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POSEIDON NICKEL

ASX Announcement

21 November 2022

POSITIVE BLACK SWAN FEASIBILITY STUDY

KEY POINTS

- Poseidon is on track to become **Australia's next nickel sulphide concentrate producer** following positive Feasibility Study outcomes
- Feasibility Study shows that mining and processing 1.1Mtpa of feed from Black Swan could deliver **free cash flows of $333 million with a pre-tax NPV$_8$ of $248 million and IRR 103%** at the current Australian dollar nickel price
- Combined Black Swan Ore Reserves[1] are **3.5Mt averaging 1.0% Ni for ~35kt Ni contained nickel**
- Study assumes milling 5.0Mt feed over four years to produce **200kt concentrate containing ~30kt nickel**
- Black Swan can produce a high-grade nickel concentrate with ~**15% Ni, < 6% MgO and a Fe:MgO ratio of 5:1** which is highly desirable for conventional nickel smelters
- Estimated C1 unit cost of ~US$4.50/lb and All in Sustaining Costs of ~US$4.90/lb (Ni in concentrate before smelter deductions)
- Existing infrastructure means a **low pre-production capex of ~$50 million** compared to a greenfields operation, which includes **$38 million for refurbishment of the Black Swan concentrator**
- Significant carried forward **tax losses of up to $187 million** could be utilised
- ESG focus embedded into the Feasibility Study process, carbon emissions reduced compared to 2018 Feasibility Study by using grid power
- The Company is progressing discussions with potential offtake and financing partners to achieve Final Investment Decision (FID)
- Feasibility Study on the 2.2Mtpa ore feed option to produce rougher concentrate is well advanced and due for completion during first half 2023
- Assuming FID is made during first half 2023 (whether based on a 1.1Mtpa or 2.2Mtpa mill feed), **concentrate production could commence in early 2024** taking advantage of the strong nickel price environment

[1] Refer to Table 1 in the Executive Summary for a component breakdown of Mineral Ore Reserves between Black Swan Disseminated, Silver Swan and Golden Swan Mineral Reserves

Poseidon Nickel Ltd (ASX: POS, "Poseidon" or "the Company") is delighted to report the outcomes of the Black Swan Bankable Feasibility Study ("BFS") for the 1.1Mtpa mill feed option (the "Project").

Managing Director and CEO, Peter Harold, commented: "*Poseidon has achieved a significant milestone for our "Fill the Mill" strategy by completing the Black Swan 1.1Mtpa mill feed Bankable Feasibility Study.*

Economic analysis for the Black Swan project shows free cash flows of circa \$333 million, NPV_8 \$248 million and an IRR of 103% at the current spot nickel price and exchange rate. The Black Swan project is highly leveraged to the improving nickel price outlook with the NPV_8 increasing to \$470 million based on an input assumption of US\$15.00/lb nickel price and foreign exchange AUD:USD \$0.65. These positive economic outcomes are set against an environment where capital and operating costs have increased significantly since the 2018 Feasibility Study was completed.

The team at Poseidon together with our contractors and consultants have put in a huge effort throughout the study period undertaking resource drilling, resource model updates, mine studies, metallurgical testing, process plant refurbishment and operating cost estimates, marketing and logistics studies and economic analysis to ensure the study numbers are robust.

When we commenced the study the main areas that required further work were the large amount of higher risk Mining Inventory tonnages included in the 2018 study based on the conversion of "low confidence" Inferred Mineral Resources, the talc distribution within the disseminated mineral resource and the suitability of the concentrate for a traditional nickel smelter.

We have undertaken several resource definition drilling programs on each proposed ore source resulting in a far more robust Mining Inventory. We have also undertaken numerous QXRD readings to construct a detailed talc distribution model for the Black Swan Disseminated Mineral Resource Estimate that will allow us to optimise the ore blends.

Production data from when Black Swan last operated in 2009 showed high MgO levels were present in the concentrate. Recent metallurgical breakthroughs with the addition of a rougher concentrate regrind stage in the processing flowsheet and blending in a small amount of Silver Swan Tailings have confirmed we can produce a high-grade nickel concentrate containing ~15% Ni, < 6% MgO and a Fe:MgO ratio of 5:1. We have received indicative offtake terms from a number of groups which confirm this is a sought after concentrate with excellent nickel payability. This is a significant de-risking of the project compared to the 2018 study.

Resource drilling, mineral resource estimate updates and mining studies have increased the combined project Ore Reserves to 3.5Mt averaging 1.0% nickel for 35kt nickel contained, which combined with the Silver Swan tailings and existing stockpiles has extended the Project life to over four years of processing. This increased project life together with the high spot A\$ nickel price have led to improved project economics compared to the 2018 Feasibility Study and will allow us to consider more financing options for the restart.

During the study we have maintained an ESG focus to ensure our nickel concentrate production meets the expectations of our stakeholders. By developing an ESG framework focused on achieving identifiable benefits to the environment, social and governance elements we aim to deliver real benefits to all Black Swan stakeholders.

Moving forward we will progress discussions with potential offtake and financing partners toward definitive terms that will support a Final Investment Decision. Concurrently we continue to work on the 2.2Mtpa ore feed feasibility study which includes the processing of the talc carbonate ore to produce a rougher concentrate, with a lower nickel grade and higher MgO when compared to typical conventional smelter concentrate specifications. This could unlock significantly more material and would result in higher annual nickel production and improved project economics, with potential customers including Pure Battery Technologies proposed Kalgoorlie pCAM refinery or local HPAL plants.

I would like to take this opportunity to thank the Project team and all the consultants and advisors for their efforts in pulling together this Feasibility Study which has been a significant undertaking."

FIGURE 1: SILVER SWAN PORTAL

Competent Persons Statement

The information in the BFS that relates to Geology and Mineral Resources is based on information compiled and/or reviewed by Mr John Hicks, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Hicks has sufficient experience which is relevant to the style of mineralisation and the deposit under consideration, and to the activity which he is 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). Mr Hicks is Chief Geological Consultant of the Company. Mr Hicks is taking responsibility for the quality of the resource estimation data and the collection and processing of the 2022 resource estimation data. Details for the Competent Persons responsible for the individual Mineral Resource estimates are disclosed in the respective Mineral Resource estimates contained in the BFS.

The information in the BFS that relates to metallurgical testwork, process opex and process plant capex is based on information compiled and/or reviewed by Mr Peter Allen, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Allen has sufficient experience which is relevant to the metallurgy and processing method under consideration, to qualify as a Competent Person as defined in the JORC Code. Mr Allen is a full-time employee of GR Engineering Services Limited. Mr Allen has consented to the inclusion in the BFS of the matters based on his information in the form and context, which it appears.

The information in the BFS that relates to open pit mining methods and open pit Ore Reserves is based on information compiled and/or reviewed by Mr Craig Mann, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Mann has sufficient experience which is relevant to the mining methods and modifying factors under consideration, to qualify as a Competent Person as defined in the JORC Code. Mr Mann is a full-time employee of Entech Pty Ltd. Mr Mann has consented to the inclusion in the BFS of the matters based on his information in the form and context, which it appears.

The information in the BFS that relates to underground mining methods and underground Ore Reserves is based on information compiled and/or reviewed by Mr Charles Walker, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Walker has sufficient experience which is relevant to the mining methods and modifying factors under consideration, to qualify as a Competent Person as defined in the JORC Code. Mr Walker is a full-time employee of Entech Pty Ltd. Mr Walker has consented to the inclusion in the BFS of the matters based on his information in the form and context, which it appears

Cautionary Statement

The information contained in this announcement that relates to Mineral Resources has been extracted from the Company's ASX announcements on:

- 4 July 2022 titled “More Nickel in Updated Black Swan Disseminated Mineral Resource”, available at www.poseidon-nickel.com.au
- 27 April 2022 titled “Updated Silver Swan Resource underpins significant increase in high grade indicated resource base”, available at www.poseidon-nickel.com.au
- 27 October 2021 and 12 November 2021 titled “Golden Swan Maiden Resource and Golden Swan Maiden Resource – Additional Information”, available at www.poseidon-nickel.com.au
- 15 September 2021 titled “Silver Swan Tailings – Maiden Resource Estimate”, available at www.poseidon-nickel.com.au
- 4 August 2014 titled “Poseidon Announces Black Swan Mineral Resource”, available at www.poseidon-nickel.com.au

This announcement has been prepared and reported in accordance with the requirements of the JORC Code and relevant ASX Listing Rules. The primary purpose of the BFS is to establish the economic viability of the Project. The BFS level of accuracy is estimated to be ±15%.

The Company has concluded it has a reasonable basis for providing any of the forward-looking statements included in this announcement and believes that it has a reasonable basis to expect that it will be able to fund its stated objectives for the Project. All material assumptions on which the forecast financial information is based are set out in the announcement.

Forward Looking Statements

This announcement contains certain forward looking statements including nickel production targets matters that may involve risks or uncertainties and may involve significant items of subjective judgement and assumptions of future events that may or may not eventuate (Forward Statements). 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. No independent third party has reviewed the reasonableness of any such statements or assumptions. None of the Company, their related bodies corporate and their respective officers, directors, employees, or advisers represent or warrant that such Forward Statements will be achieved or will prove to be correct or gives any warranty, express or implied, as to the accuracy, completeness, likelihood of achievement or reasonableness of any Forward Statement contained in this release. Except as required by law or regulation, the Company assumes no obligation to release updates or revisions to Forward Statements to reflect any changes. Recipients should form their own views as to these matters and any assumptions on which any of the Forward Statements are based and not place reliance on such statements.

BLACK SWAN BANKABLE FEASIBILITY STUDY – 1.1MTPA FEED TO PRODUCE SMELTER GRADE CONCENTRATE

Executive Summary

The Poseidon board and management are pleased to provide the outcomes from the Black Swan Bankable Feasibility Study (BFS) for a 1.1Mtpa feed to produce smelter grade concentrate scenario ("**Phase 1 Black Swan Project**" or the "**Project**").

The BFS is based on the plan to mine ore from the Black Swan disseminated (BSD) open pit (serpentinite ore only) and Silver Swan and Golden Swan high-grade underground mines, supplemented with Silver Swan Tailings and existing surface stockpiles (disseminated serpentinite material) and process these feed sources through the existing concentrator and associated infrastructure. Total mine inventory is presented in Table 1.

TABLE 1: MINING INVENTORY FEED SOURCES TO PROCESSING FACILITY

Feed Source	JORC Compliance	Feed Tonnage (Mt)	Nickel Grade	Contained Nickel (kt)
Black Swan Disseminated	Proved & Probable Reserves[2]	3.3	0.7%	22.1
Silver Swan		0.2	5.0%	9.0
Golden Swan		0.1	4.0%	4.0
Feed Source from Ore Reserve[6]		**3.6**	**1.0%**	**35.1**
Silver Swan Tailings	Measured Resource[3]	0.4	0.9%	3.2
Existing Surface Stockpiles	Indicated Resource[3]	0.6	0.5%	3.2
Existing Surface Stockpiles	Inferred Resource[3,5]	0.4	0.5%	2.0
Feed Source from Mineral Resources[4]		**1.4**	**0.6%**	**8.4**
Total feed sources[1,4]		**5.0**	**0.9%**	**43.5**

1. *Rounding of numbers may result in slight differences in calculated and cumulative numbers.*
2. *Refer to Section 7 – Ore Reserves & Mining Inventory for further information on Ore Reserves.*
3. *Refer to Section 4 – Mineral Resources for further information.*
4. *The LOM plan includes 30.8% of Mineral Resources not included in the Ore Reserves, being the Silver Swan Tailings Measured Resource and existing surface stockpiles Indicated and Inferred Resources, which are not included in Ore Reserves as further metallurgical testwork is required to confirm nickel recoveries.*
5. *The LOM plan includes 7.7% of Inferred Resources in the surface stockpiled material. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further resource drilling will result in the determination of indicated mineral resources or that the production target itself will be realised.*
6. *The mined mineral inventory varies slightly to the declared Ore Reserve in Table 3 and presented in Section 7 – Ore Reserves & Mining Inventory as it is based on the updated Working Talc Model as described in Section 4 – Mineral Resources of this report.*

The study is based on refurbishing and operating the existing plant with a processing capacity of 1.1Mtpa to align with the available processing mine inventory of 5.0Mt, presenting a post development project life of four years. Plant refurbishment and mine development works are expected to take about 11 months.

Over the life of the project, the Phase 1 Black Swan Project will produce 200kt of smelter grade concentrate averaging 15% nickel containing ~30kt of nickel from the various feed sources representing an average metal recovery of 68%.

Completion of the BFS is a key milestone in Poseidon's "Fill the Mill" strategy which aims to build Poseidon into a sustainable nickel producer delivering value through performance and growth. The Black Swan restart is the basis to achieving our first strategic pillar of our "Pathway to Production".

Beyond a potential restart of Black Swan, the Company continues to progress growth opportunities including:

- the Feasibility Study on the 2.2Mtpa feed option to produce rougher concentrate (**Phase 2 Black Swan Project**).
- a 10,000 metre resource drilling program at Black Swan to convert more Inferred BSD resource to Indicated, supporting the 2.2Mtpa feed scenario or increasing reserves for the Phase 1 Project;
- exploration activities at Lake Johnston to increase the resource base supporting a potential restart of operations at that site;
- mining studies at Windarra on the Mt Windarra orebody to determine the economics of mining and trucking the ore to Black Swan for treatment; and
- assessing business development opportunities which may provide third party feeds to either Black Swan or Lake Johnston.

This BFS includes substantial work completed since the 2018 Black Swan Feasibility Study which significantly de-risks the project. Metallurgical breakthroughs with the addition of a rougher concentrate regrind stage and the blending of Silver Swan Tailings into the processing feed (see Section 8 – Metallurgical Testwork) have reduced risks associated with high MgO levels in concentrate, which can impact the marketability of the concentrate product to conventional smelters. This is further supported by the BSD Resource update which includes delineation of the talc content in the resource model to more accurately define the serpentinite ore zones which are more amenable to producing a smelter grade concentrate (see Section 3 – Geology and Section 8 – Metallurgical Testwork). A list of material activities completed since the 2018 Feasibility Study are detailed in Section 1 – Introduction.

Mineral Resource updates following resource drilling of the BSD, Silver Swan and Golden Swan resources, the release of the Maiden Resource for the Silver Swan Tailings, plus inclusion of the surface BSD ore stockpiles, has confirmed a total combined Mineral Resource for Black Swan of 31.5Mt averaging 0.68% Ni for 214kt of contained nickel. The Black Swan Mineral Resource is summarised in Table 2.

TABLE 2: BLACK SWAN PROJECT MINERAL RESOURCE INVENTORY (NOVEMBER 2022)

Nickel Sulphide Resources	JORC Compliance	Cut Off Grade	BLACK SWAN PROJECT MINERAL RESOURCE SUMMARY												
			MEASURED & 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	2012	0.4%	10,700	0.75	80,000	18,200	0.55	101,000	28,900	0.63	181,000	0.01	4,500	0.02	5,800
Silver Swan	2012	1.0%	138	9.00	12,450	8	6.00	490	146	8.80	12,940	0.16	240	0.36	530
Golden Swan	2012	1.0%	112	4.70	5,200	48	2.20	1,050	160	3.90	6,250	0.08	120	0.30	480
Silver Swan Tailings	2012	NA	675	0.92	6,200	-	-	-	675	0.92	6,200	0.07	460	0.04	270
Sub-Total Ni, Co, Cu Resources	2012		11,625	0.90	103,850	18,260	0.60	102,540	29,880	0.69	206,390	0.02	5,320	0.02	7,080
Stockpiles	2012	0.4%	1,200	0.49	5,900	400	0.53	1,900	1,600	0.5	7,800	NA	NA	NA	NA
Total Ni Resources	2012		12,825	0.86	109,750	18,660	0.56	104,440	31,480	0.68	214,190	-	-	-	-

Note: totals may not sum exactly due to rounding. NA = Information Not Available from reported resource model.

Details of the Black Swan Mineral Resource are presented in Section 3 – Geology.

Conversion of Resources to Reserves for the BFS was contingent on feeding material types to the concentrator which are amenable to producing a smelter grade concentrate with an MgO content and Fe:MgO ratio that is suitable for potential offtake partners. Producing a conventional smelter grade concentrate limits the combined Mineral Reserves to the Measured and Indicated Resources of Silver Swan and Golden Swan and the serpentinite ore type in the BSD Measured and Indicated Resources with appropriate MgO levels. The resulting Mineral Reserve for the 1.1Mtpa smelter grade concentrate project is presented in Table 3.

