

# Don Bubar on the Zenyatta graphene advantage

“That is the unique property. Usually graphite forms through metamorphism and forms very large crystals or flakes. This formed very fine crystals. These fine crystals are now proving to be very advantageous for making the very high-end monolayer type of graphene product.” States Don Bubar, CEO and Director of Zenyatta Ventures Ltd. (TSXV: ZEN), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** Don I noticed this morning that our story, They Are Back, about Zenyatta is trending number three for most read on our site. You just recently became the co-CEO after joining the board of directors. Can you tell me what the catalyst was for you joining this team?

**Don Bubar:** I have been involved with Zenyatta peripherally right from the start when the Albany graphite deposit was first discovered. I recognized then that this was something very special. Indeed that is what has proven to be the case now. I knew Aubrey Eveleigh, the former CEO well and helped him understand what the possibilities with this graphite deposit and acted as an advisor, but also was an investor and a shareholder and still am in the company because of my belief that this unique resource will prove to have great value for the shareholders in the long-term.

**Tracy Weslosky:** We have interviewed professionals over the years. Your background is a geo. Can you tell us, our audience, who might not be familiar with Zenyatta Ventures about the uniqueness of Zenyatta’s graphite?

**Don Bubar:** It is a very special deposit. Every geologists that has looked for massive sulfide deposits has drilled graphite and been disappointed because of course it is a conductive

mineral and you are looking for metallic minerals with the copper and zinc. This was an example of an exploration program of serendipity where they were looking for copper-nickel massive sulfide deposits by drilling airborne EM conductors and hit graphite. Normally that is like, oh darn, missed it on this one. This one was recognized by Aubrey early on, well, that is not your typical graphite. This is very funny looking graphite. We should find out more about it. For your viewers, this is the material that comes out of the Albany Graphite Deposit. You can see it has got this very unusual brushed texture and the graphite is the matrix to these fragments of the original wall rock. It was formed by an explosive volcanic event where this fluid that was enriched in CO2 basically crystallized very quickly and essentially flash-frozen. That is the unique property. Usually graphite forms through metamorphism and forms very large crystals or flakes. This formed very fine crystals. These fine crystals are now proving to be very advantageous for making the very high-end monolayer type of graphene product.

**Tracy Weslosky:** I was just talking to an investor this morning and he was wearing a t-shirt that said, you had me at graphene. For those of you out there who are looking at your cannabis winnings and looking for new sectors to invest your money, you may want to take a look at graphene. If you can just kind of give us a broad stroke on the competitive advantages of Zenyatta's graphene please.

**Don Bubar:** Graphene is not that easy make. It is a nano material where you try to make a particle, a layer that is one atom thick. That involves a process called exfoliation of peeling off the other layers so you can get down to ideally that one layer thick particle, nano particle...to access the complete interview, [click here](#)

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# Zenyatta's Albany graphite deposit – purified to over 99.9%

✘ Zenyatta Ventures Ltd. (TSXV: ZEN | OTCQX: ZENYF), has one of the purest deposits of graphite, one of the most unique resources on Earth. Their Albany hydrothermal graphite deposit is unlike the majority of graphite which is made synthetically from petroleum. There are very few natural sources of graphite, from which graphene is sourced. Yesterday the Thunder Bay based company announced that independent testing by SGS Engineering of their deposit confirmed that their graphite is over 99.9% pure.

The Albany deposit, located near Hearst ON, was only discovered in 2012, by accident, while Zenyatta was looking for copper-nickel. Though not producing yet, experts are excited about this deposit because graphite use has been limited by the low availability and the high price of manufacturing it.

Aubrey Eveleigh, President & CEO at Zenyatta, says in the release that, “SGS has developed a relatively benign purification process from an environmentally benign deposit to produce highly crystalline graphite exceeding 99.9% purity. Feedback from the market, including potential strategic partners in the CleanTech sector, suggests that environmental considerations are critical when sourcing raw materials for today's high tech applications like energy storage.” Though graphite is used in electric car batteries, it is made from petroleum by-products. The energy intensive production of synthetic graphite is ironic considering that electric

cars are thought to be environmentally friendly.

The uses of graphite are sure to increase in part due to the rising integration of fuel cell technology in motor vehicles, telecom towers and material-handling equipment, which has created [significant growth prospects](#) for the fuel cell market.

