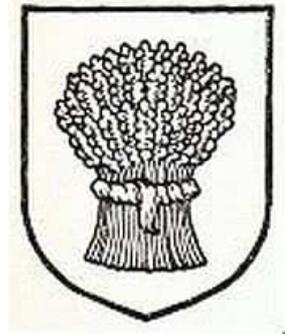


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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Mining Portfolio: Primed for the Roaring 20s?

Performance Review – December 2019

Model Mining Portfolio

Good Riddance to the Lost Decade

- + **Gold and Silver heading into the new year with a strong start**
- + **Growth prospects, everywhere but China, turned up in the last months of the year**
- + **In a reflection of this, Copper has started to move up slowly with Chinese destocking ceasing to weigh on the market**
- + **Our sentiments are for a much stronger performance by most metal categories in the coming decade as long term underinvestment and the passing of Chinese dominance starts to become apparent**
- ✗ **International political tensions have never lasted the distance in recent decades**
- ✗ **China remains in a quasi-recessionary state**
- ✗ **Palladium looks dangerously toppy**
- ✗ **Talk of a Rare Earths commodity exchange in China show that amateurism and criminality will continue to dog China's efforts to dominate trading in specialty metals**

Primed for the Roaring 20s?

In bidding farewell to a miserable 2019, we also say good riddance to a decade which started out well enough but then went downhill in so many mining categories. Even the fleeting fads made hardly any money for investors or even promoters. Even worse were the fads that proved to be a real briar patch like Lithium and earlier Rare Earths. They destroyed vast amounts of scarce capital and produced few to no mines, jaundiced some investors' views of mining and tied up corporate vehicles for years waiting for the turn. As John Cleese put it "it's not the despair that gets you, it's the hope".

In the Rare Earth capitulation came pretty rapidly as promoters realized that reanimation of prices was a long way off (or never). In the Lithium space though there has been the paradox of continued (indeed escalating) talk of the EV boom which feeds the "hope" of managements and holders of the Lithium wannabes that there is a turn imminent. In reality we need the same type of Darwinian culling in Lithium that we saw in Rare Earths. Three quarters of the current players should abandon the field, but will they?

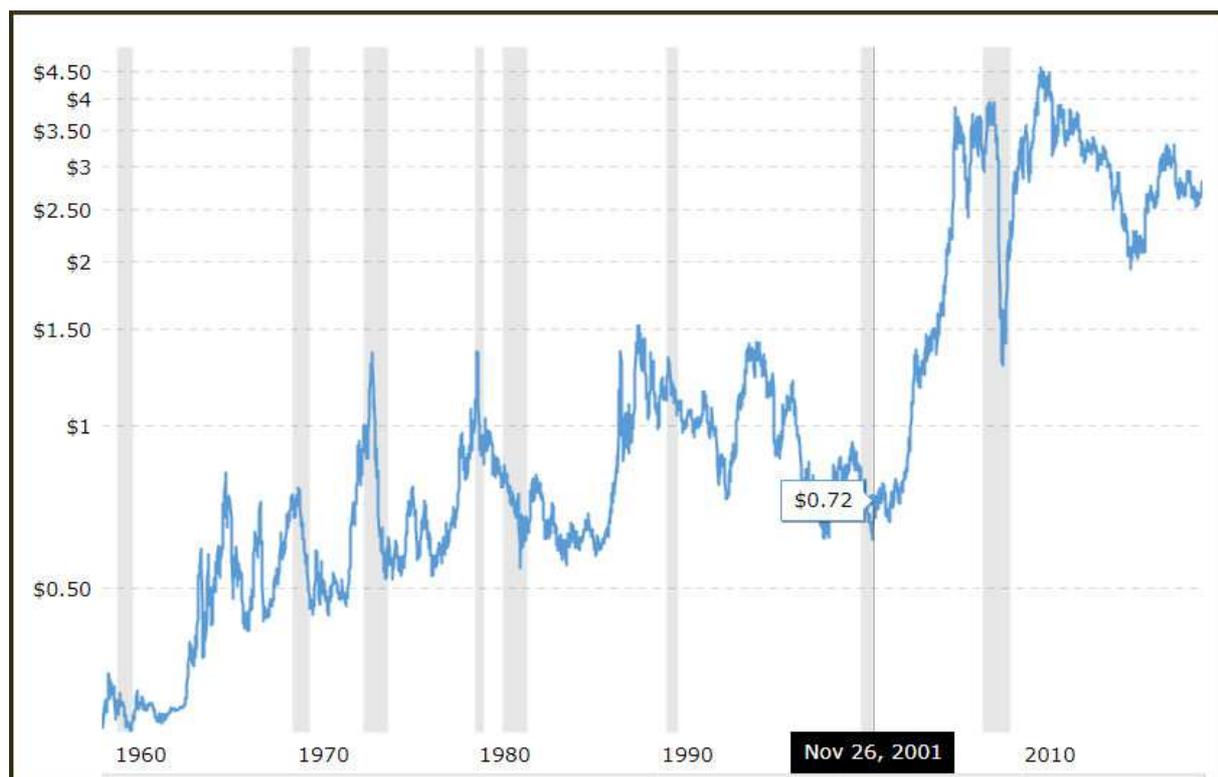
Almost all other categories involved in mining suffered to one degree or another. The Uranium sub-sector had reserved for it a special category of endless torture reminiscent of the trials of Job.

