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HALLGARTEN & COMPANY

Coverage Update

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Largo Resources

(TSX: LGO, OTCBB: LGORF, FSE:LR81)

Strategy: Neutral

Key Metrics

Price (CAD)	$	2.40
12-Month Target Price (CAD)	$	2.60
Upside to Target		8.3%
12mth hi-low CAD		$1.08 -$4.65
Market Cap (CAD mn)	$	1,255.0
Shares Outstanding (mns)		522.9
Fully diluted (mns)		648.0

	FY17	FY18e	FY19e	FY20e
Consensus EPS		n/a	n/a	n/a
Hallgarten EPS		$0.54	$0.56	$0.63
Actual EPS	($0.02)			
P/E	n/a	4.4	4.3	3.8
Dividend	0.00	0.00	0.00	0.00
Yield	0.0%	0.0%	0.0%	0.0%

Largo Resources

Riding the Vanadium Dragon

+ Surging Vanadium price electrified the prospects of producers and wannabes in the sub-space during 2018
+ Higher Vanadium prices have enhanced the profitability of Largo's operations with plans being implemented to increase production in the immediate future
+ Upsurge in interest is VRB batteries puts Vanadium in contention as a Battery Metal
+ Brazil has represented a good jurisdiction for miners
+ We remain bullish on the Vanadium demand and price outlook going forward and see the price above $20 per lb again in 2019

× Vanadium's surge provoked the almost inevitable retreat which has seen prices plummet during the last month of 2018
× Earnings at Largo are unhedged as they are entirely pre-sold to Glencore
× The market cap of Largo would appear too high to tempt a potential acquirer
× Exploration expenditure is minimal, bordering on the non-existent, which bodes ill for reserve replacement

Peak Largo?

The last 18 months have brought a reawakening in the Vanadium space. For investors hunting for exposure there was little on offer. Two producers, and a small group of wannabes. Despite the massive surge in price in the interim there have been no additions to the ranks of producers and very few to the ranks of wannabes.

While others in the Vanadium space talked about what they would do, Largo Resources was ahead of the curve in getting into production in 2014 at its 100%-owned Maracas mine. However the first few years were traumatic with massive losses during an extended period of artificially depressed Vanadium prices. The situation improved dramatically in 2017 and then faded, but then roared back to life in 2018, with a vengeance.

The rising tide in the Vanadium price took the company to a market cap of over $2bn which begs a number of valuation questions which we shall endeavour to address in this note. Another issue that must be addressed is whether Vanadium will rebound and what is its long-term future.

Vanadium Awakens

The recent upsurge in Vanadium prices sent investors (and the more alert of the *promoterati*) scrambling to find primary Vanadium mines or projects into which they could sink their teeth. The selection on offer was poor indeed. Back in the more balmy days of the turn of the decade the potential names to conjure with were only five or six companies, with only two being advanced. The ranks thinned further with ASX-listed producer Atlantic Ltd going bust and some of the assets of others moving on to new owners.

The recent revival has thrown focus back onto the space and Largo Resources stands out (with Bushveld Minerals) as the most prominent producers that are accessible. A few new names have been added to the mix of explorers/developers.

Perversely the red-hot phase of the Vanadium price also coincided with the white-hot phase of the cannabis boom, thus spare shells were rallied to the cause of weed, with the heads of the promoters spinning like the infamous scene out The Exorcist. With quasi-failed Lithium promoters still living in hope of a price rally in their space there was literally “no spare capacity” in Vancouver to reap the Vanadium whirlwind. In a market without CBD there would have been twenty to thirty new Vanadium names in the veritable blink of an eye. Fortunately that did not happen. Vanadium pulled back, promoters congratulated themselves on having dodge a bullet and they took another puff on their vice of choice.

Thus the Vanadium universe would appear to be less than twenty listed names currently, meaning that it gathered even less critical mass than graphite did in its brief heyday of 2012/3. How many of the current crop can be regarded as serious will only be shown by the passage of time.

