

The Most Important Line Item in Zenyatta's Graphite PEA



Zenyatta Ventures Ltd. (TSXV: ZEN | OTCQX: ZENYF) today released the results of its Preliminary Economic Assessment (“PEA”) on its Albany graphite project, near Hearst, Ontario, offering the markets one tantalizing observation.

A PEA is a standard document in the evolution of a mining property, useful to help the owner of the property obtain further equity and debt funding. The document is exactly what its name suggests it is: an economic assessment based on preliminary information. A well-written PEA gives the reader a look-and-feel for what the mine’s economics could be, knowing in advance that many of the key assumptions and conclusions in the PEA will change over time as more facts are known.

This PEA from Zenyatta indicates the Albany Project could be a low-cost source of high purity graphite, using an innovative “green” purification process, and calls for a 22 year mine life (based on less than 50% of the Indicated & Inferred Mineral Resources); total life of mine gross revenue of roughly \$4.8 Billion; an after-tax cash average annual cash flow of \$110 Million; and, a base case after-tax Net Present Value at a 10% discount rate of \$438 Million yielding an after-tax Internal Rate of Return of 24%.

From a mining economic perspective, the PEA is positive. It encourages management to take the usual next steps in the development process. (Disclosure: GTA Resources and Mining Inc., for whom I’m an insider, has a 82 km long property just

to the south of the Albany Project.)

To get these numbers, Zenyatta had to make informed assumptions about the future price per tonne for purified graphite. The price they worked around to \$7,500 per tonne. Projected operating costs at the site of \$2,046 per tonne would create a gross margin of \$5,454 per tonne.

As the troubles in the Ring of Fire have shown, just having a high grade deposit in the ground is meaningless. It has to be economic. And that's why, to me, of all the numbers in Zenyatta's PEA it's this margin calculation that matters the most, and that makes the revenue input the most important line item in the PEA.

Zenyatta provided guidance for its thoughts on the 2017 graphite market:

Market Segment	2017 Market Demand Estimate (kt)	Price Range	Average Price
		(US\$/tonne)	(US\$/tonne)
Batteries	160	4,000 -> 20,000	12,000
Powder Metallurgy	20	3,000 -> 12,000	7,000
Fuel Cells	15	5,000 -> 10,000	8,000
Conductive Polymers	6	3,000 -> 5,000	4,000
Carbon Brushes	90	3,000 -> 5,000	4,000
Nuclear	30	10,000 -> 35,000	23,000

Lubricants	80	3,000 -> 5,000	4,000
Super-Capacitors	2	5,000 -> 10,000	8,000
Graphite Artifacts	15	3,000 -> 10,000	7,000
Electronics	8	30,000 -> 40,000	35,000
Total	426		

Some of these market segments have the potential for huge swings. Look at the Batteries line: the price is expected to run between \$4,000 and \$20,000 a tonne! How the pricing actually turns out will have a massive impact on the economics of the mine.

Part of the reason for these pricing variables is that graphite is not an element found on the periodic table – it's a stable form of carbon. If you buy, say, copper on the commodity exchange, you know exactly what you're getting – a tonne of copper from Chile is exactly the same as a tonne of copper from Duck Pond, Newfoundland. Not so with graphite – although it is traded globally, it is not a commodity, it does not have a standard clearing house, and one tonne of graphite may not have the same characteristics as a tonne from another deposit.

Graphite is described by its carbon content (as a percentage) and by mesh size (the physical dimensions of the grains). A higher carbon content or a higher mesh size will drive up the value of that graphite. If both carbon content and mesh size are higher than average then the seller can expect to yield a higher price per tonne.

That's why Zenyatta continually talks about the high purity of its deposit. The higher carbon content should dictate a higher price per tonne for its product, which drives a higher revenue

number, which drives a larger gross margin. The project then becomes less risky when compared to other graphite projects.

Although this economic assessment is still preliminary, it does offer a good window into what the Albany Project could be. Keep an eye on the revenue line.

The PEA must be filed at SEDAR within 45 days (as per *National Instrument 43-101*). The press release can be found here at the company's website.

