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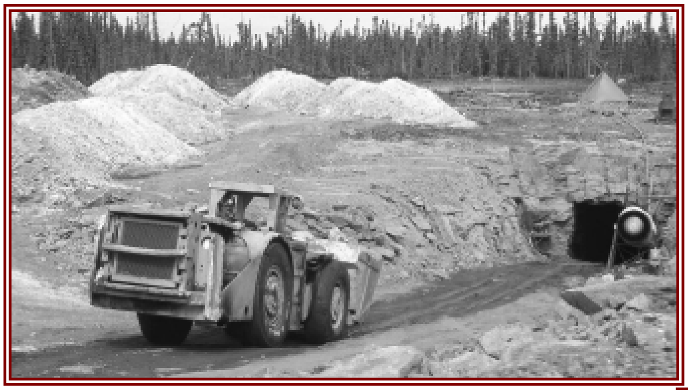
INFORMATION MEMORANDUM

AVALON VENTURES LTD.



Left: Thor Lake Project (ca 1985)

Right: Honda Insight hybrid

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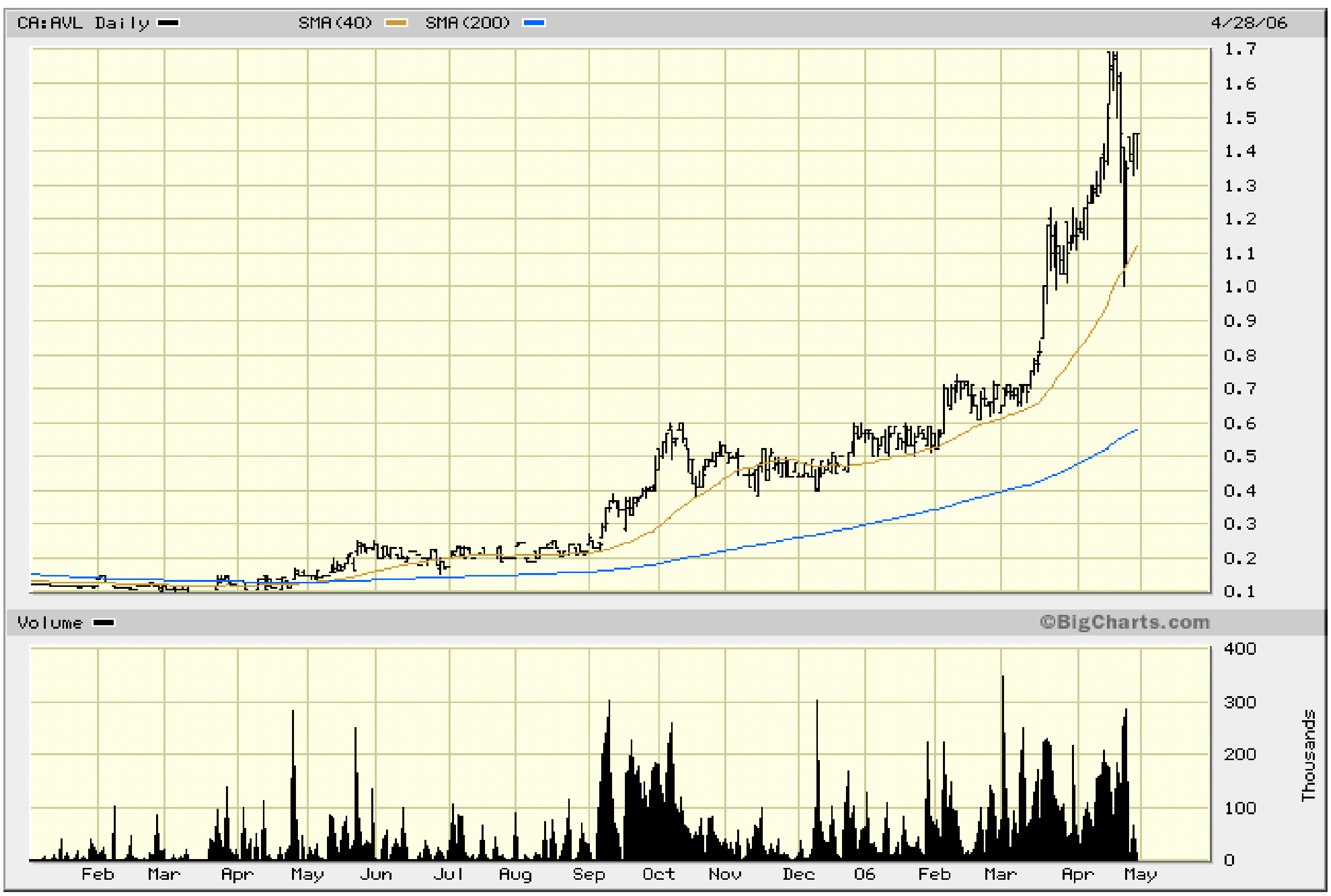
STOCK PRICE: CANADIAN FUNDS



CONTENTS

AVALON VENTURES LTD. (TSX-V: AVL) – OVERVIEW

Avalon has selected a market sector that has enjoyed long-term growth and may well be poised for explosive expansion. The Company's focus is to become a major player in the supply of esoteric rare minerals and metals that are used to make every-day products work better. A key example is the evolution of cars – moving away from simple internal combustion engines to hybrids, plug-in hybrids, battery- or hydrogen fuel cell-powered cars, all of which require rare metals and minerals that Avalon plans to supply

The drive towards more efficient use of the world's raw materials is being driven by the confluence of the rapid industrialization in China and India, continued economic growth in the advanced economies, and shortages of raw materials with resultant secular increases in the prices of those raw materials. The most obvious manifestation of these changes is the energy sector, but other raw materials such as copper and zinc are experiencing similar adjustments.

Avalon has assembled an impressive portfolio of advanced-stage rare metals properties, located in the politically and economically stable environment of Canada, that have the potential to propel the company to become a major supplier of rare earths and other minerals. The Company is hardly known outside a small group of early investors.

- Avalon has accumulated a large portfolio of potentially world-class rare metals deposits, including:
    - Separation Rapids – lithium, feldspar, tantalum
    - Thor Lake – beryllium, rare earths, yttrium, zirconium
    - Warren Township – calcium feldspar (anorthosite)
- We believe that both Separation Rapids and Thor Lake could independently justify a market valuation that is a multiple of the current market capitalization of the Company. That ignores the potential value of Warren Township, Lilypad Lakes, or the extensive portfolio of earlier-stage exploration projects.
- Notwithstanding the stock price appreciation during the last six months, we believe the underlying value to be significantly greater than the current market value.
- Excellent track record of property identification and acquisition.
- Extensive portfolio of other projects could either be farmed out or sold to other companies or spun out into a separate entity in order to generate shareholder value.

As the natural resource markets evolve, we expect that there will increasing attention paid to specialist companies such as Avalon. Through its spread of potentially world-class rare metals assets and ability to develop unique products, we believe that Avalon is well positioned to benefit from the second phase of the extended resource cycle.

Exchange		TSX-V	Shares out. (4.28.06)	(millions)	47.103
Symbol		AVL	Insider ownership	(%)	5.9%
Price (4.28.06)	(C$)	1.45	Options & warrants (in the money)	(millions)	5.765
52 week: high (4.20.06)	(C$)	1.69	Average exercise price	(C$)	0.37
low (4.25.05)	(C$)	0.12	Cash (proforma)	(C$)	2.752
Average daily trading volume		120,600	Cash on option/warrant exercise	(C$)	2.150

SUMMARY

Avalon is a Canadian mining corporation listed on the TSX-Venture exchange under the ticker symbol AVL. The Company, originally called Keith Resources Ltd., was formed in 1991 through the merger of Meadfield Mining Corp. and Rockridge Mining Corp. Following a restructuring in 1994 that included a 5:1 share consolidation, the Company was renamed Avalon Ventures Ltd. and Don Bubar was appointed President and CEO.

The Company has assembled an impressive portfolio of properties focused on rare metals and industrial minerals as well as base and precious metals, including: Separation Rapids (lithium feldspar and tantalum), Warren Township (calcium feldspar), and Thor Lake (beryllium, rare earths, yttrium, zirconium).

The key role of these minerals and compounds is to make existing products work better and to facilitate the development of new technologies. Generally, they are used in small quantities per application but in some cases the total market is vast.

For example, Avalon's unique high lithium feldspar product is developing critical markets in the specialty glass sector because of its energy-saving benefits, extending the more traditional use of lithium as an additive is specialty glass and ceramics, and combining it naturally with feldspar to make a product with far wider applications.

Put simply, products using rare metals and new materials designed around rare metals are smaller, lighter, stronger, and faster.

Environmentally Responsible

New materials being developed using rare metals help the environment in numerous ways. The characteristics listed above – smaller, lighter, stronger, faster – contribute. More directly, these metals are used in alternative energy applications, including advanced batteries and fuel cells. They are also used in hybrid and electric cars.

Applications for Avalon's Rare Metals and Minerals

	electronics	automotive	batteries	metallurgical processing	fushion	chemicals	ceramics	specialty glass	biomedical	photoelectrics	heavy media	lasers
RARE METALS												
Lithium		X	X	X	X	X	X	X				
Rubidium							X	X	X	X	X	
Cesium							X	X	X	X	X	
Tantalum	X	X		X				X	X			
Beryllium	X	X							X			X
Rare Earth Elements	X	X	X				X	X				
Cobalt				X			X					
INDUSTRIAL MINERALS												
Lithium Feldspar							X	X				
Calcium Feldspar								X				

Source: Proteus Capital Corp.

Many of these esoteric minerals can be mined and processed quite simply. In fact, Avalon anticipates selling high grade lithium feldspar ore from its Separation Rapids project direct to consumers without any processing by Avalon.

Market Development

The biggest challenge in the rare metals and industrial minerals business is to develop the markets. Potential consumers need to be assured of reliable supply yet such supply can only be fully developed in the face of clear demand. This chicken-and-egg situation can only be resolved by dogged development of the market in conjunction with potential customers. Moreover, the location of Avalon's projects in the politically and operationally stable environment of Canada eliminates the geopolitical risk.

We believe that the specialty products that Avalon plans to produce are poised for significant demand growth as the world economy evolves and many natural resources become increasingly scarce, driving prices higher. Avalon has secured projects that combine quality and size, making them particularly attractive.

As with virtually all natural resource prices, the market price of rare metals have increased during the past several years. For example, the price of neodymium has more than doubled since 2002 while the price of lithium carbonate has increased from approximately $0.50 per pound in the late 1990s to more than $2.00 per pound today.

VALUATION

- In the financial section on page 31 we conclude that Separation Rapids alone could be worth more than C$3.00 per share. Depending on price and sales volume assumptions, within three years Separation Rapids could generate annual pretax cash flow that exceeds Avalon's current market capitalization.
- The other advanced projects – Thor Lake and Warren Township – could ultimately be comparable or greater than Separation Rapids.
- The exploration portfolio could be worth as much as C$1 per share in today's commodity environment.

Thus, we conclude that Avalon's current share price is well supported by very conservative assumptions of the potential at Separation Rapids – and as that project progresses and the market size and pricing become clearer, Separation Rapids alone could support a substantial increase in the valuation.

The other projects have the potential to add considerable value over and above Separation Rapids, particularly Thor Lake which hosts a significant resource of rare earth elements, and a proven resource of what is widely considered to be the richest deposit of beryllium in the world. Beryllium was recently described by *Mad Money* host Jim Cramer as "the next titanium."

On page 33 we conclude that the so-called T-zone at Thor Lake could contain in excess of US$2.2 billion of beryllium oxide.

ANTICIPATED VALUE DRIVERS

We believe that there will be four fundamental value drivers:

- bulk sampling work at Separation Rapids to deliver large volume product test samples to the customer which could lead to a near term production decision as the product is a direct shipping ore
- scoping study and drilling at Thor Lake and bulk sampling at Warren Township
- advancement of the other advanced projects potentially with the backing of strategic partners who are consumers of the rare metals or minerals
- exploration successes on the other properties and /or acquisition of new projects of merit

RISK ASSESSMENT

- project development – although none of Avalon's projects is currently in operation, each is in an established mining area and both the mining and processing technologies are standard
- market development – specialty products such as those contemplated by Avalon require the marketing. Test work to date supports the marketability of Avalon's products
- securing finance – Avalon will have to raise production finance, although it is significant that Separation Rapids, likely to be the first project in commercial production, is not expected to require a mill or other processing facilities

CONCLUSION

Avalon has the potential to become a significant North American supplier of key minerals and metals that are critical to making everyday products work better.

We believe that both Separation Rapids and Thor Lake could independently justify a market valuation that is a multiple of the current market capitalization of the Company. That ignores the potential value of Warren Township, Lilypad Lakes, or the extensive portfolio of earlier-stage exploration projects.

Notwithstanding the stock price appreciation during the last six months, we believe the underlying value to be significantly greater than the current market value.

MARKETS

We believe that there are several trends in the global economy that are coming into focus simultaneously. The most significant is the effect on commodity markets as China and India industrialize – the economic impact of the industrialization of Europe, North America, Japan, and southeast-Asia is well documented. Each event resulted in a long-term, secular rise in natural resource prices. However, the populations of both China and India exceed the combined populations of all the other industrial economies, and those other economies industrialized sequentially not simultaneously.

This, perhaps irresistible, force towards industrialization and increasing consumption of natural resources is coming at a time when the resource industries are already facing some long-term challenges – reserve increases currently being reported reflect higher prices bringing previously uneconomic resources into the reserve category, not any significant, industry-wide exploration success. Meanwhile, as the macro-political scene worsens and countries that were “open for business” in the 1990s begin to raise the barrier to entry, regions available for exploration and development are shrinking, in sharp contrast to the experience of the past two decades.

We draw two conclusions from these trends – global economic activity may be constrained by the availability of raw materials, and the world needs to become a lot smarter about how it uses increasingly scarce natural resources.

Being smarter means using natural resources more efficiently – reducing waste, improving efficiency of use, and increasing recycling. Improving the efficiency of use of common materials often requires the use of small quantities of special minerals.

The Appendix analyses the rare earth markets in more detail. The descriptions include many superlatives: highest melting point (tantalum), lightest metal (lithium), lowest melting point (cesium) that merely serve to demonstrate the exceptional properties of many of the minerals relevant to Avalon.

One of the strange anomalies of the earth’s crust is that there are many minerals that are actually quite common yet are typically finely disbursed throughout the near-surface part of the crust and therefore are rarely found in economic concentrations. In these cases, potential ore-bodies require some form of natural concentration such as through the deposition of hydrothermal fluids or of beach sands.