The world commercial fuel cell spending is expected to reach [\\$11 billion by 2017](#) and then almost double through 2022 with portable fuel cells experiencing the fastest growth and motor vehicles following as a close second. In early 2014, Hyundai began leasing fuel cell vehicles to commercial customers, and a number of additional vehicle models are expected to become available from other major automakers by 2017.

Graphene is expected to address one of the major hurdles in fuel cell technology, which is the efficient separation of the electron of the hydrogen atom. Traditionally, platinum used to be the only catalyst utilized in fuel cells and for a time, mass market usage of fuel cells for commercial applications had been hindered by its high cost and the limited deposits of platinum.

The uses for graphene have been even more limited, as it was only discovered in 2003. However, increased availability of this resource could revolutionize materials as graphene is harder than diamond, yet since it is only an atom thick, it is flexible, and clear.

The largest graphite mines operating currently are in Sri Lanka. There are two, Kahatagaha Kolongaha, and Ragedara. Sri Lanka is the only country that produces lump and chippy dust graphite, the most valuable forms, which have sold for \$1,990 per MT. This is significantly higher than prices for flake or amorphous graphite, the kinds made synthetically. The deposits in Sri Lanka are comparable geologically to Zenyatta's discovery. However, in Sri Lanka it is a narrow vein deposit unlike Zenyatta's hydrothermal breccia pipe graphite deposit.

Because of a vein width of only 5cm, the Sri Lankan mine can only take out 5,000 tonnes annually. Given the previous drill intersections of 100-200m, it's possible that the Zenyatta project could produce up to 20 times the Sri Lankan operation's output, or more. Zenyatta's deposit is close to rails, highways, and the modern amenities found in Canada, while being in the mining friendly Arc of Fire region of Northern Ontario, north of Lake Superior.

The news released yesterday that Zenyatta's deposit of graphite is of such high purity could help stimulate these uses of this hard to find, and hard to synthesize material. Graphite's applications have been limited by the availability, but Zenyatta's Albany deposit could change that.

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## **InvestorIntelReport: Precious Metals Surge ... with a Uranium Chaser**

✘ Those who had expected the Greek election results to make bigger waves were disappointed when that tsunami's wave failed to travel very far and faded away as an impetus for global markets after a few days. It doesn't mean it's gone as an influence but like Ebola seems to be a contagion that is now geographically constrained. The week ended with the new government pretty much saying it didn't care what the Germans wanted *vis a vis* austerity so a showdown is on the cards.

Meanwhile with the Swiss revaluation fading in investor's memories and without a Greek drama, the gold and silver prices both started to give back ground and understandably so... they had moved too far and too fast on not enough solid footing.

Oil continued in a weak mode and base metals investors (or bargain buyers.. not clear which) finally cottoned on that low oil is good for base metal prospects. While these didn't exactly jump, they stopped falling and started to firm..the star was uranium which had a good week (relatively speaking).

Currencies are the thing to watch... and I don't mean the Euro. The collapse (no other word for it) of the Canadian and Australian dollars has brought quite a number of benefits for domestic miners in those countries with the oil price decline being icing on the cake in the cost-saving department. With the recent gold/silver price strengthening it's a triple benefit for those mining those metals. I suspect the upturn in the commodity currencies shall start soon and that will probably not be welcome amongst Central Banks that would prefer a long period of lower currencies to help boost domestic economic activity. However they go to low and they start importing inflation (though not in energy prices...*phew*). Then interest rates have to go up, which crimps growth, but attracts speculators back into the currencies. With both currencies at around 77-78cts to the USD, defensive action must be nearing.

The stellar performance of the month (excuse the bad pun) was Star Minerals, which we expounded upon here last week in an article. It is the up and coming mine-to-market Manganese battery story run by the team that built up Great Western last decade. Star's up-move was a startling 50%. In the absence of news we are tempted to ascribe this move to our analysis. However looking at the moves for the broader universe it seemed to be a week of extremes with only a few stocks making small moves and a lot making sizeable jumps, both up or down. Alkane was unchanged for the week but that concealed the fact that it had been a good performer for the month up 18% during January.

