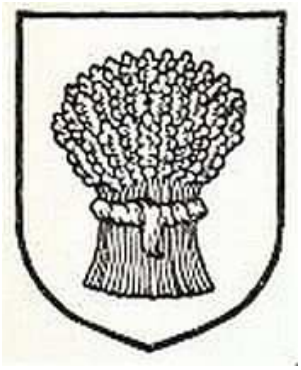
Wednesday, May 5, 2021



HALLGARTEN & COMPANY

Initiation of Coverage

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Perpetua Resources

(Nasdaq: PPTA / TSX: PPTA)

Strategy: Long

Key Metrics	
Price (USD)	$7.63
12-Month Target Price (USD)	$16.10
Upside to Target	111%
12 mth high-low	$3.73-$15.50
Market Cap (USD mn)	$362.88
Shares Outstanding (millions)	47.56
Options (millions)	2.74
Warrants (millions)	0.20
Convertible notes (mns)	4.35
Fully Diluted (millions)	54.85

Perpetua Resources

Antimony as Icing on the Cake

- + The Stibnite mine is moving rapidly into the development category
- + Perpetua has one of the US's most resourced investment management firms as its largest shareholder and driving force
- + When operational the mine will be one of the biggest gold producers in the US
- + Idaho is a prime investor-friendly mining location topping recent Fraser Institute rankings
- + The US government has declared Antimony to be a strategic and the country's almost total dependence upon China for supplies is clearly undesirable
- + Antimony has doubled in price over the last six months as a long-term supply crisis merged with new applications in mass-storage to push the price to over US$11,000 per tonne
- + Stibnite mine will be the largest (and only) producer of Antimony in the USA
- + The mine (re)development will bring the side benefit of remediating several legacy environmental problems from past activities
- + Chinese are losing their long-held dominance of the Antimony market
- + Significant upside potential for the stock price from inclusion in indices and attendant purchases by ETFs and tracker funds
- ✘ CapEx is sizeable
- ✘ The Chinese still dominate the Antimony processing space
- ✘ Financing requirements will be substantial

What's in a Name?

This company's long-held name, Midas Gold, was not entirely accurate as its mine looks likely to become the US's largest (and only) Antimony mine beyond its primary revenue stream as a gold mine. And it also evoked memories of the not exactly joyful fate of King Midas in Greek myth. The new name, Perpetua Resources, implies (hopefully) a long and prosperous life of mine but also gives a nod to the motto of the State of Idaho… *Esto perpetua,* a Latin phrase meaning "let it be perpetual".

The historical Stibnite mine takes its name from the mineral Stibnite (Sb_2S_3), derived from Stibium, the Latin word for Antimony, hence the metals' chemical symbol, Sb.

Since coming into the orbit of the New York investment management group, Paulson & Company, the Stibnite project in Idaho has been rethought and reenergized, and now focused. This mine has the potential to be within the top handful of gold producers in the United States. It is also located in Idaho, which is fast challenging Nevada as the top-ranking "go-to" mining friendly state.

Felicitously the upsurge in the price of Antimony has also given the company a second potentially strong

income stream from a metal that now figures in Washington's hit-list of critical metals that need to be wrestled out of Chinese control and dominance.

In this note we shall look at the previous plans, the move towards production and the implications of the resurrection of Antimony for the economics of the mine and the US government's goals in resource security.

The Asset

The Stibnite Gold Project is located in central Idaho, USA. The project lies approximately 100 miles northeast of Boise, Idaho, 38 miles east of McCall, Idaho, and approximately 10 miles east of Yellow Pine, Idaho.

It is remotely located in the rugged mountains of central Idaho with the district's elevation ranging from 6,000 to 8,000 feet at the summits of adjacent ridges. The central valleys of the district are drained by the East Fork of the South Fork of the Salmon River and its tributaries.

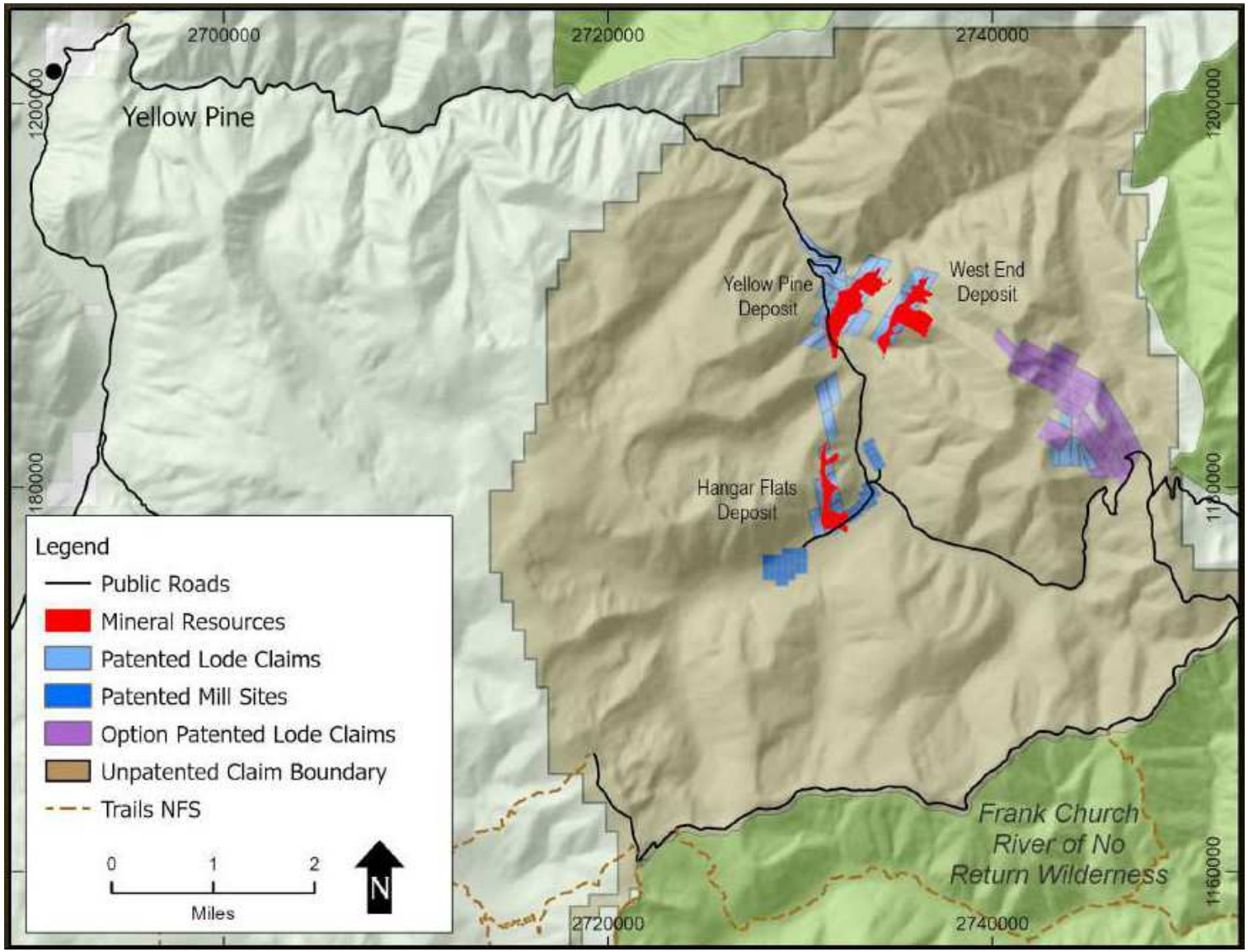
The land is heavily wooded with fir and pine trees and underbrush. Large forest fires burned much of the area in 2002, 2006 and 2007.

The Hangar Flats, West End, and Yellow Pine deposits, along with the historic tailings, lie within mineral concessions controlled by Perpetua, as are other exploration prospects.

Mineral rights controlled by Perpetua include patented lode claims, patented mill site claims, unpatented federal lode claims, and unpatented federal mill site claims and encompass approximately 27,104 acres or 42 square miles.

The claims are 100% owned, except for 27 patented lode claims that are held under an option to purchase. The project is subject to a 1.7% NSR Royalty (to Franco Nevada, TSX:FNV) on gold only. There is no royalty on Silver or Antimony output.

The property is located approximately 152 road-miles northeast of Boise, Idaho. The primary access to the Project area is known as the Johnson Creek Route of which some 113 miles are paved.


2700000
2720000
2740000
1200000
1180000
1160000
Yellow Pine
Yellow Pine Deposit
West End Deposit
Hangar Flats Deposit
Frank Church River of No Return Wilderness
Legend
Public Roads
Mineral Resources
Patented Lode Claims
Patented Mill Sites
Option Patented Lode Claims
Unpatented Claim Boundary
Trails NFS
0
1
2
Miles
N

The current state of the site can be seen in this aerial view:

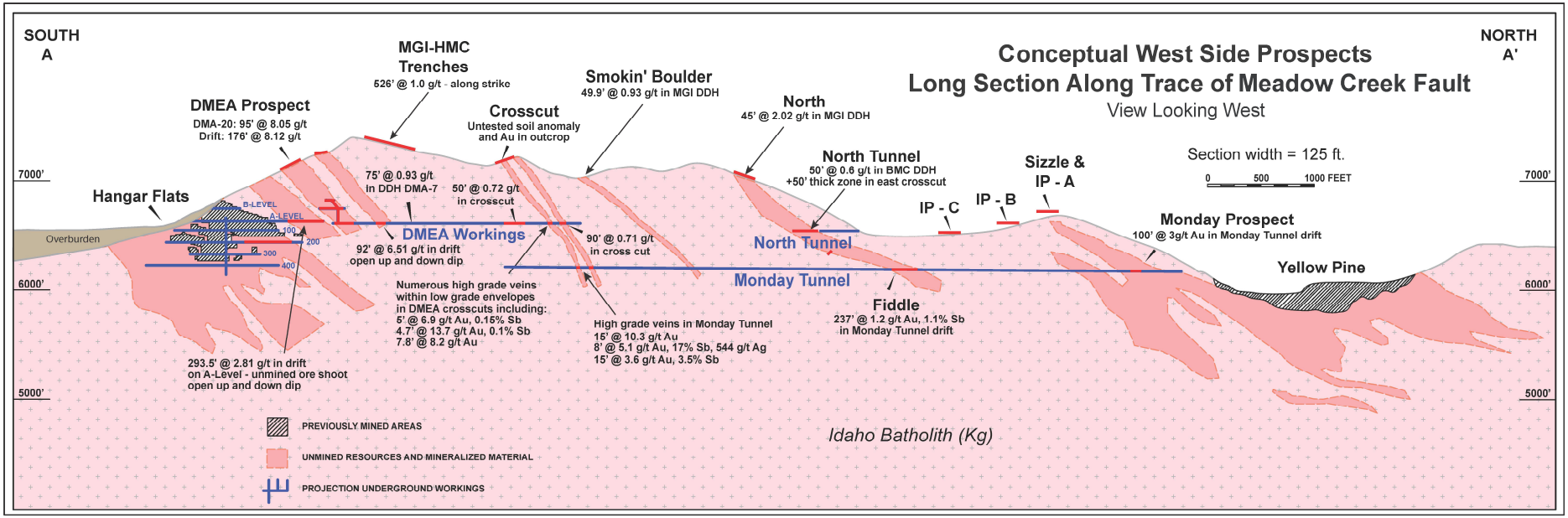
History

The project is located in a past-producing area near the historical town of Stibnite. Since the late 1920s, gold, silver, Antimony, Tungsten, and mercury mineralized materials have been mined in the area by both underground and, later, open-pit methods, creating numerous open pits, underground workings, large-scale waste rock dumps, heap leach pads, spent heap leach ore piles, tailings depositories, a mill site, three town sites, an airstrip, and other disturbances, some of which still exist today.