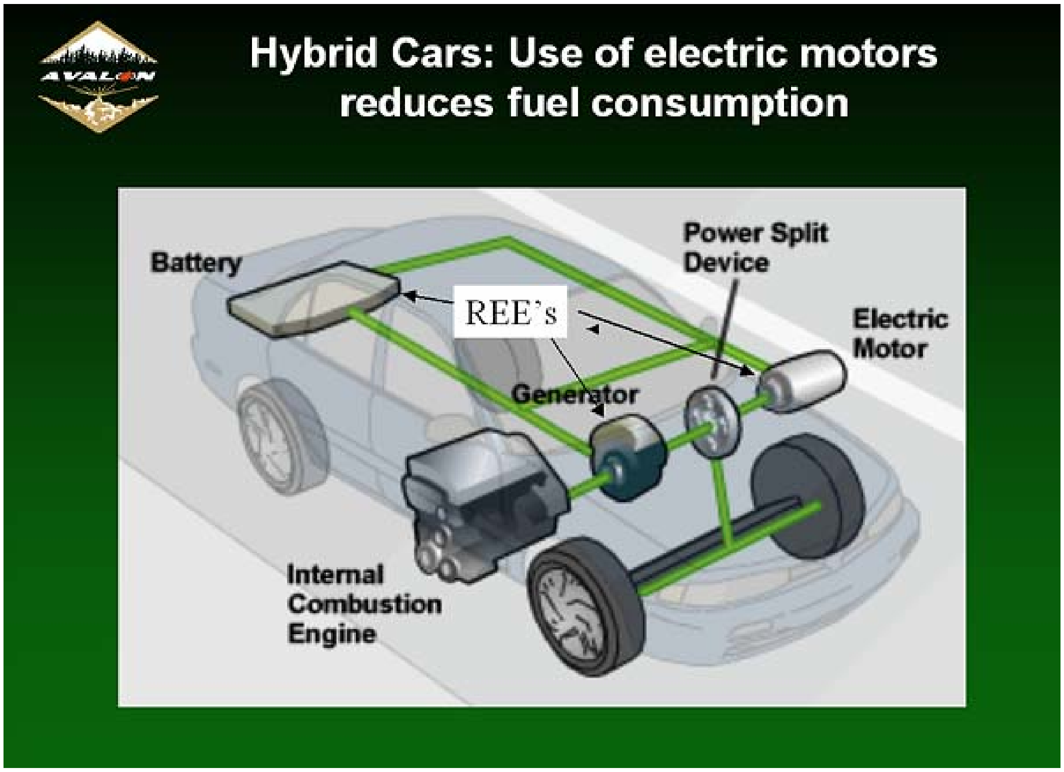
HYBRID AND ELECTRIC CARS

The prospect of a $100-a-barrel oil environment is driving the development of fuel-efficient cars. The automobile industry is facing a huge challenge. With perhaps half of the world’s known reserves of oil already consumed and the rate of consumption increasing as China and India advance into the developed world economy, the economics and sustainability of the gasoline-powered internal combustion engine is being brought into sharp focus.

Some argue that $100 oil will spur exploration and bring previously uneconomic oil production into range, but this will merely delay the inevitable. Installing an individual internal combustion engine in each car is a very inefficient way to generate power.

The first step has been the commercial development of the hybrid car. This market is important for Avalon because, for example, each Toyota Prius uses approximately 45 pounds of the rare earth elements ("REE's"), mainly *neodymium* which is used to make the high intensity permanent magnets that are an integral component of the electric motor and generator.

Toyota is already the leader in commercializing hybrid cars and has a stated goal of selling one million hybrids globally per year as well as producing hybrid versions of all their popular vehicles. REE's are also used in the metal hydride batteries (lanthanum) and in the catalytic converter pollution control devices (cerium).



Source: Avalon Ventures Ltd.

Today, hybrid cars use a combination of conventional gasoline engine and nickel metal hydride (NiMH) batteries. NiMH is a major step up from the conventional lead acid battery but that is the technology used in older rechargeable batteries in portable electronics – the generation where the battery remembered the charge cycle, lost capacity and became less efficient over its life.

The auto industry is working hard to improve the battery technology in order to be able to transfer more of the emphasis to the electric motor, away from the gasoline engine. In the longer term, the industry is divided between those who believe that the hydrogen fuel cell will replace the internal combustion engine and those who believe high efficiency batteries are the way to go.

Hydrogen fuel cells need various rare earths as catalysts. State-of-the-art batteries use lithium, which is the lightest metal and, as the owner of any new cell phone, laptop computer, or other portable electronic device knows, it is a great carrier of energy.

Thus, from Avalon's perspective, the debate between lithium battery and hydrogen fuel cell is something of a high class problem since Avalon's minerals will be needed whichever side wins the debate – and, more importantly, the commercial battle.

The lithium battery is already beginning to be used in conventional cars where its much reduced weight and greater efficiency compared with the traditional lead-acid battery are attractive. Toyota is leading the way with a four-cell lithium pack in its Japan-only Vitz CVT4.

Car manufacturers are now looking to the lithium battery to revolutionize hybrid or pure electric cars with great efficiency, acceleration and range – at the same price or cheaper than today's conventional cars. In December 2005, Toyota announced it would accelerate development of lithium batteries for use in hybrids.

While commercialization of an electric-only vehicle is some way off, the "plug-in" hybrid is much closer. The concept here is that a car would be recharged overnight during off-peak hours, and could travel 50 or 100 miles without using any gasoline, which would be reserved for longer trips that are taken much less frequently.

Hybrid and electric cars depend on generators to capture energy in braking and electric motors to provide power. Both generators and motors require magnets – and the most powerful magnets use neodymium.

Neodymium-iron-boron magnets are very powerful and they retain their magnetic characteristics better than conventional magnets. They can be ground to shape, although machining is not easy because they are extremely brittle. These magnets are so powerful that even small ones come with a warning that they can crush fingers if not handled with care – and break apart if the smash into another object.

However, for applications such as electric motors, the powerfulness, magnetic retention characteristics, and light weight of neodymium magnets are extremely attractive.

The lithium-ion battery may also be more important to Avalon as a market for rare earth elements than the direct consumption of lithium, where the Company's main focus is not in competing with the lithium carbonate producers but in developing markets for its high lithium feldspar mineral products.

Rare earth elements are being used to optimize the performance of lithium-ion batteries. As recently as October 2005 a scientific report by the Department of Applied Chemistry at the Harbin Institute of Technology in China described improved charge/discharge characteristics using electrodes comprised of a new composite material created by mixing vanadium oxide hydrosol, acetone, carbon, and neodymium oxide powder together.

The development of lithium ion batteries for the auto industry is attracting serious investment. For example, A123 Systems, a private company in Watertown, MA that is working with Department of Energy on the development of lithium ion batteries for hybrid vehicles, secured funding from investors including Sequoia Capital, Motorola, and the Massachusetts Institute of Technology.

More notably, Toyota recently invested US$740 million to acquire a 9% stake in Fuji Heavy Industries, a leading manufacturer of advanced hybrid car batteries, and manufacturer of the Subaru line of cars – Subaru recently unveiled a concept car using manganese lithium-ion batteries.

Toyota has also increased its equity stake from 40% to 60% in PEVE, a joint venture with Panasonic. PEVE is the world's leading supplier of nickel metal hydride and will be the key player in Toyota's plans to develop a lithium ion battery for hybrid cars.

In 2002, Johnson Controls acquired Varta, a major European automotive battery manufacturer. Last year, Johnson launched a new program to develop lithium batteries, including a memorandum of understanding to work with Saft, a battery maker based in France that itself entered into a partnership with DaimlerChrysler. Johnson could emerge as the only major U.S.-based hybrid battery maker.

If the lithium ion battery becomes the standard for the next generation of “plug in” hybrid cars, demand for lithium will soar. While lithium is not uncommon, it is generally found in very low concentrations. Economic concentrations generally require natural concentration, often through the formation of salts from brines and in various minerals in pegmatite deposits.

Avalon’s Separation Rapids project is one of the few hard rock deposits of sufficient size to be a meaningful supplier to the world’s lithium market, a market dominated by Sociedad Química y Minera de Chile (NYSE: SQM), Foote Minerals, which was acquired by Chemetall GmbH, and FMC Corporation (NYSE: FMC) that primarily recover lithium from brines produced from salt beds in the Atacama desert of northern Chile.

Thus, in the case of hybrid cars, Avalon is positioned to take advantage of the current technology, supplying rare earth metals, and is even better positioned to take advantage of the likely next generation using lithium ion batteries.

RARE EARTHS

The rare earths can be divided into two groups based on atomic number:

- the light rare earths (LREE's) comprising yttrium, lanthanum, cerium, praseodymium, neodymium and samarium (atomic numbers 39 and 57-62)
- the heavy rare earths (HREE's) comprising europium, gadolinium, terbium, dysprosium, homium, erbium, thulium, and ytterbium (atomic numbers 63-71)

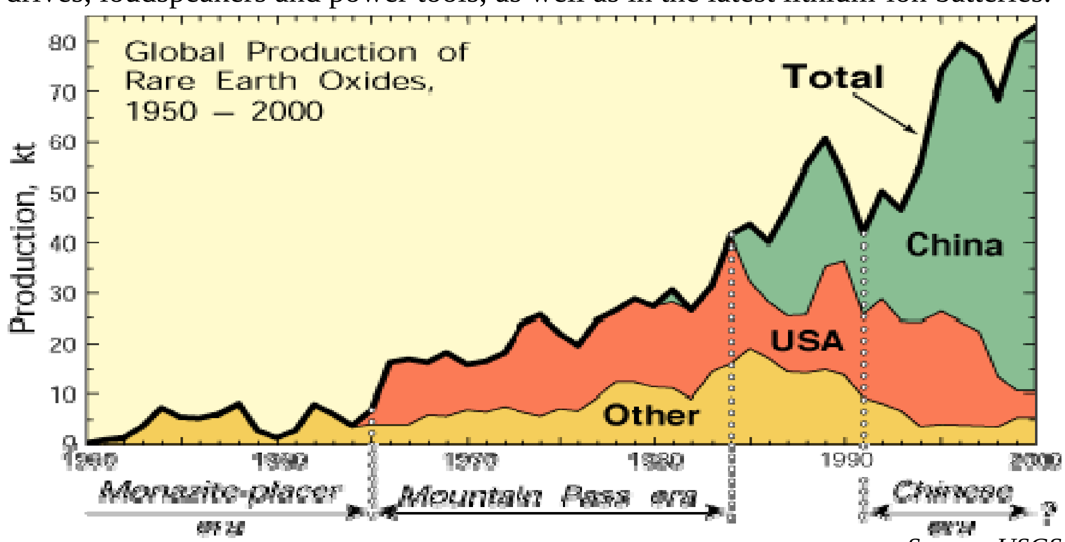
Prices of the more abundant LREE's range from US$3.50 to US$25 per kg while prices of the much scarcer HREE's range from US$400 to US$7,500 per kg.

The rare earths are typical transition metals. They are silver-white on a fresh surface, tarnish rapidly, are soft and usually ductile, and burn when heated. Cerium can be cut with a knife and can catch fire if scratched. None are of any use as structural metals and they are employed mainly in alloys and as compounds. The sulfates of the yttrium group are soluble in water, while those of the dysprosium group are insoluble. The hydroxides of scandium, yttrium and lanthanum are the most alkali of the group.

Rare earths have vital applications in:

- the presentation of color and light
- high intensity magnets
- environmental improvements
- energy efficiency and conservation, and
- miniaturization

Neodymium is the most important rare earth for Avalon. Neodymium has a wide range of uses in metal or compound form in lasers, glass coloring and tinting and, perhaps most importantly, as a fundamental element in neodymium-iron-boron permanent magnets, widely used in automobiles, computers and CD and DVD drives, loudspeakers and power tools, as well as in the latest lithium-ion batteries.



Source: USGS

The chart on the previous page shows the history of the first 40 years of rare earth production, in which one bastnaesite mine at Mountain Pass, CA, played a pivotal role. The Mountain Pass mine has been closed for two years, and only sells product extracted years ago.

The Chinese era, which began around 1990, continues to this day, with a market share for that nation estimated at over 90 percent. Other sources of supply (the Former Soviet Union, India, Brazil) have declined in importance. Current annual global REE demand is estimated at 100,000 tonnes and this is expected to increase by over 50% over the next five years based on demand from the hybrid car market alone.

The development of new markets requires a symbiotic combination of available supply and consumption – producers won't produce unless there is demand and consumers won't consume unless they can see reliable supply. This interplay is the great challenge for new or specialist materials.

China's hegemony has not been beneficial to the penetration of rare earth products. In part, this reflects the fact that, in addition to the Baotou Mine in Inner Mongolia, which supplies about half of total Chinese production, there are perhaps as many as 150 small, poorly capitalized producers who have, at times, dumped product at distress prices.

Although some of the symptoms of a difficult operating environment persist, the worst appear to have abated and most forecasters expect further continued improvement in the business climate.

Moreover, the emerging demand for the REE's from the North American automotive industry creates an opportunity for a new domestic supplier to emerge to serve this growing market. North American consumers will be reluctant to rely solely on foreign sources for vital raw materials, particularly with China's own domestic consumption likely to increase dramatically. Avalon's Thor Lake rare metals project, with its apparently large resource and high quality based on initial assays which demonstrate a relatively high proportion of the more valuable HREE's, provides such an opportunity.

LITHIUM

Lithium is a silvery white, soft and highly reactive metal and is one of the lightest solid elements, having half the density of water. Lithium is not uncommon, but it is generally found in very low concentrations. Economic concentrations generally require natural concentration, often through the formation of salts from brines and through fractionation processes related to the formation of granitic pegmatites.

Lithium's key characteristics are its light weight, high reactivity and the high thermal shock resistance it imparts to glass and ceramics products. It is an extremely powerful flux which makes it valuable in glass manufacture by reducing the amount of energy required for melting or fusion.

More recently, lithium has been used increasingly in re-chargeable batteries, especially in portable applications in which its light weight is important. The lithium-ion re-chargeable battery is rapidly becoming the standard in all modern electronics and is being touted as the battery of the future for electric cars.

Batteries
Lithium batteries were developed in the mid-1970s with rechargeable batteries coming to market in the late 1980s – the Sanyo Group is one of the pioneers and continues to be a technology leader. Sanyo points to several key features of the lithium-ion battery, in which lithium ions inside the battery transfer between the lithium metallic oxide cathode (positive electrode) and a carbon anode during charge or discharge.

These key features include:

- high voltage (3.6volts) reduces the number of batteries used
- high energy density minimizes battery size and weight, making it perfect for use in small portable equipment
- no metallic lithium is used so charging and discharging are very safe
- no memory accumulation so it provides a full charge every time

Sanyo has developed lithium polymer batteries which are lightweight and thin for use in portable information & communication devices such as phones, audio systems and PDA (personal digital assistants.) The polymer battery is ultra-thin and ultra-light, using a gel-type electrolyte that provides exceptional reliability and lifespan with more than 500 recharging cycles combined with high performance characteristics. These lithium polymer batteries work well even at very low temperatures.

Metallurgical applications
Historically, the biggest consumption of lithium has been in the form of lithium carbonate, which is a key ingredient in aluminum smelting. However, the aluminum industry has been working to reduce the use of lithium, with some success.

Ceramics
Lithium in its mineral forms (spodumene or petalite) is used extensively in the ceramic and glass industries mainly in specialty glass applications. Its best known application was in Corning’s famous Corningware® cookware, famous for its durability and thermal shock resistance, properties imparted by the small amount of contained lithium. This type of glass is also used to make stove cook-tops.

The use of lithium in conventional soda-lime glass (windows and bottles) is not yet widespread but its use is growing slowly as energy prices increase because of its ability to reduce the consumption of energy in the glass furnace and reduce furnace refractory wear. Most furnaces in North America are fuelled by natural gas, which has seen substantial price increases in recent years, providing incentive for glass manufacturers to consider lithium additions to reduce gas consumption.

Lithium additions can increase production capacity (owing to faster melting and cooling), reduce emissions of greenhouse gases, and strengthen the glass products. Lithium is also used in ceramic frits and glazes also to take advantage of its low thermal expansion, thermal shock resistance characteristics.

Avalon has reported that lithium minerals (specifically petalite) are being used in a new ceramic-type application having remarkable physical properties, giving it broad potential commercial application as a new "high tech" construction material. It has also learned that the ore from its Separation Rapids deposit is uniquely suited to this new application creating an interesting new market opportunity.

Lithium Feldspar

Lithium feldspar (or Lithospar®) is a blend of constituents of pegmatite – petalite (or spodumene), sodium feldspar, potassium feldspar, mica and quartz that is essentially a lower cost diluted lithium minerals product that Avalon believes has potential for broad application in the glass and ceramics industries as a lower cost lithium minerals alternative. Lithospar was produced by FMC at Kings Mountain NC as a by-product of lithium carbonate production but production of both products ceased when lithium carbonate prices collapsed in the late 1990's and Lithospar is no longer available.

Avalon has recognized that the relatively homogeneous nature of its Big Whopper pegmatite lithium deposit lends itself to low-cost production of a product very similar to Lithospar (but containing petalite instead of spodumene) that it calls High Lithium Feldspar. As discussed above, High-Lithium Feldspar will be marketed as a basic lithium-enriched raw material for the production of a broad range of consumer glass and ceramics products including container glass, flat glass, sanitary ware and ceramic tiles.