After the early decade peaking of gold and silver they too entered a wilderness phase from which they

have only recently emerged. As the upmove has not been accompanied by inflationary fears or heightened international tensions, the two traditional props of the precious metals space are patently lacking.

So are we destined for more of the same or a sea-change in sentiments towards the space? The answer depends upon one's view of China. The Chinese demand for metals was *bigged up* during the Supercycle phase and indeed became so much of a mantra that it has become hard to shake. China is not the be-all and end-all of metals demand, at least not in our humble opinion. The sooner that thinking on China starts to get a grip on the reality that China is past its prime and may even be in a recession the sooner that some type of normality will return to the metals markets. That base metals prices have held up in such a scenario is due to Western demand and the effect of decades of under-investment in many metals.

But what is normality? Gold prices were suppressed for nearly half a century by US controls on the metal's ownership and price. Base metals did well from 1945 till the early 1970s when the oil crises hit and ended the post-war boom. As recently as November 2001, Copper was trading at 72 cents per lb.



The base metals did not get another day in the sun until thirty years later when the Supercycle brought them back into focus. Many specialty metals were ravaged by Chinese predatory pricing from the 1980s onwards, with Antimony, Tungsten and Rare Earths being good examples of how this stratagem was implemented to try and move all production and processing to the Mothership and assume dominance.

All this malaise in stock (and metals) prices has meant that the pipeline of projects in anything but gold is rather thin. Even many silver projects are spinning their wheels and the PGM surge of recent times has had little effect upon wannabes, some of which are unmoved (principally because they are in the hands of parties not dedicated to production). Why should a stock that does not intend to produce (or is unattractive to majors to buy) move with the metals price? There is no intersection of reality and intention in these plays.

The base metals stocks are hampered by demanding capex and construction lead times. Nickel laterites are the poster-boys for this dilemma after the debacles of \$5bn plus capex projects (Goro shall go without mentioning what it eventually cost). But copper-gold projects are also nightmarish with Pascua Lama being a case in point. Big copper projects sit on the drawing boards around about waiting for an acquirer with deep pockets to pick them up. The gruesome five-year chart of Hudbay shows what happens to copper developers who go all-in on developing copper mines.