The burgeoning activity at Stibnite was associated with Tungsten and Antimony mining that supplied strategic minerals needed for the U.S. and Allied efforts during World War II. The war-induced demand for these strategic metals in turn drove development decisions.

The mining process for Tungsten and Antimony during the War years originated at the Yellow Pine Mine where the Tungsten ore body lay beneath a thick cover of gravel almost directly below the East Fork. The number one shaft was begun in April and the first Tungsten ore was milled in August, 1941. During 1942 the underground mine was in intensive production and the overburden above the Tungsten was stripped preparatory to open-pit operation. By May of 1943 the mine was abandoned in favour of extraction of ore exclusively using open-pit mining. Before the open pit mining operation could be started it was necessary to divert the flow of water from the East Fork.

On the following page can be seen a long-section of the historical mine(s) with select drill intercepts.


SOUTH
A
NORTH
A'
Conceptual West Side Prospects
Long Section Along Trace of Meadow Creek Fault
View Looking West
Section width = 125 ft.
0 500 1000 FEET
MGI-HMC
Trenches
526' @ 1.0 g/t - along strike
DMEA Prospect
DMA-20: 95' @ 8.05 g/t
Drift: 176' @ 8.12 g/t
Crosscut
Untested soil anomaly
and Au in outcrop
Smokin' Boulder
49.9' @ 0.93 g/t in MGI DDH
North
45' @ 2.02 g/t in MGI DDH
North Tunnel
50' @ 0.6 g/t in BMC DDH
+50' thick zone in east crosscut
Sizzle &
IP - A
IP - C
IP - B
Monday Prospect
100' @ 3g/t Au in Monday Tunnel drift
Yellow Pine
Hangar Flats
B-LEVEL
A-LEVEL
100
200
300
400
Overburden
75' @ 0.93 g/t
In DDH DMA-7
50' @ 0.72 g/t
in crosscut
DMEA Workings
92' @ 6.51 g/t in drift
open up and down dip
90' @ 0.71 g/t
in cross cut
North Tunnel
Monday Tunnel
Numerous high grade veins
within low grade envelopes
in DMEA crosscuts including:
5' @ 6.9 g/t Au, 0.15% Sb
4.7' @ 13.7 g/t Au, 0.1% Sb
7.8' @ 8.2 g/t Au
High grade veins in Monday Tunnel
15' @ 10.3 g/t Au
8' @ 5.1 g/t Au, 17% Sb, 544 g/t Ag
15' @ 3.6 g/t Au, 3.5% Sb
Fiddle
237' @ 1.2 g/t Au, 1.1% Sb
in Monday Tunnel drift
293.5' @ 2.81 g/t in drift
on A-Level - unmined ore shoot
open up and down dip
7000'
6000'
5000'
PREVIOUSLY MINED AREAS
UNMINED RESOURCES AND MINERALIZED MATERIAL
PROJECTION UNDERGROUND WORKINGS
Idaho Batholith (Kg)

The 4,000 ft Bailey tunnel was started in 1942 and completed early in 1943. It diverted flows of the East Fork around the east side of the pit and discharged into Sugar Creek. The large open-pit was mined in benches 30 feet high.

Ore was hauled to the Stibnite milling plant located some two miles south of the open pit. The ore would be crushed twice and then ground using ball mills. Through the use of chemicals and air the minerals would be separated by flotation. At the surface of the flotation cells the minerals were skimmed off and sent through a process of thickening. A selective flotation process could produce either Tungsten or Antimony concentrates. Waste sands or tailings were hydraulically transported to storage areas near the processing plant. The concentrates were then hauled by truck over mountain roads to the rail head 80 miles away at Cascade.

Low-grade Tungsten product was shipped to the Metal's Reserve Corporation at Salt Lake City, Utah, the United States Vanadium Corporation near Bishop, California or to the purification plant of the Bradley Mining Company at Boise for further refinement.

Past Production

Mine	Production Years	Short Tons Mines	Recovered Au ozs	Recovered Ag ozs	Recovered Sb Short tons	Recovered Tungsten (MTUs)
Hangar Flats	1928-38	303,853	51,610	181,863	3,758	67
Yellow Pine	1938-92	6,493,838	479,517	1,756,928	40,257	856,189
West End	1978-97	8,156,942	454,475	149,760		
Total		14,954,633	985,602	2,088,551	44,015	856,256

Antimony-Tungsten-gold sulphide milling operations ceased in 1952 as a result of lower metal prices following the end of the Korean War, while Mercury operations on the Cinnabar claims continued until 1963.

During World War II and the Korean War, the district is estimated to have produced more than 90% of the US's Antimony and approximately 50% of the US's Tungsten. This is an impressive concentration of strategic metals from one relatively small area.

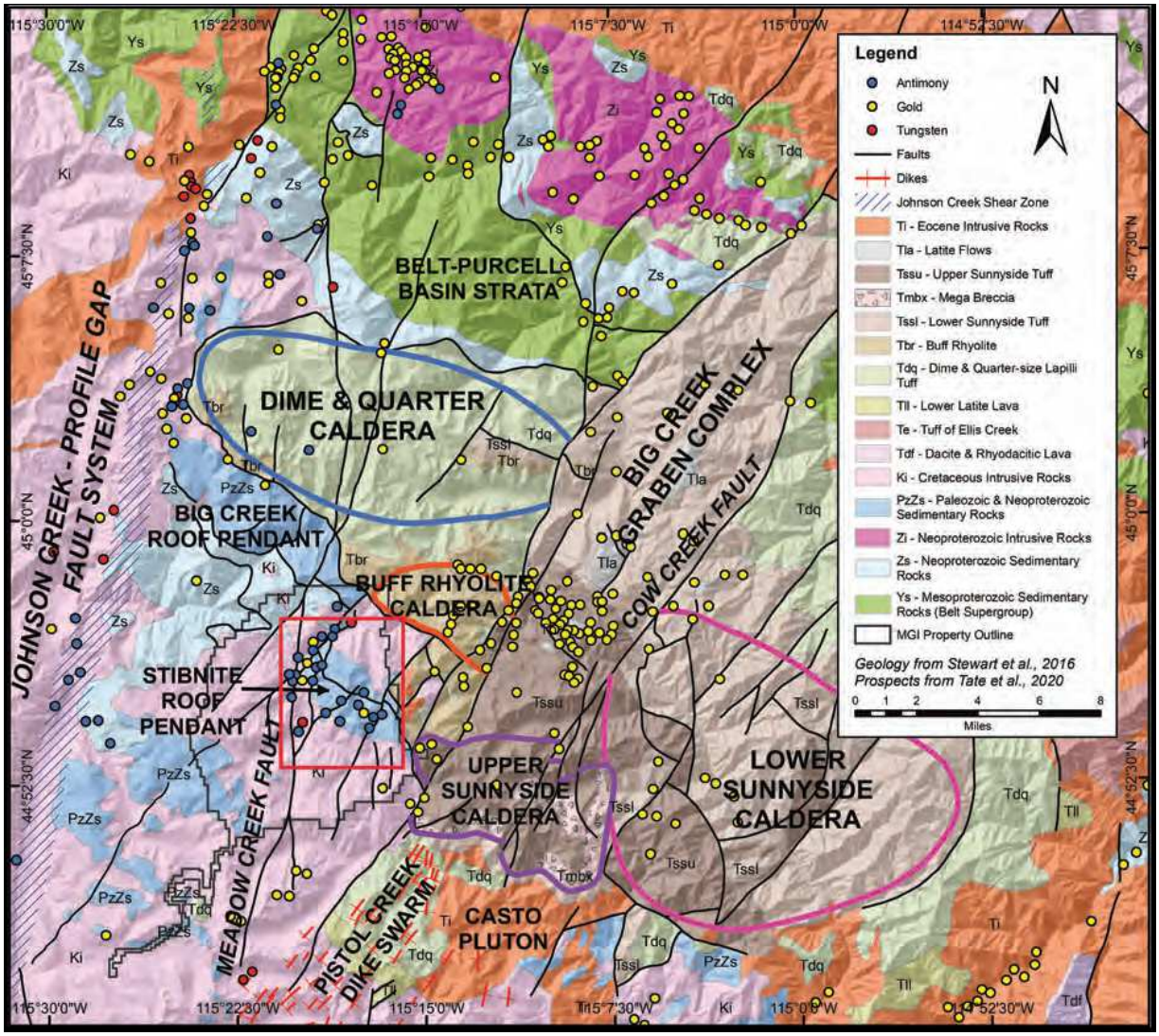
Exploration recommenced in 1974, followed by open pit mining and seasonal heap leaching of oxide gold ores from 1982 to 1997.

Geology

The Stibnite project area is underlain by pre-Cretaceous "basement" sediments, the Cretaceous-age Idaho Batholith (granitic), Tertiary-age intermediate to felsic intrusions and volcanics, younger unconsolidated sediments derived from erosion of the older sequences and glacial materials.

Large, north-south striking, steeply dipping to vertical structures exhibiting pronounced gouge and multiple stages of brecciation occur in the central and eastern portions of the property and are often associated with east-west and northeast-southwest trending splays and dilatant structures.

To say the regional geology is complicated is a gross understatement as the map below shows:



