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PRESIDENT'S MESSAGE **David J. Busch** MPDA 2011

Maybe it's the time of year or maybe it's the time of man (to paraphrase an oldie but goody) as my thoughts turn to measures of success. There are many ways to measure success but most feel like a bit of a compromise.

I'd really like to review the exploration industry in Manitoba in these terms. To a large extent the exploration intensity is determined by global factors, metal prices in particular. Today these are healthy but with forward projections going both ways. The relative success (relative to other national and international jurisdictions) is a factor of several things. Chief among them is level of exploration. This level is determined by perceived potential and the regulatory and tax environments.

The regulatory environment in Manitoba clearly is a major factor in determining levels of exploration. It is commonly viewed that there are only two small areas within Manitoba where exploration is welcomed. In the rest of the province, it might be grudgingly tolerated if allowed at all.

Over the last half decade the exploration industry has had to come to terms with issues like the duty to consult and engage, work permits and the relentless establishment of new parks where mining and exploration are not allowed. We already have more park hectares per resident than any jurisdiction in Canada. Frequently the only apparent purpose of the park is stated in the opening paragraph of the legislation and it is to prevent logging and mining. The provincial government has added to this by creating multiple layers of jurisdiction over large areas essentially ceded administrative control over large tracts of Manitoba to nebulous concepts of "development" or "resource management" agreements. The result is that any attempt at development in these areas would be mired for years in "red tape" to the point where exploration would not even be considered by any reasonable person with access to risk capital.

One established World Heritage Site (park) in Africa has recently (2011) permitted the commissioning of a new large uranium mine. In Manitoba, the mere selection of an area for consideration as a park or natural wonder of some sort is enough to provoke anti-exploration or development of any kind, regulations and significant provincial funding to special interest groups opposed to development. This same rationale is somehow linked to "no to power lines" but "yes to roads" on the east side of Lake Winnipeg. All of this defies fundamental notions of logic or reason, let alone responsible stewardship.

The "perceived" mineral potential of any jurisdiction is not only the area of unexplored favourable rocks or a low number of drill holes. It is largely shaped by recent successes, and these are largely determined by the level of exploration activity. In essence, success breeds success. Unfortunately, the converse is also true and appears to be the preferred course as set by the current government. The perception of Manitoba as any kind of "go-to" place for mineral exploration is being badly tarnished.

Over 30 years ago I decided to come to Manitoba to seek my fortune in mineral exploration because I believed in the mineral potential and the regulatory environment was favourable. It may not be a fortune, but I succeeded in achieving many of my goals. If faced with the choice and conditions of today, I am not sure I would make the same decision. \Box



DRILLS OPERATING AT THE REED LAKE VMS PROJECT, A HUDBAY MINERALS/VMS VENTURES JOINT-VENTURE. PHOTO COURTESY OF VMS VENTURES INC.

MANITOBA 2011 EXPLORATION AND DEVELOPMENT HIGHLIGHTS

Base and precious metals by Chris Beaumont-Smith, Minerals Policy and Business Development; specialty/industrial minerals by Jim Bamburak, Manitoba Geological Survey, Manitoba Innovation, Energy and Mines – Current as of September 2011.

Manitoba's mining industry has experienced a modest recovery from the global economic downturn that occurred in the latter half of 2008 and in 2009 and remains optimistic in the face of the current global economic uncertainty related to sovereign debt. Exploration and deposit appraisal expenditures totalled \$84.6 million in 2010, a significant decrease from the 2008 peak of \$152 million, but are projected to rebound strongly in 2011 to \$115.7 million.

Base Metals

Base-metal exploration and development highlights in 2011 reflect cautious optimism, resulting from exploration successes juxtaposed with the setback of Vale's closure plans for the Thompson smelter and refinery by 2015. In addition, market volatility generated by sovereign debt issues have resulted in global economic uncertainly and a softening in commodity prices. The drop in prices may translate into a tightening of mine financing, which may have a negative effect on a number of near-term development projects in the province. Fortunately, Manitoba's base-metal sector is benefitting from recent discoveries and is moving forward with a number of major development projects.

HudBay Minerals Inc. maintained an aggressive exploration and development program in the Flin Flon–Snow Lake greenstone belt and continues to move forward on two development projects announced in 2010:

- the 777 North expansion project, which will provide additional feed to its Flin Flon concentrator and zinc plant and additional exploration opportunities.
- the Lalor deposit in Snow Lake, which will result in the construction of a 4500 tonne per day underground mine.

The development of the Lalor mine near Snow Lake is proceeding on schedule and on budget. In July, the company committed to construct a new 4500 tonne per day concentrator bringing total development costs to \$704 million. Initial mine production will start in 2012 via a production ramp from the nearby Chisel North mine and full production is anticipated to begin in 2014 through shaft infrastructure currently in development.

The Lalor deposit consists of three zones of stacked mineralization comprising the Base Metal, Gold, and Copper-Gold Zones. The Indicated base-metal resource stands at 13.3 million tonnes grading 8.87% zinc with an Inferred resource of 4.8 million tonnes grading 9.25% zinc. The Gold Zone Inferred resource is 5.4 million tonnes grading 4.7 grams per tonne gold. HudBay anticipates additional gold resources will be delineated with further exploration to be conducted underground. Conceptual estimates indicate the potential for an additional 5.1 to 6.1 million tonnes grading between 4.3 and 5.1 grams per tonne for the Gold Zone and an additional 1.8 to 2.2 million tonnes grading 5.8 to 7.0 grams per tonne gold and 3.2% to 4.0% copper for the Copper-Gold Zone.

HudBay is anticipating an additional mine development project with their Reed Lake joint venture located south of Snow Lake. Successful joint-venture negotiations with partner VMS Ventures, Inc. to expand the scope of their partnership has led to significant project advancement. HudBay has initiated permitting to authorize initial mine development leading to the extraction of a bulk sample for metallurgical testing. The Reed Lake deposit contains a NI 43-101–compliant Indicated resource estimate of 2.5 million tonnes grading 4.55% copper. HudBay plans to start site preparation in November and expects to complete the extraction of a 10 000 tonne bulk sample in the fourth quarter of 2012. A production decision is expected early in 2013. The expanded joint venture also afforded HudBay the opportunity to conduct exploration drilling elsewhere on the property, which led to the discovery of additional copper mineralization. In July, HudBay announced the discovery of significant copper mineralization northeast of the Reed Lake deposit with a drill intercept of 7.18 metres of 7.44% copper. Additional drilling to assess the discovery is ongoing.

HudBay also partnered with Halo Resources Ltd. on the Lost Lake joint-venture project in the Sherridon area and continues to assess the feasibility of developing the deposit. HudBay has started pre-feasibility engineering, which is expected to be completed in 2011

CaNickel Mining Ltd. (previously Crowflight Minerals Inc.) returned to commercial production at their Bucko Lake Nickel Project near Wabowden in the second quarter of 2011. The introduction of company-owned mine production and modifications to mine development and production methods has resulted in a significant increase in nickel-ore grade, which is having a positive effect on the economics of the mine. CaNickel has successfully increased the Proven and Probable reserves at Bucko to 3.71 million tonnes of 1.45% nickel, an increase of 122% in contained nickel from the 2007 feasibility study, extending the projected mine life to 10 years. The company is also having considerable exploration success on the nearby M11A deposit, which may provide additional life to the mining operation.

Further optimism on the base-metal front was generated by the successful environmental licensing of Victory Nickel Inc.'s Minago nickel mine north of Grand Rapids. The granting of the Environment Act Licence authorizes Victory to construct and operate the Minago



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mine and represents the final regulatory hurdle for the project. The planned mine will produce 25 million pounds of nickel in concentrate and 1.15 million tonnes of by-product frac sand per year for 10 years. The company plans to start initial pre-stripping of the open-pit area in winter 2011-12 and the construction of the mine and supporting infrastructure will begin in the second quarter of 2012, provided the \$600 million in project financing can be successfully secured. Victory continues to explore the Minago property and anticipates the completion of a resource estimate for the North Limb deposit located near the planed open pit. The North Limb deposit represents a potential economic resource that will add significantly to the project mine life.

Rockcliff Resources Inc. maintains an aggressive exploration program on their Snow Lake area properties. Rockcliff completed their evaluation of the Rail deposit, southwest of Snow Lake, with the release of a NI 43-101–compliant Precious metals, led by gold, continue to benefit from the current economic uncertainty that has resulted in considerable appreciation in their value. In Manitoba, this is manifest in a considerable increase in exploration and deposit appraisal expenditures for gold.

Indicated resource of 822 000 tonnes grading 3.04% copper for the deposit. Rockcliff continues to explore the property, targeting untested geophysical anomalies with the goal of further expanding the resource. Rockcliff also began a diamond-drill program at their Tower VMS property north of Grand Rapids. Initial results outlined multiple copper-gold VMS systems over a 700 m strike length and additional drilling is ongoing. The Tower property is a joint-venture with Pure Nickel Inc. and represents a copperzinc-rich VMS deposit in the Thompson Nickel Belt. work on the ongoing feasibility study of the Makwa deposit near Lac du Bonnet and exploration work at the nearby Mayville property. The Makwa deposit comprises a NI 43-101-compliant resource of 9.855 million tonnes in the Probable category containing 0.541% nickel, 0.113% copper and 0.433 g/t PGM. The Mayville deposit contains a NI 43-101 Indicated resource of 9.227 million tonnes containing 0.61% copper, 0.23% nickel and 0.174 g/t palladium. Mustang believes the Mayville deposit has the potential to host a significant PGM resource. The company recently completed the purchase of the Bouchard

Mustang Minerals Corp. continues

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Herbert mill near Rouyn-Noranda, Quebec. The mill will be relocated and potentially provide a significant reduction in the capital costs incorporated in the feasibility study expected to be completed this year.

VMS Ventures Inc.'s exploration and development successes with partner HudBay Minerals were complemented by exploration successes on their large stable of Snow Lake properties. Exploration was highlighted by a gold discovery on the Sails Lake project that returned a drill intercept of 56.89 m grading 1.21 grams per tonne gold and a new zinc discovery on the Copper project.

The current trend of exploring pastproducing mine properties is not restricted to gold properties in Manitoba. Prophecy Resources Corp. and Corazon Mining Ltd. are exploring past-producing nickel mines originally operated by Sherritt Gordon Mines in Lynn Lake. Employing advanced exploration tech-





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Development • UG Construction • Raise Boring • Mining Mechanized Raising • Shaft Sinking • Engineering niques and technology, both companies have been successful discovering new mineralization and expanding the remaining resources at the Lynn Lake and El mines.

PRECIOUS METALS

Precious metals, led by gold, continue to benefit from the current economic uncertainty that has resulted in considerable appreciation in their value. In Manitoba, this is manifest in a considerable increase in exploration and deposit appraisal expenditures for gold. The primary focus is the re-evaluation of pastproducing gold deposits. This trend was started with San Gold Corporation with their purchase of the Rice Lake mine in Bissett from Harmony Gold Inc., which was brought back to producer status in 2007.

San Gold continues to experience improved operational performance and exploration success at its Rice Lake and Hinge mines in Bissett. San Gold has achieved record quarterly production in successive quarters, which has lead to a corresponding increase in operational profit. During their most recent quarter, San Gold reported record operating margins resulting from a significant decrease in operating expenses and strong gold prices. San Gold is on pace to produce 80,000 ounces of gold in 2011.

San Gold's operational success is largely due to their considerable exploration success and their ability to identify and develop high-grade, near-surface deposits hosted by the Shoreline Basalt in the hanging wall of the Rice Lake mine. This has resulted in the opening of the Hinge and 007 mines that are accessed through ramps from surface. Several other zones hosted by the Shoreline Basalt are currently in the advanced stages of exploration and pre-production development. The company anticipates increases in annual gold production over the next few years.

Also in the Rice Lake belt, Bison Gold Resources Inc. continues to explore the

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past-producing Ogama mine on their Central Manitoba property southeast of Bissett. Bison completed a 31-hole drill program that successfully returned highgrade gold results from the Ogama Vein 1 and Eldorado zone. A winter drill program will focus on the assessment of the Eldorado zone over its 1 km strike length. The past-producing Ogama-Rockland mining operation produced 45,440 ounces of gold from 1948 to1951.

Elsewhere in the Rice Lake belt, Wild-

cat Exploration Ltd. maintains an aggressive gold exploration program with jointventure partner San Gold on their portfolio of Rice Lake gold projects. The company conducted drill programs on the Mike Power, Jeep and Poundmaker properties and advanced a number of other properties towards the drilling stage.

Strikepoint Gold maintains an active gold exploration program on their Strikepoint property adjacent to San Gold's Rice Lake mine and their joint-ventured

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Rice Lake properties with San Gold.

Greenstone belts located in the Trans-Hudson Orogen are also attracting considerable attention in the current environment of elevated gold prices. The large number of past-producing mines and their largely intact infrastructure represent attractive targets for junior gold explorers.

In the Snow Lake area, Alexis Minerals Corporation continues to evaluate the reopening of the past-producing Snow Lake gold mine (previously the New Britannia mine). Alexis delayed their anticipated production decision to reopen the mine in order to include additional gold resources not reported in the December 2009 feasibility study. The additional resources will increase the projected mine life and will improve the already robust economics of reopening the Snow Lake gold mine. The 2009 feasibility study forecast production of 80,000 to 90,000 ounces of gold per year for a minimum of six years. Alexis anticipates the completion of the revised feasibility study in 2012. If Alexis is successful, it will be the second reopening of the Snow Lake mine. New Britannia produced 858,000 ounces of gold between 1995 and 2005 and 760,000 ounces of gold between 1949 and 1958 as the Nor Acme mine.

Also in the Flin Flon-Snow Lake greenstone belt, Auriga Gold Corp. continues to advance their Maverick gold project towards "near-term" gold production. The Maverick project comprises the pastproducing Puffy Lake gold mine and adjacent Nokomis gold property south of Sherridon. Auriga completed a 41-hole drilling program that culminated in the release of NI 43-101-compliant optimized in-pit and underground Indicated resources totalling 174,000 ounces gold and Inferred resources totalling 558,000 ounces. The gold resources are hosted in a number of east-dipping, parallel, mineralized vein structures including the Upper, Sheridan, Main and Lower Zones. Auriga has commissioned a Preliminary



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Economic Assessment (PEA) looking at the potential economic viability of an initial open-pit mining operation utilizing the on-site Puffy Lake mill and other existing infrastructure. The company expects the PEA to be completed in October 2011 and a positive result will provide the basis to refurbish the Puffy Lake mill and commence test mining within the next year. The Puffy Lake mine produced 28,000 ounces of gold in 1988 and 1989. St. Eugene Mining Corporation Ltd. completed the acquisition of the Tartan Lake gold mine northeast of Flin Flon. The Tartan Lake mine produced 45,000 ounces of gold between 1987 and 1989. St. Eugene is upgrading the Tartan Lake historic gold resources base to a NI 43-101–compliant resource, with an Indicated mineral resource of 1 million tonnes at 4.0 g/tonne gold (130,000 ounces) and an additional Inferred mineral resource of 1.9 million tonnes at 3.9g/tonne gold (240,000 ounces). St.

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Eugene continues to expand mineral resources through a 4000 m surface exploration drilling program and is working towards mine de-watering and the initiation of an underground exploration and test mining program.

The Lynn Lake greenstone belt, located in the northern Trans-Hudson Orogen, hosts a number of past-producing gold mines. Carlisle Goldfields Limited continues to assess the potential redevelopment of four past-producing gold mines in the Lynn Lake region with a 40,000 metre drill program. The centrepiece is the MacLellan Gold mine that contains a NI 43-101-compliant open pit and underground Measured and Indicated resource estimate of 1,035,200 ounces of gold and 9,344,000 ounces of silver. Carlisle commissioned a Preliminary Economic Assessment for the MacLellan mine as an open-pit operation. Exploration drilling at the nearby BT open pit mine, which operated between 1994 and 1996, the Lasthope deposit, and pastproducing Farley Lake mine focuses on the delineation of potential incremental feed for an envisioned regional gold mill.

Gold exploration activity is not limited to past-producing deposits located in established greenstone belts, but also includes a number of advanced exploration projects located in more frontier regions of the province. The highest profile project is Mega Precious Metals Inc.'s Monument Bay gold project near Red Sucker Lake in northeastern Manitoba. Mega continues with an aggressive infill and exploration drill program and recently released an updated NI 43-101compliant Measured resource of 221,510 tonnes grading 12.48 g/tonne, plus an Indicated resource of 2,199,100 tonnes grading 7.12 g/tonne plus Inferred resources of 6,147,000 tonnes grading 6.01 g/tonne using a 3.0 g/tonne cut-off grade. This represents a 47% increase in the resource estimate to 1,294,999 contained ounces. Mega continues to advance the Monument Bay project towards initial mine development through an

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Advanced Exploration Permit in 2012.

Mega's exploration success at Monument Bay and the favourable geology has attracted a number of junior gold explorers to the Archean Northern Superior Province southeast of Thompson. The list includes Gossan Resources Limited, Alto Ventures Ltd. and QMC Quantum Minerals Corp. This under-explored accretionary terrane is viewed by explorers as 46 M INTERCEPT OF CONTINUOUS COAL FROM BLACK DIAMOND PROPERTY; ARROWS BRACKET TOP AND BOTTOM OF INTERSECTION. PHOTO COURTESY OF WESTCORE ENERGY LTD.

having the potential to host a number of gold deposits in a regional camp.

SPECIALTY/INDUSTRIAL MINERALS

In March 2011, Westcore Energy Ltd. reported that it had completed 39 vertical holes on its 2011 drilling program on its wholly owned Black Diamond and FNR JV coal properties near The Pas. A total of 4529 m of drilling was done, with 516 coal core samples recovered for Proximate Analysis. In addition, a bulk sample of coal was shipped to the Quantex Energy Ltd. lab in Morgantown, West Virginia in February 2011 for coal liquefaction analysis. The breakeven cost of the Quantex process is estimated at less than \$50 per barrel of oil. A gravity-gradient airborne survey was completed during the summer of 2011 and a 2012 winter drilling program is planned on the gravity anomalies. A NI 43-101 resource



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report is expected upon completion of the 2012 work.