TABLE 3: 2022 BLACK SWAN PROJECT ORE RESERVE ESTIMATE

	JORC Compliance		Nickel Sulphide Reserves		
			Tonnes (Kt)	Ni% Grade	Ni Metal (kt)
BLACK SWAN PROJECT					
Black Swan Disseminated	2012	Proved	579	0.7	4.2
		Probable	2,608	0.7	17.7
Silver Swan	2012	Proved	-	-	-
		Probable	179	5.0	9.0
Golden Swan	2012	Proved			
		Probable	100	4.0	4.0
Total Ni Reserves	2012	Proved	579	0.7	4.2
		Probable	2,887	1.1	30.7
		Total	3,466	1.0	34.9

**Calculations have been rounded to the nearest 1,000t of ore, 0.1% Ni grade and 100t of metal*

A portion of the BSD Resource not included in the Mineral Reserves is subject to the ongoing 2.2Mtpa rougher grade concentrate Feasibility Study which may convert a larger amount of the BSD Resource to Reserves. The BSD Resource is large and continues well beyond a depth of the planned open pit for current feasibility studies. This portion of the BSD Resource may be subject to feasibility studies in the future, however, is not included in the current 1.1Mtpa smelter grade concentrate or 2.2Mtpa rougher grade concentrate studies.

Details for the Black Swan Ore Reserve are presented in Section 7 – Ore Reserves & Mining Inventory.

In addition to the mined mineral inventory, feed sources for processing include Silver Swan Tailings and surface BSD stockpiles, of which the Silver Swan Tailings is a Measured Resource and the surface BSD Stockpiles are Indicated and Inferred Resources. Total combined feed sources are presented in Table 1.

The available feed sources will be processed through the existing Black Swan plant to produce smelter grade concentrate. Locked cycle tests confirmed the benefit of the two metallurgical breakthroughs for the project which reduce MgO content in concentrate and improve the Fe:MgO ratio being:

- inclusion of a rougher concentrate regrind stage in the flowsheet; and
- addition of Silver Swan Tailings to the feed blend.

The results of the locked cycle tests which reflect the concentrate specifications for the BFS are summarised in Table 4. Results presented are typical range for each test. Refer to Section 8 – Metallurgical Testwork for further locked cycle test results and Section 9 – Concentrate Product Quality for further details on concentrate specifications.

TABLE 4: CONCENTRATE SPECIFICATIONS

Element	Unit	BSD Only	BSD + 7.5% Silver Swan Tailings + 5% Silver Swan
Ni	%	17.1	15.0
Cu	%	0.6	0.6
Co	%	0.5	0.4
MgO	%	5.7	4.4
Fe	%	25.9	29.6
Fe:MgO	Ratio	4.5	6.7
As	ppm	3,400	3,800
S	%	38.4	36.2

Based on available feed sources, the BFS assumes that 5.0Mt of feed containing 44.3kt of nickel will be processed over a four-year period to produce 200kt concentrate grading 15% Ni containing 30kt of nickel (the Production Target). Metallurgical recoveries for each feed source are discussed in Section 8 – Metallurgical Testwork. The quarterly processing feed source and Production Target profile for the Project life are presented in Figure 2 and Figure 3.

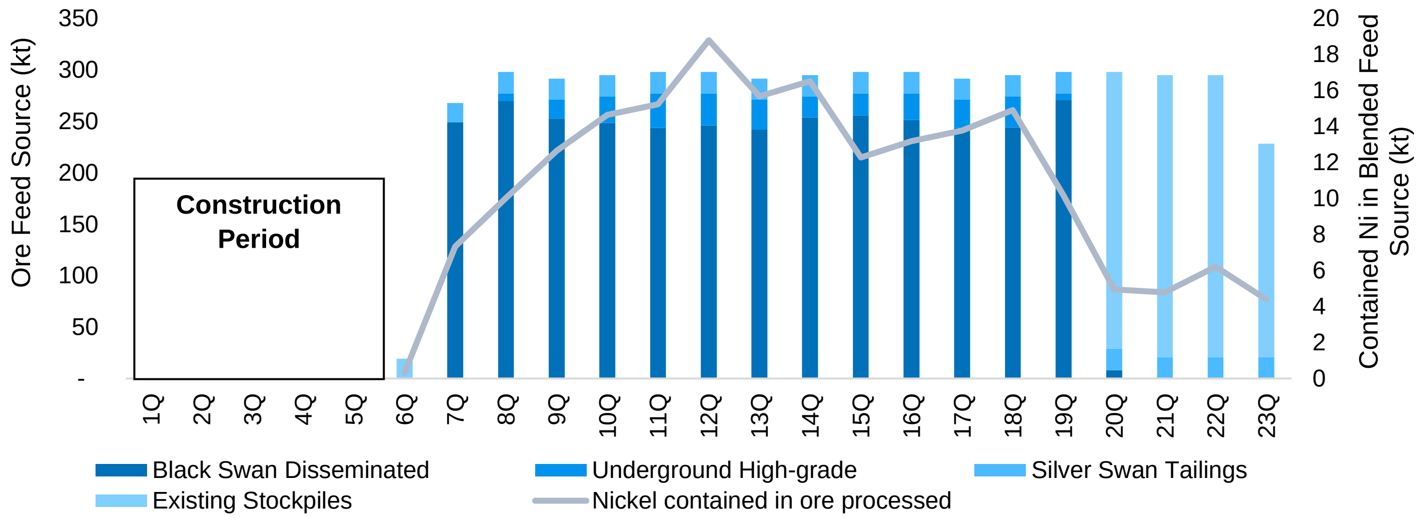

FIGURE 2: QUARTERLY MILL FEED SOURCE PROFILE

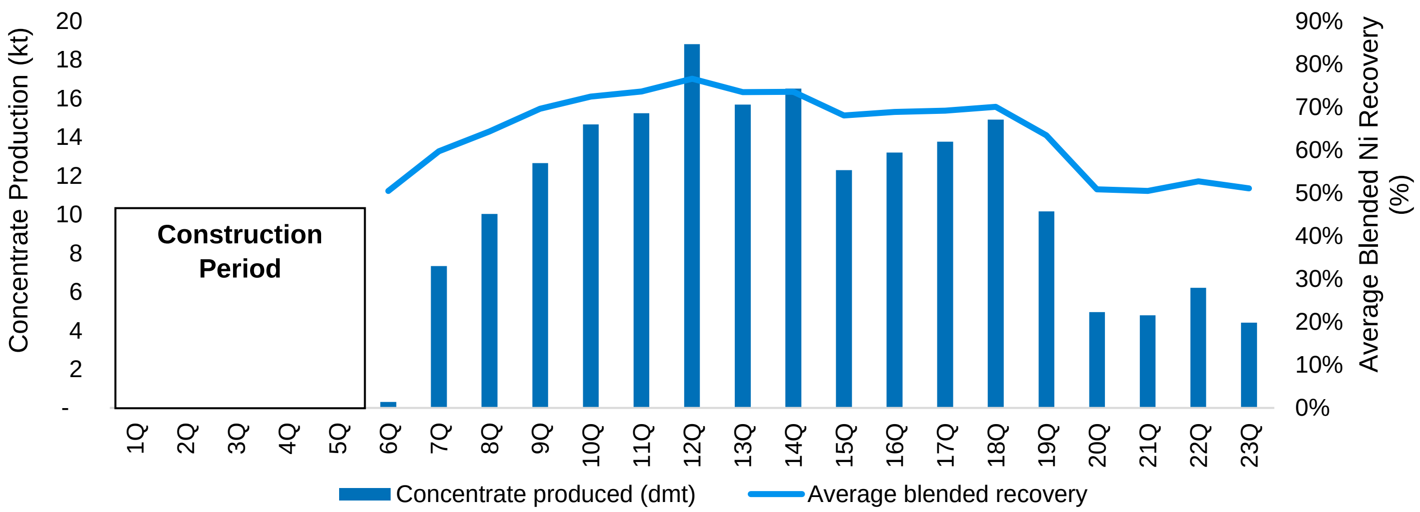

FIGURE 3: QUARTERLY CONCENTRATE PRODUCTION PROFILE

The Phase 1 Black Swan Project has attractive economics assuming Base Case economic assumptions being nickel price forward curves for the initial operating period to December 2025, then a flat US$10.00/lb and AUD: USD $0.65 for the production period beyond this date. Forecast nickel price and foreign exchange rate by quarter is presented in Table 5.

TABLE 5: BASE CASE ECONOMIC INPUTS

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Concentrate Production	kt	-	17.7	61.3	57.7	43.8	15.4
Nickel Price	US$/lb	12.15	12.58	12.18	10.00	10.00	10.00
AUD: USD rate	AUD: USD	0.68	0.68	0.68	0.70	0.70	0.70
Basis of assumption		Forward Curves[1]			Management Forecast[2]		

1. *Nickel Price forward curves for 2023, 2024 and 2025 from LME website on close of Thursday 17th November 2022 inputted as Year 1, Year 2 and Year 3 respectively. AUD:USD forward curves inputted from an external source based on close of Thursday 17th November 2022.*
2. *Management estimate for period beyond forward curve inputs is US$10.00/lb nickel price and AUD:USD $0.70. Management has conservatively estimated these economic inputs based on expected nickel pricing to support the projected nickel demand over the medium term. Alternative upside nickel pricing scenarios have been considered based on positive outlook for nickel, see below.*

Assuming Base Case nickel price and foreign exchange inputs, the economic outcomes for the BFS are presented in Table 6. All economic outcomes are presented in Australian dollars unless specified otherwise.

TABLE 6: PROJECT BASE CASE PRE-TAX ECONOMIC EVALUATION SUMMARY

Economic Outputs	Base Case
Revenue	$809M
Operating Costs	$483M
Capital Expenditure[1]	$99M
Net Cash Flow	**$227M**
Pre-tax NPV_8 [2]	**$167M**
IRR	**86%**
Payback Period[3]	1.3 years
C1 Cash Cost[4]	US$4.56/lb
AISC Cash Cost[5]	US$4.90/lb
Average Ni price	US$11.6/lb
Average FX (USD/AUD)	0.69

1. *Capital expenditure includes $50 million of pre-production capital expenditure with the remainder of capital expenditure incurred post first ore production.*
2. *NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.*
3. *Period post completion of concentrator refurbishment.*
4. *C1 cash costs include operating cash costs including mining, processing, geology, OHSE, site G&A, concentrate transport, less by-product divided by nickel in concentrate produced (100% basis before smelter deductions). Excludes development and sustaining capex, pre-production costs and royalties.*
5. *AISC - are C1 cash costs plus royalties and sustaining capital. Excludes development capital and preproduction costs.*

Alternative economic scenarios considered were the 'Spot Case', being the current nickel price and foreign exchange, and an 'Upside Case' which assumed a flat US$15.00/lb nickel price and flat AUD: USD $0.65. Both scenarios presented positive economic outcomes as presented in Table 7.

TABLE 7: ALTERNATIVE PROJECT PRE-TAX ECONOMIC SCENARIOS

Economic Outputs	Upside Case	Spot Ni Price & FX
Revenue	$1,207M	$919M
Operating Costs	$498M	$487M
Capital Expenditure[1]	$99M	$99M
Net Cash Flow	**$610M**	**$333M**
Pre-tax NPV_8 [2]	**$470M**	**$248M**
IRR	**188%**	**103%**
Payback Period[3]	1.0 year	1.4 years
C1 Cash Cost[4]	US$4.36/lb	US$4.52/lb
AISC Cash Cost[5]	US$4.81/lb	US$4.89/lb
Average Ni price	US$15.0/lb	US$11.8/lb
Average FX (USD/AUD)	0.65	0.67

1. *Capital expenditure includes $50 million of pre-production capital expenditure with the remainder of capital expenditure incurred post first ore production.*
2. *NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.*
3. *Period post completion of concentrator refurbishment.*
4. *C1 cash costs include operating cash costs including mining, processing, geology, OHSE, site G&A, concentrate transport, less by-product divided by nickel in concentrate produced (100% basis before smelter deductions). Excludes development and sustaining capex, pre-production costs and royalties.*
5. *AISC - are C1 cash costs plus royalties and sustaining capital. Excludes development capital and preproduction costs.*

The economic modelling at the assumed metal prices shows that mining the BSD, Silver Swan and Golden Swan ores with the inclusion of the Silver Swan Tailings and existing stockpiled material and processing on site to produce a smelter-grade concentrate has attractive cash flow, NPV and IRR. Project economic evaluation is discussed in further detail in Section 24 – Economic Evaluation.

The BFS presents a Project funding requirement of circa $90 million. This funding requirement comprises ~$50 million pre-mine production capital expenditure with the remainder representing working capital to build up sufficient concentrate inventory stockpiles for assumed 5,000 tonne shipments and time to first concentrate sales.

Next Steps

Based on the positive BFS outcomes the Company is progressing the following workstreams as we move towards a Final Investment Decision (FID):

- Discussions with potential offtake partners to agree definitive terms ahead of signing an appropriate offtake agreement;
- Discussions with potential contractors:
  - for the refurbishment of the Black Swan concentrator and associated infrastructure; and
  - for mining and ore processing operations.
- Completion of the 2.2Mtpa feasibility study which presents an opportunity to significantly increase annual concentrate production and contained nickel and enhance the project economics;
- Complete the 10,000 metre resource drilling program to convert more Inferred Resources at Black Swan to Indicated, the grow the Measured and Indicated resource base for the 1.1Mtpa and 2.2Mtpa projects; and
- Discussions with selected project finance partners to secure appropriate funding for the restart of operations at Black Swan.

The Phase 2 Black Swan Project presents an opportunity to process a larger portion of the significant nickel endowment within the BSD Resource. The Company will progress the Phase 2 Feasibility Study and provide updates on progress, with an aim to complete the study during first half 2023.

The Company is aiming to make an FID during first half 2023 (whether based on a Phase 1 or Phase 2 Black Swan Restart), so that production of concentrate could commence in early 2024 to take advantage of the strong nickel price environment.

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1. Introduction

Poseidon continues planning for a future restart of the Black Swan Operations (BSO) to mine and process material from the Black Swan disseminated (BSD) open pit, Silver Swan and Golden Swan high-grade underground mines, Silver Swan tailings and on existing surface stockpiles (disseminated nickel sulphide serpentinite) through the existing concentrator and associated infrastructure. The Project is intended to operate at a de-rated processing capacity of 1.1Mtpa to align with the available processing inventory of 5.0Mt, presenting a post development Project life of four years. Plant refurbishment and mine development are estimated to occur over an 11-month period.

This Bankable Feasibility Study (BFS) has been compiled to support the restart of BSO. The study is a collaborative work undertaken by the Company and the following consultants, engineers and laboratories:

- Golder Associates Pty Ltd (Golder)
- Entech Pty Ltd (Entech)
- GR Engineering Services Ltd (GRES)
- Green Geotechnics Pty Ltd (Green Geotech)
- Strategic Metallurgy Pty Ltd (Strategic Metallurgy)
- ALS Metallurgy Pty Ltd (ALS Metallurgy)
- MBS Environmental Pty Ltd (MBS Environmental)
- Optiro Pty Ltd (Optiro)
- Tetra Tech Coffey Pty Ltd (Tetra Tech)

The final BFS report has been drafted by Poseidon.

This BFS presents updates on information from previous studies and works undertaken on the Project. Considerable work has been completed by the Poseidon team during the BFS process to de-risk the Project and improve the economic outcomes. Table 8 below summarises the Project progress since the 2018 Feasibility Study:

TABLE 8: SUMMARY OF BFS WORKS COMPLETED SINCE 2018 FEASIBILITY STUDY

	2018 Black Swan Feasibility Study	2022 Black Swan BFS
Mineral Resources	Black Swan Mineral Resources for the 2018 Study are summarised below: - BSD: 30.7Mt @ 0.58% Ni for 179kt Ni - Silver Swan: 136kt @ 9.0% Ni for 12.4kt Ni - No Golden Swan Mineral Resource - No Silver Swan Tailings Mineral Resource - No stockpiles reported in Mineral Resource Combined Black Swan Mineral Resource 30.8Mt @ 0.62% Ni for 191kt contained Nickel. Nickel contained in Inferred Resource category represents 69% of total resource. Refer to ASX Announcement, '*Black Swan & Silver Swan – Feasibility Study Supports Project Restart',* 18 July 2018.	Following resource drilling programs and Mineral Resource updates, current combined Black Swan Mineral Resource is 31.5Mt @ 0.68% Ni for 214kt contained nickel, including: - BSD Mineral Resource was updated in July 2022 to 28.9Mt @ 0.63% Ni for 181kt Ni - Silver Swan: 146kt @ 8.8% Ni for 12.9kt Ni (5.5% Inferred) - Golden Swan: 160kt @ 3.9% Ni for 6.2kt Ni (30% Inferred) - Silver Swan Tailings measured Resource Estimate: 675kt @ 0.92% Ni for 6.2kt Ni - Existing surface stockpiles 1.6Mt @ 0.5% Ni for 7.8kt Ni Nickel contained in Inferred Resource category represents 59% of total resource. Quantitative Xray Diffraction (**QXRD**) analysis completed providing information on talc distribution throughout the BSD Resource, which has now been reflected in the BSD Mineral Resource.