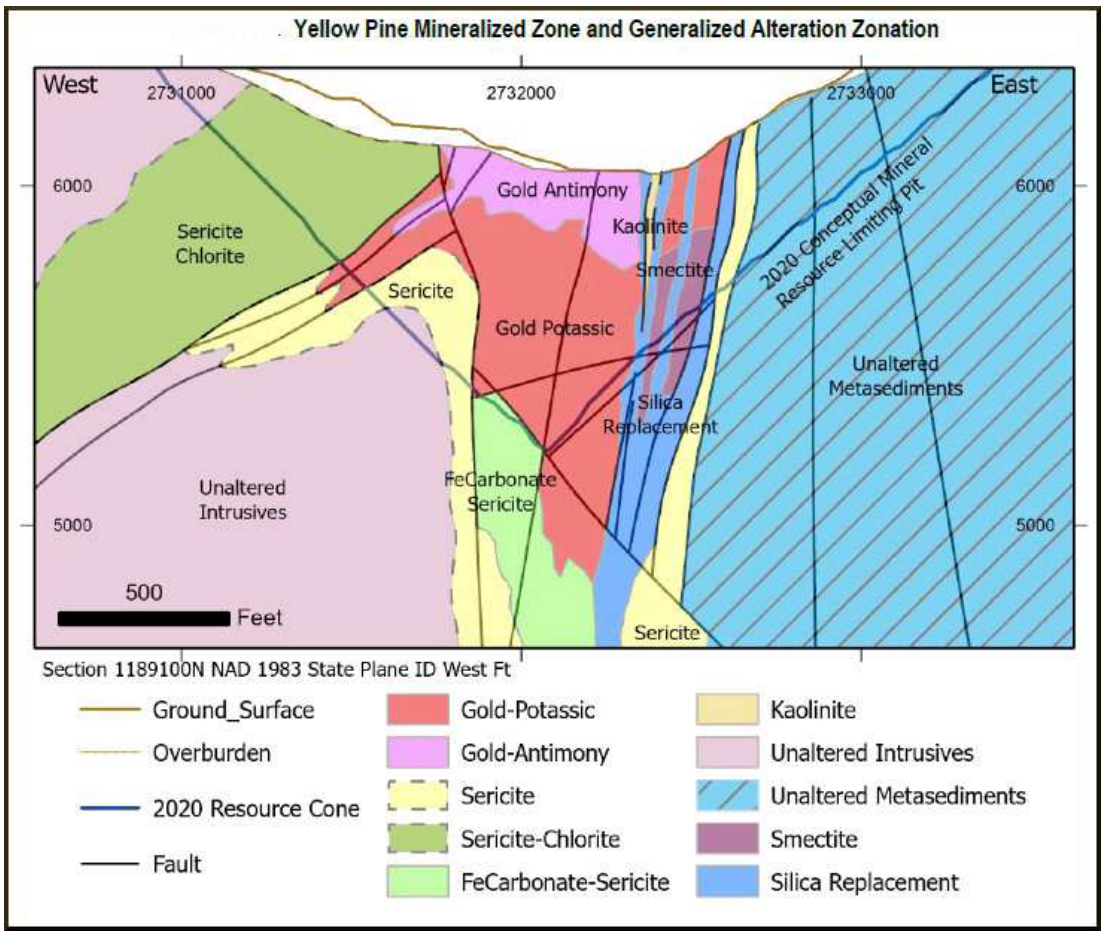
Intrusive-hosted precious metals mineralization typically occurs in structurally prepared zones in association with very fine-grained disseminated arsenical pyrite (FeS_2) and, to a lesser extent, arsenopyrite (FeAsS), with gold almost exclusively in solid solution in these minerals.

Antimony mineralization occurs primarily associated with the mineral stibnite (Sb2S3). Zones of silver-rich mineralization locally occur with Antimony and are related to the presence of pyrargyrite (Ag_3SbS_3), hessite (Ag_2Te) and acanthite (Ag_2S).

Metasediment-hosted mineralization has a similar sulphide suite and similar geochemistry to the intrusive hosted mineralization, but with higher carbonate content in the gangue and a much more diverse suite of late stage minerals.

Numerous genetic models have been proposed for the deposits in the Stibnite district. The complexity resulted in early workers attributed the mineralization to the Idaho Batholith (Schrader and Ross, 1926); to hot springs associated with igneous intrusions (Thomson, 1919); to the Thunder Mountain caldera (Larsen and Livingston, 1920); to Tertiary dikes and small stocks (Bell, 1918; Thomson, 1919); or to both the batholith (gold and antimony) and the volcanic rocks (mercury) Currier (1935).

Below can be seen a cross-section of the Yellow Pine zone (the resource limiting pit being the dark-blue line). The pit aims to encompass the maximum amount of the Gold-Antimony and Gold-Potassic zones.



Geologists in the late 1990s (Bookstrom and others) attributed the great abundance of metal species in the district to the concurrence of a variety of deposit types, including distal disseminated gold; Au-Ag and mixed-metal veins; simple antimony veins, disseminated antimony veins: quartz-scheelite veins and breccia deposits; mixed metal skarns; and mercury-rich hot-springs. Recent research by the Idaho

Geological Survey, the U.S. Geological Survey and several academic institutions utilizing a wide variety of analytical methods has demonstrated that episodic magmatic and hydrothermal events have affected the District spanning a period over 30 million years. Early mineralization stages have deeper higher temperature and pressure magmatic affinities and were repeatedly overprinted by progressively younger, shallower and lower temperature and pressure events.

In the Yellow Pine Deposit area, major structures include the northerly striking Meadow Creek Fault Zone (MCFZ) and the northeasterly striking Hidden Fault Zone. These structures show evidence for multiple stages of movement, both pre- and post-main stage gold mineralization. Additional structures include subsidiary splay faults to the MCFZ, the northeasterly striking Letter faults, named by Bradley and USBM geologists in the 1940s, and northwesterly striking scissor faults.

The structural setting of the Yellow Pine Deposit is interpreted as a broad damage zone along the high-angle MCFZ accommodating progressive displacement and amalgamation of the Hidden Fault. This has led to development of synthetic and antithetic shears and extensional and transpressional block rotation within the zone. MGII geologists have identified four main periods of faulting in the Yellow Pine deposit area.

Infrastructure

The aforementioned Johnson Creek Route measures approximately 74 miles from Cascade to Stibnite and is not available at certain times of the year when Johnson Creek Road is impassable due to snow. Alternatively, the South Fork Route provides year-round access to Stibnite because it maintains a lower elevation profile. The distance from Cascade to Stibnite is approximately 96 miles along this alternate South Fork Route.

A grass airstrip is located along Johnson Creek Road approximately 3 miles south of the town of Yellow Pine and a 2,300 ft long gravel airstrip is located at Stibnite.

The nearest powerline is located along Johnson Creek Road, roughly 8 miles west of Stibnite. The powerline along Johnson Creek Road provides 12.5 kV distribution power to local residents along the route and the village of Yellow Pine but has been deemed insufficient to support a mining operation. In order to support planned operations, powerline infrastructure would need to be installed / upgraded from the main regional Idaho Power Company (IPCo) substation at Lake Fork to the project site.

Perpetua holds four permanent and three temporary water rights in the district. The current water rights are insufficient to support the proposed development plan, and therefore additional rights will need to be secured through direct permit application and subsequent approval of those rights from the IDWR.

Exploration

Midas Gold commenced its exploration activities in 2009. Latest resource estimates are based on

significant past work. The project area, including the three main deposits, has been drilled by numerous operators, totaling 793,769ft in 2,723 drill holes, of which Midas Gold drilled 637 holes, totaling over 344,465ft, since 2009.

Pre-Midas Gold drilling was undertaken by a wide variety of methods and operators, while Midas Gold employed a variety of drilling methods including core, RC, auger, and sonic throughout the district, but with the primary method being core.

Resource

The latest Mineral Resource estimate represents the fourth mineral resource NI 43-101 prepared for Midas Gold. It includes updated Mineral Resource estimates for the three lode gold deposits; Yellow Pine, Hangar Flats and West End, and also reports the Mineral Resource Estimate for the historical tailings deposit, which is unchanged since the PFS in 2014.

Stibnite Project - Resource Estimate

Category		Tonnage (000s)	Gold g/t	Contained Au (000s ozs)	Silver g/t	Contained Ag (000s ozs)	Antimony %	Contained Sb (000s lbs)
Measured								
	Yellow Pine	4,902	2.42	382	3.75	590	0.24	25,831
Indicated	Yellow Pine	45,350	1.72	2,509	2.07	3020	0.09	85,774
	Hangar Flats	25,861	1.44	1,194	3.24	2697	0.15	84,463
	West End	53,469	1.08	1,849	1.31	2259	0.00	-
	Historical Tailings	2,687	1.16	100	2.86	247	0.17	9,817
Total M&I		132,269	1.42	6,034	2.07	8814	0.07	205,885
Inferred								
	Yellow Pine	3,214	0.96	99	0.60	62	0.0	50
	Hangar Flats	12,224	1.12	440	2.64	1037	0.11	28,560
	West End	20,540	1.06	700	1.11	733	0.00	-
	Historical Tailings	191	1.13	7	2.64	16	0.16	662
Total Inferred		36,168	1.07	1,246	1.59	1849	0.04	29,272

The Reserve

In calculating the Mineral Reserves, the consultants employed cutoff grades assuming long-term metal prices of $1,600/oz gold, $20/oz silver, and $3.50/lb Antimony for material lying within the pit designs based on the pit shells calculated using cut-offs of $1,250, $750 and $1,300/oz Au for Yellow Pine, Hangar Flats and West End, respectively.

This results in a Life-of-Mine (LOM) average gold cut-off grade of 0.48 g/t for open-pit mining.

Stibnite Gold Project - Reserves Estimate

Deposit	Tonnage mns	Au grade g/t	Contained Au (ozs)	Silver g/t	Contained Ag (ozs)	Antimony %	Contained Sb (tonnes)
Yellow Pine							
Proven & Probable	47.847	1.77	2,718,000	2.23	3,423,000	0.106	50,643
Hangar Flats							
Probable	8.262	1.56	414,000	2.85	756,000	0.15	12,365
West End							
Probable	45.83	1.08	1,587,000	1.36	2,004,000		-
Historic Tailings							
Probable	2.687	1.16	100,000	2.86	247,000	0.166	4,454
Proven & Probable Reserves							
Oxide - Probable	4.749	0.54	83,000	0.87	133,000		-
Low Sb - Proven & Probable	59.856	1.55	2,988,000	1.54	2,958,000	0.013	7,557
High Sb - Proven & Probable	14.181	1.96	894,000	4.61	2,104,000	0.422	59,905
Transitional - Probable	25.839	1.03	855,000	1.49	1,236,000		-
Total Proven & Probable	104.625	1.43	4,819,000	1.91	6,431,000	0.064	67,462

It is worth also noting that the Stibnite Gold project is a quantum larger than the other independent (i.e. not owned/controlled by Barrick or Newmont) gold projects in the US as shown in the graphic below:

A Word on Antimony & Grade

Several years ago this property was brought to our attention by an investor, who knew our long-term coverage of the Antimony space, requesting a "quick & dirty" opinion. One look at the Antimony grades quickly scared us off and left us wondering how the mine had started out being called Stibnite, after the Antimony metal rather than some other name.

What we had failed to note was that in seeking the gold component of the deposit (understandable as Sb was in the dumpster price-wise) management had opted for open-pit scenarios which encompassed the rich Antimony veins that had been the original *raison d'etre* of the mine, across a very large open pit. In this process of expanding to an open-pit the dilution of the Antimony veins drove the metal's grade to an infinitesimally low grade.

The classic dilemma with Antimony mining is that it's a case of "follow the vein", which does not fit in with the traditional model of drilling to try and firm up a resource. Drill six inches over in one direction and come up with nothing, and six inches in another direction one intercepts 40% Sb. It is telling that Twinkling Star, the famed Chinese Antimony mine was discovered in the 1500s, and has been steadily producing since and has made up to 40% of global production at some moments in its existence. Using current NI43-101 approaches to that deposit in 1500 would have resulted in the mine being a fish that was thrown back as "nothing special".

At the Stibnite project, the pitshells are driven entirely by the Au value, so Sb is modeled as a true byproduct only. During pit development, if the rock is payable, it will likely get mined and processed and both Yellow Pine and Hangar Flats have Sb-rich, lower Au grade materials that might result in that case.

Much of the Sb in the two deposits occurs in intense stockworks, sheeted veins and stibnite-scheelite breccias and are more analogous to classic porphyry styles of mineralization in texture than simple stibnite veins. Thus making this a significantly different style of deposit than most and, historically, this facilitated the bulk mining of lower grade materials. In fact, stibnite flotation methods were first developed at Berkley in the late 1920s and early 1930s under U.S. government sponsored research specifically on, and for, ores from the Stibnite mine.

If one averages the Antimony grade over the entire tonnage of all three deposits (>100mn tonnes), the Antimony grade appears, ostensibly, to be too low for it to be economical. However, if one averages the Antimony grade over only the high Antimony ore, i.e. the ore that passes the high Antimony cutoff grade, then it is very profitable to try to recover the Antimony.

