



AmericanPacific

BORATE & LITHIUM
LIMITED

ASX Announcement

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27 June 2018

American Pacific Borate Working on Reducing Opex and Increasing Revenues at Flagship Fort Cady Borate Project

- **Onsite testworks progressing positively with boric acid being recovered from the commercial scale cavern**
- **Opex per tonne of boric acid is expected to be reduced with an optimised design philosophy and better than expected heat retention within caverns**
- **Sale of by-product gypsum into large Californian market likely to increase revenue whilst reducing tailing pond capex and opex. Likely to result in an operation with minimal waste products**
- **Discussions are progressing with Californian gypsum wholesalers with product expected to generate a premium price given high micro nutrient levels**
- **Air Quality permit application to be lodged in coming weeks to enable commencement of construction, subject to financing**
- **Definitive Feasibility Study (“DFS”) on track for completion in 2H of CY18**

American Pacific Borate and Lithium Limited (ASX:ABR) (“APBL” or the “Company”) is pleased to provide an update on progress in commercialising its 100% owned Fort Cady Borate Project (the “Project”) in Southern California, USA.

The commercial scale cavern testworks are progressing positively with boric acid being recovered. Value engineering design alterations being prepared as part of the DFS program are showing the ability to reduce pre by-product credit opex by around 10% per tonne of boric acid. This reduction in opex will be achieved through the addition of cogeneration to decrease energy costs, solvent extraction and the flow through reduction of a set of crystallisers. The resulting process plant will also allow for a wider range of boric acid head grades.

In parallel with ongoing testworks, the Company is exploring options to sell by-product gypsum into the large Californian agricultural market, with the US gypsum soil amendment market initially estimated at US\$30m to US\$40m per annum by the Company’s US based fertiliser consultants, Context Inc. The sale of by-product gypsum will result in minimal waste products from the operations.

COMPANY DIRECTORS

Harold (Roy) Shipes – Non-Executive Chairman

Michael X. Schlumpberger - Managing Director & CEO

Anthony Hall - Executive Director

Stephen Hunt -Non-Executive Director

John McKinney – Non-Executive Director



ISSUED CAPITAL

169.8 million shares

17.9 million options

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American Pacific Borate and Lithium, CEO, Michael Schlumpberger commented:

“We are very pleased with the progress of the onsite testworks. We are also pleased with the initial results of the value engineering program as part of our DFS showing we can reduce opex by around 10% whilst providing for a wider range of head grades.

In addition we now believe that we can sell by-product gypsum into the Californian market which will increase by-product credit revenue and reduce capex and opex associated with tailings facilities. We are now in an exciting position to be targeting an operation that produces minimal waste products.”

Onsite Testworks Progress

The Company’s onsite testworks and bulk sampling program is on-going and designed to:

1. Test the Scoping Study flowsheet (Refer ASX Release of 27 December 2017);
2. Obtain bulk samples for equipment sizing, to progress detailed engineering in preparation for the start of construction, and
3. Obtain product samples to provide to potential customers and partners.



Figure 1. On site infrastructure for current commercial scale cavern testworks at Fort Cady

The onsite testworks build on the lab testworks completed in December 2017. These testworks demonstrated that by heating the brine to be pumped underground it was likely to lead to a higher head grade and better recoveries. This was consistent with commentary from previous Fort Cady operations.

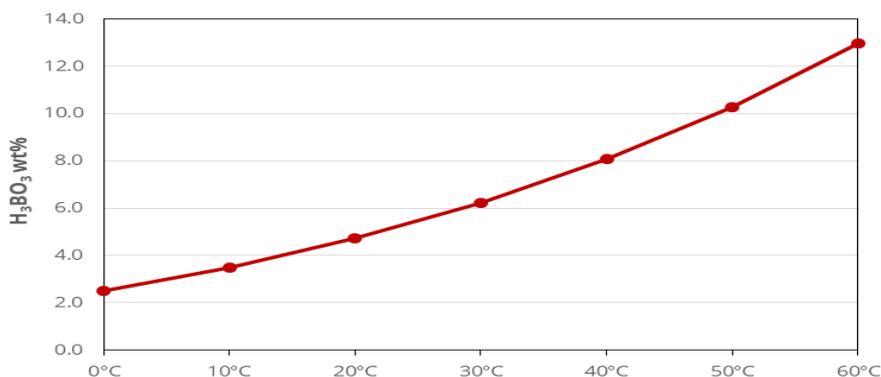


Figure 2: Boric acid solubility curve v temperature



Recently located historical records from Mountain State Minerals that produced boric acid on site in 1986 and 1987 has shown the operations achieved an average boric acid head grade of 3.7% without heating injection fluids, recirculating pregnant liquor solution (**PLS**) to boost recoveries or utilising waste water containing residual boric acid. This historical information is important as Mountain State Minerals was using the same injection fluids the Company is proposing to use.

