# ASX Release 16th April 2012

## **Corporate Details**

| ACY Codes        | OTD           |
|------------------|---------------|
| ASX Code:        | 218           |
| Germany:         | SO3-Fra       |
| OTC/ADR:         | SBMSY         |
| Share Price:     | \$1.00        |
| Market Cap:      | \$116M        |
| Shares on issue: | 116.1M        |
| STB Options:     | 9.2M (\$4.2M) |
| Cash/NTA:        | \$20.3M       |
| Top 40           |               |
| shareholders:    | 40%           |

## **Contact Details**

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## **Media Enquiries**

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## Listed Equity Holdings

| (ASX: MZM)     | 5.382M |
|----------------|--------|
| (ASX: AVZ)     | 0.400M |
| (ASX:LTX)      | 1.016M |
| (ASX: BUX)     | 1.610M |
| (BUX options)  | 0.750M |
| (CDNX: CNI.V)  | 0.121M |
| (CDNX: SMP.V): | 2.500M |
| Auvex (Pte):   | 0.500M |

# Colluli Potash Resource Tops 1 Billion Tonnes

SOUTH BOULDER

South Boulder Mines Ltd (ASX:STB) is pleased to announce that the JORC/NI43-101 Compliant Mineral Resource Estimate for the flagship Colluli Potash Project now stands at **1.08 billion tonnes** @ **18% KCI\* for 194Mt of contained potash**.

This represents an **85%** increase in contained potash with mineralisation starting from just 16m below surface.

|                                    | Tonnes<br>(Mt) | Grade<br>(% KCI) | Total KCl<br>(Mt) | Grade<br>(% K <sub>2</sub> O) | Total K <sub>2</sub> O<br>(Mt) |
|------------------------------------|----------------|------------------|-------------------|-------------------------------|--------------------------------|
| Measured                           | 261.81         | 17.94            | 46.96             | 11.33                         | 29.67                          |
| Indicated                          | 674.48         | 17.98            | 121.29            | 11.36                         | 76.67                          |
| Inferred                           | 143.50         | 18.00            | 25.78             | 11.37                         | 16.33                          |
| Current April-12<br>Total Resource | 1,079.00       | 17.97            | 194.09            | 11.35                         | 122.61                         |
| Previous Oct-11<br>Total Resource  | 564.40         | 18.60            | 104.96            | 11.75                         | 66.31                          |
| Variance                           | + 91%          | -3%              | + 85%             | -3%                           | + 85%                          |

\*KCl is commonly expressed as  $K_2O$  according to the formula (KCl \* 0.6317 =  $K_2O$ ). The recent KCl contract price is estimated at around US\$ 470/t.

The expanded resource is expected to substantially improve the already robust economics of an open pit mine at Colluli. Importantly, the shallow deposit is open in many directions and is expected to grow further with the current resource extension drilling programs<sup>##</sup>.

An engineering scoping study (ESS) completed in November 2011 demonstrated a pre-tax NPV<sub>12</sub> of US\$ 1.33bn with start-up capital costs of US\$ 0.74bn.

This study was based on Stage 1 production of 1Mt of KCI p.a. from the potash mineral Sylvite, a zone which represents only a small part of the overall deposit. The study investigated a 17-year open pit operation and forecast an internal rate of return of 40.6%. As an indication of the growth potential of Stage 1, the ESS only included ~16% of the potash contained within the previous October 2011 resource estimate. Studies are currently underway to incorporate additional zones of potassium minerals to further enhance the overall commercial outcomes.

South Boulder Managing Director Lorry Hughes said the resource increase provided more strong evidence of the outstanding outlook for Colluli.

"This upgrade further confirms Colluli as a Tier 1 asset". Mr Hughes said. "The 17-year mine life indicated in the scoping study will definitely be extended".

"In addition, the scoping study didn't consider substantial production increases that are apparent from this huge resource. Over the course of the definitive feasibility study, the upside will be included to demonstrate the significance of Colluli in relation to the global potash market."

South Boulder is fast tracking the world's first open cut potash mine which is located approximately 70km from a proposed export site at Anfile Bay on the Red Sea coast and proximal to major international shipping routes.