So the pipeline is dry or nearly dry (except for gold). But we have heard this cry before and its proponents (including ourselves) have been labelled as the boy who cried “Wolf”. But the wolf is still on the prowl and will eventually turn up on the doorstep. The Trade War has derailed more than a few projects (particularly in the base metals space) so the hungry beast is going to be all the more ravenous when the penny drops that projects that might actually produce anything in a short timeframe

The market has been living on the fat of projects started pre-2008. The plunging stockpiles at the LME over the last year might be a move to just-in-time or a more serious sign of metals users living vicariously. The many-to-many relationship between users and producers (at least in base metals) means users have no-one to complain to if they feel a shortage coming down the pike and see the

producers sitting on their hands waiting for higher prices to stimulate a supply reaction. The supply-side has gone beyond the point at which an immediate production increase of size is possible even with a 20% higher price in commodities like Zinc, Tin or Nickel.

There is no fat left. There are few mothballed mines and low prices have prompted high-grading in recent years that mean that incremental production would be less profitable even at higher prices in many mines. There are even fewer mines permitted and in development. Overlaid on this are government's desires (e.g. Indonesia and Philippines) to impose industrial development plans that cast aside the old "dig-it and ship-it" mentality of many Western miners. This boosts the capex, lengthens the lead times and (a silver lining!) reduces China's role as an intermediate processor.

There are the foundations for a much healthier mining scene in the coming decade than there were at the start of the last. The passing of the Chinese "myth" of dominance both of the buying market (and of the production of certain specialty metals) has to be a good thing.

Here's hoping we can look back in 2030 and raise a toast to a decade behind us that had the exuberance (but not the stupidity) of 2000-2009 and be able to term it mining's Roaring 20s.

Projections Backwards and Forwards

Looking at our metal price estimates for 2019 is both dismaying and heartening. The dismaying part is how the most useful and practical metals all massively underperformed (with the exception of nickel) while the frankly "useless" precious metals managed to outperform our projections for the year.

Our best outcome was hitting copper on the head. The rest of the base metals were not so fortuitous. Only nickel managed an overshoot. The specialty metals were pretty dire. Battery metals excelling to the downside (though Lithium, which we do not offer estimates on, had already tanked in 2018). Vanadium was late to the battery metal party and ended up winning the prize of worst performer in our estimates (and in absolute terms) in 2019.

We are content that our bullishness on silver came to fruition and it was nearly the nearest projection in the precious metals group to the actual outcome (though Platinum was only 4% off).

We are least concerned about our biggest miss to the upside which was Palladium. This metal appears to be in the grip of speculators and as has been proven countless times... it will end in tears. The surprising thing about the PGM space is how little effect the positive movement has had for explorers/developers which would seem to suggest, subliminally, that the market mavens don't actually believe in the durability of the move. Accordingly we have added the Palladium ETF as a Short position in recent days.

Our projections going forward remain almost entirely to the upside with a few exceptions. Lead's rally to over a dollar per lb was regarded as a last gasp by us powered most probably by EV take-up having

failed to hit expectations in either China or the West. Destiny is working against lead though and ultimately the EV “revolution” will drive a stake through its heart. Zinc bounced off the \$1 per lb mark showing it now has a floor whereas for many years it was a ceiling that held it back. A higher move to above \$1.20 would not require much impetus.