Sentiments in the Rare Earth space were all over the place with Rare Element Resources and Tasman both down over 10% and

Ucore up by 13% in the last week of the month. There was no specific news to prompt either to go down and indeed Ucore had some promising drill results confirming its deposit to be open at depth. Graphite had a weak patch with Zenyatta giving back 10.7% to end the month unchanged from where it began 2015. It was not alone though as the whole graphite sub-space was off the boil.

One of the more inexplicable moves for the month was Largo's drop of 30% (down 6.25% in the final week). An operational update during the month showed production was doing well so this down-move looks like it comes from residual bad sentiment towards the steel sector for which Largo's Vanadium output is an important component in alloys. We would note though that the decline in Vanadium prices over the last twelve months has been relatively small compared to the brutal decline in iron ore prices.

One of the very strongest movers was Carlisle Goldfields which rose by 43% over the month DESPITE having a stock rollback which some minority shareholders had griped about. It seems management was right and the complainers were wrong. The other gold play on our watchlist, Chesapeake Gold, added 16% during January. In silver plays, Levon Resources also had a good month, rising by 13.4%.

We suspect the price declines say less about the stocks that were hit during the month and rather more about the dramatic shift in investor focus to the long becalmed precious metals space where gold's move during the month put every other mining sub-space in the shade.


**Note from the Publisher:** Daniel Carlson's ongoing commentary, or should I say walk-on as an interim editor on The Calandra Report last week seemed to make a difference, with \$AMSE up +37.80%, and of course, one of my favorite InvestorIntel weekly column's – Clausi's Takeover Targets, made a difference in GTA Resources, as identified takeover target \$GTA was up

+22.22% for the week. On the graphite sector, I noted a sizable increase in interest again for clients, and 2 led the week: Alabama Graphite Corp.'s \$ABGPF +18.45% & ALP +13.33% and Graphite One Resources Inc. \$GPH up +13.33%. Not to be left in the dust, let's credit lithium play Neometals \$NMT up +18.18% for the week...more being emailed to InvestorIntelReport members this morning...

If you want more, including market sector numbers and the Top 15 most read articles of the week, log-in to InvestorIntelReport or the full copy should be in your inbox within the next hour or so. If you're not a member? Click here to become one.

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## Alabama Graphite and Zenyatta Ventures move north on metallurgical results

 **Graphite Market Review** – The Graphite & Graphene market continued along a now predictable bearish path alongside the resource sector overall, even though the share price average for the week ending on November 21 improved somewhat given that the sector dropped by barely a point (-1.13%).

**Alabama Graphite Corp.** ('AGC', TSXV: ALP | OTCQX: ABGPF) continued its successful run from the previous week rising an additional 5.56% in Toronto and 7.06% at the OTCQX. Alabama Graphite presented additional results from metallurgical testing of three new composite samples from the upper 50 feet of the pit walls at its past-producing Bama mine project. The tests showed that "using only simple floatation (without



optimization, chemical or thermal treatment)' the samples featured a high percentage of large and jumbo flakes with graphitic carbon purities ranging from a low of 93.8% to a high of 97.9% – including the smaller flakes. The results suggest that high purity levels can be maintained consistently using relatively inexpensive and very environmentally friendly and chemical-free processing. The higher the purity of the graphite and the low costs of production indicated by the low cost beneficiation process will allow Alabama Graphite to maximize profits from advantageous project economics and a higher average price for its graphite. Alabama Graphite intends to step up exploration in order to ensure that it become “the first low-cost producer and just- in-time supplier of high purity flake graphite in the United States of America.”

**Zenyatta Ventures** ('Zenyatta', TSX: ZEN | OTCQX: ZENYF), which has been one of the fastest growing mineral graphite companies, moved 8.79% in Toronto and 13.39% at the OTCQX respectively. Zenyatta recently ran pilot plant and beneficiation testing of graphite extracted from its Albany graphite project showing a mineral producing a high purity, highly crystalline graphite product featuring less than 0.05% elemental impurities, meaning that Zenyatta has successfully produced a highly crystalline graphitic carbon (Cg) product featuring 99.95% purity. Twenty potential end users have already started to evaluate Zenyatta's graphite and Zenyatta will be further testing the materials to achieve even higher purity levels ahead of the preliminary economic assessment (PEA) that is expected to be published toward the end of 2014.