Ore Reserves	Black Swan Mineral Reserves for the 2018 Study are summarised below: - BSD: 3.4Mt @ 0.63% Ni for 21.5kt Ni - Silver Swan: 57kt @ 5.8% Ni for 3.3kt Ni - No Golden Swan Mineral Reserve Combined Black Swan Mineral Reserve 3.4Mt @ 0.73% Ni for 24.8kt contained Nickel. Silver Swan minimum mining width for underground stopes was 2.5m. Refer to ASX Announcement, '*Black Swan & Silver Swan – Feasibility Study Supports Project Restart',* 18 July 2018.	Black Swan Ore Reserves are summarised below: - BSD: 3.2Mt @ 0.69% Ni for 21.9kt Ni - Silver Swan: 179kt @ 5.0% Ni for 9.0kt Ni - Golden Swan: 100kt @ 4.0% Ni for 4.0kt Combined Black Swan Ore Reserve 3.5Mt @ 1.0% Ni for 34.9kt Ni. **Metal contained in Mineral Reserve has increased 40% since the 2018 Study.** Minimum mining width for underground stopes was increased to 3.25 metres for Silver Swan.
Processing feed	Processing feed included 2.2Mt @ 1.0% Ni for 23.2kt nickel contained. Processing feed over a circa two-year Project life. **A large amount of the high value Silver Swan Mining Inventory (62% of the total Inventory) was sourced from the conversion of "low confidence" Inferred Mineral Resources.** Refer to ASX Announcement, '*Black Swan & Silver Swan – Feasibility Study Supports Project Restart',* 18 July 2018).	Processing feed totalling 5.0Mt averaging 0.9% Ni for 43.5kt nickel contained. Processing feed over a four-year Project life. Silver Swan, Golden Swan and Black Swan have no conversion of Inferred Resources in Mining Inventory and based on published Ore Reserves. Silver Swan Tailings Mining Inventory is a Measured Resource. Surface BSD stockpiles include the 1.0Mt Indicated portion of this Mineral Resource. Surface Stockpiles are based on surveyed volume models, applying loose cubic metre estimate for density and mining grade control estimates to determine grade.
Marketable Concentrate Product	Concentrate produced over last 12 months of Black Swan operations (2008/2009) averaged below typical Fe:MgO rejection limit of 3:1 (2.2:1 Fe:MgO ratio with 5% Silver Swan blended, 1.4:1 Fe:MgO with no Silver Swan blended). **2018 Study did not include mitigating factors to address MgO issues or include indicative terms from potential offtakers based on assumed concentrate product specifications.**	Locked-cycle flotation tests including a regrind stage and with a small addition of Silver Swan tailings has significantly reduced MgO levels to <6% and improved the Fe:MgO ratio to >5:1 which is well above typical smelter rejection limits. Product specifications shared with a number of potential offtake parties and indicative terms received with most preferential terms reflected in BFS.

Pre-production works	None of the pre-production works identified in the 2018 Study had commenced.	**The Company has completed or commenced the following pre-production works:**
		- **Underground ladderway refurbishment and ongoing maintenance**
		- **Safety works in the processing plant**
		- **Re-establishment of services throughout the underground mine, including:**
		  ○ **full rehabilitation of decline areas for mining restart**
		  ○ **pump station upgrades and dewatering to the bottom of the decline**

		○ **primary southern vent fan and new compressor install** - **450m development access drive for Golden Swan** - **Communications upgrade, including tower installation** - **Installation of pit dewatering infrastructure and commencement of dewatering with completion expected during December 2022 quarter**
Process Water	No committed water source for the project.	**Five-year water access agreement executed with Norton Goldfields Pty Ltd**, supplemented with Black Swan borefield to be used as a back-up water source. Combined these water sources are sufficient to undertake either a 1.1Mtpa or 2.2Mtpa restart project.
Power Source	Assumed on-site diesel fire power station.	**Grid power allocation proposed** to be sourced under the Eastern Goldfields Load Permissive Scheme (EGLPS) from Western Power sufficient for 1.1Mtpa (15.7MVA load), **significantly reducing operating costs and carbon emissions.**
Operating Costs	2018 pricing.	Based on recent quotes from GRES and contractors reflecting mid 2022 pricing.
Offtake Terms	No offtake indicative terms reflected in 2018 Study.	Product specifications shared with a number of potential offtake parties and **indicative term sheets have been received with most preferential terms reflected in the BFS.**

2. Project Description & History

BSO is a brownfields nickel project located in the Goldfields region of Western Australia. Nickel mineralisation was first discovered in the Black Swan area during the late 1960s, but no significant exploration was conducted until 1995 when the tenements were acquired by a joint venture between MPI Nickel Pty Ltd and Outokumpu Exploration Ventures Pty Ltd. The Silver Swan massive sulphide deposit was discovered with the second drill hole and over the next two years the White Swan, Cygnet and Gosling deposits were discovered.

Operations commenced in 1997, first mining the underground Silver Swan deposit and processing the high-grade massive sulphide ore through the original 300ktpa concentrator. A major upgrade to the concentrator was completed in 2006 to allow for the processing of the low-grade Black Swan disseminated (BSD) ore. This increased the throughput to 2.2 Mtpa. The operation was placed on care and maintenance in February 2009 due to unfavourable economic conditions.

Poseidon acquired the BSO assets in March 2015. At the time of acquisition, BSO comprised of the high-grade Silver Swan underground mine, the lower grade Black Swan open pit, the processing facility, and offices, workshops, and associated site infrastructure.

BSO is located 43km NNE of Kalgoorlie, (370,150 mE; 6,636,800 mN), approximately 580 km east of Perth. The mine is serviced by Yarri Road, a 53km drive from Kalgoorlie, the nearby regional centre. Yarri Road has a sealed surface for approximately 30km from Kalgoorlie, thereafter a gravel surface to BSO (Figure 4). The unsealed surface is maintained to local shire standards and is generally all-weather.

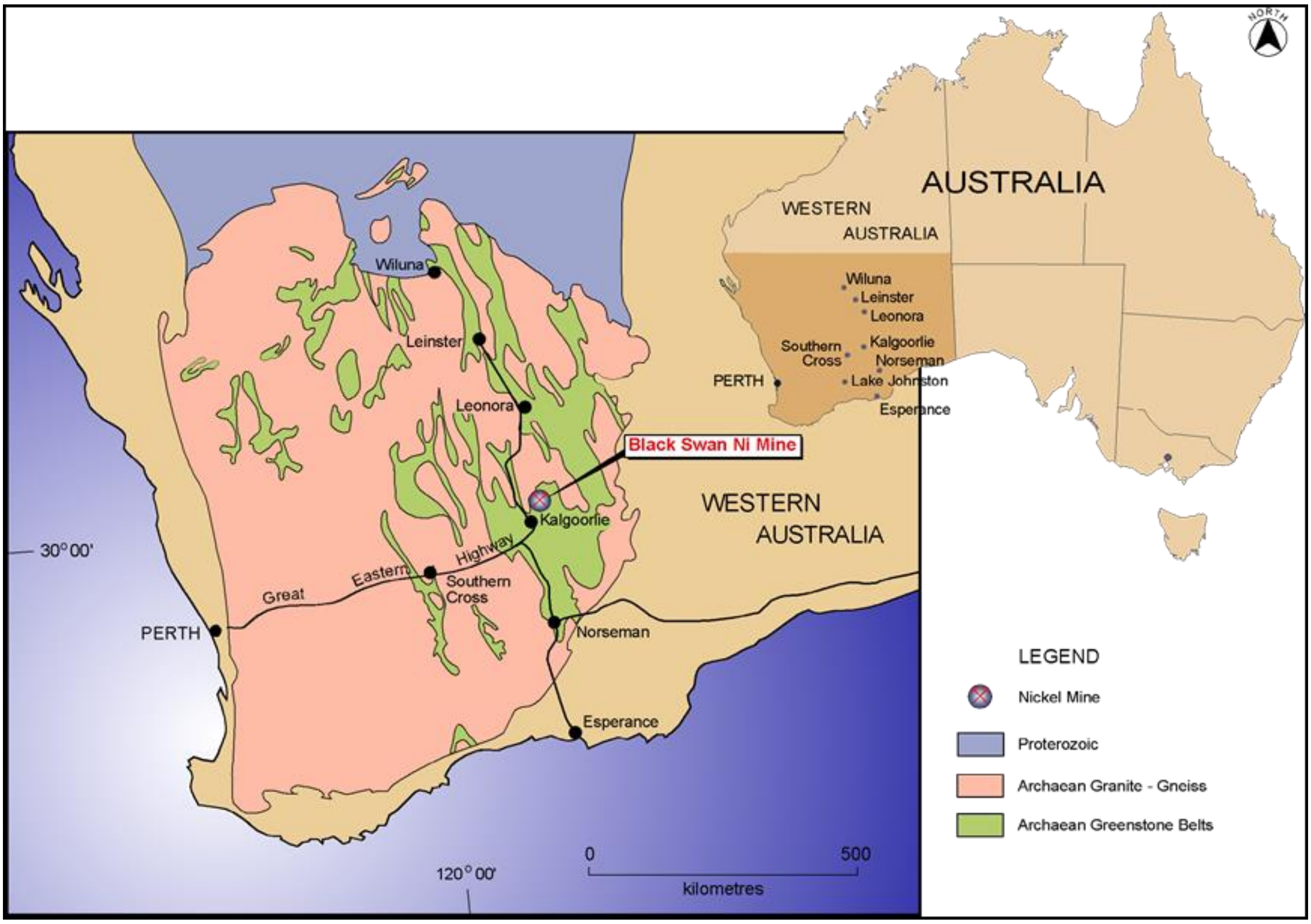


FIGURE 4: BLACK SWAN PROJECT LOCATION

3. Geology

Mineralisation was first discovered in the Black Swan area during the nickel boom of the late 1960s. By 1972, drilling had defined a nickel sulphide resource, which is now recognised as the BSD orebody.

Nickel sulphide mineralisation at Black Swan is hosted by the Black Swan Komatiite Complex (BSKC), a 3.5 km long by 0.6 km thick arcuate lens of olivine cumulate and spinifex-textured komatiite flows (Figure 5). The complex is enclosed within a broad NE dipping sequence of intermediate felsic lavas and associated volcaniclastics. Graphitic black shales have been recognised within the enclosing felsic sequence, approximately 700 metres above and below the BSKC. The BSKC and enclosing felsic volcanic sequence face and dip steeply towards the NE. Except for several small areas of sub-outcrop, a thin veneer of lateritic red soil covers the BSKC.

The northern and southern tails of the BSKC thin and terminate rapidly in a complex series of interdigitating felsic and komatiite horizons. Where this occurs, the individual felsic horizons are typically of limited extent both along strike and down plunge. The southern tail of the complex is more pronounced and extends over approximately 1 km and is overlain by up to three discrete thin (spinifex textured) komatiite flows.

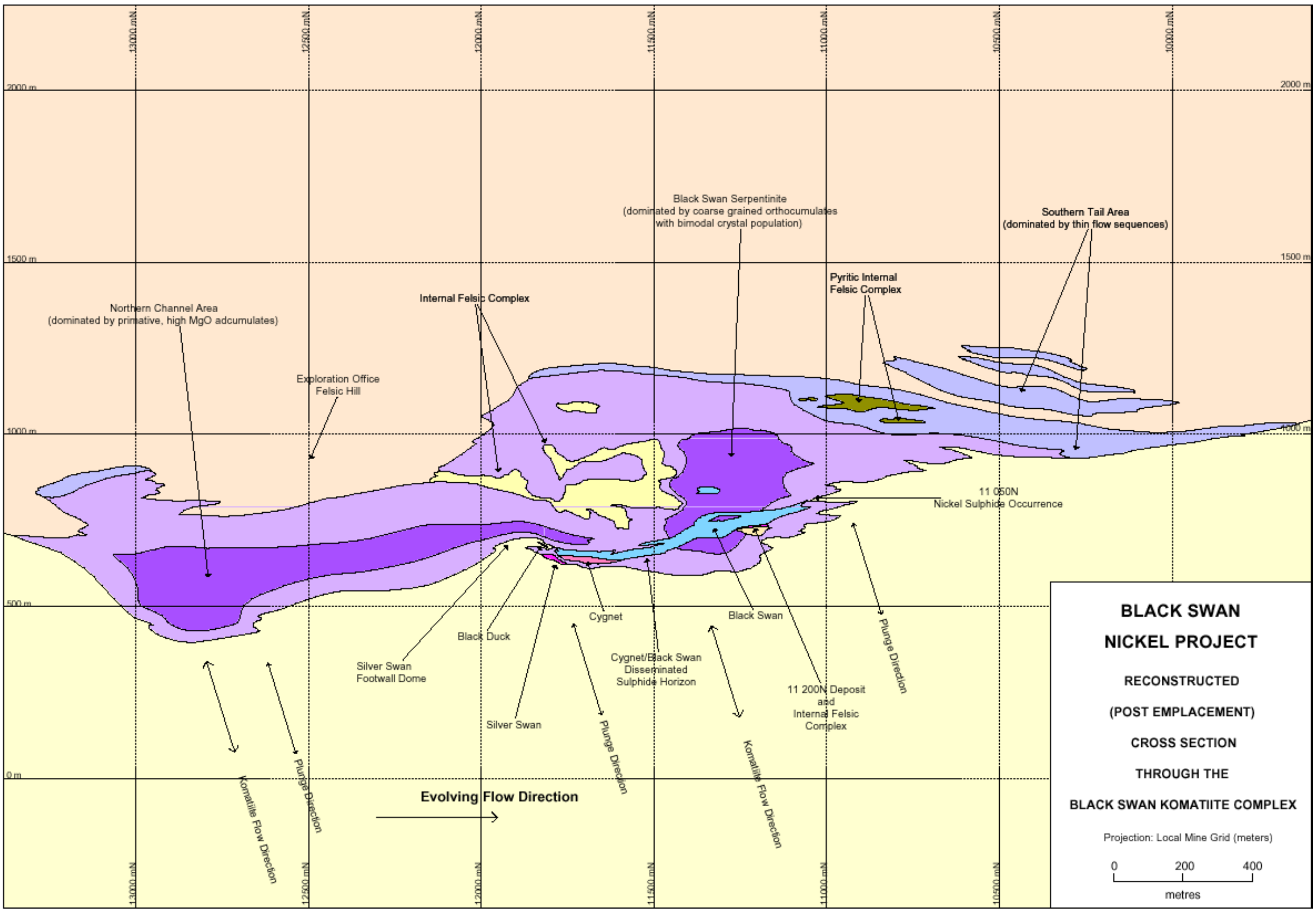


FIGURE 5: INTERPRETED SOLID GEOLOGY OF THE BLACK SWAN KOMATIITE COMPLEX

Large areas of the BSKC have been subjected to an intense carbonation event, which altered rocks of an earlier serpentinisation event to talc–carbonate ± quartz-sericite assemblages, and at the same time destroyed most primary igneous textures of the parent komatiite. Carbonate is by far the most dominant alteration mineral and is present as magnesite and siderite. Fine talc flakes, intergrown with the carbonate, form a significant component in some areas. Quartz is a minor constituent, replacing and enveloping the carbonate, while minor sericite is a widespread alteration product.

Two areas of serpentinite located near the centre and at the northern end of the BSKC survived the carbonation event. These serpentinite areas are dominated by antigorite ± carbonate-talc assemblages and typically exhibit well preserved igneous textures. The central serpentinite area is commonly referred to as the Black Swan serpentinite and is the host unit for most of the BSD mineralisation at surface.

Three principal nickel sulphide deposit types are recognised within the BSKC:

- High-grade (14% Ni) long (>1km) "ribbon-like" shoots of pyrrhotite-pentlandite-pyrite ± chalcopyrite massive sulphide mineralisation developed on the basal (western) contact of the complex of which Silver Swan and White Swan are the type examples.
- Low-grade (0.7-2.0% Ni) pyrite-millerite-vaesite-polydymite ± magnetite disseminated sulphide mineralisation developed internally within the complex of which Cygnet and the Black Swan deposits are the type examples; and
- Medium-grade (3.0-5.0%Ni) complex zones of massive, semi-massive and matrix mineralisation developed where the BSD sulphide rich flow contact internal felsic units within the Complex. Gosling and Golden Swan are the type examples of this type of deposit.

The mineral resource inventory available for a restart at BSO (for either a 1.1Mtpa smelter grade concentrate or 2.2Mtpa rougher concentrate option) is restricted to the unmined portions of the Silver Swan, Golden Swan and the BSD sulphide deposits (see Figure 6).