Hallgarten & Company - Commodity Estimates						
	Unit	End 2019 Est.	End 2019 Actual	Undershoot/ Overshoot	End 2020	End 2021
Lead	lb	\$1.02	\$0.87	-14.7%	\$1.00	\$0.95
	tonne	\$2,248	\$1,917	-14.7%	\$2,204	\$2,094
Zinc	lb	\$1.50	\$1.04	-30.7%	\$1.35	\$1.45
	tonne	\$3,306	\$2,292	-30.7%	\$2,975	\$3,196
Copper	lb	\$2.80	\$2.80	0.0%	\$3.20	\$3.65
	tonne	\$6,171	\$6,171	0.0%	\$7,053	\$8,045
Gold	oz	\$1,230	\$1,520	23.6%	\$1,580	\$1,650
Silver	oz	\$16.80	\$17.85	6.3%	\$21.00	\$23.00
Platinum	oz	\$910	\$976	7.3%	\$920	\$950
Palladium	oz	\$1,150	\$1,901	65.3%	\$1,150	\$1,150
Uranium (spot)	lb	\$40.00	\$25.15	-37.1%	\$35.00	\$45.00
Antimony	tonne	\$8,800	\$6,050	-31.3%	\$7,300	\$8,100
Tungsten APT	MTU	\$330	\$240	-27.3%	\$280	\$330
Tin	tonne	\$21,500	\$17,200	-20.0%	\$19,000	\$19,800
Cobalt	lb	\$36.00	\$14.63	-59.4%	\$20.00	\$22.00
Vanadium	lb	\$25.00	\$6.00	-76.0%	\$13.00	\$15.00
Nickel	lb	\$5.80	\$6.30	8.6%	\$6.50	\$6.30
	tonne	\$12,783	\$13,885	8.6%	\$14,326	\$13,885
Moly	lb	\$11.80	\$9.21	-21.9%	\$10.50	\$11.30

The New Year has started well for Gold with the events in the Middle East prompting a rise of \$20 in one day. This was like kicking an anthill with the \$1,800 (or more) goldbugs coming out of their lairs. They failed to notice that the threat of World War Three had only moved “My Precious” by slightly over 1%. Hope springs eternal.

The specialty metals had a poor 2019 with the Chinese either standing on their necks or, in more charitable versions, rescuing them from a post-FANYA hangover. That FANYA was a massive own goal and epic scam is something we endless enjoy repeating. The year ended with talk of the Chinese launching a Rare Earth exchange. Oh lordy... those who do not know history are destined to repeat it.

In any case the turn may be in for the “minor” metals with Tungsten, often a bellwether turning upward after its China-engineered swoon (got to give them credit for persistence) and other metals like Cobalt and Antimony (and even Dysprosium turning upwards).

Uranium is something on which we dare not opine too loudly having been proven wrong so many times. Que sera, sera is the most we can say there.

All in all though, it looks good for everyone except Palladium holders in 2020.

Reformatting the Model Portfolio

Long-time observers of the Model Mining Portfolio are few and far between. As it was begun back in the first half of 2009, when our client base was substantially different and this firm was New York-based, the survivors of that group have seen the cumulative profitable transaction that were cultivated and then liquidated when their target prices were reached. Being long term believers in the mining sector we probably held many of our Longs well past their use-by date and only axed those that had fallen afoul of some of our principals (or management had gone awry) rather dumping stocks that had fallen in price for no reason pertaining to their own actions.

Cumulatively over a rather dire decade this left us with a large number of stocks that were down significantly and readers did not know the collective history and logic behind the position. Neometals, being a case in point, with multiple profit takings and further acquisitions. The in-price never took account of the significant dividends it paid out over the years. *Mea culpa*.

Tiring of having to answer queries on this and, dare we say it, to improve the optics (spoken like a true Vancouver promoter) we resolved to change the portfolio to a list of Long and Short positions with target prices. We purged a few stocks that were in limbo (e.g. Noble and Cabo) or had fallen from favour (IBC Advanced Alloys).

Having abandoned any pretense at having a 120/20 weighting we have doubled our number of Shorts by the addition of one with an egregious price and another with uninspiring management and an egregious price.

Henceforth we shall not be talking about portfolio “performance” over the previous month but instead looking at the moves in the stocks over the preceding month and twelve months.

Portfolio Changes

There two additions during the month.

- Added Texas Minerals (TMRC) to our Short positions with a 12 month target price of US 30 cents

- Added The Aberdeen Standard Palladium Trust (PALL) to our Short positions with a 12-month target price of US\$1.15

The Carpetbaggers Ride into Town

We have to confess to loving the mineralogy at the Round Top deposit, a rhyolite dome in Texas. It has something for everyone, Uranium, Lithium, Rare Earths and Beryllium. Unfortunately over the years none of these virtues have moved the project forward as some elements conflict with others, while some metals come into favour and then go out of favour, asynchronously, and rarely fire on all cylinders at once. Then there was the subject of the traditional management... less said the better.... As for the “new” management their history precedes them, being well-known in Australian markets, for all manner of things over a long period of time. Go DYODD, as they say in the classics.

