

Investment Briefing

Equity Research

3 October 2006

Great Western Minerals (GWG.V)

Metals and Mining

"A 'rare' opportunity"

Previous close price (CN\$)

0.43

Market cap (CN\$m):

24.9

Index:

TSX Venture

52 week high (CN\$):

0.70

52 week low (CN\$):

0.35

Shares O/S (m)

57.8

Shares F/D (m)

74.6

Reason for report

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Share price performance (CN\$):



Source: Insinger de Beaufort, Bloomberg

- Great Western Minerals is aiming to become a producer of rare earth minerals by developing its 100 per cent-owned Hoidas Lake deposit in northern Saskatchewan, Canada. Its initial objective is to achieve annual production of 3,000 – 4,000 tonnes of rare earth oxide (REO) by 2010, which is expected to satisfy 10 per cent of US demand.
- The near-surface deposit, currently the subject of a pre-feasibility study, is one of only two in North America and has a JORC-compliant resource of 1,364,000 tonnes at a grade of 2.59 per cent TREO (Total Rare Earth Oxide). Using a value of US\$8,600 per tonne REO, our calculations suggest that the resource has an in situ value of US\$300 million. There is good potential for future resource expansion. Assuming the pre-feasibility study is positive, management expects the bankable feasibility study to start in early 2007.
- A recent independent study, comparing the world's five largest rare earth deposits, found that, in terms of revenue per tonne, the Hoidas Lake deposit has a higher in situ value than the rest of its peer group. This is due to the high content of neodymium which, along with the more common cerium and lanthanum, is used to produce neodymium magnets and nickel-metal-hydride batteries respectively.
- Global supply of rare earths in 2005 was 105,000 tonnes, a slight increase on the previous year. However, to meet expected increases in demand from the automotive and technology sectors, production is forecast to increase significantly to 150,000 tonnes by 2010. One of the largest growth areas is expected to be the production of hybrid vehicles, such as the Toyota Prius. Each hybrid car contains 16 kg of rare earths, predominantly in its batteries and electric motors.
- The recent decision by China to introduce export quotas on rare earths is expected to reduce global supply by up to 30 per cent. The underlying strategic importance of rare earths was highlighted in 2005 when the state-owned China National Offshore Oil Corp (CNOOC) attempted to acquire Union Oil of California (UNOCAL). Opposition by US Congress to the deal was driven not only by energy concerns, but also by UNOCAL's ownership of Mountain Pass, the only rare earth mine in North America.

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Rare earths are 15 elements that are used in many technological applications.

The Hoidas Lake project is located in northern Saskatchewan, Canada.

The Company owns 100 per cent of the project. We consider the risk of permits not being issued to be low.

The deposit consists of steeply dipping veins.

Background

Great Western Minerals is a TSX-listed company that owns 100 per cent of the Hoidas Lake rare earth project in northern Saskatchewan, Canada, the Chuckwalla copper gold project in California and the Copper Hill project in Nevada. The Company plans to focus the majority of its resources on developing Hoidas Lake, its most advanced project.

The rare earths are a group of 15 metallic elements that have unique properties, making them indispensable for many technological applications. Rare earths already play a role in the electronics, automotive and petrochemical sectors and, as these industries evolve, research is expected to develop new applications.

Hoidas Lake Project

Location and Access

The project is located north of the Athabasca Basin outside of the permafrost zone, within gently rolling topography. Vegetation is predominantly forest, interspersed with lakes and swampy ground. The closest infrastructure is at Uranium City, a mining centre 55 km to the southwest. Access is currently by float or ski equipped aircraft. Attempts will be made later this year to create a winter road, providing access over frozen lakes. However, in the long term, we expect that an all-weather road will eventually be constructed to link with the closest highway.

