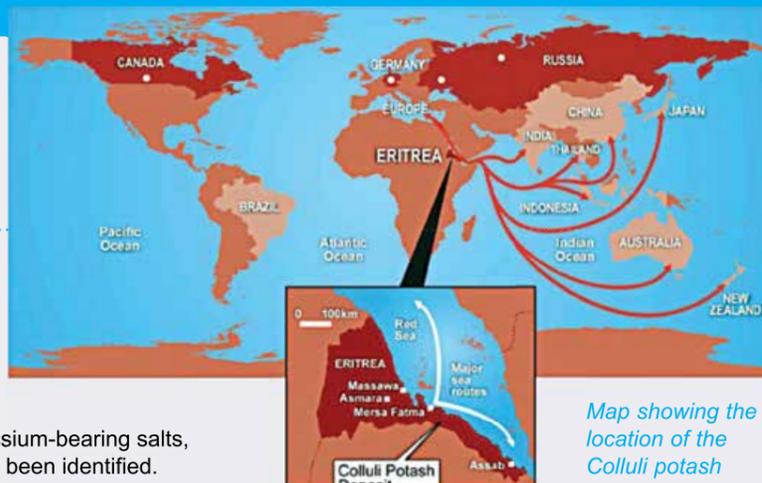


South Boulder Mines

Project name: Colluli
Project location: Danakil Desert, Eritrea
Commodity / resources: potash

Company summary

South Boulder Mines (ASX:STB) is focused on the development of the Colluli Potash Project in Eritrea, East Africa. The project covers an area of about 400sq km and is held in a 50:50 joint venture with the Eritrean National Mining Company (ENAMCO). Since exploration started in 2010, more than 1000Mt of potassium-bearing salts, suitable for the production of potassium sulphate, have been identified. Potassium sulphate has limited production centres around the world and Colluli is a major potential new low-cost source. The pre-feasibility study is due for completion in February 2015.



Map showing the location of the Colluli potash deposit and routes for export



South Boulder exploration team on the Colluli site

Board of directors and management:

- > Seamus Cornelius, Non-Executive Chairman
- > Paul Donaldson, Chief Executive Officer & Managing Director
- > Tony Kiernan, Non-Executive Director
- > Liam Cornelius, Non-Executive Director

“Critically, according to Donaldson, previous Colluli studies did not assess the economic potential of lower-layer material”

A world-class potash resource, A-grade development team

The Danakil Depression saddling the Eritrea-Ethiopia border in east Africa is an emerging potash province, which compares favourably with other international potash belts in terms of size, resource depth and environmental considerations. More than 4200Mt of measured and indicated potassium salts have been outlined across the Danakil to date.

The Colluli project has a distinct geographical advantage in that it is the closest potassium sulphate resource to the coast globally.

South Boulder has a highly regarded management team led by Paul Donaldson, who became chief executive officer early in 2013. Before joining South Boulder, he worked in a series of senior management roles spanning more than 20 years with BHP Billiton, most recently as General Manager of the plus-50Mt/y Area C Iron Ore operation in Western Australia.

Donaldson was also formerly manager of BHP Billiton's technical marketing group based in Asia, contributing to both

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product suite and product placement strategies for coking coal, manganese and iron ore. He has worked as Manager of Port Operations at the Nelson Point Facility in Western Australia, and ran business improvement, logistics and information technology at the Cannington underground mine in central Queensland.

On taking the reins at South Boulder, Donaldson set about forming a top team of specialists to work on Colluli, including AMC Consultants, Lycopodium, Knight Piesold, the Saskatchewan Research Council, PRDW and MBS Environmental.

Fresh strategic focus

A new strategic focus and the input of this crack team led to an overhaul of the previous project blueprint, setting the venture on a new development course.

Previous studies focused only on the production of potassium chloride. The initial scoping study, ESS1, considered production of 1Mt/y of potassium chloride from sylvinitite, the most commonly used mineral for the production of potassium chloride. The study gave a forecast mine life of approximately 17 years, and consumed only 16% of the potassium bearing salts.

The resource is dominated by kainitite, a potassium salt which also contains sulphur. Utilising the kainitite not only results in a lower strip ratio and therefore lower mining costs, it provides the opportunity to produce a premium fertiliser product, potassium

sulphate. Kainitite is the most commonly used potassium salt for the production of potassium sulphate, and typically exists in brine form. The Danakil region is one of only three areas globally where the kainitite salt exists in solid form. This eliminates the need for large solar evaporation ponds to form harvest salt prior to production, thereby reducing the overall footprint, reducing processing water requirements and improving production.

Following a comprehensive review of processing options focusing on full resource utilisation, South Boulder Mines initiated a pre-feasibility study for the production of potassium sulphate from all salts in the Colluli resource in February. The review identified scope to materially reduce the overall mining strip ratio from about 6.4:1 to around 2.5:1, slashing mining costs from A\$122/t of product to less than \$70/t of product.

Fundamentally, the process combines potassium chloride produced from sylvinitite, with processed kainitite. This results in an ambient temperature chemical conversion to potassium sulphate. The process is believed to be the lowest-energy, highest-potassium yield route to potassium sulphate. In October, South Boulder announced that it had successfully produced potassium sulphate at the Saskatchewan Research Council, using the simple process design.

Critically, according to Donaldson, previous Colluli studies did not assess the economic potential of lower-layer material. He said it was clear from the processing options identified that blends of upper and lower layer materials not only reduced mining costs, but also generated higher-value products, specifically potassium sulphate (SOP) which achieved a substantial price premium relative to potassium chloride. Currently, potassium sulphate achieves a price almost US\$400/t over potassium chloride.

“A key differentiator of the Colluli resource is the fact that the salts are in solid form from the outset. Other potassium sulphate

producers have to evaporate potassium-rich brines to get to these salts; to produce what's called a harvest salt. The brines effectively start with about 5kg of potassium per tonne of water. That water needs to be removed, typically by evaporation, whereas all the evaporation's done for our resource.

“There are only three areas in the world that kainite salt is present in appreciable amounts in solid form: Ukraine, where mining has stopped; Sicily, where mining has stopped; and then the Danakil basin, which is unexploited. The salts in solid form are a big plus.

“In terms of information that is in the public domain, this appears to be the biggest potassium sulphate resource. There's over 200Mt of potassium sulphate in this resource. The next closest is about 40Mt.”

In the early studies, requisite consideration was not given to the balance between what the resource can potentially deliver, the processing route(s) required, and the operating cost benefits that may be achieved with full consideration of the operating environment (eg. The Danakil Depression is a favourable environment for evaporation).

The revised study has looked at the total resource to determine the best economic outcome, and has embraced the strengths of the operating environment in the processing design.

PFS progressing well

The pre-feasibility study work is well advanced and is supported by highly favourable metallurgical testwork results.

Environmental baseline submissions began in August 2014, and infrastructure and mine geotechnical drilling was completed in October. As part of the pre-feasibility work, South Boulder plans to determine the most appropriate module size that balances risk, fundability and economic return.

This will enable the DFS to resume and be quickly completed, with a target of mid-2015 for delivery.

Investment highlights

- > Large, high-grade potassium bearing resource close to surface in an emerging potash province.
- > Close proximity to coast and geographically favourable relative to key markets.
- > Unique combination of salts suitable for low cost production of potassium sulphate (SOP or sulphate of potash).
- > Low capital intensity project
- > Premium potash fertiliser (sulphate of potash)
- > Strategic national project in JV with Eritrean National Mining Company, ENAMCO

Overview of Colluli

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