

Corporate Directory

ASX Code: POS
Shares on Issue: 2,638M
Market Cap: ≈\$150M
Cash and equivalents at 30 June 2019
\$60.1M

Board of Directors

Non-Executive Chairman
Geoffrey Brayshaw

Non-Executive Directors
Felicity Gooding
Karl Paganin

Interim CEO
David Riekie

Joint Company Secretaries
Eryn Kestel
Brendan Shalders

Key Shareholders

Black Mountain Metals: 19.8%
Squadron Resources: 17.1%

Key Operating Nickel Assets (100%)

Black Swan/Silver Swan
Lake Johnston
Windarra

Principal & Registered Office

Unit 8 Churchill Court
331-335 Hay Street
Subiaco 6008
Western Australia

T: +61 8 6167 660
F: +61 8 6167 6649
E: admin@poseidon-nickel.com.au
W: www.poseidon-nickel.com.au

BLACK SWAN UNDERGROUND RC DRILLING UPDATE

16 SEPTEMBER 2019

HIGHLIGHTS

- **2,500m Underground RC Drilling program below the Black Swan open pit is progressing well, with eight holes (~50% of program) finished successfully**
- **Drill technique being used is a first for nickel in Australia and offers potential for Research and Development status and support**
- **Immediate benefit to Poseidon is that this RC technique overcomes Black Swan blebby sulphide “nugget effect” by increasing sample volumes much more efficiently than conventional drilling**
- **Assay results are due within 2-3 weeks**
- **Poseidon continues to work on the restart plan for nickel mining operations at Black Swan / Silver Swan**



Underground RC drill rig at Black Swan

Poseidon Nickel (ASX: POS, “the Company”) is pleased to announce the successful commissioning of a 2,500m underground RC drilling program from the Gosling Access Drive, 200m below the Black Swan open pit. The program commenced in August and has been designed with a research and development focus. It utilises a Cubex 5200, track mounted long-hole rig supplied by Metres Down Under with gyro survey support and development from Downhole Surveys.

The successful refining of this technology and drill method has the strong potential to provide a more efficient alternative to exploration diamond drilling in the underground environment. In particular it allows for the recovery of large samples for statistical and metallurgical purposes whilst having the flexibility to drill in any direction up or down. The process is anticipated to confirm the added benefit of reducing the number of drill-holes required, improved cost structure and overall program flexibility.

Earlier this year Poseidon successfully located high-grade blebby disseminated sulphides 900m below the Black Swan open pit. The aim of that particular program was to provide information on the continuation of the Black Swan mineralisation at depth and to obtain core for metallurgical testing. Hole PBSD001A intersected 223m @ 1.02% nickel in an interpreted hangingwall position of the deposit (see ASX announcement 6 May 2019 “Successful Phase 1 Drilling Under Black Swan Open Pit”).

Aided with these historical drilling results (from both surface and underground into the Black Swan Deposit below the open pit) Poseidon was able to establish the potential for geological continuity of mineralisation from the base of the current pit to the new intersections 900 meters below (Figure 1).