With the change in design philosophy to construct a more flexible plant and the likely redesign of the process plant to provide for a wider range of boric acid head grades (from 4% to 9% boric acid), the Company now needs to demonstrate it can increase the 3.7% head grade achieved by Mountain State Minerals to only 4% by heating injection fluids, recirculating PLS and utilising waste water containing residual boric acid.

With onsite testworks ongoing for seven weeks the Company is pleased to report:

1. It has been able to establish connectivity between caverns with the Company pumping PLS from a historic cavern adjacent to the current test cavern;
2. The ore body has retained more heat than expected thereby reducing the likely cost of heating of injection fluids, and
3. After pushing deeper into the current test cavern to limit connectivity with the historic cavern, the boric acid recovery (head grade) in the PLS is progressively building in line with Company expectations and historic operations.

Process Plant Value Engineering

As part of the DFS program the Company has been working on a value engineering workstream with its US based consultants, Barr Engineering, with a view to designing a process plant that caters for a wider range of boric acid head grades whilst simultaneously seeking to reduce pre by-product credit opex.

Initial design work has yielded positive results with the potential to reduce pre by-product credit opex by around 10% per tonne of boric acid produced. The revised process plant design would see the inclusion of a cogeneration plant with gas as the input to reduce energy costs; the inclusion of solvent extraction to enable a wider range of head grades to be processed; whilst enabling the reduction of a set of crystallisers. This revised flow sheet is currently being incorporated in the DFS, expected to be released in the second half of the current calendar year (2H, CY18).

Gypsum Market Opportunity

With the recirculation of waste water from boric acid production, the only waste product is gypsum. The Company currently has a 16-acre tailings facility approved under its mining permit for the storage of this waste product.

Gypsum, as an agricultural product, is generally applied to soils in areas where sodium levels are high to neutralise the effect of sodium on crops. It is also applied in areas where calcium levels are low, or to crops that require calcium for their growth like tomatoes and peanuts. Acid soils require the addition of calcium to maintain optimum pH ranges of between 5.8 and 6.2 to produce most field crops.

Gypsum is also widely used in the construction of walls and ceilings in the construction industry. Boron based gypsum improves product performance, user convenience and process efficiency.

Recent positive discussions with local gypsum suppliers have been encouraging and suggest the Company should be able to sell gypsum into local markets and its enriched boron gypsum will be highly sought after.



Added to this, an initial U.S. market size has been estimated by the Company's US based fertiliser market consultants, Context Inc, to be between US\$30m and US\$40m per annum.

The Company is currently progressing offtake discussions with local suppliers and understands that retail gypsum sells from the gate for over \$350 / tonne in Orange County, California. Context Inc has provided initial guidance for 90k tonnes per annum into the Californian market of between US\$30 and US\$75 per tonne. This is particularly positive given gypsum production is likely to mirror boric acid production, and the Company had a cost of \$5 / tonne in its Scoping Study to move the gypsum waste to tailings dumps. Any sale of gypsum also has the additional benefit of reducing capex associated with tailings facilities.

Given the above, any sale of gypsum would materially benefit Project metrics.

Speciality Fertiliser Market Target

The Company's recently commissioned study by US based Context Inc into US micronutrient markets for boron and SOP has been completed. The key finding is boron is the second most used micronutrient by value and that its annual micronutrient value is expected to grow by a strong 9% compounded annual growth rate (CAGR) through to 2022.

This study reinforces the Company's North American specialty fertiliser market target and its view that its boron fertiliser, and its boron enriched gypsum, will be sought after in local Californian markets and wider US domestic markets.