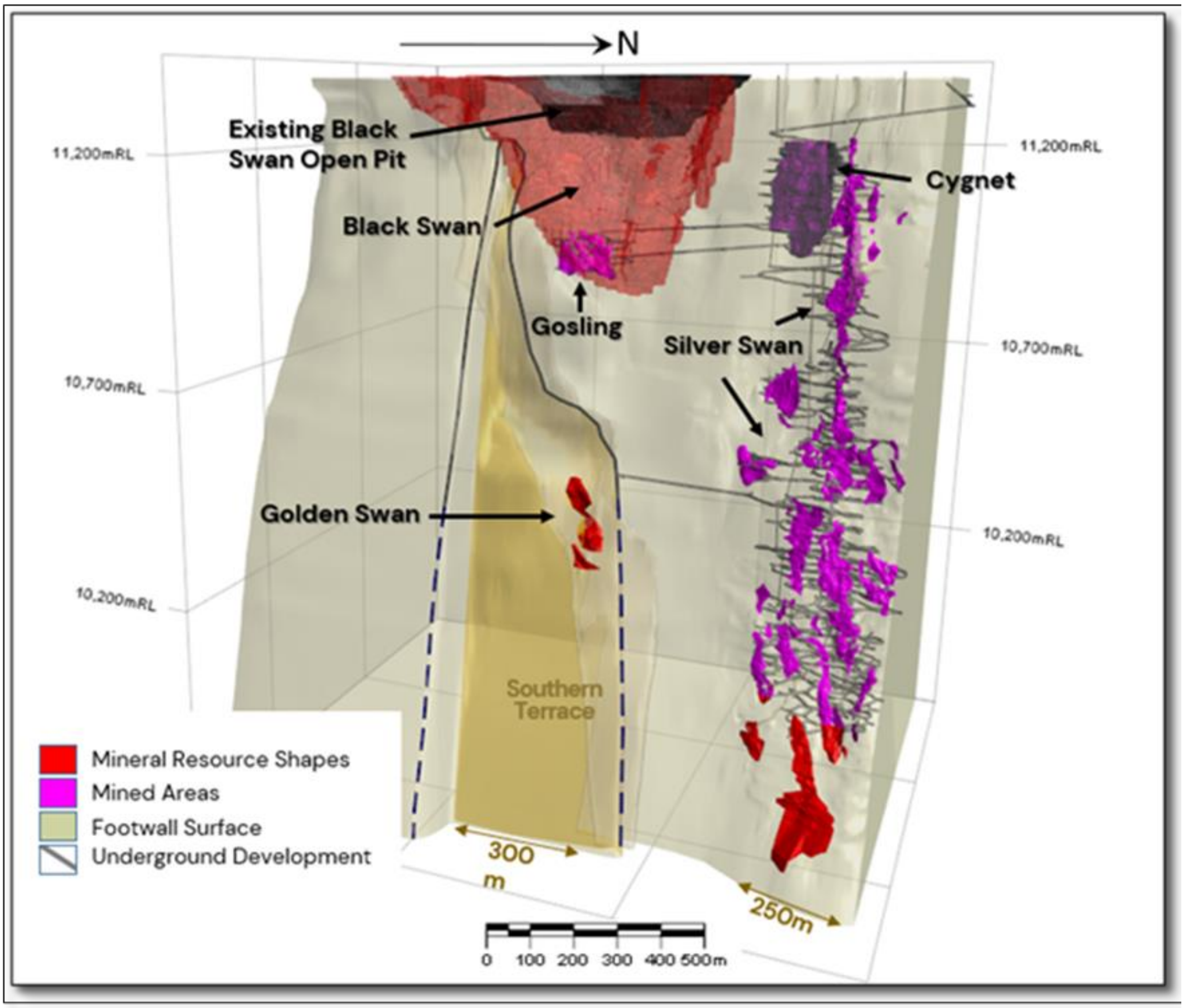


FIGURE 6: 3D IMAGE SHOWING DISTRIBUTION OF BFS MINERAL RESOURCES

3.1. Black Swan Disseminated (BSD) Sulphide Deposit

The BSD sulphide deposit is located 0.5km south of the Silver Swan portal. It forms part of the Cygnet-Black Swan disseminated sulphide horizon, a more-or-less continuous zone, comprising several disseminated sulphide horizons between mine grid 11800 mN and 11000 mN. Overlying the deposit is a zone of oxidised ultramafic, residual and transported ferruginised clays between 24 and 42 metres thick.

Near surface, the greater portion of the Black Swan resource is hosted by the Black Swan serpentinite. Talc–carbonate (magnesite and dolomite) altered rocks enclose the serpentinite to the north and south and at depth. Primary igneous textures comprising ortho- to mesocumulate textured olivine pseudomorphs between 1mm and 10mm in diameter are well preserved in the serpentinite. Igneous textures in the enclosing carbonate-altered rock types have generally been destroyed.

The BSD disseminated sulphide mineralisation forms between 2-10% of the host rock. 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 sulphide types are recognised:

- Fine grained interstitial composite grains between olivine pseudomorphs; and
- Coarse grained blebby or droplet composites similar in size to the olivine pseudomorphs.

The fine-grained composites are more widely distributed, defining a broad, low grade mineralised horizon consisting of several discrete lenses (Figure 7). The coarser grained composites are much less widely distributed, forming small discrete, higher-grade zones within the sulphide rich lenses. They are also unique to the Black Swan deposit and are generally restricted to the disseminated sulphide lenses developed between 11200 mN and 11450 mN. The majority of the BSD sulphide mineralisation is contained within a central 'main' lens which is up to 50 metres thick and contains most of the coarser grained blebby sulphides.

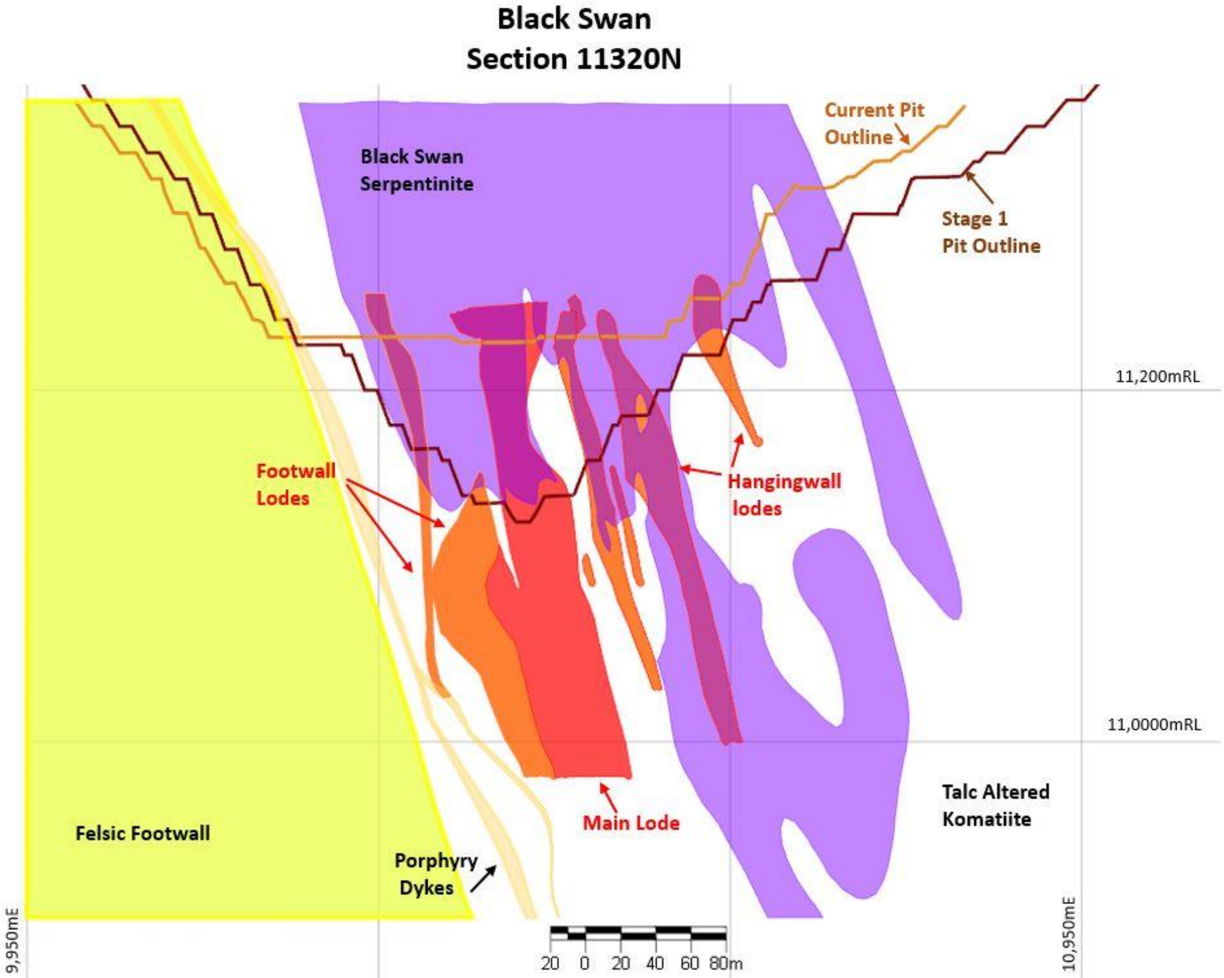


FIGURE 7: BLACK SWAN GEOLOGICAL CROSS-SECTION 11320N LOOKING NORTH

3.2. Silver Swan Massive Sulphide Deposit

The high-grade Silver Swan massive-sulphide nickel deposit consists of a series of discrete, steeply east dipping (70 - 90°) thin (<1 to 10 metres) short strike length lens-shaped shoots situated on the basal contact of the BSKC (see Figure 8). Individual shoots include Silver Swan, White Swan, Goose, Fledgling-Canard, Odette, Trumpeter, Peking Duck and Tundra Mute. This mineralisation plunges steeply towards the north along the southern flank of a substrate topographical high referred to as the Silver Swan footwall dome.

Silver Swan massive sulphides are typically coarse grained without any consistent compositional layering. Two textural types are generally recognised. The more dominant 'lattice' or 'trellis' texture consists of alternating stringers and sub-parallel lenses of pentlandite and pyrrhotite with minor to trace amounts of violarite, chalcopyrite, pyrite and gersdorffite. Individual pentlandite lenses are typically 2 - 5 mm thick and several centimetres long and consist of 0.1 – 2 mm diameter granular pentlandite crystals. The pyrrhotite lenses consist of coarse granular aggregates of pyrrhotite with minor stringers and flames of pentlandite and pyrite. The other, less widely distributed textural type, is 'leopard' texture. It consists of coarse-grained circular pentlandite crystals (up to 10 mm in diameter) in a pyrrhotite matrix.

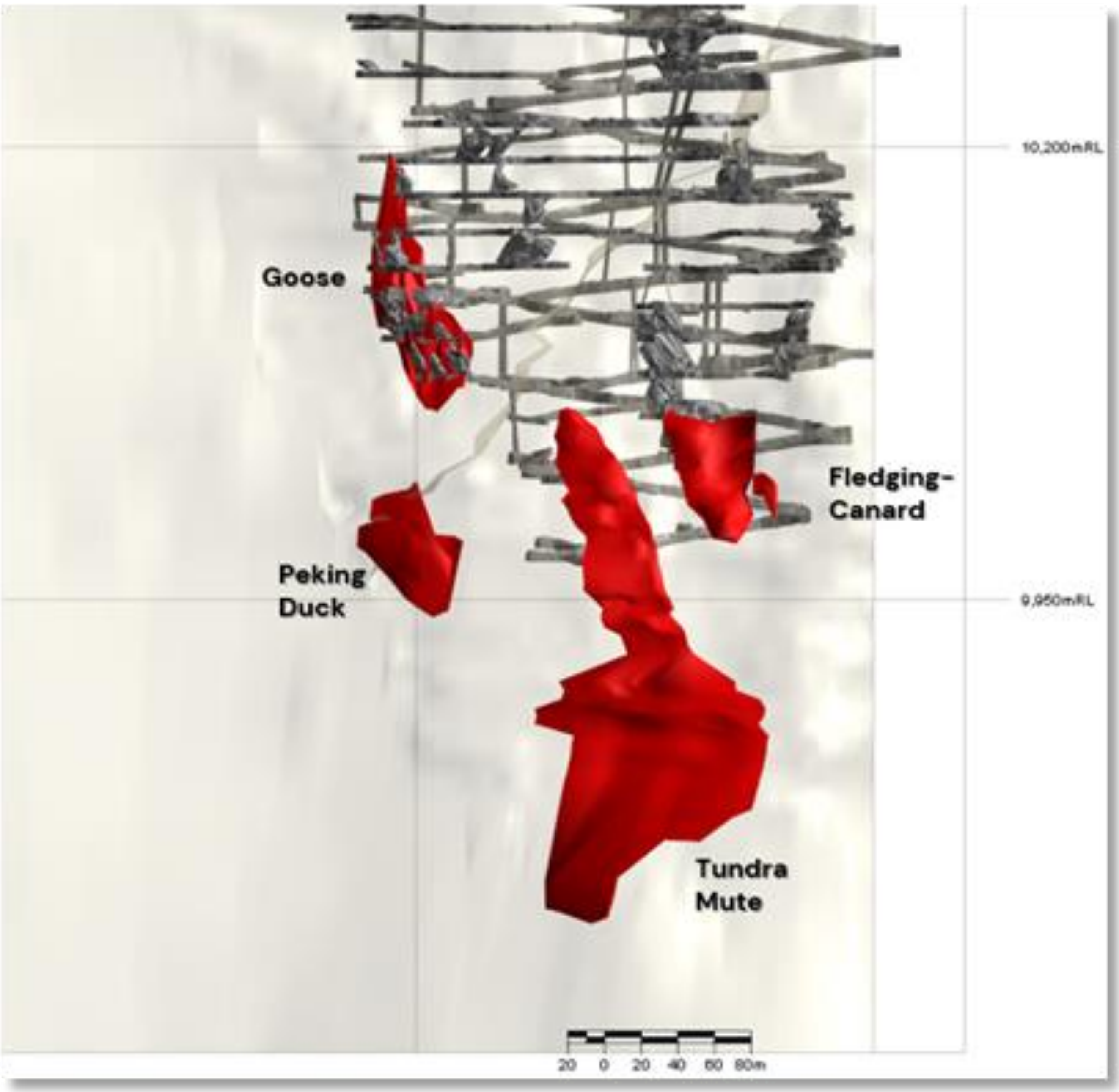


FIGURE 8: LONG SECTION LOOKING WEST OF THE IN-SITU LODES AT THE BASE OF SILVER SWAN

3.3. Golden Swan Semi-Massive Sulphide Deposit

The Golden Swan semi-massive nickel sulphide deposit is located within the BSKC, 450m south of the high-grade Silver Swan massive sulphide deposit (see Figure 9). The deposit, for which Mineral Resources have been estimated, consists of three contact (C10460, C10360 and C10300) and two hanging wall mineralised lenses (U10450 and U10370) (Figure 9). The contact lenses consist predominantly of pyrrhotite-pentlandite rich massive to semi-massive sulphide mineralisation intermixed in places with strong matrix-disseminated mineralisation. The lenses are developed on the contact between an underlying felsic volcanic re-entrant unit referred to as the Southern Terrace and the overlying mineralised BSD sulphide rich komatiite (host to the BSD sulphide deposit described above).

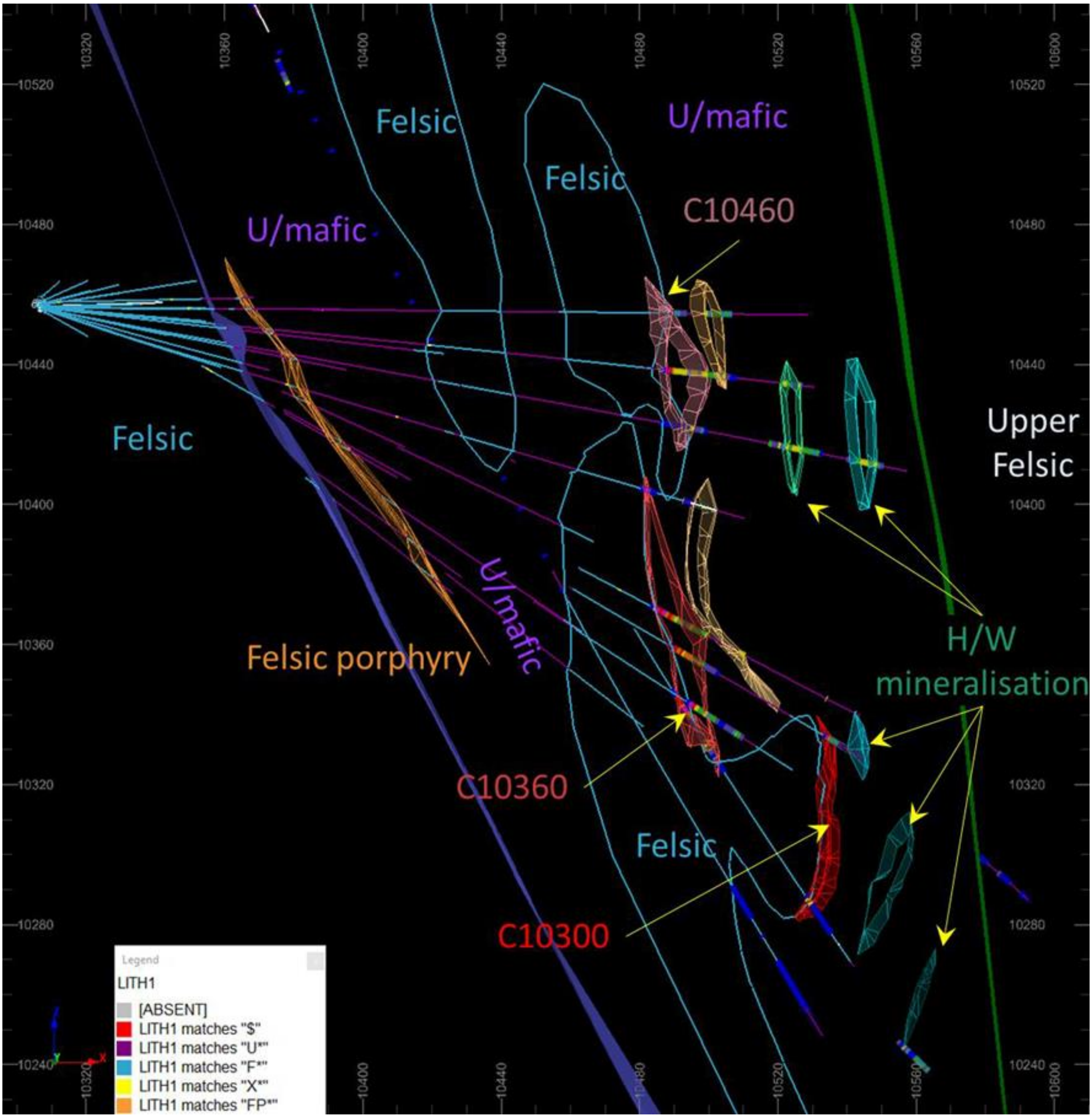


FIGURE 9: CROSS-SECTION 10300 MN LOOKING NORTH SHOWING CONTACT AND HANGING WALL LENSES AND UNDERLYING FELSIC

Within the overlying talc-carbonate altered Black Swan komatiite succession adjacent to the C10460 and C10360 contact lenses, pyrite-millerite rich disseminated and blebby sulphides are sufficiently developed to model the two hanging wall lenses U10450 and U10370. Several other potential hanging wall lenses are evident but lack sufficient drill hole support to adequately constrain. The entire stratigraphy has been intruded by late-stage felsic porphyry dykes, none of which have been observed to date to impact the Golden Swan deposit.

