

## QUARTERLY ACTIVITIES REPORT FOR QUARTER ENDED 31<sup>st</sup> MARCH 2018

30<sup>th</sup> April 2018

# HIGHLIGHTS

- Due diligence largely completed on Blue Sky Lithiums' *Hombre Muerto* salar projects located in Argentina - located in the *Lithium Triangle* of South America
- Projects adjoin FMC Corporation's Fenix and Galaxy Resources Limited's Sal de Vida Lithium operations
- Highly productive basin with low impurities and shallow targets
- The *Candelas* target is very extensive being ~15km long by 3-4km wide
- Ideal geological setting for Li brine development
- Recent surface sampling includes results similar to those obtained by Galaxy nearby where economic brine occurs
- Geophysical surveys planned to commence shortly
- Experienced in-country team being assembled
- GM to approve the transaction being held on 4<sup>th</sup> May 2018
- Argentina is actively encouraging foreign investment in the mining sector

Dempsey Minerals Limited (ASX:DMI) (**Dempsey** or **the Company**) is pleased to provide this March 2018 Quarterly Activities Report, which focuses on the due diligence work on its exclusive agreement with Australian company Blue Sky Lithium Pty Ltd (**Blue Sky**) to acquire 100% of Blue Sky's interests in mining tenements located in the lithium bearing *Hombre Muerto* salt flat in the province of Catamarca, Argentina (see Dempsey ASX announcement 6<sup>th</sup> February 2018).

Dempsey has convened a meeting of shareholders for the 4<sup>th</sup> of May to consider a range of resolutions in connection with the transaction including a change in the nature and scale of activities, approval of the Blue Sky transaction and capital raisings to assist in progressing the project (see DMI Notice of Meeting ("**NoM**") dated 3 April 2018). Since signing the agreement, the Company has been active in undertaking due diligence ("**DD**") on the project and on Blue Sky and provides an update on this work in the Due Diligence section of this report.



Figure 1: Blue Sky's Project within the Lithium

## Background

The Blue Sky tenements (the **Project**) are located within the South American *Lithium Triangle* in the Hombre Muerto Basin, one of the most important and prolific salt flats in Argentina and indeed the world. The Project is situated adjacent to Galaxy Resources' *Sal de Vida* project (proposed production of 25ktpa LCE - GXY:ASX announcement, 22 August 2016) and FMC's Fenix lithium operations (which has been in operation since 1997). The basin is known to have the lowest impurity levels of any producing Salar in Argentina and has been in production for over 20 years. The geology of the basin is well understood with lithium grades ranging from 680 to 780ppm and reserve life's estimated to be greater than 50 years for FMC (GXY NI 43-101, March, 2010) and 40 years for Galaxy (GXY: ASX announcement, 22 August 2016) at current and forecast production rates.

## Due Diligence

DD work has comprised legal assessment of Blue Sky and the licences which comprise the project in Argentina. Whilst all licences were found to be legally held and that binding agreements to acquire the licences were held by Blue Sky, the work highlighted the mineral rights for the second project in the portfolio forming the Catalina licence (which covers ~2.5km<sup>2</sup> of prospective ground) have been granted by both the Catamarca and Salta provinces over the same ground. This is a result of a long term border dispute between the provinces and further details are being sought on this matter.

The Company's main interest in Blue Sky's portfolio however, has always been the Candelas group (which covers ~55km<sup>2</sup> of prospective ground) where no such title issues exist and on Blue Sky's ability to further grow the project portfolio in country.

On the technical front, a site visit has been made and a programme of surface sampling conducted over the Candelas group of licences. Key points to arise from this work are:

- The Hombre Muerto salar is the premiere salar for lithium brine production (FMC) in Argentina
- Proven high grade/low impurity Li brine setting
- *Candelas* adjoins Galaxy Resources' ("GXY") *Sal de Vida* brine project
- The Candelas target channel is very extensive being ~15km long by 3-4km wide
- Ideal geological setting for Li brine development; ground waters sourcing volcanic rocks, local hydrothermal activity, a closed basin, arid climate and a faulted environment
- Galaxy's closest drilling to Candelas indicates substantial volumes of brine hosted by coarse sands and gravels similar to those thought to exist at Candelas; perfect permeable host
- Recent surface sampling includes results similar to that obtained by Galaxy
- Potential for significant volumes of brine to exist at depth within the Candelas channel
- Further potential at Deceo for brines to exist below surficial alluvial fan cover over palaeo-salar
- Experienced in-country team
- Argentina is actively encouraging foreign investment in the mining sector