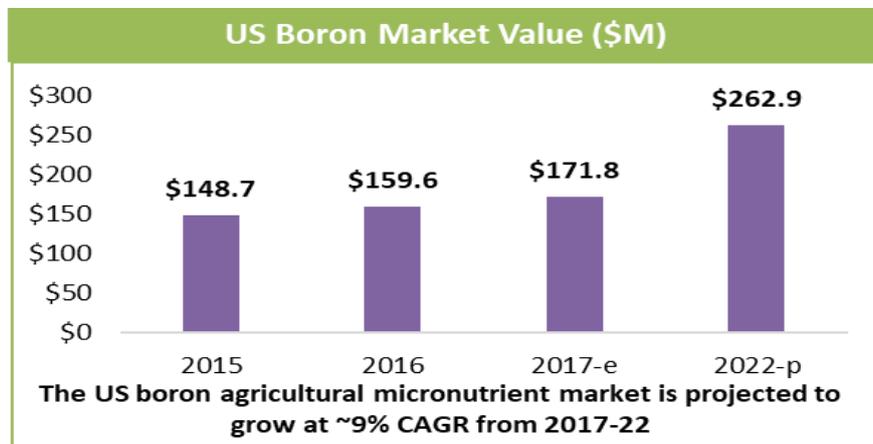


Figure 3. Graph showing estimates of US boron market value for use as a micro nutrient

Permitting Process

In order to commence construction, the Company requires the reinstatement of the previously held air quality permit. In order to commence production, a water related permit must be obtained.

The Company is in the final stages of preparing its air quality permit application. It expects this to be lodged over the coming weeks. The Company has been advised the permitting process should take between four and six months.

If this is correct, the Company would be in a position to commence construction by the end of CY18.

The formal water related permit application is expected to be lodged in Q4 2018. This permit application cannot be lodged until initial pond designs and related hydrological studies have been completed. The Company has been advised by retained legal counsel that this process should take between six to eighteen months from lodging.



Importantly, discussions are ongoing with relevant referral authorities with respect to both the air and water permits.

The Company is currently seeking to be fully permitted by mid CY2019 and in a position to commence construction shortly thereafter, subject to financing.

Existing Permits

The Company's Fort Cady Borate Project currently has the two key mining permits in effect. These permits are known as the:

1. Plan of Operations and combined Environmental Impact Statement and Environmental Impact Report (issued by the Department of the Interior, Bureau of Land Management); and
2. Mining Conditional Use permit and Approved Reclamation Plan (issued jointly by the San Bernardino Land Use Services Department and the California Department of Conservation, Office of Mine Reclamation)

The Environmental Impact Statement and Report considered the following:

The proposed action consists of the construction and operation of a borate production mine and process plant with the capability of producing 90,000 tons per year of borate product. The proposed facility would employ in-situ mining technology to mine an ore body containing colemanite, a boron-bearing, hydrous oxide ($\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$) mineral. The recovery of boron from the colemanite mineral would be accomplished by injecting a weak acid solution (no more than five percent hydrochloric acid, sulfuric acid, or a mixture of both in a water solution) into the ore body. The acid would react with the alkaline nature of the ore body to recover a mixture of borate product and calcium chloride, which would be dissolved in solution as products of the chemical reaction. This solution would be withdrawn from the well and pumped to the process plant where borate crystals would be precipitated. The remaining formation would be a porous matrix of clays and insoluble minerals. The void space that would result from the leaching process would constitute less than 12 percent of the formation, and the void space would ultimately contain water, therefore subsidence is not expected to occur.

Under the Plan of Operations the mine is expected to operate for around 130 years with the following components:

- A 273 acre well field that would ultimately be comprised of up to approximately 200 wells;
- A 10 acre process plant
- A 16 acre gypsum deposition area
- Water pipelines, railroad spur and three access roads

Corporate

With the recent positive announcements of two strategic cooperation agreements with two Chinese State-Owned Enterprises ranked in Fortune 500's Global 500 list, the Company has started a process to source debt financing for the Project.

The Company has engaged a financing professional with deep debt capital markets experience to ensure the Company has the right resources to quickly progress the necessary financing work stream.