Mineral Title

The property consists of thirteen posted mineral claims covering 10,188 hectares. All claims are 100 per cent owned by Great Western Minerals. Work permits for exploration purposes are obtained from Saskatchewan Environment and are issued on a program basis. The long-term presence of uranium mining in the adjacent Athabasca Basin indicates to us that the risk of permits not being issued is low.

The claims are currently subject to a 1.8 per cent net smelter royalty, capped at \$1 million, payable to the original prospector. Great Western Minerals may buy out this royalty for a lesser payment, through negotiation.

Resources

The deposit, known as the JAK Zone, consists of steeply dipping veins that outcrop on surface, containing both light (cerium and lanthanum) and the more valuable, heavy (neodymium) rare earths. The mineralisation has been traced by drilling over a length of 700 metres, across a width of 75 metres and at a vertical depth of up to 125 metres.

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Total resources are 1,364,000 tonnes at an average grade of 2.59 per cent TREO.

The JORC-compliant measured and indicated resource stands at 552,000 tonnes, at 2.81 per cent TREO. An additional inferred resource stands at 812,000 tonnes, at 2.44 per cent TREO. Both resources were calculated using a cut-off grade of 1.5 per cent TREO. The resources will underpin a feasibility study, which we expect will start at the beginning of 2007.

There is good potential for future discoveries.

Additional veins of rare earth mineralisation have been discovered since the original JAK Zone, which could result in the resource being extended, once production has started. The Company has observed 30 rare earth showings along a mineralised strike length of six miles, which have yet to be drilled. There is good potential for future discoveries.

Mine Feasibility

The bankable feasibility study is expected to start early 2007 and cost CN\$4.5 million.

The bankable feasibility study is expected to start in early 2007 and cost approximately CN\$4.5 million. An optimal development scenario will be identified and further work will be undertaken on environmental studies and bulk sampling. A pilot plant will be acquired to process the bulk sample.

At this stage, management expects that access to the resource will be through a decline and that underground stoping will be the most cost-effective mining method. Initial geotechnical analysis of the drill core suggests that the host rock is sufficiently competent to support an underground operation and that the mineralisation will break cleanly along its contact with the host rock, causing minimal dilution of the ore.

Metallurgy and Mineral Processing

Metallurgy is considered conventional and amenable to low cost cold acid leaching.

Compared with rare earth deposits, such as Mountain Pass in California, the metallurgy of the rare earths at Hoidas Lake is relatively straightforward. One of the key differences is that, at Hoidas Lake, the rare earth minerals are hosted in apatite and allanite, which, unlike the more common radioactive monazite and bastnaesite, are expected to be amenable to leaching.

Ore recoveries are likely to exceed 95 per cent.

The Company has undertaken testwork on the JAK Zone, including two bulk samples. The results suggest that a simple, low-cost cold acid leach process can be used to liberate the rare earth. Early cost estimates for a 500 tonnes per day beneficiation plant are between CN\$60 - \$90 million. Management is confident that recoveries will exceed 95 per cent.

The beneficiation process will result in a pregnant solution, which can then be treated to produce individual rare earth compounds. This solution will then be transported to another plant owned by Great Western Technologies, a subsidiary company in Detroit, which produces value-added products.

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The Rare Earth Industry

The viability of the Hoidas Lake deposit very much depends on the ability of the Company to establish markets for its rare earth products in an industry currently controlled by Chinese producers. Until the mid 1990s, the United States was the world's largest producer of rare earths, a position now occupied by China, which currently accounts for over 80 per cent of global production.

Rare earth production is dominated by China.

Global demand is forecast to increase to over 150,000 tonnes by 2010.

Global production of rare earths in 2005 was 105,000 tonnes, a slight increase on the previous year, and is forecast to increase further to 150,000 tonnes by 2010 to meet expected increases in demand.