Musk's battery drives May market ZEN



InvestorIntelReport: Last week the market news was batteries. Graphite news was good, perhaps thanks to Elon Musk and his Powerwall batteries. His announcement April 30th that his company Solar City wants to put solar powered batteries into homes

could be as big as when electricity first went into houses. Luc Duchesne called it the democratization of energy in his article this week. Since graphite is needed for those batteries, it might be why InvestorIntel's member Zenyatta Ventures Ltd., was up the most in dollar amounts. They also had good news about the refining of their graphite last week. They were third in percentage, up 19.89% (\$ZEN.V), and 21.41% (\$ZENYF).

The April results reported last week were the best in years,

but the first week of May was largely as to be expected, since there was nothing like the new Chinese tax to light fires under rare earth stocks. But that there wasn't any major corrections after such major gains is as good as could be hoped since numbers like April aren't likely again soon. Yet Technology Metals company GeoMegA \$GMA.V, did very well in that sector, up the most for InvestorIntel members the week at 30.56%. The superstar from last month, Canadian rare earth company Deveron Resources Ltd. \$DVR.V, who were up 177%, continued to climb, up 3.7%. However the average for the week was essentially even, down .7%.

GeoMegA announced April 29th that they completed the validation of the key unit operations of the Montviel rare earth and niobium project process flow sheet, supervised by G Mining Services Inc. As well, the announcement stated that results of the metallurgical performances are to be released in May 2015 followed by the updated NI 43-101 resource estimate. As a result the stock price went from \$.12 on the 28th to \$.23 at the end of the week on May 8th.

The real success story of the week though, was Zenyatta who announced on May 6th, that their graphite has been refined to over 99.9% pure. The testing and verification was done independently by SGS Engineering. The graphite came from Zenyatta's Albany hydrothermal graphite deposit. This deposit in Northern Ontario is being called a freak of nature, as it is potentially the purest and largest deposit of graphite (the source of graphene), in the world. Currently only Sri Lanka produces lump and chippy dust graphite, the most valuable forms, but Zenyatta might be able to challenge that before long. By the look of the markets, investors seem to think their news is moving them in the right direction. That direction will be greatly aided by home electric batteries which will need graphite and Technology Metals to democratize energy production.

Other strong numbers came from bio-tech company Miraculins

Inc. (\$MOM.V), who announced good news about their pre-diabetes screening kiosk on April 28th. They did well on the last few days of April, and they continued to do well the first week of May, during which I suggested that the stock of a company tickered \$MOM.V might make a good gift for Mothers Day. You would be lucky if you took my advice because the stock was up 9.52% in the first week of May.

Another Tech-Metals Company that did well was gold, zirconium, and rare earth element miner Alkane Resources Ltd., (\$ALK | \$ANLKY), who were up 9.43% on the ASX, and even on the OTCQX. They announced their quarterly report on April 24th, and have been up and down since, but they were up decently for the first week of May.

The remarkable rises in stock values in April were the result of the major shakeup that China caused with the tax replacing quotas. That those numbers weren't followed by major corrections the week after the tax took effect May 1st is as good as could be expected. No one had seen numbers like April in many years, so the fact that they are stable is good news indeed. Several Technology Metals companies did well, and graphite news was excellent. All in all, even was good for the beginning of May.

So do you want to see the InvestorIntel leaders and their numbers? And do you want to know what the Top 15 most read articles were on InvestorIntel last week? To access, click here to log-into InvestorIntelReport or wait for Asher to email this directly to you shortly; and/or click here to join the InvestorIntelReport.

Zenyatta's rise to the top



When it comes to ultra-high-purity graphite plays, few can touch **Zenyatta Ventures Ltd.** (TSXV: ZEN | OTCQX: ZENYF). Recently, I had the pleasure to have an in-depth conversation with the understated and unassuming **Aubrey Eveleigh**,

Zenyatta's President and CEO. From his offices in Thunder Bay, Ontario, Eveleigh spoke at length about Zenyatta – from the origins of the company, to where it's at now, to the upcoming major milestones for the company.