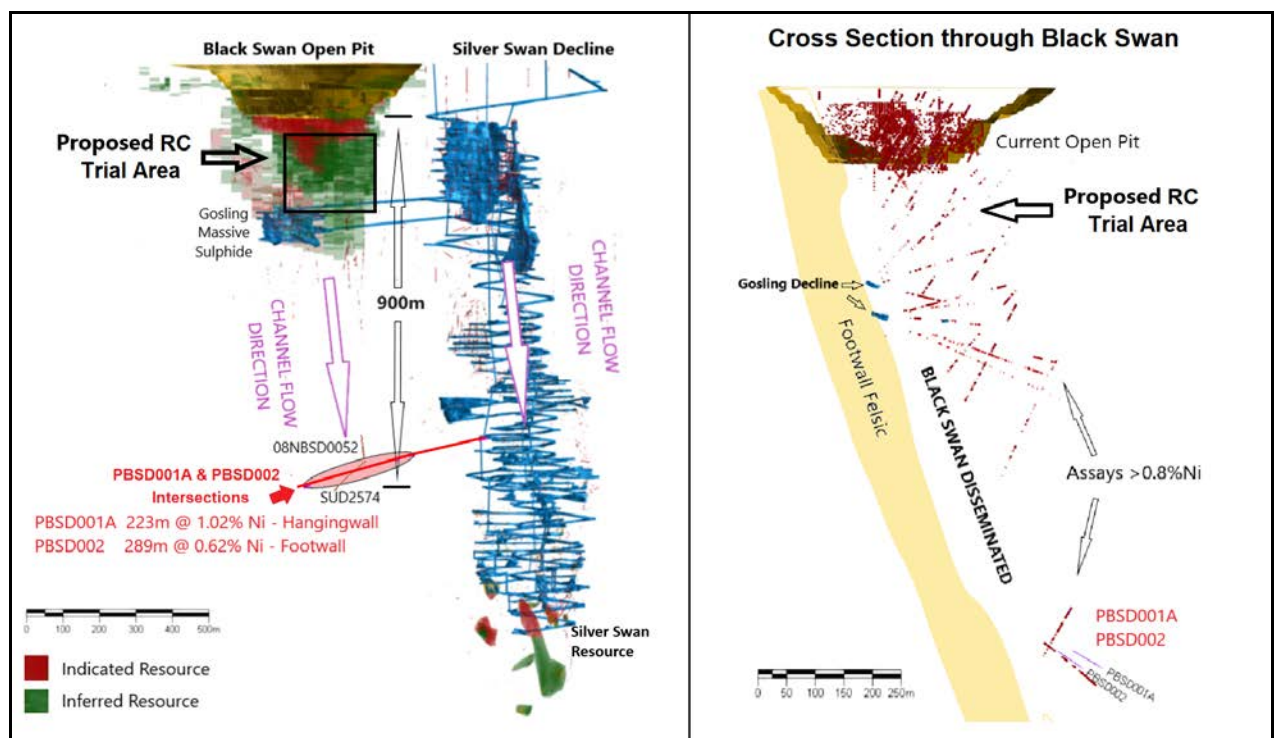


Figure 1 - Deep diamond intercept in relation to historical drilling and the Black Swan open pit. The RC trial area lies directly below the open pit.

Due to what is known in the industry as, “nugget effect” (a phenomena caused by large, blebby nickel sulphides), there is a need to increase the diameter of a drill hole so that the impact of this feature is reduced, thus improving the representativeness of samples. Diamond core holes are smaller in diameter to RC holes, and are not considered of adequate volume to accurately define the extent or grade of mineralisation, without vastly increasing the number of diamond holes required and the associated cost. Historical drilling below the open pit consisted exclusively of diamond core and therefore historical understanding of potential below the pit remained nebulous. Poseidon envisages the new application of RC drilling to the Black Swan nickel deposit will improve our level of understanding of the deposit.

Technical Summary

The Company has chosen to utilise a long-hole drilling technique used in underground mines to drill large diameter service and production holes, combined with reverse circulation downhole hammer and sample collection technology specially adapted for underground use more recently by Metres Down Under. The underground RC system has been in development for a number of years and has been used in gold mines (high nugget effect orebodies) for the last 2-3 years, drilling short grade-control holes.

The Company is working with Metres Down Under to develop and adapt the underground technique to nickel exploration in an ultramafic environment, and push hole depths beyond 180m whilst successfully retrieving large-volume, uncontaminated samples of blebby sulphide mineralisation. The large sample volumes are another means to overcoming nugget effect, with the outcome being less drill-holes are necessary to statistically and spatially locate and estimate mineralisation boundaries with confidence.

The technique utilises a traditional long-hole drill rig coupled with RC in-the-hole hammers (ITH) and a purpose-built air and water injection technology to run an underground RC system. The 1.5m RC rods are custom made and the sample is collected in a purpose built rotary cone splitter. The hole diameter yields a 650% increase in sample size from traditional NQ2 sized core.