The Word Was Given

Last decade Vanadium surfaced as a subject of interest primarily tied to the fortunes of the then-booming steel industry. It is now over six years since we did our Vanadium Review, covering the then most likely Canadian- and ASX-based players in the future of Vanadium production. Now Vanadium is coming back with a vengeance for its potential in mass electricity storage devices, namely the Vanadium Redox Battery (or VRB). At a Natural Resources Forum event at the London Stock Exchange in 2017 which we attended, the guest speaker was Robert Friedland in nothing short of a Vanadium-induced ecstasy. Never could we have imagined the metal having such a euphoric effect.

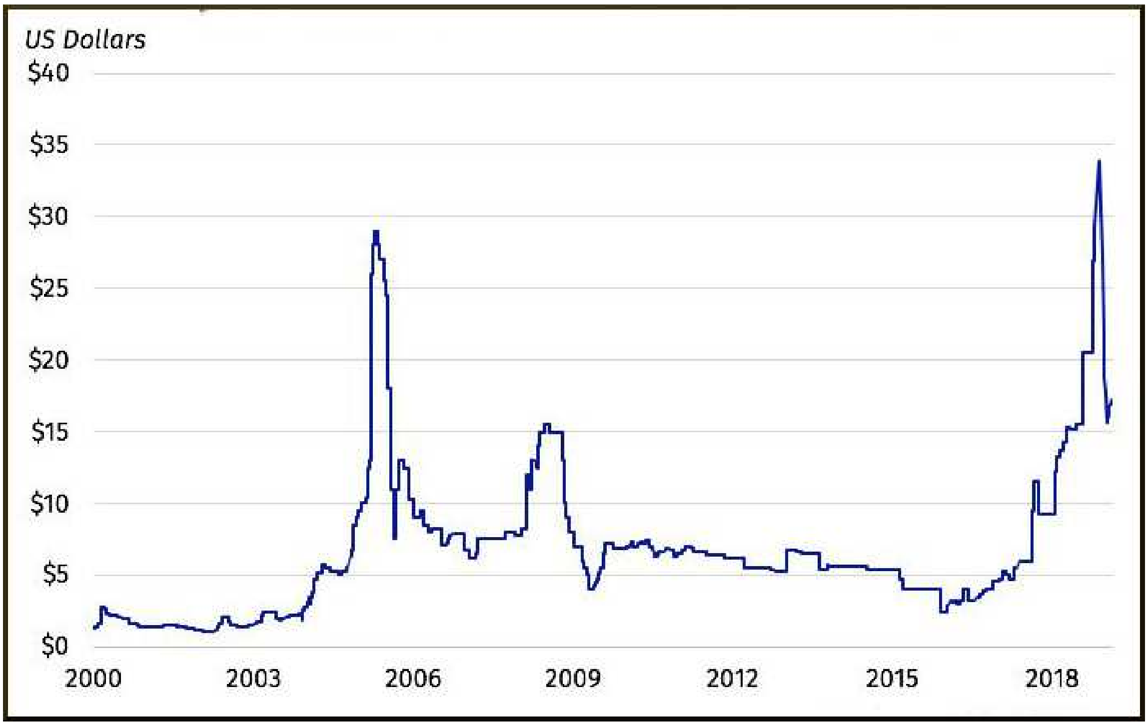
In any case it gave the Friedland imprimatur to a metal which most metals watchers have rarely paid any attention to due to it (largely) being a by-product of the mining of other metals and, curiously, of the petroleum refining industry.

It was not just Friedland though that has latched onto this bandwagon as we heard Vanadium name-checked at a number of events in late 2017 as the next best thing. As things played out it certainly was the case for those with any Vanadium production. The *cognoscenti* were “onto” Vanadium before it happened but when it happened, as we noted before, it was largely only the *cognoscenti* who noticed.

