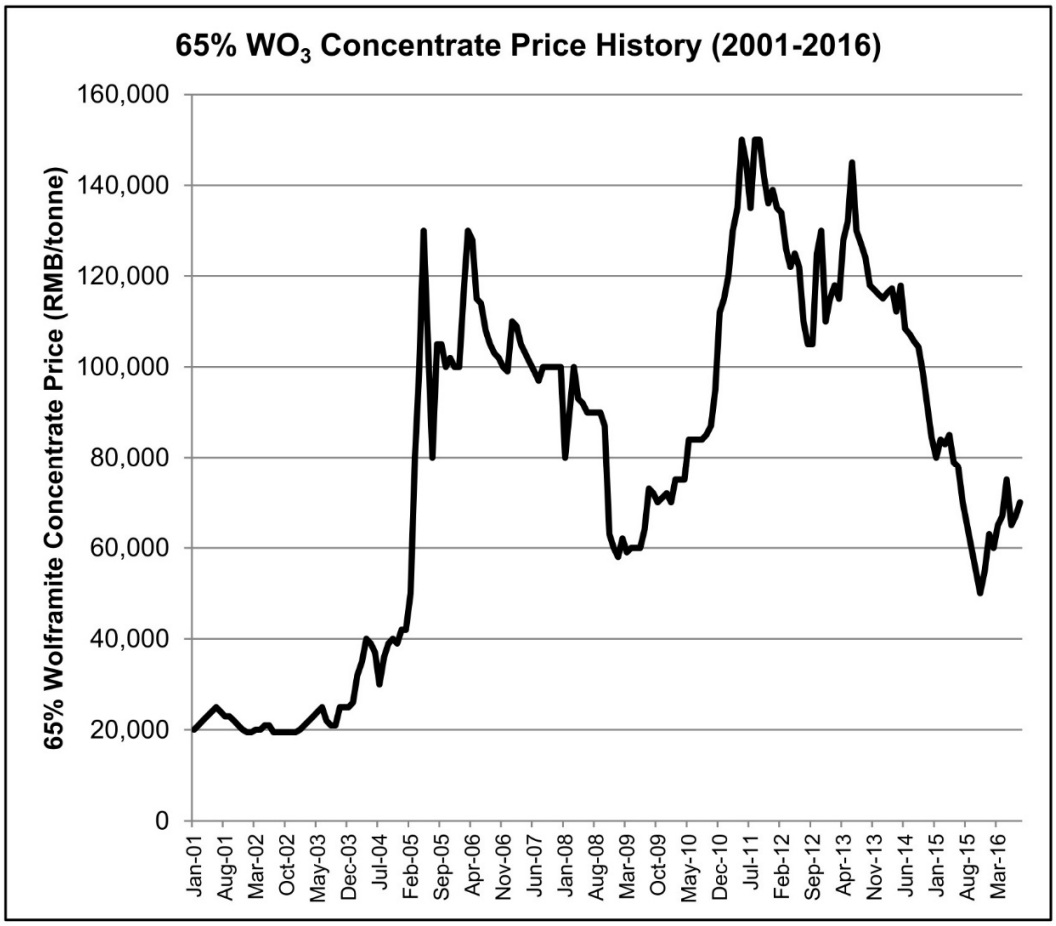
The metal's potential sources are quite geographically diversified with Tungsten (or Wolfram) resources located in China, Canada, Russia and the United States, at least in the official versions. And yet the largest sources of production outside China are Spain/Portugal, Australia and, shortly, South Korea.

Pricing

The average annual price of Tungsten since 1950 has 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.

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 Fastmarkets, 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.