Avalon believes that the product will be attractive to glass manufacturers in a high cost energy environment owing to its superior fluxing power which can reduce the manufacturer's energy requirements and produce a more durable product. Because access to rail is excellent, Avalon should be able to price the product very competitively into target markets in the Midwestern and southwestern U.S.

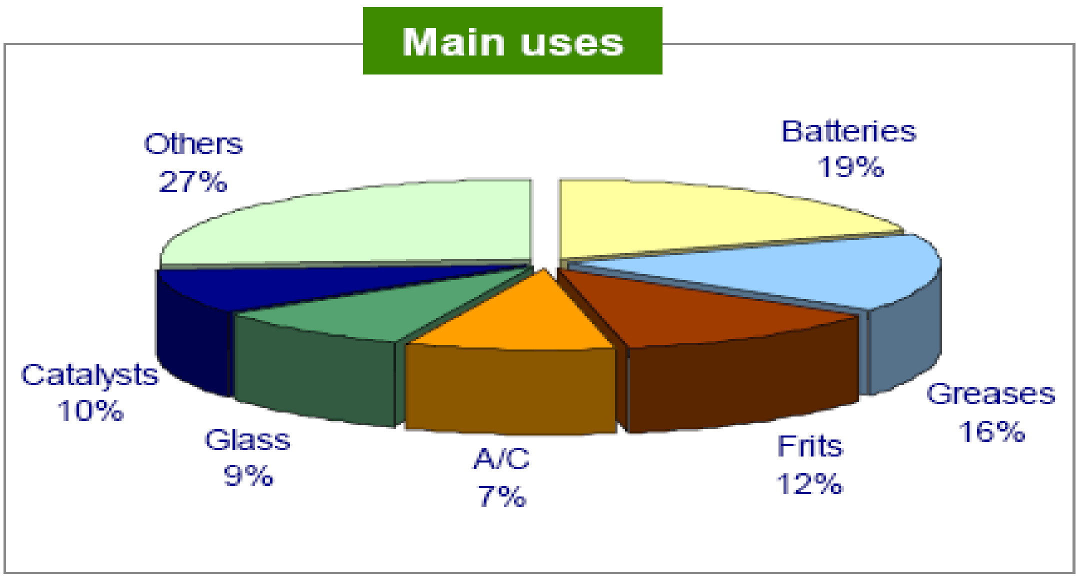
Avalon has retained Amalgamet Canada as its exclusive, worldwide sales and marketing agent – Amalgamet is experienced in marketing lithium products to the glass and ceramics industries. This relationship has been beneficial to Avalon even though it is not yet in production as Amalgamet is assisting the Company in developing the market and was responsible for identifying the new market in the construction material application.

Other

In contrast to its declining use in aluminum smelting, lithium-aluminum alloys are a growing area of demand owing to their light weight and strength, with large applications in the aerospace industry.

Finally, lithium is used in a variety of chemical applications including pharmaceuticals (including the treatment of mood disorders,) rubber manufacture, air treatment, lubricants and others.

According to Sociedad Química y Minera de Chile (NYSE: SQM) the total lithium market has grown at a compound rate of 7.4% so far this decade and currently stands at about 15,000 metric tonnes of metal a year. Consumption is likely to continue to grow at about 5% a year based on continued high growth in demand for lithium batteries. This has translated into rising prices for lithium carbonate, the chemical form of lithium which is the primary feedstock for the battery application.



Source: SQM

Prices now reportedly exceed US$2.00/lb up from around US$0.50/lb just 8 years ago, after the Chilean brine producers entered the market. This has had the effect of making lithium carbonate uncompetitive with lithium minerals such as petalite in glass applications. The chart above shows consumption by sector.

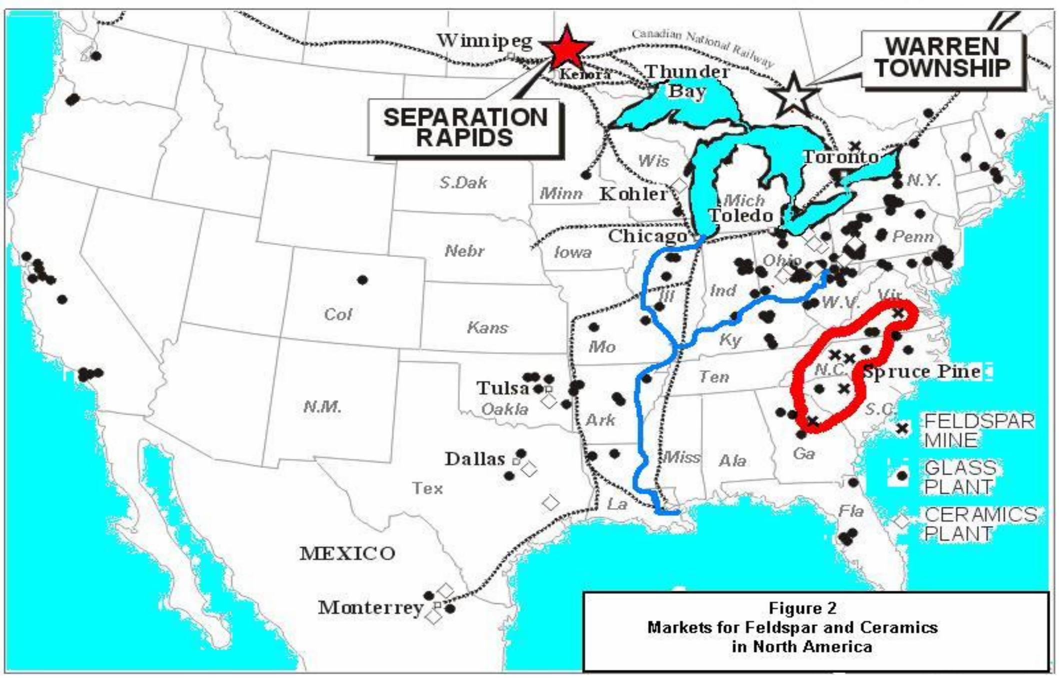
Chile is the world's major producer of lithium carbonate, representing more than half the world's supply, from SQM and Foote Minerals, which was acquired by Chemetall GmbH in 1998. The market is dominated by three players: SQM, Chemetall, and FMC Corporation (NYSE: FMC). Lithium minerals are produced by Bikita Minerals in Zimbabwe, Tanco in Manitoba, and Sons of Gwalia in Australia, but both Bikita and Sons of Gwalia are experiencing production difficulties due to political and/or financial problems. Tanko is a subsidiary of Cabot Corporation (NYSE: CBT).

ANORTHOSITE (CALCIUM FELDSPAR)

Anorthosite or Calcium Feldspar, (chemically (Ca, Na)$Al_2Si_2O_8$) is a very rare, high purity calcic member of the common rock-forming family of plagioclase feldspars. Anorthosite is an igneous rock consisting almost entirely of calcium feldspar (>95%). One occurrence of such high purity anorthosite is on Avalon's Warren Township property, located near Timmins, Ontario. Calcium Feldspar is acid soluble, yielding aluminum chemicals and a silica residue, offering the potential as an alternative source of alumina. The material also has applications as a raw material in glass and ceramic applications such as structural fiberglass and ceramic tile formulations.

Other applications include:

- raw material for rock wool manufacture
- filler for certain molding compounds and specialty paper products
- slag conditioner in ferrosilicon and silicon metal manufacture
- dimension stone manufacture



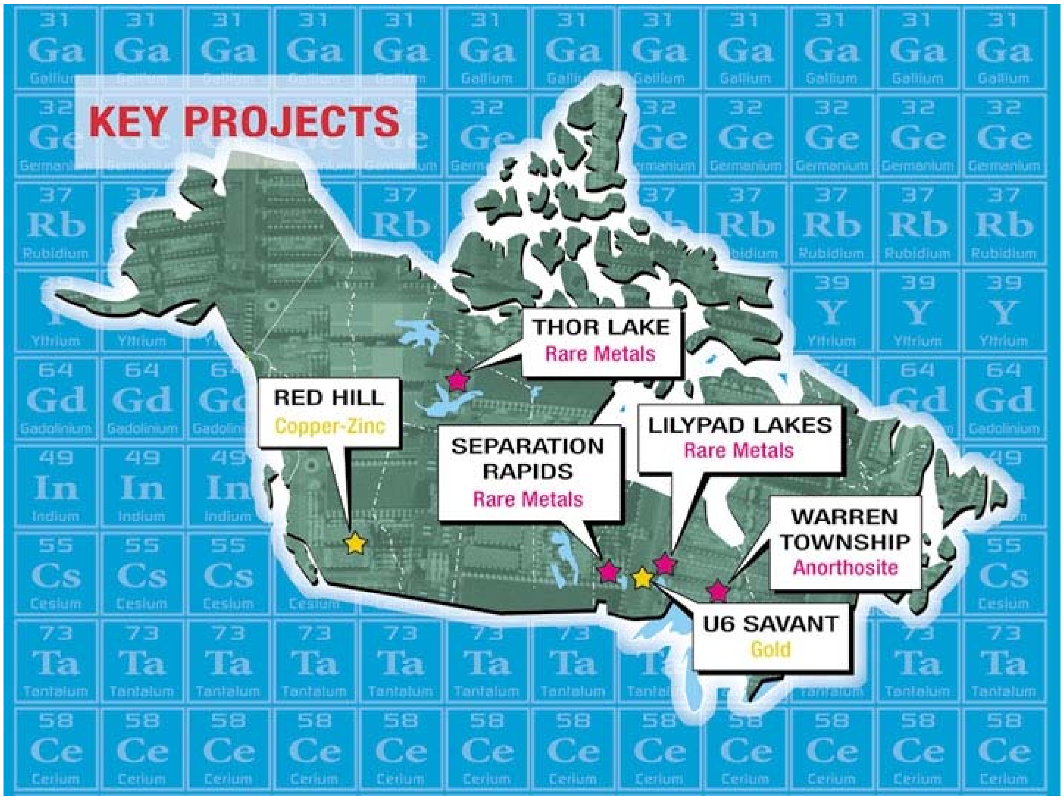
Source: Avalon Ventures Ltd.

The key criteria governing most of the applications are the high aluminum and calcium content, low iron, absence of free silica and low volatile content (LOI). Filler applications generally need a pale gray to whitish color although Avalon has investigated its use in some specialty paper applications and feels this market still has potential.

The application with the most potential for Avalon is in structural fiberglass where the glass formulation utilizes calcium along with alumina and silica. The anorthosite offers the possibility of replacing two other raw materials typically used in such glass formulations (limestone and clay) with attendant cost savings.

Avalon was negotiating with one such glass manufacturer two years ago but were unable to come to agreement on the chemical specifications of the delivered product. Since then, Avalon has reported that it has received a strong expression of interest from another manufacturer that is satisfied with the Avalon's delivered product specification based on initial small scale samples. The Company is optimistic that this expression of interest will result in an order for larger quantities and potentially justify construction of a pilot plant.

PROJECT REVIEW



SEPARATION RAPIDS

Separation Rapids is one of the largest rare metal pegmatite deposits in the world. It was discovered in 1996 by Dr. Fred Breaks of the Ontario Geological Survey who named it the "Big Whopper."

Rare metal pegmatites, which are important as economic sources of lithium, tantalum, cesium, and rubidium are found in many areas of the world but most deposits are too small to be economic.

Separation Rapids is one of only four known, highly-evolved pegmatites of sufficient size to be economically significant – three of the four are in production: the Tanco mine in Manitoba operated by a subsidiary of Cabot Corporation (NYSE: CBT), the Bikita mine in Zimbabwe, and Greenbushes in Western Australia.

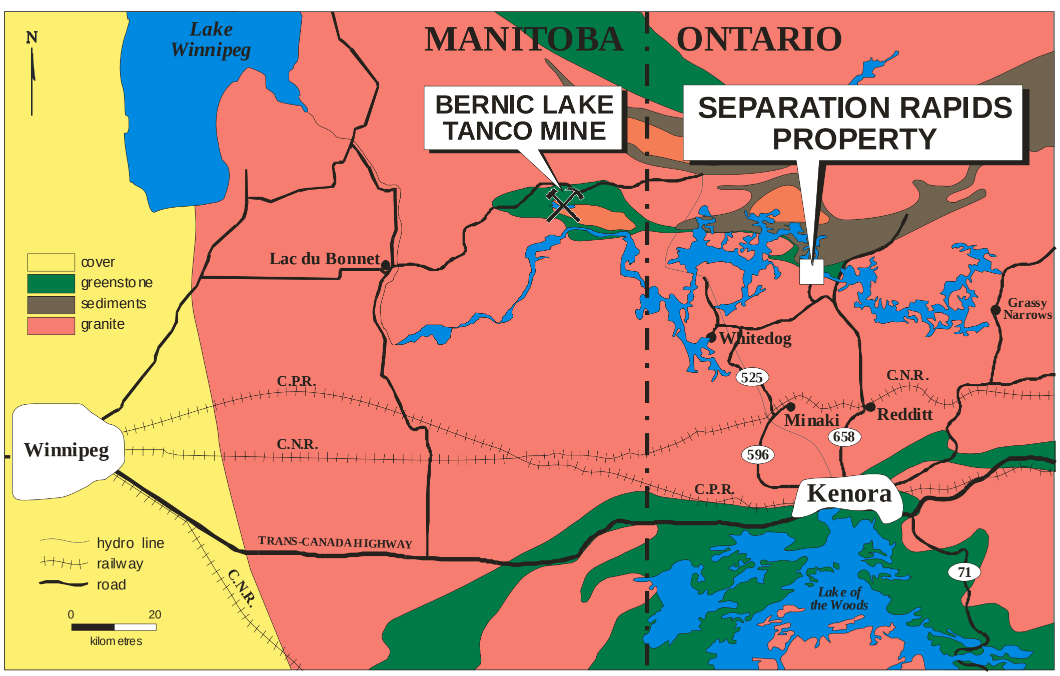
The fourth is Avalon's Separation Rapids which, along with Bikita, but unlike the other deposits, has the advantage that it is enriched with petalite, a rare lithium mineral ($LiAlSi_4O_{10}$). Separation Rapids is located east of the Tanco mine in an extension of the same greenstone belt. Avalon originally planned production of high-purity petalite concentrate with by-product feldspars, micas and tantalum.

Avalon now intends to produce a combined petalite-feldspar product, called *high-lithium feldspar*, along with by-product tantalum concentrates. High-lithium feldspar has applications in the glass industry and, more recently, Avalon has defined a new market related to specialty construction materials. This direct-shipping ore would eliminate the capital and operating costs of processing.

Ownership and Access

In 1996, Avalon acquired an option over Separation Rapids, located in the Paterson Lake Area of the Kenora Mining Division in western Ontario. Avalon exercised the option in 1999 and has subsequently staked additional ground to expand the property to ten mineral claims covering approximately 3,600 acres owned 100% by Avalon. The original owners retained a 2% royalty on the property but Avalon has the right to buy back half of the royalty at any time for C$1,000,000.

Location of Separation Rapids



Source: Avalon Ventures Ltd.

Access is excellent – the property is located approximately 50 miles (70km) by road north of Kenora, Ontario and is accessible from an all-weather road via a network of secondary roads. The Company completed a direct access road to the Big Whopper in 2002. The main line of the Canadian National Railway passes within 50km by road to the south. The property lies within the traditional land use area of the Wabaseemoong Independent Nations of Whitedog, Ontario, which is an aboriginal community located approximately 35km southwest of the property.