Vanadium Dynamics

Over the last two decades the price of Vanadium has been typified by long dull periods of low prices and then a few spikes. The first spike occurred in the white hot phase (around 2005) of the Commodity Supercycle when metals were "discovered" by the market and then discarded. Then the metal started to glean attraction again before the 2008 financial meltdown knocked it back into obscurity.

We have covered the metal and some of the players in it since early this decade. The chart below shows the price of V_2O_5 since the year 2000.



Source: Vanadiumprice.com

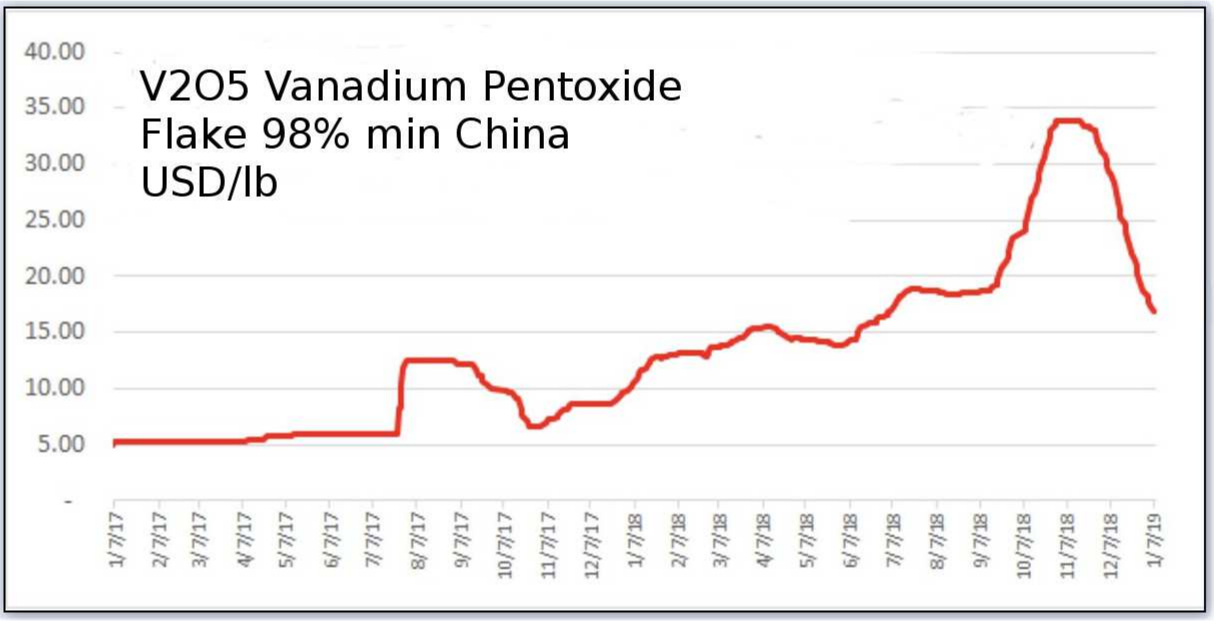
After a long period of somnolence the Vanadium price quite literally took off in the second half of 2017.

The prime motor was a mooted change in Chinese specifications for Vanadium use in steel alloys for construction use. This had been a prospect dangled over the market five years ago after a series of devastating Chinese earthquakes, but had then retreated.

However, the background music was the far more sexy mass adoption of Vanadium Redox Battery technologies for storage of electricity (particularly from solar and wind generation). This was not an immediate or real impetus for Vanadium Pentoxide demand despite all the chatter.

In 2017 the jungle drums started to indicate that the Chinese were likely to up the required percentage of Vanadium in steel alloy rebar and this swung the focus back onto the metal. With a large (and relatively fixed percentage of supply coming (as a by-product) from the petroleum refining industry and long-term underinvestment in new mines, there was little scope for the market to meet this reawakened demand. The talk of battery metal applications was icing on the cake.

As the chart on the following page shows the price during 2018 went into the stratosphere, before a fall from favour in the last months of the year.