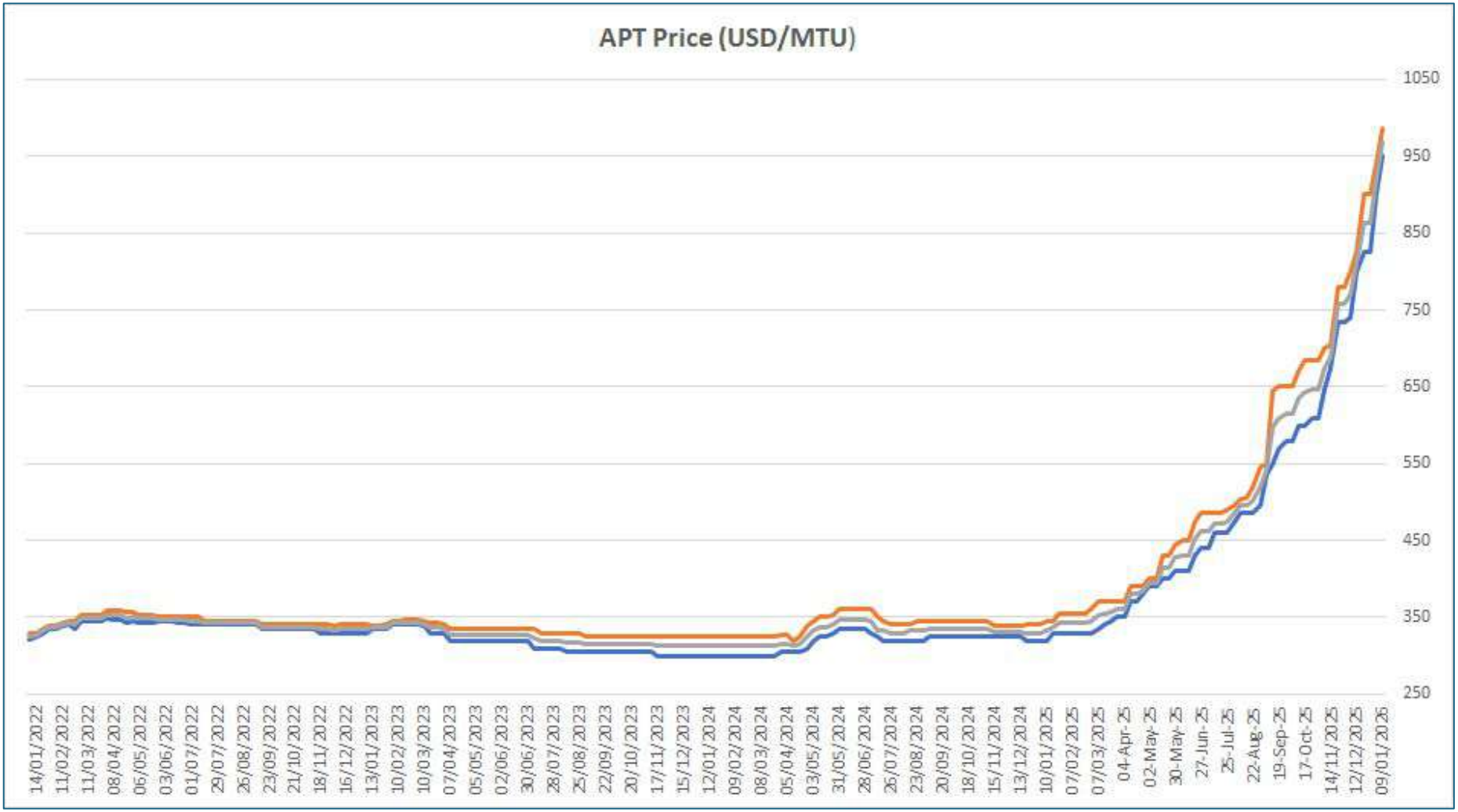
The Tungsten price was blissfully boring in 2023 as all around it wilted in the backwash from China's abandonment of the Zero Covid policy. The lack of a "spike & dump" meant that few were attracted into the space and those that are already in the space, pursue their projects *sotto voce*, or wither on the vine.

Tungsten is one of those metals where the wild ride in pricing since 2008 made it particularly difficult to plan a company's long-term trajectory.

Increased Tungsten usage by military and industrial users 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.