Figure 2- Underground RC drill rig in use



Figure 3- Purpose built underground RC rotary splitter

Drilling campaign details

A 2,500m trial program consisting of 2 sections of drilling has been designed from the Gosling access drive below the open pit. The trial area is within a likely extension of the Black Swan mineralisation and will challenge the drill technique with a combination of long up-holes and ultramafic rock-types. The technique has not previously been applied in this environment but is necessary as a fit-for-purpose exploration tool to successfully explore below the Black Swan open pit from the existing underground workings.

To date, eight underground drill-holes have been completed with no sample dilution and no sample loss as the system can be fully flushed between samples. A maximum drill depth of 174m has been achieved and a maximum drill rate of 109m in a 10 hour shift. Estimated drill costs are only half that of a diamond hole of the same length and the drill rates are much faster. In addition, the 140mm hole is of adequate size to alleviate statistical variation seen in sample results from traditional NQ2 core (50mm diameter) meaning that less holes will be required to test mineralisation with higher confidence in the results.

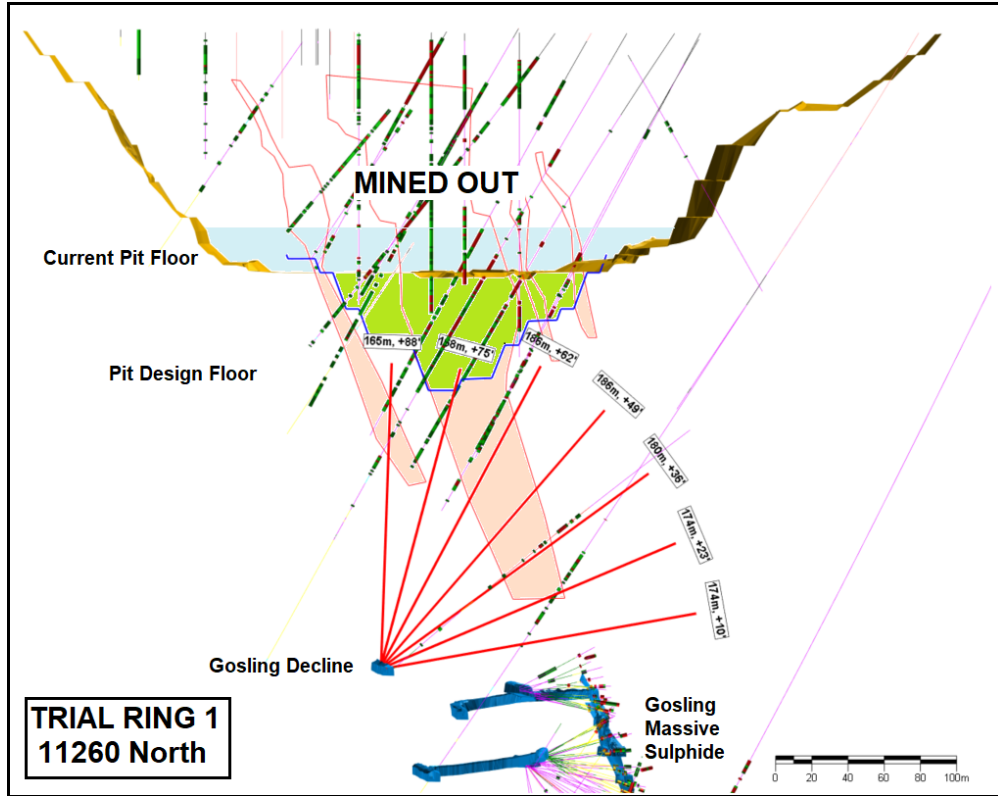


Figure 4- First trial ring layout in relation to the Open Pit

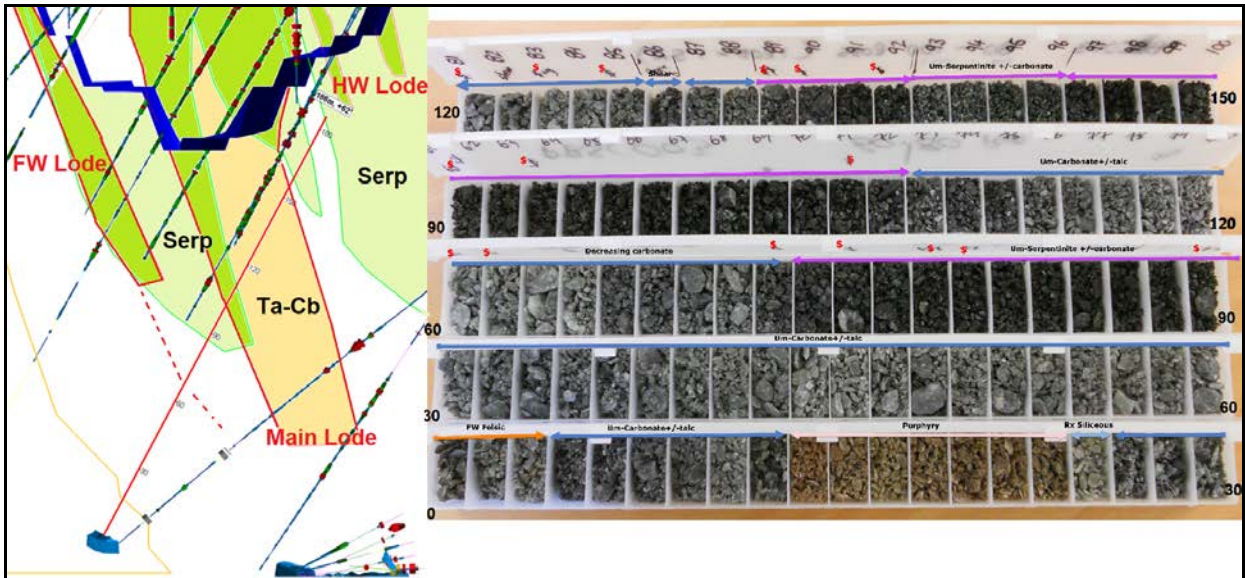


Figure 5 - Chip results from the first hole showing the metallurgical zonation within the Black Swan mineralisation. The light ultramafic is talc-carbonate altered and the dark ultramafic is unaltered serpentine.