In a case of easy come/easy go the price then tumbled back to earth though still comfortably 100% above its long-term average during this decade. We had warned at the time of the surge that any Chinese decision was revocable if prices went too high and that may have been the impetus for the decline. At current levels though there is no need for the Chinese to shift from their original decision to adopt a higher Vanadium component in construction steels.

More conspiratorial minds suggested that the price tumble was due to Glencore not liking the price rise. In theory as a trader Glencore makes money on the spread and in theory the same percentage spread on a higher price means more income. However it could also be the case that Glencore (which admitted, during its 2015 travails, that it could not hedge Vanadium) did not have guaranteed supplies for sales contracts written at lower prices and was thus caught short.

Additionally the rise of new producers or changing trading arrangements at existing producers might have threatened Glencore's dominance of the Vanadium trading space. Glencore's own production of Vanadium had been negatively impacted in the first half of 2017 when it announced that it had produced 10% less Vanadium owing to lower kiln availability and maintenance on their evaporation plant. So Glencore wins if prices are up or down but it potentially loses out long term if dominance of the trading space escapes it.

Largo - The Mine and its Complex

The major asset of Largo is its Maracas mine. The property totals 28,587 hectares and is located in the

State of Bahia in Brazil. The project is roughly 250 km southwest of Salvador (capital of Bahia) and 813 km northeast of Brasilia (capital of Brazil).

The project has good access by road from Salvador via 405km of paved secondary road from the main costal highway in Bahia, with a direct project access road about 50 km west of the town of Maracas (population of approximately 25,000).

The Maracas mine employs an open-pit mining process. The process is that ore from the mine is crushed, milled, and sent through a magnetic separator to create a concentrate. The resulting concentrate is exceptionally high at 3.4% V_2O_5. This concentrate is then processed into Vanadium Pentoxide.

The company likes to stress that it is utilizing industry proven equipment and processes to produce vanadium – there are no new technologies or processes being utilized at the Maracas plant. This is possibly to deflect comparison with the troubled Windimurra mine of Atlantic Ltd in Western Australia.

Performance

In all the road to production has not been a long one as Largo began initial construction activities at the site in June of 2012 and all systems at the project were in the commissioning stage by Q1 of 2014.

Things are clearly hitting their stride at the operations in Brazil, which were initially bedeviled by low prices, massive losses and technical issues in the first years of production.

The production results for the fourth quarter, and full year, 2018 included a new quarterly production record of 2,595 tonnes of V_2O_5 and record full year production of 9,830 tonnes of V_2O_5 from the Maracás Menchen Mine. This represented an increase of 6% over FY17 and is the strongest full year of production from the mine since operations commenced in 2014. The quarterly production record in Q4 2018 was up 2% from the previous quarter and representing the fourth consecutive quarter of production growth during 2018.

Global V_2O_5 recovery rates averaged 77% in 2018 representing an increase of 2% over the year prior. Recoveries of 75.3% in Q4 2018 averaged somewhat lower when compared to 77.1% in Q3 2018 due to issues with kiln stability. Following the kiln refractory replacement in Q1 2019, management expects recoveries to stabilize throughout the year as it continues its focus on established maintenance programs at the mine.

When we wrote in 2015 on this project average annual production at Maracas was expected to be 11,400 tonnes of V_2O_5 equivalent over a lengthy 29 year mine life. Even the latest guidance for 2019, discussed later, does not have production level reached during this year.

Resource – Burning the Candle at Both Ends?

Largo claims the deposit has the highest grade Vanadium resource in the world and that is positioned to be the lowest cost producer in the Vanadium market.

Geologically speaking the entire strike length of the Maracas deposit is rich in Vanadium, hosting many deposits of Vanadium-rich titaniferous magnetite mineralization, particularly at Gulcari A and other smaller deposits such as Gulcari B, Nova Amparo and Sao Jose.

