

# A unique graphite resource returns with graphene strength

Graphite is a popular metal with several unique properties. It conducts heat and electricity and retains the highest natural strength and stiffness even in temperatures exceeding 3600°C. Graphite is self-lubricating and is also resistant to chemicals. Graphite is also a key component of the anode in lithium-ion batteries.

Graphene has unique properties that exceed those of graphite. Graphene is the strongest material ever found. It is more than 40 times stronger than diamond and more than 200 times stronger than steel. Graphene is simply one atomic layer of graphite. Scientists at the University of Manchester discovered graphene in 2004 for which they won the 2010 Nobel Prize for Physics.

## Graphene - A Carbon Nanomaterial with Extraordinary Properties

zenyatta

Properties	Facts	Applications
Strength	200 x stronger than steel	Composite materials - rubber, plastic, aluminum & concrete
Flexibility	Bend & stretch to 120% of original size	Coatings, additives & wearable technologies.
Thermal	10 x conductivity of copper	Composites - concrete, coatings, polymers.
Electrical	1000 x current capacity of copper	Longer battery life, semiconductors
Impermeable	Hydrogen atoms cannot penetrate structure	Filters, water purification, gas storage and hydrogen fuel cells
Electronic	Electrons move at near light speed	Improved speed & efficiency of computer chips

Graphene opens the door to the next generation of advanced composite materials that are stronger, ultra-light and more flexible with higher thermal / electrical conductivity.

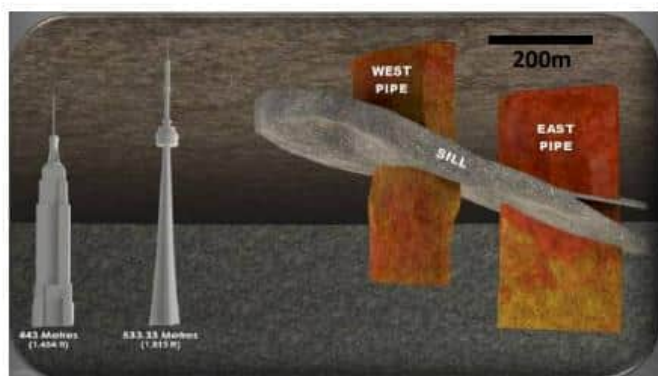
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Zenyatta Ventures Ltd. (TSXV: ZEN) is a Canadian mineral development company, which discovered the large and very rare ultra high-purity graphite deposit in Northern Ontario, called the Albany Graphite Deposit. The deposit contains the largest and only high purity hydro-thermal (volcanic in nature) graphite mineralization being developed in the world.

The Zenyatta graphite deposit can be upgraded without the use of aggressive acids and high temperature thermal treatment. Zenyatta has discovered an easy and environmentally friendly process that consist of grinding, floating and caustic treatment using sodium hydroxide. The Company has been able to achieve an ‘extraordinary’ carbon purity result of >99.9 percent in bench-scale tests, using this proprietary and environmentally safe method of purification.

**A large graphite resource open to depth containing sufficient graphene precursor material to sustain production for decades!**