The Candelas tenements cover the Los Patos delta valley which is the major conduit for incoming waters into the HM salar accounting for ~79% of the salars total water intake. The delta sits at ~4060m RL in the south and gently dips from the south to the salar at ~4000m in the north where the tenements abut Galaxy Resources' tenements. The scale of the valley is very large; being ~15km long and 3 to 4 km wide giving enormous potential should brines exist at depth. The valley sits within a graben structure bounded by major north-south faults and is transgressed by a major NW-SE trending fault. Active fumaroles were observed in the area associated with these faults indicating the relatively shallow depth to magma.

There is very real potential for lithium bearing brines to exist below the delta. The Eastern Hombre Muerto sub-basin is dominated by coarse sands where Galaxy has proven significant volumes of brine. It is likely that these coarse sands exist below the delta and, having good porosity and permeability, could potentially host significant volumes of brine. Galaxy has stated that the Eastern sub-basin could be at least 300m deep and it is considered likely that these brine hosting sediments continue below the Candelas licences.

A programme of sampling comprising 18 water samples was undertaken over the Candelas licences (as reported in the announcement dated 17 April 2018). Water samples were taken from shallow auger holes up to 1.3 metres deep and analysed for conductivity, total dissolved salts (“TDS”) and analysed for a range of elements. The results were highly encouraging with several samples recording Li values and conductivities similar to those observed from near surface results from the closest drilling to Candelas as conducted by Galaxy at Sal de Vida. The results were surprising as the deltaic sediments sit above the RL of the salar and it was thought that there would be significant contamination from the surficial alluvial waters and that sampling would return no significant lithium values.

Samples collected in the northern section of Candelas ranged up to 59 mg/l Li. This compares to near surface results of ~62.8 mg/l Li in Lithium One (Galaxy) drillholes SVH11\_16 and 52.7 mg/l in SVH10\_8 (figure 3). These results lie above economic brines occurring within an interpreted palaeo-channel as observed from gravity survey data (figure 2). The highest recorded result from the Candelas sampling was 120 mg/l located ~10km to the south in the southern part of the project.

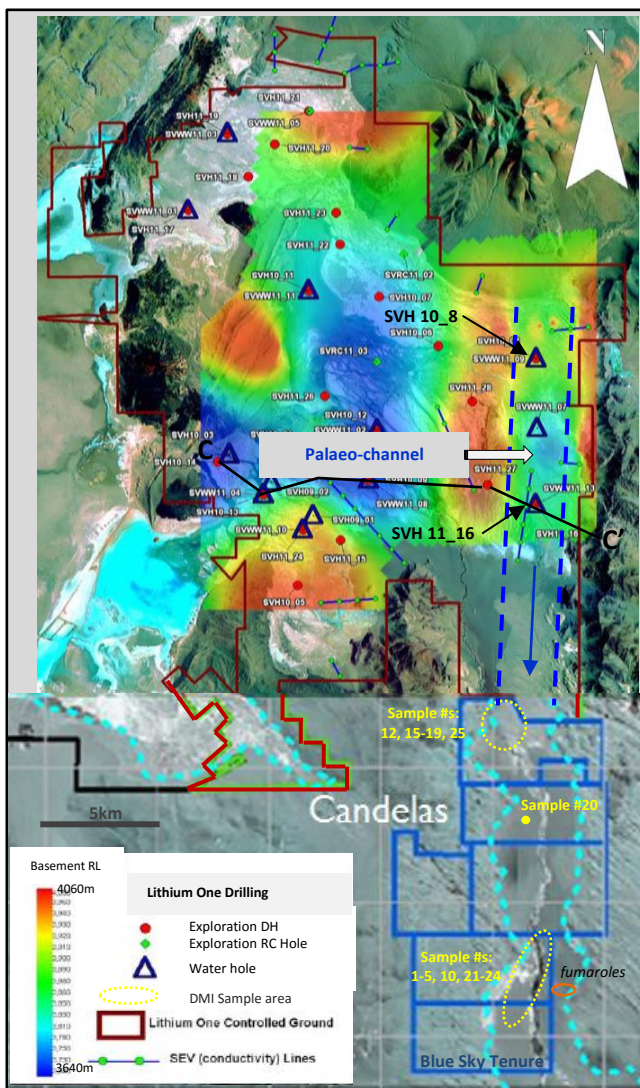


Figure 2: Base gravity/aerial foto image showing eastern palaeo-channel, location of Lithium One (Galaxy) drilling & DMI Samples – Candelas area (ref: Lithium One NI43-101, March 2012)