The NI 43-101 resource estimate outlined in the PEA of March 2013 was:

Mineral Reserve:	13.1 million tonnes @ 1.34% V_2O_5 (P&P)
Mineral Resource:	24.6 million tonnes @ 1.11% V_2O_5 (M&I)
	30.4 million tonnes @ 0.83% V_2O_5 (Inferred)

The latest published mineral reserve is shown on the following page. This implies the reserve has gone up despite the mining in the interim though the grade has declined slightly, to a level that is still an excellent grade by any standards.

Campbell Pit Mineral Reserves – Effective May 2, 2017			
Category	Tonnes (kt)	V2O5 Head Grade (%)	V2O5 % in Con.
Proven	17,570	1.14	3.21
Probable	1,440	1.26	3.20
Total in pit reserve	19,010	1.15	3.21

The company sustains that there remains good potential for the expansion of resources and production rates at the complex but the minuscule expenditure on exploration, largely as a consequence of poor metal prices, has meant little resource expansion over the first few years of production.

To put this in perspective the company had spent less than $1mn in exploration in the first nine months of FY18, in what was a prolific year in terms of cashflow.

However, with higher prices the pace has picked up. In December 2018 the company announced that it had completed the second phase of drilling at the Novo Amparo Norte (NAN) deposit. NAN lies approximately 6.5 km north of the Campbell Pit and is the most northern zone of mineralisation identified at the Maracás Project.

Some highlights Included:

- 1.18% V_2O_5 over 18.76 metres (true thickness of 13.10 metres*) in hole FNAN-26
- 1.12% V_2O_5 over 19.53 metres (true thickness of 14.46 metres*) in hole FNAN-31

These findings extend the NAN mineralisation to approximately 1,840 metres (remaining open) which represents an increase of approximately 130%. In a sign of the hiatus between original work and current work the previous drilling at NAN was undertaken in 2011-2012 and outlined a consistent zone of mineralisation over 790 metres with an average width of 18 metres and an average grade of 0.87% V_2O_5.

An extensive 25,000 metre exploration program is planned for 2019 on several targets near the Campbell Pit, including additional drilling at Novo Amparo Norte, showing a renewed commitment to extending the mine-life or higher production rates.

Recent Results & Outlook

The FY18 thus far (with only three quarters of results and four quarters of production announced) has been a bumper year. The table on the following page shows the operations and results of the company in the last few years and projections out to 2020.