**3D Deposit Model**

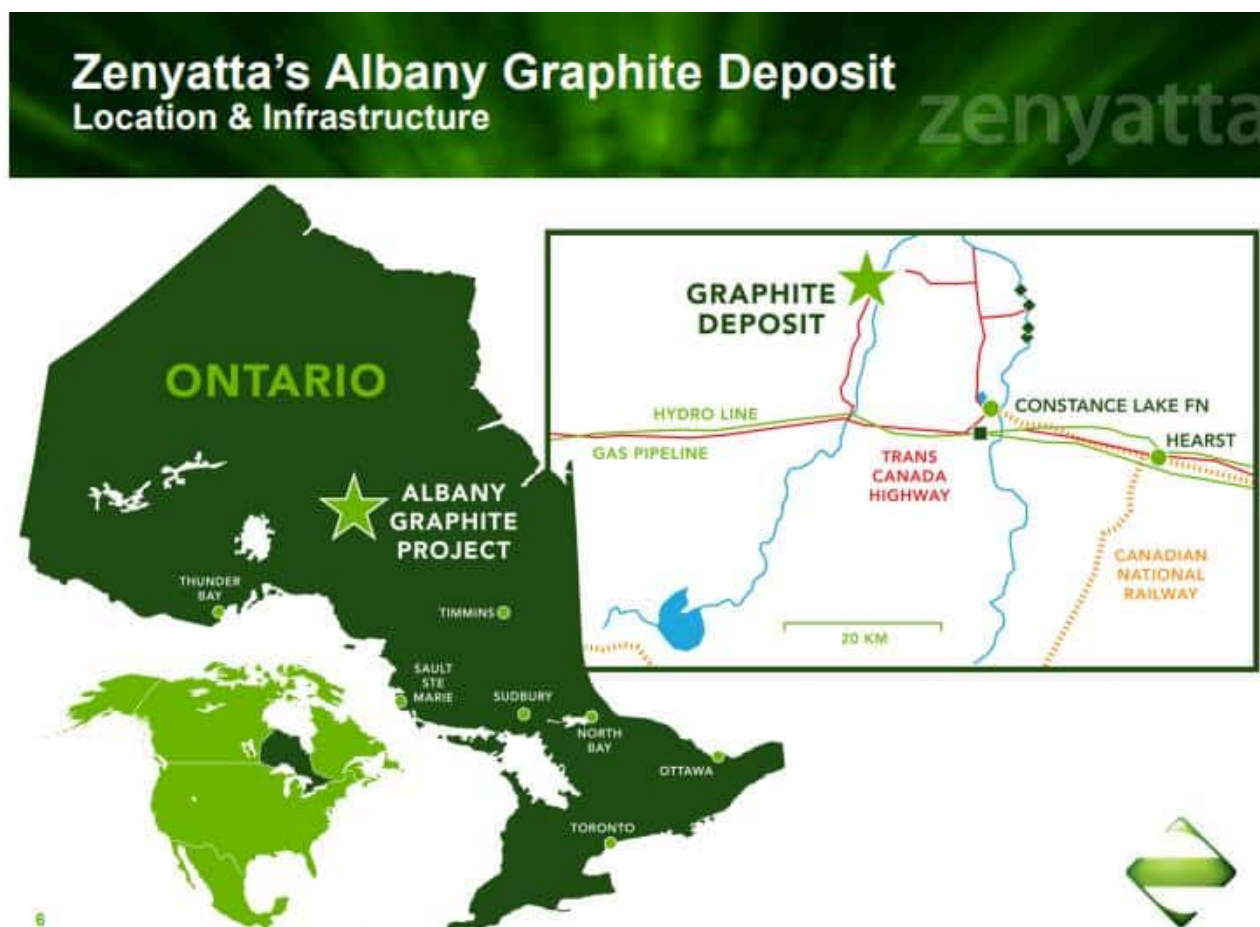
**Deposit Open At Depth**

	Tonnes (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t)
<b>Open Pit Mining</b>			
Indicated	24.3	3.98	968,000
Inferred	5.4	2.58	138,000
<b>Underground Mining</b>			
Indicated	–	–	–
Inferred	11.5	2.67	307,000
<b>Total Indicated</b>	<b>24.3</b>	<b>3.98</b>	<b>968,000</b>
<b>Total Inferred</b>	<b>16.9</b>	<b>2.64</b>	<b>445,000</b>

## The Albany Graphite Deposit

The Albany deposit is a large graphite resource open to depth containing sufficient graphene precursor material to sustain production for decades. The open pit and underground mine has an inferred resource of 5.4 Mt containing 138,000 tonnes of graphite carbon at a grade of 2.58% (Indicated at 968,000 with

a grade of 3.98%). The deposit is near surface, beneath glacial till overburden and a thin veneer of Paleozoic sedimentary cover rocks, and has easy access to all local infrastructure.



On September 27 2018, the Company announced a new memorandum of understanding (“MOU”) with Constance Lake First Nation, under which a project partnership structure will be created in support of the development of the Albany Graphite Project. This reflects the transition of the project from the exploration to the development stage. The parties intend to commence discussions immediately toward completing a formal agreement defining the future partnership structure and accelerating the development of the Albany Project.

Dr. Francis Dube, Head of Business Development for Zenyatta, commented: “We are delighted to enter this new MOU with the leadership of Constance Lake First Nation. The graphene market offers exceptional growth potential not only to establish a

profitable producing mining business but, more importantly, to create a new value added business in the many emerging high-value downstream applications for graphene.”

Today there is a global race to develop new products with enhanced performance using graphene material, which can revolutionize many things that we use in our everyday life. Potential graphene applications include lightweight, thin, flexible, and yet incredibly lightweight electric/phonics circuits, solar cells, and various medical chemical and industrial processes. All enhanced or enabled by the use of new graphene materials. Graphene is starting to sound like a miracle material from a science fiction movie.

Zenyatta Ventures Ltd. are developing a unique graphite resources to serve the growing global needs for high purity graphite driven by the cleantech sector in a socially and environmentally responsible manner, while providing a good return to shareholders. Independent labs in Japan, UK, Israel, USA and Canada have demonstrated that Zenyatta’s Graphite easily converts (exfoliates) to graphene, using a variety of simple mechanical and chemical methods. Graphene could turn into the planets most valuable material in the coming years.