The implication of this is that the potential Antimony output of this mine is not indicated by the resource estimate. With the upsurge in Antimony's price and it being viewed as a critical metal (and its new application in mass energy storage), the new team at Perpetua do not intend to let the Antimony potential go by the wayside.

The Latest Feasibility Study (FS)

The FS published in January 2021 was compiled by M3 Engineering & Technology Corp. (M3) and supersedes and replaces the technical report entitled "Amended Preliminary Feasibility Study Technical Report" prepared by M3 and dated March 28, 2019 and the latest report contains Mineral Resource estimates that supersede and replace the Mineral Resources issued in February 2018.

Mine Plan

Mining at the project will utilise conventional open-pit hard rock mining methods.

The mine plan developed for the Project incorporates the mining of the three *in situ* mineral deposits:

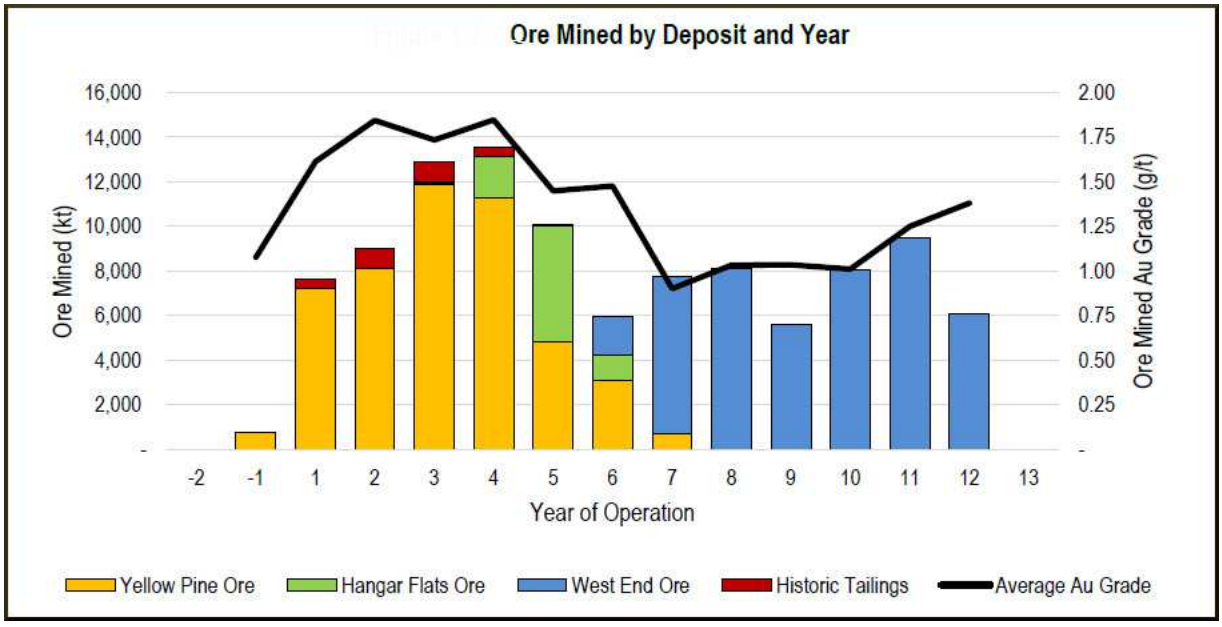
- Yellow Pine
- Hangar Flats
- West End

The mine plan includes the related waste rock for the three aforementioned deposits, reprocessing of historic tailings and removal of the spent heap leach ore that overlie the historic tailings.

Ore from the three pits would be sent to a centrally located crusher while the historic tailings will be fed by slurry into the process plant's grinding circuit.

Waste rock would be sent to four distinct destinations: the tailings storage facility (TSF), the main Waste Rock Storage Facility (Main WRSF), that buttresses the tailings storage facility (TSF) embankment and to backfill the Yellow Pine and Hangar Flats open-pits.

The chart that follows shows the progression of mining.



The general sequence of mining would be:

1. Yellow Pine deposit

2. Hangar Flats deposit
3. West End deposit

This planned sequence is driven by the need to backfill the Yellow Pine pit with waste rock from the West End pit in order to restore the original gradient of the East Fork (EFSFSR) while using environmentally appropriate carbonate-rich material for such backfill.

This order generally follows a sequence of mining gold ounces from highest grade to lowest grade, and lowest cost to highest cost. The historic tailings, which lie within the footprint of the Main WRSF, would be removed during the first four years of the mine schedule to make the necessary space for the Main WRSF.

Long-term lower-grade ore stockpiles have been incorporated into the mine plan. The primary benefits to adding ore stockpile capacity is increased potential to optimize process ore feed value throughout the mine life, improved utilization of the Mineral Resource, reduced peak water treatment needs, reduced development rock tonnage and associated mining impacted water management.

The stockpiling strategy is particularly significant during the first half of the mine life, when Yellow Pine high-value ore is mined at a rate greater than process plant throughput capacity. The addition of long-term ore stockpiles allows for relatively high value ore mined from Yellow Pine open pit to be stockpiled and made available to process when lower-value ore is being mined in West End open pit

Processing

A large, gently sloping area immediately northeast of the confluence of Meadow Creek and the EFSFSR was selected as the preferred processing plant location. The ore process plant has been designed to process sulphide, transition and oxide material from the Yellow Pine, Hangar Flats, and West End deposits, as well as historic tailings. The processing facility is designed to treat an average of 20,000 t/d. As noted, the historic tailings shall be reprocessed early in the mine life to recover precious metals and Antimony, and to provide space for the TSF embankment and buttress.

The two finished products from the ore processing facility will be gold/silver bars (doré) and a filtered Antimony-Silver concentrate.

As far as the mineral issues involved in processing are concerned, gold in all three deposits is hosted in pyrite and arsenopyrite minerals and is predominantly refractory to direct cyanidation. However, discrete free gold is present in oxidized portions of the West End Deposit. Antimony in the Yellow Pine and Hangar Flats deposits occurs almost entirely as stibnite and is typically coarse-grained when occurring at head grades above 0.1% Antimony. Stibnite becomes sufficiently liberated for recovery via selective Antimony flotation.

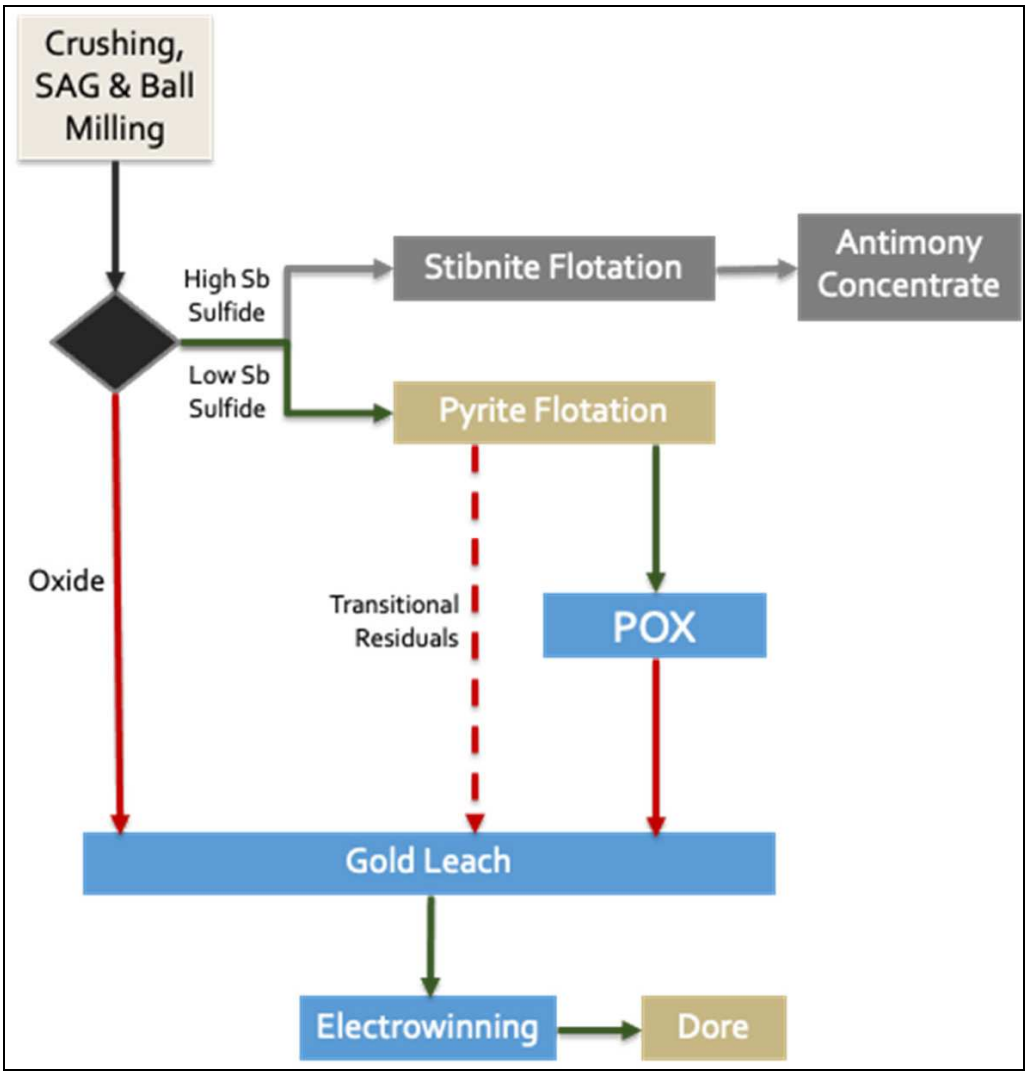
The process operations include the following components: crushing, grinding, pyrite and stibnite

flotation, lime and oxygen plants, pressure oxidation, oxidized concentrate neutralization, carbon in leach, carbon handling, gold refinement, tailings detoxification, and process control systems.

Mining is planned to deliver 8.05mn short tons (st) of ore to the crusher per year (22,050 st/d), with stockpiling by ore type (low Antimony sulphide, high Antimony sulphide and oxide). Batches of oxide and sulphide material would be sent to the crusher; the oxide feed would be vat-leached while the sulphide material would be floated to produce up to two concentrates:

- an Antimony concentrate, when there is sufficient Antimony to justify recovering it, to be sent offsite
- a Gold-bearing sulphide concentrate that would be oxidized in an autoclave and then sent to agitated leach tanks for gold-silver leaching

The simplified flowchart gives the general concept of the proposed operation:



Flotation and pressure oxidation (POX) pilot plant testing has demonstrated successful sulphide

concentrate production and gold liberation. The POX pilot study was completed using in situ acid neutralization (ISAN), which involves adding ground limestone to the POX feed to control free acid and sulfate concentrations to limit the formation of jarosites and basic iron sulphates.

The ISAN process was shown to produce environmentally stable arsenic compounds while inhibiting encapsulation of gold particles prior to gold extraction.

Throughput

The FS mine plan envisages a total of 102mn tonnes of ore would be mined from the three open pits and an additional 2.7mn tonnes of historic tailings would be mined. During the first four years, 2.7mn tonnes of historic tailings would be fed to the processing plant at a stripping ratio of 2:1 (SODA:tailings).