Largo Resources

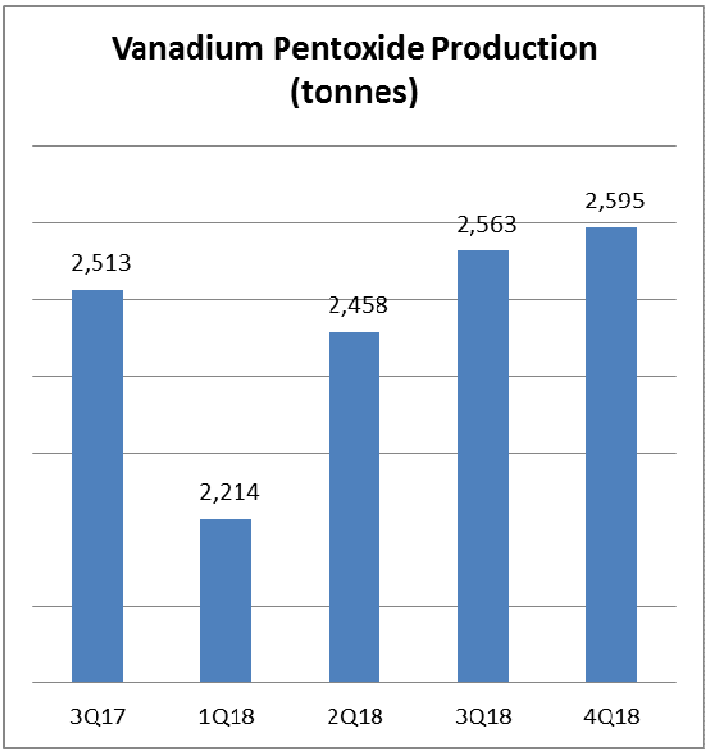
In Millions of CAD

	FY20e	FY19e	FY18e	4Q18e	3Q18	2Q18	1Q18	FY17	FY16	FY15	FY14	FY13
Revenue	640.00	580.00	503.87	160.00	149.46	103.32	91.09	167.72	81.23	7.60	0.00	-
Cost of Revenue, Total	162.00	149.00	137.11	39.00	36.71	30.22	31.18	120.40	113.17	29.38	0.00	-
Gross Profit	478.00	431.00	366.76	121.00	112.75	73.10	59.91	47.32	-31.94	-21.78	0.00	-
Selling/General/Admin. Expenses	22.00	23.00	19.99	5.20	4.81	5.28	4.70	13.55	13.28	12.31	12.56	5.13
Exploration	4.00	3.50	1.10	0.50	0.55	0.04	0.01	0.01	0.10	0.71	0.22	-
Interest Expense (Income)	14.00	18.00	48.10	17.00	14.75	8.42	7.93	39.40	-	-	-	-
Unusual Expense (Income)			0.00						0.00	6.75	14.76	0
Other Operating Expenses	7.20	6.00	9.22	1.50	0.91	9.06	-2.25	3.39	3.08	0.85	10.02	2.06
Total Operating Expense	209.20	199.50	215.51	63.20	57.73	53.02	41.57	176.76	129.63	50	37.56	7.19
Operating Income	430.80	380.50	288.36	96.80	91.73	50.31	49.52	-9.04	-48.4	-42.4	-37.56	-7.19
Gain (Loss) on Sale of Assets	-	-	-					-	-	-	-	-
Other, Net	-	-	-					-	-	-	-	-
Income Before Tax	430.80	380.50	288.36	96.80	91.73	50.31	49.52	-9.04	-55.63	-129.96	-52.62	-11.58
Tax	99.08	87.52	6.57	23.00	20.32	-40.43	3.68	1.38	0.00	0.00	0.00	0.00
Income After Tax	331.72	292.99	281.79	73.80	71.41	90.74	45.84	-10.41	-55.63	-129.96	-52.62	-11.58
Ordinary Shares on Issue	530.00	526.00	520.81	523.50	522.91	518.77	518.08	468.01	387.03	167.11	100.93	89.61
Diluted Shares on Issue	656.0	652.0	636.41	648.03	648.03	633.74	615.84					
Basic EPS	0.63	0.56	0.54	0.11	0.11	0.17	0.09	-0.02	-0.14	-0.74	-0.38	-0.13
Volumes sold (tonnes)	11,000	10,500	9,830	2,595	2,563	2,458	2,214	9,297	7,966			

The rapid escalation of revenues over the years is evident. It is poignant that our estimate for sales revenues for 4Q18 is almost as high as for the whole of FY17. How things have switched around in Largo's fate. Meanwhile the company produced a loss on the FY17 revenues and in Q4 of FY2018 should produce over $70mn in bottom line revenues.

It is worth noting that the real, almost vertical, uplift in the Vanadium price took place from the start of October, thus the "crazy period" is all within that quarter. This implies that Q4 earnings for Largo are going to be good, but not that earnings in an average quarter of 2019 will be lower than say 3Q18 because prices are currently only back to where they were during the bumper quarters of 3Q and 2Q of FY18.

We are premising our model on Vanadium prices around $16 per lb going forward into 2019 and 2020. However we will not be surprised if the price again heads to the upside. As long as the price stays around current levels then we would foresee the company making slightly higher profits in 2019 (due to removing the spike quarter of 4Q18) and then around 10% higher in FY20 largely due to enhanced volumes.



It's interesting to note from the September accounts that accounts receivable had blown out from nearly $8mn at the same moment in 2017 to nearly $55mn a year later. This might imply that Largo is funding Glencore's trading book.. Just a thought..

Expansion Plans

In a recent announcement Largo revealed its plans to replace the kiln refractory in 1Q19 which will result in approximately 17 days of down time affecting production rates and cash operating costs for the first quarter. As a result of the kiln refractory maintenance, the company now anticipates lower production during the month of March and higher cash operating costs in 1Q19.

