POSEIDONNICKEL



30th March 2015

Poseidon Completes Purchase of Black Swan

Highlights

- Poseidon has taken full operational control of the Black Swan nickel project from Norilsk
- Project includes the Black Swan processing plant, Black Swan open pit mine, Silver Swan underground mine and stockpile of 1.6m tonnes of mined ore containing 178,700 tonnes of nickel metal
- The concentrator plant was expanded in 2006 and closed in 2009 due to the impact of the financial crisis
- Poseidon now has the 2nd largest nickel sulphide processing capability in Australia with its Black Swan and Lake Johnston projects



Poseidon Nickel Limited (ASX:POS) is pleased to announce that it has taken full operational control of the Black Swan nickel operation from OJSC MMC Norilsk Nickel ("Norilsk"). This follows announcement of the acquisition in 2014 which was then subject to legal completion activities.

The acquisition of the project brings with it the Black Swan nickel sulphide concentrator plant, the Black Swan sulphide ore open pit mine and the Silver Swan underground mine. The processing plant was extensively upgraded and expanded in 2006 and was put on care and maintenance in February 2009 during the financial crisis. The plant has a proven throughput capacity of 2,150,000 tonnes per annum of ore.

David Singleton, Managing Director and CEO said, "This project, when in production, mined the highest nickel grade ore in the world at Silver Swan and today includes a very substantial resource. We have already completed and announced the results of the resource upgrade and restart feasibility study for the project in late 2014 (see ASX announcements). Whilst our short term focus remains on our Lake Johnston and Windarra projects, we will now commence further work intended to lead towards the reopening of the mine."



Figure 1: Location of Black Swan/Silver Swan Nickel Operation

Whilst the transaction has been completed, there remains an unresolved historic mortgage transfer at Black Swan that is currently in the name of Norilsk and needs to transfer to Poseidon. This transfer will now be dealt with as a condition subsequent to the transaction. This outstanding issue does not prevent Poseidon from undertaking its activities or restarting the mine whilst the parties continue to satisfy this remaining condition.

In August 2014, Poseidon published the results of an engineering study into the restart of Black Swan using a configuration that also allowed for the processing of ore from Poseidon's other operation at Windarra. Some of the key outcomes from the study are listed below:

- Cash cost of US\$4.05/lb
- Initial operating life for both mines of circa 7 years
- Production 9,600 tonnes nickel in concentrate per annum
- Capex of A\$12.8m for Black Swan only, excluding working capital

Process plant and associated facilities

The current nickel concentrator at Black Swan was built to enable an increase in processing capacity for the Silver Swan underground mine and the Black Swan open pit mine and successfully operated for over 24 months demonstrating both its design capacity and reliability in operation. The plant was designed by Lycopodium who managed construction activities undertaken by Roche Mining and GR Engineering senior staff who were part of the construction team (see Figure 2 Process Flow Diagram). The plant design is ideally suited to processing Windarra style nickel ore as well as Black Swan Ore which has been confirmed by the work completed to date.

The process plant is shown in figures 2-5 below and comprises of the following major components:

- Single stage jaw crushing circuit (Figure 3)
- Two stage grinding through a 4.8MW SAG mill in a closed circuit with 185kW Terex gyracone pebble crusher and a 5.5MW ball mill (Figure 4)
- Multi stage flotation circuit (Figure 5)
- Concentrate and tailings thickeners (Figure 6)
- Ceramic disc concentrate filters as well as concentrate storage and load out facilities
- Power from the main grid via two separate sub stations
- Single cell tailings storage facility with an estimated capacity of approximately 4 years before an additional wall lift is required
- Water from the Black Swan borefield and mine ingress water

The plant was designed to have the option to only use the SAG mill for operations which fits with the initial operating plans of 1.1m tonnes of throughput. The float cells can be reconfigured to the initial operating throughput and progressively brought back into operation as throughput is increased beyond that envisaged in this report.