The price per MTU of Ammonium Paratungstate has finally broken through, definitively, the levels achieved early last decade. At that time wild gyrations pushed APT prices to levels which fired up the promoters, however it was those movements which ultimately ended most of the players in the space.

The chart on the following page shows Tungsten making new highs in an environment where Chinese exports have been severely curtailed, with no prospect as yet of a change in that policy.



Source: Fastmarkets/Almonty Industries

Our latest projections are shown on the table at the right. As the preceding price chart indicated APT prices have risen by $300 per MTU in mere months, when previously advancing $100 might have taken a decade. The price of Tungsten (APT) breached $600 per MTU in the last months of the year then powered up a further 30% to end the year at $862.

Though one should be wary of the spike & dump phenomenon in the specialty metals space, historically.

This may seem ambitious but utilizing an inflation rate calculator the rise of 42.9% (in the US) between 2011 and now would signal a price in real terms of $672 per MTU. But that ignores the altered demand dynamic from the military-industrial complex.

Tungsten APT Pricing

Year end	MTU (US$)
2023	$312
2024	$330
2025	$862
2026e	$750
2027e	$680

We see added production and a less fevered market leading to a year end of $750 per MTU and likewise added production volumes in 2027 resulting in a year end of $680 per MTU.

APPENDIX III:

Molybdenum

Chemical Relations

Tungsten and Molybdenum are closely-related refractory metals, sitting in the same group on the periodic table. This means they share similar chemical behaviors and properties like high melting points, but Tungsten is much denser, harder, and stronger, while Molybdenum offers lower density, better ductility (less brittle), and superior thermal conductivity, often serving as a cheaper, lighter alternative or a replacement in advanced electronics.

They function as substitutes in biological systems (enzymes) and industrial applications (high-heat components, electronics) due to their analogous chemistry, though Tungsten is generally preferred for extreme hardness and Mo for lightness and conductivity, with alloys combining their strengths.

Geologically we note that many mines in the Tungsten space seem to have a Molybdenum component, which frequently is discrete from the Tungsten mineralisation. An excellent example of this is the Sangdong Mine of Almonty in South Korea. Thus, it was no surprise to find that the Ima Mine also shares this characteristic.