Negotiations have commenced with the Government of Eritrea for its purchase of a paid participating interest in the Colluli Project (see ASX announcement dated 26th of March 2012) which is the precursor to the formation of the Joint Venture Share Company and the ultimate granted Mining Exploitation License.

The Company has strong support from the Eritrean Government to build an economical long term, environmentally sustainable resource project.

### Mineral Resource Estimate

The Colluli Mineral Resource Estimate was compiled by Ercosplan Ingenieurgesellschaft Geotechnik und Bergbau mbH in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves [2004] (the JORC Code) and the Canadian National Instrument 43-101.

The current resource is flat lying occurs over a semi-continuous north-south extent of over 16kms and an east-west extent of 12kms. The resource is considered to be open in many directions, particularly in the central and northern areas between Areas A and B where extensive drill testing is underway. Resource blocks typically are shallowest in the north commencing at 16m depth, dip gently towards the south to a depth of 114m. The relatively shallow resource blocks are constrained by NW/NNW – SE/SSE oriented faults with vertical offsets in the 50 to 100m scale.

The resource is composed of three main potash minerals Sylvite, Carnallite and Kainite. The term potash is usually used to describe "muriate of potash" (MOP) with the chemical formula (KCI). Another common potassium fertilizer is "sulphate of potash" (SOP) with the chemical formula  $K_2SO_4$ . To be able to compare these products the grade of potassium products is usually expressed in  $K_2O$  (potassium oxide, the conversion factor for KCI to  $K_2O$  is 0.6317). Due to the presence of chloride potash bearing minerals as well as sulphate of potash bearing minerals the grade of the resources has been shown as both KCI and  $K_2O$ .

All of the potash minerals contained within the Colluli deposit can, in principle, be used for the production of MOP as well as SOP based fertilizers. In addition, the mineral Kieserite (MgSO4 x H2O) occurs in significant amounts predominantly with the Carnallite mineralisation which is favourable for SOP production. The production of SOP and other potassium-magnesium products from the extensive Carnallite and Kainite resources will be important for the long term expansion of the Colluli production base. The current definitive feasibility study will consider multiple product streams to a scoping study level including the abovementioned commodities and determine the most economic mining, processing and expansion scenarios for the long term.



### **Resource Classification**

The Report classifies the potash mineralisation in terms of Measured, Indicated and Inferred resources as defined by JORC Code and NI 43-101 in CIM (2005, /9/). This reflects the level of confidence of the extent and grade of the identified potash mineralisation. In the opinion of the authors of the Mineral Resource Estimate, resource categories for the Colluli Deposit are as follows:

- Measured resources in a radius of 300m of an investigated drill hole;
- Indicated resources in a radius of 750m of an investigated drill hole, minus any Measured resources in this area; and
- Inferred resources in a radius of 1,500m of an investigated drill hole, minus any Measured and Indicated resources in this area (Figure 1).

The rationale for these radii is that within the evaporites of the Danakhil Depression correlation of potash members is straightforward however local disruptions do occur. For this reason the confidence radii has not been extended beyond the faults defining the shallow resource blocks. At the Colluli deposit the geometry and the continuity of the potash layers within the evaporites has been interpreted with diamond drilling results and a detailed gravimetric survey. The results of the drilling campaign show a near perfect correlation of the potash layers and marker beds between the diamond drill holes.

## Grade Cut-offs

The Sylvite resource is high grade and comprises (114.60Mt @ 28.56% KCl or 18.04% K2O for 32.69Mt KCl or 20.65Mt K2O). A sample is part of the resource if the KCl grade of the sample is > 15%, or when the average grade of all samples reaching up to 1.5m below and 1.5m above the sample have an average Sylvite grade of >12%. If no samples with Sylvite content >15% are present above the sample, this sample is taken as top of the deposit. A drill hole is considered to have a Sylvinite Member as part of the resource, if a minimum thickness of 30 cm with on average over 20% KCl can be defined.