GR Engineering has produced a detailed estimate of costs to refurbish the plant suitable for operations. This cost estimate was reviewed in line with the initial operating requirements and provided an estimated plant refurbishment cost of \$9.4m (including infrastructure)



Figure 2: Black Swan overall process flow diagram

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Figure 3: Black Swan primary crushing circuit



Figure 4: Black Swan grinding circuit





Figure 5: Black Swan flotation circuit



Figure 6: Black Swan concentrate thickener

Black Swan Geology^[1]

The Black Swan Komatiite Complex (BSKC) is a 3.5 km long by 0.6 km thick arcuate lens of olivine cumulate and spinifex textured thin flows. The complex is enclosed by a broad sequence of proximal facies intermediate felsic lavas and associated volcaniclastic rocks

situated on the NE dipping, NE facing limb of the Kanowna-Scotia anticline. The anticline is located in the upper greenschist – lower amphibolite facies Boorara Domain, one of six tectono-stratigraphic domains making up the Kalgoorlie Terrane.

The complex evolved as a series of episodically emplaced komatiite flows. The flows were channelised within a dynamic, coevally erupting calc-alkaline submarine environment, which resulted in the formation of several large felsic bodies (extrusive and intrusive) at various levels within the complex. Early during its evolution, massive and disseminated nickel sulfides accumulated in favourable locations on and adjacent to the basal contact of the complex. Post emplacement alteration, metamorphism and deformation was moderate to extreme and was responsible for the destruction of primary igneous textures throughout much of the complex but without significant structural reconstitution or geochemical modification of the nickel sulfides.

The Black Swan deposit (Figures 7 & 8) compromises serpentinite and surrounding talc magnesite and dolomite altered komatiites. The disseminated sulfides at Black Swan form between 2-10% of the host rock and are patchily distributed and less coherent than other members of the BSKC. They generally consist of composite grains of pyrite-millerite-magnetite±violarite in serpentinite areas with vaesite-polydymite becoming significant in the surrounding talc-carbonate altered rocks. Two textural sulfide types are recognised; fine grained interstitial composite grains between olivine pseudomorphs and coarse grained blebby or droplet composites. The fine-grained composites are more widely distributed defining a broad low grade mineralised envelope. The coarse grained composites are much less widely distributed, forming small discrete, higher-grade horizons within the envelope.

^[1] The Norilsk 2007, Gipronickel 2010a, Cas 2005 and Hicks 1998 reports contain extensive descriptions of the Black Swan geology. This was an edited extract from Hicks 1998.



Figure 7: Black Swan Disseminated (BSD) and Cygnet mineralisation with existing mining infrastructure and pit shell options



Figure 8: Cross sections of BSD and Cygnet disseminated ore occurrences including pit shell options

Nickel Sulphide	JORC Compliance	Ore Reserve Category											
		Probable											
Reserves		Tonnes (Kt)	Ni% Grade	Ni Metal t									
BLACK SWAN PROJECT													
Open Pit	2012	2,170	0.71	15,500									
Stockpiles	2012	1,190	0.49	6,000									
TOTAL													
Total Ni Reserves	2012	3,370	0.63	21,500									

Black Swan Reserve Table November 2014

Nickel Sulphide Resources	JORC Compliance	Cut Off Grade	Mineral Resource Category									
			Indicated		Inferred		TOTAL					
			Tonnes	Ni%	Ni Metal	Tonnes	Ni%	Ni Metal	Tonnes	Ni%	Ni Metal	
			(Kt)	Grade	t	(Kt)	Grade	t	(Kt)	Grade	t	
BLACK SWAN PROJECT												
Black Swan	2012	0.40%	8,400	0.70	59,100	20,700	0.54	111,900	29,100	0.59	170,900	
Stockpiles	2012	0.40%	1,200	0.49	5,900	400	0.53	1,900	1,600	0.50	7,800	
TOTAL												
Total Ni Resources	2012	0.40%	9,600	0.68	64,900	21,100	0.54	113,800	30,700	0.58	178,700	

Black Swan Resource Table August 2014

Notes

The information in this report which relates to the Black Swan Mineral Resource and Ore Reserves is based on information compiled by Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and Francois Bazin of IMC Mining Pty Ltd who are both Members of the Australasian Institute of Mining and Metallurgy.

Mr Weeks and *Mr* Bazin have sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code 2012)., Mr Weeks and Mr Bazin have consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

POSEIDONNICKEL

CORPORATE DIRECTORY

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Home Exchange

The Company's shares are listed on the Australian Securities Exchange and the home exchange is Perth ASX code: POS