What this particular crew of Australians do know how to do is elevate (to put it politely) a stock.... It is all “*le tout-Williamsburg*” can talk about...



Such are the attractions of claiming paternity on a US-based Rare Earth oxide product that even the hitherto respectable Arafura has jumped on the bandwagon by claiming it will send concentrate from Nolan’s Bore to this plant.

Hats off to TMRC and its fellow travelers if the Colorado “processing plant” actually becomes a reality but we encountered one cynic who said it was a “Bunsen burner in a kitchen” that then stimulated images of Bryan Cranston’s character at work. On a less flippant note the promoters seem to have overlooked the fact that ore from both Nolan’s Bore and Round Top is radioactive and the Ruritanian sounding Wheat Ridge, Colorado is actually a suburb close to downtown Denver. Just wait till the Green factions in Colorado get to learn of this development.



Source: Google Maps

Over and beyond the “processing” operation TMRC’s valuation surge wants to be seen to be underpinned by the August 2019 PEA on the Round Top deposit. This has a \$1.56bn NPV but with a capex of “only” USD\$350mn which brings the project in below the capex of the stillborn Nechalacho project of Avalon, but still massively higher than most of the Rare Earth survivors.

However if this ever were to come to fruition TMRC would have only 20% of the Round Top, thus its “share” of the NPV is closer to \$300mn. With the market cap recently touching \$80mn then the ratio of market cap to expected economic benefits share is very high, particularly with the prospects of this moving forward being about as dim as the rest of the semi-moribund Rare Earth developers.

For us the unfortunate thing about all this is that the serious players in the Rare Earth space are going to be caught in the backwash when this particular bubble bursts.

TMRC at the moment reminds us of one of those Viet Cong traps where they would dig a pit, place

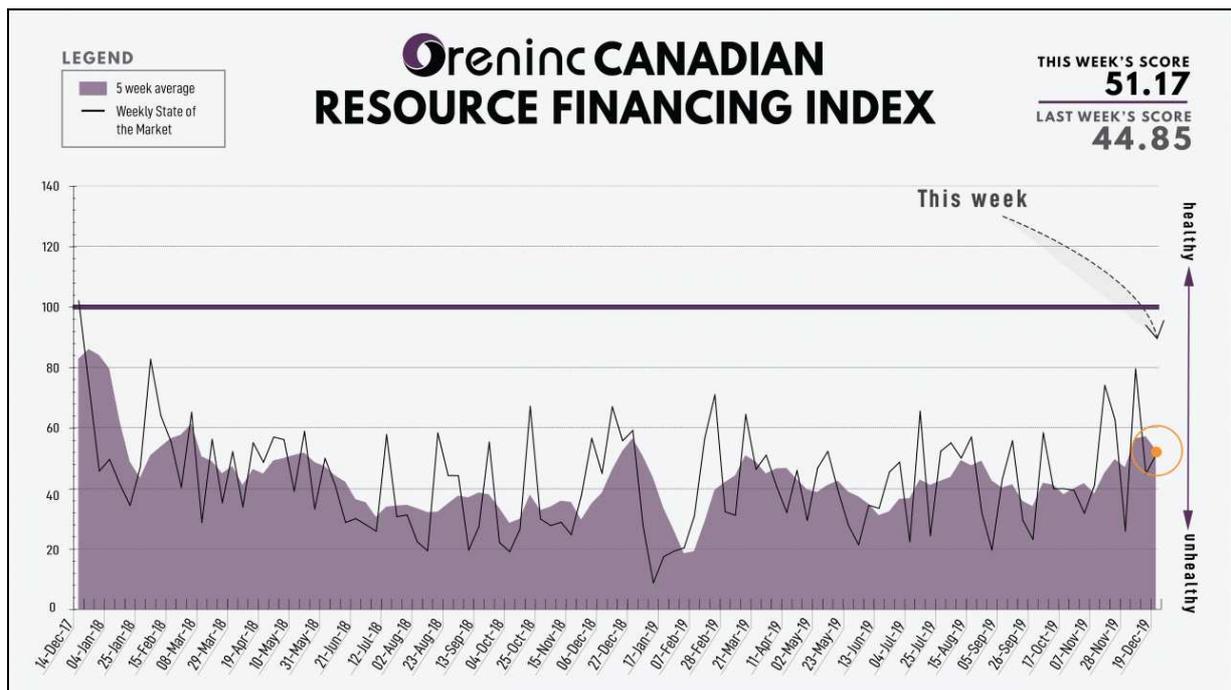
upward pointing stakes and then cover it with bamboo and grass for the unwitting to fall into. However in this case, investors who go wandering in this part of the jungle (or Denver suburbia) deserve all that they get. They (you?) have been warned.