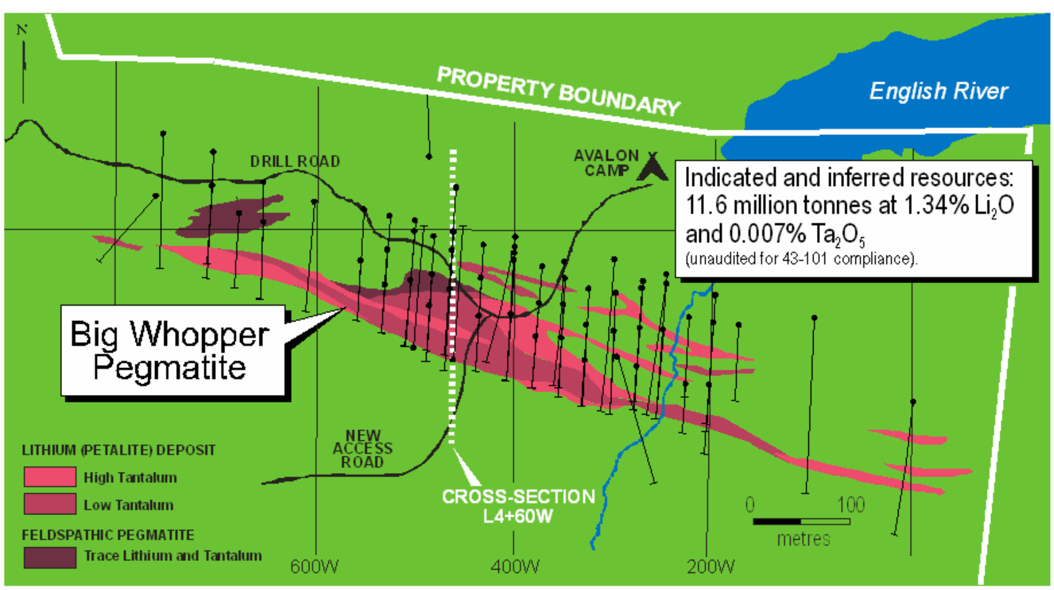
Work Completed to Date

During the option period, Avalon carried out extensive geophysics and geochemical surveys and two phases of diamond drilling totaling approximately 8,751m in 57 holes. This program was accompanied by scoping level metallurgical studies to develop a flow sheet for processing the ore and a marketing study to identify the size and value of the available markets, leading to completion of prefeasibility studies in 1999.

In the following two years, the Company completed additional exploration and metallurgical test work, market studies and plant design studies to provide detailed capital and operating cost estimates for pilot- and full-scale processing facilities leading to a new scoping study to evaluate production of high feldspar lithium. This work was then enhanced by additional market and transportation studies, geological compilation and process test work.

In 2002, a five metric tonne bulk sample was processed to produce commercial quality high-lithium feldspar. The knowledge gained from this program led to a revised process flow sheet that was incorporated into an updated scoping study in February 2003.

Separation Rapids Surface Geology



Source: Avalon Ventures Ltd.

Avalon has expended more than C$4 million on exploration and development, including a comprehensive pre-feasibility study in 1999 prepared by Micon International Inc. This study contemplated the production of high purity concentrates of petalite for sale to glass and ceramic manufacturers such as Corning. That plan was set back by the closure of Corning's Corningware manufacturing facility in the U.S. in 2001.

After reviewing the potential for commercial development of the tantalum resource during a period of high tantalum prices in 2000-01, in 2002 Avalon switched its focus to High-Lithium Feldspar. A scoping study completed in 2003 evaluated the potential to produce a lithium-enriched glass sand by removing the iron and tantalum and aggregating the petalite with feldspar and quartz. Processing of a bulk sample and crucible melt tests on the product demonstrated a viable process to make a product that would lower the melting point of glass, thus reducing energy consumption and therefore production costs.

However, Avalon has not succeeded in breaking into the glass market owing to the typical challenge that the prospective buyers require large volumes of test materials which Avalon is unable to supply on a speculative basis.

In 2005, Avalon was approached on a confidential basis by an international company that has developed a high-specification construction material. While details of the prospective purchaser remain scant, we are encouraged by the fact that Avalon supplied a 6-tonne bulk sample in 2005 that was successfully processed and led to an order for a larger, 300-tonne sample for delivery in April 2006.

Geology and Resources

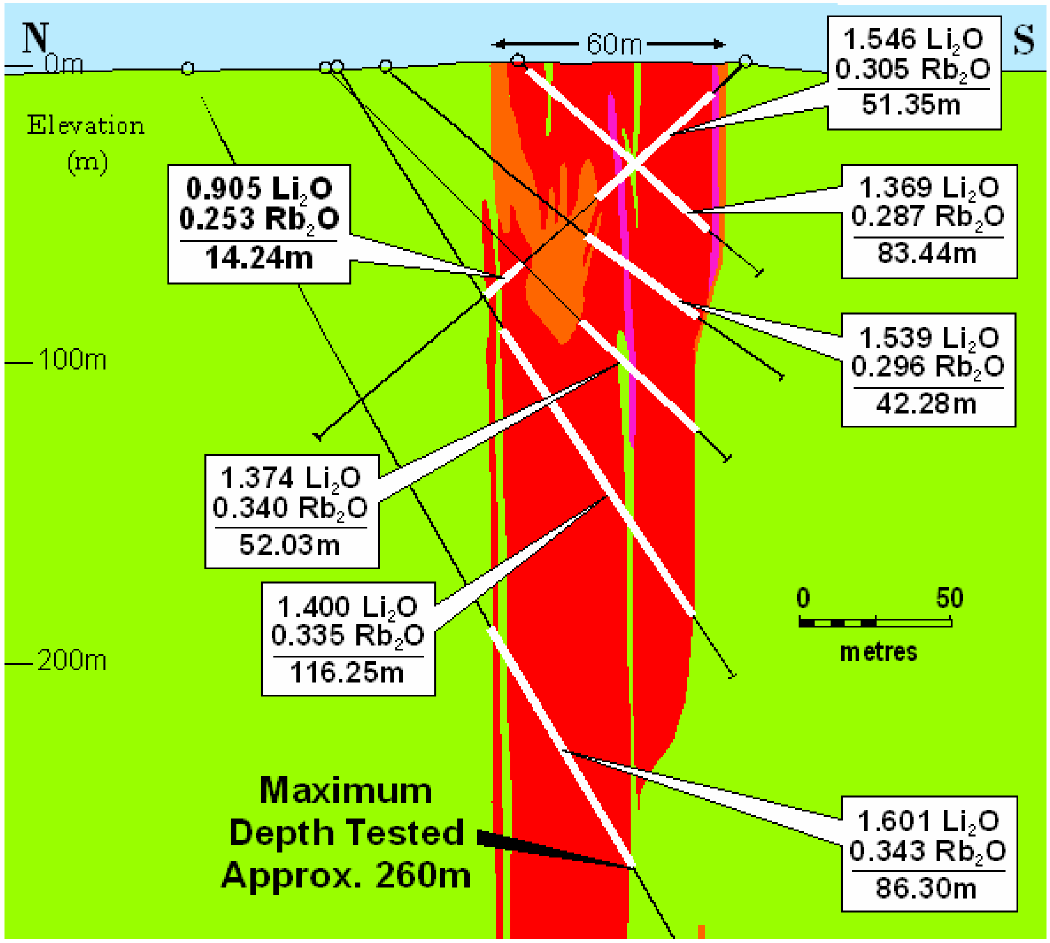
The Big Whopper system has a strike length exceeding 1.5km, with widths ranging from 10m to 80m and a known vertical depth of close to 300m. The deposit, which is still open at depth, consists of a vertically oriented, east-west striking massive petalite pegmatite dyke hosted by metamorphosed mafic volcanic rocks and flanked by narrower barren pegmatitic dykes. The whole package has undergone intense deformation resulting in folding and shearing.

Resource definition has focused on approximately 600m along strike and to a depth of 250m, where an indicated resource of 8.9 million tonnes and an inferred resource of 2.7 million tonnes of petalite, both grading 1.34% lithium oxide, 0.007% tantalum oxide, and 0.30% rubidium oxide. These resources have been audited independently for compliance with NI 43-101.

Resources remain open both to depth and along strike. The lithium and rubidium are consistent with a petalite content of approximately 25% and a rubidium-potassium feldspar averaging 10 to 15%.

The mineralized zone outcrops in a low hill where it averages 55m wide over a strike length of 400m – mining will be straight forward with a low strip ratio. A conceptual pit designed for the Micon prefeasibility study contains a probable reserve of 7.7 million tonnes grading 1.4% lithium oxide.

Big Whopper Pegmatite
(cross section)



Source: Avalon Ventures Ltd.

Environmental Issues

Because the ore contains no toxic, radioactive, or acid-generating minerals and more than 75% of the ore will be processed, the project is environmentally friendly. Avalon has already completed baseline studies in the project area, ensuring that local environmental sensitivities were identified at an early stage.

Avalon has also been proactive in dealing with the First Nations of the area; in August, 1999 the Company signed a Memorandum of Understanding with the Wabaseemoong Independent Nations of Whitedog, Ontario to address their concerns regarding new resource development in their traditional land use area and access to employment opportunities.

Development Plans

As we have described, there are several markets that Avalon has examined in some detail. The latest, the specialty construction material market is particularly attractive because of its size – potentially absorbing all of Avalon's production from Separation Rapids – its unique requirements that match the ore at the property, and the fact that the process will take run-of-mine material.

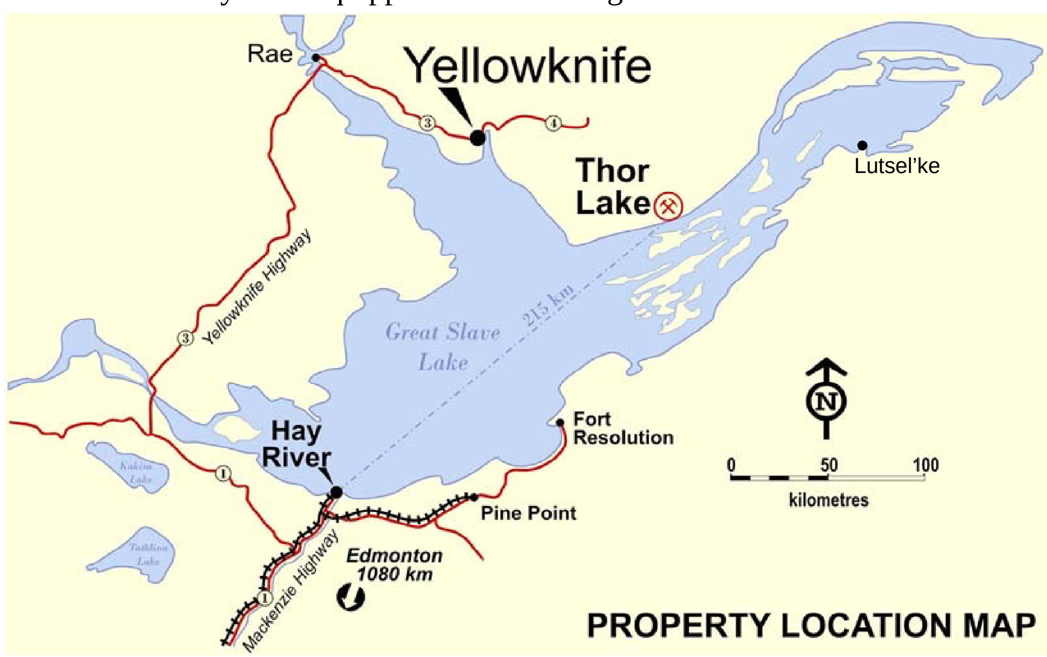
Avalon has recently extracted a second bulk sample of 300 tonnes that has been shipped to the prospective customer. If the results of this work are positive, orders for further test samples are likely in 2006 and a long term supply contract could be signed as early as 2007.

2006 Bulk Sampling Program

Source: Avalon Ventures Ltd

THOR LAKE RARE METALS PROPERTY

Location and Ownership
Thor Lake is located in the Mackenzie Mining District of the Northwest Territories, about 5 km north of Great Slave Lake and approximately 100 km southeast of Yellowknife. The property is accessible by winter road from Yellowknife or by float-equipped aircraft during the summer.



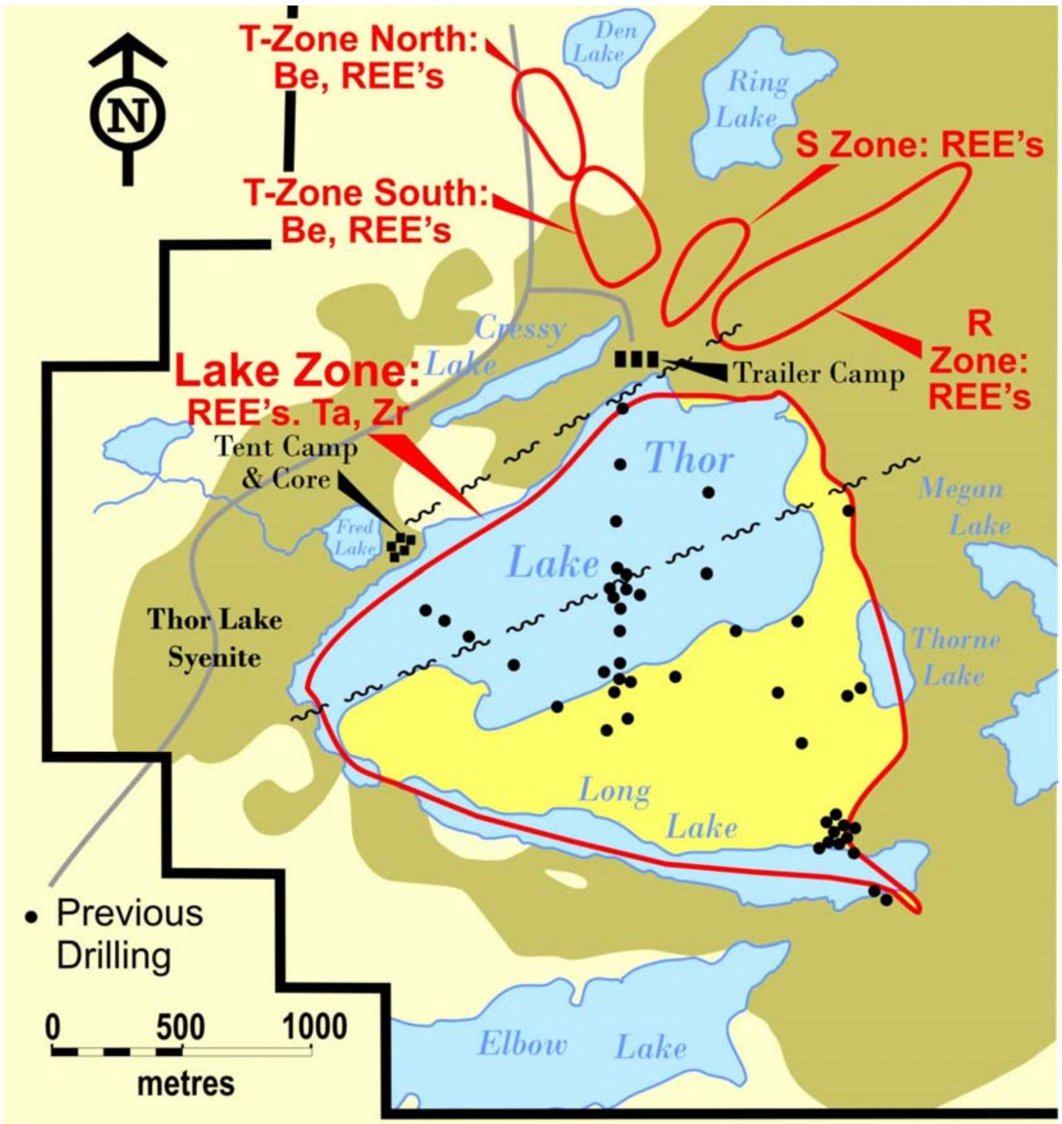
Thor Lake comprises five contiguous mining leases totaling 10,449 acres (4,249 hectares). Each mining lease has a 21-year life and is renewable in 21-year increments. The property is subject to two underlying royalty agreements totaling 5.5%.