**Mason Graphite** ('Mason', TSXV: LLG | OTCQX: MGPHF), in particular, gained 37.63% in Toronto trading and 31.71% respectively. Mason announced the preliminary results of a study of hub location options for its Lake Gueret project in Quebec. The market rewarded Mason's opportunity to optimize its feasibility study through unexpected opportunities to

reduce capital and operating costs and improve operational efficiency as revealed in a study was conducted during the 2014 third quarter by the engineering consulting firm Hatch. The mining project located near Baie-Comeau should present operational and financial benefits due to revised and lower costs of hydroelectricity, easier access to labor and a more efficient operational framework, which should jointly contribute to reducing both capital costs (CAPEX) and operating costs (OPEX) for the project. It is anticipated that the additional costs of transporting the ore from the mine to Baie-Comeau concentrator would be more than offset by the savings made. A reduction in the emission of greenhouse gases is also anticipated based on the preliminary estimates as defined in the Preliminary Economic Assessment (PEA) published in April 2013.

Meanwhile, the Australian **Syrah Resources** (ASX: SYR) rose 7.65% announcing that it has succeeded in producing uncoated battery grade spherical graphite, using flake graphite from its own Balama Graphite and Vanadium Project in Mozambique. Even though batteries account for just under a quarter of global flake graphite output, the rapidly growing interest and demand in lithium ion (Li-ion) batteries make it the most important application for this emerging mineral. Among industrial raw materials, graphite is one of those substances which, although only required in small amounts, are expensive due to high demand.

Graphite is expected to experience strong demand growth in the coming years. Just like rare earths, China has been the market leader in the market for mineral graphite; its purity level has not been very high because it has been overwhelmingly used for steel production. However, China's production will drop because of new and stricter environmental and labor policies – as noted also by its recent commitment to reduce greenhouse gases emissions by at least 20% over the next decades at the G20 meeting. New technological applications from Li-ion

batteries in the short term and graphene – in the near future – require over 99% purity and just a handful of producers will be able to deliver such a product.



**Graphite Market Review** is a special weekly feature on InvestorIntel sponsored by Alabama Graphite Corp. (TSXV: ALP | OTCQX: ABGPF).

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## **Good ZEN and high DVR performance not enough to drive graphite sector in October**



**Graphite Market Review – Zenyatta Ventures** ('Zenyatta', TSXV: ZEN | OTCQX: ZENYF) was one of the few graphite companies to experience some 'ZEN' in October, gaining 16.58% in Toronto and 15.18% at the OTCQX. Zenyatta can boast a graphite deposit that is entirely different than the vast majority of its competitors, which have flake graphite. Its geological formation, through igneous hydrothermal processes, accounts for a superior purity and crystallinity. The Albany project, located in northern Ontario, is the largest & only, "high purity" hydrothermal graphite deposit being developed in the world. The important and simple fact that investors should consider is that the Albany deposit has been proven to present a very high carbon graphitic content, which means the graphite is pure enough to compete with synthetic varieties. Zenyatta's

target customers are precisely the ones, who, until recently, had no alternative to synthetic graphite. There are incentives to switch from oil based synthetic graphite to naturally occurring graphite of Zenyatta's caliber. The processing has delivered a nice high-grade, pure product with minimal cost and minimal detrimental environmental effects. The synthetic graphite market accounts for a potential USD\$ 13 billion-dollar market.

Zenyatta's strong performance contrasts sharply with that of the other graphite companies tracked by InvestorIntel. Market performance was decidedly down, registering an average drop of 9.08% versus InvestorIntel graphite members that were barely down 2.43%. Tracy requested I mention this as she insists an online media presence makes a difference, and allow us to welcome **Northern Graphite Corp.** whose OTCBB: NGPHF – one of the few graphite companies to move upward +2.69% last week.

Speaking of new members, allow me to welcome **Deveron Resources Ltd.** (TSXV: DVR) who became an InvestorIntel member in the last 2 weeks. DVR gained an impressive 54.55%, starting the month at CAD\$ 0.11 and ending at CAD\$ 0.17, after announcing that they had officially entered the graphite and zinc market with a targeted acquisition with a high grade deposit.