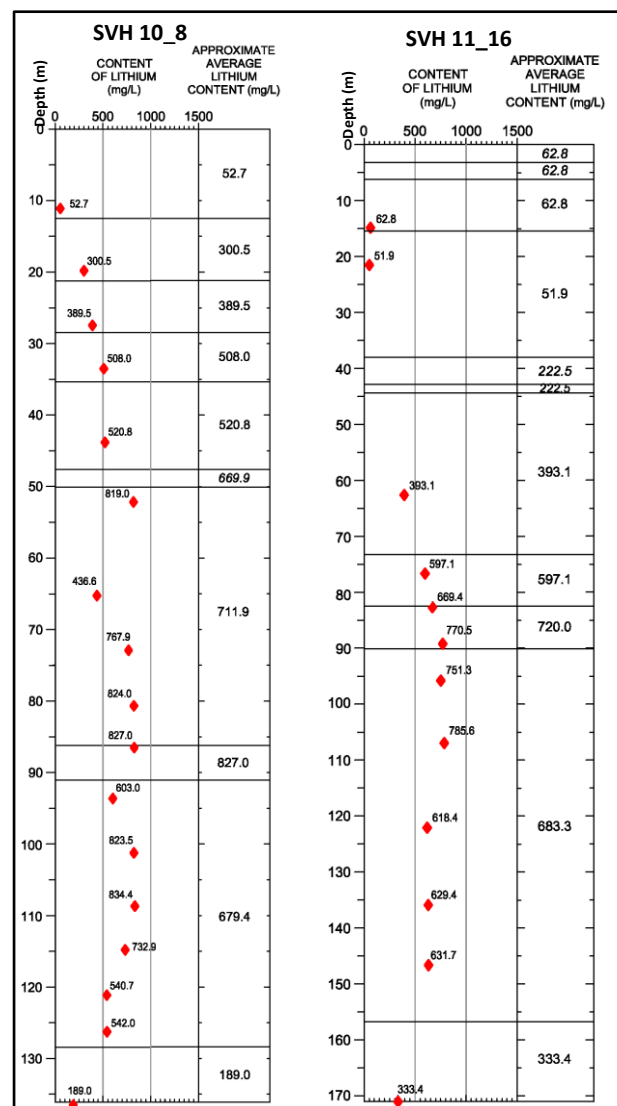
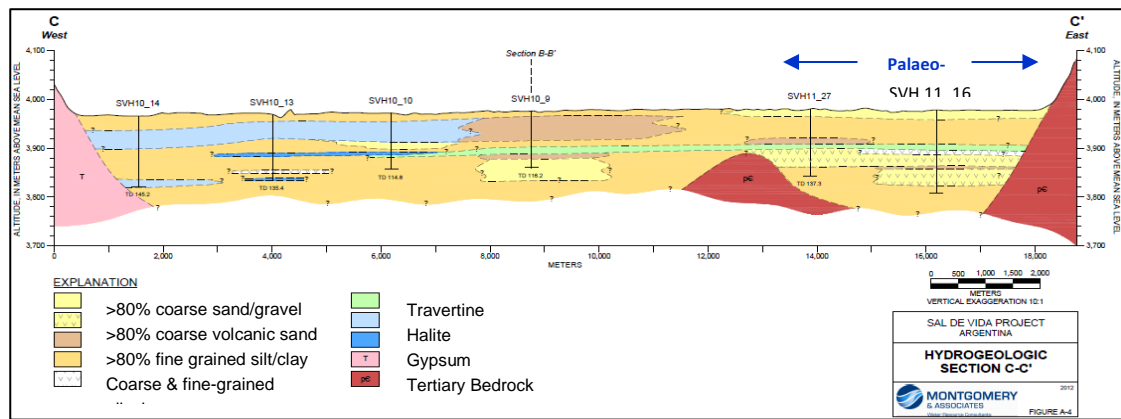


Figure 3: Lithium One (Galaxy) drillholes SVH10\_8 & SVH11\_16 noting near surface Li versus underlying economic Li grades (ref: Lithium One NI43-101, March 2012)



**Figure 4: Lithium One X-Section C-C' (Ref: Lithium One NI43-101).**

The variable results from the Company's sampling indicate mixing of brine and fresher waters brought in by the Los Patos river in the Candelas area. What is important is that there is elevated lithium bearing briny waters in the system with some samples having Li levels similar to that observed near surface at Sal de Vida below which significant concentrations of economic lithium brine is found. It is also noted that the highest recorded value received was 120 mg/l Li taken some 10km south of the northern extent of the project.