4. Mineral Resources

The Black Swan Project 2022 Mineral Resource inventory is summarised in Table 9.

TABLE 9: BLACK SWAN PROJECT MINERAL RESOURCE INVENTORY (NOVEMBER 2022)

Nickel Sulphide Resources	JORC Compliance	Cut Off Grade	BLACK SWAN PROJECT MINERAL RESOURCE SUMMARY												
			MEASURED & 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	2012	0.4%	10,700	0.75	80,000	18,200	0.55	101,000	28,900	0.63	181,000	0.01	4,500	0.02	5,800
Silver Swan	2012	1.0%	138	9.00	12,450	8	6.00	490	146	8.80	12,940	0.16	240	0.36	530
Golden Swan	2012	1.0%	112	4.70	5,200	48	2.20	1,050	160	3.90	6,250	0.08	120	0.30	480
Silver Swan Tailings	2012	NA	675	0.92	6,200	-	-	-	675	0.92	6,200	0.07	460	0.04	270
Sub-Total Ni, Co, Cu Resources	2012		**11,625**	**0.90**	**103,850**	**18,260**	**0.60**	**102,540**	**29,880**	**0.69**	**206,390**	**0.02**	**5,320**	**0.02**	**7,080**
Stockpiles	2012	0.4%	1,200	0.49	5,900	400	0.53	1,900	1,600	0.5	7,800	NA	NA	NA	NA
Total Ni Resources	2012		**12,825**	**0.86**	**109,750**	**18,660**	**0.56**	**104,440**	**31,480**	**0.68**	**214,190**	-	-	-	-

Note: totals may not sum exactly due to rounding. NA = Information Not Available from reported resource model.

New and updated Mineral Resource Estimates (MRE) have been generated for the Black Swan, Silver Swan, Golden Swan and Silver Swan tailings deposits following the completion of significant drill programs at each deposit by Poseidon in 2021 and 2022. All four MRE were completed jointly by Poseidon and independent consultants in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012). Details of the MRE were reported separately by Poseidon in the following titled ASX announcements:

- "*More Nickel in Updated Black Swan Disseminated Mineral Resource*" (4 July 2022)
- "*Updated Silver Swan Resource underpins significant increase in high grade indicated resource base*" (27 April 2022)
- "*Golden Swan Maiden Resource and Golden Swan Maiden Resource – Additional Information*" (27 October 2021 and 12 November 2021)
- "*Silver Swan Tailings – Maiden Resource Estimate*" (15 September 2021)
- "*Poseidon Announces Black Swan Mineral Resource*" including surface stockpiles (4 August 2014)

The Black Swan MRE was compiled by Golder in 2022, replacing the previous estimates completed by Golder in 2014 and 2018. The updated Black Swan MRE incorporated new data from 24 diamond drill holes (5,144 metres) completed by Poseidon between October 2021 and March 2022 and 14 RC holes completed in 2019.

The Silver Swan, Golden Swan and Silver Swan tailings MRE were compiled by Optiro. The Silver Swan MRE was compiled in 2022 following the completion of a 38 hole (8,179 metre) underground diamond drill program. The maiden Golden Swan MRE was completed in 2021 following completion of a 69-hole (22,000 metre) program of exploration and Resource drilling undertaken after the discovery of the deposit in 2020. The maiden Silver Swan tailings MRE was compiled by Optiro in 2021 following completion of a sonic drilling program of 57 vertical holes completed in 2018 on a 40 metre x 40 metre drilling pattern.

Post completion of the 2022 Black Swan MRE, the model was updated by Golder to include recently available data on the distribution of talc within the BSD sulphide deposit (see Figure 10) to help domain the ore for processing (see Section 8 - Metallurgical Testwork).

The inclusion of talc into the 2022 MRE model required minor adjustments to be made to the model, primarily around the interface between the serpentinite and talc-carbonate domain boundaries. The updated model is referred to as the "Talc Working Model" (TWM) and due to the importance of talc, has been adopted as the mine planning model for the Black Swan BFS. This has resulted in minor differences between the production target reported against the TWM compared to declared Ore Reserves (reported against the July 2022 MRE).

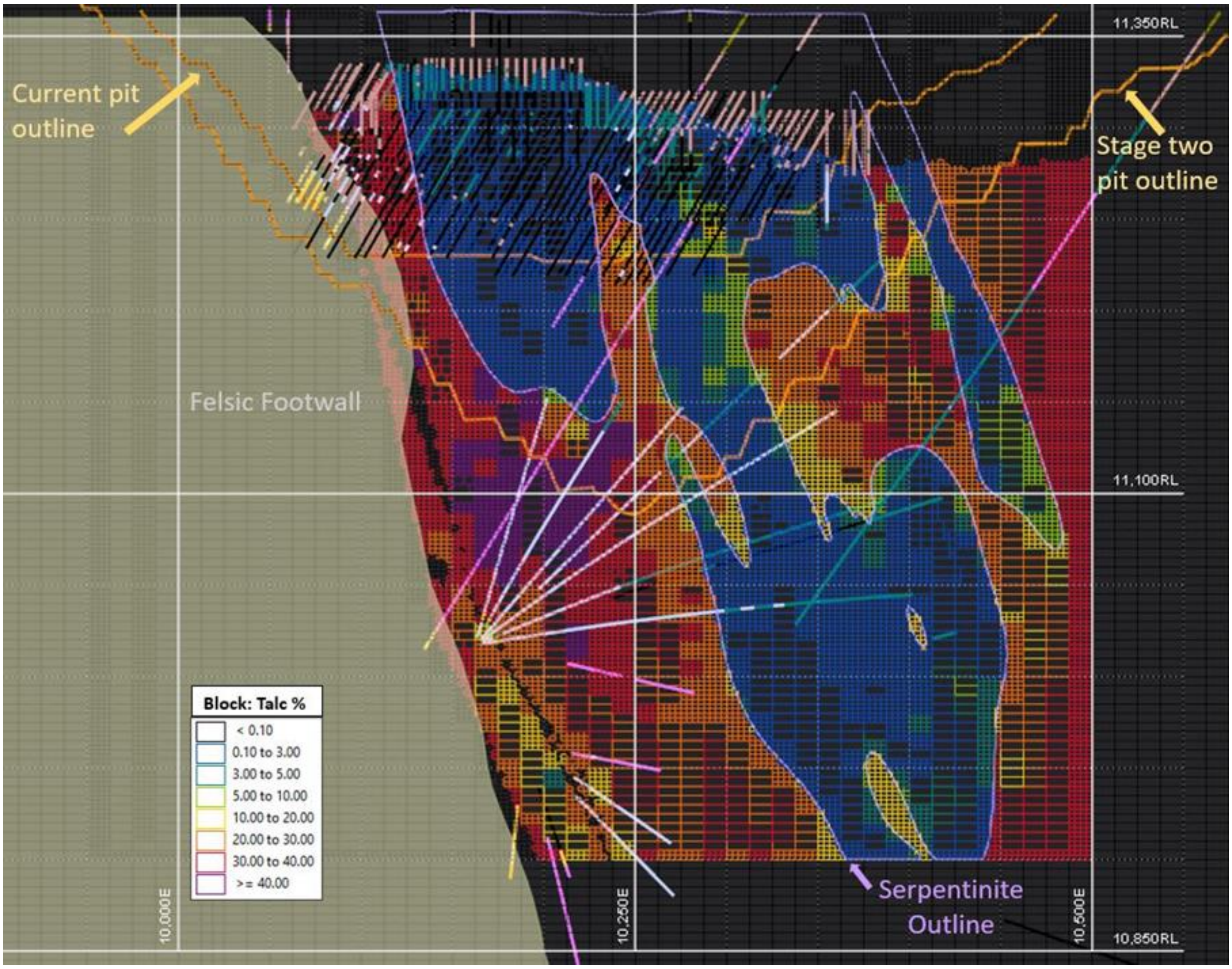


FIGURE 10: SECTION 11340N - TALC WORKING MODEL SHOWING THE DISTRIBUTION OF BLOCK TALC GRADES

5. Open Pit Mining

The Black Swan open pit is planned to be mined using a conventional diesel fleet of 120t excavators and 90t trucks. The minimum mining widths adopted are considered adequate given the geometry of the open pit designs to achieve full access and manoeuvrability for the proposed mining fleets. A 20 metre minimum mining width was chosen for the open pit design and physical cut-back distance from the existing pit void.

An open pit optimisation was established using Datamine's NPV Scheduler. The optimisation considered Measured, Indicated and Inferred Mineral Resource material in its economic evaluation.

The Mineral Resource model was prepared for open pit optimisation by adding cost, recovery, royalties, and revenue drivers to individual blocks within the model using macros. All cost assumptions were aggregated to create a total ore related cost assigned to ore blocks.

Mining dilution and mining recovery factors of 10% and 95% respectively were applied. These factors have been based on mining recovery of the ore, factoring some losses during mining.

An open pit optimisation was carried out to assess the economic viability of a potential cut-back and assess the inherent risk of various options. Key factors considered were the remediation requirements of the current wall failure and the minimum cut-back distance required to safely mine the Black Swan open pit to depth.

An optimised pit shell was deemed appropriate for maximising metal within the proposed pit design whilst providing a strong NPV value. Previous studies identified a smaller open pit option which mined the base of the pit without encroaching on existing pit walls. However, as a result of the upper wall failure on the southern extents of the pit, it was deemed favourable to mine a larger open pit, cutting a new wall to the east and to the north to gain access to ore at depth. A cut-back design was subsequently carried out on a chosen optimisation outcome and a detailed mining cost analysis undertaken using contractor mining rates for Load & Haul and Drill & Blast and costs associated with the processing of ore from the open pit.

The proposed final open pit design incorporates the remediation of the existing wall failure on the south-eastern wall. Due to the initial cut-back and wall failure remediation will require a large amount of waste to be removed before accessing the ore in the base of the existing pit. It is planned that an initial starter pit be mined, utilising the existing pit ramp and mining within the current open pit footprint, allowing for a minimum of 50 metres standoff from the base of the current pit wall failure. This will provide ore feed in the early months of the mine schedule and allow for the safe and effective remediation of the wall failure as the pit is mined to final depth.

Geotechnical design parameters were consistent with the previous 2018 Feasibility Study, with the addition of a pit wall failure remediation plan report (Green, 2022).

A summary of the total LOM open pit physicals is presented in Table 10 to Table 11.

TABLE 10: BLACK SWAN OPEN PIT PRODUCTION TARGET (PART 1)

Item	Units	Q1	Q2	Q3	Q4	Q5	Q6
Waste Volume	bcm	1,040,069	1,126,268	1,134,348	629,865	350,717	318,128
Mill Feed Volume	bcm	376,081	29,427	12	3,075	19,183	55,882
Total Volume	bcm	1,416,150	1,155,695	1,134,360	632,940	369,900	374,010
Waste Tonnes	t	2,846,055	3,104,503	3,134,194	1,735,696	957,378	857,860
Mill Feed Tonnes	t	1,025,816	80,160	34	7,769	51,187	147,944
Total Tonnes	t	3,871,870	3,184,663	3,134,227	1,743,465	1,008,565	1,005,804
Total Feed Tonnes	**t**	**1,025,816**	**80,160**	**34**	**7,769**	**51,187**	**147,944**
Total Feed Ni Grade	**% Ni**	**0.7%**	**0.8%**	**0.4%**	**0.5%**	**0.7%**	**0.6%**
Total Feed Mined Ni Metal	**t**	**6,954**	**616**	**0**	**42**	**343**	**927**

TABLE 11: BLACK SWAN OPEN PIT PRODUCTION TARGET (PART 2)

Item	Units	Q7	Q8	Q9	Q10	Q11	Total
Waste Volume	bcm	261,883	241,122	215,571	215,652	118,762	5,652,385
Mill Feed Volume	bcm	115,560	134,324	153,924	158,358	119,470	1,165,295
Total Volume	bcm	377,443	375,446	369,495	374,010	238,232	6,817,681
Waste Tonnes	t	725,953	673,660	597,818	602,702	336,624	15,572,443
Mill Feed Tonnes	t	318,456	368,387	422,336	436,601	327,877	3,186,566
Total Tonnes	t	1,044,409	1,042,047	1,020,154	1,039,302	664,501	18,759,009
Total Feed Tonnes	**t**	**318,456**	**368,387**	**422,336**	**436,601**	**327,877**	**3,186,566**
Total Feed Ni Grade	**% Ni**	**0.6%**	**0.7%**	**0.7%**	**0.7%**	**0.7%**	**0.7%**
Total Feed Mined Ni Metal	**t**	**1,989**	**2,429**	**3,003**	**3,234**	**2,368**	**21,905**

**Calculations have been rounded to the nearest 1,000t of ore, 0.1% Ni grade and 100 t of metal and includes only Measured and Indicated Material*

The production target mined from within the Black Swan open pit is reported as slightly different to the estimated Reserve. This is due to the Reserve being estimated using the JORC compliant July 2022 MRE and the mining inventory being estimated using the TWM as described in Section 4.

Figure 11 and Figure 12 illustrate the layout and geometry for the design, including the preliminary starter pit.