The Graphite space features in most respects companies that are operating in politically stable locations with access to acceptable to excellent infrastructure. Most of the graphite companies covered by InvestorIntel, moreover, have shown wise management, while just about every deposit seems able to quench the need for a stable and high quality graphite supply, capable of being used in technology ranging from Li-Ion battery anodes to graphene.

The biggest winners for the month ending on October 31, 2014 were, apart from Zenyatta and Deveron, Strategic Energy Resources Ltd. (ASX: SER) which gained 6.45%, Lomiko Metals (TSX: LMR | OTCQX: LMRMF) which gained 19% in OTCQX trading

and **Discovery Africa** (ASX: DAF) gained 9.52%.

This said, there were several companies that saw equally impressive negative numbers (see below chart). Whereas the graphite sector's market performance in the previous months and weeks might best be characterized as 'mixed', October was decidedly less optimistic. Yet many of the companies announced positive developments. For instance, **Alabama Graphite** announced that it has completed ground geophysical surveys at its prior producing Bama Mine Graphite Project, starting exploration in additional zones at the Coosa Project in Alabama. The two projects encompass over 43,000 acres and are located in an area with significant historical production of crystalline flake graphite. The Company has the largest NI 43-101 indicated flake graphite resource in the United States based on drilling 0.18 square miles (0.3% of the total acreage). The Alabama deposits are unique in that a significant portion of the graphite-bearing material is oxidized and has been broken down into an extremely soft rock, which suggests that operational costs from mining to grinding should be lower than average.

In addition to the good news Christopher Ecclestone initiated coverage on Alabama Graphite and then selected it as one-of-five most likely to prosper. Undoubtedly the exercise of warrants is responsible for the downward pressure on the stock in October, however – TSXV: ALP was up +5.26% and OTCQB: ABGPF was up +4.17% last week.

On October 21st, **Triton Minerals Limited** (ASX: TON), which also suffered from downward pressure – presented its maiden JORC compliant resource estimate for the Nicanda Hill graphite deposit at the Balama North project in Mozambique. The total Mineral Resource estimate comprises 1,457 million tons at an average grade of 10.7% Total Graphitic Carbon "TGC" and 0.27% vanadium classified as either Inferred Mineral Resources or Indicated Mineral Resources. 328 Mt were classified at 11.0% TGC and 0.26% vanadium and 1,129 Mt were classified at 10.6%

TGC and 0.27% vanadium. Triton claims it now has the single largest known graphite deposit in the world as well as one of the largest vanadium deposits. [Click here](#) to access the interview on how Triton's Nicanda Hill is the largest graphite and vanadium deposit in the world.

**Elcora Resources Corp.** (TSXV: ERA) reported that metallurgical tests are being conducted by SGS Canada Inc. to determine the preferred processing circuit for the graphite from the Company's Sakura mine site in Sri Lanka. Elcora aims to produce premium graphite and graphene through a vertically integrated business strategy and announced a name change to focus on the Graphene revolution...and added Jack Lifton to the Advisory Board last week...

**Mason Graphite**, which had some positive share price movement earlier in October, reported the second batch of assay results from the 2013-2014 drilling program at its Lac Guéret project in northeastern Quebec. Mason said that the results confirmed the continuity of the mineralization within the GC zone while the graphite grades continue to be very high, confirming the high value potential of the Lac Guéret property.

Australian based **Valence Industries Ltd.**, which saw its shares drop 8.89%, announced it has discovered a new and unique flake graphite deposit zone with intercepts exceeding 60% graphitic carbon. The discovery improves the economics of Valence's Uley operation thanks to the presence of high quality arterial flake graphite, which is located close to the surface presenting grades exceeding 60%+ graphitic carbon (gC). **Lomiko Metals**, which as noted above had a mixed performance, gaining in OTC trading and losing in Toronto, announced that it has received the drilling permit for the its La Loutre Crystalline Flake Graphite Property. Lomiko has targeted La Loutre, expecting to find high-grade, near-surface graphite mineralization suitable for conversion to battery-grade graphite. Mason Graphite, meanwhile, opened a pilot plant test for the Lac Guéret graphite project at COREM's research

facility in Quebec City to test a bulk sample of approximately 60 tonnes of graphite mineralization obtained from the Lac Guéret property, featuring an average sample grade of 29.1% Cg. **Focus Graphite Inc.** (TSXV: FMS | OTCQX: FCSMF) announced that significant widths of graphitic mineralization ranging from 95 to 110 meters in thickness were intersected in a new zone at its wholly owned Lac Tétépisca Project southwest of the Manicouagan reservoir in Québec, comparing favourably with the mineral derived at the Lac Knife graphite deposit.