The next phase of work currently being undertaken is a programme of geophysics incorporating a Gravity survey and a Controlled Source Audio-frequency Magnetotellurics (CSAMT) survey. The surveys are aimed at defining the geometry and depth to basement, as well as mapping resistivity contrasts to help identify potential lithium-bearing brine aquifers. This work has commenced.

#### **Capital Raising and Extraordinary General Meeting – 4<sup>th</sup> May 2018**

As part of the Financing Condition and prior to completion of the Acquisition under the Option Agreement (as per ASX announcement of 6<sup>th</sup> February 2018), the Company raised \$616,000 by the issue of 7,700,000 Shares at \$0.08 per Share to enable the Company to meet the administrative costs of the Acquisition including due diligence costs, advisers' fees, the costs of seeking shareholder approval for the Acquisition and to allow sufficient working capital within the Company. Pending Shareholder approval at the General Meeting on 4<sup>th</sup> May 2018, Dempsey will complete a further capital raising of at least \$1,384,000 by the issue of 17,300,000 Shares at \$0.08 per Share, in order to satisfy the Fundraising Condition precedent to completion of the Acquisition under the Option Agreement.

Upon completing the Acquisition, the Board of the Company shall appoint two new Directors. The two representatives of Blue Sky will be Mr. Juan Pablo Vargas de la Vega (who will be appointed as the Managing Director of the Company) and Mr. Raymond Liu (who will be appointed as a Non-Executive Director).

Mr. Vargas de la Vega (or "JP"), is a Chilean/Australian mineral industry professional with 15 years broad experience in ASX mining companies, stockbroking and private equity firms and holds a Masters in Mineral Economics from Curtin University, Perth. JP has a firm understanding of the global lithium market stemming from his prior role as a specialist lithium analyst in Australia and has successfully negotiated agreements with one of the largest world lithium producers SQM (NYSE:SQM). Mr. Vargas de la Vega's experience has also seen him operate a private copper business as in Chile. He has also worked for BHP, Rio Tinto and Codelco.

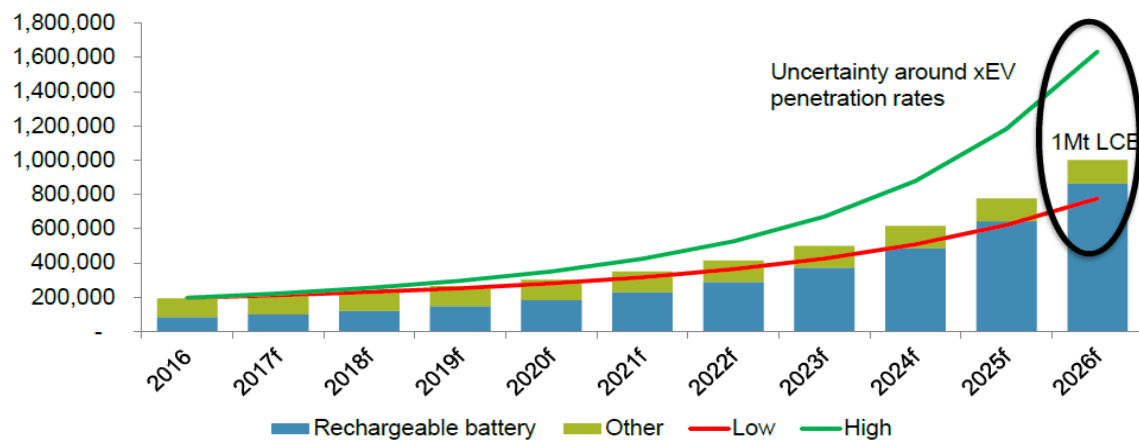
Mr Liu is a qualified mining engineer with a commercial background and received his degree in Mining Engineering from University of Western Australia. Mr. Liu also holds a Master of Mineral Economics from Curtin University and a Western Australia Unrestricted Quarry Manager's licence. Raymond is the founding managing partner in Havelock Mining Investment, a Hong Kong investment company and has been involved in the recapitalisation, restructuring and acquisition of assets for numerous ASX listed companies and is currently a director of Okapi Resources Ltd.