Table One: Summary of total rare earth demand by application, through 2010

Application	2004	2005	2005 % of total	2010	2005-2010 CAGR* %
Neo Magnets	13,650	17,150	18.0%	31,100	12.64%
NiMH batteries	6,200	7,200	7.6%	27,300	30.55%
Catalysts	20,440	21,230	22.3%	25,960	3.78%
Phosphors	3,652	4,007	4.2%	7,512	13.00%
Glass	13,440	13,590	14.3%	13,990	0.57%
Polishing compounds	14,100	15,150	15.9%	23,500	9.2%
Other	15,365	16,935	17.8%	24,950	8.00%
Total	86,847	95,262	100%	154,312	10.10%

Source: BCC Research

*Compound Application Growth Rate

The largest growth application is NiMH batteries used in hybrid vehicles.

According to Table One, the largest growth application using rare earths is expected to be nickel-metal-hydride rechargeable batteries used in hybrid vehicles. For example, a Toyota Prius hybrid car contains approximately 16 kg of rare earth metal. Neodymium, a heavy rare earth, is a key component in neodymium magnets used in electric motors. Demand for phosphors, used in liquid crystal display (LCD) screens, is also expected to increase significantly.

The rare earth industry in China is consolidating. Regulation is increasing.

The rare earth mining industry in China is consolidating, with the number of mines decreasing by a quarter since 2001. The reduction is due to the government tightening environmental controls and controlling the issue of new mining licences in a bid to manage output and avoid price slumps.

Prices for rare earths are expected to increase significantly in the next few years.

Historically, Chinese rare earth producers have had an undisciplined approach to managing the supply in the international market. This has been exploited by a concentrated number of buyers who have collaborated to force prices down. We believe that, as China gradually increases its bargaining power by restricting supply, the market will tighten and rare earth prices will improve significantly over the next five years.

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The Company's aim is to supply 10 per cent of US rare earth demand by 2010.

In December 2005, downstream processing facilities were acquired near Detroit, America's automotive centre.

The processing facilities are capable of accepting rare earth feed from Hoidas Lake.

The Company has secured an agreement to build an additional processing facility at the world's largest and richest uranium mine.

The successful roll out of this plant would potentially make Great Western Minerals one of the world's largest producers of rare earths.

Strategy

The objective of Great Western Minerals is to become a vertically integrated supplier of rare earth products and it is positioning itself to supply the United States, the world's largest market for rare earths, with 10 per cent of its requirements by 2010. Management estimates that this will be in the region of 3000 – 4000 tonnes of refined rare earth product per year, giving annual revenues of US\$50-\$100 million.

Central to the strategic vision of the Company is the role of Great Western Technologies, a subsidiary company that acquired downstream rare earth processing facilities in December 2005 from Energy Conversion Devices, a NASDAQ-listed company. The facilities, acquired at a cost of US\$1.3 million, are located on the outskirts of Detroit, Michigan, and are capable of producing nickel-metal-hydride powder used in the manufacture of rechargeable batteries for hybrid vehicles. Annual production capacity is approximately 2,200 tonnes.

The processing facilities restarted commercial operations in January 2006 and are currently supplying product to various customers in North America. The plant is capable of accepting some of the rare earth feed from the Hoidas Lake deposit. However, we believe that, in the long term, the Company's intention is to relocate the strategically important knowledge base to northern Saskatchewan, where it plans to construct a new processing facility.

The Company has negotiated a preliminary agreement with a large Canadian uranium mining company to construct a rare earth processing facility within the footprint of its largest mine in the Athabasca Basin, northern Saskatchewan. The uranium mining company produces large quantities of rare earths from this processing facility, which are currently dumped as waste. Early cost indications are that CN\$5 million will be needed to acquire and build a series of ion exchange columns to recover the rare earths. However, the Company has yet to determine how it can integrate the columns into the existing plant set-up without affecting uranium recoveries.

We believe the successful roll-out of this plant would potentially enable Great Western Minerals to become North America's largest producer of rare earths. However, the Company will need to create a market for its products by negotiating off-take agreements similar to that negotiated in March this year by the Lynas Corporation with Rhodia SA, the French chemical company. We expect the biggest end-users for Great Western Minerals will include the US automotive sector and companies producing neodymium magnets.