In May 2005, Avalon purchased title to Thor Lake from Beta Minerals Inc. for a total consideration of 2,500,000 treasury shares at C$0.12 per share, plus 250,000 share purchase warrants exercisable at C$0.25 per share until May 2007.

The Thor Lake deposit contains the richest known beryllium resource in the world, containing more than 20lb/ton beryllium oxide, which is now reportedly worth at least $200/lb.

General Geology and Mineralization
The Thor Lake rare metals deposit is hosted by a Proterozoic-age intrusive ring complex emplaced in Archean supracrustal rocks. The principal intrusive rocks are syenites, granites and gabbros with associated pegmatitic phases hosting rare metal mineralization. The host rocks exhibit strong hydrothermal alteration and a diverse mineralogy.

Rare Metal Zones



Source: Avalon Ventures Ltd.

The North T deposit is a strongly zoned pegmatite containing at least four distinct mineralogical sub-zones – mineralogical zonation is also evident in the much larger Lake Zone deposit but is less well defined by drilling.

Five zones of rare metal mineralization have been identified: the North T deposit, the South T deposit, the S Zone, the R Zone, and the Lake Zone, of which the North T and South T deposits are of greatest interest for beryllium, yttrium and rare earths while the Lake Zone is of interest due to its yttrium-rare earth, tantalum, niobium and zirconium mineralization.

Exploration and Development History

Rare metal mineralization was first discovered in 1976 by Highwood Resources Ltd. (a predecessor to Beta). Since 1976, over C$12 million has been spent on exploration and development. Work includes geological mapping, sampling, geophysical surveys and nearly 200 drill holes totaling some 13,000m which was followed by underground development work, bulk sampling, metallurgical test work and market studies on the North 'T' deposit.

In 1984 a 25-tonne bulk sample was collected from the high beryllium section of the North T-Zone for initial metallurgical testing. In 1985, a 500m decline went through all of the major zones and demonstrated continuity of the beryllium mineralization and collected bulk samples for metallurgical testing.

At the Lake Zone, drilling by Highwood and Placer delineated a large low-grade mineral deposit containing tantalum, niobium, zirconium and various rare earth elements, including yttrium. In 1982, Placer generated a mineral resource estimate for the Lake Zone of 65 million tonnes grading 0.03% tantalum oxide, 0.4% niobium oxide, 1.7% combined rare earths and 3.5% zirconium oxide. Additional drilling has not been included in resource estimates.

In 1986 the property was optioned to Hecla Mining Company of Canada Limited (NYSE: HL), which withdrew in 1990 as it retrenched its specialty metals group. Additional engineering and market studies during the 1990's were focused on the North T beryllium resource.

Resources and Reserves

There have been several mineral resource estimates undertaken by Beta/Highwood and its various partners. Perhaps the most reliable and certainly the one most often cited is that by Eugene Lindsey, an independent mineral consultant, prepared in 1987 for Hecla, which is summarized in the table on page 23.

Lindsey's assumptions were similar to an earlier report for Unocal Canada except that it included additional data and may have been a more rigorous estimation. What Lindsey describes as proven reserves are approximately equivalent to indicated mineral resources and his probable reserve category is equivalent to inferred mineral resources under NI 43-101.

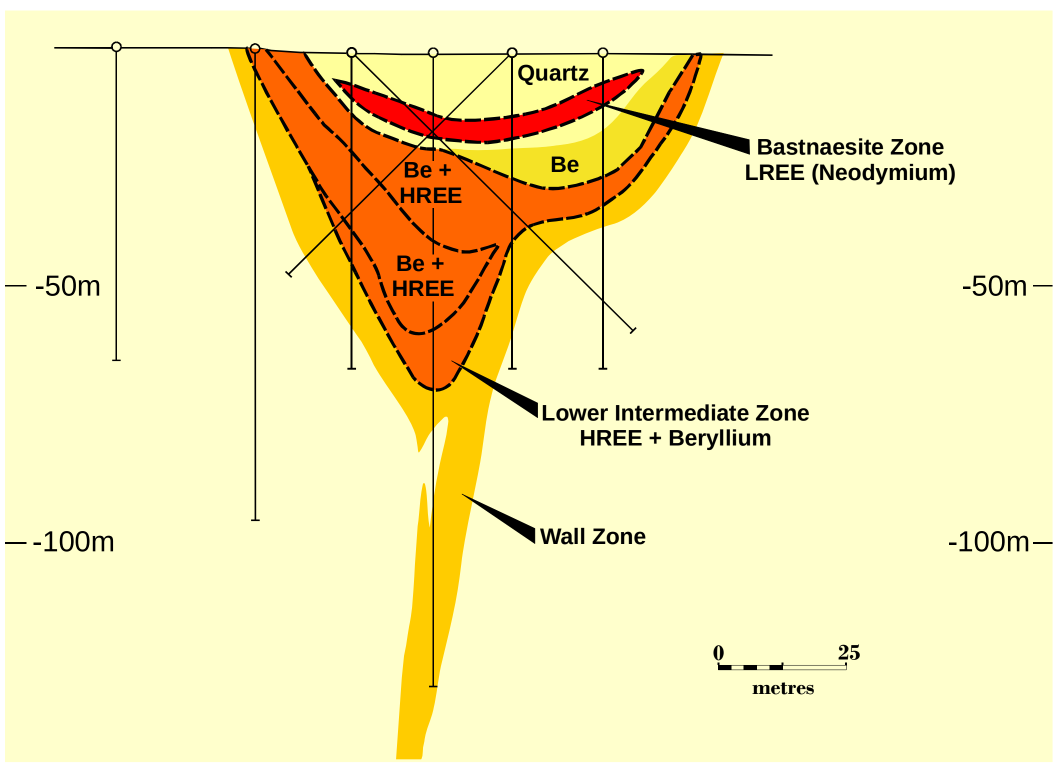
Subsequently, in October 2003 J.F. Allan Mineral Consultants published an independent technical review of the Thor Lake property under NI 43-101 that reviewed but did not fully verify the Lindsey number – this was filed on Sedar by Beta Minerals in November 2003 and remains available.

North T-Zone and South T-Zone Resource Estimate

Zone	Tonnes	beryllium oxide (%)	Yttrium oxide (%)	Cesium oxide (%)	Niobium oxide (%)
North T-Zone					
Proven Reserves*	460,500	1.11	0.167	0.141	0.575
Probable Reserves	91,000	0.82	0.148	0.119	0.535
Total	551,500	1.06	0.164	0.137	0.568
South T-Zone					
Potential Reserves*	1,135,500	0.62	<0.1	<0.1	0.464

Note: "Reserves" above would not qualify for reserve status under National Instrument 43-101. Lindsey's Proven Reserves should be thought of as Indicated Mineral Resources until such time as they are audited for compliance with NI43-101.

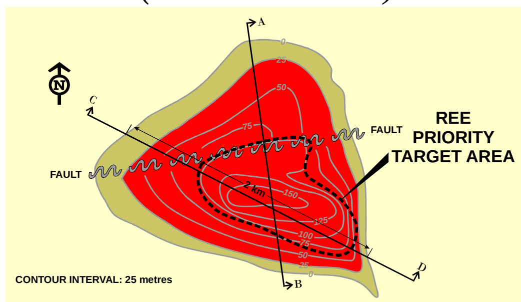
North T Beryllium and REE deposit
(cross section)



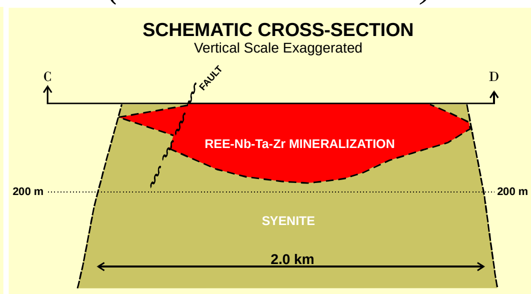
Source: Avalon Ventures Ltd

Lake Zone

(Contour thickness)



(schematic cross section)



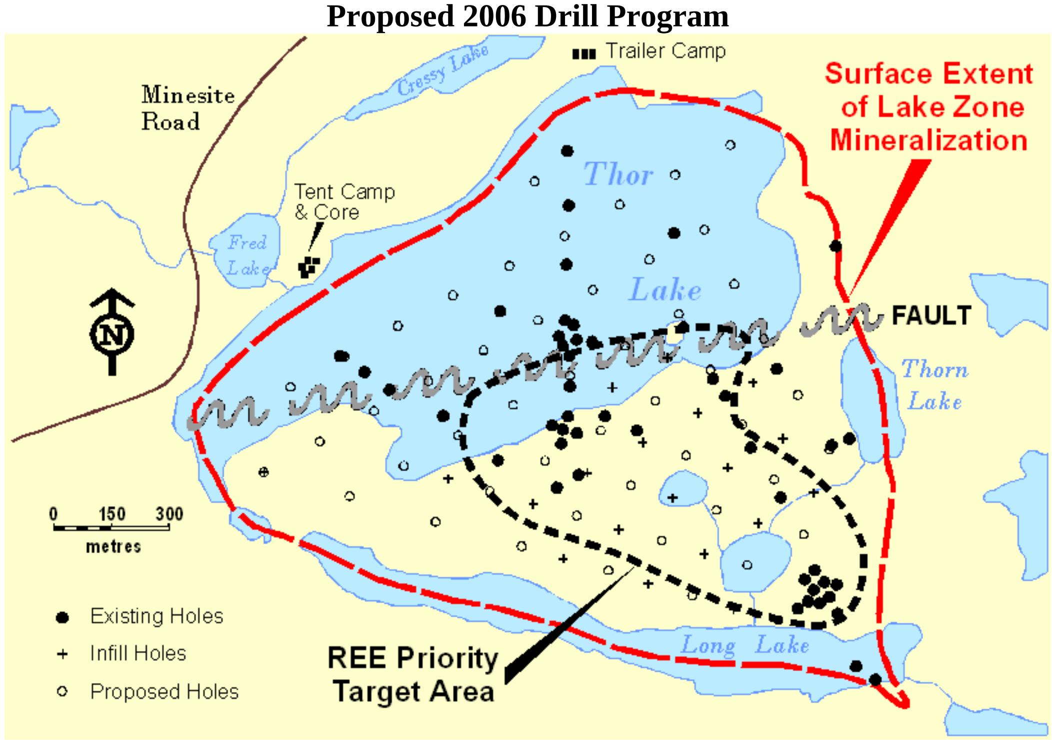
Source: Avalon Ventures Ltd.

2005-2006 Work Program

In June 2005, Avalon initiated a re-evaluation of the economic potential of Thor Lake focusing on the rare earth elements. There are few historical data on the rare earth content of the mineralized zones as these elements were not systematically analyzed for during previous work programs.

Initial assay results from samples collected in 2005 confirm high levels of rare earth enrichment over broad intervals in the Lake Zone and extremely high levels in grab samples from the R-Zone. Additional re-sampling of historical drill cores in September 2005 will be used to plan a drill program to delineate rare metals resources in the Lake Zone, scheduled for 2006.

Proposed 2006 Drill Program



Source: Avalon Ventures Ltd.

Avalon is planning to carry out a scoping study to model potential development scenarios for the Lake Zone REE deposit and help in the design of the delineation drilling program where identification of potential high-grade sub-zones will be a priority.

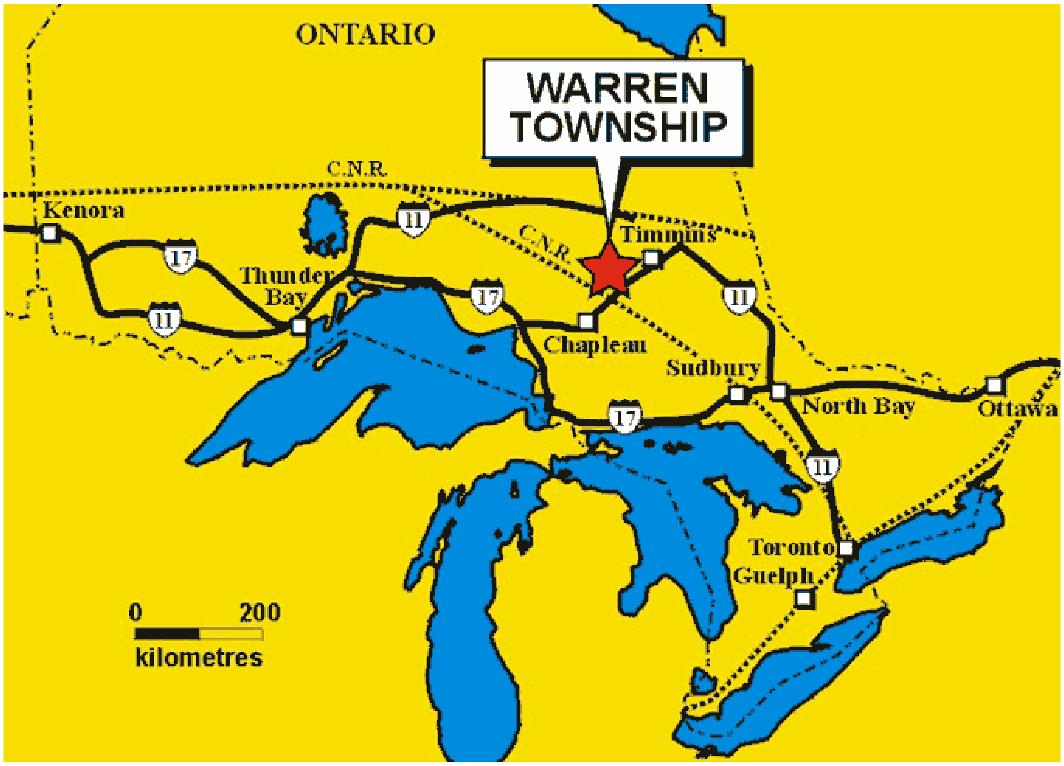
Avalon will also be reviewing the market potential of the beryllium resource. Previous studies have focused on the potential of a value-added beryllium oxide product to compete with existing suppliers. However, it may be possible to market a high-grade beryllium mineral concentrate. In addition, zircon is in high demand for refractory applications and could be a high value by-product

WARREN TOWNSHIP PROJECT

Project Background

Warren Township is an advanced calcium feldspar project located near Foleyet, 100 km west of Timmins, Ontario. The project comprises three mining claims totaling 1,800 acres that were staked by Avalon in 2002. The three claims cover a portion of the Shawmere anorthosite complex hosting a large resource in excess of 800,000 tonnes of a high purity (up to 98%) anorthosite.

Anorthosite is an unusual mafic igneous intrusive rock consisting of greater than 90% high calcium plagioclase feldspar that can produce a high quality calcium feldspar material for manufacturing reinforcing glass fiber and other industrial products such as mineral fillers. The property is located near both road and rail transportation that provide readily accessible to markets in southern Ontario and the Midwestern U.S.