In addition the Company is working closely with Downhole Surveys (DHS) to implement a novel up-hole surveying technique utilising a recently developed 30mm continuous gyro system, purpose built for RC surveying. Testing of the gyro was completed this week with good results. The novel feeder system will be assembled in coming weeks if required, and further updates will be provided after testing.



Figure 6 - Commissioning of the up-hole gyro survey system by Downhole Surveys

The combination of these different technologies has come together well and the Company and its partners will continue to refine the system so that it can be used routinely as an exploration tool.

Assay results and QAQC sample analysis will be available in the coming weeks.

David Riekie
Interim Chief Executive Officer

For further information contact David Riekie : + 61 (0)8 6167 6600.

About Poseidon Nickel Limited

Poseidon Nickel Limited (ASX: POS, "Poseidon"), is an Australia focussed nickel company that owns three previously operating Nickel Sulphide mines: Windarra, Black Swan/Silver Swan and Lake Johnston. These 100% owned assets collectively had an operating capacity of 3.6mtpa (Lake Johnston 1.5mtpa; Black Swan 2.1mta). The processing facilities at Lake Johnston and Black Swan have been maintained through company managed, care and maintenance programs.

On 18 July 2018, POS released to ASX a definitive feasibility study regarding the restart of operations and potential outcomes for Black Swan/Silver Swan, located 50 kms from Kalgoorlie. Poseidon is currently undertaking a number of de-risking initiatives including additional drilling at and around Black Swan.