## **Conclusion**

Overall, therefore, the graphite sector was very active in October as the graphite miners explored new areas, confirming or adding new sources of high grade materials suitable for the high end applications that have made graphite such a coveted material in the high technology sector. The market performance of many graphite companies, most of which are based in North America – with few exceptions in Madagascar, Mozambique or Australia, appears to fly in the face of the fact that the resumption of graphite mining in North America serves as a way for North America to rebuild internal supply lines for critical materials such as graphite.

**Note from the Publisher:** Graphite interest continued to outperform other sectors last month, with 7 of our Top 15 most read articles in October being composed about graphite.

1. Liquid Metal Batteries – An Impending Deluge? – Christopher Ecclestone
2. Hostilities between China and Japan heat up in the American Courtroom over Patents – Jack Lifton
3. Hykawy's Focus on Focus: Through a Mining Lens – Jon Hykawy
4. Uranium Stocks Remain Near 52-Week Lows Despite Bounce in Spot Price – Peter Epstein
5. Graphite stocks down 3rd week in a row, fundamentals be damned – Peter Epstein

6. The Rare Earth Market Evolves – Jon Hykawy
7. Confidence of Lynas’s financiers to signal a more profitable change for the rare earths sector? – Alessandro Bruno
8. Triton Minerals Beats All Expectations with Maiden JORC Resource – Peter Epstein
9. The Tesla Beauty Contest – Alessandro Bruno
10. Graphite Market Review: China’s exports of graphite to decline markedly – Peter Epstein
11. Chinese authority launches new special campaign to fight illegal rare earths – Hongpo Shen
12. Graphite Market Review: Mixed performance despite a lot of good news – Peter Epstein
13. Seismic Shift in the Niobium Space – Christopher Ecclestone
14. Strong graphite market news flow sets the pace for a market turnaround – Peter Epstein
15. Potash is the new safe haven sector to hedge against market volatility – Alessandro Bruno



Graphite Market Review is a special weekly feature on InvestorIntel sponsored by Alabama Graphite Corp. (TSXV: ALP | OTCQX: ABGPF) and is written by US Analyst, Peter Epstein. – See [more at: https://investorintel.com/graphite-graphene-intel/graphite-market-review-positive-week-stocks/#sthash.0F58rc2U.dpuf](https://investorintel.com/graphite-graphene-intel/graphite-market-review-positive-week-stocks/#sthash.0F58rc2U.dpuf)

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## **Zen & the Art of Market Cap**



# Maintenance

Without any negative happenings to justify a down-move, the high-quality graphite mine developer, Zenyatta Ventures has retreated from a twelve-month high of \$4 to half that level. This would seem to be a rather harsh punishment by the market of the company. It could be that the advancement of some other stories to production (e.g. Flinders, Elcora) has tempted investors jump over to the Swedish story in particular. However, with a PEA imminent the tide may be about to turn for Zenyatta. Certainly having a healthy market cap as it does makes it easier to finance the company and gives it a good currency to make acquisitions, something its near-peer Flinders Resources, has done in recent weeks.

## Some Reminders

Zenyatta is developing its crystalline graphite Albany Graphite Deposit in Ontario, Canada. The consultant, RPA, estimate Indicated Mineral Resources, to date, of 25.1 million tonnes at an average grade of 3.89% graphitic carbon, containing 977,000 tonnes of graphite. Additionally, Inferred Mineral Resources delineated to date are estimated to total 20.1 million tonnes at an average grade of 2.20% of graphite, containing 441,000 tonnes of graphite. The upcoming PEA technical data will include among other items: open pit mining methods, metallurgy and processing, infrastructure, environment, manpower requirements, marketing and price assumptions, capital and operating costs, life of mine plan and execution plan. This should go a long way towards fleshing out the project for investors trying to weigh up the alternatives in the space.