In late 2009, Saturn Minerals Inc. completed a preliminary airborne gravity survey over its Overflowing property south of The Pas and immediately to the east of Westcore Energy's properties (described above). Seven vertical holes were drilled early in 2011 of which 6 intersected the Saturn coal seam in the company's Karolina Coal Basin. One coal intersection was reported to be 88.98 m in core length. Positive washability results on coal samples were received and a followup airborne gravity survey flown by late August 2011. The newly acquired analytical data is being incorporated into the company's exploration model to identify new drill targets for its 2011 summer drill program.

Gossan Resources Limited has drilloutlined two zones of high-purity silica sand near Manigotagan on the east shore of the south basin of Lake Winnipeg. The zones extend for over 400 and 600 m in length and have thicknesses exceeding 5 m and widths of over 15 m. A marketing study, completed on the property in October 2010, concluded that the sand meets the specifications and appears suitable for the frac sand proppant, fibreglass, recreation, metallurgical, construction, filtration and well pack markets.

In September 2009, Victory Nickel Inc. announced it had drilled a (NI 43-101–compliant) Indicated resource of 15 million tonnes of Ordovician Winnipeg Formation silica sand (containing 84% marketable frac sand) above its Minago Nose nickel deposit south of Thompson. The sand, which forms part of the overburden, must be removed before the nickel can be open-pit mined. In September 2011, Victory Nickel was granted an Environmental Act Licence for the Minago mine and its board of directors approved the development, including a frac sand component. □





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Photos taken at PotashCorp mine in Allan, SK.

MANITOBA MINERAL SECTOR PROFILE

(Current as of October 24, 2011)

SECTOR PROFILE

Size:

The mineral industry is the secondlargest primary resource sector of the Manitoba economy. The 2010 value of production for Manitoba's mineral industry totalled over \$2.5 billion, comprising:

- Metallic minerals (\$1.49 billion or 58 per cent) including nickel (45.3 per cent), copper (27.5 per cent), zinc (11.5 per cent), gold (12.1 per cent) and other metals (3.6 per cent).
- Industrial minerals (\$175 million or seven per cent).
- Petroleum (\$892 million or 35 per cent).

In 2010, the mineral industry accounted for approximately 5.8 per cent of provincial GDP and about 12 per cent of total exports. Employment averaged 6,100 in 2010, a 5.2-per-cent increase from 2009. In 2010, the industry invested \$706.8 million in capital expenditures, up 24 per cent from 2009.

- In 2010, Manitoba produced*:
- 20.1 per cent of Canada's nickel.
- 15.8 per cent of Canada's cobalt.

- 10.7 per cent of Canada's copper.
- 12.7 per cent of Canada's zinc.
- 4.6 per cent of Canada's gold.
- 100 per cent of Canada's cesium and lithium.
- 27.8 per cent of Canada's selenium.
- 6.4 per cent of Canada's silver.
- 37.5 per cent of Canada's tellurium. *Cobalt, silver, selenium and tellerium

are by-products of other mined metals or minerals.

Dominant Activities:

- Mining, smelting, refining of base and precious metals.
- Mining/quarrying of industrial minerals.
- Crude oil extraction.

Structure & Concentration:

 There are approximately 45 companies active in mineral exploration and mining in Manitoba. Two mining companies employ approximately half of the workforce in this sector. Manitoba has 10 producing mines, one operating smelter and two refineries.



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- There are about 20 major producers active in the industrial minerals sector in Manitoba.
- There are 50 companies that produce oil in Manitoba, ranging from large multinationals to small locally based producers. In 2010, 513 new wells were drilled. As of December 2010, Manitoba had 3,435 wells capable of producing oil. Crude oil produced in Manitoba is shipped through the Enbridge pipeline system to refiners in southern Ontario and the northeast and north-central areas of the United States.

Exploration and development highlights:

- In 2010, the value of production for metals increased 26 per cent; industrial minerals, 4.5 per cent; and petroleum, 41 per cent from 2009. Total production value was \$2.5 billion, a 29-percent increase.
- As of October 2011, exploration and deposit appraisal expenditures totalled \$84.6 million for 2010, a significant decrease from the 2008 peak of \$152 million, but expenditures are projected to rebound strongly in 2011 to \$115.7 million.
- In 2010, approximately 3,318 wells produced over 31,501 barrels of oil per day, more than doubling oil production since 2004. Estimated oil and gas industry expenditures for 2010 totalled a record-breaking \$894 million.

Advanced exploration projects:

 Lalor Project (zinc-copper-gold) – 100per-cent HudBay Minerals, Inc.: As of July 2011, capital expenditure investment for the project increased to \$704 million with the announcement of a new \$144-million dedicated concentrator added to the development plans. The new concentrator is expected to increase production capacity to 4500 tonnes per day at the Lalor underground mine. Initial production is scheduled for 2012 and full production is anticipated in 2014.

- Reed Lake Joint Venture (copper-zinc)

 70-per-cent HudBay Minerals, Inc.,30-per-cent VMS Ventures Inc.: The Reed Lake deposit contains a NI 43-101-compliant Indicated resource estimate of 2.5 million tonnes grading 4.55 per cent copper. HudBay plans to start site preparation in November and expects to complete the extraction of a 10,000-tonne bulk sample in the fourth quarter of 2012. A production decision is expected early in 2013.
- Snow Lake mine (gold) 100-per-cent Alexis Minerals Corporation: Alexis delayed their anticipated production decision to reopen the mine in order to include additional gold resources not reported in the December 2009 feasibility study. The 2009 feasibility study forecast production of 80,000 to 90,000 ounces of gold per year for a minimum of six years. Alexis anticipates the completion of the revised feasibility study in 2012.

- Lost Lake Joint Venture (copper-zinc) 67.5-per-cent HudBay Minerals, 32.5per-cent Halo Resources Ltd.: HudBay continues to assess the feasibility of developing the deposit and has started pre-feasibility engineering, which is expected to be completed in 2011.
- Monument Bay Project (gold) 100per-cent Mega Precious Metals Inc.: An upgrade and 47-per-cent increase of the gold resource was announced in June 2011 based on a National Instrument 43-101-compliant resource estimate. Mega continues to work towards underground development in 2012. Mega and Red Sucker Lake First Nation signed a memorandum of understanding to cover certain portions of the project that lie within the traditional lands of the First Nation.
- Minago Project (nickel) 100-per-cent Victory Nickel Inc.: In August 2011, Victory Nickel was granted an Environmental Act Licence for a 10,000-tonne per day nickel mine. The Minago open pit will produce approximately 25 mil-

lion pounds of nickel in concentrate and 1.15 million tonnes of by-product frac sand per year for 10 years.

 Makwa Project (nickel-PGE) – 100-percent Mustang Minerals Corp.: A National Instrument 43-101-compliant reserve estimate in 2010 outlined a 10-million-tonne open pit. Mustang continues work on a feasibility study and has purchased a mill facility to reduce the capital costs outlined in the study. Mustang and Sagkeeng First Nation signed a memorandum of understanding as the first step in a community engagement process to benefit both parties.

Mining operations:

 CaNickel Mining Limited (formerly Crowflight Minerals Inc.) resumed production at their Bucko Lake Nickel Project near Wabowden in April 2011.
 Production was stopped in October 2010 to introduce company-owned mine production and mine modifications. CaNickel expects to mine

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MANITOBA MINING REVIEW 2012 17

220,000 tonnes of ore in 2011 to produce approximately five million pounds of payable nickel.

- San Gold Corp. continues to expand their mining operation at Bissett with further exploration successes, and record quarterly production levels in 2011 with a full-year production forecast of 80,000 ounces.
- HudBay Minerals is proceeding with the 777 North expansion project, which will provide additional feed to its Flin Flon concentrator and zinc plant and additional exploration opportunities.
- Vale is pursuing new mine development opportunities, particularly the 1-D Project, which is currently in the prefeasibility stage. The company announced plans to transition its Thompson operations to mining and milling with the phasing out of smelting and refining by 2015. The Government of Manitoba, City of Thompson, United Steelworkers and Vale continue to work together exploring options to keep the processing facilities operational beyond 2015.

Aboriginal/industry agreements:

- Memorandum of Understanding between Manitoba Keewatinowi Okimakanak. (MKO) and the Mining Association of Manitoba.
- Memorandum of Understanding between Sagkeeng First Nation and Mustang Minerals as a first step in a community engagement process regarding Mustang's Makwa Nickel Project.
- Memorandum of Understanding between Mega Precious Metals and Red Sucker Lake First Nation to cover certain portions of the company's Monument Bay project that lie within the traditional lands of the First Nation.

Sector Capabilities:

- Base and precious metals: copper, nickel, zinc, gold.
- Industrial minerals: cesium, dolomite, spodumene, gypsum, salt, dimension stone, limestone, peat, lime, crushed

rock, sand and gravel aggregate.Crude oil extraction.

Key Players:

- Vale
- HudBay Minerals Inc.
- San Gold Corporation
- CaNickel Mining Limited
- Tantalum Mining Corporation of Canada, Ltd.
- Gillis Quarries Ltd.
- Graymont Western Canada Inc.
- Lafarge Canada Inc.
- Lehigh Inland Cement Limited
- Cold Spring Granite (Canada) Ltd,
- Tundra Oil & Gas Partnership.
- EOG Resources Canada Inc.
- Enerplus ECT Resources Ltd.
- Penn West Exploration
- Canadian Natural Resources Limited
- ERCO Worldwide
- Sun Gro Horticulture Canada Ltd.
- Sunterra Horticulture (Canada) Inc.
- Berger Peat Moss Ltd.
- Premier West Peat Moss Ltd.
- Certain Teed Gypsum Canada Inc.

COMPETITIVE STRENGTHS

Mineral Endowment:

· Metal deposits in Manitoba's Precambrian Shield have been mined for decades. Ongoing development at Flin Flon will extend operations there until 2016 and at Snow Lake, the Lalor deposit is expected to support mining to 2030 and beyond. These developments will see mining activity in the Flin Flon-Snow Lake region extend over 100 years since the first mines were opened. The Bucko Lake Nickel Mine, located in the prolific Thompson Nickel Belt, is expected to produce an average of 11 million pounds of nickel per year over its currently projected seven-year mine life. Similarly, new investments in Vale's Birchtree project near Thompson are projected to extend mining operations there beyond 2020, more than 60 years after initial production. In 2006, San Gold Corporation reopened the gold mine at Bissett, where the mining history of the region's mineral-rich Rice Lake gold belt dates back to 1911.

- Large areas of high mineral potential in remote regions of the province remain under-explored when compared with similar regions elsewhere in Canada. This represents a potential avenue for considerable growth in Manitoba's mineral sector, and may provide significant employment opportunities for northern and Aboriginal communities near new mineral exploration and development projects.
- Manitoba mineral resources with potential for future economic development include platinum-group elements (platinum, palladium and rhodium), rare earth elements, uranium, titanium, vanadium, chromite, silica, diamonds and potash.
- Although oil has been produced in Manitoba for over 60 years, the province is still relatively under-explored. Production has been obtained from only a small part of the total sedimentary sequence present in the province. Due to the relatively shallow depth of sedimentary rocks in Manitoba and the generally flat terrain, drilling costs are relatively low.

Business Strengths:

- In addition to known mineral deposits and occurrences, Manitoba offers a number of economic advantages that support the minerals sector including: varied geology with high mineralpotential; a comprehensive geoscience knowledge-base; financial incentives for exploration and mining; a transparent land-tenure system; competitive business costs; skilled labour; environmental stewardship balanced with industry needs; high-quality transportation infrastructure; access to a sea port; and low-cost, reliable electricity.
- Recent initiatives to support mineral and petroleum exploration and development include:
 - Renewal of the Mineral Exploration Assistance Program in April 2011 for another three years. The program will provide funding of \$1.5 million through one offering per year, for a

total of \$4.5 million over the three year period. Since 1995, Manitoba has invested a total of \$27.7 million through its Mineral Exploration Assistance Program to support 744 exploration projects. These projects have generated \$227.3 million in company spending for exploration in the province.

- The Manitoba Drilling Incentive Program, which provides incentives to explore and develop petroleum resources in the province, was extended at the end of 2008 through to January 1, 2014.
- A progressive mining tax rate of 10, 15 or 17 per cent based on profits and other mining tax incentives, making Manitoba among the most competitive mining tax regimes in Canada.
- An increased Mineral Exploration Tax Credit to 30 per cent in 2010 offers Manitoba taxpayers the most generous mineral exploration tax credit in the country.
- The Northern Essential-Skills Training Initiative to address skilled labour shortages in the mining sector. Since 2009/10, over 500 people have received training in essential skills (ES), including industry-specific training such as ES Prep for Underground Mining.
- The Manitoba government, in collaboration with industry, educational institutions, municipal and federal governments, established the Northern Manitoba Mining Academy. The academy, located in Flin Flon and Thompson, will provide training to prepare thousands of workers over several generations for mining employment. Construction is scheduled for completion in winter 2012.
- \$77.6 million in funding for 2011-12 to support the clean-up of orphaned and abandoned mines in the province.
- Manitoba has been recognized nationally and globally as one of the best places for exploration and mining:
 - For over a decade, since 1999, Manitoba has consistently ranked as

one of the top ten jurisdictions worldwide for mineral policies favourable to mining investment (based on the results of the annual Fraser Institute Survey of Mining Companies).

 Manitoba's effective mining tax rate is ranked lowest or second-lowest in Canada over a range of mine profitability levels according to a federal study published in the Natural Resources Canada Information Bulletin: Taxation of Mineral Income 2012 – How Canada Compares (June 2011).

For the past three years, Manitoba has ranked as the best (2009 and 2010) or second-best (2011) jurisdiction in Canada to invest in petroleum exploration and development, as rated by oil industry executives in the Fraser Institute's 'Global Petroleum Survey'. □



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LEFT TO RIGHT: TIM KULCHYSKI, GEORGE NYKULAIK, DAVID BUSCH, AND CLIFF DUKE.



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MINING DISPOSITION STATISTICS AS OF SEPTEMBER 31, 2011

Dispositions	Totals	Area in ha
Mining claims (active & pending)	6,302	1,019,727
Mineral Exploration Licences (active & pending)	105	1,826,986
*Leases	3,905	144,094
*Leases include mineral leases and leases grouped under Order in Council.		

of Dispositions

Area in hectares







■Claims ■MELs ■Leases

Courtesy of

Gerald Teichrib Acting Mining Recorder







ACTIVE MINERAL EXPLORATION LICENCES

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25

Halo Resources Ltd.

26 Alexis Minerals Corporation

Sherridon VMS

Snow Lake Mine Property



AND DEVELOPERS ASSOCIATION INC. For property owner contacts see: www.mpda.ca/map/contacts

MANITOBA PROSPECTORS

MANITOBA MINERAL PROPERTIES OWNED BY MPDA MEMBERS - 2011

with potential for: 🕘 Base Metals 🔵 Nickel 🛑 Gold 🔁 Uranium 🛑 Diamonds 🔘 Other





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2011 MPDA SCHOLARSHIP RECIPIENTS

IN MARCH 2011, THE FOLLOWING FOUR STUDENTS WERE AWARDED \$1,000 MPDA SCHOLARSHIPS FOR STUDIES IN GEOSCIENCES IN THE 2011-2012 ACADEMIC YEAR.



RUSSEL HIEBERT PH.D. CANDIDATE – UNIVERSITY OF MANITOBA

I was a student at the University of Manitoba from September 1999 to May 2003, when I graduated with a Bachelor of Science with Honours in Geology. During this time I had a summer jobs working in geology with the Manitoba Geological Sur-

vey (2001) and with the University of Manitoba (2002). From 2003 to 2005 I attended Acadia University and graduated with a Master of Science in Geology. Upon graduation I accepted a job with FNX Mining Company Inc. as an exploration geologist in Sudbury, Ontario. I was employed by FNX until December 2009, when I left to pursue Ph.D. studies at the University of Manitoba beginning in January 2010.

Since beginning Ph.D. studies, I have focused my studies on stable isotope systems and their application to the understanding of magmatic sulfide deposits and using this understanding to further refine exploration techniques for these deposits. This study will use multiple sulfur isotopes to determine if the assimilation of crustal sulfur was an important factor for the formation of Ni-Cu-PGE mineralization present in the Archean Bird River Sill in southeastern Manitoba. It is generally thought that mafic and ultramafic magmas are generated by mantle melting and rise through the crust unsaturated with respect to sulfur. These magmas then require additional, external sulfur to form significant accumulations of sulfide mineralization. This source is often thought to be derived locally through melting and assimilation of sulfur-bearing sedimentary country rocks, but this source is not obvious in the Archean Bird River greenstone belt, as it is dominated by volcanic rocks and siliciclastic sediments with low S content. Traditionally, researchers used only 34S values to identify the crustal source, but most Archean sediments exhibit small variations in 34S, making it difficult to conclusively distinguish crustal from mantle S. However, photochemical reactions in the Archean anoxic atmosphere produced mass-independent fractionations of S that have been incorporated into Archean sediments and can be identified using multiple S isotope measurements, providing a useful tool for tracing the sulfur source for these deposits. To determine if assimilation of crustal sulfur was important for the Bird River Sill to reach sulfur saturation, we will collect several samples containing sulfides from the Bird River Sill and from the surrounding country rock. The samples will be prepped and analyzed in the stable isotope laboratory at the Department of Geological Sciences of the University of Manitoba for multiple sulfur isotopes. Polished thin sections will be also prepared at the University of Manitoba to assist in sample description and in characterization of the sulfide minerals present.



MELISSA ANDERSON M.SC. CANDIDATE – UNIVERSITY OF NEW BRUNSWICK

Rare-metal granitic pegmatites are important hosts for the rare lithophile elements, including: Ta, Li, Cs, Nb, Be and Sn. This study comprises a detailed examination of the Moose II pegmatite, located approximately 115 km east-southeast of Yellow-

knife, NWT. The pegmatite forms a north-trending dyke, approximately 430 m long and up to 61 m wide, dipping moderately to the west, discordantly hosted within metasedimentary rocks of the Archean Yellowknife Supergroup. This deposit was selected for detailed geochemical investigations due to the accessibility, exposure and production history of Li & Ta (1946 – 1954). This zoned dyke is classified as a Spodumene-Subtype of the rare-element pegmatite family.