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Other Projects

Copper projects in California and Nevada may be spun off in due course.

In addition to Hoidas Lake, Great Western Minerals also has 100 per cent ownership of the Chuckwalla copper project close to the Californian border and has recently acquired the Copper Hill project, 20 km away in Nevada. The Company also has a 30 per cent stake in the Candle Lake diamond project. The other 70 per cent interest is held by Great Western Diamonds. Both copper projects are at an early stage of development and we believe that they will be spun-off into a separate-listed company in the future.

Financials

The processing facilities at Detroit are expected to be profitable by the end of 2006.

Revenue for the period ending 30th June 2006 comes from the processing facilities in Detroit, which are currently breaking even and expected by management to make a small profit by the end of the year. The Great Western Technologies subsidiary is currently seeking new strategic alliances with end users and, if successful, revenues from this venture could increase in 2007. Exploration expenditure in Canada can be written-off against tax and is included in the profit and loss flow in anticipation of this happening.

Table Two: Profit and loss summary (CN\$m)

Item	30 June 2006 Interims	Y/E to Dec 2005	30 June 2005 Interims
Revenue	0.270	0.012	0.004
Costs	-1.927	-1.703	-0.778
Loss before tax	-1.657	-1.691	-0.774
<i>Future income taxes (recovery)</i>	0.586	0.514	-
Loss before under noted items	-1.071	-1.177	-0.774
<i>Shares in loss of G.W.Diamonds</i>	-0.347	-0.290	-
<i>Gain on dilution of interest in G.W.Diamonds</i>	-	0.742	-
Net Loss	-1.418	-0.725	-0.774
Basic and fully diluted loss per share	-0.026	-0.020	-0.018
Weighted average number of shares outstanding	55.046	44.414	42.486

Exchange rate: £1 equals CN\$2.08.

The Company currently has CN\$1,600,000 in cash.

At the end of June 2006, the Company had approximately CN\$900,000 (£435,000) in cash. This is in addition to the non-brokered private placement announced on 20th September 2006, which raised approximately CN\$550,800 (£265,000) in flow-through funding and CN\$608,000 (£292,000) in non-flow-through funding. Total cash now stands at CN\$1.6 million (£770,000).

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Table Three: Cash flow summary (CN\$m)

Item	30 June 2006 Interims	Y/E to Dec 2005	30 June 2005 Interims
Cash flows from operating activities			
Net Loss	-1.418	-0.725	-0.774
Items not affecting cash			
<i>Amortization</i>	0.118	0.013	0.003
<i>Other</i>	0.089	-0.047	0.407
<i>Change in working capital</i>	0.191	-0.220	-0.276
	-1.020	-0.979	-0.640
Cash flows from investing activities			
<i>Exploration work - Hoidas Lake</i>	-0.862	-2.201	-1.835
<i>Exploration work - Chuckwalla</i>	-0.085	-	-
<i>Acquisition costs - Chuckwalla & Copper Hill</i>	-0.063	-	-
<i>Purchase of capital assets</i>	-	-1.591	-
<i>Other</i>	-0.136	0.117	-0.063
	-1.146	-3.675	-1.898
Cash flows from financing activities			
<i>Advances to related parties</i>	0.098	-0.126	-0.001
<i>Issuance of share capital (net of issue costs)</i>	1.375	4.218	2.114
<i>Other</i>	0.350	0.758	-
	1.822	4.850	2.112
Net increase in cash during the year	-0.344	0.196	-0.425
Cash, beginning of year	1.250	1.054	1.054
Cash, end of period	0.906	1.250	0.628

Exchange rate: £1 equals
CN\$2.08.

Expenditure for 2007 is
expected to be CN\$10
million.