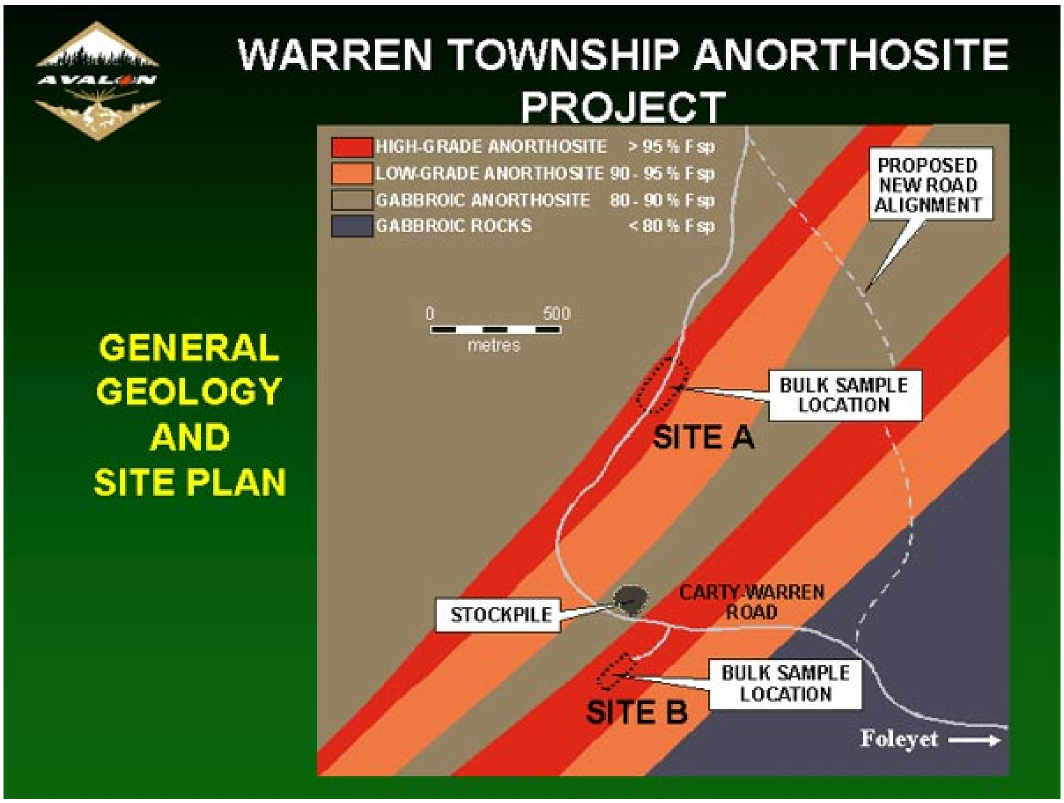


Source: Avalon Ventures Ltd.

Previous Work
Warren Township was previously owned by Purechem Limited, a private company, which evaluated the property as a potential producer of aluminum chemicals and later as a producer of high-purity calcium feldspar. Purechem identified a major potential customer for the calcium feldspar and completed a positive pre-feasibility study in 2001.

The calcium feldspar was found to be well suited as a raw material for the textile glass reinforcement product made by the potential customer and would replace high cost kaolin and high purity limestone being imported from the United States.

Avalon completed an updated pre-feasibility study in February 2003 that found that the market opportunity in reinforcing glass fiber identified by Purechem still existed.



Source: Avalon Ventures Ltd.

In 2004, Avalon carried out an $80,000 work program on the Warren Township property involving the collection and processing of a 10 tonne bulk sample to produce test quantities of the calcium product for two potential customers, one in the glass industry and the other in the paper industry. The Company also completed engineering work to design a pilot plant and work program for carrying out a larger scale bulk sampling program. This program did not proceed after the potential customer in the glass industry determined that the soda level in the product exceeded their limit.

The second potential customer, considering the product for a filler application, indicated that it requires a larger test sample to complete its evaluation of the material. Cost efficient production and delivery of this sample is contingent upon also receiving an order for a large scale bulk sample from the glass customer and consequently the project was put on hold in 2005.

Early in 2006, the Company received a new expression of interest for the calcium feldspar product from another potential customer in the glass industry. The soda levels in the material were acceptable to this customer and the Company has since determined that its product can be cost competitive. Plans are presently being prepared to revive the bulk sampling program and possibly construct a pilot plant near the site, if the potential customer delivers a firm order for the product.

OTHER PROJECTS

Lilypad Lakes

Lilypad Lakes comprises 14 claims totaling 7,680 acres covering a field of tantalum- and cesium-rich pegmatites, located 150km northeast of Pickle Lake, Ontario. The claims were staked by Avalon in 1999 and 2000. In 2000, Avalon optioned the property to Global Canada Company which funded two exploration programs totaling C$1.43 million in 2000 and 2001 – Global has since withdrawn from the project.

Lilypad Lakes was originally explored for lithium in the 1950s by Standard Lithium Corporation and in the late 1970s for tantalum by Tantalum Mining Corporation of Canada (Tanco). Standard drilled two targets but did not assay for tantalum or cesium. Tanco carried out detailed geological mapping and geochemical sampling identifying ten tantalum targets that were drill tested. Two holes tested the South Dyke and intersected significant tantalum values of 0.058% tantalum oxide over 9.8m and 0.038% tantalum oxide over 11.0m. Tanco did not systematically assay for cesium, rubidium, or lithium.

Reconnaissance mapping and sampling by Avalon confirmed economically significant tantalum mineralization at several locations and discovered associated high grade cesium mineralization. Further work in 2000 identified 14 occurrences of economic-grade tantalum mineralization, hosted by a field of highly-evolved rare metal pegmatites extending over an area of at least 18 square km.

The following year, Avalon completed detailed geological mapping, prospecting, channel sampling of all known pegmatite occurrences, magnetic and gravity geophysical surveys, preliminary metallurgical test work for tantalum as well as a further 2,786m of diamond drilling in 15 holes.

This drill program began to delineate the tantalum-cesium zones while testing several geochemical and geophysical targets for new rare metal pegmatites. The most significant results were obtained from the Rubellite Dyke, which has been traced over a strike length of 100 m and to a vertical depth of 250 m, where it shows evidence of increasing thicknesses exceeding 40 m and remains open to depth. The whole width of the dyke is mineralized with tantalum with average grades ranging from 0.025% to 0.048% tantalum oxide.

Detailed mapping identified two new parallel tantalum rich pegmatites within 100 m of the Rubellite Dyke. Grab samples from returned assays ranging from 0.04% to 0.11% tantalum oxide while channel sampling of the Rubellite Dyke revealed new zones of cesium enrichment averaging up to 1.8% cesium oxide over 4.0 m and 1.4 cesium oxide over 9.5 m along with tantalum grades of 0.061% and 0.048% tantalum oxide respectively.

Other significant new discoveries were made at the South and Pollucite Dyke areas. The Pollucite Dyke may be more important for its enrichment in the rare cesium mineral pollucite which produced assays of up to 4.62% Cs2O. This rare mineral is being produced by Cabot Corporation to make a successful new specialty drilling fluid for deep oil wells called cesium formate.

New mineralized pegmatites were also discovered at several other places on the property, indicating the potential for a very large buried pegmatite.

A 235 kg sample from the Rubellite Dyke grading 0.053% tantalum oxide was tested at Lakefield Research Ltd. A direct gravity concentration recovers 60-65% of the tantalum into a concentrate grading over 30% tantalum oxide, and the recovery can be improved to over 80% by floating the tailings.

RED HILL

Red Hill is a copper-zinc-silver-gold volcanogenic massive sulfide ("VMS") prospect located approximately 80km west of Kamloops, B.C. The property comprises 11 claims covering a total area of 6,080 acres and easily accessed via the Trans Canada Highway that runs along the length of the property.

Avalon is earning a 100% interest in the property from Teck Cominco Limited by incurring expenditures totaling C$1,200,000 over four years – Teck Cominco would retain a 2% NSR royalty interest and certain back-in rights to re-acquire up to a 70% interest in the property.

Red Hill covers a sequence of mafic and felsic volcanic rocks and associated volcano-sedimentary and intrusive rocks interpreted to be a classic island arc type shallow, subaqueous volcanic assemblage of the type which frequently host copper-zinc-silver-gold VMS deposits. The Permo-Triassic aged Nicola group rocks are exposed in a 5km wide NNW-striking thrust.

The property has been intermittently explored for copper-zinc-silver-gold VMS deposits over the past 50 years. The prominent gossans and copper showings attracted prospectors traveling along the Thompson River in the early part of the 20th century. Most of the modern exploration was carried out by Noranda, Rea Gold, BP Selco and Teck Corp.

Teck staked the property in 1997 and carried out geological, geochemical and geophysical surveys and 22 diamond drill holes to explore three separate targets in 1998 and 2001.

Prior to Teck's involvement, work on the northeast part of the property identified widespread disseminated, stringer and massive sulfide mineralization that was drill tested in 1984 and 1985 by BP Selco and again in 1998 by Teck Cominco.

In 2005, Avalon compiled the historical data and completed detailed geological mapping in order to develop an alternative structural model for the property. Previously, it had been assumed that the volcanic rock units formed a simple, steeply west-dipping package with little structural deformation other than fault offsets. Consulting geologist Jean-Philippe Desrochers, Ph.D. of SRK Consulting, an expert in structural geology and volcanogenic massive sulfide deposits, concluded that the host volcanic rocks are strongly deformed and folded with an overall orientation which is approximately orthogonal to previous interpretations with the folds plunging to the northwest.

Targets generated by the new structural model were drill tested in November 2005. The highlight was one hole which intersected two narrow bands of massive sulfide mineralization assaying 2.08% copper, 7.5 g/t silver over 1.35 meters and 0.56% copper, 0.79g/t silver over 2.95 meters. The program confirmed the new model and support a follow-up geophysical and drill program. A budget of $250,000 has been established for this program.

U6 Savant

U6 Savant is located in Conant Township, approximately 13km north of Savant Lake and 50km east of the town of Sioux Lookout in Northwestern Ontario. The property lies about 15km east of Hwy 599 and is accessible via a network of logging roads. The property, comprising two claims covering 1,280 acres owned by Teck Cominco Limited, is underlain by felsic to intermediate volcanic rocks and was originally explored for copper-zinc-silver volcanogenic massive sulfide mineralization. Avalon can earn a 100% undivided interest in the property by incurring $500,000 in expenditures on the property over four years while Teck Cominco would retain a 2% NSR interest and the right to back-in for up to a 70% interest.

Teck-Cominco acquired the claims after observing that the quartz-sericite-pyrite schist is reminiscent of the rich gold deposits of the Bousquet district, Abitibi, Quebec. The area drilled historically forms part of a larger area of anomalous gold in soils – limited trenching identified highly anomalous gold grades in grab samples.

In 2005, Avalon carried out a $25,000 work program involving a compilation of previous work, prospecting, channel sampling and geological mapping to prioritize targets for drilling in 2006. Highlights from the channel sampling include values of 2.72 g/t gold over 0.9 meters and 3.15 g/t gold over 1.0 meters.

These results came from a showing located peripheral to an interpreted major structure which produced the significant assays in the historical drilling of 0.65 g/t Au over 36.0 meters including 1.2m @ 6.8g/t Au. The zone remains open to depth and along strike for delineating zones of economic grade gold mineralization, and has yet to be tested across its full width which is estimated to be in the order of 100 meters. A minimum 600 meter drilling program is planned to test this target in the summer of 2006.

Mussy Lake
In June 2004 the Company staked eight claims totaling 3,240 acres in the Mussy Lake area near Marathon, Ontario. The claims cover the projected eastern extension of a promising nickel-copper-platinum group prospect called Big Lake being explored by MetalCORP Limited. The geological environment is very similar to that of the Eagle discovery in northern Michigan where Kennecott Minerals reported a high-grade resource of 5 million tonnes grading 3.68% nickel, 3.06% copper and 0.1% cobalt.

Recently, MetalCORP reported the discovery of high grade copper-zinc-silver gold VMS-style mineralization on the Big Lake property with one hole intersecting 4.0 meters of massive sulfide mineralization assaying 7.5% Copper (Cu), 2.2% Zinc (Zn), 138.0 g/t Silver (Ag) and 9.2 g/t Gold (Au)**.**

Avalon believes that MetalCORP's Big Lake project could host a Voisey's Bay caliber nickel-copper-PGE deposit or a rich copper-zinc-silver-gold VMS deposit.

Wolf Mountain
The Wolf Mountain platinum-palladium project is located approximately 90km northeast of Thunder Bay, Ontario and covers two Proterozoic aged layered ultramafic intrusions favorable for the occurrence of platinum-palladium plus copper-nickel deposits. Wolf Mountain consists of two properties: in November, 2003, Avalon elected to sell its 40% working interest in the project to joint venture partners Eastwest Resource Corporation and Canadian Golden Dragon Resources Ltd. for $20,000 cash and a carried 0.4% NSR royalty interest in the two properties. The joint venture can purchase this royalty interest from the Company at any time for $1,000,000 cash.

East Cedartree
Avalon holds a 2% royalty interest in five claims, comprising part of the East Cedartree gold property located 70km southeast of Kenora, Ontario. Metalore intersected significant gold values of up to 0.24 oz/ton gold over a core length of 23.30m and continues to explore the property.

FINANCIAL ANALYSIS

As of February 28, 2006 Avalon had approximately C$2.7 million in net current assets. In addition, there are approximately 5.7 million options and warrants with an average exercise price of C$0.37 and all of which are in the money. Upon exercise, these would bring in an additional C$2.1 million.

Even at the increased level of activity during the three months to the end of February, 2006 total cash expenditures were less than C$200,000, indicating that the Company can survive for between two and three years at that burn rate. In view of the fact that the Company may be able to get into production at Separation Rapids without construction of a processing plant and with the use of contract miners, Avalon may be able to stretch this small amount of cash a long way.

Consolidated Balance Sheet: 02/28/06 in C$

Assets	
Current Assets	
Cash and equivalent	2,873,981
Receivables and prepaid expenses	61,089
	2,935,070
Investments	22,143
Resource Properties	4,170,552
Property, Plant and Equipment	4,916
	7,132,681
Liabilities	
Current Liabilities	
Accounts payable	183,541
	183,541
Shareholders' Equity	
Share Capital and contributed surplus	23,605,274
Deficit	(16,656,134)
	6,949,140
	7,316,222

PROJECT VALUATION

Because Separation Rapids is the most advanced, we have focused our analysis on that project. We believe that Separation Rapids alone supports the current market valuation of Avalon based on what we consider to be "worst case" price and production projections. Our conservative case supports a valuation well above the current market capitalization of the Company and what we consider to be the most likely case suggests the potential for a considerably higher valuation as the Big Whopper is brought on stream over the next year or so.

Separation Rapids
Pricing of the Separation Rapids lithium product as a direct shipping ore for the new application as a hi-tech construction material has not yet been established.

In December 2004, analysis of the potential for High-Lithium Feldspar assumed a price of US$55 per tonne, which reflected the price of other high-purity feldspars at that time. Since then, other feldspar prices have increased along with most other commodities.

An alternative approach is to use the potential value of the material as lithium carbonate. Lithium carbonate contains 40% lithium oxide (Li_2O) and is selling for more than US$2.00 per pound. Thus, pure lithium oxide could be valued at US$5 per pound (US$2.00 divided by 40%) or approximately US$11,000 per tonne.

The Big Whopper deposit averages 1.34% lithium oxide, which indicates an in-the-ground value of approximately US$150 per tonne.

We have considered four profiles for Separation Rapids, as set out in the table below:

- In the first case, we have taken the production level projected in the 2003 scoping study and the pricing assumptions of that report – US$48 per tonne. Since metal prices in general were at there lowest levels in real terms since the Depression of the 1930s, we feel comfortable viewing this as truly "worst case."

  Nonetheless, even on this extreme case, a multiple of nine times cash flow would place a value of nearly C$60 million, or approximately C$1.25 per share on this project alone.

- In our second case we have doubled the production rate and assumed 2004-level pricing of US$55 per tonne. A nine-times cash flow multiple indicates a value of more than C$150 million – even a more conservative multiple of six would value the project at more than C$100 million – in excess of C$2.00 per share – once it is in full production.

- Our third case assumes this same production rate but a price increase of 25% from 2004 levels to US$68.75 per tonne. Projected annual cash flows increase to nearly C$25 million and, again assuming a multiple of six, the project could be valued at approximately C$150 million, or more than C$3.00 per share.

- In our final case, we have assumed pricing reflecting the current market for lithium carbonate – namely US$150 per tonne. At this level, the project has the potential to generate nearly C$70 million in pretax cash flow, or approximately C$1.50 per share currently in issue. If Avalon can achieve these operating criteria in terms of price and sales volume, the annual pretax cash flow could approximate the current market capitalization.