The objectives of this study include: (1) documenting the textural and zonal features based on detailed mapping and analysis of the major and minor mineral composition; (2) examining the mineralogy and petrography, including mineral chemistry; (3) determining the age and cooling history of the pegmatite through U-Pb geochronology of tantalite, and Ar-Ar dating of primary muscovite; (4) documenting fractionation trends in muscovite to study pegmatite evolution, and to define a geochemical tool for pegmatite exploration in the area; (5) comparing chemistry between primary and secondary muscovite associated with Ta-oxides by LA-ICP-MS to understand the nature of late-stage pegmatitic fluids, and therefore the controls on Ta mineralization; (5) examining the variations in 18O and D through the dyke to study processes of ore formation and fluid interaction; (6) analyzing non-traditional stable 7Li isotopes to investigate diffusion-related concentration variations and isotopic fractionation, as well as other igneous processes, such as volatile element degassing or contamination; and (7) geothermometry based on mineral-exchange equilibria. This comprehensive study will assist in understanding how pegmatites form, the mechanisms for emplacement, and the processes leading to mineralization. Applications within the mining industry will also be significant, as trace-element geochemistry of muscovite may serve as a valuable tool for pegmatite exploration.



AYAT BAIG B.SC.HONS. CANDIDATE – BRANDON UNIVERSITY

Ayat Baig has completed his third year of study in the Geology program at Brandon University. To date, he has worked on various projects, including both lab work and field exploration. He has experience as a research assistant in the scanning

and electron microscope laboratory (SEM lab) on diverse projects. This included geochemical research on diamond indicator minerals for kimberlitic exploration. He also conducted research pertaining to Platinum Group Elements (PGEs) within sulphides from layered mafic intrusions within the Thompson Nickel Belt.

Additionally, Ayat has gained valuable experience doing exploration work on the Eden Lake carbonatite complex located in northern Manitoba. This mineralogically diverse carbonatite is not only of interest for academic reasons but also for economic interests, as it hosts rare-earth elements. Currently, Ayat spent the summer season assisting in an exploration program in the Flin Flon Snow Lake Greenstone Belt. The deposit type is of strong interest to Ayat as he intends to do further academic research pertaining to hybrid epithermal Au/VMS deposits and an independent study on methods of gold exploration in his final year of study. After graduation he plans to pursue a rewarding career in the gold industry and mineral exploration.



LOGAN KUCHERHAN B.SC.HONS. CANDIDATE – BRANDON UNIVERSITY

After completing the upcoming 2011/12 school year, I will have half a year remaining to complete my postsecondary education at Brandon University. I will be finishing with a Bachelor of Science Honours, with geology being my major and geogra-

phy being my minor. Upon completion, I will possess all my academic requirements to become a professionally registered geologist.

During the upcoming school year I plan to explore thesis topics of interest, in particular precious metals. I plan on not only educating myself through my post-secondary education, but also continuing my education by gaining experience and knowledge through summer employment opportunities. I gain knowledge during my summer experience that cannot be found in a postsecondary education. I find experience gained by working with other experienced professionals is nearly as valuable as the amount of education gained in school. During the school year I want to continue building relationships with experienced professionals (both in the workforce and in education) who seek to share their experience and knowledge. I want to broaden my knowledge of different mineral deposits and potentially gain experience with a variety of different mineral deposits. Upon completion of my post-secondary education, I plan to explore the potential routes I can take continuing with a master's degree. As my interest and understanding continues to grow in geology, through my education and experience, I am more interested in continuing on with a master's study eager to become the best geologist I can be in the growing industry. \Box





SUN SHINES ON STUDENTS' ENTHUSIASM



From May 26th to 28th, 2011, Manitoba Innovation, Energy and Mines (IEM) presented the 13th annual Manitoba Rocks! event at The Forks in downtown Winnipeg. Though the previous year's event was marred by strong winds and constant rain, the sun shone down on this outing, attracting over 2,700 people to the interactive mining displays. Manitoba Rocks! is an IEM outreach



program and part of Provincial Mining Week activities, celebrating the importance of the mining industry to all Manitobans. Since the event began in 1999, over 30,000 people have attended, many of whom have remarked how they keep an eye out for the advertising each May as it has become an annual family outing for them.

Over 400 students from eight different schools attended the event, as well as 15 members of an adult English as an Additional Language class; attendees spent the day learning about the importance of minerals in their daily lives from IEM staff and industry volunteers. Many visitors brought special rocks to show the 'Rock Doc', an on-site geologist to help them learn more about rocks and minerals.

Students and visitors enjoyed free activities like panning for gold, collecting mineral and fossil samples, exploring mining equipment, and trying their luck at spinning the Mining IQ Wheel to answer a question and win a prize. New attractions to the event included a Treasure Hunt activity for children and a mock stock market contest put on by the Manitoba branch of Women in Mining. The Canadian Fossil Discovery Centre brought along a "dig box" allowing visitors to dig through the dirt in search of fossils. Also on display was a miniature version of a functioning petroleum pump jack donated by HG Pumping Units.

Manitoba Rocks! was also at the Children's Hospital, where patients received a special visit from gold-panning champion Yukon Dan and Rick Unruh from the IEM rock lab. The children enjoyed the activity and learned more about rocks and minerals.

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Minerals are Manitoba's secondlargest primary resource industry, playing an important role in our economy. In 2010, the industry produced over \$2.5 billion worth of metals, industrial minerals and petroleum. Manitoba's mineral industry employs about 6,100 workers directly with many more in indirect jobs, and generates millions of dollars in spin-off business. There are currently 10 operating mines in the province.

Nickel, copper, zinc and gold are the major metals produced in Manitoba. Other minerals and metals mined include aggregates, building stone, peat, dolomite, spodumene, silver, salt, lime and gypsum. Prospects for the future include mining diamonds, platinum group metals, titanium, chromite, silica and potash.

Manitoba produces 10.7 per cent of Canada's copper, 20.1 per cent of Canada's nickel and 12.7 per cent of Canada's zinc. From toothpaste to comput-



ers, sinks to scooters, the minerals we mine contribute enormously to the quality of life for all Manitobans.

Manitoba Rocks! is grateful for the continued support of partners from the mining industry, including the Mining Association of Manitoba, the Mineral Society of Manitoba, the Manitoba Prospectors and Developers Association Inc., Rodren Drilling Ltd., Mining Matters, Oak Hammock Marsh Interpretive Centre, Women in Mining, the

Canadian Fossil Discovery Centre, and the Manitoba Children's Museum.

In 2012, Manitoba Rocks! will take place May 24th to 26th at The Forks. It will also be featured November 17th and 18th, 2011 as part of the Manitoba Mining and Minerals Convention at the Winnipeg Convention Centre, and will offer pre-booked school tours. For more information, please call 204-945-6569 in Winnipeg or 1-800-223-5215 toll free, or visit www.ManitobaRocks.info.



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RESOURCE POTENTIAL ABOUNDS IN SOUTHEAST MANITOBA

By Leonard Melman

Most people within the general mining community are aware of major historic Canadian mining regions such as the Klondike, the Sudbury Nickel Belt, British Columbia's Barkerville region or the extensive mining operations between Timmins, Ontario and Val d'Or, Quebec. However, it can come as a rather unexpected surprise to many when they learn that agriculture-rich Manitoba has also earned a strong reputation within the mining world.

Actually, mining has been part of this province's history for hundreds, if not thousands of years, as natives have mined red ochre/hematite for tribal rituals from the Red Cliff area for centuries. Later, in the early 1800s, salt recovered from brine springs to the west of lakes Winnipegosis and Manitoba provided the first commercial returns from mineral development.

Mining development in Manitoba advanced during the 20th century with important discoveries taking place in the northern half of the province with developments at Snow Lake, Thompson and near the city of Flin Flon garnering substantial attention.

However, our purpose is to examine mining in the south-eastern portion of Manitoba and the town of Bissett, located 250 kilometres northeast of Winnipeg, which became the focus of early developments with the discovery of gold at nearby Rice Lake and led to the establishment of the periodically prosperous San Antonio Mine near Bissett in 1933.

San Antonio Gold Mines Ltd. operated the San Antonio Mine until 1968. It then sat idle for three decades despite attempts from companies such as Brinco/New Forty-Four Mines (in 1982) and Rea Gold (in 1997) to rejuvenate the property, but low gold prices of that era proved a difficult obstacle to overcome. The mine was reopened in 1998 by Harmony Gold Canada, but operations were suspended

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after only three years. San Antonio again remained idle until 2006 when San Gold took over operations and re-started production. Mining at San Antonio has taken place at depths as low as 1,650 meters (5,500 feet) below surface.

San Gold has proven to be a major developer in the area. In addition to conducting active mining operations at the San Antonio Mine, the company has continued active exploration work in the vicinity of Rice Lake and during the last two years, they have established seven new discoveries named The Hinge, 007, 007 East, Cohiba, L-10, L-13 and Emperor. San continues to undertake large drilling programs, and annual gold production reached the 80,000 ounce mark during 2011.

Mustang Minerals Canada is another mining corporation active in south-eastern Manitoba, where they have developed two project areas in the search for nickel, copper and the platinum group metals (PGMs). Their projects are named the Makwa Nickel Project and the Mayville Property. Both projects are located just inside the Manitoba-Ontario border and are just 35 kilometres from each other by road.

Makwa is the more advanced of the two projects and has a NI 43-1010 Reserve Estimate completed in February 2010 which outlines 9.855 million tonnes in the Probable category grading 0.541% nickel, 0.113% Copper and .433 grams per tonne (gpt) PGMs. Work on a Feasibility Study is under way, the permitting process at Makwa is ongoing and operations are planned to start in late 2012.

Maryville has also had a published NI 43-101 qualified resource Estimate for their project which shows an Indicated Resource of 9.227 million tonnes grading 0.61% copper, 0.23% nickel0.174 gpt palladium.

Strike Point Gold, another company active in the region, has recently begun a drill program at their Angelina property. Drilling commenced on August 15, 2011, and the program calls for about 600 metres of drilling over five or six holes in the centre of an area that yielded assays ranging from 0.14 to 6.41 gpt Au from various grab samples.

Strike Point is also involved in a joint venture with San Gold at the Strike Point Project adjacent to Rice Lake.

Bison Gold Resources is also active in the south-eastern Manitoba area, with properties located east of Rice Lake, 25 kilometres from San Gold's operating mill and along the same trend line as

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prolific Red Lake in Ontario. Two former mines are found on Bison's properties.

With all of this activity, mining in south-eastern Manitoba is alive and prospering, adding high-paid jobs to a relatively remote area where few other opportunities have existed. Like all other Manitoba miners, those working in the south-east have benefitted from the fact that Manitoba ranks very high as a desirable mining jurisdiction in the latest Fraser Institute listings. \Box

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STEVE LESAVAGE MANITOBA MINER AND PROSPECTOR EXTRAORDINAIRE

By Leonard Melman

Every industry seems to have a roster of special people who have made

outsized contributions and for Manitoba mining, one person held in particular esteem is noted geologist, prospector and developer Steve Lesavage.

After serving his country in the Second World War, Lesavage eventually turned his focus toward the world of Manitoba mining and has enjoyed a lengthy career stretching back over several decades. While he has enjoyed wide personal travels through the years, the bulk of his mining experience has taken place within Manitoba, with emphasis on two particular areas centred near the communities of Neepawa and Bissett where his focus has been on iron and gold, respectively.

One of the difficulties related to Manitoba mining is the problem of locating potential ore bodies, since much of the province is covered by heavy soil overburden or swampy wetlands. These conditions diminish the opportunities available elsewhere to locate potential profitable ore bodies via prospecting for visible outcroppings. In order to overcome this dilemma, Lesavage expanded his knowledge of geophysical surveys and soil geochemical work, including the development of his own tools and instruments. Among his particular goals was the sampling of vegetation for trace elements which might serve as "markers" for possible ore bodies lying hidden beneath the surface.

Steve's exploration work in the Neepawa area of Manitoba resulted in the discovery of an iron deposit; most of his work through the decades, however, was focused on the search for gold in the Rice Lake Mining Camp near Bissett. His many prospecting ventures resulted in several discoveries, including properties that became known as Lesavage North and Lesavage South.

These properties, held as part of Lesavage's company Tudale Explorations Ltd., were located along the Wanipigow Fault, which has been traced to the prolific Red Lake Gold Belt some 80 kilometres eastward. Canadian junior mining company Harvest Gold signed an option to acquire a 50-per-cent interest in each project in 2005, and in their corporate management discussion, they emphasized that an integral part of their decision was based on Lesavage's accumulated data on area soils and vegetation.

Perhaps the most notable association Lesavage has maintained was with the Manitoba Prospectors & Developers Asso-



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ciation, an organization representing Manitoba miners originally dating back to the 1930s, which was incorporated in its present organizational form in 1994. Lesavage's reputation in Manitoba mining exploration and prospecting work is such that he is listed as the contact person on the MPDA provincial mining map for gold and iron mining locations close to both Bissett and Neepawa.

Much of the success of the MPDA can be attributed to the excellent work of their committees; Lesavage has served on several, specifically including the Mineral Exploration Committee, Sustainable Development Advisory Committee, Membership Committee and the Mines Act sub-committee. He has been a director of the MPDA during many of the years since the incorporation in '94, and has played an active role through the years, representing the MPDA at various conventions – such as the annual Manitoba Mining Conference held in Winnipeg each fall, and the world's largest annual mining gathering, the Prospectors and Developers Association of Canada (PDAC) that takes place in Toronto in early March – in addition to his numerous work on MPDA committees.

Despite being in his mid-80s, Lesavage remains in good health, continues to play an active role in the world of Manitoba mining and is able to enjoy the well-earned high esteem in which he is held by his friends and colleagues. \Box



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BISSETT's 100th ANNIVERSARY CELEBRATION



It was here on the shores of Rice Lake that, in March 1911, prospector Major Ephrem A. Pelletier, a Royal Northwest Mounted Police Inspector, guided by Arthur Quesnel and Duncan Twohearts, staked the first of several of his claims – "The Gabrielle". This discovery of gold would prove to be the first documented in Manitoba. And so, on August 12th, 13th and 14th, Bissett was host to the 100th Anniversary Celebration of this historical discovery.

The discovery would be the leading factor in the operation of the San Antonio Gold Mine, currently an actively producing mine (San Gold Corporation/ Rice Lake Gold Mine) with a work force of now close to 500. The discovery would also ultimately result in the building of this great little community known as Bissett, which has most definitely and proudly survived the tests of time!

In May 2010, a group of seven eager volunteers came together to begin discussions and planning of this event. The Bissett & Area Historical Society, a group of dedicated former Bissett residents who have made it their mission to ensure the history of mining, community and area is preserved, worked closely with the "Group of 7".

By Gail Wynne

The support of volunteers, community service and business, both local and otherwise, was beyond generous, and we could not have done it without their help and support. So with everything in place to welcome folks home it was finally here the weekend we had been planning for! Friday began with registration and a "meet and greet" at the community hall – a reunion of sorts, as people came from all over to attend this celebration. In all, more than 700 people took part in the festivities over the duration of the weekend. This is, without a doubt, a tribute to





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the love for this community that once you are touched by it never leaves your heart.

On Saturday morning, under a clear blue sky and situated on the water's edge not far from the historic site, the day began with the opening ceremonies. Invited delegates welcomed "home" those in attendance, and special acknowledgements and recognitions were made.

To the delight and surprise of those in attendance, Manitoba-born movie star Adam Beach made a surprise appearance. The weekend activities included a walkabout magician, a fun casino, children's bouncers, face painting, balloon sculptures, bubble fun, popcorn and candy floss, beverage gardens, a silent auction, souvenir stand, dog shows, a street busker, jugglers, clowns, panning for gold, live music, mine and airplane tours, catered supper, pancake breakfast, a church service and a museum display. Unfortunately, the scheduled fireworks and fire dancers were canceled due to the extreme dry conditions, but that most certainly did not extinguish the excitement in the air.











People sat and chatted, reminiscing and recalling special memories of their lives here in Bissett...

Notes, pictures and small meaningful items were placed in a time capsule that will be opened in 2036.

Former resident Wilda (Reynolds) Ward wrote a spectacular book entitled Bissett: 100 Years Of Gold specifically for the 100th anniversary, which debuted at the event. Another former resident, Sandra Barton, unveiled paintings depicting Bissett's past and present, which will be hung in future mining museum.

People sat and chatted, reminiscing and recalling special memories of their lives here in Bissett, and as the most beautiful Sunday wore on, the people began to dwindle after sharing a last laugh and even a tear and saying their final farewells. The community spirit was overwhelming, and the event can only be described as "perfect" as old friends reconnected and new friendships were made. Now it is a memory we will carry with us of this most perfect event that happened on the 100th anniversary celebration in Bissett!



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SAN GOLD ONE OF CANADA'S MOST EXCITING EXPLORATION COMPANIES



Success takes vision. It also takes the focus to make that vision a reality and bring out an idea's full potential. For San Gold Corporation, that vision and focus have taken them a long way in a short time.

While San Gold is still a young company, its roots date back almost 80 years. Located near Bissett, in the Rice Lake Greenstone Belt, small-scale gold production first occurred in the region in 1916. The first gold brick was poured in 1923 from the Poundmaker Mine. The Rice Lake Mine (formerly San Antonio Mine) first began operating in 1931.

The mine produced more than 1.4 million ounces of gold from approximately 5.8 million tons of ore with an overall average grade of about 0.25 oz/ton. Rea Gold Corporation spent \$90 million in the late 1990s and Harmony Gold (Canada) Inc. spent another \$30 million in the early 2000s to make improvements on the mine.