Approximately 254mn tonnes of development rock would be mined from the three open pits for a total of 356mn tonnes mined from the open pits and an average strip ratio (waste:ore) of 2.5.

The expected production by deposit is shown below:

Production by Deposit

	Gold ozs	Silver ozs	Antimony (tonnes)
Dore Bullion			
Yellow Pine	2,453,000	11,000	
Hangar Flats	364,000	1,000	
West End	1,333,000	839,000	
Historic Tailings	68,000	-	
Revovered Dore Bulllion	4,218,000	851,000	0
Antimony Concentrate			
Yellow Pine	17,000	573,000	41,772
Hangar Flats	4,000	255,000	9,447
Historic Tailings	1,000	31,000	1,113
Antimony Con recovered metals	22,000	859,000	52,333
Total recovered metals	4,240,000	1,710,000	52,333

The CapEx

If there is a negative in this project it is the substantial capex. While clearly not beyond the skillset of Paulson & Company, the bottom line capex is in the category of the most sizeable projects in circulation at the current time, but still not of the order of the type of Nickel projects that have had $10bn plus

costs in the last twenty years.

For what is likely to be the largest US gold producer, not owned by one of the gold giants, the capex is understandable. The project does not lend itself towards scaling down throughput and at current gold prices that would be deemed undesirable anyway.

The processing plant is by far the largest component of the envisioned costs.

Stibnite Mine - CapEx

	Initial	Sustaining	Closure	Total
Directs				
Mine costs	84.02	118.97		202.99
Processing Plant	433.46	49.04		482.51
On-site infrastructure	190.91	83.89		274.80
Off-site infrastructure	115.94			115.94
Indirect Cost	232.68			232.68
Owner's Costs	38.35			38.35
Offsite Environmental Mitigation	14.40			14.40
Onsite mitigation & closure	3.47	23.48	98.05	125.01
Total CapEx	1,113.24	275.39	98.05	1,486.68
Contingency	149.71	20.35	1.24	171.31
Total CapEx with Contingency	1,262.95	295.74	99.30	1,657.99

The CapEx includes a substantial provision for mine closure and remediation of over $99mn.

Assumptions

The economic analysis completed for this FS assumed that gold and silver production in the form of doré with appropriate deductions for payabilities, refining and transport charges. The gold prices selected for the five economic cases vary from $1,350/oz to $2,350/oz.

The Base Case employed a $1,600/oz gold price that was derived from the weighted average of the three-year trailing gold price (60%) and the two-year gold futures price (40%); this calculation was completed in July 2020. With 10 months having gone by since and the gold price having touched $2,000 and stabilised above $1,700 one could argue for using a higher base case if the study was redone now.

Silver prices were set at a gold:silver ratio of 80:1 for the base case. The silver price was varied by $4.00/oz Ag (versus $250/oz Au) for the other cases, which is approximately 60:1; the lower ratio for the

delta was used to reflect the historically greater level of volatility of the silver market. As we have also noted recently the gold:silver ratio has broken out of its past trend with silver at a much healthier 67:1 at the current time.

Antimony prices were assumed to be constant at $3.50/lb ($7,700 per tonne). That latter price has now clearly been left behind by the Antimony price surge. While one might speculate that the price will come back down, there is no swing supply likely to appear to engineer such a fall.

As mentioned earlier the project is subject to a 1.7% NSR Royalty on gold only, with no royalty on silver or antimony.

The Economics

As can be noted we are not subscribers to the Gold and Antimony components of the FS's Base Case. In our opinion the closest approximation is Case C and even there the Antimony price is at least $3,000 per tonne below current levels.

The outcome of Case C at a 5% discount rate can be seen in the table below:

Our Base Case - Perpetua's Case C

Premise = $1850 oz Au, $24 oz Ag, $7,700 tonne Sb

	Pre-tax	Post-tax
NPV @ 5%	$2.346bn	$1.9bn
Annual av. EBITDA	$368mn	
Annual Av. post-tax Free Cashflow		$302mn
IRR	30.40%	27.70%
Payback Period	2.5 years	2.5 years

The average production per annum in the first six years is 8,200 tonnes of Antimony. At current Antimony prices around $24.5mn in extra margin would be added from Sb to the pre–tax bottom-line.

Management expects the project to carry 60-70% of debt and that any equity component of project financing will be manageable.

Earnings Model

On the following page can be seen our model for the revenues and operating profits of the Stibnite Gold/Antimony Project). In calculating this we used the volumes of gold and Antimony mooted in the Feasibility Study over the first nine years (there is no Antimony revenue after that year).

Stibnite Mine

USD mns

	Year 1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue - Au & Sb	577.50	773.50	875.00	1,018.50	700.00	570.50	423.50	381.50	346.50
Cost of Mining	51.48	68.95	78.00	90.79	89.20	72.70	53.97	48.61	44.15
Cost of Processing	69.63	93.26	105.50	122.80	142.80	116.38	86.39	77.83	70.69
Royalty	8.91	11.93	13.50	15.71	10.80	8.80	6.53	5.89	5.35
Refining & Transportation	2.31	3.09	3.50	4.07	2.26	1.84	1.36	1.23	1.12
Operating Income (Gold)	445.17	596.26	674.50	785.12	454.94	370.78	275.24	247.94	225.20
Selling/General/Admin. Expenses	18.81	25.19	28.50	33.17	38.07	31.03	23.03	20.75	18.85
Financing	29.78	27.86	27.38	25.46	29.06	29.66	29.78	30.26	30.50
Operating Income (Au & Sb)	396.58	543.21	618.62	726.49	387.82	310.09	222.43	196.94	175.86
Gold production (ozs)	330,000	442,000	500,000	582,000	400,000	326,000	242,000	218,000	198000
Antimony production (tonnes)	3,630	13,158	11,570	5,445	8,167	8,621	454	-	1,361
Gold price (Hallgarten est.)	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750	$1,750
Antimony price (Hallgarten est.)	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000

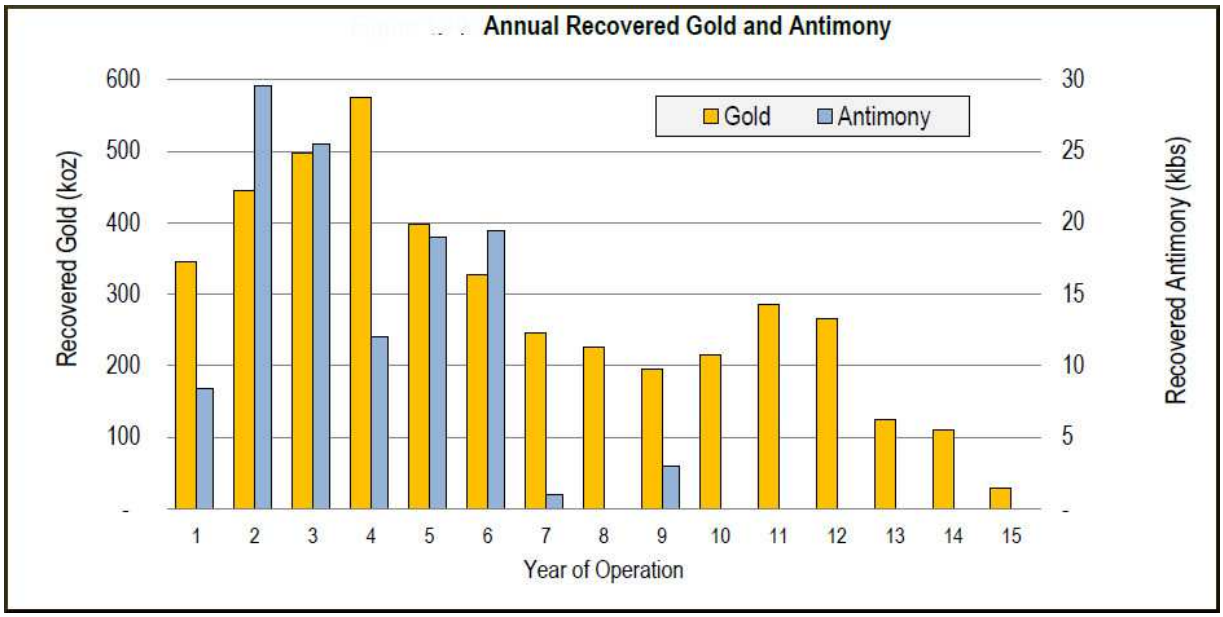
We used the cash costs as per the Feasibility Study but without the by-product credits (because we have built Antimony revenues into the top-line instead.

Stibnite Mine - Cash Costs

	Years 1-4		Life of Mine	
	$/st milled	$/oz Au	$/st milled	$/oz Au
Mining	9.71	156.00	8.22	205.00
Processing	13.13	211.00	12.76	318.00
G&A	3.54	57.00	3.43	85.00
Cash Costs Before By-Product Credits	26.38	424.00	24.41	608.00
By-Product Credits	(5.99)	(96.00)	(2.81)	(70.00)
Cash Costs After By-Product Credits	20.40	328.00	21.60	538.00
Royalties	1.69	27.00	1.09	27.00
Refining and Transportation	0.46	7.00	0.24	6.00
Total Cash Costs	22.54	362.00	22.94	571.00

With financing we assumed that the project shall be 60% debt-financed at a rate of 4%.

Below can be seen the recovered metals per annum:



Upside for Economics

Over and beyond the advantages afforded by Antimony staying around current levels (rather than the FS's use of $7,700 per tonne) there are various opportunities that could improve the economics, and/or permitting schedule of the project, including a number with potential to increase the NPV (@ 5%) by

more than US$100 million. These include:

- In-pit conversion of approximately 9.8mn tonnes of Inferred Mineral Resources grading 1.02 g/t Au occurring within the Mineral Reserve Pits, containing approximately 321,000 ozs of gold, increasing Mineral Reserves and thereby reducing the strip ratio

- Out-of-pit conversion of approximately 26.2mn tonnes of Inferred Mineral Resources grading 1.09 g/t Au occurring outside the current Mineral Reserve Pits containing approximately 917,000 ozs of gold, furthering augmenting Mineral Reserves

- Out-of-pit conversion of approximately 27.1mn tonnes of Measured and Indicated Mineral Resources grading 1.26 g/t occurring outside the current Mineral Reserve Pits containing approximately 1,098,000 ozs of gold, again adding to Mineral Reserves

- In-pit conversion of unclassified material (currently treated as development rock) to Mineral Reserves, increasing Mineral Reserves and further reducing strip ratios

- Definition of additional Mineral Reserves within the West End deposit through infill and resource definition drilling

Most of these “easy wins” can be achieved through additional drilling and have the potential to enhance mine life, lower cash-costs per ounce and obviously increase payable mineralized ore.

It can also be posited that gains with a medium impact ($10 to $100 million increases in NPV @5%) might be gained through improved metallurgical recoveries, secondary processing of Antimony concentrates, steeper pit slopes, and government funding of off-site infrastructure.