## Pilot Plants – Elementary Derisking

Scarcely had the post-summer lull finished than Zenyatta shot out a release on the 2nd of September with an update on the

pilot plant & metallurgical testing it had previously commissioned from SGS Canada. This continues the growing trend of companies moving to pilot testing of their processing flowsheet to derisk their projects early on rather than waiting until much later. It also puts the process of metallurgical testing far more under the company's control than in the past where third party metallurgists did their thing often at a significant distance from the company.

The flotation pilot plant results, confirmed earlier bench-scale testing, and additionally produced a concentrate that was upgraded at laboratory scale to a high purity and highly crystalline graphite product using a caustic bake based process. The highlights of the testwork were:

- the Glow Discharge Mass Spectrometry ('GDMS') results show less than 0.05% elemental impurities (or >99.95% purity of highly crystalline graphitic carbon (Cg))
- there were no deleterious elemental concerns and verifying good crystal structure (hexagonal with real density of 2.25 g/cc)
- tests produced samples of high purity graphite material for market evaluation & testing by more than 20 prospective end users

Additional test work is underway to produce a higher grade flotation concentrate feed to further optimize the purification process and provide extra high purity material for testing by interested parties. This optimization work will provide additional information for the flow sheet and the much-awaited Preliminary Economic Assessment which is to be completed in the 4th quarter.

### **Graphite and the Urge to Merge**

The recent bid by Flinders Resources for Big North Graphite was the ice-breaker for consolidation in the graphite space. Flinders is doing what many in the first flush of the REE boom

should have done. I am on record as being critical of “one-mine” stories. They always have the inherent danger of something going wrong (even if just a significant delay) and then the stock plunges as expectations are shattered and investors move on, unlikely to ever return. In some cases it can be something far worse that proves terminal to a project such as government capriciousness or opposition by NGOs.

And yet very few companies in the graphite space have a second property let alone having made an acquisition to secure one. Of course, the best positioned parties in any sector to make acquisitions for stock are those with the highest market caps and they happen to be Zenyatta and Flinders. Flinders has launched itself into the fray, would, or should Zenyatta follow suit?

Rather than whether Zenyatta should pursue a transaction is what is there that makes a sensible fit? With Zenyatta having staked its claim to leading in the high-purity graphite space, the obvious candidate that springs to mind is Elcora, with its near-production property in Sri Lanka, which I have previously written up here. Elcora owns the Ragedara property has an unrestricted exploration license covering four square kilometres and a mining license for unlimited monthly production. Historically, the Ragedara mine operated (under state-ownership) between 1974 and 1985 and produced as much as 18,000 tons per year of high purity graphite. The Ragedara graphite is of natural crystalline vein type.

Zenyatta’s market cap (excluding dilution) is around \$110mn at the current time. With a market cap that is still less than \$10mn, a move on Elcora by Zenyatta would not so much be a merger of equals, as a merger of the equally worthy and a bit of a bargain, dare I say it. Curiously, Flinders’ transaction was to get itself some longer term reserves (having the short term production already) whereas the best transaction for Zenyatta would be one that gave it shorter term production as it has the longer-term already covered.

## Conclusion

When pondering the recent lassitude in the Zenyatta share price, my mind drifted to a less familiar part of the Zen ritual in Japan and wondered whether Zenyatta shareholders might care to indulge. In Zen Buddhism, the keisaku is a flat wooden stick or slat used during periods of meditation to remedy sleepiness or lapses of concentration. This is accomplished through a strike or series of strikes, usually administered on the meditator's back and shoulders in the muscular area between the shoulder blades and the spine. The keisaku itself is thin and somewhat flexible; strikes with it, though they may cause momentary sting if performed vigorously, are not injurious.



The gap between resource estimate and PEA can be a tricky patch for companies to traverse when the patience of investors is tested as they await the next level of information on a project's viability. Recent weeks have seen the pilot testwork partly fill that gap with some exceedingly positive results, which no longer leave any doubts on the process flowsheet.

In the interim it will be interesting to see whether the game-changing transaction by Flinders proves to be a tempting path for Zenyatta to follow and gain itself some production in the very short term.