In 2004, San Gold Resources Corporation and Gold City Industries Ltd. worked together to acquire Harmony's Rice Lake assets for less than \$10 million. Included in the transaction was the 1,200 tpd mill, 550,000 ounces of audited gold resources and a small mine claim package for a total purchase price \$7.5 million. The principals involved in the transaction, Dale Ginn and Hugh Wynne, restarted operations in July 2005 as the newly formed San Gold Corporation.

By Lyndon McLean

EXISTING OPERATIONS

San Gold is currently operating along two active mining trends. The first, where the Rice Lake Mine is located, has held many names over the last 80 years, including the San Antonio Mine (SAM) Unit and the Mine Diabase. The second. known as the Shoreline Basalt, was identified in 2010 as part of the company's exploration program. Five new deposits have been identified along the near-surface portion of this unit, three of which -007, 007 East, and L-10 - are in production. Two near-surface portals provide access to a large volume of high-grade deposits typical of the claims area and increase San Gold's operational flexibility along the basalt.

San Gold employs about 420 people, with most staff working in Bissett. Four people work in the company's Winnipeg head office and three more work in Toronto. Another 160 people work for on-site contractors.

The company is proud of its strong relationship with local communities. San Gold continues to invest aggressively in local training initiatives – all done on-site – to start people on their path in the mining industry. Some go directly under-



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ground while others work on surface, in the mechanics shop, the assay lab, the mill or in one of the many occupations available at site.

Since 2005, this has generated a strong local workforce – 40 per cent of employees live within an hour and a half, in towns like St. Georges and Lac du Bonnet, and close to two-thirds are from southern Manitoba. This has reduced reliance on labour from other regions and from contractors, provided increased labour stability through a greater sense of local ownership, and fostered goodwill between San Gold and its surrounding communities. It has also reduced costs, with less than 30 per cent of workers requiring flights as part of their commute every two weeks.

GROWING FAST

San Gold has come a long way in a short period of time, and the company takes great pride in what has been accomplished. Both the Hinge and 007 mines went into production within only two years of being discovered. From the start of production in 2005, production has



increased about 80 per cent year by year.

"We've grown rapidly over the past six years, and especially in the last 18 months," says San Gold's communications director Tim Friesen. Friesen says the company remains focused on increasing its production capacity while continuing to build up its resource profile.

On the production front, the company continues to remove bottlenecks in the mining and milling processes. For instance, only last summer, the company had completely exhausted its electrical power infrastructure. There wasn't enough capacity to add a new fan or pump, let alone a new camp for the increasing number of employees being hired at site.

The company built a new substation capable of accepting all the power Manitoba Hydro can provide. Additional capacity was added to provide some buffer and as more power becomes available. Along with the electrical upgrade, the company also expanded and improved its existing camp and built new warehouses, offices and an 18,000square-foot mechanics shop with heated floors to ensure the growing fleet remains well serviced. An expansion of the tailings impoundment area is also in the works.

The company also examined their milling operation and determined the

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crushing/grinding circuit was limiting the amount of ore that could be processed. In the first quarter of 2011, new crushing and grinding equipment was put in place. This included a new jaw crusher and cone crusher, as well as a new tertiary crusher. With this, San Gold was able to move well beyond the mill's stated 1,200 tons/day capacity - all for less than \$6 million. The mill is currently able to process 1,600 tons/day with peak days reaching well beyond that. Now that the flotation circuit has been upgraded and a new screening plant is about to be installed, the mill's capacity is expected to further increase.

These increasing production levels continue to drive down the cash costs per ounce of gold produced, which are already comparable with other Canadian underground junior gold miners. In Q2 of 2011, cash cost were \$820/oz of gold sold. The company is expecting cash costs to be approaching \$650/oz by year-end. "San Gold was frequently identified as a talented group of gold explorers, and now we're demonstrating that we are good miners too, as evidenced by our dramatic year-over-year reduction in cash costs," says Friesen. As production levels continue to increase, the company expects the average cost per ounce of gold produced to continue to drop.

San Gold has come a long way in a short period of time, and the company takes great pride in what has been accomplished.

GOING FORWARD

But the real excitement remains on the exploration front. San Gold is spending \$26 million this year drilling 300 kilometres of core from the region surrounding the Shoreline Basalt, both from surface and from depths of up to 1,500 metres underground. Results of the 2011 drill program are expected to be incorporated into a National Instrument 43-101-compliant technical report in early 2012.

San Gold recently entered into joint venture agreements that together cover 200 square kilometres inside the Rice Lake greenstone belt. While the company remains focused on delineating the Shoreline Basalt deposits along strike and to depth, many additional targets remain to be explored across the region. The company completed an airborne geophysics program that is expected to help guide a regional exploration program in 2012.

KEYS TO SUCCESS

San Gold has grown and continues to grow, building on past success and looking forward. Over the past six years, San Gold has attracted more than \$300 million in new investments. At the same time, the company's market capitalization has grown from less than \$10 million to peaks of more than \$1.2 billion. In spite of recent market volatility, the company continues to provide good value to those shareholders who originally believed in the story.

San Gold recently hired a new president and chief executive officer, George Pirie, who, alongside his team of officers – chief operating officer Ian Berzins, chief financial officer Gestur Kristjansson, and vice-president, corporate development Jeremy Link – is charged with taking San Gold to the next level.

While volatility in world economies continues to dominate the headlines, San Gold's management remains focused on doing what it does best. "We find new deposits and we develop safe, efficient strategies to mine those deposits in ways that provides maximum benefit for our investors, employees and the communities in which we operate," says Friesen. \Box



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SHARPE LAKE GOLD PROJECT

The 5,000-hectare Sharpe Lake Gold project is located 550 kilometres northeast of Winnipeg, Manitoba. The project is centred on a portion of the east-west trending Stull Lake-Wunnummin Fault Zone (SWFZ). The SWFZ is a major, first-order Deformation Zone that is host to several important gold deposits, including the Monument Bay Gold Zones which is located 30 kilometres east of Sharpe Lake.

The property is underlain by volcanic rocks of the Archean Superior Province. The Superior Province is the largest and most prolific gold producing Archean craton in the world and extends from northeast Quebec to northeast Manitoba. The Sharpe Lake property represents one of the few remaining gold-bearing greenstone belts in the Superior Province, which has never been drill tested.

The geologic setting at Sharpe Lake resembles other gold districts in the Superior Province. For example, the SWFZ is considered to be similar in style to the prolific Destor-Porcupine Fault Zone, which is host to the 60-million-ounce Timmins District. Also, large and pervasive altered zones associated with these fault zones have been identified at Sharpe Lake.

Minor previous work at Sharpe Lake consisted of an airborne magnetic/electromagnetic survey and some ground prospecting and geochemistry. The airborne survey helped map the extent of the SWFZ and preliminary prospecting of very limited rock exposure revealed grab samples up to 6.9 g/t Au along the trace of the fault zone. The airborne survey also helped identify a prominent geophysical feature interpreted as a sequence of folded, conductive, banded iron formation, which appears to have many similarities to the nearby producing Musselwhite Mine (>1.5 million ounces).

The property can be brought very quickly to the drill-ready stage by refining existing airborne geophysical targets and surface geochemical anomalies with follow-up ground geophysics. Drilling can be carried out very efficiently by taking advantage of winter access roads.



MONUMENT BAY GOLD DEPOSIT

- Mega Precious Metals Inc. (just east of Sharpe Lake)
- 2.4 million tonnes @ 7.6 g/t Au (inferred 6.1 mill t @ 6.01 g/t)
- (mine feasibility currently underway)

A joint venture partner is being sought for the Sharpe Lake gold property. *Contact Donald Gibb at (204) 275-3216 for information.*





For more information please contact: Donald Gibb, President and CEO, Canada Bay Resources Inc. Tel: 204-275-3216 | dgibb@canadabayresources.com. □



MAXIMIZING VALUE AT THE 20,000 HECTARE SHERRIDON PROPERTY



Over the last six years, Halo has concentrated its efforts at the Sherridon VMS Property, which covers an area of over 200 square kilometres and hosts the pastproducing Sherridon Mine about 70 kilometres northeast of Flin Flon. The Sherridon Mine was operated by Sherritt Gordon Mines from 1933 to 1950 and produced 7.7 million tonnes of ore with recovered grades of 2.46% copper and 0.8% zinc. Zinc grades were likely 3% to 5% but zinc was generally not recovered since the mine operated during WWII when copper was the primary interest.

There was considerable prospecting around the Sherridon Mine up to the late 1950s based on the limited tools available at the time, with various players, notably Hudson Bay Mining and Smelting and Sherritt Gordon Mines, competing for land positions. In 2005, Halo seized an opportunity to consolidate a large land position in the belt and staked some 85% of the 20,876 hectares currently held, then negotiated joint ventures with HudBay and Bruce Dunlop to house the deposits under one umbrella. Halo's exploration focus was on the style of deposits known as volcanogenic massive sulphides (VMS) that occur in clusters offering considerable opportunities for more discoveries.

Halo has generated NI 43-101-compatible mineral resources on four copper-zinc deposits within the Sherridon VMS District, including one new discovery, the Lost deposit. Resource estimates now stand at 6.5 million tonnes grading 0.85% copper and 1.22% zinc as Indicated Resources and an additional 15.9 million tonnes grading 0.68% copper and 0.84% zinc as Inferred Resources with precious metal credits. At least 75% of the material in both categories is contained within potentially economic open pits.

In late 2010, Halo signed an agreement with HudBay Minerals to earn up to a 67.5% interest in the one-square-kilometre area covering the Cold and Lost deposits, or 0.5% of the total claim package. HudBay Minerals completed two rounds of in-fill drilling and stated that it intends to prepare a Preliminary Economic Assessment during 2011 to determine how the project fits with HudBay's longterm production plans.

Mr. David Garofalo, President and CEO of HudBay Minerals Inc., is quoted as saying "The high-grade and near-surface deposit confirms our belief that Lost and Cold have the potential to be a future source of feed for our concentrator in Flin Flon."

Halo's 2011 drill program followed up on targets defined by an exploration strategy employing a multi-disciplined approach based on new structural interpretations and intensive field work. As usual, the drill program defined new targets and expanded known resources. The presence of a second shallow mineralized lens located east of the main Bob deposit was confirmed when DH11-163 encountered disseminated and massive sulphides over a length of more than 14 metres, including 2.37% Zn over 3.28 metres and also 0.87% copper and 2.06% zinc over 1.07 metres. DH11-164 also intersected more than 20 m of mineralization within a 33-metre-thick zone that includes an impressive 9.23 metre interval grading 0.82% copper and 0.86% zinc. These intersections are adjacent to existing open-pit Inferred Resources at Bob of similar grade.

A Bore Hole Pulse Electromagnetic

(BHPEM) survey conducted in two of the three shallow holes drilled in the Bay/Sheila Lake area to test a VTEM anomaly has revealed the presence of a large late-time response off-hole anomaly at depth located on one of the "exploration tracks" that Halo defined after five summers of intensive geological studies. A ground geophysical program is planned this fall to better define the target with drill testing expected in 2012.

Summer 2011 field work focused on an area approximately 10 kilometres east of the four known VMS deposits where Halo has reported NI43-101 copper and zinc mineral resources. A series of samples collected from three closely spaced pits reported, on average, greater than 10 g/t gold. The three closely spaced pits, at the Quartermoon showing, are all located along a north-south striking feature that is prominent on airborne magnetic surveys. The magnetic feature shows continuity of more than 1,600 meters to the south and was mapped as a layered

amphibolite. An outcrop located 1,600 meters to the south of the three abovementioned pits was sampled and returned values up to 3.5 g/t gold. Two gold deposits, approximately 15 kilometres south of the Quartermoon showing, are the historic Puffy Lake gold mine and the Nokomis gold deposit and both deposits are hosted in or near layered amphibolite-type rock.

"With the new regional interest in gold and strong gold prices, Halo chose to evaluate the gold potential of the Sherridon Property this summer," says President and CEO Lynda Bloom. "We are pleased with the preliminary results and plan to follow up with a 2012 work program."

The emerging gold story at Sherridon complements Halo's other activities just across the Manitoba border and west of Red Lake. Halo has earned a 60% interest in the 3,500-square-kilometre West Red Lake project from Goldcorp and continues to follow up on mineralization in different geological environments.

Halo's unique situation, as a junior company with 20,000 hectares to explore and develop within a major VMS district, means that there will always be a wealth of opportunities. In Flin Flon-Snow Lake, some 26 deposits have been mined over 80 years with an average size of 3.5 million tonnes, and the Sherridon VMS District has similar geology and deposit types. Both Sherridon and Flin Flon will continue to have deposits mined, drilled, discovered and targets tested to find the next mine, all concurrently, and all with an eye to a long and prosperous future for the region.

Halo Resources Ltd. is a Canadian mineral exploration company that trades on the TSX Venture Exchange (HLO) and on the Frankfurt Exchange (HRE).

For further information on Halo Resources Ltd., visit their website at www.halores.com. □

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- Gold properties in Red Lake and Kenora

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ALEXIS MINERALS' SNOW LAKE MINE



The Snow Lake mine, wholly-owned by Alexis Minerals, is proudly located within the community of Snow Lake, Manitoba, 685 km north of Winnipeg. The former producing mine was taken over by Alexis through the purchase of Garson Gold in April of 2010. This historic mine was in operation from 1949 to 1958 and then from 1995 to 2005, with recorded production of over 1.44 million ounces. Since then, the project area has been expanded to cover almost 4,840 hectares.



The Snow Lake property is road accessible from Winnipeg, the provincial capital of Manitoba. The major population centres for the region are Flin Flon to the west-southwest of Snow Lake and Thompson to the northeast.

The topography and physiography are typical of the pre-Cambrian shield in Manitoba, consisting of low rolling hills composed of bedrock outcroppings. The climate is generally cold, but the operating season is year-round, with the usual winter storms which are common in the northern portions of Canada.

One of the main structural features of the Snow Lake property is the northnorthwest-trending McLeod Road Thrust fault. The McLeod Road Thrust fault is the structural break that occurs between the metavolcanic (Amisk Group) and metasedimentary (Missi Group) assemblages and defines the western extent of the deposit on the property.

The current feasibility report suggests that production from the Snow Lake mine could be over 80,000 oz a year for five years. As of December 2010, current measured and indicated resources are approximately 728,000 oz and inferred resources are 336,700 oz. This makes the Snow Lake mine an important asset to Alexis as the company continues to explore the area. Of particular interest are the #3 Zone and the Main Mine Zone. Recent drill results from these areas suggest that there is additional mineralization between these zones that are of interest. The company also plans to drill many of the nearby zones at Snow Lake, including the Boundary, Kim, Caper and Birch. A new team has been mobilized to undertake a regional exploration effort which should lead to a better understanding of the potential in the area. In addition to exploration activities, the

company is also ramping up to restart production.

The infrastructure at the Snow Lake mine includes a fully permitted 2,000 tonne per day modern mill and tailings facility, and associated plant and equipment. The mill was built in 1995 by the Kinross/High River Gold joint venture as the New Britannia Mine and operated until 2005. The mill remains in excellent condition. The ore bodies continue to be accessible through the main mine shaft and the #3 Zone ramp. Alexis currently maintains all permits and environmental licenses.

In January of 2011, Alexis appointed a new president and CEO, Francois Perron. Mr. Perron was most recently the president and CEO of Golden Goose Resources. Following Mr. Perron's appointment, Alexis also appointed Gerald Thornton as Vice President, Operations (Manitoba) to oversee the Snow Lake operations in April of 2011. Alexis feels that using a decentralized approach to managing its properties will better position the efforts of the company.

Commenting on the Snow Lake mine, Mr. Perron said, "The Snow Lake project is now at the point of nearing the production decision. Current efforts are centered on finalizing the project financing, building the team to deliver a mine as outlined in the feasibility study, and the evaluation of several opportunities to further optimize our plans. These efforts, enriched by our operating experiences, should provide for a project that will unlock significant shareholder value."

Alexis also holds assets in some of Canada's richest mining regions – Vald'Or & Rouyn-Noranda, Quebec with over 1,000 square kilometres of property. Gold production is a priority, as Alexis is targeting growth in gold production levels reaching an annual rate of production of approximately 100,000 oz by the end of 2013. □



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Alexis Minerals Corporation is a dynamic and aggressive mining company operating in Canada's richest mining regions: Snow Lake, Manitoba and Val-d'Or/Rouyn-Noranda, Quebec. With Mineral Reserves of 850,000 oz. (M&I), gold production is a priority as Alexis is targeting mid-tier gold production levels in 2011-2012.



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Snow Lake Mine

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WILDCAT EXPLORATION'S GOLD, BASE METALS FOCUS IN CENTRAL CANADA



The roots of Wildcat Exploration Ltd. [WEL-TSXV] are in Manitoba's well-established Rice Lake gold camp. The area's pedigree has recently been upgraded by the continuing exploration successes of Wildcat's neighbour, San Gold Corporation, with total published gold reserves and resources now exceeding 3 million ounces.

The company's expertise in the mining-friendly central Canadian provinces led Wildcat to expand into additional promising gold and base metal projects in several established camps.

KEY GOLD PROJECTS IN THE UCHI SUBPROVINCE

All of Wildcat's gold properties are located in the Uchi subprovince, which has produced more than 30 million ounces of gold collectively from the Red Lake, Pickle Lake and Rice Lake gold camps.

In the Rice Lake Greenstone Belt, near Bissett, Wildcat has five gold-focused projects. In August, 2011 the company signed an option agreement with San Gold involving the Jeep, Mike Power and Poundmaker properties.

Wildcat's President and Chief Executive Officer John Knowles says, "By partnering with San Gold, with its nearby mill and proven mining and exploration teams, we have reduced the economic hurdle to advance our properties while accelerating the exploration of three projects in the vicinity of San Gold's Rice Lake Project. This transaction also brings up to \$2 million into Wildcat's treasury, allowing us to accelerate investigations on Wildcat's gold and base metal projects in Manitoba and Ontario."