When Eveleigh founded Zenyatta in late 2010, he thought he was creating a new nickel and copper exploration company. But when he went searching for these metals in an area northeast of Thunder Bay, he found something else. "There was no copper or nickel", explains Eveleigh. "What we found was hundreds of metres of a unique and incredibly rare form of graphite." Eveleigh and Cliffs Natural Resources (his partner in the project) had never seen this material in their life. They weren't sure if they were sitting on something valuable or if they had just wasted their time. After testing a sample, Eveleigh got his answer. He had – completely by accident – stumbled upon on what could potentially be the most historic graphite find in over 100 years. "Zenyatta's deposit really is a once-in-a-lifetime thing".

Right now the company is using its venture-raised capital to drill holes in the Albany Project to determine its size. Drilling will be completed by the end of the month; however, Eveleigh has stated that there have been, "no unpleasant surprises; just the opposite, in fact." The results for Zenyatta's NI 43-101 Resource Estimate will be calculated in September and released in October. Then the company will

complete its Preliminary Economic Assessment (PEA), which will be released near the end of the fourth quarter this year. The company is well funded and Eveleigh expects that Zenyatta will have between \$4 and \$5 million in the bank this time next year.

The quality and purity of Zenyatta's deposit has been established, now Eveleigh and company are trying to determine the size of the deposit. That said, the deposit consists of two separate breccia pipes of mineralized graphite (Albany's East and West Pipes). Eveleigh comments: "We have drilled on both of the pipes and they will be factored into the calculation when the Resource is announced."

What separates Zenyatta from all of the other advanced-stage graphite projects in the world is that Zenyatta has a very rare hydrothermal volcanic type of graphite. A hydrothermal breccia pipe to be exact. All the other graphite is sedimentary or flake type graphite. What's the difference? Zenyatta has very few impurities in their deposit. That is why it is easily upgraded to 99.9% purity, using a cheap and fairly easy process of caustic bake (which is sodium hydroxide), without using acid and thermal treatment. That is why Zenyatta stands out; the unique graphite is so incredibly pure naturally, it only requires minimal processing to achieve the highest levels of purity.

Zenyatta has been the top performer on the TSX in both 2012 and 2013. Once people heard about the this one-of-a-kind find, they wanted in. The stock price climbed a staggering +455% in 2012 and has already seen +456% increase from its January 2, 2103 share price to yesterday's market close (.87 cents to \$3.98), off from its all-time high for the year of \$5.00 per share (a +575% increase).

Graphite is used to make lithium-ion batteries; it's also used in electronics, steel production, nuclear reactors and more. Conventional synthetic graphite is man-made – it's created by

cooking petroleum coke, a byproduct of refining oil. "It's costly to make from scratch," says Eveleigh, and that's why he thinks his company has an edge. It cost nearly \$6,000 a ton to make synthetic graphite. Zenyatta's costs won't be anywhere near that – nor will it harm the environment. While Zenyatta still has a long way to go before revenue starts, the company's overwhelming stock-price performance proves, according to Eveleigh, "that there's still money in the market, but you have to do something special." And that's just what Zenyatta is doing.

Note: Hydrothermal graphite is much more valuable than the typical variety found elsewhere. Normally, graphite comes in a lower purity, approximately 70% to 90%. The hydrothermal type of graphite is of a higher purity, greater than 95% and upwards of 99.9%

Ty Facts:

- largest hydrothermal graphite deposit being developed in the world
 - metallurgical testing yielded ultra-high-grade purity carbon (99.99% purity)
 - the company is targeting the \$13 billion synthetic graphite market
 - the company is named after the third album released by *The Police* in 1980, *Zenyatta Mondatta* (Eveleigh has the album framed on his office wall)
 - When it comes to graphite pricing, it's all about purity (Flake: \$500-\$2,000 per tonne vs. Synthetic: \$8,500-\$20,000 per tonne)
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InvestorIntel Graphite & Graphene Week-in-Review: Focus Graphite gains on 'Big' news

InvestorIntel Graphite & Graphene Week-in-Review (August 12-16, 2013): Not to sound like a carbon copy of last week's Week-in-Review, but when evaluating the past week's numbers, it basically was a repeat showing of the previous week. The InvestorIntel Graphite & Graphene members' performance was more or less flat, with a marginal overall decline of **-1.43%** for the week ending August 16, 2013.