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About American Pacific Borate and Lithium Limited

American Pacific Borate and Lithium Limited is focused on advancing its 100%-owned Fort Cady Borate Project located in Southern California, USA (*Figure 1*). Fort Cady is a highly rare and large colemanite deposit with substantial lithium potential and is the largest known contained borate occurrence in the world not owned by the two major borate producers Rio Tinto and Eti Maden. The Project has a JORC mineral estimate of 120.4 Mt at 6.50% B_2O_3 (11.6% H_3BO_3 , boric acid equivalent) & 340 ppm Li (5% B_2O_3 cut-off) including 58.59 Mt at 6.59% B_2O_3 (11.71% H_3BO_3) & 367 ppm Li in Indicated category and 61.85 Mt @ 6.73% B_2O_3 (11.42% H_3BO_3) & 315 ppm Li in Inferred category. The JORC Resource has 13.9 Mt of contained boric acid. In total, in excess of US\$50m has historically been spent at Fort Cady, including resource drilling, metallurgical test works, well injection tests, permitting activities and substantial pilot-scale test works.

ABR expects the Fort Cady Project can quickly be advanced to construction ready status due to the large amount of historical drilling, downhole geophysics, metallurgical test work, pilot plant operations and feasibility studies completed from the 1980's to early 2000's. 33 resource drill holes and 17 injection and production wells were previously completed and used for historical mineral estimates, mining method studies and optimising the process design. Financial metrics were also estimated which provided the former operators encouragement to commence commercial-scale permitting for the Project. The Fort Cady project was fully permitted for construction and operation in 1994. The two key land use permits and Environmental Impact Study remain active and in good standing.

In addition to the flagship Fort Cady Project the Company also has an earn in agreement to acquire a 100% interest in the Salt Wells North and Salt Wells South Projects in Nevada, USA on the incurrence of the Company funding US\$3m of Project expenditures. Both projects are exploration stage projects that are considered prospective for borates and lithium in the sediments and lithium in the brines within the project area. Surface salt samples from the Salt Wells North project area were assayed in April 2018 and showed elevated levels of both lithium and boron with several results of over 500ppm lithium and over 1% boron.

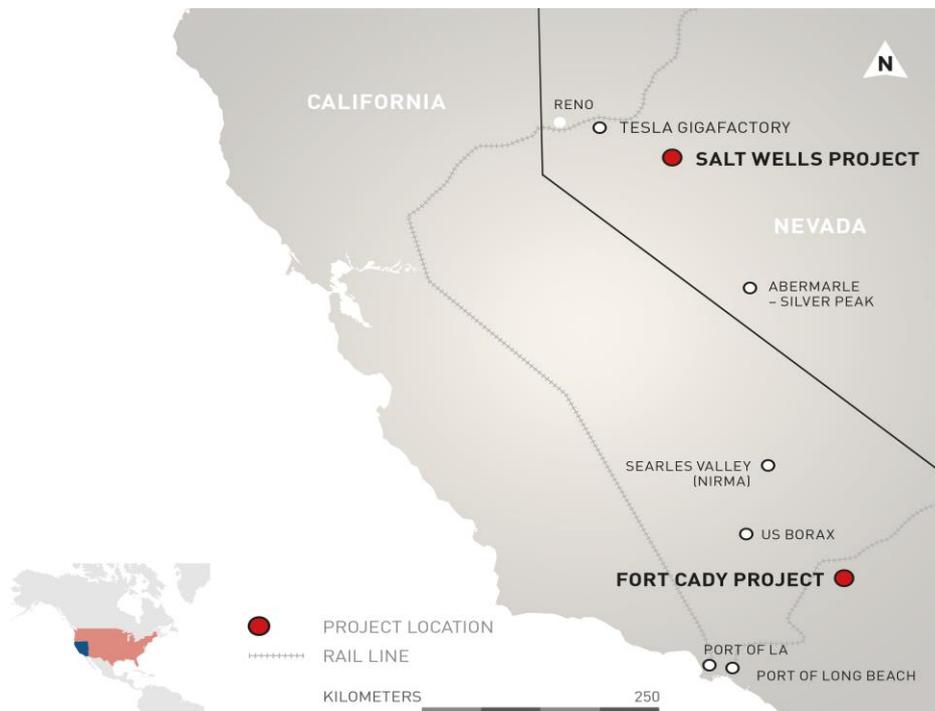


Figure 4. Location of the Fort Cady Project, California and the Salt Wells Projects, Nevada, USA