Under the terms of the option agreement, San Gold may earn an 80% interest in the three projects by expending \$5.1 million on exploration activities over a four-year period. Additionally, over a three-year period, San Gold will be required to make cash payments to Wildcat in aggregate of \$1 million and, subject to regulatory approval, subscribe for an aggregate of \$1 million of Wildcat shares via private placement. San Gold is the operator of the exploration program for the duration of the option agreement, and the planned 5,000-metre drill program in winter 2011/12 will partially build on the results of Wildcat's recent work.

In 2010, Wildcat's geologists compiled and ranked more than twenty gold prospects in the Uchi geological subprovince. They visited two properties before freeze-up, and as a result staked ten claims covering 2,400 ha at McVicar Lake, about 80 km west of Pickle Lake, Ontario. Since the initial staking, Wildcat has twice expanded the property, which now stands at 22 claims covering 5,248 ha.

Known gold mineralization at McVicar occurs in four main zones: the Altered and North Flexure Zones, the Shonia #1 Zone and the Chellow Vein. Historically these zones have been tested with nearsurface drilling and are open along strike and at depth. Gold assays from the Altered Zone include intersections of 5.7 g/t across 7.1 metres and 14.3 g/t across 14.6 metres. Gold assay results from the North Flexure Zone include 9.3 g/t over 2.0 metres, from the Shonia #1 Zone, 4.4 g/t over 2.3 metres and from the Chellow Vein, 1.2 g/t over 0.3 metres.

Recent mapping and sampling have resulted in a new gold discovery south of the Chellow Vein. In addition, the company's geological investigations have improved the potential for defining lowgrade, bulk-tonnage gold at the Sor Lake and Shonia Zones. The McVicar property exhibits several areas and styles of gold mineralization, and Wildcat is planning a diamond drill program for winter 2011/12.

Tom Lewis, VP of Exploration, commented, "Our results to date on McVicar show good exploration potential for high-grade gold mineralization in the claims between the Chellow vein and the past-producing Golden Patricia Mine to the southeast. We are also interested in the blue-grey quartz occurrences that we found for the first time during our follow-up work in July southeast of the Chellow vein, for which there are 30 samples still out for assay. In addition, as a result of new outcrop exposures from a forest fire 12 years ago, our geologists are gaining new information on the property. At the Altered, Shonia and Sor zones,



historic exploration focused on highgrade vein deposits, whereas Wildcat is assessing the low-grade, bulk-tonnage potential of narrow pyrite-quartz veins and pyrite-bearing granites."

BASE METALS IN MANITOBA'S FLIN FLON AND THOMPSON CAMPS

Wildcat's Reed copper-zinc-silver prospect in the Flin Flon-Snow Lake Greenstone Belt is located between the Reed Lake copper deposit of HudBay Minerals Inc. and VMS Ventures Inc. to the south and the Rail copper-zinc deposit immediately to the north. The company's geologists have identified a favourable felsic/ mafic contact, with associated mineralization grading 1.58% copper in a shear zone. In addition, based on strong and extensive chlorite alteration and nearby conductors the company carried out a VTEM airborne survey in early October to assist in identification of targets in the planned 2011/12 winter drilling program. LEFT: OUTCROP AT MIKE POWER PROJECT. RIGHT: EXAMINING OUTCROP, MIKE POWER PROJECT.

In the Thompson Nickel Belt, Wildcat is earning a 100% interest in the Burntwood nickel project, located 55 km southwest of Thompson, from senior producer Anglo American plc. The option agreement calls for Wildcat to spend \$2 million over five years, and in the summer of 2011, Wildcat commissioned geophysical surveys to supplement surveys done by Anglo American, with a winter drill program to follow. □



MEGA PRECIOUS: REALIZING POTENTIAL



Mega Precious Metals Inc. (Mega), headquartered in Thunder Bay, Ontario, is committed to an accelerated growth strategy and is strategically working to advance their projects to create shareholder value.

Key value drivers are:

- Experienced board and management team
- Mining-oriented economic vision, planning & execution
- Company is currently valued at \$13/ ounce
- 250% increase in organic growth (resources) in last nine months to 1.53M Measured & Indicated and 1.57M Inferred gold ounces.
- Discovery and acquisition ounces currently costing < \$8/ounce

- Robust economics, excellent potential to improve resource grades at lower gold prices and higher cut-off grades
- Resources remain open at depth and along strike

WORKING TOWARD PRODUCTION

On June 27, 2011, Mega announced a 47% increase of gold in all categories at its Monument Bay Project. The deposit, which spans less than four kilometres of the 25-kilometre length, is based upon > 116,000 metres of diamond drill core.

The current definition drill program is concentrating on extending the western portion of the mineralized deposit to further define the open pit and underground potential. The summer/fall 2011 results demonstrate that the "Burn Zone"

MEGA JUNE 28, 2011 MONUMENT BAY MINERAL RESOURCE ESTIMATE GOLD GRADE CONTAINED **CLASSIFICATION** TONNES (grams/tonne) OUNCES Measured (M) 221.510 12.48 88.905 7.12 Indicated (I) 2,199.100 503,188 7.61 Sub Total (M+I) 2,420,610 592,093 Inferred 6,147,000 6.01 1,187,091

The estimates are in-situ and undiluted and figures are rounded Resource model is using a 3 g/tonne cut off and west extension extend along strike; as a result, this will drastically improve the project economics and increase the total potential gold production model in excess of 200,000 ounces/year. In Q4 2011, Mega will continue with its exploration activities and ongoing environmental baseline studies. The project remains on track for an upgraded resource in late 2011 and Preliminary Economic Assessment (PEA) for Q1 2012, with advanced exploration development and test mining to follow.

UNTAPPED POTENTIAL OF RED LAKE GOLD CAMP

Mega's North Madsen property is located in the heart of the prolific Red Lake Gold Camp. The project is a near surface quartz tourmaline and shear hosted Archean gold deposit. Mega believes that the property is part of a much larger gold system that encompasses the adjacent Howey, Hasaga and Gold Shore mines.

Currently there are seven known mineralized zones all within the top 250 metres from surface. On September 21, 2011, Mega announced the significant increase of its gold resources at the North Madsen project.

During 2011/12, Mega will continue to delineate open-pit resources with a goal to deliver a positive PEA in 2012. Based on Mega's 2011 results and ongoing delineation of potentially pittable resources at North Madsen, Mega believes that near-term production from a smaller facility located at the project would be economic but that a larger-scale operation that incorporates partnerships with adjacent land owners could have greater value for all participants.

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Build a mine that produces 200,000 ounces Au/year at a cash cost of \$500/ounce

PLAN

Current objective is to delineate near surface open pittable ounces and to quickly bring the project to an advanced exploration test mining phase

HIGH GRADE

Category	Tonnes (000)	Grade g/t	Au Ounces	
Measured	222	12.48	88,905	
Indicated	2,199	7.12	503,188	
M + I Total	2,421	7.61	592,093	
Inferred	6,147	6.01	1,187,091	

* The estimates are insitu and undiluted, figures are rounded. Resource model is using a 3 g/t cut off.

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CANADA

For more information Email ir@megapmi.com 807.766.3382 or Toll Free 877.592.3380

TSX-V MGP



HIGH-GRADE POTENTIAL EXPLORATION

Mega's Headway property abuts Goldcorp's Red Lake Gold Mines and would be accessible to a depth of 3 km from Goldcorp's underground infrastructure. The target is 3 – 5 million ounces of high-grade gold mineralization (>40g/t) and it is based on the presumption that the Red Lake Gold Mines mineralized horizon continues down plunge to the south west within the well developed stratigraphic meta basalts and komatitic flows that host the high-grade mineralization in the Red Lake Mine. To date, Mega's drilling has confirmed all the essential geological elements including a well-developed intersection pattern of stratigraphic, shear/deformation zones that are associated with the high-grade gold system on the adjacent mine properties, significantly de-risking the target.

Deep-drilling technology is allowing Mega to explore for the high-grade, plunging gold mineralization, located below the unconformity, in the underlying Balmer Rocks.

REALIZE THE POTENTIAL

Mega Precious Metals is an attractive prospect for investors looking for a junior with a mix of projects to provide limited downside risk and multiple upside opportunity. Mega trades on the TSX Venture under the symbol MGP. \Box

MEGA SEPTEMBER 20, 2011 NORTH MADSEN MINERAL RESOURCE ESTIMATE

CLASSIFICATION	TONNES	GOLD GRADE (grams/tonne)	CONTAINED OUNCES	
Measured (M)	19,638,140	1.27	803,886	
Indicated (I)	3,838,000	1.08	133,281	
Sub Total (M+I)	23,476,140	1.24	937,167	
Inferred	11,486,000	1.03	379,026	

The estimates are in-situ and undiluted and figures are rounded Resource model is using a 0.5 g/tonne cut off for Main Zone, Laverty and Buffalo West Extension zones







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widths, manufactured to any length. The 6' and 8' leg options provide increased clearance, allowing for improved storage capacity. Designed with functionality and cost in mind, this building is available in a variety of mounting options, resulting in versatile installation, decreased shipping and foundation costs and reduced labor and installation expenses.

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VALE'S PLAN FOR LONG-TERM SUCCESS IN MANITOBA



CITY OF THOMPSON MAYOR TIM JOHNSTON ACCEPTS A \$1.5 MILLION DONATION TO THE THOMPSON **REGIONAL COMMUNITY CENTRE** FROM VALE EXECUTIVES STEVE WOOD, VICE PRESIDENT, MINING AND MILLING, NORTH ATLANTIC **REGION (MIDDLE) AND LOVRO** PAULIC, GENERAL MANAGER, SMELTER AND REFINERY, MANITOBA **OPERATIONS (RIGHT).** FAR LEFT, STEVE WOOD, VICE PRESIDENT, MINING AND MILLING, VALE'S NORTH ATLANTIC REGION MIDDLE - TIM JOHNSTON, MAYOR OF THOMPSON., FAR RIGHT - LOVRO PAULIC, GENERAL MANAGER, SMELTER AND **REFINERY, VALE MANITOBA** OPERATIONS.

Since Vale entered the Canadian landscape five years ago, the company has made a number of investments in its business and in the community, demonstrating just how important the Canadian operations are to the company's global success. Specific to Manitoba, recent capital investment announcements, aggressive exploration and the formation of new community partnerships affirm that the Thompson Nickel Belt is integral to achieving the company's global vision of becoming the biggest and best mining company in the world.

Achieving this vision means not only owning market cap but also leading the industry in areas such as safety, sustainability and innovation. It also means living by their mantra: there is no future without mining, and there can be no mining without caring for the future.

At Vale's Manitoba operations, it's all about the future. Begun in 1956 after the discovery of significant nickel deposits in the area, the operations quickly became the world's first fully-integrated mining and processing facilities. And now, with the recently announced changes that the operations will transition to mining and milling only by 2015, Thompson remains a prominent arm of Vale's Canadian business, poised for continued growth through significant capital investments and an aggressive exploration program.

AN INVESTMENT PLAN TO MATCH FUTURE AMBITIONS

In November 2010, Vale announced an unprecedented \$10 billion investment package in its Canadian operations – most of which will be spent by 2015.

A portion of this investment plan is earmarked for a new mine development, 1-D, in Thompson. 1-D is approximately 4,200 feet underground, about four miles north of the main plant site and includes several areas that contain more than seven million tons of reserves containing an estimated 500 million+ pounds of nickel.

"1-D is now in the later stages of Vale's

comprehensive evaluation and study phase; we know the ore is there, and we're now determining the best way to access it," explains Lovro Paulic, one of three general managers for the Manitoba operations. "Vale continues to be excited about the opportunities in Thompson, and we are committed to operating in the area for a very long time to come," he adds.

According to Paulic, other investments in the operations include \$150 million in upgrades to the mill, as well as new training and technology initiatives for the mines. "We have a bright future in mining and milling in our Manitoba operations. The investments we're making and planning for will serve us well for the long-term."

LOOKING BEYOND THE OPERATIONS

Vale is a company that not only measures its business strength by production and profit, but also on the strength of the community it is a part of. This is evident in Vale's investments in community ini-

Being one of Canada's largest companies is great. Being part of Canada's strong, sustainable future is even greater.

Today, Vale is growing our Canadian portfolio to include resources beyond nickel such as potash and copper. Over the next four years, we will invest \$10 billion in our Canadian operations to advance our environmental performance, unlock new markets, develop leading technologies, increase efficiencies and strengthen our global competitiveness, which will greatly benefit the communities in which we operate.

Vale. There is no future without mining. And there can be no mining without caring about the future.





VALE'S BIRCHTREE MINE EMPLOYEES WIN 2011 NATIONAL JOHN T. RYAN AWARD.

tiatives and organizations within the greater Thompson area.

In May of this year, the City of Thompson and Vale together announced an economic diversification working group to advance initiatives to broaden and strengthen the economic base of the City of Thompson and the broader region. Also in the spring of 2011, Vale announced an additional \$1.5 million contribution to the Thompson Regional Community Centre, bringing its total investment to \$3 million.

Stu Waring, another general manager for Manitoba operations, points out that "investing in the programs that bolster our community is a must – the people and the businesses that make up our community are critical to our success, and playing an active role in the wellbeing of these individuals and groups is paramount."



Vale continues to be a community partner of choice in Thompson, making investments in the organizations that strengthen the future of the city. Aaron Sauve, Drop-In Director at the Boys and Girls Club of Thompson, explains that "Vale's support helped us provide a safe and supportive environment for children of Thompson during summer holidays." And Grant Kreuger, Technical Vocational Coordinator for the Frontier School Division, praised the value in partnering with Vale, stating, "Vale's support helped us to plan future expansion into all of the mechanical trades at our Northern Technical Training Centre in Cranberry Portage."

THE IMPORTANCE OF PEOPLE

Vale's Manitoba operations truly showcase the company's worldwide commitment to safety.

Manitoba's Birchtree and T1 mines tied for the 2010 John T. Ryan National trophy, awarded annually to Canada's safest mine. "Nothing is more important than safety," Waring affirms. "It is the company's top priority to invest in the systems and processes that ensure every employee goes home safe at the end of their shift."

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MANITOBA OPERATIONS COMPLETES LATEST PHASE OF UPGRADES TO THEIR THOMPSON MILL WITH SIX NEW OUTOTEC FLOTATION TANK CELLS.

While the Ryan trophy recognizes safety performance specific to the mines, Vale established new standards of safety excellence across the breadth of its Thompson operations last year. Taken together, the mines, mill, smelter and refinery improved their combined disabling injury from a frequency rate of 7 in 2000 to an all-time low of 0.7 in 2010.

Vale attributes these achievements to SafeProduction, a safety program adopted in Thompson in 2003 as a joint initiative of management, the United Steelworkers Union Local 6166 and employees.

"There are 500 or so employees working at T1 and Birchtree mines, and this award spoke to their commitment to SafeProduction," Waring explains. "Our employees continue to embody the company's objective to operate the safest mines in Canada, and the world." \Box



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HUDBAY MINERALS' LALOR PROJECT: OPTIMIZED FOR SUCCESS

By John Vincic



HudBay Mineral Inc.'s fully-owned Lalor project is on a fast track to become Hud-Bay's next major underground mine. The Lalor project helps affirm HudBay's already strong five-year production profile from our three large-scale, long-life assets. Copper production is now expected to increase by 155% over the next five years, while gold production is projected to increase by 105% and zinc production by 60%.

The Lalor project is located in the Chisel Basin of the Flin Flon Greenstone Belt (FFGB), a prolific zinc-copper-gold region in northern Manitoba where several other mines have been developed. Intense exploration has identified separate and distinct zinc, gold and coppergold zones since Lalor was discovered in March 2007. Based on current data, Lalor is estimated to hold the second-richest metal deposit ever discovered in the FFGB.

Lalor also has the strategic advantage

of being only three kilometres from HudBay's existing Chisel North mine. Because of its close proximity to Chisel North, HudBay's Board of Directors approved funding for the construction of an underground three-kilometre ramp from the Chisel North mine to Lalor in October 2009. Progress on the planned 3,200-metre access ramp at the Lalor project continued during the quarter and is now close to 2,500 metres since the start of the project in December 2009. The ramp remains on track to be completed in the second quarter of 2012. HudBay expects to complete the ramp to 810 metres below surface level with multiple headings by the fourth quarter of 2011, and the company plans to reach the ventilation shaft site in the first quarter of 2012. HudBay will then start diamond drilling from underground and proceed to the main production shaft location.

In August 2010, HudBay made a full commitment to the development of the

LOOKING DOWN COLLAR - MARCH 2011.

Lalor project by authorizing the \$560 million capital expenditure necessary to put the project into full production. The go-ahead decision was based on the resource identified to date and estimates of potential grades and quantities of the gold zone and copper-gold zone, along with other available information such as cost estimates and portions of the engineering design, which had been completed to a level suitable for the feasibility study.

In addition to making a construction decision at Lalor, the company also began trade-off studies to determine whether refurbishing the existing Snow Lake concentrator or constructing a new concentrator at the mine site makes more economic sense. HudBay completed those studies in July 2011, which supported an enhanced production rate of 4,500 tonnes per day made possible by the construction of a new concentrator and paste backfill plant. These improvements are expected to increase the company's overall capital expenditure investment by \$144 million for a total of \$704 million, which includes approximately \$120 million spent to date.

"The new concentrator, with a higher production rate and related efficiencies, together with a paste backfill plant, is expected to allow for an extended mine life and enhance the economics of the Lalor project," said President and Chief Executive Officer David Garofalo.

The decision to build a new concentrator and paste backfill plant changed certain assumptions made in HudBay's preliminary economic assessment with

Optimized for Success The Lalor project is on track to become HudBay's next major underground mine.

Lalor's development and site construction are proceeding on schedule. We completed an optimization study, which supported an enhanced production rate of 4,500 tonnes per day made possible by the construction of a new concentrator and paste backfill plant. Further production optimization from Lalor is expected as we optimize precious metals recoveries and use the production shaft more fully.

HudBay Minerals is a Canadian base and precious metals producer with high-quality operations and a pipeline of exciting growth projects throughout the Americas. HUDBAY

TSX/NYSE: HBM



respect to Lalor, as disclosed when the company announced its full commitment to the project on August 4, 2010. These changes are outlined in the table below.