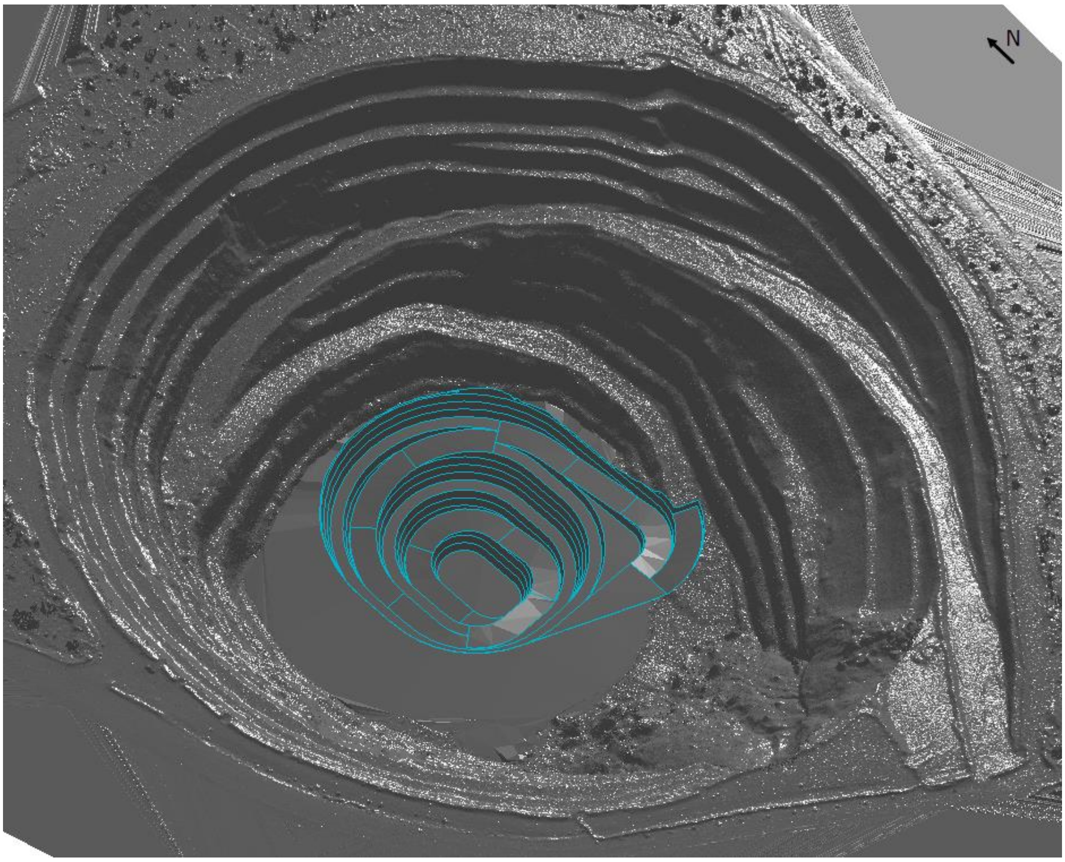


FIGURE 11: OPEN PIT DESIGN (LOOKING NORTH-EAST)

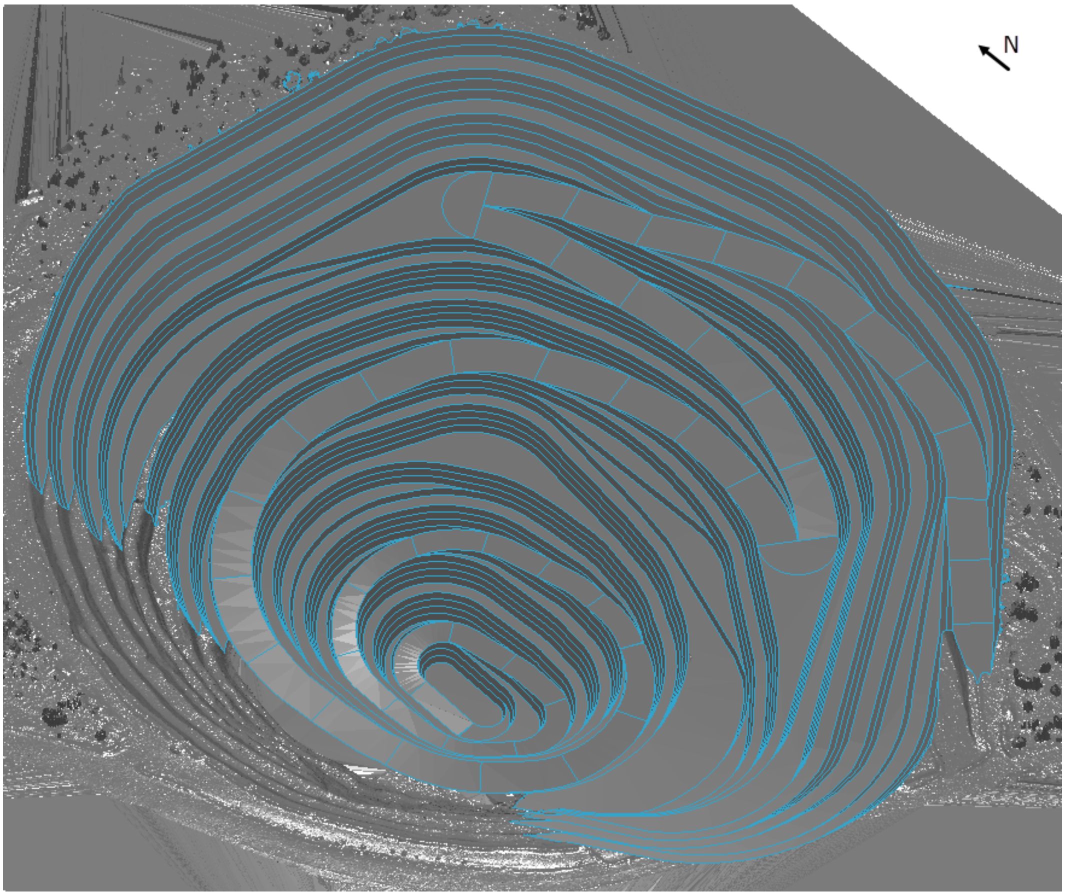


FIGURE 12: OPEN PIT DESIGN (LOOKING NORTH-EAST)

6. Underground Mining

The mining method proposed for the Silver Swan underground is unchanged from that in the 2017 mining study that consisted of mechanised bottom-up longhole stoping with continuous cemented rockfill (CRF) on 25 metre vertical sub-levels. Stoping voids without top access will be left open with rib pillars retained for support. The same mining method for the Golden Swan underground is being applied but will use 15m sub-levels.

Mining activities are planned to be carried out by reputable mining contractors, with Poseidon providing mine management and technical support.

All stoping areas are based on geotechnical advice resulting in a minimum width of 3.25 metres for Silver Swan and 2.75 metres for Golden Swan. Fill stopes will have an additional 3% dilution at zero grade included in the schedule to account for overbogging of fill material. Mining recoveries of 95% have been applied to stopes to allow for issues such as local orebody spatial variability and material left behind during remote loading.

A sill pillar will be used at both Silver Swan and Golden Swan to allow for two concurrent working areas respectively for more efficient mine scheduling:

- The Silver Swan sill pillar designed between the 9900-9925 level - Geotechnical analysis indicated that the sill pillar will need to be fully sub-level in height to remain stable. On the 9,875 level beneath the sill (see Figure 13) 5 metre rib pillars will be used in-situ due to the inability to fill the stopes from the absent 9900-9925 level.
- Golden Swan will use a 2-metre thick CRF sill pillar placed in the floor of the 10,350 level ore drive (see Figure 14).

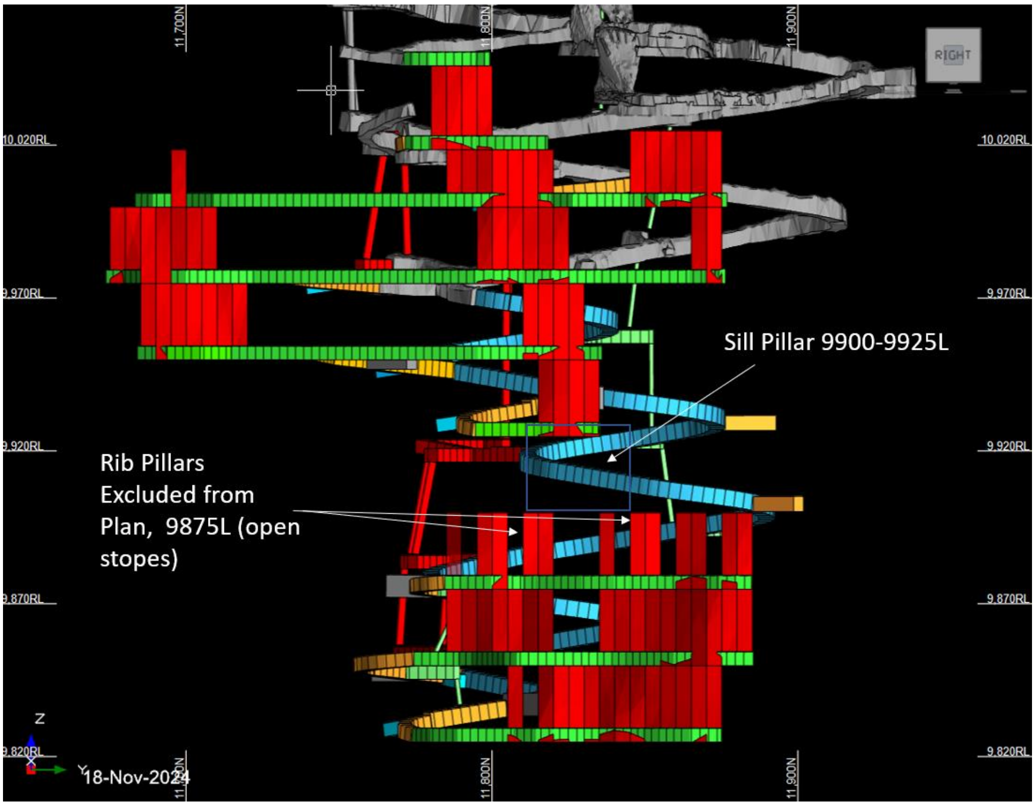


FIGURE 13: SILVER SWAN RIB AND SILL PILLARS EXCLUDED FROM PLAN (LONG-SECTION LOOKING W)

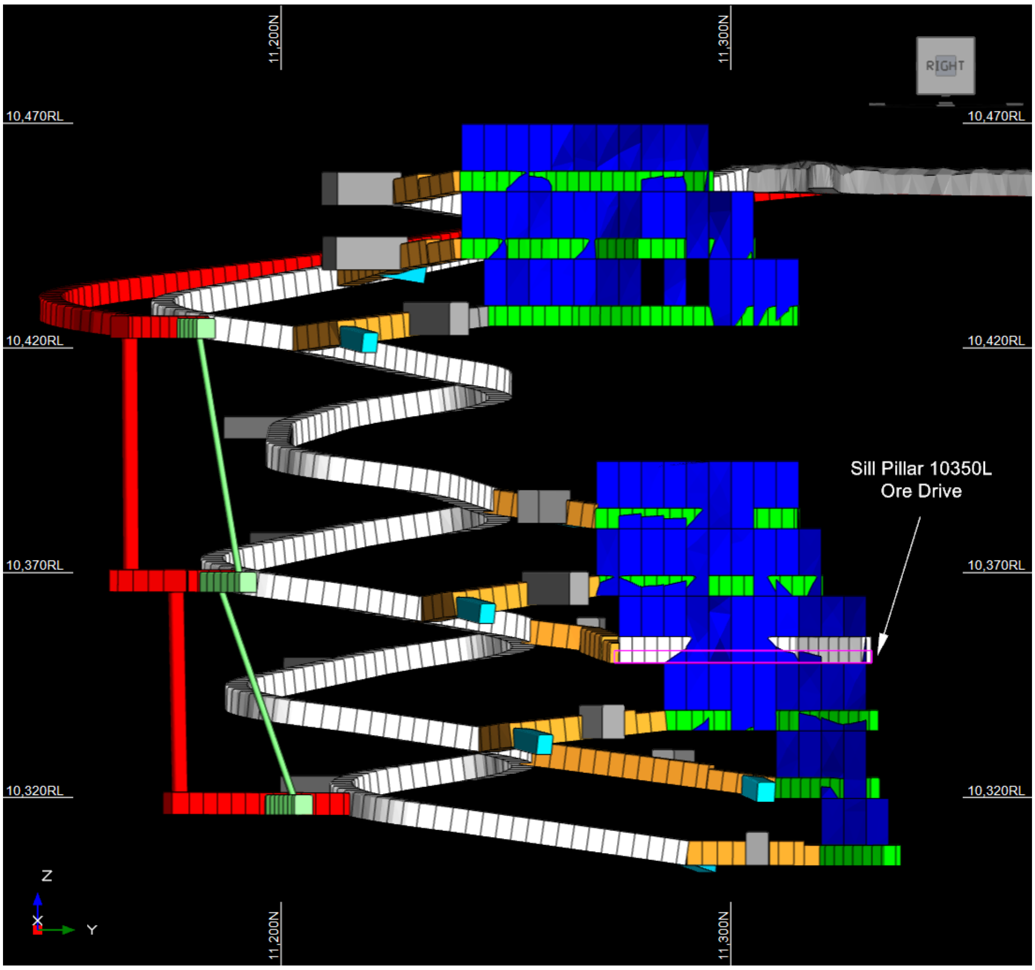


FIGURE 14: GOLDEN SWAN SILL PILLAR LOCATION ON ORE DRIVE (LONG-SECTION LOOKING W)

The economic nickel cut-off grades (COG) were determined by using mining and processing costs assumptions along with revenue inputs, assuming processing of all ore at the Black Swan concentrator. Optimisation software to determine mineable shapes was based on the Indicated and Inferred resource categories only.

The optimisation results were reviewed for mineability with any stopes falling below the calculated COG being removed from the mine plan. Drill and blast, backfilling and updated ground support costs were applied to the optimised stope shapes to determine the final designs.

Productivity assumptions have been applied based on similar equipment and mining methods prevalent within the Western Australian hard rock mining industry and assuming the engagement of an experienced and competent underground contractor. The stoping sequence is unchanged from the previous 2017 mining study, being bottom-up methods retreating back from the end of each stope drive.

The mine will be ventilated using a series of ventilation methods where the air is re-used by reintroducing air back into the decline until it reaches the last Return Air Raise (RAR) connection at depth. An updated analysis for the current mine plan includes the following points:

- The existing primary fan infrastructure is sufficient to meet the needs of the Silver Swan and Golden Swan mine at peak production so long as the return blockage in the Northern Vent Rise (NVR) is bypassed. This series of bypasses are accounted for in the first 2 months of the mine plan.
- The mine will require mechanical cooling for operating conditions to be within regulatory requirements. A 6MWh decline cooling plant has been allowed for in the financial model and can be switched off in the cooler months.

Underground mining costs have been estimated based on contractor rates from a detailed Request for Quote (RFQ) process carried out in April 2022. These rates were provided on a fixed and variable basis.

The final Silver Swan and Golden Swan underground Ore Reserve Mine Plan schedule is presented in Table 12. The planned underground mine life is 39 months.

TABLE 12: SILVER SWAN & GOLDEN SWAN ORE RESERVE MINE PLAN KEY SCHEDULED PHYSICALS BY QUARTER

Item	Units	Total	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Capital Lateral Development	m	4,811	391	542	553	470	408	427	556	423	510	500	31	-	-
Operating Lateral Development	m	2,004	120	278	486	152	232	208	148	83	123	149	26	-	-
Total Lateral Development	*m*	*6,815*	*511*	*820*	*1,038*	*622*	*640*	*635*	*704*	*506*	*633*	*649*	*57*	-	-
Total Capital Vertical Development	m	811	180	74	133	83	116	6	-	-	53	74	91	-	-
Longhole Drilling	k drm	85.3	0.5	1.0	2.5	9.2	9.2	8.7	9.0	5.4	5.7	9.9	8.4	11.5	4.3
Total Backfill Placed	kt	120.8	-	-	-	18.8	14.3	8.6	20.9	9.4	12.5	4.6	12.9	15.8	3.1
Total Waste Tonnes Mined	kt	401.7	35.7	48.4	54.0	36.9	35.4	33.2	41.8	32.6	40.4	38.8	4.4	-	-
Waste Movement	k tkm	3,452.6	273.2	430.3	439.7	403.1	328.9	245.2	334.6	270.9	348.2	341.6	36.9	-	-
Ore Movement	k tkm	3,188.7	67.8	150.0	277.1	315.1	387.3	396.1	339.5	192.9	224.7	260.8	186.3	285.9	105.1
Total Movement	*k tkm*	*6,641.2*	*341.0*	*580.3*	*716.8*	*718.2*	*716.2*	*641.3*	*674.0*	*463.9*	*572.9*	*602.4*	*223.2*	*285.9*	*105.1*
Development Ore Tonnes	kt	58.6	-	3.8	9.5	5.3	6.1	7.9	7.0	3.7	6.4	7.9	1.0	-	-
Development Ore Ni Grade	% Ni	4.1%	-	5.3%	3.8%	4.6%	3.2%	6.4%	3.3%	2.4%	3.7%	4.0%	2.6%	0.0%	0.0%
Development Ore Co Grade	ppm Co	777	-	909	816	860	670	1,065	598	375	740	811	519	-	-
Development Ore Cu Grade	% Cu	0.2%	-	0.3%	0.1%	0.2%	0.1%	0.2%	0.2%	0.1%	0.3%	0.4%	0.1%	0.0%	0.0%
Development Ore Mined Ni Metal	t Ni	2,398	-	201	360	246	197	505	228	86	233	316	26	-	-
Development Ore Mined Co Metal	t Co	46	-	3	8	5	4	8	4	1	5	6	1	-	-
Development Ore Mined Cu Metal	t Cu	130	-	10	14	10	9	18	14	5	20	30	1	-	-
Stope Ore Tonnes	kt	220	-	-	2.3	22.5	24.4	26.2	26.2	14.5	15.1	18.8	21.4	35.7	13.1
Stope Ore Ni Grade	% Ni	4.8%	-	-	3.3%	4.5%	4.4%	5.0%	5.9%	10.2%	3.3%	3.6%	3.6%	4.3%	4.8%
Stope Ore Co Grade	ppm Co	905	-	-	667	961	796	819	1,079	1,665	811	616	739	849	984
Stope Ore Cu Grade	% Cu	0.2%	-	-	0.1%	0.2%	0.2%	0.2%	0.2%	0.4%	0.1%	0.2%	0.3%	0.3%	0.3%
Stope Ore Mined Ni Metal	t Ni	10,602	-	-	76	1,015	1,067	1,313	1,542	1,477	493	676	776	1,543	625
Stope Ore Mined Co Metal	t Co	199	-	-	2	22	19	21	28	24	12	12	16	30	13
Stope Ore Mined Cu Metal	t Cu	523	-	-	3	43	47	51	60	51	19	32	58	120	38
Total Ore Tonnes	**kt**	**278.6**	**-**	**3.8**	**11.8**	**27.8**	**30.5**	**34.1**	**33.2**	**18.1**	**21.5**	**26.7**	**22.4**	**35.7**	**13.1**
Total Ore Ni Grade	**% Ni**	**4.7%**	**-**	**5.3%**	**3.7%**	**4.5%**	**4.1%**	**5.3%**	**5.3%**	**8.6%**	**3.4%**	**3.7%**	**3.6%**	**4.3%**	**4.8%**
Total Ore Co Grade	**ppm Co**	**878**	**-**	**909**	**788**	**942**	**771**	**876**	**978**	**1,405**	**790**	**673**	**729**	**849**	**984**
Total Ore Cu Grade	**% Cu**	**0.2%**	**-**	**0.3%**	**0.1%**	**0.2%**	**0.2%**	**0.2%**	**0.2%**	**0.3%**	**0.2%**	**0.2%**	**0.3%**	**0.3%**	**0.3%**
Total Ore Mined Ni Metal	**t Ni**	**13,000**	**-**	**201**	**436**	**1,262**	**1,263**	**1,817**	**1,770**	**1,563**	**727**	**992**	**801**	**1,543**	**625**
Total Ore Mined Co Metal	**t Co**	**245**	**-**	**3**	**9**	**26**	**23**	**30**	**32**	**25**	**17**	**18**	**16**	**30**	**13**
Total Ore Mined Cu Metal	**t Cu**	**653**	**-**	**10**	**17**	**54**	**56**	**68**	**74**	**55**	**39**	**62**	**60**	**120**	**38**

7. Ore Reserves & Mining Inventory

Ore reserve estimates have been generated for the Black Swan open pit, Golden Swan and Silver Swan underground mines. All three Mineral Resource estimates have been classified in accordance and to be compliant with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012).

