At the forefront of Alberta’s lithium brine riches

Today, MGX Minerals Inc. reported to have acquired the intellectual property and design rights to a proprietary processing design which proposes to reduce lithium brine evaporation times by >99% over standard solar evaporation pond processes, from approximately 18 months to 1 day. The design was developed as part of the previously announced Design & Scoping Study for its highly mineralized lithium brine properties in Alberta, which include 14 of the 24 highest grade (>90 mg/L) lithium assays throughout the province, as reported by the Alberta Geological Service. All intellectual property rights have now been acquired from the inventor. The company has retained Fasken Martineau, an international business law firm, to conduct an intellectual property assessment and prepare documentation for the filing of a patent. Rockstone believes that today’s news demonstrate that the process flowsheet, designed by Cementation AG, has been working successfully for the highly mineralized brine associated with MGX’s lithium properties in Alberta. With this technology in hand, coupled with the vast existing infrastructure in Alberta, MGX could be clearly at the forefront of the rapidly developing lithium brine industry, especially in Alberta. A maiden NI43-101 Technical Report is expected to be completed by next week.
MGX Minerals’ President and CEO, Jared Lazerson, commented today:

“This proprietary design process, combined with vast existing infrastructure in Alberta, positions MGX at the forefront of the rapidly developing lithium brine industry. The potential advantage of using a new design to reduce lithium brine processing time is significant. Solar evaporation is necessary due to a deficiency of infrastructure that existing lithium brine producers face, particularly in the remote high altitude deserts of South America where options are extremely limited. As well, the cost/revenue model has shifted dramatically due to surging demand for lithium compounds, creating an opportunity to change how lithium is produced moving forward. There are a number of areas for improvement including the elimination of solar evaporation. We believe the Company has solved the issue of very long production times, relatively low recoveries (40-50%) currently associated with lithium brine processing, and real estate requirement of lake size solar evaporation ponds. We are now moving to protect this intellectual property as it may have great value to MGX and the lithium industry moving forward.”

On April 14, MGX received an initial Process Design & Scoping Study from Cementation AG, an engineering consultation firm that was engaged to analyze the extraction of minerals from the heavily mineralized brine of the Fox Creek and Swan Hills areas within MGX’s portfolio of Alberta lithium properties. The study includes flowsheet recommendations and operational expenditure (OPEX) calculations to process lithium-bearing brine of 20,000 bpd (barrels per day) in a commercial plant. The process proposes to significantly reduce the process time versus traditional solar evaporation, which is up to 18 months. The process is designed to rapidly separate brine minerals to produce various compounds including lithium carbonate, sodium chloride and calcium chloride. The implementation of multiple product lines is designed to maximize potential revenue and reduce the lithium carbonate equivalent cost of production. A flowsheet, non-iterative mass balance, evaporator load, pond sizing, equipment list and operating costs were also developed based on water analyses from historic central wells located on MGX’s Fox Creek Property. Jared Lazerson commented on April 14:

“The proposed process developed by Cementation AG provides for a modern industrial process that would reduce evaporation time and provide for a number of product lines to offset potential costs and increase potential long term profits.”

On May 9, MGX received the initial CAPEX (capital expenditure) report for a lithium carbonate production plant from Cementation AG. The CAPEX budget is the second part of the previously received initial Process Design & Scoping Study. Cementation AG formulated a detailed initial CAPEX budget based on quotations from potential vendors in addition to applying in-house expertise and experience.

Scoping Study Highlights

Further details of the proposed process and production plant design are provided as follows:

- Reduction of production time of lithium carbonate by greater than 99% over current traditional brine production (1 day versus 18 months);
- multiple end market products including lithium carbonate, sodium chloride and calcium chloride with potential for addition of boron and bromine production;
- strategic sourcing of reagents and energy to reduce input costs;
- application of energy efficient technology to significantly reduce potential operating expenditures (OPEX); and
- utilization of existing oil and gas infrastructure and expertise to reduce CAPEX and OPEX.

The Study also includes a metallurgy testing protocol. MGX is currently evaluating metallurgical laboratories for bench testing of the proposed process.

As a result of the CAPEX report, Cementation AG has provided a 6-month engineering and development project plan to follow metallurgy testing for the detailed engineering of the proposed lithium carbonate plant.

On May 18, MGX reported to now control 14 of the top 24 historical high-grade lithium properties (>90 mg/L, up to 140 mg/L) as reported by the Alberta Geological Service in 2013. The dataset comprises lithium geochemical data from ground and formation water in Alberta and near the Alberta border. The data was captured from several databases, including the Alberta Geological Survey (oil and gas wells database, AERI and Beaver River Basin projects), and the Alberta Research Council. In total there are 1,511 records, of which 48 records have >75 mg/L lithium. 19 analyses have >100 mg/L lithium (up to 140 mg/L) and occur within the Middle to Upper Devonian Beaverhill Lake Formation and Woodbend and Winterburn groups of west-central to northwestern Alberta.
On May 18, MGX also reported to have engaged APEX Geoscience to complete a NI43-101 compliant technical report on MGX’s Alberta lithium properties. Mr. Roy Eccles (P. Geo.) will author the technical report.