Upside for Exploration

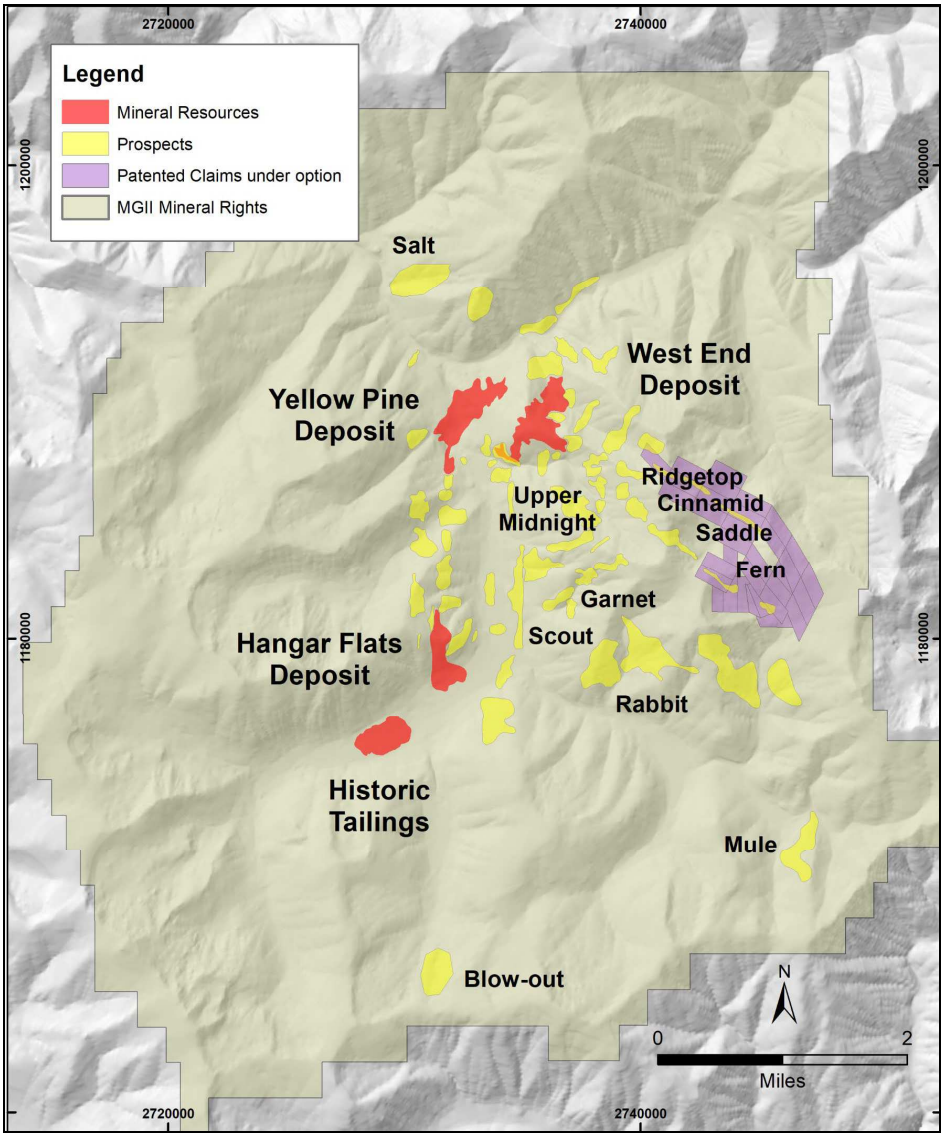
The program at the Stibnite district has been almost exclusively devoted up until now on the past producing parts of the concessions. However the reality is that the company has a vastly greater territory under its control, much of which has been barely (or not at all) explored.

The latest Feasibility Study contends that there is potential for the definition of higher-grade, higher-margin underground Mineral Reserves at Scout, Garnet or Hangar Flats.

In particular, Scout looks promising. It is potentially an underground-mineable Au-Ag-Sb exploration prospect discovered in the 1930s by Bradley interests and further evaluated during Strategic Minerals investigations in the 1940s. Pre-Midas Gold drilling included 18 holes totaling 6,912 ft. Midas Gold work includes IP and CSAMT surveys, mapping, rock and stream sediment sampling, and completion of 21 drill holes totaling 15,629 ft.

The target has dimensions of approximately 25-75 ft in true thickness, 2,000-3,000 ft along strike, and

250-300 ft down-dip at grades ranging from 1-2 g/t Au, 1-4% Sb, and 5-25 g/t Ag., The potential underground target is in the range of 2-5 million tons and contains between 50,000-300,000 oz Au; 40-150 million lbs Sb; and 300,000-1,500,000 oz Ag.



With regard to the broader exploration territory, the Perpetua geological team note that the upside in the district is in the large areas containing carbonate rocks and very large Sb geochemical anomalies where virtually no drilling or modern exploration has focused on the Sb. The styles in the sediments both siliciclastic and carbonate hosts include the above types of fabrics, but also in the carbonates there is evidence of manto-style replacements in paleokarst – potentially analogous to many Mexican CRDs and some of the larger Andean (Bolivian) Sb deposits.

An example is in the piece of breccia material below where one can see the stibnite cementing breccia

clasts of oxidized carbonate.

Antimony – Critical or Strategic or Both?

China has a very strong position in Antimony and long has had. Indeed this is the metal it has been dominant in for the longest. However, like so many other resources this was squandered through overproduction, predatory pricing and high-grading. China now finds its domestic share of global production plunging and to prop up its dominance it has become a leading importer of artisanal and "conflict" ore from all around the world. It then processes this imported ore/concentrate and manages to hold a still dominant position in processed end-product Antimony Trioxide and other products.

Is the metal strategic? Thus far it does not have the type of applications that other high-tech metals possess but it is still a key component in the things it is used for and its long term application as an alloy with Lead in ammunition has not gone away.

Antimony is a strategic metal used to harden lead in ordnance and lead-acid storage batteries.

Antimony Trioxide is a fine, white powder that is used primarily in conjunction with a halogen to form a

synergistic flame retardant system for plastics, rubber, fiberglass, textile goods, paints, coatings and paper. Antimony oxide is also used as a color fastener in paint, as a catalyst for production of polyester resins for fibers and film, as a catalyst for production of polyethylene phthalate in plastic bottles, as a phosphorescent agent in fluorescent light bulbs, and as an opacifier for porcelains.

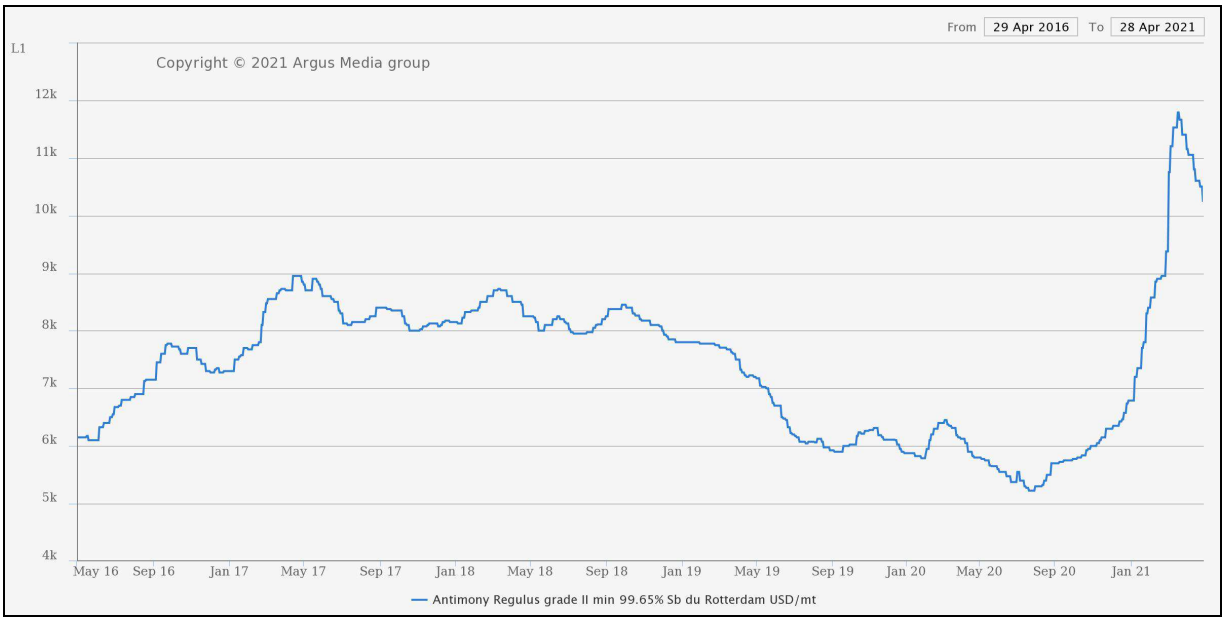
Sodium Antimonate is primarily used as a fining agent (degasser) for glass in cathode ray tubes and as a flame retardant. Antimony Trisulphide is a major component in primers for all center-fired ordnance.

And now we have the latest new technology to utilize the metal that is Antimony molten salt batteries for mass storage. The potential here is for a quantum surge in demand. This new application may be its own undoing if the price of the metal goes too high and unravels the economics. Time will tell.

Lighting a Fire Under the Price

After a swoon that lasted several years, and sank the prospects of several Antimony wannabes, the price of Antimony started to uptick in 2016. It got to around $8,500 per tonne and then plunged again to around $5,800 on stories that the metal was about to be put in the penalty box by the EU and some American states. This was linked to supposed toxic properties when used in fire retardants, particularly with children's pijamas.

This was further complicated by the ever-looming liquidation of the FANYA stockpile, which amounted to around 19,000 tonnes, which was finally sanctioned by Chinese courts over the summer. The latest talk in the trade is that now the FANYA stocks have been bought by one of China's largest Sb producers.



Source: Argus Metals

The price (as shown in the chart above) has taken off in recent times on a combination of global shortages caused by the Pandemic and the coup in Burma, long term underinvestment, declining Chinese production and the arrival of Molten Salt batteries in the commercial marketplace.

The effect was stunning, with Antimony breaking out of a multi-year malaise and becoming the hottest metal in the last six months (though tussling with Tin for that title) doubling in price from around $5,500 to nearly $11,000.

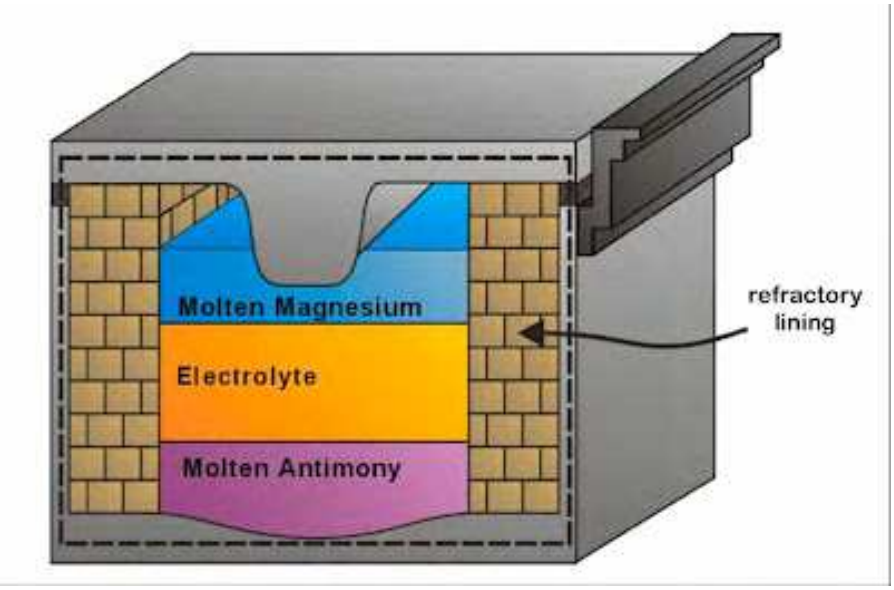
Mass Storage Devices

After a long period with no significant new applications for Antimony the appearance on the scene of Molten Salt batteries as mass storage devices has upset the delicate supply/demand balance in Antimony.