Poseidon has continued to explore at Lake Johnston, with recent diamond drilling at the Abi Rose prospect. These exploration results were released to ASX on 22 October 2018 and 21 November 2018.

Windarra has a number of near mine exploration projects including the extension of the original Windarra deposit, Cerberus, South Windarra and Woodline Well.

The current Resource Statement below shows a combined Nickel resource of 391,900 tonnes of Nickel (which should be read with the Competent Person statements below).

MINERAL RESOURCE STATEMENT

Table 1: Nickel Projects Mineral Resource Statement

Nickel Sulphide Resources	JORC Compliance	Cut Off Grade	MINERAL RESOURCE CATEGORY												
			INDICATED			INFERRED			TOTAL						
			Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Co% Grade	Co Metal (t)	Cu% Grade	Cu Metal (t)
BLACK SWAN PROJECT															
Black Swan	2012	0.40%	9,600	0.68	65,000	21,100	0.54	114,000	30,700	0.58	179,000	0.01	4,200	NA	-
Silver Swan	2012	4.50%	108	9.4	10,130	61	9.7	5,900	168	9.5	16,030	0.19	316	0.4	679
LAKE JOHNSTON PROJECT															
Maggie Hays	2012	0.80%	2,600	1.60	41,900	900	1.17	10,100	3,500	1.49	52,000	0.05	1,800	0.10	3,400
WINDARRA PROJECT															
Mt Windarra	2012	0.90%	922	1.56	14,000	3,436	1.66	57,500	4,358	1.64	71,500	0.03	1,200	0.13	5,700
South Windarra	2004	0.80%	772	0.98	8,000	-	-	-	772	0.98	8,000	NA	-	NA	-
Cerberus	2004	0.75%	2,773	1.25	35,000	1,778	1.91	34,000	4,551	1.51	69,000	NA	-	0.08	3,600
TOTAL															
Total Ni, Co, Cu Resources	2004 & 2012		16,775	1.04	174,030	27,275	0.81	221,500	44,049	0.90	395,530	0.02	7,516	0.03	13,379

Note: totals may not sum exactly due to rounding. NA = information Not Available from reported resource model. The Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore Reserves.

Black Swan Resource as at 22 July 2014, Silver Swan Resource as at 5 August 2019, Maggie Hays Resource as at 17 March 2015, Mt Windarra, South Windarra and Cerberus Resource as at 30 April 2013

Table 2: Gold Tailings Project Mineral Resource Statement

Gold Tailings Resources	JORC Compliance	Cut Off Grade	MINERAL RESOURCE CATEGORY								
			INDICATED			INFERRED			TOTAL		
			Tonnes (Kt)	Grade (g/t)	Au (oz)	Tonnes (Kt)	Grade (g/t)	Au (oz)	Tonnes (Kt)	Grade (g/t)	Au (oz)
WINDARRA GOLD TAILINGS PROJECT											
Gold Tailings	2004	NA	11,000	0.52	183,000	-	-	-	11,000	0.52	183,000
TOTAL											
Total Au Resources	2004		11,000	0.52	183,000	-	-	-	11,000	0.52	183,000

Note: totals may not sum exactly due to rounding.

Windarra Gold Tailings Resource as at 30 April 2013.

ORE RESERVE STATEMENT

Table 3: Nickel Projects Ore Reserve Statement

Nickel Sulphide Reserves	JORC Compliance	ORE RESERVE CATEGORY						
		PROBABLE						
		Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Co% Grade	Co Metal (t)	Cu% Grade	Cu Metal (t)
SILVER SWAN PROJECT								
Silver Swan Underground	2012	57	5.79	3,300	0.11	60	0.26	150
Black Swan Open pit	2012	3,370	0.63	21,500	NA	NA	NA	NA
TOTAL								
Total Ni Reserves	2012	3,427	0.72	24,800	0.11	60	0.26	150

Note: Calculations have been rounded to the nearest 10,000 t of ore, 0.01 % Ni grade 100 t Ni metal and 10t of cobalt metal.