The Ore Reserve estimate for the Black Swan open pit nickel mine as at October 2022 is 3,187,000t of ore grading 0.70% Ni for a total of 21,900t of contained Ni metal.

The Ore Reserve estimate for the Silver Swan underground nickel mine as at June 2022 is 179,000t of ore grading 5.0% Ni for a total of 9,000t of contained Ni metal.

The Maiden Ore Reserve estimate for the Golden Swan (GS) underground nickel mine as at June 2022 is 100,000t of ore grading 4.0% Ni for a total of 4,000t of contained Ni metal.

TABLE 13: 2022 BLACK SWAN PROJECT ORE RESERVE ESTIMATE

	JORC Compliance		Nickel Sulphide Reserves		
			Tonnes (kt)	Ni Grade %	Ni Metal (kt)
BLACK SWAN PROJECT					
Black Swan	2012	Proved	579	0.7	4.2
		Probable	2,608	0.7	17.7
Silver Swan	2012	Proved			
		Probable	179	5.0	9.0
Golden Swan	2012	Proved			
		Probable	100	4.0	4.0
Total Ni Reserves	2012	Proved	579	0.7	4.2
		Probable	2,887	1.1	30.7
		Total	3,466	1.0	34.9

**Calculations have been rounded to the nearest 1,000t of ore, 0.1% Ni grade and 100 t of metal*

Refer to Table 1 and Figures 2 and 3 for a summary of mined mineral inventory and total ore feed sources for processing through the Black Swan concentrator.

The Mineral Resources used as the basis for the Ore Reserve estimates was announced to market on 27 October 2021 and 12 November 2021 (Golden Swan), 27 April 2022 (Silver Swan) and 4 July 2022 (Black Swan). Indicated Resources have been converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. No Measured material was contained in either of the Silver Swan or Golden Swan Resources. Any Inferred material contained within the mine plan both underground and within the open pit operations have been treated as host rock waste. The Ore Reserves have been defined at delivery to the Black Swan concentrator, on the assumption that all material will be processed alongside surface stockpile material.

The Ore Reserve estimate is based on financials and modifying factors determined as part of this BFS undertaken on the Project. The Ore Reserves are estimated using more conservative modifying factors (e.g. commodity prices) than the base case production target. This statement relates to a global estimate.

Material uncertainties relating to this Ore Reserve estimate are discussed below:

- There is a degree of uncertainty associated with geological estimates. The Reserve classifications reflect the levels of geological confidence in the estimates;
- Nickel price and exchange rate assumptions set out by POS are subject to market forces and present an area of uncertainty;

- There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the BFS level of detail of the study; and
- No offtake agreement has yet been signed for the final product and there is no guarantee that such an agreement will be reached.

Factors in favour of confidence in the Ore Reserve estimate include:

- The mine plan assumes simple mechanised mining methods that have been successfully implemented at various sites in the local area;
- The underground mine has been successfully operated previously and has been kept dry and accessible during the care and maintenance period, allowing detailed inspection of the workings and infrastructure; and
- The Project, as previously operated, has a very high likelihood of being successfully permitted.

The BSD production target includes feed sources for processing which are not included in the Ore Reserves, this includes 0.4Mt of Silver Swan Tailings and 1.0Mt of existing surface BSD stockpiles (serpentinite only). These feed sources represent 21% of the contained nickel in feed sources in the production target. The Silver Swan Tailings are a Measured Resource (refer to Section 4 – Mineral Resources) and the on-surface stockpiles are Indicated & Inferred Resources (refer to Section 4 – Mineral Resources).

The surface BSD stockpile production target is based on surveyed volume models, a loose cubic metre estimate for density and the grade determined from the grade control estimations and reconciliations during operations. The calculation is also the basis of the 2014 “Indicated Mineral Resource” estimate. Since the surface stockpiles are post mining, no dilution or mining recovery parameters have been applied to estimate the production target. Surface stockpiles included in the production target do not include stockpiled talc-carbonate material. Processing recovery for surface BSD stockpiles has a reduced recovery factor of 90% further applied to the algorithm derived recovery to address any additional recovery loss as a result of weathering of the material.

The Silver Swan Tailings is based on a Maiden Measured Resource Estimate (see ASX announcement “Silver Swan Tailings – Maiden Resource Estimate” released 15 September 2021). The production target was applied the following modifying factors based on GR Engineering reclaim studies. An estimation of the operating costs has been sourced from recent contract tender appraisals for similar scopes of works. A feed rate of 15t/h has been assumed with operations occurring on the day shift only. Capital allowances have been included for the construction of a haul road to access the TSF. A processing recovery factor based on testwork undertaken on the tailings.

8. Metallurgical Testwork

8.1. Background

The process engineering for the BFS assumes a blend of the Black Swan open pit, surface Black Swan stockpiles and Silver Swan/Golden Swan underground mill feed types. To improve the final concentrate quality for smelters, the blend also includes a small proportion (approximately 7.5% by weight) of tailings from the Silver Swan Tailings Storage Facility (TSF). The inclusion of the Silver Swan tailings to the production blend is primarily to recover additional iron-sulphides to the concentrate. Testwork has shown that approximately 30% of the nickel in the tailings are recovered when reprocessed, making reclamation and reprocessing of the tailings cashflow accretive. The recovery of the iron-sulphides assists to improve the iron content in the final concentrate and therefore increase the ratio of iron (Fe) to magnesia (MgO) in the concentrate to a level more acceptable to nickel smelters. Smelters ideally require the Fe:MgO ratio to be greater than 4:1. Penalties are imposed around the iron and magnesia content and ultimately rejection limits can be enforced if the concentrate quality specifications fall outside the agreed parameters.

The importance of understanding the distribution of talc throughout the Black Swan Resource in relation to the delineation of the metallurgically favourable serpentinite ore type and the processing of this ore type to produce a smelter-grade concentrate is important to ensure processing is optimised. Considerable effort was made to ensure the serpentinite ore type was accurately delineated from the mine plan and representative samples selected for the testwork program. The talc-carbonate ore type, which also contains nickel mineralisation of an attractive tenor, is not proposed to be processed when producing a smelter-grade concentrate. Previous owners of BSO concluded that the treatment of the talc-carbonate ore type had not been fully unlocked, particularly with respect to opportunities to increase the nickel recovery. The previous owners mined but only stockpiled this ore type, waiting for a technical breakthrough in flotation or an opportunity to treat or market the lower grade concentrate for downstream hydrometallurgical processing, such as Pressure Oxidation (POX) and/or High-Pressure Acid Leach (HPAL).

Poseidon completed preliminary metallurgical testwork on the talc-carbonate ore type in parallel to the BFS which indicates this ore type could be blended with the serpentinite ore type to produce a lower grade concentrate that would be suitable to market to a POX and/or HPAL facility. Adopting a flotation approach to blend these two ore types and move down the concentrate grade/recovery curve, to produce a lower grade concentrate, significantly improves the nickel recovery to the concentrate, potentially making the resource associated with the talc-carbonate ore type mineable at depth and potentially extending the open pit mine-life. Details of this preliminary testwork are the subject of ongoing R&D and are being captured in a separate study. Therefore, the talc-carbonate ore type is still considered a resource that could potentially be converted to a reserve through ongoing R&D and additional studies. For this reason, the nickel and cobalt associated with the talc-carbonate ore type are also included in the Black Swan MRE, since there remains an opportunity to exploit the value of metal contained in the talc-carbonate ore type.

The ore source blending testwork program for the BFS utilised representative samples of BSD serpentinite ore, selected from the Black Swan open pit resource drilling program. Representative samples of massive sulphide ore were selected from the Silver Swan and Golden Swan resource drilling programs. Representative samples of the Silver Swan tailings were collected from the Silver Swan TSF. The samples were selected to represent the mill feed sources, including mining dilution, and were collected from within appropriate areas of the mine-plan. Considerable input to the sample selection process was received from the metallurgists, resource geologists and mining engineers.

Strategic Metallurgy was engaged to complete the main testwork program under the direction from the Project team. The scope of work included initial ore characterisation via head assay and open circuit flotation testing using the composite samples selected from each ore source. Then detailed flotation tests were completed using the composite ore sources as combined blends, initially without a concentrate regrind and then with the concentrate regrind stage in place. Finally, a definitive Locked-Cycle Testing (LCT) program was completed which incorporated the concentrate regrind stage, using proportions of the ore sources that reflected the proposed mine-plan.

8.2. Key Results and Interpretations

The head assays for the composite samples are summarised in Table 14.

TABLE 14: HEAD ASSAYS FOR MAIN FEED SOURCE COMPOSITES

Composite	%Ni	%Co	%Cu	%NSNi	%Fe	%S	%S	%MgO	%As	%SiO_2
BSD Stockpile	0.78	0.022	0.02	0.130	6.55	1.72	1.08	37.7	0.005	34.2
BSD Master Composite	0.98	0.021	0.04	0.152	5.88	1.67	1.60	36.5	0.030	34.7
BSD Variability (0.8%-Ni)	0.82	0.022	0.03	0.143	6.04	1.71	1.60	36.5	0.020	33.6
BSD Variability (0.6%-Ni)	0.61	0.017	0.03	0.094	5.29	1.05	0.90	38.0	0.020	34.5
Silver Swan Tailings	0.80	0.060	-	0.270	21.5	11.5	-	6.58	0.100	29.9
Silver Swan Underground	8.34	0.140	0.30	0.105	27.2	19.6	18.5	3.08	0.180	23.8
Golden Swan Underground	3.67	0.071	0.21	0.070	14.3	8.32	8.14	19.6	0.040	29.3

A synthetic process water solution was used in all testwork and was prepared with the intent of matching the expected composition of the process water on site based on production records for the process water when operating the Black Swan concentrator at steady state. The Total Dissolved Solids (TDS) content in the synthetic process water 'recipe' was approximately 120,000 TDS, which comprised primarily of sodium chloride (NaCl).

The testwork utilised the Black Swan concentrator flotation flowsheet in open circuit flotation mode. The testwork involved a primary grind to P80 106µm, three stages of cleaning with a cleaner-scavenger circuit with the regrind stage being added later in the program. The regrind stage was applied to the rougher concentrate and cleaner-scavenger concentrate, with the flowsheet also including a primary grind to P80 106µm. For the Locked-Cycle Testing flowsheet, the cleaner-scavenger concentrate was recirculated back to the regrind mill and the re-cleaner and re-re-cleaner tailings streams were recirculated back to their preceding cleaner stages.

Testing completed on the BSD Master Composite (BSD-MC) involved a series of flotation tests on the composite sample, with two tests completed at different regrind sizes (P80 38µm and P80 32µm). Refer to Table 15 for a summary of the flotation conditions applied and the key results.

TABLE 15: BSD SERPENTINITE MASTER COMP – OPEN CIRCUIT FLOTATION RESULTS

JR No	Test type	Reagents Addition				Rougher			Final Concentrate		
		$CuSO_4$	SIBX	Guar	CMC	Ni	Ni dist	Fe: MgO	Ni	Ni dist	Fe: MgO
		g/t	g/t	g/t	g/t	%	%		%	%	
JR084	BS Flowsheet	50	500	390	-	5.65	73.7	0.47	10.9	54.2	1.33
JR086	BS Flowsheet	75	500	300	50	5.30	71.3	0.45	11.2	58.2	1.38
JR087	BS Flowsheet 38µm regrind	75	500	300	50	5.35	76.7	0.43	16.5	62.9	4.29
JR088	BS Flowsheet 32µm regrind	75	500	300	50	6.84	70.4	0.57	18.1	61.3	3.98
JR089	Bulk Rougher	100	452	450	-	3.30	78.7	-	-	-	-

These tests demonstrated that a high-grade concentrate could be produced by including a regrind stage applied to the rougher concentrate. Refer to Figure 15 for the respective concentrate grade / recovery curves. The grade/recovery curves highlight the significant positive impact that the regrind stage has had by improving the liberation of the fine-grained nickel minerals. The regrind stage assists to further liberate the nickel minerals from the Non-Sulphide Gangue (NSG) minerals, which are primarily magnesia (MgO) and silica (SiO_2). A proportion of the NSG also float to the rougher concentrate as 'composite' sulphide particles. Therefore, finer grinding of the rougher concentrate is required to further liberate the NSG. This also significantly increases the Fe:MgO ratio to around 4.1 (refer to final concentrate JR087 and JR088 in Table 15).

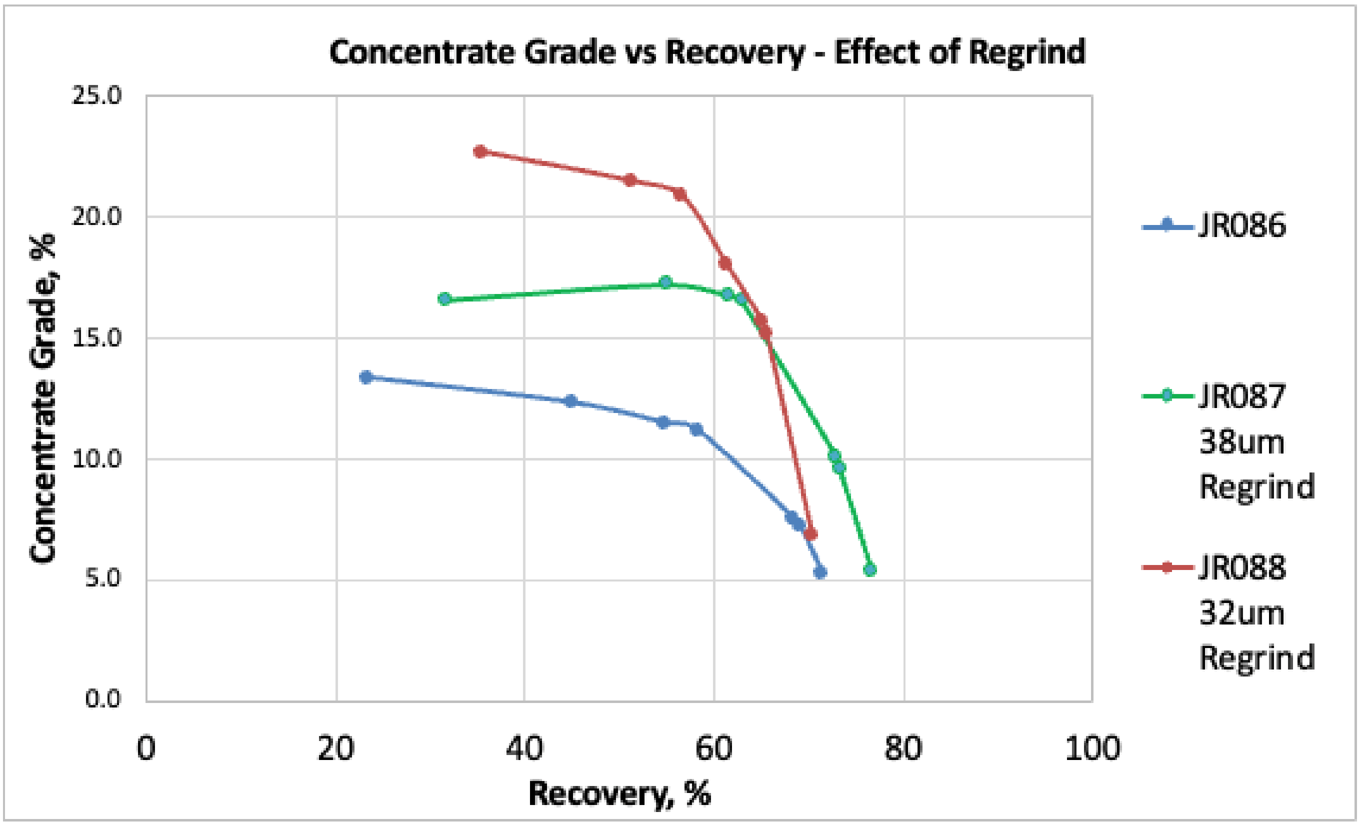


FIGURE 15: EFFECT OF REGRIND ON BSD SERPENTINITE MASTER COMPOSITE (BSD-MC)

A series of blended flotation tests were then completed incorporating the Silver Swan Master Composite (SS-MC) and the Silver Swan tailings Master Composite (SST-MC) with the BSD-MC (refer to Table 16 for the key results from the open circuit flotation tests).