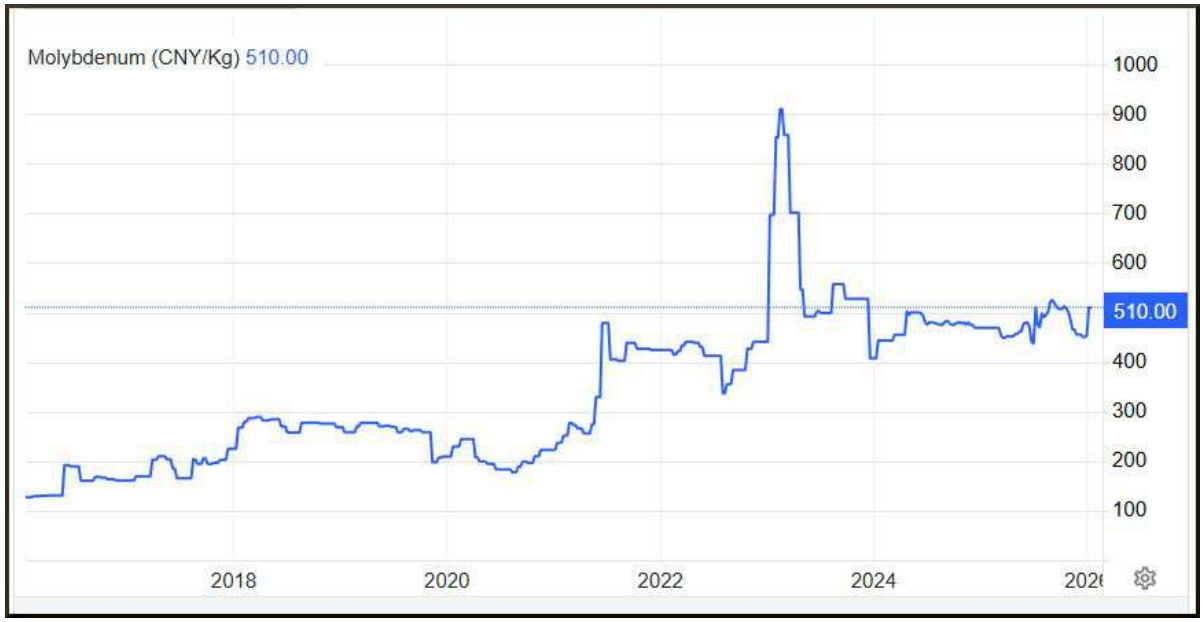
The Fall from Grace

This once “hot” metal assumed a roll around 2009 as the mineral equivalent of a leper in our midst forced to wander along Bay Street ringing a bell, to warn travelers, and crying “Unclean, unclean”. Such was the noxious nature of Molybdenum for almost a decade. And yet in the run-up to 2008, Molybdenum was the metal that investors could not get enough of. In some respects, it was hotter than gold and then the fall from favour was dramatic. In particular we had followed the fortunes of Thompson Creek Minerals and Creston Molybdenum during the go-go period.

What Ailed It?

At a meeting back in 2008 or even 2008 just before the LME introduced trading in Molybdenum and Cobalt with a company in the Molybdenum space telling us that it would be a disaster. Logic dictated that there was no way that a clearer, more transparent market should result in the end of life as we know it. But curiously Molybdenum has never been the same.

The chart below shows the wild ride the metal has had in the last decade. Currently its price is little changed from the post-2008 lows from which there was a meaningful rally in 2011 before it sank again.



There were various reasons posited for the weakness of the metal during the previous decade. Prominent amongst these were:

- strong U.S. dollar
- weaker macro sentiment in Asia and Europe
- demand contraction for "at the wellhead" Molybdenum-based steels relating to energy production

Applications

Key to understanding Molybdenum's attractions as a steel alloy is its anti-corrosive qualities. For this reason, it is used in clean water systems, pipelines, desalinization plants and other water treatment plants. More prominently promoted though is its role in oil & gas production and infrastructure, such as:

- Pipelines
- LNG storage and transport
- Off-shore oil & gas
- Horizontal drilling and fracking
- Reducing SO_2 emissions (Molybdenum as a catalyst)

Demand

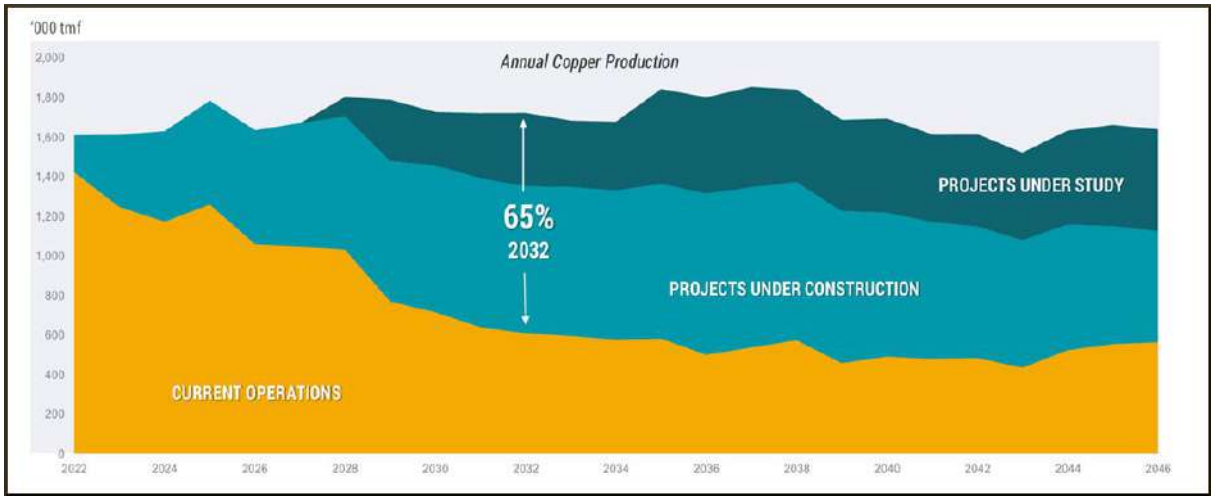
Something did not quite add up in the bull version of Molybdenum in the years after its fall from grace after the Commodity Supercycle phase when it got to around $35 per kg. As noted, the main driver of Molybdenum is supposedly products known as Oilfield Trade Goods (OFTG) and yet post 2008 (and the launch of the LME contract) drilling and infrastructure in the energy industry went on an absolute tear with the fracking boom.