Co & Cu grades and metal content for Black Swan require additional modelling prior to estimation. Silver Swan Underground Reserve as at 26 May 2017, Black Swan Open Pit Reserve as at 5 November 2014.

The Company is aware that the 2019 upgrade to the Silver Swan Indicated Resource will materially affect the Silver Swan Reserve above which was based upon the 2015 Silver Swan Resource Estimate. Such information is based on the information compiled by the Company's Geologists and the Competent Persons as listed below in the Competent Person Statements.

COMPETENT PERSON STATEMENTS:

The information in this report that relates to Exploration Results is based on, and fairly represents, information compiled and reviewed by Mr Steve Warriner, Chief Geologist, who is a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists.

The information in this report which relates to the Black Swan Mineral Resource is based on, and fairly represents, information compiled by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd. The information in this report which relates to the Black Swan Ore Reserve is based on, and fairly represents, information compiled by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and who is a Members of the Australasian Institute of Mining and Metallurgy.

The information in this report which relates to the Silver Swan Mineral Resource is based on, and fairly represents, information compiled by Mr Steve Warriner, Chief Geologist, who is a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists and Mr Kahan Cervoj who is a full time employee of Optiro Pty Ltd and is a Fellow of the Australasian Institute of Mining and Metallurgy. The information in this report which relates to the Silver Swan Ore Reserve is based on, and fairly represents, information compiled by Mr Matthew Keenan who is a full-time employee of Entech Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy.

The information in this report which relates to the Lake Johnston Mineral Resource is based on, and fairly represents, information compiled by Mr Steve Warriner, Chief Geologist, who is a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists and Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. The information in this report which relates to the Lake Johnston Ore Reserves Project is based on, and fairly represents, information compiled by Mr Matthew Keenan who is a full time employee of Entech Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy.

The information in this report that relates to Mineral Resources at the Windarra Nickel Project and Gold Tailings Project is based on, and fairly represents, information compiled by Mr Steve Warriner, Chief Geologist, who is a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists and Mr Ian Glacken who is a full time employee of Optiro Pty Ltd and is a Fellow of the Australasian Institute of Mining and Metallurgy. The Windarra Project contains Mineral Resources which are reported under JORC 2004 Guidelines as there has been no Material Change or Re-estimation of the Mineral Resource since the introduction of the JORC 2012 Codes. Future estimations will be completed to JORC 2012 Guidelines.

Mr Warriner, Mr Cervoj, Mr Weeks, Mr Glacken and Mr Keenan all 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 Warriner, Mr Cervoj, Mr Weeks, Mr Glacken and Mr Keenan 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.

FORWARD LOOKING STATEMENT – INFERRED RESOURCE STATEMENTS:

The Company notes that an Inferred Resource has a lower level of confidence than an Indicated Resource and that the JORC Codes, 2012 advises that to be an Inferred Resource it is reasonable to expect that the majority of the Inferred Resource would be upgraded to an Indicated Resource with continued exploration. Based on advice from relevant competent Persons, the Company has a high degree of confidence that the Inferred Resource for the Silver Swan deposit will upgrade to an Indicated Resource with further exploration work.

The Company believes it has a reasonable basis for making the forward looking statement in this announcement, including with respect to any production targets, based on the information contained in this announcement and in particular, the JORC Code, 2012 Mineral Resource for Silver Swan as of May 2016, together with independent geotechnical studies, determination of production targets, mine design and scheduling, metallurgical testwork, external commodity price and exchange rate forecasts and worldwide operating cost data.

FORWARD LOOKING STATEMENTS:

This release contains certain forward looking statements including nickel production targets. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "except", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs. Indications of, and guidance on future earnings, cash flows, costs, financial position and performance are also forward looking statements

Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change, without notice, as are statements about market and industry trends, which are based on interpretation of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance.

Forward looking statements may be affected by a range of variables that could cause actual results or trends to differ materially. These variations, if materially adverse, may affect the timing or the feasibility and potential development of the Silver Swan underground mine.