We have added a **Short** position in this stock to the Model Mining Portfolio with a target price of 30 cents.

Parting Shot

Mining promoters would say that the level of financings being achieved is the problem these days. However the application of funds (and the past poor application of funds) is more of an issue for us. The current lacklustre situation is significantly the product of investors beating themselves up over poor allocation of capital to this space from 2008-12 when investors actually believed that managements were serious about moving projects forward.

We sometimes look at the Oreninc Index to get the pulse of the Canadian junior financing scene. The latest reading is below and the chart cover back two years.



At a glance it does not look all that great. Certainly the December result was much better than the low of February 2019. For Oreninc the year ended on a relatively firm note as their Index increased in the week ending December 27th, 2019 to 57.69 from 54.06 a week before despite being a much-truncated week for the seasonal holidays.

The methodology intrigues us though as they also said that total funds raised announced more than

halved to \$24.3 million, a 17-week low, which included no brokered financings and no bought-deal financings. The average offer size more than halved to \$0.71 million, a 29-week low, while the number of financings decreased to 34. A strong finish should be made of sterner stuff.

Market mavens can blame weed and crypto as much as they like but mining finance travails are more than metals prices and, in our view, have much more to do with protracted poor returns (from share prices), lack of profitability and the absence of dividends.

The Rare Earth boom is still a touchstone for gross irresponsibility by almost all concerned (including investors). It plays the role in Canada that the failed Nickel Boom of the late 1960s did in damaging views of the market and its participants in Australia (and London) for over a decade afterwards. Canadian investors view Bre-X as being their seminal moment but, by singling out just one company, the Canadian psyche was able to ignore a whole swathe of egregious behaviour that had gone on in the Vancouver Stock Exchange for decades in a way that would make anyone in Perth blush. Moreover the attitudes that made Bre-X happen were prevalent (and still are) across the Canadian markets. NI43-101 fixed the paperwork, not the mindset, of those intent on misdeeds.

Australians don't come out of all this as saints either but we would note that, by well-feathering (frankly egregiously) their salary nests, the average Perth promoter is not so dependent upon rips & rorts with options and warrants as their Vancouver brethren.

It is hard to think of another sector (though maybe used car dealers) that still harbours so many shifty characters. They may make up only 5% or less of the total but the damage they do has had a lasting effect and little is done to chase them out of the Temple. Investors persist in following them with the sentiment that they will get out before the game is found out, regulators regard some of these people as worthies and industry veterans (ergo untouchables) and banks persist in funding them as they are a regular source of income (i.e. by constantly returning to the well). Maybe we are unrealistically pining for the days when in the London market, at least, certain people were regarded as "beyond the pale" and "repeat offenders" and found a frosty welcome at most firms. Ah, nostalgia.

With our more bullish sentiment for metals in the coming decade, our main source of concern remains the management/promotorial class that dominate the mining space. They have done investors few favours and done themselves many favours. The state of things cannot be blamed on metals prices, weed or the "dog ate my homework" any longer. Miners, heal thyselfes!