"Because of the high quality of the Lalor deposit, we pursued a fast-track commitment to Lalor in August 2010, which was based on the robust economics that were achievable from refurbishing our existing concentrator," said Mr. Garofalo. "However, Lalor is a large enough deposit to support a new, dedicated concentrator, and we are pleased to commit to a further investment in the future of our Manitoba operations."

In addition to advancing the Lalor project toward production, HudBay is conducting extensive exploration at Lalor, which remains highly prospective and underexplored. Exploration in 2010 indicated significant potential for additional gold mineralization at Lalor and raised the possibility of discovering new gold and copper-gold zones and extending existing zones. It also confirmed the continuity of the copper-gold zone, which remains open down plunge.

"We will continue to drill from surface in 2011 to evaluate opportunities along strike and the periphery of the deposit," said Mr. Garofalo. "We also intend to conduct extensive underground exploration at Lalor, including definition drilling on the gold zone and coppergold zone, when ramp access to the deposit has been completed."

The Lalor project's development and

	OPTIMIZED LALOR	LALOR – AUGUST 4, 2010	
Construction CAPEX	C\$ 704M	C\$ 560M	
Annual Sustaining	C\$ 22M	C \$15M	
Production Rate	4,500 tpd	3,500 tpd	
Mining Costs	\$36 per tonne	\$56 per tonne	
Mining Costs	\$16 per tonne	\$24 per tonne	
Metallurgy	95% Zn	95% Zn	
	86% Zn	90% Zn	
	66% Zn	80% Zn	
	60% Zn	75% Zn	

In addition to advancing the Lalor project toward production, HudBay is conducting extensive exploration at Lalor, which remains highly prospective and underexplored.

site construction are proceeding on schedule. Initial production from the 3,200 metre access ramp is scheduled in the second quarter of 2012, and commissioning and first production from the 985-metre production shaft and new concentrator are anticipated in late 2014. The construction of the new 4,500 tonne per day concentrator is expected to begin in early 2013 and is scheduled for completion in late 2014 to coincide with the completion of the production shaft.

Further production optimization from Lalor is expected as HudBay optimizes precious metal recoveries and also studies the possibility of using more of the production shaft, which will have a total capacity of 6,000 tonnes per day.

HudBay believes further metallurgical test work is warranted before finalizing the design of a precious metal recovery process with the new concentrator. Once HudBay gains underground access to Lalor in 2012, the company will also be able to support this analysis with actual ore production from the gold zones at Lalor. By waiting on a decision, HudBay preserves its optionality without jeopardizing the ability to maximize precious metal recoveries by the time we reach peak gold production at Lalor.

The combination of location, exploration results and mine development timing attach high strategic significance to Lalor. The now-optimized Lalor project further strengthens an already compelling investor proposition for HudBay, with additional production upside over the next five years still to be defined from exploration and precious metal recovery optimization. These attributes make Lalor an extremely attractive development project and HudBay's top priority. □

CARLISLE GOLDFIELDS LIMITED: A REVITALIZED COMPANY, POSITIONED FOR GROWTH

Carlisle Goldfields Limited is a junior mining and development stage company engaged in the acquisition, exploration and development of gold and silver projects primarily in Northern Manitoba. The company's principal asset exists at the past- producing MacLellan Mine in Lynn Lake, Manitoba, where 144,000 ounces of gold and 432,000 ounces of silver were produced between 1986 and 1989. Carlisle's 20,000-hectare land package consists of 29 known satellite deposits, five of which demonstrate significant historical resources and three (including MacLellan) which were past gold producers.

In January 2010, the company implemented strategic management changes in line with its goal of achieving proper market recognition for the value of its core assets and to ultimately reward loyal shareholders. This began with the installation of Bruce Reid as president and CEO. Reid has more than 30 years of direct experience in the mining industry. He brings to the company a unique combination of expertise in both corporate finance and mining exploration.

A new experienced board of directors was also put in place. Carl McGill remains as the only director from the company's origin in 2007 and has assumed the role of Vice President of Corporate Development. The management team was also bolstered with the addition of an established mining industry CFO, a vice president of Operations, a vice president of Engineering and a special geologist advisor to the board. The company has also maintained the services of QP and Vice President of Exploration Peter Karelse.

Accomplishments of the new management team and board of directors have been extensive.

- After a delisting of the company's common shares on the Toronto Stock Exchange for market capitalization deficiency reasons in June 2009, a relisting on the Canadian National Stock Exchange, executed by new management, occurred in June 2010. Subsequently the company's shares were re-listed on the Toronto Stock Exchange effective June 29, 2011. This gives the company much needed market exposure and liquidity in support of its business objectives.
- In August 2010, an updated NI 43-101 compliant technical report pertaining to the MacLellan Mine site was produced. This report incorporated 8,100 metres of drilling that were not included in the past report, as the company was only as of August 2010 under new management able to pay the assay lab in order to release results. The report estimates 5.3 million tonnes containing 658,200 ounces Au at an average grade of 3.85 g/t AuEq in the measured and indicated category and 4.4 million

tonnes containing 506,200 inferred ounces AuEq at an average grade 3.56 g/t AuEq. Of particular interest is the fact that nearly half of the ounces in this new resource are contained in an open pit down to a depth of 220 metres.

- · Carlisle management is of the firm belief that this gold deposit is of sufficient merit to justify undertaking preliminary engineering, environmental, and metallurgical studies aimed at completing the characterization of the context of the mineralization. To that extent, the company's initial NI 43-101 resource estimate will form the basis of a new Preliminary Economic Assessment (PEA). The PEA will assess the capital and operating costs of re-commencing operations and the feasibility of the overall project at a preliminary level. Targeted completion date is Q4 2011.
- Carlisle's management team, led by Bruce Reid, and two consulting groups, led by Jonathon Buick and Vance Loeber, have been able to raise approx-



MANITOBA MINING REVIEW 2012 63

imately \$14 million from Q4 2010 to the end of Q1 2011, all on a non-brokered basis.

• The company has stated a working capital deficiency in its financial statements since Q3 2008, due in large part to being assessed by Canada Revenue Agency (CRA) for not spending sufficient funds on qualifying Canadian Exploration expenses within the prescribed times to meet the company's renunciation obligations for funds raised in 2006 and 2007 flow-through In January 2010, the company implemented strategic management changes in line with its goal of achieving proper market recognition for the value of its core assets and to ultimately reward loyal shareholders.

share financings. In this respect, the company has accrued a liability of \$1,407,000 to meet this possible obligation in its financial statements. Management has been actively pursuing this matter with CRA and due to



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Supplier to Northern Canada and the Pacific Rim. Supplier of specialty wood products to Vale Inco and northern Manitoba for over 40 years recent negotiations the company appears to be able to clear this position with a payment not in excess of \$425,000. The extinguishment of this obligation should be concluded by no later than end of Q4, hence overcoming a significant working capital deficiency.

- In March 2011, Carlisle closed on an option to purchase the Last Hope Gold Property, approximately 20 km southeast of Lynn Lake. The property has a non compliant resource of nearly 900,000 tonnes of mineralized material at a grade of 9.4 grams per tonne. This represents over 270,000 ounces of gold, most of which is within 150 metres of surface.
- In April 2011, the company announced the commencement of a 45,000-metre drill program. The Phase I program is intended to expand and improve confidence in the zone defined in the MacLellan Resource estimate issued August 2010. The Phase II program objective is to assess the definition of the MacLellan Extension Area.

Significant key catalysts between now and the end of Q1 2012 are as follows:

- Settlement of CRA liability
- PEA for MacLellan mine site
- Anticipated positive drill results from the 45,000-metre drill program
- An updated resource estimate for the MacLellan site
- New 43-101 resource estimates for the three properties as defined by the MacLellan Extension Area

The management team at Carlisle is pleased with revitalization efforts that have been made within the company. President and CEO Bruce Reid states: "We firmly believe that with the repositioning of the company and, in anticipation of critical milestones being achieved, 2012 will be an exciting and rewarding year for all shareholders." \Box

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ARLISLE

• TSX-CGJ+

TOTAL SILVER RESOURCE ESTIMATES IN OUNCES (Measured & Indicated *plus* Inferred) 10 9,344,000 8 (inmillions 6 672,200 2 Not available Not availabi 0 JUNE 2008 AUGUST 2010

JUNE 2008

AUGUST

2010

0.8 622.000 undergro 0.6 412,200 0.4 141,912 181,500 0.2 542,400 Δ JUNE 2008 AUGUST 2010

TOTAL GOLD RESOURCE ESTIMATES IN OUNCES (Measured & Indicated plus Inferred)

OPEN PIT POTENTIAL

Nearly 600,000 oz located in an open pit down to a depth of 220 meters.

1

Average grade 3.14 grams/ Au/T plus 32 gram Ag/T or US\$ 150 in ground value per tonne.

At 2,000 T/day this open pit portion of the deposit will produce 75,000 ounces AuEq for eight years.

TOTAL OPEN PIT AND UNDERGROUND RESOURCE ESTIMATE AT 0.65 g/t AuEq CUT-OFF GRADE

CLASSIFICATION	TONNES	Au (g/t)	Ag (g/t)	AuEq (g/t)	Au (oz)	Ag (oz)	AuEq (oz)
MEASURED	1,618,000	3.53	11.6	3.70	183,700	604,000	192,100
INDICATED	3,696,000	3.61	22.7	3.92	428,900	2,697,000	466,100
MEASURED & INDICATED	5,314,000	3.59	19.3	3.85	612,600	3,301,000	658,200
INFERRED	4,428,000	2.97	42.4	3.56	422,600	6,043,000	506,200

CANICKEL MINING LIMITED: COMMITTED TO CANADA'S RESOURCES

CaNickel Mining Limited (formerly Crowflight Minerals Inc.) is a nickel producer with assets in Canada's two most prolific nickel camps: the Ontario Sudbury Basin and Manitoba's very own Thompson Nickel Belt. CaNickel owns the Bucko Lake Nickel Mine located at Wabowden, just south of Thompson. The Bucko Lake Nickel Mine resumed production in April 2011 and is on track to achieve the goal of 1,000 tons per day by the end of 2011.

Bucko Lake Mine initially began commercial production in June 2009. Production was halted twice due to inadequate preparation. Upon the second shutdown, the Board of Directors and senior management team of CaNickel Mining were completely overhauled. CaNickel also ended its relationship with Dumas Contracting, which was the mining general contractor. Since then, CaNickel has raised C\$45 million to ready the mine for a well-prepared restart, complete with its own mining team and equipment fleet. CaNickel has been through many challenges but has been steadfastly supported by the company's strategic Chinese partner, Hebei Wenfeng Industrial Group. Hebei Wenfeng is a significant Chinese steel producer and a Top 500 Chinese Enterprise. Hebei Wenfeng owns 38% of the shares of CaNickel and has been instrumental in helping the company finance, build the team and keep more than 100 workers employed at Wabowden. Hebei Wenfeng Industrial Group has supported the company as it grows, currently helping CaNickel seek out other strategic Chinese partners to help develop and grow CaNickel's significant resources base in order to meet China's ever growing demand for base metals resources. The entire company is focused on operating the Bucko Lake Mine at 1,000 tons per day by the end of 2011.

In addition to Bucko Lake Mine, CaNickel Mining owns a significant basket of exploration resources in the Thompson Nickel Belt and the Sudbury Basin. At the Thompson Nickel Belt, CaNickel owns mineral exploration rights to an area of more than 688 square

CaNickel Mining Limited 加拿大镍矿有限公司

TSX多交所:CML www.canickel.com

CaNickel Mining Limited (Formerly "Crowflight Minerals Inc.") (TSX: CML, Frankfurt: CMIC) is a Canadian junior mining company that owns the Bucko Lake Nickel Mine near Wabowden, Manitoba.

In addition to the operation at the Bucko Lake Nickel Mine, CaNickel owns or has under option an additional 800 square kilometres of advancedstage base metal exploration properties in the Thompson Nickel Belt in Manitoba and the Sudbury Basin in Ontario.

Phone: 778-372 1806 (Vancouver); 204-689 2972 (Manitoba); Fax: 604-254 8863

www.canickel.com



Bucko Lake Mine Reserves and Resources based on NI 43-101 Report of March 2009

kilometres at the heart of this prolific resources base. Within these mineral rights, CaNickel has firmed up on a NI 43-101 compliant basis more than 118 million pounds of contained nickel reserves and an additional amount of more than 740 million pounds of contained nickel resources.

At the Sudbury Basin, CaNickel also owns mineral rights to an area of more than 76 square kilometres.

In spite of the challenges, CaNickel is committed to our community and team and will continue to work hard to develop Canada's great natural resources. \Box



ARG

ARGO'S 2012 HDI AND CENTAUR: EXTREME PERFORMANCE



Mining and mineral extraction involves overcoming many challenges, but maintaining an all-season, all-terrain vehicle fleet shouldn't be one of them. ARGO products – designed for mining, resource exploration, utility construction and maintenance, the public sector, as well as agriculture and forestry – are versatile and can be equipped with optional accessories such as rubber tracks, convertible top, receiver winch, windshield, bilge pump, spare tire and fuel carriers, cargo box liner and many other endless custom solutions for any given task.

Over 40 years of experience in offroad vehicles design and manufacturing has made ARGO a leading manufacturer of lightweight amphibious vehicles and innovative off-road platforms. Their flagship HDi and Centaur models give crews the freedom to traverse miles of undeveloped wilderness for prospecting new mining sites, conducting environmental surveys and managing drilling rigs throughout the year over any terrain.

With a low cost and a balance a low terrain impact and high payload capability, the 2012 HDi and Centaur lineups provide the best value, extreme-terrain capable solutions for delivering work crews and the ability to deliver equipment anywhere it is needed. The HDi and Centaur fleet is fuel efficient, simple to maintain, and environmentally friendly due to its very low ground pressure.

The heavy duty Centaur 8x8 DT, with its 3 cylinder liquid cooled 34 hp turbo diesel engine, provides more power and load capacity when the mounting of cranes, drills, cargo boxes and fire & rescue equipment is required. The Centaur comes with a wide range of track solutions for extreme terrain performance.

And ARGO's 8x8 750 HDi has the advanced features that exploration utility fleet managers are looking for:

- Lighter steering effort for all-day easeof-use
- A powerful drive train for accomplishing the most rugged tasks
- Comfortable seating and massive storage space
- Durable design to maximize utilization – getting the job done anytime of the year.
- The patented triple-differential ADMI-RAL paired with a powerhouse 31-hp fuel-injected engine to create a unique

all-terrain, amphibious off-roader that turns with ease in high gear while maintaining its amazing, on-the-spot manoeuvrability in low gear.

The ARGO product line is versatile and durable and can travel anywhere, according to Parker Sutherland of Guertin Equipment in Winnipeg, a fullservice dealer offering a wide variety of products, including recreational and marine products, as well as a full line of John Deere products. Parker says they've been selling Argo for about 5 years and "the line complements the rest of their business nicely." He says they sell the HDi and Centaur to everyone from hunters and government agencies to people in the mining and energy fields anyone who needs reliable amphibious vehicle. "Some companies helicopter them in to hard to reach area for exploration work," he says. "And with these vehicles, they know they'll be able to get out."

2012 ARGO HDi and Centaur – why use a fleet of vehicles when one amphibious ARGO can do it all?

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MINAGO NICKEL MINE PROJECT NOW PERMITTED FOR VICTORY NICKEL INC. TO GO FORWARD



The road to building a mine is a long and sometimes bumpy one. Some of the steepest hills involve exploration, completing a feasibility study and permitting. Over the past several years, Victory Nickel Inc. (TSX: NI) has successfully scaled these hills and more, successfully delineating and permitting one of Canada's largest undeveloped sulphide nickel deposits at its 100%-owned, royalty-free Minago project. Now financing and building a mine are the next steps.

Located 255 km south of Thompson, Manitoba on that province's prolific Thompson Nickel Belt, Minago has not only a large known nickel resource but substantial exploration upside, tremendous added value in a hydraulic fracturing ("frac") sand by-product from the deposit and excellent infrastructure.

In December 2009, the Minago feasibility study, which incorporated only the open-pit portion of the mine, was completed. Efforts to optimize the feasibility study began immediately.

The entire Minago resource used for economic evaluation is contained in an area known as the Nose Deposit. And importantly, the only resource used to assess the economic viability of the project in the feasibility study is located within the confines of the open pit – none of the underground inferred resource has been factored in.

In early 2010, an aggressive 23-hole drill program was begun on the Nose Deposit in an attempt to increase the amount of material in the proposed open pit. Results exceeded expectations and successfully expanded the pit-constrained nickel resource. The Measured and Indicated NI 43-101 pit-constrained resource grew to 302.3 million pounds of sulphide nickel (NiS). Tonnage increased by 20.6% to 31 million tonnes (measured: 8.2 Mt grading 0.473% NiS; indicated: 22.8 Mt grading 0.432% NiS) and the average grade increased to 0.443%. This represents a potential open-pit mine life of 8.6 years based on a 10,000 tpd mining rate.

With the increase in pit-constrained resource and mine life came an improvement in Minago's economics. The base case IRR increased to 22.9% and the NPV at a 6% discount rate rose to \$720.5 million CDN. Undiscounted cash flow increased to greater than \$1.5 billion CDN.

Minago's nickel endowment not only includes the resources contained in the Nose Deposit pit and the underground resource beneath it, but also mineralization in the North Limb, a near-surface domain of ultramafic rock very similar to the Nose Deposit.

Extending about 1.5 kilometres to the north of the Nose Deposit, the North Limb has been known as nickel-bearing for some time. But additional drilling done in 2011 added sufficient data to calculate an NI 43-101-compliant Exploration Target Mineralization Inventory ("ETMI"), the first indication of the potential for a second open pit that could further extend mine life. The ETMI incorporated all drilling completed to date on the North Limb and established the target estimate at between 21 million and 34 million tonnes grading 0.49% to 0.59% total nickel, based on a 0.30% total nickel cutoff and 2.43 tonne/m³ bulk density.