## Lithium Markets

The lithium market is currently experiencing unprecedented significant growth, especially in the last two years. The short-term supply has struggled to meet demand resulting in a threefold increase in the spot price for lithium carbonate from 2015 to 2017 a trend which could potentially continue as supply is estimated to continue to lag demand.

Lithium demand has almost doubled from 2009 to 2017 and is estimated to increase slightly more than four times (to 850ktpa-1Mt) by 2025 (Figure 3). The main driver for lithium demand comes from batteries needed to power electric vehicles (EV). The Company's board of directors expects there is likely to be a strong upward trend in the production of EV's, led by the Chinese Government and new legislation phasing out the internal combustion engines for small vehicles. Further demand is also expected due to similar legislation in Europe which could be effective from 2025 onwards. As a result, EVs are expected to eventually replace internal combustion engine cars. The phase out process might take 20-30 years to occur at a global level.

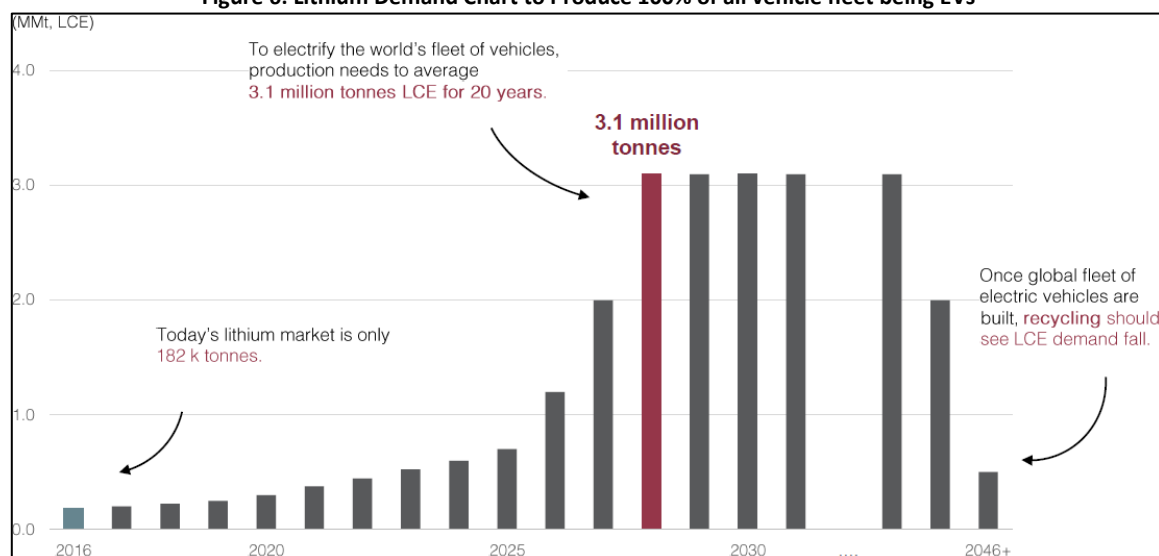
Figure 5: Global Lithium Demand Forecast 2016-2026



Source: Roskill

Future supply looks constrained with not enough supply reaching the market at the right time. Assuming the electric vehicle will be embraced 100% by 2030 (Figure 4), the lithium demand would be 3.1Mt LCE per year for 20 years, this **being more than 10 times current supply**. If this change in technology is applied, the market pressure to meet demand could see unprecedented spikes in lithium carbonate prices.

Figure 6: Lithium Demand Chart to Produce 100% of all vehicle fleet being EVs



For further information contact:

Nathan McMahon

Non-Executive Chairman

Email: [nathan@dempseyminerals.com.au](mailto:nathan@dempseyminerals.com.au)

Phone: +61 8 9322 6283

Tenement list as at 31 March 2018:

Project	Licence Number	Interest/Status
Greenbushes South	E70/4629	Application
Walpyring Hill	E70/3065	Royalty interest