The Upper Carnallite resource comprises (13.74Mt @ 18.95% KCl or 11.97% K2O for 2.61Mt KCl or 1.65Mt K2O). A sample is part of the resource if the KCl grade of the sample is >10%, or when the average grade of the sample above and below are above 10%. The cut-off grade towards the underlying Bischofite Member is when the sample has MgCl2 content, which is over 35%. A drill hole is considered to have an Upper Carnallite Member as part of the resource, when over at least 30cm of core the Carnallite content is above 40% and Bischofite content is below 10% or equivalent K2O and MgSO4 content in a different mineralogy.

The Lower Carnallite resource comprises (295.08Mt @ 12.01% KCl or 7.59% K2O for 35.44Mt KCl or 22.39Mt K2O). A sample is part of the resource when the Carnallite content summed with the Kieserite content is above 60%. A drill hole is considered to have a Lower Carnallite Member as part of the resource when the sum of Carnallite and Kieserite is above 60% with < 10% of Bischofite or equivalent K2O and MgSO4 content in a different mineralogy.

The Kainite resource comprises (596.56Mt @ 19.77% KCl or 12.49% K2O for 117.94Mt KCl or 74.51Mt K2O). A sample is considered part of the Resource when the Kainite content is above 30%. A drill hole is considered to have a Kainitite Member as part of the resource when the Kainite content is on average above 50%.

### ##JORC Compliance Statement – Exploration Target

The current Mineral Resource Estimate is included in the current exploration target of 1.25 – 1.75 billion tonnes @ 18-20% KCI. The potential quantity and grade of the current exploration target is conceptual in nature and there has been insufficient exploration to define a Mineral Resource other than the current Mineral Resource Estimate and it is uncertain if further exploration will result in the determination of a Mineral Resource Estimate other than the current Mineral Resource Estimate.





Figure 1: Colluli Project JORC/43-101 Compliant Mineral Resource Estimate Plan.



#### **Investor Coverage**

Recent investor relations, corporate videos and broker/media coverage on The Company's projects can be viewed on the website in the "Media Centre" and "Investor Centre" sections by following the links www.southbouldermines.com.au and www.abid.co.

#### About South Boulder Mines Ltd

Listed in 2003, South Boulder Mines (ASX: STB) is a diversified explorer focused on potash, nickel and gold. South Boulder has a 90% interest in the Colluli Potash Project in Eritrea and a 100% interest in the Duketon Gold Project in Western Australia.

The Colluli Potash Project has a current JORC Compliant Measured, Indicated and Inferred Mineral Resource Estimate comprised of 261.81Mt @ 17.94% KCl or 11.33% K<sub>2</sub>O of Measured Resources, 674.48Mt @ 17.98% KCl or 11.36% K<sub>2</sub>O of Indicated Resources and 143.50Mt @ 18.00% KCl or 11.37% K<sub>2</sub>O of Inferred Resources for a total of 1,079.00Mt @ 17.97% KCl or 11.35% K<sub>2</sub>O (total contained potash of 194.09Mt KCl or 122.61Mt K<sub>2</sub>O); **This includes higher grade Sylvinite of 114.60Mt @ 28.56% KCl or 18.04% K<sub>2</sub>O**. The current resource is included in an exploration target of 1.25 – 1.75 billion tonnes @ 18-20% KCl ## (see disclaimer below).

An engineering scoping study for the production of 1Mt p.a. of potash demonstrated an estimated capital cost of US\$0.74bn generating a Pre-tax NPV<sub>12</sub> of US\$1.33bn. A Definitive Feasibility Study into open pit mining and processing of the resource is underway with initial production scheduled for 2016 or sooner. South Boulder has strong support from the Eritrean Government to build a long term, economically and environmentally sustainable resource project.

Within the Duketon Gold Project area, South Boulder entered a farm-out Joint Venture (JV) Agreement with Independence Group NL, whereby Independence can earn a 70% interest in the nickel rights on JV tenements held by South Boulder in the Duketon Project, by the completion of a Bankable Feasibility Study within 5 years of the grant of the relevant tenement.