Mr. Eccles is considered one of the foremost experts on Alberta lithium brine, having spent 25 years of his career at the Alberta and Manitoba Geological Surveys. While at the Alberta Geologic Survey, Eccles oversaw the above mentioned Province-wide sampling program responsible for compiling lithium values from oil and gas wells in Alberta. Eccles obtained his B.Sc. and M.Sc. from the Universities of Manitoba and Alberta. He completed his thesis on “The Petrogenesis of the Northern Alberta Kimberlite Province”. Eccles is a practicing professional geologist with the Association of Professional Engineers and Geoscientists of Alberta. He has over 26 years of mineral exploration experience encompassing a wide range of geological processes and commodities. Eccles has published over 70 manuscripts and 75 oral presentations. He is internationally recognized for his research and knowledge of the geology and economic mineral potential of the Canadian Shield and the Western Sedimentary Basin.

MGX believes that completion of a NI43-101 compliant Technical Report is an important first step towards potentially developing future mineral resources for its properties. The Technical Report will include detailed geological and historical information on the properties and is expected to be completed in one month (i.e. by June 18).

Rockstone is looking forward to the receipt of this NI43-101 compliant Technical Report as MGX has not yet completed a mineral estimate of the Alberta Lithium Properties and the initial Process Design & Scoping Study’s purpose was solely to develop a process design, not to provide a preliminary economic assessment. Readers are also cautioned that the company has not completed a pre-feasibility or feasibility study which establishes mineral reserves with demonstrated economic and technical viability.
MGX’s Alberta Lithium Properties

Overview

MGX has consolidated a strategic portfolio of lithium properties located throughout the Province of Alberta. The total land package spans more than 300,000 hectares and contains some of the highest reported levels of lithium bearing brine in Province, with lithium levels reaching up to 140 mg/L as reported in the Provincial Industrial Minerals database (1).

All permits and permit applications are geologically associated with current and past oil producing fields. MGX has identified an initial group of 16 past producing wells for test production. These wells are located within the lithium bearing brine pools of the Swan Hills formation near Fox Creek and cover an area of approximately 8 km in length and reach up to 3.2 km in width. Past production of brine in the most recent wellhead production reports for the cluster totaled approximately 17,000 bpd as reported in the GeoScout database. A central well within this cluster reported historical grades of 130 mg/L lithium and 2 additional nearby wells reported historical grades of 117 mg/L and 130 mg/L at 3 km and 10 km, respectively, as reported in the Provincial industrial minerals database.

Location & Infrastructure

All properties surround existing wells that have provided initial historic assays. The properties are generally associated with past producing oil fields that are fully serviced with nearby roads, power and wellheads in place.

6 Permits are located in Alberta’s Fox Creek area and include wells with reported historic lithium values ranging from 115-140 mg/L, in the lithium-bearing Leduc and Swan Hills formations. The 6 Permit Applications cover various locations throughout the Province including the Keg River, Winterburn and Woodbend Group formations, with reported historic values ranging between 95-140 mg/L lithium.

Technical Consultants

MGX has engaged industry experts to lead development strategies of these properties, including The Lamar Corporation, Cementation AG and Mr. Derek Stonehouse.

The Lamar Corporation

The Lamar Corporation is led by Dr. Larry Marks, a 35-year industry veteran of the oil and gas sector. Dr. Marks spent 30 years in various executive roles for Shell Canada Ltd. and various Shell Group companies, including General Manager and Vice President of Marketing and Transportation for Shell Canada. He has experience in all facets of the oil and gas business, having worked extensively throughout Canada, Asia, Africa and the Middle East in his career.

While at Shell Canada, Dr. Marks implemented strategies for marketing, sales and transportation of energy and co-products in excess of more than $3 billion in annual revenue.

Cementation AG

Cementation AG (Above Ground Division) has completed a Process Design and Scoping Study for MGX’s Alberta lithium properties.

Derek Stonehouse

Mr. Stonehouse has over 26 years of experience in the oil and gas industry in western Canada, including the identification and drilling of over 140 horizontal wells. In particular, his experience with Northern Blizzad Resources, involving the re-development of an existing oil pool thought to be previously exhausted, and grass roots development of the Montney gas/condensate exploration target for Storm Resources, currently producing 10,000 bpd, are highly relevant to the development of MGX’s lithium fields.

(1) All assays referenced are from the geoScout Oil & Gas Industry database as reported by well operators and monitored by the Government of Alberta.
Vancouver Commodity Forum

June 14, 2016 at Hyatt Regency Hotel in Vancouver

Click Here to Register

Program:

12:00 pm: Exhibitor floor opens

1:00 pm: Welcome from Dave Hodge, President of Zimtu Capital Corp.

1:10 pm: Participant company introductions by Dave Hodge and Sven Olsson

1:30 pm: Joe Martin (Cambridge House International): The difference between exploration and mining, and the importance of Vancouver

1:40 pm: John Kaiser (Kaiser Research Online): “Criticality of Supply” and how it effects world prices, demand, and the ability to use that to your advantage in the market place

2:10 pm: BREAK - Networking with refreshments

3:00 pm: Stephan Bogner (Rockstone Research): How European markets impact Canadian markets

3:20 pm: John Hykawy (Stormcrow Capital): Demand & Pricing for lithium, cobalt and other battery materials

3:50 pm: Gerry McCarrill (Aurvista): Hedging the metals markets - How to contain the large down drafts of the last 5 years

4:00 pm: Chris Berry (Disruptive Discoveries Journal): The future of lithium

4:30-6:00 pm: Networking Session with refreshments
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