Nickel has built a strong working relationship with the government of Manitoba and surrounding Aboriginal communities. In August 2011, Victory Nickel was awarded its Environment Act Licence from the Manitoba government paving the way for the construction and operation of the Minago mine. This makes Victory Nickel one of the few companies with a viable, permitted mining project ready to move forward in Canada. Construction is expected to create roughly 600 jobs, and the mine will create about 400 full-time jobs once in production.

While nickel gets the most attention at Minago, a unique feature of this large and valuable project is not a metal at all, but a high-value by-product with the potential to generate substantial revenues – frac sand.

Frac sand is used in the oil and gas industry to increase flow to the wellhead. Vast quantities are consumed in hydraulic fracturing, and demand for frac sand is expected to increase as shale gas plays in Canada and the US rise to prominence.



At Minago, frac sand is contained in a sandstone layer approximately 10 metres thick and overlying the nickel deposit. This layer must be removed as part of pre-stripping the open pit to expose the nickel mineralization and, according to engineering firm Wardrop, a Tetra Tech Company, the proposed pit area contains a marketable frac sand resource of 11.2 million tonnes, with additional tonnage potential for the future.

To sum up, having both nickel and frac sand resources makes Minago exceptionally attractive. As René Galipeau, Vice-Chairman and CEO, recently stated, quoting one of Victory Nickel's institutional shareholders: "Minago is a very good nickel project. Minago is also a very good frac sand project. Together, Minago is an exceptional mining project." \Box





TSX Symbol: Ni

Victory Nickel Inc. Victory Building 80 Richmond St. W., Suite1802 Toronto, Ont. M5H 2A4

416-363-8527

www.victorynickel.ca admin@victorynickel.ca

Developing One Of Canada's Largest Sulphide Nickel Inventories

- Four sulphide nickel projects in Manitoba and Quebec Minago
 - Mel
 - Lynn Lake
 - Lac Rocher
- 10,000TPD Minago Mine permitted for development and production
- Proven ability to produce the world's highest grade nickel concentrate at Minago
- Valuable by-product at Minago: 15,000,000 tonnes of frac sand
- Tremendous exploration upside at Minago, Mel, Lynn Lake and Lac Rocher
- Undervalued shares are ready for a re-rating

Lynn Lako Project Minago Project Mel Project Lac Rocher Project

GOSSAN RESOURCES LIMITED: FOCUSED AND COMMITTED

Gossan Resources Limited is engaged in the exploration and development of a broadly diversified portfolio of properties hosting gold, platinum group and base metals, as well as the specialty and minor metals (vanadium, titanium, tantalum, lithium and chromium). Gossan also holds a large deposit of magnesium-rich dolomite, an exclusive option on the worldwide rights to the Zuliani magnesium production process and a high-purity silica frac sand deposit. All of the properties are located in Manitoba and northwestern Ontario.

Restrictions on greenhouse gas emissions are starting to have a significant effect on the mining sector. The net global carbon footprint of new production facilities for metals, such as Gossan's Inwood Magnesium Project, may become an increasingly critical factor in determining their feasibility. Various new electronic storage technologies for batteries in electric vehicles to large-scale grid storage of renewable energy – wind, solar and hydro – will likely dramatically increase the demand for various metals including lithium, vanadium and magnesium.

Gossan has established a substantial resource of high-purity dolomite (NI 43-101 compliant) at its Inwood Magnesium Project. Currently, the company is focused on the development of the Zuliani Production Process, a new, potentially highly efficient method for the production of magnesium. Bench scale testing has been completed, and the next stage of testing is being planned and equipment is being sourced. Based on the experimental and current FactSage thermodynamic modeling work, the Zuliani Process has demonstrated calcined dolomite and silicon efficiencies both over 92%. At these efficiencies, raw material consumption is about 20% lower for dolomite and 30% lower for ferro-silicon than for a typical Pidgeon plant operating in China where about 80% of global magnesium supply is produced.

RESOURCES LIMITED

These higher raw material efficiencies of the Zuliani Process, coupled with the use of hydro electricity, would lower the environmental impact of magnesium production dramatically. Manitoba has abundant, low-cost hydro-electricity. Gossan is currently undertaking a carbon emission study for the Zuliani Process and a several-fold reduction in GHG emissions is expected in comparison to the level of current producers.

As the lightest structural metal, magnesium is increasingly in demand from the auto and transportation sector, where ongoing efforts are being made to lighten weight loads in order to improve fuel efficiencies and reduce GHG emissions. This is also important


to the immerging electric vehicle market where lighter weight can extend the travelling range between re-charging batteries. Recently, the US auto industry conducted a component-by-component study which indicated that the current use of magnesium at about 10 pounds per automobile could be increased substantially to about 350 pounds per vehicle.

New additional demand could come from electrical storage as a French technology is being developed utilizing magnesium to store hydrogen as a method of recycling electricity from off peak to peak hours of demand. This technology could also reduce peak demand on the electrical grid, as the storage could be located where the energy would be used.

Gossan holds a 50% interest in a large low-grade vanadium and titanium deposit at Pipestone Lake, with its equal partner, the Cross Lake First Nation. Gossan is active in ongoing engagement with its partner. Vanadium in various forms has a number of unique attributes pertaining to an electrical charge. Re-dox batteries, which utilize these attributes in two large tanks of solutions that have the capacity to accept and release an electrical charge at great speed, allow for large scale grid storage of electricity. Commercial adoption of this technology would provide a new use for vanadium and provide a steady and large increase in demand, which would allow for new entrants of primary vanadium producers into the market. Vanadium is also likely to see a substantial increase in demand for use in lithium-based batteries, including batteries for the e-vehicle market.

Gossan holds a high-purity silica sand deposit at Manigotagan

that has excellent pressure conductivity tests and consistently achieves ISO 8K-9K Proppant ratings for use as frac sand in the oil and gas industry. Demand for frac sand is strong as the technology of drilling multi-fraced horizontal oil and gas wells utilizes large amounts of frac sand. A 2010 marketing study recommended the joint venture of the property and proceeding with development.

At the Bird River Project, adjacent to Mustang Minerals' Makwa Deposit, Gossan holds an approximate 45% interest with jointventure partner Stillwater Mining. An initial low-grade in-situ resource has been estimated for the Page Block and Ore Fault Zone containing nickel, copper, zinc, silver, gold and PGEs. An updated resource calculation is underway and a drill program is scheduled for February, 2013. Hybrid vehicles currently use nickel-metalhydride batteries, and PGEs are a fundamental component to catalytic converters which limit auto emissions.

Gossan trades on the TSX Venture Exchange under the symbol GSS and on the Frankfurt-Freiverkehr & the Xetra Exchanges. As at September 30, 2011, there were 29.3 million common shares outstanding.

Gossan holds a commodity-diverse property portfolio well positioned to meet the increasing demand for high technology and environmentally beneficial applications, including electric vehicles and battery storage. Although Gossan is currently assessing European mineral properties for their investment potential, Gossan remains focused on and committed to Manitoba, the land of the Golden Boy.



FINDING THE RIGHT BUSINESS STRUCTURE FOR YOUR MINING PROJECT: THE PROS AND CONS OF JOINT VENTURES AND STRATEGIC PARTNERSHIPS

By Craig D. White

A joint venture is a business structure which has been consistently used by junior mining companies in order for them to raise funds and resources to develop their mining projects. As it has become increasingly difficult to obtain competitive financing through the capital markets or financial institutions, joint ventures or strategic partnerships are still often used by mining companies of all sizes as an alternative structure for their mining projects.

A joint venture is an arrangement between two or more persons who agree to contribute resources or expertise to a common joint-venture project. The joint venture is created by a contract between the parties, and the structure is entirely governed by the terms of that agreement. There is no legislation anywhere in Canada which is specifically related to joint ventures, so the contracts must set out completely how the relationship between the parties will be governed. Usually each party will bring something unique to the joint venture that will complement the resources and expertise brought by the other party or parties.

One of the main advantages of a joint venture is that it can allow a mining company with valuable properties to develop or explore those properties even if they have limited capital resources or high levels of debt. The party can find a complementary joint-venture partner which will allow them to advance their project as well as share some of the risk associated with the project. The joint venture permits the company to spread their financial exposure to exploration risks and also to increase the amount of land which they can develop.

Another advantage is flexibility. Because the entire relationship is based on the joint-venture agreement negotiated between the parties, there can be a great deal of customization for parties when crafting the terms of the joint venture. The separate contributions of the parties to the joint venture will usually be spelled out specifically in the agreement. Joint ventures can be useful for a number of different types of development activities, such as regional exploration, exploration on specific properties, development and mine operation, in addition to other types of development activities.

Because the joint venture has no separate legal status, there can be tax advantages as well because all expenditures and tax deductions in the joint venture can be used by each of the joint venture parties. This generally provides greater freedom for the separate participants in the joint venture to arrange their own affairs in the most advantageous way.

A variation of a joint venture is a participation or farm-out agreement which allows a third party mining company to earn an interest in a mineral property by doing work on the property.

There are some disadvantages to using a joint venture, which means that they may not be the ideal structure for all projects. As already discussed, the joint venture is not a separate legal entity, and therefore, the joint venture participants will be legally responsible for all of the liabilities of the joint venture. The parties to a joint-venture agreement may try to limit their liabilities in the joint venture agreement itself; however, this is not guaranteed to work in all cases. For this reason, a party who will not be actively involved in the operations of the project may not wish to structure the project as a joint venture. They may prefer to structure the project as a separate corporation or as a limited partnership to avoid any potential liability.

Parties who plan to invest in a project should always seek the advice of their legal counsel to determine which structure would be most appropriate for them given the type of the project as well as the level of their involvement. As financial constraints and the relative scarcity of financing continue to affect the mining industry, companies will want to seek creative and innovative strategies to finance and develop their projects. The flexible joint venture structure also allows companies to seek complementary joint venture partners, affording them a convenient way of accessing particular expertise and resources without having to acquire them. Therefore it should come as no surprise that joint ventures will continue to be a widely used structure for mining projects. Mining companies of all sizes will need to give due consideration to using the joint venture structure or they risk ignoring a valuable tool to advance their projects.

Craig White is a lawyer at Fillmore Riley LLP who practises primarily in the areas of corporate, commercial and securities law. He has acted for a number of mining and oil and gas companies in Western Canada on a wide range of issues and transactions.

THOMPSON An attractive mining supply and service cluster and strategic transportation hub for Manitoba's North and Nunavut

Located 830 kilometres north of the American border, and 750 kilometres north of Winnipeg, Thompson is a modern and progressive community, active in its own development and aware of the importance of working with the region, levels of government, First Nations, and businesses and industry. Thompson, as the "CentrePort" of Manitoba's North, offers strategic advantages to businesses needing to access mining-related businesses, individuals wanting to set up another mining-related business, and anyone engaged with transportation of goods and services to Manitoba's North and Nunavut.

Provincial Highway #6 between Thompson and Winnipeg provides affordable, dependable and reliable ground transportation to Thompson year round. The ground transportation network involves all-season and winter roads throughout the region that link strategically with the advantages of the air service provided at the Thompson Regional Airport and access to the train line (Bayline) leading to Churchill.

Thompson is the key hub for the movements of passengers, as well as bulk and time-sensitive freight. Regularly scheduled and charter flights involving a variety of aircraft and helicopter transportation modes are centered here. And the emerging technologies and unique advantages presented by airships are invited into Thompson. Convenient, direct air service to Winnipeg, regional communities and service into Nunavut are offered at the regional airport. The heavy rail link from Thompson to the Port of Churchill, with sealifts to Kivalliq Region of Nunavut, presents additional evidence of the strategic advantages afforded in Thompson.

With decades of production and a strong future of mining ahead, Vale is a world-class leader in mining, and local businesses serving Vale have grown over time to become what is referred to as a "cluster" of mining supply and services businesses. This cluster continues to grow with new business opportunities available, such as an entrepreneur/business opening an assay lab now to serve the region and into Nunavut because there is no such service now. Moreover, coupled with the transportation advantages, business opportunities to extend the existing local mining supply and services into the region and Nunavut are present as well.

Investment opportunities are also invited to Thompson. Bigbox retailers, real estate developers, and openings of new franchises in the community are just some of the opportunities available. The development of the new UCN Thompson Campus, and hydro dam constructions are some of the larger public and private sector developments that are helping spur new business opportunities. Thompson Unlimited is a business resource that can assist new business start-ups and expansions.

Thompson's commitment to working with First Nations is also clear. The Aboriginal Accord signed on National Aboriginal Day in 2009 is an acknowledgement of the role that Aboriginals had and continue to have in Thompson's growth and development. The Accord states that positive relationships must grow between the City of Thompson and Aboriginal communities based upon a foundation of the shared values of honesty, respect, mutual sharing and contribution. This Accord affirms that more will be gained by working together.

For further information, please contact Thompson Unlimited – Thompson's Economic Development Corporation. Mark Matiasek, General Manager

206 – 55 Selkirk Avenue, Thompson, MB R8N 1P1 Tel: 204-677-1900 | Toll free: 1-866-965-3386 info@thompsonunlimited.ca | www.thompsonunlimited.ca. □

GROWING THOMPSON

...is our job! We're THOMPSON UNLIMITED, the economic development corporation. Our team is helping Thompson grow and diversify through winter weather testing, tourism, as a Regional Centre, and more. Call us to discuss your business idea. We can help connect you with all the right parties... BIG or SMALL. And always in complete

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THOMPSON REGIONAL AIRPORT AUTHORITY: LOOKING TO THE FUTURE



With the completion of our capital projects in 2011, the Thompson Airport now has a 5,800-foot paved primary runway (06/24) and a 5,000foot gravel cross strip (15/33).

The Thompson Airport was developed in 1961 by the International Nickel Company to support their mining operations in the area. It originally had only one gravel runway 3,000 feet in length. With the completion of our capital projects in 2011, the Thompson Airport now has a 5,800-foot paved primary runway (06/24) and a 5,000-foot gravel cross strip (15/33).

Late in 2010, the federal government's Airport Capital Assistance Program (ACAP) announced that \$8.7 million in funding was being awarded to the



Thompson Airport to complete the rehabilitation of our primary runway (06/24). (If you have ever flown into Thompson, you are familiar with the "bump" in the middle of our runway caused by discontinuous permafrost in the area.) This announcement changed the scope of all planned projects to ensure that our airport and our carriers could stay fully operational during the 8- to 10-week shutdown of 06/24 runway. Construction on the new Taxiway Echo began in the fall of 2010. This taxiway was needed to ensure that our carriers operating on the north side of the airport could be connected to the cross strip (15/33), which would become our main runway during the rehabilitation of 06/24. Our cross strip 15/33 would need to be extended another 1,000 feet in order to function as our main runway, and in early 2011, our contractors began clearing the land in preparation for the extension. Work on both the taxiway and cross strip was suspended during the spring melt, and in mid-May work

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began in earnest to complete these two projects by the end of June.

Once Taxiway Echo and the extension of our cross strip was completed in late June, the real work began. Our primary runway 06/24 was shut down and dug up. The scope of the job was such that not only did the runway need to be dug up and proper fill and base put in, but all new drainage needed to be installed down the sides and underneath the runway and the electrical system that powers the runway lighting system had to be replaced. The "bump" area that has historically sunk and heaved had asphalt that was six feet deep in places. Weather was on our side this summer and we experienced very few rain delays during our project, allowing it to be completed ahead of schedule.

The importance of our airport cannot be understated. Thompson Airport services more than 26 northern communities, and a large percentage of those have no year-round road access. With the shrinking winter road season, this is now becoming more important than ever. Not only is Thompson an important hub for mineral exploration and surveying, it serves as an access point for ferrying employees to and from several hydro generating stations as well as a distribution hub for the Northern Nutrition Program, which ships fresh and healthy food choices to remote northern areas. Finally, Thompson is the destination for many people seeking both scheduled and emergency medical care. Thompson may well be called Northport.

With the help of the Airport Capital Assistance Program and the passenger facilities fees, Thompson Regional Airport Authority is ensuring that the infrastructure will be here now and in the future for our airport to continue to serve Thompson and the region. \Box



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PRIORITIZING REHABILITATION WORK FOR MANITOBA'S ORPHANED AND ABANDONED MINE SITE REHABILITATION PROGRAM

Caius Priscu, Ph.D, P.Eng, AMEC Environment and Infrastructure, Winnipeg



The Manitoba's Orphaned and Abandoned Mine Site Rehabilitation Program was established in 2000 in response to the Mine Closure Regulation adopted in 1999. The program received C\$2 million initial funding to address safety issues and identity environmental concerns at five pre-established high priority sites in Manitoba: Lynn Lake, Sherridon, Gods Lake, Snow Lake and Baker Patton. Subsequently, the Mines Branch has identified 148 inactive (orphaned and abandoned) mine sites, for which ownership has been reverted back to the Crown, as former mining companies no longer exist or do not have the financial capacity to carry out rehabilitation work.

A challenging program was initiated by the Mines Branch in 2001-2002 to identify location, ownership, previous inspections, availability of historical documents, and site conditions. In dealing with such a large number of mine sites, it was necessary that a priority-based rehabilitation program was necessary. A hazard-based framework model was developed from 2005 to 2007, to rank the sites and prioritize work. As a result of the 2005 provincial audit on contaminated sites, Manitoba established an Environmental Liability Account for costs associated with rehabilitation of the five high-priority mine sites (Lynn Lake, Sherridon, Gods Lake, Snow Lake and Baker Patton) and all additional orphaned and abandoned mine sites that were subsequently identified. This account is presently at more than C\$200 million. An aggressive schedule was developed to remediate these high priority and high hazard sites by the end of 2012, and various consultants were retained to undertake the work within this tight schedule.

AMEC was at the forefront, and has championed, the establishment of a priority system to rehabilitate the 148 inactive mine sites, based on a hazard-based ranking system. In dealing with such a large number of mine sites as part of the Orphaned and Abandoned Mine Sites Program (OAMS), it was necessary that a priority-based rehabilitation program be established. A hazard-based framework model was developed, to rank the sites and prioritize work, around the principle of developing a tool that would be simple, easy to use and update, and which would encompass the all relevant characteristics of the Manitoba sites. This tool helped evaluate all Crown-owned inactive mine sites in a consistent way, eliminating biased rehabilitation decisions as much as practically possible.