Production and Cost Guidance 2019

Largo also recently provided annual average cash operating cost guidance for 2019, excluding royalties, as it believes this guidance more fully represents the total costs associated with producing vanadium.

- Annual V_2O_5 Production Guidance: 10,000 – 11,000 tonnes, which is inclusive of high-purity vanadium flake and high-purity vanadium powder production
- Average Annual Cash Operating Cost Guidance per lb excluding royalties: US$3.45 – $3.65
- Sustaining Capital Expenditure: US$10 – $14 million
- Expansion Capital Expenditure: US$10 – $14 million

Current cash operating costs include royalties which vary based on the price of V2O5 and in Largo's view does not completely reflect the operational performance undertaken at the mine. In 2019, the annual average cash operating cost excluding royalties are estimated by management to be US$3.45 – 3.65/lb V_2O_5.

Glencore in the Mix

A key advantage (and restraint) that Largo has is it symbiotic relationship with Glencore. It is worth elaborating upon this because it not only shows that Largo has an outlet in good or bad market conditions but that it also (in theory) has a natural acquirer. Glencore would suffer a body blow to its status as the "axe" in the Vanadium space were Largo to fall into, say, Chinese hands.

The back history to this arrangement is that in 2008, Largo agreed to sell 100% of its Vanadium production to Glencore under an off take agreement which expires in May 2020. Under the terms of the sales agreement, Vanadium prices are provisionally set at the time revenue is recognized based upon market commodity prices. Revenue is recognized at the time of shipment. Revenue is measured using market prices on the date of transfer of risks and rewards of ownership, with an adjustment recorded once the date that final selling prices will be determined has been set by Glencore. Variations occur between the price recorded on the date of revenue recognition and the actual final price under the terms of the contracts due to changes in market prices.

For Largo's accounting purposes, such variations are recognized in revenue in the period in which the final price is determined.

Financing

In late December 2018, the company announced that it had agreed to repurchase and retire US$47.8mn in aggregate principal amount plus premium and accrued and unpaid interest in consideration for the payment of US$51.2mn in cash. Following this repurchase for cancellation the remaining aggregate principal amount outstanding on the company's 9.25% senior secured notes due 2021 will be $45mn, representing a significant decrease of approximately 51% to the current outstanding notes. The company is working with Jefferies LLC which will arrange for and facilitate the repurchase of the notes effective 28 January 2019, at 105.625%.

Following this repurchase and retirement of debt, Largo will have significantly reduced its total outstanding notes by approximately 70% since May 22, 2018. In addition, the company has been in a net cash position since earlier in the quarter, which further supports its ability to pay off all its debts in the near term.

Then in early February the company announced it had filed a final base shelf prospectus with the securities regulatory authorities in the various Canadian provinces. This would allow Largo and certain of its security holders to qualify the distribution by way of prospectus of up to $750mn of common shares, debt securities, subscription receipts, warrants and units or any combination thereof, during the 25-month period. There is no requirement though (in light of strong cashflow) that all, or indeed any, of this prospectus might be put to use in future financings.

The Curious Ownership Picture

Largo has an ownership structure that appears to be unique in the TSX mining space. The strong ownership position (over 40%) in the company held by a New York private equity fund, Arias Resource Capital (ARC) is a two-edged sword. The support of ARC saved Largo on several occasions from financial doom. But the result of the repeated financings is the over-domination of the register by one shareholder.

The negative is that to all intents and purposes the company is controlled and does what ARC wants it to. Beyond this there is the issue of a potential takeover. Essentially this could be achieved merely by mutual agreement between ARC and an acquirer. Surely the argument would go that ARC, of all investors, would want to maximize the value of its stake? However there is another fly in the ointment in that the ARC private equity funds, as is common, are time delimited and have a wind-up date. Our understanding is that the wind-up date for some of the funds is in the relatively near future, as some of the funds were established back in first decade of this century. This means that there is a greater motivation for ARC to find a buyer for all or part of its stake(s) than might be apparent from a distant observation.