There was one big mover, however, which moved on some even bigger, albeit related, news – **Focus Graphite Inc.** (TSXV: FMS | OTCQX: FCSMF). Focus was up significantly, **+16.28%** and **+15.60%** on the heels of a release that a company they have a sizable stake in, **Grafoid Inc.**, had recently applied for a joint patent for their game-changing graphene, **MesoGraph™** (the patent-pending product is joint between Grafoid and **Hydro-Québec**). Interestingly enough, Hydro-Québec's research institute IREQ (Institut de recherche en électricité du Québec) is a global leader in the development of advanced materials for lithium-iron-phosphate technology (LFP) batteries. In fact, Hydro-Québec holds the most patents for developing lithium iron phosphate charging systems. This is also great news for Focus because, aside from their 21% ownership stake in Grafoid, the company will be supplying all the graphite for Grafoid's MesoGraph.

Last Wednesday, I had a long and, quite frankly, fascinating conversation this with **Dr. Gordon Chiu**, Vice President and co-founder of Grafoid (he's also Focus Graphite's Chief Scientist). The potential of graphene is seemingly infinite

and, within a few short years, may change each and every one of our lives for the better. The reason why MesoGraph, specifically, is a “game changer” (*admittedly, I hate that term as much as you probably do; however, this is the most apt use of “game changer” I’ve ever heard of*) is because establishing a global standard for economically scalable graphene has long been recognized as central to establishing the nano-carbon as a marketable technology. Dr. Chiu stated: *“We believed that by accomplishing two things – by investing in a process of producing graphene cost-effectively and by setting a global standard – the door to industrial scale adaptation would open to us. MesoGraf has achieved this... and it is the game changer.”* It wasn’t much of a surprise to see the Focus Graphite share price be so positively affected.

Flinders Resources Ltd. (TSXV: FDR) announced an update on the Preliminary Economic Assessment (PEA) on its **Woxna Graphite Project** in Sweden on August 12th. Although the stock was flat for the week, in July they were up a phenomenal **+79.22%**.

This week, we will have some transfixing pieces on a couple of graphite companies, including an interview/update with **Aubrey Eveleigh**, President and CEO of **Zenyatta Ventures Ltd.** (TSXV: ZEN | OTCQX: ZENYF). And in case you missed it, I did a special update on *Mason Graphite titled Mason Graphite’s Lac Guéret Graphite Project: Developing a high-grade flake graphite deposit in Québec* ([click here](#)).

InvestorIntel: Graphite & Graphene	Ticker Symbol	Currency	Share price market close August 9, 2013*	Share price market close August 16, 2013*	% Change in share price August 9-16, 2013
Berkwood Resources Ltd.	TSXV: BKR	CAD	\$0.0300	\$0.0250	-16.67%
Flinders Resources Ltd.	TSXV: FDR	CAD	\$0.5500	\$0.5500	0.00%
Focus Graphite Inc.	TSXV: FMS	CAD	\$0.4300	\$0.5000	16.28%
Focus Graphite Inc.	OTCQX: FCSMF	USD	\$0.4230	\$0.4890	15.60%
Lomiko Metals Inc	TSXV: LMR	CAD	\$0.0650	\$0.0650	0.00%
Lomiko Metals Inc	OTCQX: LMRMF	USD	\$0.0656	\$0.0483	-26.37%
Zenyatta Ventures Ltd.	TSXV: ZEN	CAD	\$3.9000	\$3.9000	0.00%
Zenyatta Ventures Ltd.	OTCQX: ZENYF	USD	\$3.7940	\$3.7830	-0.29%
(*) Stock price were compiled from the following sources: TMX.com, OTCQX.com, BigCharts.com, Google Finance & YahooFinance.com. ProEdge Media Corp. assumes no liability for misprints.				Average % change	-1.43%

Despite current Market complexities, Graphite remains a key commodity for the Future

✘ **Graphite and Graphene Month-in-Review:** The ProEdgeWire graphite sponsors index lost an average 11.85% during the month of April 2013. The losses went across the board, affecting both those companies in pre-development and those in pre-production or runner-up stage. Even Zenyatta Ventures (TSXV: ZEN), which owns what has been called the 'miracle deposit' or 'freak of nature' at 99.96% graphitic carbon purity was not spared as its share price dropped 5.71%. Focus Graphite (TSXV: FMS | OTCQX: FCSMF), while rebounding toward the end of the month, lost 7.81% in Toronto trading and 5.97% on the OTCQX. Even Mason Graphite (TSXV: LLG), which published a very encouraging preliminary economic assessment (PEA) for its Lac Gueret graphite project in Quebec, lost 4.48%. Indeed,

it is by considering Mason Graphite that the graphite investment climate becomes clearer.