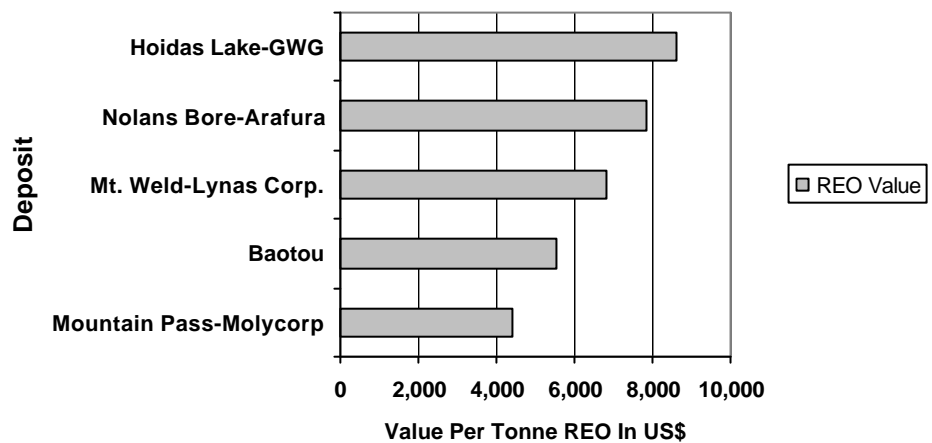
Planned expenditure for 2007 is expected to be approximately CN\$10 million. Of this, CN\$4.5 million will cover the bankable feasibility study, including an environmental base-line study, a bulk sample, and acquisition of a pilot plant. CN\$500,000 is required to complete the acquisition of Great Western Technologies and CN\$3 million will go towards maintaining the interest in Great Western Diamonds. A small amount of drilling will be carried out on the US properties costing CN\$500,000, with the remaining CN\$1.5 million being working capital.

Valuation

Revenues between US\$50 million - \$100 million have been projected by 2010.

A recent independent study (Figure One), comparing rare earth oxide distribution and values of the world's five largest rare earth deposits, found that, at 2006 prices, a single tonne of rare earth oxide from Hoidas Lake would fetch US\$8,600. This means that, in terms of revenue per tonne, the deposit has a higher in situ value than the rest of its peer group. Going forward, we expect prices to increase as supply is potentially restricted from China and demand rises on the growth of hybrid vehicles. The Company has projected annual revenues between US\$50 - \$100 million by 2010.

Figure One: REO Comparison By Value



The Hoidas Lake deposit has the highest in situ value of its peer group.

Heavy rare earths, such as those occurring at Hoidas Lake, fetch significantly higher prices.

The underlying reason for the high rare earth oxide value at Hoidas Lake is down to the mix of rare earth elements. Despite its low overall grade, the deposit has a particularly high concentration of heavy rare earths, such as neodymium. These, unlike the more common soft rare earths, occur less frequently, are highly sought after and, as a result, attract significantly higher valuations.

Under ordinary circumstances for an exploration company, we would provide a market valuation based on a discount to the NPV's of the Hoidas Lake project and the copper projects in North America, plus the 30 per cent stake in the Candle Lake diamond project. The discount would represent the geological, political and operational risks and the uncertainty over the timetable to production.

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Great Western Minerals will need to negotiate off-take agreements with end-users.

Should an agreement be negotiated, and we believe it will, we expect the value of the Company to increase significantly.

However, unlike base and precious metals which are traded through open markets, rare earths are traded through off-take agreements. This means that, for the market to apply more than a token value to the Hoidas Lake deposit and the processing facilities in Detroit, Great Western Minerals needs to negotiate an off-take agreement with one or more end-users.

We believe that, in the event that Great Western Minerals successfully negotiates an off-take agreement, the market will apply a significant uplift to the current valuation, the increase depending on the percentage of production the agreement will cover. The Company has recently retained the services of industrial minerals consultants to help it pursue strategic alliances with a number of companies in North America and Japan.

Contacts & Disclaimer

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