**Separation Rapids:
Simplified Cash Flow Analysis**

		Worst Case	Base Case	Conservative Case	Target Case
Tonnage mined	metric t	1,025,000	2,050,000	2,050,000	2,050,000
Feldspar recovered	metric t	250,000	500,000	500,000	500,000
Strip ratio		3.10	3.10	3.10	3.10
Price	US$/t	48.00	55.00	68.75	150.00
Price	C$/t	53.33	61.11	76.39	166.67
Revenue	C$	13,333,000	30,556,000	38,194,000	83,333,000
Mining	C$	3,844,000	7,688,000	7,688,000	7,688,000
Crushing & hauling	C$	2,969,000	5,938,000	5,938,000	5,938,000
Total	C$	6,813,000	13,626,000	13,626,000	13,626,000
Total costs per tonne	C$/t	27.25	27.25	27.25	27.25
Operating cash flow	C$	6,520,000	16,930,000	24,568,000	69,707,000
Cash flow per tonne	C$/t	26.08	33.86	49.14	139.41

Source: Proteus Capital Corp. estimates

Thor Lake

Thor Lake also offers considerable potential. We discussed the 1987 report by Eugene Lindsey on page 22. In summary, Lindsey reported categories that under N.I. 43-101 could equate to indicated mineral resources totaling 460,500 metric tonnes grading 1.11% beryllium oxide. With beryllium oxide reportedly selling at more than US$200 per pound (and metal at more than $375 per pound), that is some US$2.3 billion in the ground.

That figure does not take into account the cost of extraction, recovery rates, capital costs or the time value of money. However, it is nearly 40 times greater than the current market valuation of US$60 million.

In addition, Warren Township, Lilypad Lakes, and the other earlier-stage projects have value. Considering the market value of exploration companies, where market capitalizations comparable or greater than Avalon's are not uncommon, the potential upside in Avalon's stock becomes clear.

MANAGEMENT

Donald S. Bubar, M.Sc., P.Geo. President and CEO. Don Bubar is a geologist with over 25 years' experience in mineral exploration in Canada. He was formerly Vice-President Exploration for Aur Resources Inc. and has been involved in several important gold and base metal discoveries including the world-class Louvicourt copper-zinc-silver-gold VMS deposit in Val d'Or, Quebec. He was appointed President of Avalon in 1995.

Lawrence P. Page, Q.C., Chairman of the Board. Larry Page is a lawyer with over 30 years involvement as counsel to and director of mineral exploration companies. He is a director or officer of numerous other reporting companies, including Western Silver Corp.

R.J. (Jim) Andersen, C.A., C.P.A., CFO and Vice-President, Finance. Jim Andersen is partner of Forbes Andersen LLP, an accounting firm. He was in charge of the Company's external audit from 1996 to 2000.

Marie D. Thorne, Corporate Secretary. Ms. Thorne has over 25 years of relevant business experience and over the past 5 years served as Assistant Secretary and Executive Assistant to the President for a TSX-listed junior mining company.

Alan Ferry, C.F.A., Director. Alan Ferry is Vice President, Dominick and Dominick Securities Inc. He has over 25 years experience as a mining analyst with various investment dealers. He is a director of several other reporting companies including Guyana Goldfields Ltd.

F. Dale Corman, P.Eng., Director. Dale Corman has over 30 years experience in mineral exploration, development and finance. He currently serves as Chairman and CEO of Western Silver Corp., which has recently agreed to be acquired by Glamis Gold Ltd. for C$1.2 billion. He is a director of several other reporting companies, including Radiant Resources Inc.

Brian D. MacEachen, C.A., Director. Brian MacEachen has over 10 years experience in mining finance and accounting. He serves as CFO of Linear Gold Corp. He was formerly CFO for Salter Street Films and, prior to that, treasurer of Franco-Nevada Mining Corporation Ltd. and Aur Resources Inc.

Joseph G. Monteith, Director. Joseph Monteith is a chemical engineer. He serves as President of Stormceptor Corporation and three other private industrial companies.

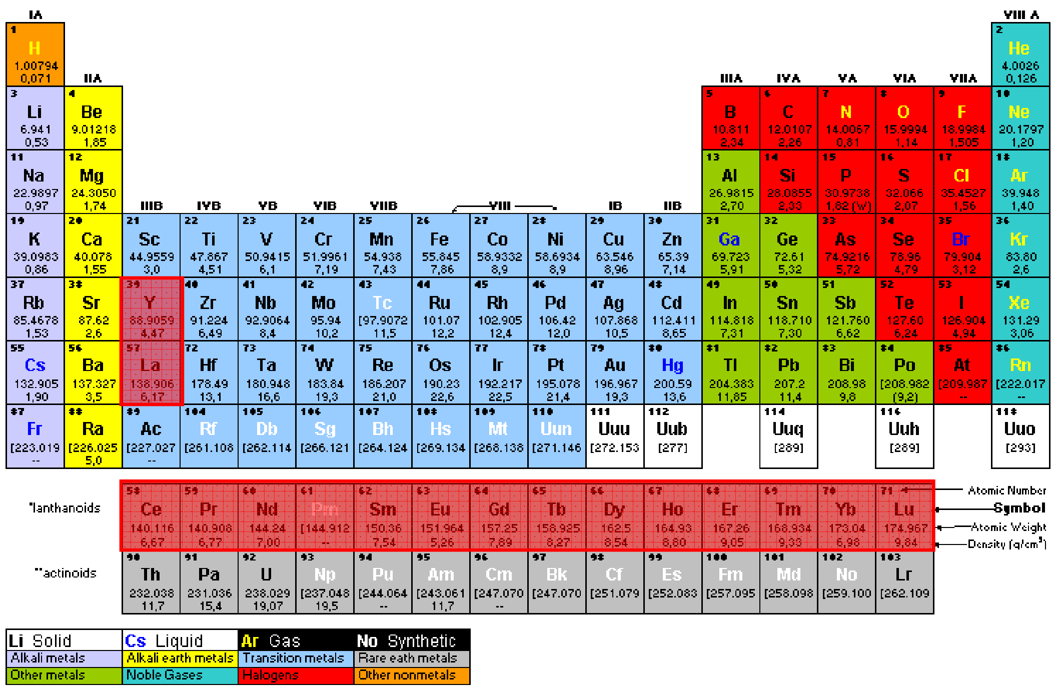
Technical consultants: this team is supported by technical consultants and advisors, including: Paul Schmidt, P.Eng, Project Manager; Les Heymann, P.Eng., Metallurgist; Don Hains, P.Geo., Minerals Marketing; Charles Merivale, Amalgamet Canada, Lithium Minerals marketing; David Trueman, P.Geo., Rare Metals Geologist; Chris Pedersen, P.Geo., Rare Metals Geologist; Jean-Philippe Desrochers, P. Geo. Gold and base metals geologist; Tony Mariano, Ph.D., Consulting Mineralogist; Wardrop Engineering; and Jacques Whitford Environmental.

APPENDIX: DETAILED MARKET DISCUSSION

We believe that the global rare metals industry is poised to enjoy a steady increase in demand from existing markets as rare metals establish many beachheads in entirely new applications. The hundreds of present day end-uses for rare metals products (many of them impossible without a rare earth ingredient) will multiply in the years ahead, notably in ceramics, electronics, and nanotechnology.

RARE EARTHS

Periodic Table
(rare metals boxed in red)



Historical Background

The metals known as the "rare earths" comprise three members of Group IIIB of the Periodic Table: scandium (Sc, 21), yttrium (Y, 39), and lanthanum (La, 57), and 14 lanthanides: cerium (Ce, 58), praseodymium (Pr, 59), neodymium (Nd, 60), promethium (Pm, 61), samarium (Sm, 62), europium (Eu, 63), gadolinium (Gd, 64), terbium (Tb, 65), dysprosium (Dy, 66), homium (Ho, 67), erbium (Er, 68), thulium (Tm, 69), ytterbium (Yb, 70) and lutetium (Lu, 71).

Not all rare earths are, in fact, very rare. Cesium is the 25th most abundant element in the earth's crust, ahead of tin and lead, and only a little less abundant than zinc. At the other extreme, promethium has a natural abundance of zero because its longest-lived isotope, Pm147, has a half-life of only 2.6 days! It has to be made freshly by nuclear reactions.

The rare earths can be divided into two groups:

- the yttrium group containing yttrium, lanthanum, cesium, praseodymium, neodymium and samarium, and
- the dysprosium group containing europium, gadolinium, terbium, dysprosium, homium, erbium, thulium, and ytterbium, with scandium in a group on its own.

Until the 1950's, few of the dysprosium group had been isolated as metals, and only cesium was at all common, usually as an alloy with lanthanum, neodymium, and praseodymium called "mischmetall."

Prices of the yttrium group range from US$350 to US$540 per kg while prices of the dysprosium group range from US$400 to US$7,500 per kg. Scandium is sells for approximately US$18,000 per kg – about the same as gold.

The rare earths are typical transition metals. They are silver-white on a fresh surface, tarnish rapidly, are soft and usually ductile, and burn when heated. Cesium can be cut with a knife and can catch fire if scratched. None are of any use as structural metals and they are employed mainly in alloys and as compounds. The sulfates of the yttrium group are soluble in water, while those of the dysprosium group are insoluble. The hydroxides of scandium, yttrium and lanthanum are the most alkali.

These elements are commonly found together within their predominant host minerals – bastnäsite, monazite and zenotime.

Although some commercial rare earth products were created as early as the 1880s, their volumes and uses were very restricted. The commercial dawn of the industry occurred about 40 years ago, when Rhône Poulenc (now Rhodia Electronics & Catalysts) developed an efficient process to economically separate rare earths in high volume at a plant, which still runs today, at La Rochelle in southwestern France.

Since then, rare earth ingredients have seen vital applications in:

- the presentation of color and light
- environmental improvements
- energy efficiency and conservation, and
- miniaturization

The following sketch of the uses of the major rare earths demonstrates their deep and broad penetration into the fabric of modern life.

- Cerium: numerous commercial applications for cerium include metallurgy, glass and glass polishing, ceramics, catalysts, and in phosphors. In steel manufacturing it is used to remove free oxygen and sulfur by forming stable oxysulfides and by tying up undesirable trace elements, such as lead and antimony. It is the most efficient glass polishing agent for precision optical polishing and it is used to decolor glass.

Cerium-doped glass that blocks out ultra violet light is used medical glassware and aerospace windows. It is also used to prevent polymers from darkening in sunlight and to suppress discoloration of television glass. It is applied to optical components to improve performance.

Cerium is also used in a variety of ceramics, including dental compositions and as a phase stabilizer in zirconium-based products is widely used in glass and semiconductor wafer polishing. Cerium oxide is a key ingredient in automobile catalytic converters.

- Lanthanum: after cerium, this is the second most abundant of the rare earths. Lanthanum is available as a metal and as a compound. Lanthanum-rich compositions have been used extensively for cracking reactions in FCC catalysts, especially to manufacture low-octane fuel from heavy crude oil.

  Lanthanum is used in green phosphors and lanthanum strontium manganites are used for their catalytic and conductivity properties. Lanthanum stabilized zirconium has useful electrical and mechanical properties. Lanthanum's ability to bind with phosphates in water creates numerous uses in water treatment. Furthermore, it is utilized in laser crystals based on the yttrium-lanthanum-fluoride (YLF) composition.

- Neodymium: the third most abundant rare earth, neodymium is used in metal or compound form. Primary applications include lasers, glass coloring and tinting and, most importantly, as the fundamental basis for neodymium-iron-boron permanent magnets, widely used in automobiles, computers and CD and DVD drives, loudspeakers and power tools.

  Neodymium has a strong absorption band which is very close to the human eye's maximum level of sensitivity. Thus it is useful in protective lenses for welding goggles. It is also used in cathode ray tube displays to enhance contrast between reds and greens and is highly valued in glass manufacturing for its attractive purple coloring.

  Neodymium is included in many formulations of barium titanate, used as dielectric coatings and in multi-layer capacitors essential to electronic equipment.

- Yttrium: because it has the highest thermo-dynamic affinity for oxygen of any element, yttrium has a wide array of applications. Yttrium metal and compounds boast many applications in ceramics for crucibles that hold molten reactive metals, in florescent lighting phosphors, computer displays and automotive fuel consumption sensors. Yttrium stabilized zirconium oxides are used in high temperature applications, such as in thermal plasma sprays to protect aerospace high temperature surfaces and as an electrolyte in solid oxide fuel cells. Yttrium-iron-garnet crystals are an essential component of to microwave communication equipment.

  A phosphor containing yttrium creates the red color in televisions and crystals with neodymium are used in a number of laser applications. It is also a popular substitute for lead and cadmium in paints and coatings and (along with cerium and lanthanum) a key component of fuel cells, laptops, and various hand-held devices such as mobile phones, digital cameras and MP3 players. Fuel cells are also widely used by essential facilities like hospitals and power plants as power back ups and have many military applications.

Others

- Europium is utilized primarily for its unique luminescent behavior in energy efficient fluorescent lighting, where it provides the red and the blue spectrum. Its luminescence is also valuable in medical, surgical and biochemical applications. Several commercial blue phosphors are based on it.
- Gadolinium is valued in phosphors and as a scintillator material. It is used as an injectable contrast agent in magnetic resonance imaging (MRI) and in scintillator materials for computer tomography.
- Praseodium is just one of the rare earths that enhance special purpose carbon lighting such as movie sets and projectors.
- Europium and dysprosium used for adding duration to phosphorescent lighting. Mischmetal is the term for a well-known alloy composed of cerium, lanthanum, neodymium and other rare metals which for many years has had a heavy volume of applications in armor plate, stainless and high carbon steels.

The complete list of rare earth applications is vast – many of today's major applications required long development lead times.

In a report on rare earths authored by James B. Hedrick, a leading US authority on these materials, the USGS stated, "As research and technology continue to advance the knowledge of rare earths and their interactions with other elements, the economic base of the industry is expected to grow."

Hedrick foresees a relatively strong future demand picture in automotive pollution control catalysts, permanent magnets, and rechargeable batteries and in magnetic refrigeration alloys. He also predicts that conventional and hybrid cars, computers, electronics and portable devices will experience greater use of rare earth products. As an example, each Toyota Prius contains approximately 40 pounds of lanthanum.

One area of demand growth relates to reductions in environmental impact and pollution-abatement throughout the industrial world. This trend will continue to drive the use of rare earths in auto catalysts as North American and European standards spread around the world. It will also result in increased demand for lanthanum in water phosphate reductions and yttrium-based automobile corrosion coatings.

Over the next decade, we expect the greatest driver of rare earths demand will be nanotechnology. Rare earth-based nanotechnology applied to materials and compounds has already established a beachhead in several industries. Nano-scale oxides have a wide variety of applications: in, for example, the making of bacteria-resistant fabrics and surfaces.

Clothing retailer Eddie Bauer now markets a stain-resistant Nano Care™ khaki material. More significantly, several healthcare companies sell antimicrobial bandages coated with silver nanocrystals. Meanwhile, silver nanoparticles on the surfaces of many new refrigerators, air conditioners, and laundry machines act as antibacterial and antifungal agents.