One of the prime attractions of mass storage devices is that they do not need to be connected to the grid and thus can be in the middle of nowhere bridging the infrastructure gap (and cost) that weighs on emerging economies (and isolated minesites). They can be supplied with the energy they store from solar or wind sources.

The most commonly touted medium for this type of storage is Vanadium Redox Flow batteries (VRBs) but now liquid metal batteries using molten salts are being added to the mix. The concept however is not new with the idea of using these salts for storing energy going back to the Second World War.

Molten salt is a solid at standard temperature/pressure but enters the liquid phase under elevated temperatures.



Liquid metal batteries can be stored indefinitely (over 50 years) yet provide full power in an instant

when required. Once activated, they provide a burst of high power for a short period (a few tens of seconds to 60 minutes or more), with output ranging from watts to kilowatts. The high power is due to the high ionic conductivity of the molten salt, which is three orders of magnitude (or more) greater than that of the sulphuric acid in a Lead–acid car battery

A team of researchers at MIT led by Professor Donald Sadoway worked on a liquid battery system that could enable renewable energy sources to compete with conventional power plants.

The research was put into a commercial venture, called Ambri, which was funded to the tune of $15mn by Bill Gates, energy giant Total, the US Department of Energy's Advanced Research Projects Agency and Khosla Ventures (run by Sun Microsystems co-founder Vinod Khosla).

What this means for Sb Demand

Each GWh of Ambri batteries requires less than 1% of current annual production of these (calcium and Antimony) anode and cathode materials. This is the closest we have to divining how much Antimony that the Ambri product line might consume if it gains traction. Current Sb production is around 170,000 tonnes per annum, implying that a Gigawatt of Ambri cell utilizes around 1,700 tonnes of Antimony.

Higher prices are rather a "chicken-and-egg" issue for the likes of Ambri. To be sure of adequate supplies of metal higher prices are needed (probably over $8,000 at least) and yet if they go too high then viability of the economic equation is cast into doubt.

If Liquid Metal Batteries become the "killer application" in grid-linked storage (or non-grid linked) then it potentially lights a fire under Antimony demand and pricing. The announcement that US Antimony (NYSE:UAMY) had secured an offtake deal with Ambri for its output lit a fire under the price of that stock in late 2020.

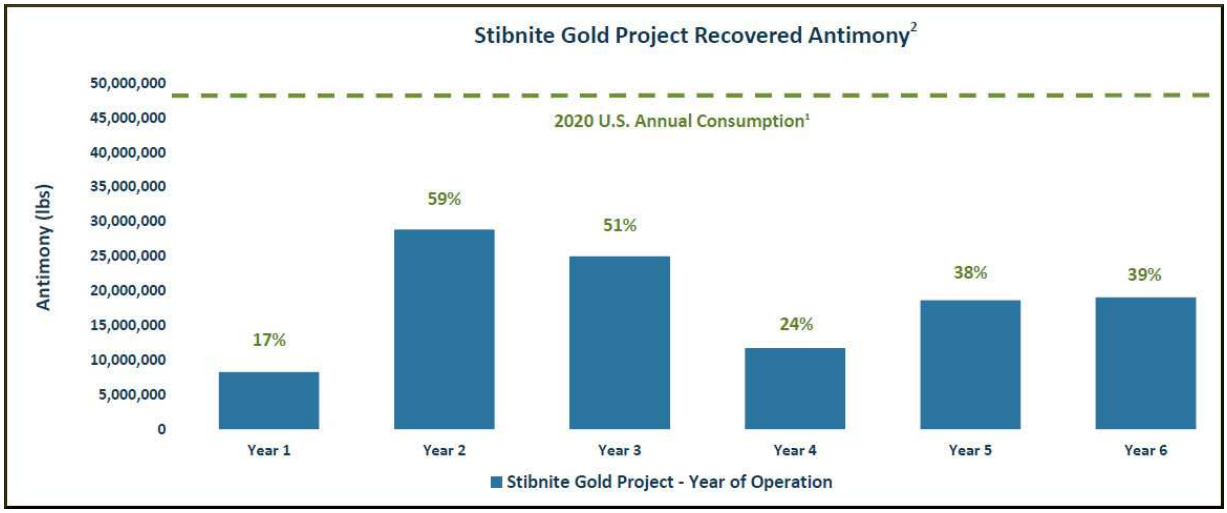
To mix some metaphors, molten salt batteries have flown under the radar thus far but definitely have a place in the evolving battery universe and hopefully will take the Antimony market along for the ride.

Perpetua to the Rescue

The US has lamentably sunk into a state of almost total dependence upon Chinese supplies of Antimony for its many uses, even to the extent that the product used in defense applications is sourced from China. As is well known this dependence upon China has now triggered alarm bells. However even with amicable relations the Chinese sources of Antimony are declining and as a result unreliable for the medium- to long-term.

As noted, the Stibnite mine came to the rescue in WW2 and serviced the voracious appetite of the US war effort for both Antimony and Tungsten. The potential exists for a substantial amount of self-sourcing of Sb yet again with the onset of production at the Stibnite mine.

The table below shows just how important this could be with a meaningful proportion of US needs being satisfied over the next decade by the Stibnite mine:



It should be noted that the mooted US consumption figure (based on USGS data) is a flatline and thus does not calculate in any growth form current applications and includes nothing for the potential demand from molten salt battery applications.

The Deal with US Antimony

Our past coverage of United States Antimony (NYSE: UAMY) is well known. The stock has been experiencing somewhat of a renaissance in recent months. After losing its long-time leader in 2020, and becoming rather becalmed, it has since been re-energised by an offtake agreement with Ambri, the rising price of Antimony and a substantial financing that finally scared away the financial wolves that have been long-camped outside the company's door.

In early May 2021, Perpetua announced that it had signed a collaboration agreement with US Antimony to study the potential for processing the Stibnite Gold Project's antimony concentrate at USAC's processing facilities. We might mention that USAC has two main processing facilities, one in Mexico and one in Montana. There is eminent logic in this move for both parties as the nearest substantial roasters (beyond those of USAC) are in Oman or in China.

Further details will be released in time.

Shareholders

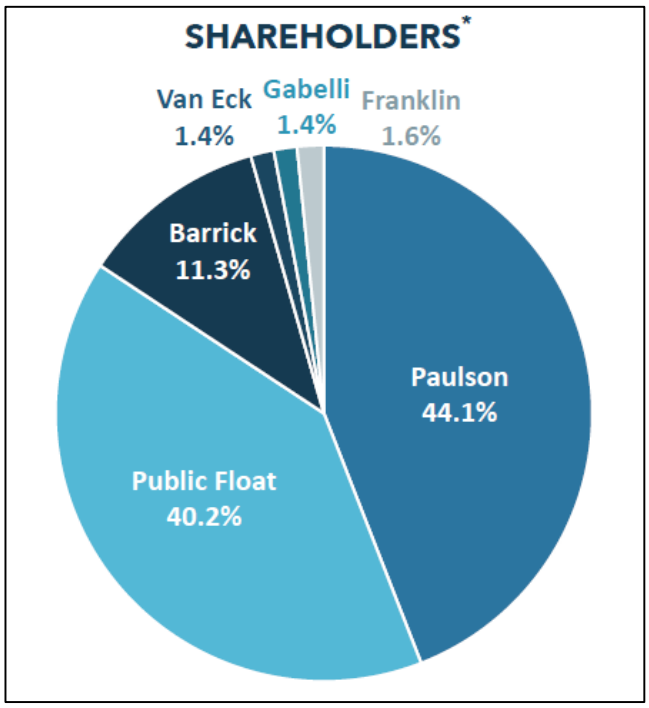
For a mid-tier developer Perpetua has a quite exceptional level of institutional shareholdings. It has long had Gabelli, Franklin and Van Eck on board. The holding of the NY investment manager, Paulson & Company is of more recent vintage, with a position having been initiated in 2016.

As at the middle of last year Paulson held only 9,664,520 Common Shares (or around 3.52% of the 274,834,608 the Company's then outstanding common shares. However, it did hold a substantial number of convertible notes that they had acquired via two separate financings completed on March 17, 2016 and March 17, 2020, with conversion prices of $0.3541 and $0.4655, respectively.

In August of 2020 it was announced that Paulson had converted in the principal amount of CAD$82,102,500 of these notes into 199,692,804 common shares of Midas Gold. This transaction propelled the Paulson holding to 44.12% of the outstanding common shares. Following the conversion, there remained outstanding convertible notes in the aggregate principal amount of CAD$15,409,901 which are convertible into 43,518,501 common shares.

Following the conversion, Paulson owned 209,357,324 Common Shares, representing approximately 44.12% of the company's expanded capital of 474,527,412 in shares outstanding. Assuming conversion of the all of the other convertible notes, Paulson would beneficially own 40.41% of the company's then outstanding common shares. It should be noted that the share amounts cited have since been consolidated on a 10:1 basis.

The current state of the shareholder distribution, excluding convertible notes, is shown in the pie chart at the right.



It is also worth mentioning that in late April, Sun Valley LLC announced that it held beneficial ownership over an aggregate of 4,040,000 common shares of Perpetua, issuable pursuant to the conversion of 0.05% senior unsecured convertible notes held by accounts over which Sun Valley has discretionary trading authority.

These are convertible at any time on 61 days advance notice, but both parties have agreed to temporarily waive the advance notice requirement, subject in each case to receipt of a notice of conversion on or prior to April 23, 2021. During the waiver period, Sun Valley will be considered to beneficially own the 4,040,00 Common Shares issuable on conversion of such Notes in accordance with their terms.

As a result of the waiver, Sun Valley is currently deemed to beneficially own/control some 5,295,726 common shares (comprised of 1,255,726 Common Shares currently for and on behalf of clients and

4,040,000 common Shares upon conversion of the notes). The 5,295,766 shares represent approximately 10.26% of the issued and outstanding common shares on an as-converted basis.

Idaho – Rising in the Ranks

The Fraser Institute remains the most respected survey of the fluctuating fortunes of the world's mining jurisdictions. The 2020 survey crowned Idaho with top spot when most observers would have blithely assumed that Nevada was the friendliest US state of mining.

In the rankings of the Policy Perception Index, Idaho displaced Finland from the top spot last year with the highest PPI score of 100. Idaho was followed by Wyoming in the second place, which moved from 16th in the previous year. Along with Idaho and Wyoming the top 10 ranked jurisdictions are Finland, the Republic of Ireland, Nevada, Utah, Arizona, Newfoundland & Labrador, Saskatchewan, and New Mexico.

Idaho ranked 9th in the investment attractiveness index. In particular the timeliness of dealing with exploration and drilling permits was cited by respondents amongst Idaho's attractions. The state also ranked fifth in the world in terms of legal system and sixth best amongst taxation regimes. In the important infrastructure category it ranked second (after Finland).

Directors & Team

Marcelo Kim is the Chairman of the board. He joined the Perpetua Resources board in March 2016 and has been a Partner at Paulson & Co. Inc. since 2011, where he oversees natural resource investments, specializing in gold, base metals, bulk commodities and oil & gas. Prior to that, commencing in 2009, he was a generalist analyst covering event arbitrage investment opportunities across broad sectors and capital structures. He is a graduate of Yale University, where he received his BA in Economics with honors.