The model was developed around a ranking methodology that included a total of ten criteria grouped under two major categories: (1) public safety, and (2) human health and environmental impacts. Each criterion needed a welldefined evaluation structure and scale, which were common for all the sites in order to maintain consistency in the evaluations, and ultimately provide a ranking of the Manitoba sites. As a result of the evaluations, of all the 148 sites reviewed:

- Only five sites were observed to have major or extensive negative environmental or ecological impacts. The remaining sites have rather small footprints, with no tailings dams or water retention structures at these sites, and it appears that there are no major structures with an imminent catastrophic consequence to the public safety or the environment;
- Public safety was confirmed as being current top priority for selecting the sites that need closure and rehabilitation. Most high-hazard-rated sites have open shafts, adits and trenches that pose a threat to public safety and increased liability for the Province;
- A total of 31 high-hazard sites were identified and were recommended for

immediate action for their rehabilitation; in addition, a total of 53 moderate-hazard-rated sites were also identified, with the remainder being of low hazard level.

The hazard-based model approach prepared by AMEC is currently in use by the Manitoba Mines Branch. An aggressive schedule was developed to remediate these high-priority and high-hazard sites by 2012, and consultants were retained to undertake this work within this tight schedule. To date, AMEC, in close collaboration with the Province of Manitoba and various retained contractors, has completed site remediation at 15 highhazard sites. Rehabilitation work is ongoing at all the other High-hazards sites and is advanced in various stages, mostly detailed engineering, design, and/or construction level. Based on the preliminary cost estimates, the 31 high-hazard-rated sites would require between C\$20 million and C\$30 million to be fully rehabilitated. An additional C\$15 million to C\$20 million are estimated for the rehabilitation of moderate- and low-hazard-rated sites.

The hazard-based prioritization of small to medium-size orphaned and abandoned mine sites provided a consistent and structured approach to the rehabilitation program. It also allowed the Province to focus its efforts and prioritize resources and public funding to the mine site reclamation projects that needed it the most, the more critical sites that posed the largest liability. Sites attributed a high hazard rating were prioritized and rehabilitation was immediately started in 2007 to minimize liabilities and reduce hazards to the public and the environment.

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Shaping the future

AMEC's multi-disciplinary team supports and works directly with mining clients to help them evaluate potential development assets, improve operations, evaluate and reduce environmental liabilities and assist in appropriate closure and reclamation planning and execution.

AMEC is a company of engineers and scientists supplying high value consultancy, engineering and project management services to the world. AMEC designs, delivers and maintains strategic and assets for its customers. The company employs more than 27,000 people in 40 countries worldwide.



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ABITIBI GEOPHYSICS

GOOD QUESTION, BETTER ANSWERS An interview with Abitibi Geophysics Inc.

Manitoba Mining Review: I understand that Abitibi Geophysics is placing emphasis on innovation, and last winter you announced the co-founding of the International Laboratory for Mining Geophysics with University du Québec en Abitibi-Témiscamingue. Why is your firm so focused on innovation?

Abitibi Geophysics Inc.: We are responding to our clients needs. Generally, the mining industry needs and wants more discoveries to meet the world's demand for minerals. In recent years, the discovery ratio has been inverse to exploration expenditures. Our clients expect us to provide effective tools that will allow them to explore deeper and in more difficult environments. We believe that through innovation we can develop new technologies to help the exploration industry find more mines.

The Athabasca Basin produces 1/3 of the world's uranium supplies and continued exploration in this basin requires looking under 1,000 metres of sandstone. Likewise, in Manitoba the favourable greenstone belt disappears under the Proterozoic. To increase the rate of discovery exploration means moving into these more challenging environments. We joined our key clients who formed

the Canadian Mining Innovation Council (CMIC). The objective of the Council is to assist the mineral industry in developing new approaches, tools and methods, through relevant R&D activities to aid new discoveries and increase training of highly qualified personnel. Our clients believe that more cooperative R&D initiatives will yield innovations that will help improve the rate of discovery.

The International Laboratory for Mining Geophysics (ILMG) will have a group of researchers working on innovations that will have a positive impact in the short/medium term discovery rate of mining deposits. Abitibi Geophysics sees a recurrence of common exploration challenges from many companies and across many environments. We can be the catalyst to bring those challenges to the ILMG and in this way we can help the university to address specific needs of the industry. It is another opportunity to focus R&D on relevant exploration challenges.

COLLEGE STUDENTS LEARNING IP WITH ABITIBI GEOPHYSICS.

MMR: Identify a recent innovation you have introduced to the market place.

AG: We had several innovations over the past few years. However, we are most recognized for the InfiniTEM[®] system,



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because it was introduced back in 2004 and has since then been credited with several discoveries. InfiniTEM[®] is a timedomain electromagnetic system with a unique loop configuration that can detect sub-vertical conductive mineralization down to 1,000 metres. More recently, to enhance the power and flexibility of our EM systems we started producing our own instrumentation. Through our persistence and innovation we now have the most powerful, accurate and energy-efficient TDEM instrumentation in the market.

In spring 2010 we introduced Hole-to-Hole 3D Induced Polarization (H-2-H 3D IP) to the market place. The H-2-H 3D IP configuration was developed to increase the radius of detection around and below the drill holes compared to what can be achieved with a classical borehole IP survey. Considering the affordability and effectiveness of H-2-H 3D IP, it is now accepted as a strategic tool by companies that have experience with it. 3D imaging has made this method more powerful and useful than classical borehole IP for mapping disseminated sulphides associated with gold, PGE, rare earths and base metals.

Over the past few months we have completed several experimental/production IPower3D[®] induced polarization surveys. Until recently, induced polarization was generally used with an in-line current/ potential electrode configuration such as pole-dipole and dipole-dipole. Abitibi Geophysics developed a 3D configuration (IPower3D®) and corresponding processing software, which has proven to be very effective in penetrating overburden. We were successful in getting bedrock responses in the Casa Berardi gold mining camp in Quebec, a region well known for its thick, conductive overburden. This past summer we successfully used the system on Baffin Island on a gold exploration project.

MMR: Do you work with students wishing to get into the mining exploration industry?

AG: Yes, this year we hired four students for summer work, and four graduates for permanent positions. We have the man-

agement structure to train young people who are keen to learn, enjoy the challenge of mining exploration and the thrill of discovery. Not all students are university graduates specializing in geophysics. We also hire technical school graduates whom we train to become geophysical instrument operators, electronics maintenance technicians, surveyors, and data compilation technicians. It is a two-way street working with young people; they have limited experience but they come with new ideas and many questions, and over the years among those new ideas we have uncovered gems.

We also assist students conducting mining geophysical research. For example, this past winter we conducted a timedomain electromagnetic survey to provide high quality data for a research project under the direction of Dr. Richard Smith at Laurentian University; we provided data and assistance to a M.Sc. student researching interpretation procedures for InfiniTEM data under the direction of Dr. Colin Farguharson at Memorial University; and similarly we worked with a M.Sc. candidate working on an interpretation approach titled "Artificial neural network applied to InfiniTEM", under the supervision of Dr. Li zhen Chang at University of Québec at Abitibi-Témiscamingue.

More than 60 per cent of our staff is bilingual, which gives us the flexibility to work with students from across Canada.

MMR: Given the global economy's current turbulence, what's your perspective on the mining industry?

AG: The sky is blue. We believe that worldwide demand for metals will generally increase for many years as close to four billion people in the world are industrializing and acquiring products from sinks to cell phones. In addition to growing demand we are experiencing an increased reliance on geophysics to help with exploration in deeper and more challenging environments. However, regardless of how optimistic the future is, we all know that mining exploration is a cyclical business and we have to be careful not to overextend ourselves in the buoyant years. □



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QUANTUM MINERALS: MOVING FORWARD

For Quantum Minerals Corp. [QMC – TSX.V], the true potential for its Manitoba properties began with the examination of historical drill hole data, a followup of a Crone Geophysics Pulse EM (PEM) survey and the recent air-borne VTEM plus Time Domain EM system survey. The VTEM survey identified 21 additional targets on its copper-gold massive sulphide Rocky Lake projects (Rocky Lake and Rocky-Namew projects) in the world-renowned Flin Flon-Snow Lake mining district. Out of the 21 targets identified, 15 would go on to be classified as first-priority targets.

The VTEM survey covered all of the project licenses and claims for a total of 2,142 line kilometres with 160 metre line spacing over an area of 316 square kilo metres. Performed by Geotech, the airborne VTEM plus Time Domain EM system has been shown to locate discrete conductive anomalies, as well as mapping lateral and vertical variations in resistivity. These conductors could represent hidden volcanogenic massive sulphide mineralized bodies at depth.

"Geotech's VTEM survey shows very large targets on our project which are worth exploring given the location and proximity," says Balraj Mann, president and CEO of Quantum Minerals. "This is in addition to the large Crone Pulse EM target identified on License 219A, which confirms that the target areas are much bigger than we expected. I am eagerly looking forward to our next stage exploration drilling program."

No previous work program had been carried out in the target areas, aside from the QMC's Rocky Lake Crone Geophysics Pulse EM survey targets and historical drilling by the Hudson Bay Company (later renamed HudBay Minerals – HBM) on the main Rocky Lake Mineral Exploration License 219A. The mineralization on License 219A was discovered in 1987 by HBM after airborne surveys identified a five kilometres conductor and a ground EM outlined 1,500 kilometre conductor.

HBM had diamond drilled 10 NQ and BQ holes totaling 2,292 metres in three programs: five in 1987, three in 1990 and two in 1991. QMC has cut a new grid over the HBM anomaly and completed the Crone PEM survey. The PEM survey delineated a very prominent conductor anomaly shown in the attached figure. QMC received the necessary permits to drill the PEM conductor anomaly with total drilling anticipated to be 2,500 metres.

"As suggested by the PEM survey anomaly, perhaps some of the strongest portions of the original Hudson Bay electromagnetic anomaly were not adequately tested," says Mohan Vulmiri, geologist and director of Quantum Minerals. "By carrying out the drilling on the footwall





QUANTUM MINERALS CORP.

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FOR MORE INFORMATION ON QMC MINERALS PLEASE CALL 604-601-2018 OR EMAIL US AT BALRAJ@QMCMINERALS.COM side of the potential mineralized body, it appears that HBM originally missed the main target of a massive sulphide mineralized body. This theory is further evidenced by copper mineralization intersected in the HBM drilling that presented as stringers and could represent footwall stringer mineralization."

Quantum Minerals has not only its own data to process, but can look over the previous work done in the area by HBM and Inco, which included airborne surveys, ground geophysics and drilling, leading to the 1984 discovery of the Namew Lake Ni-Cu mine, approximately 10 km to the Northwest of the Rocky Lake massive sulphide target. The Rocky Lake projects share the same Namew Gneiss Complex host rocks as the Namew Lake mine, which produced 2.57 million tonnes grading 0.63% copper and 1.79% nickel. The Namew Gneiss Complex is composed of highly metamorphosed rocks believed to be derived from Amisk Group volcanic rocks, the host rocks of the Flin Flon-Snow Lake mining district. With the flurry of historic and on-going mining activity in and around Flin Flon, only 65 kilometres to the north, and Snow Lake, 100 kilometres to the northeast, it's no wonder that the mining community still looks favourably at this region as a hub for Central Canadian mining activity.

For QMC, the fact that the legacy of the Flin Flon-Snow Lake mining district goes back 84 years is to be respected, as the region is still a powerhouse in the Canadian mining world. From the founding of Hudson Bay Mining and Smelting's mining infrastructure that brought power, rail and workers to the region through to today, its successor, HudBay Minerals, is still a chief player in the region. Recent joint venture deals like that of the HBM partnership with VMS Resources on the nearby Snow Lake property make the area friendly for junior explorers. Thanks to data provided by previous work from HBM, as well as

favourable infrastructure in the region credited to work done by HBM over the years, QMC is poised to help continue within the region's mineral legacy through its exploration and development. Today's copper prices are also providing what could be an enhanced economic environment for this region, and encouraging junior explorers like QMC to develop and attract the partners it needs to continue moving forward.

QMC is also active in other jurisdictions of Manitoba. They recently acquired the Cinder Lake Rare Earths (REE) project in Northeastern Manitoba. Extensive research was carried out on the Cinder Lake Complex by the Department of Geological Sciences at the University of Manitoba, and QMC believes that this project has great potential. REE mineralization is associated with the Cinder Lake alkaline intrusive complex, the only known occurrence of feldspathoid rocks in Manitoba. □



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ACCURASSAY LABORATORIES: MEETING YOUR NEEDS THROUGH AUTOMATION AND EXPANSION



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The two most common requests from our clients in the mineral exploration sector? Turn-around Time and Quality of Results. Our ultimate driver is the successful supply of both to the market.

Accurassay Laboratories, a Canadian-owned and operated analytical services company, has been providing mineral assay services since 1987. Our company meets the requirements for NP 43101 reporting through our accreditation with the Standards Council of Canada (SCC) and ISO 17025 certification. With our focus on quality and operational excellence, Accurassay provides fast, consistent turnaround time and service reliability to the mining and mineral exploration industry.

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- Fire Assay Gold, PGEs
- ICP and AA geochemical and soil analysis for base metals, up to 44 elements
- XRF geochemical analysis for iron, chromite and whole rock analysis
- Pulp Metallics for "visible gold"
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- **ACCURASSAY LABORATORIES**
- Regional coverage by satellite sample preparation facilities
- Internal and external QC programs to ensure data reliability

Accurassay continues to invest in its own development to meet the needs of the exploration and mining companies across Canada. Here is a sample of what Accurassay has been developing in 2011, and what to expect in 2012:

NEW STATE-OF-THE-ART EQUIPMENT

With the entire pulverization process now being performed by eight HP-M 1500 pulverizers with sample magazines, Accurassay is setting a new standard for quality control, operator safety and process efficiency. More of these high-tech units will be commissioned in 2012. We will also be commissioning automated crushers and sample conveyor systems in our main Thunder Bay lab by Q2 of 2012. These investments are critical to establishing the most reliable sample preparation process in the industry.

MORE CAPACITY

Accurassay's newly-expanded, high-capacity laboratory, based in Thunder Bay, Ontario, uses reliable and ISO/EIC 17025 accredited methods including fire assay, ICP and AA. As of January 2012, the effective capacity of Accurassay will have grown by over 150% since 2009. All customers stand to benefit in real terms: meeting your expectations for high quality results in a fast turnaround time. In 2010, across Accurassay's entire customer base, virtually every fire assay analysis was reported to our clients within 10 days of receiving the sample at Accurassay labs. We continue to honour that service commitment today.

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MORE COVERAGE

In 2010, we opened our new laboratory in Timmins, Ontario. In 2011, we opened our new facility in Rouyn-Noranda to serve the Quebec market with much-needed capacity on a local level. These expansions are indicative of Accurassay's focus on regional support and local service.

From project to project, Accurassay's wide range of service elements can include the popular 10-day turnaround guarantee, simplified all-in-one program pricing, the development of local sample prep facilities, and access to on-line sample status information through Acculink. For fast, accredited test results at competitive pricing, look to Accurassay as your service partner.

For high quality results delivered in industry-leading turn-around time, contact: Brad McBain, VP Sales & Marketing Suite 126, 4026 Meadowbrook Drive London, Ontario, Canada Phone: 1-519-226-4643 Fax: 1-519-652-8638 Email: bmcbain@accurassay.com

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PRICE	\$ 0.115
SHARES OUT	
MARKET CAP	\$ 10.12 MM
CASH	\$ 3.5 MM

Copper Reef Mining Corporation, based in Flin Flon, Manitoba, holds exploration properties throughout the Lynn Lake and Flin Flon Greenstone Belt in both Manitoba and Saskatchewan. This year Copper Reef has concentrated on two major base metal projects and one major gold Property. In addition, two lesser gold projects were evaluated.

GOLDROCK-NORTHSTAR PROPERTY (GOLD)



- Near Snow Lake Manitoba
- Gold Rock Vein in 198 m long and 3.6 m wide
- 12,381 m drilled to date, 2004-2010

2010/2009 DRILL RESULTS

DRILL HOLE	CORE	ASSAY
	LENGTH	
GR10114	3.3 m	14.41 g/t
GR10115	1.5 m	15.65 g/t
GR10119	2.1 m	7.79 g/t
GR10125	2.3 m	7.01 g/t
GR0981	3.8 m	11.2 g/t
GR0991	2.9 m	15.95 g/t
GR0995	1.9 m	6.90 g/t
GR0908	3.95 m	6.66 g/t
GR09111	1.9 m	5.70 g/t

ALBERTS LAKE PROPERTY (GOLD)

RECENT DRILL RESULTS, OCT 2011

DRILL HOLE	CORE LENGTH	REGULAR ASSAY	SCREEN METALLICS
DDH AL-11-	27.9 m	3.19 g/t	3.46 g/t
57tw			
Includes	4.5 m	10.76g/t	12.19g/t
DDH AL-11-	51.5 m	1.02 g/t	1.02 g/t
61Btw			
Includes	2.85 m	6.82 g/t	6.87 g/t
Includes	1.5 m	9.71 g/t	9.17 g/t
DDH AL-11- 40tw	30.9 m	1.36 g/t	1.39 g/t
Includes	2.2 m	5.37 g/t	5.83 g/t
DDH A1-11- 72tw	26.4 m	1.14 g/t	-
Includes	1.85 m	4.55 g/t	-

• 20 km east of the city of Flin Flon

- Hosted in a 25 m wide shear zone
- Tested over a 500 m strike length and to a depth of 400 m, remaining open in all directions
- Values of up to 125 g/t Au noted in drill core
- Best intersection is 10.89 g/t Au over 9 m at 225 m vertical depth
- 60 holes drilled to date
- Historical, non-NI 43-101-compliant reserve estimate of 400,000 tonnes at 7.3 g/t Au was reported by Granges Inc. in the 1980s
- This past summer, twinned 4 holes in the Alberts Zone to confirm continuality of grade and to verify assay intervals





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