And yet…. nothing has measured up to expectations. The demand has clearly been there so the problem must be there OR other parts of the usage universe for Molybdenum are not pulling their weight.

Production

It is interesting to look first at the major producers. In descending order of production, China, Chile, Peru, the United States, and Mexico provided 93% of total global production. This concentration is poignant. China's production in 2023 was 106,000 tonnes out of a total of 253,000 tonnes so significantly less than half of the supply. If Chile, Peru and Mexico can be viewed as being within the US sphere of influence, they, collectively amount to three times US production.

Of the 330,000 tonnes of Molybdenum used worldwide each year, approximately 86,000 tonnes come from recycled sources. This notable 26% recycling rate highlights the essential role that Molybdenum recycling plays in the global economy and environment.



Source: Codelco/CPM

It is interesting to look at the latest USGS numbers (those of 2024) for the metal. Total estimated U.S. mine production of Molybdenum concentrate decreased slightly to 34,000 tons of Molybdenum content in 2023 compared with 34,600 tons in 2022. Molybdenum concentrate production at primary Molybdenum mines continued at two U.S. operations in Colorado, and Molybdenum concentrate production from mines where Molybdenum was a byproduct continued at six U.S. operations (four in

Arizona and one each in Montana and Utah).

Conclusion

Molybdenum is a metal that was disappointing, price-wise, for followers for the entirety of the previous decade. Most metals have staged rallies then flopped back (while maybe making some ratchet –like move upwards from lows). Molybdenum has provided no such solace. The result is that there are no primary Molybdenum wannabe juniors out there. Like confessing to have leprosy, the fastest way for many year to clear a room of investors was to say that one was going to pursue a trajectory as a Molybdenum miner. Not it is not so toxic but still generates quizzical looks.

On the larger scale there are some names like General Molybdenum caught in an eternal holding pattern which two substantial projects in Nevada.: the flagship Mt. Hope molybdenum project (80% interest) and the wholly-owned Liberty molybdenum-copper project. Mercator Minerals the owner of Mineral Park went bust with Waterton lurking about. Its subsidiary, Origin Mining, reportedly now owns it and reportedly was going to resume production in 2025. Then there is/was Thompson Creek, the one-time champion of the Molybdenum space, that was taken over by Centerra for $1.1bn in 2016, after having been forced to put mines on care & maintenance and others reaching the end of their LOM. Freeport McMoran still has its Climax mine in Colorado in cold-storage and that might be the first cab off the rank in the event of a Molybdenum turnaround.

An interesting junior is Moon River Moly (TSX-V: MOO | OTCQB: MRIVF) that filed a PEA for a potential restart of the Endako Mine with an effective date of 21st of November 2025. The Endako mine complex is 25% owned by MOO and 75% by Centerra and is one of those assets of Thompson Creek referred to above that is currently on care and maintenance. It is comprised of an open-pit Molybdenum mine, concentrator, and roaster, located approximately 190 kilometres west of Prince George, British Columbia.

Factors that are required to spur primary Moly prospects into production would be:

- Three years of sustained better prices
- Those better prices being $20 per lb or higher

Thus, we could say that Molybdenum is one of the most extreme examples of feast or famine. There is possibility of a sustained supply crunch, but no-one is betting on that being very soon.

Important disclosures

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