Laurel Sayer, is the President, CEO and an executive director. She is based in Boise, Idaho has served as President and CEO of Perpetua Resources, since 2016. Before her appointment as CEO, she served on the Perpetua Resources board for two years. Prior to her appointment to the board, she worked as the executive director of the Idaho Coalition of Land Trusts (ICLT), which is dedicated to supporting and advancing private land conservation in Idaho. She also spent more than two decades working on policy matters with Idaho Congressman Mike Simpson and Idaho United States Senator Mike Crapo, with an emphasis on natural resource issues.

Bob Dean, non-executive director, who was raised in Idaho and now resides in Boise, has over two decades of experience in business, investment management, corporate finance, and capital markets, having spent over 20 years at Allen & Company. He is currently the Managing Member of Gemstone Capital and Co-Owner of Ada Sand & Gravel, one of the largest independent producers of construction aggregates in Southwestern Idaho. He is a Board Member of Natural Intelligence Systems, Inc., an Advisory Committee Member at Greybull Stewardship, and serves as a Board Member of several non-

profits including Trailhead Boise, MoFi, and Ramapo for Children.

David Deisley, non-executive director, resides in Salt Lake City, Utah, most recently led the successful permitting effort for the Donlin Gold Project in Alaska for NovaGold Resources and brings extensive recent permitting experience in the U.S. as well as a wealth of experience in corporate affairs, native/tribal stakeholder engagement, legal governance, litigation, and mergers and acquisitions. Prior to his tenure with NovaGold, he was the Executive Vice President, Corporate Affairs and General Counsel for Goldcorp and previously worked at Barrick Gold.

Jeff Malmen, non-executive director. He is a native Idahoan who resides in Boise, is currently the Senior Vice President of Public Affairs for IDACORP and Idaho Power, where he has worked since 2007. In his role, he oversees government and regulatory affairs, corporate communications, and corporate services, including supply chain, real estate and facilities. Prior to that, he spent 21 years in state and federal politics, most recently as Chief of Staff for Idaho Governor C.L. "Butch" Otter and Idaho Governor Phil Batt prior to that. He also served as Administrator of the Division of Financial Management for Idaho Governor Dirk Kempthorne. He is the Vice Chairman of the Idaho Association of Commerce and Industry and Board Member of the Idaho Mining Association.

Chris Papagianis, a non-executive director, is a Partner at Paulson & Co., where he works on a number of the firm's largest investments. Prior to joining Paulson, he was director of private equity at Peterson Management. He last served in government as Special Assistant for Domestic and Economic Policy to President George W. Bush. In this role, he guided the collaborative process within the White House to develop and implement policies, legislation, and regulations across numerous agencies. He is a graduate of Harvard College.

Chris Robison, non-executive director, who resides in Denver, Colorado and was most recently Chief Operating Officer for Newmont Mining, the world's largest gold miner, brings extensive expertise in mining, metallurgy, project development, mine safety, stakeholder engagement, environmental issues, corporate social responsibility, supply chain, mergers and acquisitions, capital investments, business improvement and regulatory issues. Prior to his role at Newmont, he worked for Rio Tinto Minerals and Kennecott Utah Copper.

Alex Sternhell, non-executive director, is based in Chevy Chase, Maryland, is a leading Washington strategist and lobbyist helping to shape U.S. public policy as Principal of the Sternhell Group. He has more than two decades of experience working on Capitol Hill. He served as the Democratic Deputy Staff Director of and Senior Policy Advisor to the U.S. Senate Committee on Banking, Housing and Urban Affairs as well as the Staff Director for the Senate Banking Subcommittee on Securities and Investment. He played a key role in drafting and negotiating nearly every major piece of financial services legislation in recent history, including Sarbanes-Oxley, the Terrorism Risk Insurance Act, and Gramm-Leach Bliley.

Risks

The principal risks from an investment in Perpetua would appear to be:

- A return to a downtrend in gold prices
- A return to low Antimony prices
- Environmental issues with the mine build
- Financing problems

Gold never fails to surprise or disappoint. The permabulls were in their element in 2020 seeing the metal hit $2,000 per ounce on monetary degradation fears and yet….. ended up confounded yet again when the price retreated $300 from its highs before stabilising. The best way to look at the risk of gold to any operation is to look at the cash cost per ounce and assess the cushion between the production cost (LOM cash cost is US$571 per oz) and the actual selling price of gold. The bigger the margin the less the risk. It is clear that Perpetua do NOT need $2,000 gold to be viable.

Until late 2020, Antimony was in one of its swoons over the last year. The FANYA threat was behind us only to be replaced by the regulator threat (the EU and State of Massachusetts) agitating against fire retardants. This has gone back to being a sleeper issue (but could come back to life). In the last six months, as mentioned, prices have rebounded as Chinese production continues to decline and low prices have stymied anything beyond small-scale production outside China.

It is seldom that a mining projects leads with the remediation but the aforementioned efforts to clean up old problems around the site and its vicinity show that Perpetua are starting as they mean to carry on. Environmental issues have not reared their head thus far as a hindrance to the development of the mine plan. With $99mn set aside for mitigation and reclamation the developers are spending more on this activity than most miners spend on building the whole mine.

The CapEx is sizeable on the project and the revival in mining, across the board, has heightened the competition for funds. However, the surge in metal prices has made investors more amenable to loosening their purse strings. If anything the crew at Paulson & Company are skilled at financing and while one would not expect them to fund this exclusively themselves, they have access to sources and entrée at the largest investment banks and streamers/royalty companies that mere miners can only dream of. If prices hold up then financing should not be an issue.

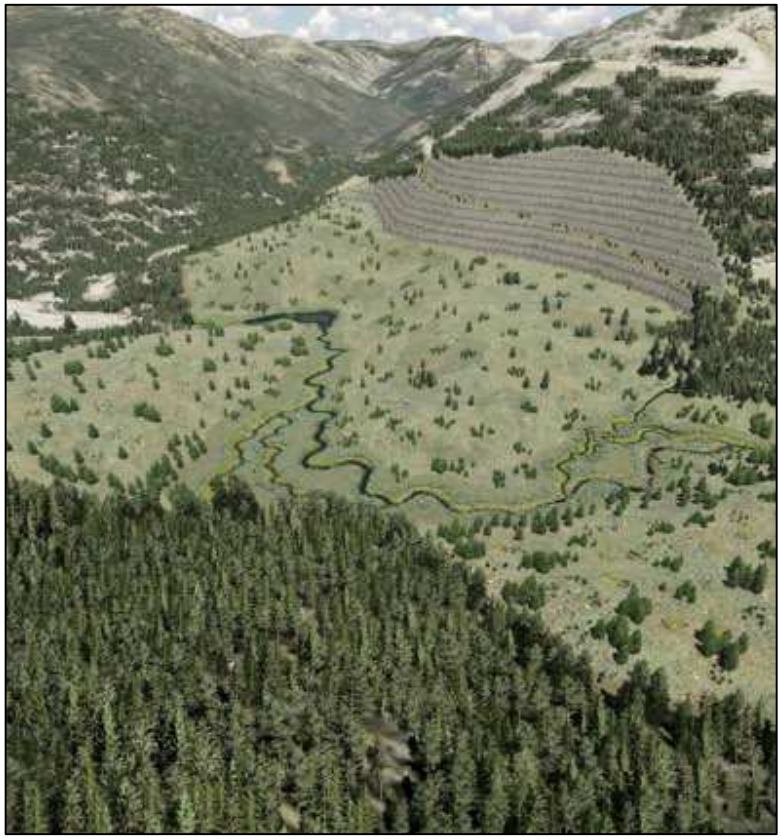
Cleaning Up after Others

As part of the early ESG efforts by the company there are commitments to undertake remediation works on local problems such as:

Yellow Pine Pit: Since 1938, the Yellow Pine Pit has blocked fish passage when the East Fork of the South Fork of the Salmon River (EFSFSR) was diverted to facilitate mining. Mining in this area stopped more than 65 years ago but river still flows into the pit today.

Blowout Creek: A few miles upstream from the Yellow Pine Pit, a failure of a water retention dam in

1966 resulted in extensive and ongoing erosion of glacial till material, contributing significant sediment into the water and draining the creeks and river in the valley above.



Meadow Creek Valley: More than 10 million tons of legacy spent ore and unlined tailings in the Meadow Creek Valley continue to degrade water quality and are likely a source of metals leaching into the surface and groundwater.

The image on the right shows how the mine site should look after remediation.

Price Target

Our price targets are based upon our perception of where a stock will be in 12 months and not the high that it might make in the meantime and not what the stock might be valued at in X number of years when it reaches production. This is not an exact science. The inputs which we consider are many but include our view on the metals prices for the stock (in this case very favorable to Sb staying above $10,000 per tonne and gold continuing to trade between $1750 and $2000).

The path to production for Perpetua is still long (permitting, financing, construction and then a two- year pre-strip). Thus 2025 target price might reflect the NAV of the project (presuming that metal prices still remain at the levels that underpin the NAV calculation). These could be higher, or lower, while the global economy could be in a different place and the political balance in Washington may yet again have changed.

The prime catalysts we can foresee over the next twelve months are driven by price, market sentiment towards miners, progress on financing of the project and very importantly, the potential for the inclusion of the company in indices (e.g. the GDX or GDX-J) which would drive demand for the shares from trackers and ETFs. The upside effect of such an event(s) is difficult to measure or project in advance.

Conclusion

To put it bluntly the old management at Midas Gold were skilled at promotion but not at raising the

funds to move the Stibnite mine towards development. The task was made that much harder during the long financing drought in gold after 2012 (that lasted until 2019). The Antimony potential of the project could not be fully factored in with that metal also suffering from a depressed price after 2014.

The company's fortunes though have "turned on a dime" with Paulson & Company taking the financial reins in recent years and the coincidental resurgence, firstly, of gold and then Antimony more recently.

In this Third Wave of battery metals, Antimony (the prime component in Molten Salt batteries) has joined the ranks of battery metals and the hunt is on for that scarce commodity, the non-Chinese Antimony miner.

Despite all that such is the uplift that Antimony stocks can achieve in a market starved for options in this metal. The only other plays are the gold/silver miner, Mandalay Resources (MND.v) that has Antimony as a byproduct from its Costerfield mine in the Australian state of Victoria, and US Antimony (UAMY) with its curious focus upon the Los Juarez Silver-Antimony mine in Mexico.

While the Antimony price was in somewhat of a regulator-induced swoon in the last two years, the main application in fire retardants has not gone away and in the wake of Grenfell Tower fire in London the regulators act against fire retardants at their own peril. In the wake of the pandemic and with the marketplace dry of product, the price has had a fire lit under it by Molten Salt batteries capturing the *Zeitgeist*. This combination was a perfect storm that drove the price from around $5,500 in late 2020 to double that level in recent weeks.

The main game at the Stibnite mine remains the gold potential and while the yellow metal has retreated from its brief flirtation with the $2,000 threshold, the reality of governments' degradation of their monetary base, all across the Western world, as a response to the pandemic leaves the inflation threat reinvigorated and waiting to rear its ugly head.

We have afforded this company a **LONG** rating with a twelve-month target price of $16.10.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Volume
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Millions
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