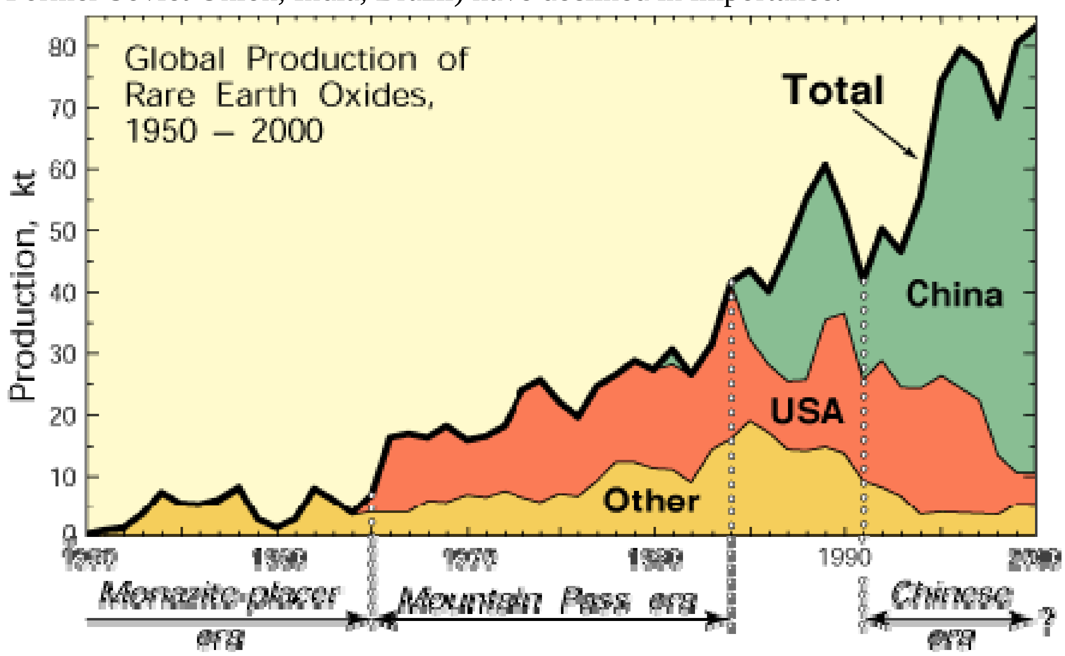
The U.S. National Science Foundation has predicted that the global market for nanotechnologies will reach $1 trillion or more within 20 years. Most applications over the next five years are in the form of nanomaterials – in which rare earths play a key role.

Already, nano-scale rare earth compounds are offered by scores of suppliers to industry, defense and academic researchers. These include materials such as lighter and stronger nanocomposites, antibacterial nanoparticles, and nanostructured catalysts.

Looked at in historical terms, it could be argued that the rare earth industry has been remarkably successful in establishing itself: considering the obstacles of high capital costs of mine and processing investment, the low volumes of any single application, and the need for a large downstream infrastructure that interfaces many diverse markets.

The chart on the following page shows the history of the first 40 years of production, in which one bastnasite mine at Mountain Pass, CA, played a pivotal role. The Mountain Pass mine has been closed for two years, and only sells product extracted years ago.

The Chinese era, which began around 1990, continues to this day, with a market share for that nation estimated at over 90 percent. Other sources of supply (the Former Soviet Union, India, Brazil) have declined in importance.



Source: USGS

The development of new markets requires a symbiotic combination of available supply and consumption – producers won't produce unless there is demand and consumers won't consume unless they can see reliable supply. This interplay is the great challenge for new or specialist materials.

China's hegemony has not been beneficial to the penetration of rare earth products. In part, this reflects the fact that, in addition to the Baotou Mine in Inner Mongolia, which supplies produces about half of total Chinese production, there are perhaps as many as 150 small, poorly capitalized producers who have, at times, dumped product at distress prices.

For example, in 2002 China increased production by 19%, far in excess of demand growth. At other times, the Chinese have imposed export controls that caused acute shortages in the international markets. Consequently, in the early 2000s consumption actually declined.

Although some of the symptoms of a difficult operating environment persist, the worst appear to have abated and most forecasters expect further continued improvement in the business climate.

Much of the past Chinese behavior was undoubtedly influenced by a change-over from state-owned to private businesses, which is now largely accomplished. The Chinese authorities have also lately forced the curtailment of some production by more marginal extractors, often via enforcing environmental regulations, and set overall production ceilings for the others.

The long-term outlook is further improved by the emergence of new sources of supply – from Lynas Corp's properties in Western Australia and Avalon's properties in Canada – that are likely to contribute to market stability and increase consumer confidence in becoming dependent on rare earths.

This should be welcome news to the industry's intermediate processors, such as China Rare Earth and Rhodia. The latter experienced significant losses a few years ago, which sparked a major strategic re-positioning and divestiture of some business lines. Now it is on the road to recovery, and expects to be in the black in 2006. According to management, the demand for Rhodia's high tech rare earth products is increasing by approximately 10% a year.

Japan, which is the largest consumer of rare earth products, has several companies in the same technically advanced, high added-value niche as Rhodia. But these intermediate consumers are not alone in developing end-use markets – they are supported by an active scientific community researching a deeper understanding of rare earth metals, oxides, crystals.

There is a large body of scientists and researchers drawn to investigating these materials. Examples of recent achievements include:

- A group at the US Dept of Agriculture has applied rare earth compounds to the study of soil erosion.
- A US Army research team has developed special permanent magnets for installation in missiles.

- At the Department of Energy's Lawrence Berkeley's Labs researchers have come up with a possible new generation of ceramics with improved resistance to fracture.
- At the University of Cincinnati Nanoelectronics Lab they have come up with a family of rare earth doped gallium nitride light emitters for visible light lasers.
- Rare earth doping materials play as important a role in modern optical technology as the active constituents of the materials.
- Much of today's cutting-edge optical technology and future innovations rely on their unique properties, as do the ytterbium and neodymium high powered lasers in current use.
- A team of researchers at 3M's Abrasive Systems Division have come up with a prototype of a glass and a ceramic doped with rare earth that have hardness and fracture toughness 1.5 to 3 times greater than conventional glasses.

Not all technological advances result in increased consumption. For example, the number of rare earth magnets sold has increased dramatically owing to the rapid increase in the number of small motors. But the size of each magnet has also shrunk, so that consumption of rare earths has been uneven. Nonetheless, we anticipate that the number of applications of products using rare earths will far exceed reductions in the per-unit consumption.

Recent Prices

Metal	Change	Price	Unit
Cesium metal 99% min	=	3.90 - 4.10	$/kg
Dysprosium metal 99% min	up	89 - 91	$/kg
Europium metal 99% min	=	440 - 460	$/kg
Lathanum metal 99% min	=	3.95 - 4.15	$/kg
Mischmetal (48% cesium)	=	2.75 - 2.95	$/kg
Mischmetal (25% lanthanum)	=	4.10 - 4.30	$/kg
Mischmetal (low zinc and magnesium)	=	4.00 - 4.10	$/kg
Neodymium metal 99% min	up	13.80 - 14.30	$/kg
Promethium metal 99% min	=	14.50 - 15.00	$/kg
Rare earth chloride	=	0.88 - 0.93	$/kg
Samarium metal 99%min	=	11.50 - 12.00	$/kg
Terbium metal 99% min	up	510 - 530	$/kg
Yttrium metal 99% min	=	23.00 - 25.00	$/kg

Source: www.metal-pages.com

RUBIDIUM AND CESIUM

Rubidium and cesium are the heaviest alkali metals and react spontaneously with air to form oxides and with water to release hydrogen. They are both silvery white in color. Rubidium is a common mineral but is rarely found in sufficient concentration to support economic extraction. The main exceptions are that it can be concentrated in certain granitic pegmatites and in the mica lepidolite in which it substitutes for potassium. An extremely rare, pure rubidium feldspar known as rubicline has been documented on Avalon's Lilypad Lakes property.

Cesium is very rare averaging two parts per million in the crust but forms its own rich alumino-silicate mineral, pollucite, that contains over 20% cesium oxide and is found in certain highly evolved granite pegmatites. Pollucite is only known to occur in three pegmatite deposits: Tanco in Manitoba, Bikita in Zimbabwe, and Avalon's Lilypad Lakes property, which hosts a pollucite-rich pegmatite dyke that may be the most significant undeveloped cesium resource in the world.

Along with mercury and gallium, cesium is one of three metals that are liquid at room temperatures – cesium's melting point is lower than either mercury or gallium.

Uses

Rubidium and cesium are traditionally a byproduct of the production of lithium chemicals and, as such, have been available commercially for only forty years. Cesium and rubidium are the most electropositive of all elements. As with many rare minerals, consumption is limited by supply and new uses are constrained by the ability to secure new sources – as such, Avalon's Separation Rapids and Lilypad Lakes properties may help to create new supplies leading to expanded commercial applications, including:

- Biomedical: rubidium and cesium compounds are used as catalysts in biomedical and chemical research and as trace compounds. Cesium chloride is being used in the treatment of cancer.
- Photoelectrics: the low ionization potential of cesium and rubidium is useful in photoelectric cells. More experimentally, a cesium-vapor/laser computer has been designed.
- Ceramics: rubidium feldspar is used in high voltage ceramic insulators, where the rubidium greatly increases insulating capacity resulting in reduced current losses on transmission lines.
- Heavy media: cesium formate is a specialty drilling fluid developed by Cabot Corp for use in drilling deep, high pressure, high-temperature oil wells – rubidium may have potential in similar applications.
- Specialty glass: rubidium carbonate glass is used in military "seeing-eye" devices and may have applications in anti collision devices for cars. Both rubidium and cesium are used in infrared optical devices for night vision glasses.
- Ion Propulsion: rubidium and especially cesium ions can be used for ion space-propulsion systems.
- Specialty Metal Alloys: rubidium forms interesting amalgams with mercury and alloys with gold, properties which should expand usage.
- Atomic clock: cesium's constant atomic resonance has been used in an atomic clock that is accurate to one second in 2 million years, which can be used to increase the capacity of fiber optic cables.

TANTALUM

Tantalum is an extremely dense, hard, gray, rare metal that is associated with tin and found in pegmatites and in some granitic greisen zones as well as tin placers and slag. It occurs in a number of oxide minerals usually containing varying amounts of niobium, manganese, iron and tin.

In contrast to cesium, tantalum has one of the highest melting points (3,017^{o} C) – only tungsten, rhenium, and osmium have higher melting points. Its tensile strength is about double that of high strength alloy steels, the carbide is the hardest of the metal carbides, and tantalum is virtually untouched by strong acids or alkalis, and in powder form it has the highest capacitance per unit of weight of any material.

Uses

- Electronics: two-thirds of tantalum consumption is related to electronic components, especially capacitors, owing to its high capacitance. Its amenability to miniaturization and its durability are unmatched
- Metallurgy: high strength, high temperature alloys are used in jet engines and other high temperature applications. Tantalum metal is used to coat equipment that functions in highly corrosive and high temperature environments such as chemical processing plants, nuclear plants and missiles.
- Wear resistant products: the super hardness of tantalum carbide is used for cutting tools, teeth for construction and mining equipment, drill bits, pavement shavers etc. Tantalum carbide graphite composite is the hardest material made by man and has a melting temperature of 3,738^{o} C.
- Glass: tantalum oxide greatly increases the refractive index of glass, facilitating lighter, thinner lenses for spectacles, cameras and other applications.
- Medical: tantalum's immunity to attack by chemicals and its non allergenic character are useful in surgical appliances and implants
- Other: tantalum is used for its ability to absorb gasses, in vacuum tubes and furnaces, as a catalyst for synthesis of butadiene and in many other applications

The technology boom of the late 1990s resulted in strong demand for tantalum and caused an acute shortage in 2000, driving the spot price to a peak of US$300 per pound, compared with its long-term average of US$40-50 per pound. Prices have since retreated to long-term levels.

BERYLLIUM

Beryllium is the second lowest-density metal after lithium. It has six times the stiffness of steel, it has a very high melting point and it maintains certain mechanical properties up to much higher temperatures than most other metals, and it is also has excellent cryogenic properties.

Beryllium combines high thermal conductivity with the highest specific heat of any metal, making it extremely useful for dissipating heat. Beryllium has the highest X-Ray transparency of any engineering material.

Beryllium is found mainly in granite pegmatites. The main ore minerals of are beryl, which forms emerald and aquamarine, and bertrandite.

Uses

Beryllium was first discovered in the 1700s yet industrial applications did not develop until the 1940s and 1950s. As an industrial material, beryllium possesses some uncommon qualities such as its ability to withstand extreme heat, remain stable over a wide range of temperatures, and function as an excellent thermal conductor.

Beryllium can be used as a pure metal, alloyed with other metals, processed to form soluble salts, and processed to form oxides and ceramic materials.

Combining beryllium with metals such as copper, nickel or aluminum significantly enhances the performance of those other metals – beryllium-copper alloy, which comprises between 0.25% and 2% beryllium alloyed with copper, is the biggest single application.

Beryllium copper alloys offer a range of high strength and high thermal or electrical conductivity. They are also less dense and more elastic than conventional specialty coppers.

- Beryllium oxide ceramics possess a unique combination of properties and provide certain characteristics that make it a necessary component in a variety of applications. Beryllium oxide is lightweight, very rigid and has excellent thermal management properties – meaning it withstands extreme temperatures and rapidly dissipates heat better than any other ceramic material.

  Beryllium oxide's thermal conductivity is ten times greater than alumina ceramics, making it useful in heat producing circuits such as those carrying high currents or very dense circuitry. Its low dielectric constant allows improved electrical performance, particularly at higher frequencies.

- Electronics: beryllium copper alloy is used for battery contacts and electronic connectors in cell phones and computers, is often the only material that meets the need for high reliability and miniaturization in these applications. FM radio, high-definition and cable television and underwater fiber optic cable systems also depend on beryllium.

- Automotive: air bag sensors, ignition, power steering and electronic auto systems, fire extinguishers and sprinkler heads all depend on beryllium alloys for optimum performance.
- Acoustics: ultrasonics and high end commercial audio speakers are developing rapidly and specialists in this area are constantly looking for materials which will improve the sensitivities and efficiencies of their systems.

  Beryllium offers a unique combination of acoustic properties not found in any other structural materials and it is particularly attractive for the higher frequencies now coming into common use.
- Avionics: airborne and space-based electronics packages are consuming higher amounts of power, and designers of avionics suites continue to look for ways to deal with the excess heat output of these electronics.

  The superior thermal diffusivity of beryllium-based aluminum alloys such as Brush Engineered Materials' (NYSE: BW) AlBeMet® draws heat away from sensitive electronic components, reducing junction temperatures and increasing "mean time between failure." The high modulus of beryllium-based materials increases the resonant frequency of electronic assemblies and reduces transmissibility of shock loads, thereby increasing the reliability of electronics systems.

  The low density of beryllium-based engineered materials also saves mass, resulting in superior system performance.
- Commercial X-Ray: Unlike most metals, beryllium has a low mass absorption coefficient, which means that it transmits X-Rays well making beryllium ideal as an X-Ray window that acts as a barrier between the vacuum or inert gas inside an X-Ray source or detector and external atmospheric conditions but allows X-Rays to pass through.

  Most commercial beryllium X-Ray windows fall into one of two broad classifications: medical and industrial/analytical. X-Ray source tubes with beryllium windows are used in a variety of medical diagnostic applications, including bone densitometry, CT scanning, and mammography.

  On the industrial/analytical front, beryllium windows are used in tubes for X-Ray diffraction, X-Ray fluorescence, baggage inspection, and in-situ analysis. Beryllium windows are being used in a wide range of non-destructive testing applications.

  Nuclear: beryllium is in demand for nuclear and scientific applications owing to its low atomic number which, combined with its low density, is key for neutron reflectors and moderators in the design of reactors. Beryllium's high scattering ability makes it effective in slowing neutron speed to a level required for efficient reactor operation. Beryllium reflectors are used to scatter leaked neutrons back into the reactor core – neutrons are conserved because of beryllium's low thermal neutron capture.

In nuclear fusion reactors, the low atomic number and high melting temperature of beryllium creates higher plasma purity, resulting in higher density operations.

- Optics: beryllium is used extensively in infrared, electro-optical applications, and lasers – the metal has been selected for airborne and space-based targeting optics and research telescopes. Other uses include ultra-high speed optical laser scanners used in copy machines, photo separators and airport luggage handling. Optical components benefit from being as small as possible and operate more efficiently when the optical piece is stiff and of minimal mass.
- Medicine: the medical profession relies on beryllium for applications in pacemakers and lasers used to analyze blood for HIV and other diseases. And there is no competitive substitute for beryllium in high-resolution X-Ray imaging, or in X-Ray windows for mammography equipment.
- Defense: military electronic targeting and infrared countermeasure systems use beryllium components, as do advanced missile and radar navigation systems. Beryllium is also a staple material in Apache helicopters, fighter aircraft and tanks, surveillance satellites, and aircraft landing gear components.