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Passport Potash to become Arizona's first potash producer

by Kathrine Moore

Five years ago, project generator, Daniel Bleak, was reviewing good projects that, due to slumping commodity prices, could be had for a bargain. He came across a report on the Holbrook potash deposit in Arizona. It fit all of his requirements; it had large reserves and it came with a wealth of data; In the 1960s and 1970s Arkla Exploration Company and Duval Corporation had drilled over 100 delineation holes. He beat other interested parties to the project by three hours.

Today, **Passport Potash Inc.** [PPI-TSXV] is moving the 100%-owned project ahead and Joshua Bleak, the company's president, a fourth generation miner and Daniel Bleak's son, is determined to see it become the first producer of potash in Arizona. Bleak says the goal is to have the project producing in three years. There were a few obstacles to overcome, Passport had exploration permits but no drilling permits. Bleak lobbied hard and his persistence paid off. The company has all the permits they need to complete their planned 2011 exploration program that includes developing a geological block model for the deposit using information gathered by conducting a 50-line mile seismic survey and drilling 15-plus exploratory holes, to a depth of 400 metres. The model and drill results will be used to prepare a NI 43-101 report to be prepared by SRK Consulting which the company expects to be completed this spring. The project is fully funded through to feasibility with an exploration budget of $3 million.

Though the project is three years away from production, given its scope, management estimates that it has the potential to produce 1–2 million tonnes of finished product annually. As the project is near surface the company also expects to benefit from lower production costs.

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Potash is the common name for various mined salts that contain potassium. It is mined from mineral deposits left by ancient evaporated seas; potassium salts crystallized into beds of potash ore that were eventually covered by thousands of feet of rock and overburden. Not only is there no substitute for potash, there are also very few economic potash deposits and only a few potash producers. The Holbrook basin, once in production, will significantly increase the US supply of potash.

Over 90% of potash produced is used as fertilizer. Potassium fertilizer makes for healthier crops by strengthening plant stalks and roots and making them less vulnerable to disease. In addition to improving yields, fertilizer allows farmers to produce more crops on less land. Without fertilizer, we would need significantly more farmland to produce the same amount food. As the world's population increases and the amount of available farmland decreases, it becomes imperative that farmland produces a maximum yield. It is estimated that the world's population will exceed 9 billion by 2050.

As well, growing economies in developing nations have already created an increased demand for food. As family incomes improve, so do their diets as they can afford to eat more protein and fresh produce. Crop yields are low in many areas and the use of fertilizer could dramatically improve crop production and promote animal growth and milk production.

The Holbrook deposit differs from most other potash deposits in that it is close to the surface; most potash deposits are thousands of feet below the surface. According to US Geological Survey estimates, most international potash resources are depths greater than 6,000 feet. The Holbrook deposit is considered shallow by industry standards, with deposits at depths of between 800 and 1,300 feet.

The property, that has land holdings encompassing over 70,000 acres, has several advantages going for it. The BNSF rail line borders it, it is situated close to Interstate 40, there is a major power plant nearby, it is 550 miles away from major shipping ports and the Arizona climate means work can be done year round.

Plans for the project include a conventional underground operation, possibly combined with in-situ mining. Passport Potash's website describes in-situ or solution mining as, "a process where multiple wells are drilled. One well is drilled down to the brine horizon and another as a

TOP: Drill core samples from Holbrook Basin potash deposit. Photos by Kathrine Moore.

RIGHT: Drill onsite at the Passport Potash's Holbrook Basin Project, Arizona.

return well. Hot water is then pumped down the first well dissolving the potash and other salts into a brine fluid that is then forced back up the return well into an evaporation pond. Water evaporates and the minerals condense for final processing. Solution mining has a much cheaper initial cost compared with traditional shaft mining and often allows access to deep deposits that may otherwise be cost prohibitive." An additional benefit of in-situ mining is that it has a minimum impact on the surface environment and leaves little signs once the well is capped.

The underground operation would utilize large electric machines to drill and excavate, cutting out the ore creating large tunnels. Traditional or shaft results in much higher recovery yield than can be obtained by solution mining.

Passport Potash has the expressed support of the surrounding communities. The company held an information event on the project property, March 14, where the public was invited to attend, learn about the project and ask questions. At the event, they learned that the project would take up ¼ square mile and that no chemicals would be used in the mining or milling process. The only resource the project requires is water, which is amply available on site in the form of brackish (salty) water in the aquifer, below the deposit. Allan Wells, mining engineer for Passport Potash explained how the drills holes will be collared and sealed to protect the integrity of the aquifer.

The property is situated near several communities and, at the event, Bleak was addressed a number of times by community representatives expressing their support for the project. Holbrook Mayor, Jeff Hill, expressed his support saying, "we have the infrastructure, we'll help you with whatever you need to get this project going." An individual, representing First Nations, stood to say, "We have a lot of available labour and excitement regarding this project and we welcome you here today. " Two men representing local business communities were in attendance and also expressed their support and willingness to help move the project forward.

On March 14, 2011 Passport Potash Inc. announced that it finalized a cooperative agreement with the Hopi Tribe stating that, "Portions of Passport's Holbrook Basin potash project are adjacent to land privately owned by the Hopi Tribe (not reservation land). The agreement sets up a cooperative arrangement between Passport and the Hopi Tribe, giving Passport access across the privately-owned Hopi lands to conduct exploration activities, while allowing the tribe to share in Passport's study results."

In terms of employment, once in production, it is estimated that the project will provide around 500 direct jobs and 1,000 indirect jobs. Bleak stated that the mine's positive economic impact on the community will be long term as the estimated mine life is easily 100 years. The Carlsbad potash deposit has been producing since the 1930s. People in the area are eager for the opportunities the project offers. "There is nothing else going on here," said a business owner and attendee at the March 14 information event. "Things have only gotten worse since the recession." There doesn't seem to be much in the way of Passport Potash becoming Arizona's first producer of potash.

Passport Potash has 106 million shares issued and $7.5 million in the treasury. ■