Glencore might be such a buyer and financing such a purchase would not be beyond its reach. Then again the Chinese might be the buyers, which would effectively alienate Glencore from its largest supplier of Vanadium and weaken its position as the dominant force in the trading scene for the metal. Thus to a certain degree there is a gun against Glencore's head on the ownership issue at Largo.

Risks

Amongst these, for Largos, are:

- Vanadium price risk
- Potential takeover offers are complicated by the company's dominant shareholder
- The company is dependent upon Glencore for 100% of its sales
- Brazil's new political arrangements are not very clear as yet

The issue of prices is more important than anything else. Prices have retreated from their recent highs but have created a higher base. The picture looks good for greater demand from VRBs, just not yet. The prospect of greater production looks dim as the markets did not respond to the price surge with a creation of new (serious) competitors or wannabes.

The Glencore relationship is a two-edged sword. Largo is under the umbrella of the world's largest Vanadium trader. But correspondingly Glencore would lose a lot of its heft in the market if Largo no longer had an exclusive marketing deal with the trader. Both parties need each other. Beyond this though (and related back to the price issue) Glencore has learnt some lessons from its 2015 near-death experience and has shown itself nimble in cutting back supplies of metals when oversupply looms as we have seen in the "now you see it, now you don't" Cobalt production at Katanga. While Largo's production is not subject to the diktats of Zug, we can rest assured that the two parties confer on production expansion issues. We would not be surprised for instance if the mooted production expansion runs into a phase of foot-dragging from Largo in the interests of maintaining (with Glencore) an orderly market.

The government of Jair Bolsonaro has only assumed power in recent weeks and is still an unknown quantity. It claims to be pro-business but that may mean pro-Brazilian business. Nationalism was part and parcel of past military governments in Brazil and across the continent.

Conclusion

Largo achieved quite a feat in moving to production a project in a specialty metal during a protracted and brutal financing environment. Its project came online at a time when V prices were stable and Western demand for industrial minerals had recovered somewhat from the slump which began in 2008. However, while prices were higher than they had been for decades they were still so low that Largo struggled with survival.

In light of the scant pipeline of new producers the potential for new applications demanding more product and even more basic factors like the Chinese adding more Vanadium to their steel formulas the prospect the company was propitiously positioned and its reward came with the price recovery in 2017 taking the metal about $10 per lb (and putting Largo in the black) and then the further surge in late 2018 put the company in the super-profits category. As the only pure-play Vanadium production story in the North American markets, Largo has carved itself out a fairly unique position, and investors seeking production rather than just promises thereof gravitated towards the name.

Some might think it is unfair to mention it, but the company's leadership was involved in the development and ultimate fate of Molycorp, which is not forgotten by those investors with a long memory in the specialty metals space. With all other things being equal: a strong V price environment, excellent results, falling debt etc. it is difficult to ascribe another reason, but this legacy reputation of management, for the stock not being as highly rated as it should be. On top of this the lack of a dividend, or noises relating to potentially issuing one, is not music to the ears of serious portfolio investors.

For us the next question at Largo is “what’s next”? Currently it is a one-mine, one-product company with a very large market cap. There is no harm in that. However, if it does not intend to be anything else/more and expansion is self-funding then the obvious path would be to become a machine churning out dividends. The side benefit of that is it would be becoming “institutional-grade” and thus provide an exit strategy for ARC with a flow of stock from the PE Fund to income and generalist funds that value dividend streams.

In light of the uncertainties over ownership and management, we can only afford Largo a **Neutral** rating despite the propitious outlook for the Vanadium market. Therefore we are positing a twelve-month target price of CAD$2.60 until further guidance on direction is offered by the controlling shareholder.


CA:LGO Weekly
1/27/19
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Volume
©BigCharts.com
30
20
10
0
Millions
15
16
17
18
19

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