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# Zenyatta proves it is one of

# most successful emerging graphite miners

Earlier this week on September 2, 2014, Zenyatta Ventures ('Zenyatta', TSXV: ZEN | OTCQX: ZENYF) published the results from its pilot plant and metallurgical studies of graphite extracted from its Albany graphite project, tested by SGS Canada. The mineral produced "a high purity, highly crystalline graphite product". Moreover, "the flotation pilot plant results produced a concentrate that has been upgraded at laboratory scale to a high purity and highly crystalline graphite product using a caustic bake based process." The tests underscored that the resulting graphite presented less than 0.05% elemental impurities, meaning that Zenyatta has successfully produced a highly crystalline graphitic carbon (Cg) product featuring 99.95% purity. Purity is but one factor in determining mineral graphite's desirability; structure and shape are also important. The samples showed that there were "no deleterious elemental concerns and verifying good crystal structure". The overwhelming success of the test material has prompted Zenyatta to test the market, allowing over twenty potential end users to start evaluating the graphite themselves. Zenyatta will be further testing the materials to achieve even higher purity levels ahead of the preliminary economic assessment (PEA) that is expected to be published toward the end of 2014.



The Albany graphite is of the rare hydrothermal variety, which means that it occurs at naturally high purity levels and that it is very malleable. Both of these features add to its market desirability and value. Geologists define the type of graphite deposit at Albany as being of the 'breccia' variety, very rare compared to other typographical deposits and, in fact, research of the Albany hydrothermal deposit will help to

create the first 'genetic' model for this special variety of graphite. The important and simple fact that investors should consider is that the Albany deposit has been proven to present a very high carbon graphitic content, which means the graphite is pure enough to compete with synthetic varieties. Zenyatta's target customers are precisely the ones, who, until recently, had no alternative to synthetic graphite. There are incentives to switch from oil based synthetic graphite to naturally occurring graphite of Zenyatta's caliber. The processing has delivered a nice high-grade, pure product with minimal cost and minimal detrimental environmental effects. The synthetic graphite market accounts for a potential USD\$ 13 billion-dollar market.

The world of graphite mining has expanded considerably in recent years and many companies have claimed to find amorphous flake graphite of one type or another. Indeed, some flake graphite miners have even achieved surprising purity results, approaching Zenyatta's. The problem, however, is that to try purifying other standards of flake graphite to achieve those presented by Zenyatta would require more refining and still lack the quality of Zenyatta's deposit. Quality and purity are very important to the targeted end users in the green technology and clean-tech sectors. The Albany deposit's purity, therefore, allows Zenyatta to set ambitious sales targets, lithium-ion batteries, pebble nuclear reactors, solar power capacitors, wind power generators and graphene. This means that Zenyatta's graphite will command high prices. Moreover, the rarity of the type of graphite found at the Albany deposit is such that Zenyatta has received interest and support from the National Research Council of Canada Industrial Research Assistance Program for metallurgical testing.

Zenyatta is a promising graphite company. The only other graphite in the world similar to its deposit is found in Sri Lanka and it now belongs to Germany's Kropfmühl AG. Zenyatta's

deposit, however, is the largest and possibly purest (hydrothermal) graphite deposits in the world. The infrastructure at the Project is very good and will keep costs low. The Project's high visibility and uniqueness, moreover, have attracted a lot of attention. Tesla, which announced it would build the Gigafactory in Nebraska, wants to get into the battery side of the business with its "gigafactory", which is intended to make lithium-ion (Li-ion) batteries for electric vehicles. This giant plant may require investments of between USD\$ 4 and 5 billion dollars, occupy an area of 930,000 square meters, employ 6,500 employees and produce enough batteries to equip 500,000 cars per year. Graphite production in North America, the only place where Tesla expects to be sourcing it, will have to increase accordingly. Tesla has finally set his sights on the neighboring state of Nevada (hot and sunny – a selection criterion needed to enable the use of solar panels). The announcement of Tesla's proposed super-factory has assured us that a 'sustainable future' is possible. Tesla's planned launch of the Compact Model 3 will turn the brand a truly great automobile builder and a huge consumer of graphite. Meanwhile, the discovery of high grade mineral graphite and proof of the purity levels that can be achieved, mean that Zenyatta has the chance to become one of the more successful new graphite miners.