Mason Graphite is one of the more practical graphite propositions. Not only does its high purity level and prolific resource hold promise for the high technology graphite applications of the future, it also has its 'feet on the ground' by targeting the more pedestrian graphite market demand in refractories for the steel industry.

Evidently, **graphite stocks have been victimized by the current market**, which is rather complex. The complexity stems from a lack of optimism for an economic turnaround in the West, especially vulnerable to slow growth in Europe. At the same time, there has been rather bullish sentiment in the major stock market indices have been reaching for record highs and most fund managers and institutions have been putting their money in the majors and away from resources – not to mention the mid-April gold price collapse, which affected the commodity market in general.

The other factor is the general investment public's unawareness of graphite's potential. Indeed, if current price valuations are a factor of the continuing worldwide economic recession – or slowdown, the drop is not a reflection of the actual value of graphite. In China, which has the fastest growing automobile market, electric cars are more popular than they are in the West, which suggests battery demand will surge – and that's just one application. Until recently, and not unlike the situation for rare earths, China was seen as maintaining an unchallenged monopoly over graphite. Indeed, China supplies half of the graphite needs of Europe, Japan or North America (combined). Overall, China is said to account for 70% of world graphite production, but, this could change very soon as export restrictions and greater downstream processing comes on line in China.

China itself will be cutting its own supply of graphite as new

legislation comes into play, restricting the opening of new mines and closing many, failing to meet the new and tougher standards. Most of China's graphite comes from Hunan province and few mines will be left operational, as new production standards are adopted. Graphite suppliers in China will likely undergo a consolidation and rationalization echoing the new provisions for rare earth miners. The graphite supply problem is that there are few active mines for this resource outside China and a few dozen are said to be needed in order to address demand.

The conditions that pushed graphite prices higher in 2011 and early 2012 remain as valid as ever; all the more so, given that China is now targeting consolidation and 'cleanup' of graphite miners, just as it has done in the rare earths sector, potentially reducing supply of flake graphite. As noted by Gary Economo in a recent article published on ProEdgeWire, graphene, which is a 100% graphite derivative, is the main leading the pace toward "a new industrial revolution is fueled by economic necessity, national security and the desire to lever graphene's myriad advantages." On a more 'contemporary' level, the average mobile phone or laptop Li-ion battery already contains ten times more graphite than it does lithium and as new applications continue to be developed, demand for graphite can only increase by several factors before the end of the decade.

There are some mines closer to reaching production stage than others, some of these featuring outstanding grades and varieties such as Zenyatta, Mason Graphite or Focus Graphite – the latter is also developing expertise in the scalable production of graphene through its subsidiary Grafoid Inc. It makes sense to revisit and begin graphite mining projects in North America, as the same market conditions that drove its production to China some 25-20 years ago, are no longer valid. The demand for graphite over the rest of the decade might be best described as being acute, and the alarm of higher prices

will be sounding soon enough, especially in view of the time needed to bring the new mining prospects to production. Surely, petroleum derived graphite will continue to fill the more basic and common applications from sports equipment to alloy additives or carbon fibre, however, naturally occurring flake graphite is the type needed for the development of new technologies and applications.



Zenyatta Ventures Soars on “freak of nature” Graphite Deposit



April 30, 2013 – Aubrey Eveleigh, President, CEO & Director, Zenyatta Ventures Ltd. (TSXV: ZEN) in an interview with Tracy Weslosky, Publisher of ProEdgeWire (ProEdgeWire.com)

refers to the purity of their graphite as “...the catalyst that really got the stock moving.”

The Albany graphite deposit previously described as vein-like is now being referred to as a “breccia” since it is up to three hundred metres thick in some cases making it a very unique and impressive deposit.

Zenyatta Ventures Ltd., a junior exploration company based in Thunder Bay, Ontario, recently discovered the Albany Graphite

Deposit in Northeastern Ontario.

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