#### About the Duketon Nickel Joint Venture

The Duketon Nickel Joint Venture (DNJV) has had recent success at The Rosie and C2 Nickel sulphide prospects where drilling has defined intercepts of *5.20m* @ *9.2% Ni*, *1.09% Cu*, *0.21% Co and 7.09g/t PGE's at Rosie and 50m* @ *0.92% Ni including 37m* @ *1.05% Ni at C2*. The deposits are located approximately 120km NNW of Laverton, W.A in the Duketon Greenstone Belt. The deposits are approximately 2km apart and the mineralisation at both prospects is considered open in most directions. A Mining Lease was granted over the Rosie and C2 deposits on the 19<sup>th</sup> of November. A Maiden JORC Compliant Mineral Resource Estimate has been compiled for the Rosie deposit; please refer to the Company's 25<sup>th</sup> January 2012 ASX Announcement for details.

#### More information:

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| Lorry Hughes          | Kerry Rudd          | Liam Cornelius     | Flavio Garofalo | Dr. Chris Gilchrist |
|-----------------------|---------------------|--------------------|-----------------|---------------------|
| CEO/Managing Director | Executive Assistant | Executive Director | CFO             | Non-Exec Director   |

#### ## Competent Persons and Responsibility Statement

The Colluli Potash Project has a current JORC/NI43-101 Compliant Measured, Indicated and Inferred Mineral Resource Estimate of 1,079.00Mt @ 17.97% KCl or 11.35% K<sub>2</sub>O (total contained potash of 194.09Mt KCl or 122.61Mt K<sub>2</sub>O). The resource contains 261.81Mt @ 17.94% KCl or 11.33% K<sub>2</sub>O of Measured Resources, 674.48Mt @ 17.98% KCl or 11.36% K<sub>2</sub>O of Indicated Resources and 143.50Mt @ 18.00% KCl or 11.37% K<sub>2</sub>O of Inferred Resources. The current Mineral Resource Estimate is included in the current exploration target of 1.25 – 1.75 billion tonnes @ 18-20% KCl. The potential quantity and grade of the total current exploration target which includes the current Mineral Resource Estimate is conceptual in nature and there has been insufficient exploration to define a Mineral Resource other than the current Mineral Resource Estimate.

This ASX release has been compiled by Lorry Hughes using information on exploration results and Mineral Resource estimates supplied by South Boulder Mines Ltd under supervision by Ercosplan. Dr Henry Rauche and Dr Sebastiaan van der Klauw are co-authors of the JORC and NI43-101 compliant resource report. Lorry Hughes is a member in good standing of the Australian Institute of Mining and Metallurgy and Dr.s' Rauche and van der Klauw are members in good standing of the European Federation of Geologists (EurGeol) which is a "Recognised Overseas" Professional Organisation" (ROPO). A ROPO is an accredited organisation to which Competent Persons must belong for the purpose of preparing reports on Exploration Results, Mineral Resources and Ore Reserves for submission to the ASX.

Mr Hughes, Mr Rauche and Mr Van Der Klauw are geologists and they have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they have undertaken to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Hughes, Mr Rauche and Mr van der Klauw consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### Quality Control and Quality Assurance

South Boulder Exploration programs follow standard operating and quality assurance procedures to ensure that all sampling techniques and sample results meet international reporting standards. Drill holes are located using GPS coordinates using WGS84 Datum, all mineralisation intervals are downhole and are true width intervals. Assay values are shown above a cut-off of 6% K<sub>2</sub>O. The samples are derived from HQ diamond drill core which in the case of carnalitie ores are sealed in heat sealed plastic tubing immediately as it is drilled to preserve the sample. Significant sample intervals are dry quarter cut using a diamond saw and then resealed and double bagged for transport to the laboratory. Halite blanks and duplicate samples are submitted with each hole. Chemical analyses were conducted by Kali-Umwelttechnik GmBH Sondershausen, Germany utilising flame emission spectrometry, atomic absorption spectroscopy and ionchromatography. Kali-Umwelttechnik (KUTEC) Sondershausen have extensive experience in analysis of salt rock and brine samples and is certified according by DIN EN ISO/IEC 17025 by the Deutsche Akkreditierungssystem Prüfwesen GmbH (DAR). The laboratory follow standard procedures for the analysis of potash salt rocks • chemical analysis (K+, Na+, Mg2+, Ca2+, Cl-, SO42-, H2O) and • X-ray diffraction (XRD) analysis of the same samples as for chemical analysis to determine a qualitative mineral composition, which combined with the chemical analysis gives a quantitative mineral composition.