MODEL MINING PORTFOLIO						
	Security	Currency	Price	Change		12-mth Target
				last 12 mths	last mth	
Long Equities						
Diversified Large/Mid-Cap	Teck Resources (TECK.B)	CAD	22.52	-23%	8%	\$30.00
	Metals X (MLX.ax)	AUD	0.08	-81%	-33%	\$0.35
Uranium	Uranium Participation Corp (U.to)	CAD	4.08	-9%	-4%	\$4.90
	GoviEx (GXU.v)	CAD	0.16	7%	14%	\$0.22
Zinc/Lead Plays	Zinc ETF (Zinc.L)	USD	7.34	0%	1%	\$8.10
	NorZinc (NZC.to)	CAD	0.09	13%	6%	\$0.22
	Myanmar Metals (MYL.ax)	AUD	0.05	-17%	25%	\$0.13
	Ascendant Resources (ASND.v)	CAD	0.32	-68%	60%	\$0.65
	Telson Mining (TSN.V)	CAD	0.12	-69%	0%	\$0.25
Silver Producer	Excellon Resources (EXN.to)	CAD	1.03	49%	23%	\$1.35
Silver Explorer	Southern Silver Exploration (SSV.v)	CAD	0.41	105%	78%	\$0.65
Silver ETF	IShares Silver ETF (SLV)	USD	16.68	15%	5%	\$18.50
Gold Producer	Para Resources (PBR.v)	CAD	0.12	-14%	-8%	\$0.58
Coking Coal	Colonial Coal (CAD.v)	CAD	0.32	-36%	-24%	\$1.10
Project Generator	Altus Strategies (ALTS.v)	CAD	0.12	200%	50%	\$0.24
Copper Explorers	Western Copper & Gold (WRN.to)	CAD	1.07	73%	11%	\$1.65
	Panoro Minerals (PML.v)	CAD	0.08	-67%	-20%	\$0.32
Tungsten Producer	Almonty Industries (All.v)	CAD	0.42	-35%	-28%	\$1.00
Vanadium Developer	Vanadium Resources (VR8.ax)	AUD	0.03	-63%	0%	\$0.12
Lithium	Neometals (NMT.ax)	AUD	0.20	-17%	0%	\$0.28
	Lithium Power Intl (LPI.ax)	AUD	0.27	4%	8%	\$0.56
Scandium Developer	Scandium International (SCY.to)	CAD	0.10	-52%	11%	\$0.18
Sc/PGM/Zinc	Platina Resources (PGM.ax)	AUD	0.02	-67%	0%	\$0.10
Gold Explorer	Banyan Gold (BYN.v)	CAD	0.08	60%	60%	\$0.15
	Cabral Gold (CBR.v)	CAD	0.12	-37%	9%	\$0.35
	Gunpoint Exploration (GUN.v)	CAD	0.52	27%	-5%	\$0.75
Fertilizers	Verde Agritech (NPK.to)	CAD	0.41	-42%	-11%	\$1.36
Cesium et al.	Pioneer Resources (PIO.ax)	AUD	0.01	-50%	0%	\$0.06
Rare Earths	Northern Minerals (NTU.ax)	AUD	0.06	0%	0%	\$0.16
	Neo Performance Materials (NEO.to)	CAD	12.35	-20%	3%	\$18.00
Mining Media/Events	Aspermont (ASP.ax)	AUD	0.01	0%	0%	\$0.02
Short Equities						
Shorts	NioCorp (NIO.to)	CAD	0.82	55%	0%	\$0.40
	Texas Mineral Resources (TMRC)	USD	1.23	310%	78%	\$0.30
	Abdn Standard Palladium Trust (PALL)	USD	179.82	52%	4%	\$115.00
	Galane Gold (GG.v)	CAD	0.12	140%	17%	\$0.03

Important disclosures

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