TABLE 16: BSD SERPENTINITE BLENDED COMPOSITE FLOTATION RESULTS – OPEN CIRCUIT

			Reagents Addition				Rougher			Final Concentrate		
JR No	Composite	Test type	$CuSO_4$	SIBX	Guar	CMC	Ni	Ni dist	Fe: MgO	Ni	Ni dist	Fe: MgO
			g/t	g/t	g/t	g/t	%	%		%	%	
JR090	BSD-MC + 5% SS-MC	BS Flowsheet 32µm regrind	75	500	300	50	7.27	75.6	1.01	16.1	65.6	5.33
JR092	BSD-MC + 10% SST-MC	BS Flowsheet 32µm regrind	75	50	30	50	4.34	68.9	1.02	13.1	53.6	6.95

With reference to the final concentrate Fe:MgO ratios achieved in tests JR087 and JR088 in Table 16, the result for test JR092 in Table 16 indicates that reclaiming the tailings from the Silver Swan TSF and blending in small proportions with the BSD serpentinite ore, should significantly further improve the final concentrate Fe:MgO ratio (i.e., the 'regrind improved' ratio of approximately 4.1 increased further to 6.95). This represents an additional 70% improvement to the Fe:MgO ratio in the final concentrate, while also recovering nickel from the Silver Swan tailings. Importantly, the flexibility offered to the process plant by reclaiming the Silver Swan tailings will also extend to situations when the serpentinite ore type is deficient in iron-sulphide content below that tested with the BSD-MC, which was known to occur historically within areas of the BSD resource.

Table 17 summarises the key results from the definitive Locked-Cycle Testing program, which used the BSD-MC (test JR095) as the baseline Locked-Cycle Test, and then completed two other Locked-Cycle Tests that incorporated the two ore blends (tests JR096 and JR097) approximating the proposed BFS mine-plan.

In addition, two 'variability' Locked-Cycle Tests were completed using head grade variability samples from the BSD ore type, to determine the relationship between head grade and nickel recovery for the BSD ore type. All of the Locked-Cycle Tests were completed with the rougher concentrate being reground to P80 32µm, which was based on the calculated grind size that the Silver Swan ball mill could achieve, after testing the responsiveness (to fine grinding) of the rougher concentrate. The fine grinding energy required for the regrind stage was established by a detailed testwork program completed at ALS Metallurgy (ALS) were an industry standard Levin grindability test was completed, using a representative sample of the rougher concentrate produced from the flotation program at Strategic Metallurgy.

Referring to Locked-Cycle Tests JR095 and JR096 in Table 17, the addition of only 7.5% (by weight) of the SST-MC improved the Fe:MgO ratio significantly, uplifting the Fe:MgO ratio by approximately 50% under Locked-Cycle Testing conditions. The results show the final concentrate nickel grade and recovery for JR096 reduced marginally, due to the lower nickel recovery (and concentrate grade) that can be achieved when floating the SST in isolation. The testwork completed at ALS indicated that the SST-MC yields a nickel recovery of approximately 48% when floated in isolation through to a cleaner concentrate, with a cleaner concentrate nickel grade of only approximately 3%. Reconciliation of the results from JR095 and JR096 indicated the recovery of nickel directly related to the nickel in the SST-MC ranged from approximately 30% to 60%, subject to the method of interpretation applied. At only 30% nickel recovery the reclamation of the Silver Swan tailings makes a positive cashflow contribution to the Project.

With reference to Locked-Cycle Tests JR097 and JR096 in Table 17, the nickel recovery increases significantly by approximately 6.0 percentage points (i.e., from 62.8% to 68.8%) with the addition of only 5% (by weight) of the SS-MC. This result is consistent with the much higher recovery (~92.0%) that can be achieved when floating the high-grade SS-MC in isolation. This flotation testwork result was established early in the program. Referring to Locked-Cycle Tests JR095, JR105 and JR106 (and Figure 16), the results have established the relationship between head-grade and nickel recovery for the BSD serpentinite ore type with a regrind stage in place which has been adopted for the DFS.

TABLE 17: LOCKED-CYCLE TEST RESULTS FOR BSD-MC / BLENDS AND BSD HEAD GRADE VARIABILITY

			Reagents Addition				Final Concentrate		
JR No	Composite	Test type	$CuSO_4$	SIBX	Guar	CMC	Ni	Ni dist	Fe: MgO
			g/t	g/t	g/t	g/t	%	%	
JR095	BSD-MC (Cal Head grade 0.94%-Ni)	LCT	75	490	300	50	17.1	65.9	4.51
JR096	BSD-MC + 7.5% SST-MC	LCT	75	490	300	50	14.7	62.8	6.80
JR097	BSD-MC + 7.5% SST-MC + 5% SS-MC	LCT	75	490	300	50	15.0	68.8	6.68
JR105	BSD Variability (Cal Head grade 0.53%-Ni)	LCT	75	490	300	50	16.9	61.2	5.84
JR106	BSD Variability (Cal Head grade 0.75%-Ni)	LCT	75	490	300	50	14.1	62.9	6.88

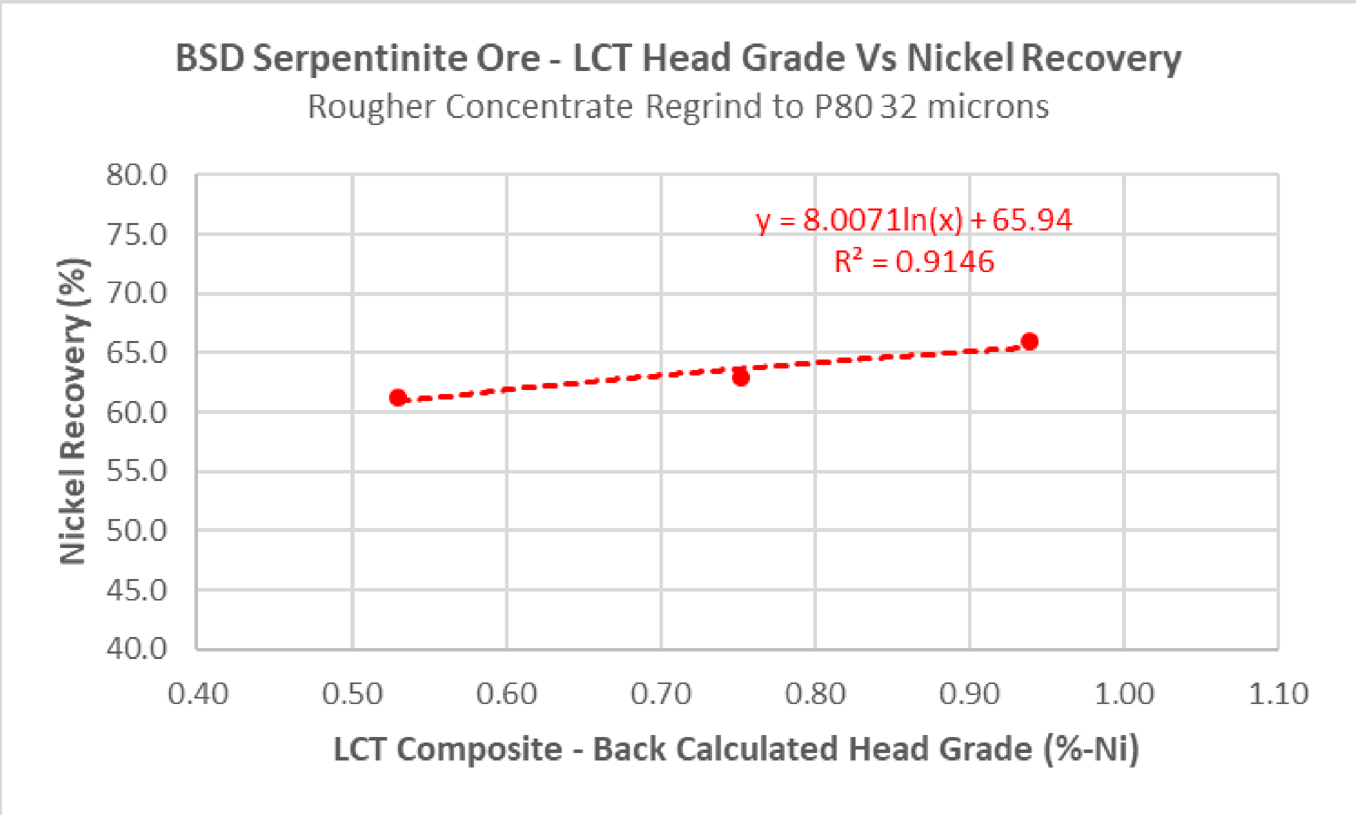


FIGURE 16: BSD SERPENTINITE ORE – HEAD-GRADE VS NICKEL RECOVERY RELATIONSHIP – WITH REGRIND

9. Concentrate Product Quality

Table 18 summarises the concentrate quality for the full year of 2008 production from the Black Swan concentrator when approximately 5% (by weight) of the Silver Swan ore was added to the BSD serpentinite ore in the production blend. Table 18 compares the concentrate quality achieved in 2008 to the concentrate quality produced in February 2009, when the Black Swan concentrator only processed the BSD serpentinite ore. The Silver Swan underground mine ceased operating in December 2008, resulting in a large reduction to the iron-grade (25.2%-Fe reducing to 19.5%-Fe) and an increase in the MgO grade (12%-MgO increasing to 14.2% MgO) in the January to February 2009 final concentrate, which unfavourably significantly reduced the Fe:MgO ratio (from 2.10 in 2008 to 1.37) in the January to February 2009 final concentrate. Table 18 also compares the historical concentrate quality to the Locked-Cycle testwork results.

From a product marketing perspective, the MgO level and Fe:MgO ratio in the final concentrate have penalty provisions associated with offtake terms from the nickel smelters. Both parameters are ultimately subjected to concentrate rejection limits. Historically, concentrate terms for smelter-grade concentrates have included a 'right to reject' for MgO grades above ~12% and Fe:MgO ratios below ~3:1. With reference to Table 18, the Black Swan concentrate produced historically in 2008 and 2009 had both MgO levels and Fe:MgO ratios close to standard historical rejection limits.

The MgO, SiO_2 and Fe:MgO levels summarised for the Locked-Cycle Tests in Table 18 demonstrate that introducing a regrind stage and blending a small proportion of the Silver Swan tailings materially improves the concentrate quality compared to that achieved in historical production. In this context, the concentrate regrind and Silver Swan tailings addition concepts investigated in the BFS are considered a breakthrough for the Project. The combination of the regrind and the Silver Swan tailings addition should result in the production of a desirable concentrate for nickel smelters. The concentrate specifications used for discussions with potential offtake parties are presented in Table 19.

TABLE 18: LOCKED-CYCLE TESTING – CONCENTRATE QUALITY COMPARISONS

Element	Units	Full Year 2008 95% BSD 5% SS	Jan/Feb 2009 BSD 0.71%-Ni	No Regrind JR086 BSD-MC 0.94%-Ni	Locked-Cycle Tests (with Rougher concentrate Regrind to P80 32 microns)				
					JR095 BSD-MC 0.94%-Ni	JR106 BSD Variability 0.75%-Ni	JR105 BSD Variability 0.53%-Ni	JR096 BSD-MC +7.5% SST	JR097 BSD-MC +7.5% SST + 5% SS
Ni	%	15.7	13.9	11.2	17.1	14.1	16.9	14.7	15.0
Cu	%	0.6	0.5	0.5	0.6	0.4	0.5	0.6	0.6
Co	%	0.3	0.3	0.3	0.5	0.5	0.6	0.5	0.4
MgO	%	12.0	14.2	15.2	5.7	4.5	4.8	4.3	4.4
Fe	%	25.2	19.5	20.9	25.9	31.1	27.8	29.0	29.6
S	%	-	-	26.1	38.4	40.7	40.1	39.7	36.2
SiO2	%	-	-	15.2	6.6	4.0	4.3	5.9	6.3
Al2O3	%	-	-	-	0.6	0.5	0.6	0.3	0.6
CaO	%	-	-	-	0.1	0.1	0.1	0.1	0.1
Mn	ppm	-	-	-	120	170	140	70	110
As	ppm	2,424	1,363	2,369	3,407	1,802	2,248	4,060	3,806
Fe:MgO	Ratio	2.10	1.37	1.38	4.51	6.87	5.84	6.80	6.68

TABLE 19: CONCENTRATE SPECIFICATIONS FOR MARKETING STUDIES

Specification A BSD only				Specification B BSD + 7.5% SS tailings + 5% SS high-grade			
Element	**Units**	**Range**	**Typical**	**Element**	**Units**	**Range**	**Typical**
Ni	%	15 - 19	**17.1**	**Ni**	%	15 - 19	**15.0**
Cu	%	0.4 - 0.7	**0.6**	**Cu**	%	0.4 - 0.7	**0.6**
Co	%	0.3 - 0.6	**0.46**	**Co**	%	0.3 - 0.6	**0.41**
MgO	%	4 - 7	**5.7**	**MgO**	%	4 - 6	**4.4**
Fe	%	24 - 28	**25.9**	**Fe**	%	26 - 32	**29.6**
S	%	34 - 42	**38.4**	**S**	%	32 - 42	**36.2**
SiO2	%	4 - 8	**6.6**	**SiO2**	%	4 - 8	**6.3**
Al2O3	%	<1	**0.6**	**Al2O3**	%	<1	**0.6**
CaO	%	<1	**0.1**	**CaO**	%	<1	**0.1**
Mn	ppm	<300	**120**	**Mn**	ppm	<300	**110**
As	ppm	1,500 - 3,500	**3,407**	**As**	ppm	3,500 - 4,100	**3,806**
Cl	ppm	<500	**<500**	**Cl**	ppm	<500	**<500**
F	ppm	<50	**<50**	**F**	ppm	<50	**<50**
H20	%	<15	**10**	**H20**	%	<15	**10**
Fe:MgO	Ratio	4.0 - 5.0	**4.51**	**Fe:MgO**	Ratio	5.0 - 8.0	**6.68**

The head grade versus nickel recovery relationship established for the BSD serpentinite ore type is presented in Figure 17 which compares representative samples selected for the BFS metallurgical testwork program to the actual production data. Noting the production data did not incorporate a concentrate regrind stage but did incorporate the blending of high-grade ore from the Silver Swan underground mine.

Figure 17 also presents the relevant Locked-Cycle Testing results against the backdrop of the 2008 monthly and February 2009 production data. The Silver Swan underground mine ceased production in December 2008 with stockpiled ore still being processed through the concentrator in the first half of January 2009. Therefore, the January 2009 production data point has been excluded but aligns reasonably well to the February 2009 data point. One month's worth of BSD serpentinite ore production is included (green triangle data point in Figure 17) prior to the shutdown at the end of February 2009. Figure 17 further presents the 2008 monthly production data (blue circle data points) when the BSD serpentinite ore (averaging 0.60 – 0.75%Ni) was blended with small proportions (4-6% by weight) of the high-grade ore from the Silver Swan underground mine. In 2008, the Silver Swan underground ore (averaging 4.2%Ni) was blended in at approximately 5% (by weight). This proportion (and grade) changed daily and monthly based on the continuity of supply from the underground mine.

Figure 17 also presents a regression curve (the orange curve) derived in 2007 production data derived by the previous operators by Norilsk Nickel Australia (NNA) for the treatment of BSD serpentinite ore. The NNA regression was obtained from daily production data with the associated daily nickel recovery estimate. In the NNA assessment, the BSD serpentinite ore had been 'sorted' by sorting for the days throughout the year when the Silver Swan underground ore was not being processed. The data set that underpins the 2007 regression line (orange curve in Figure 17) is presented below in Figure 18. Note the variability in the daily data is poor (R^2 0.43). This variability may be related to daily measurements, whereby changes in circuit inventories daily can impact significantly on recovery predictions.

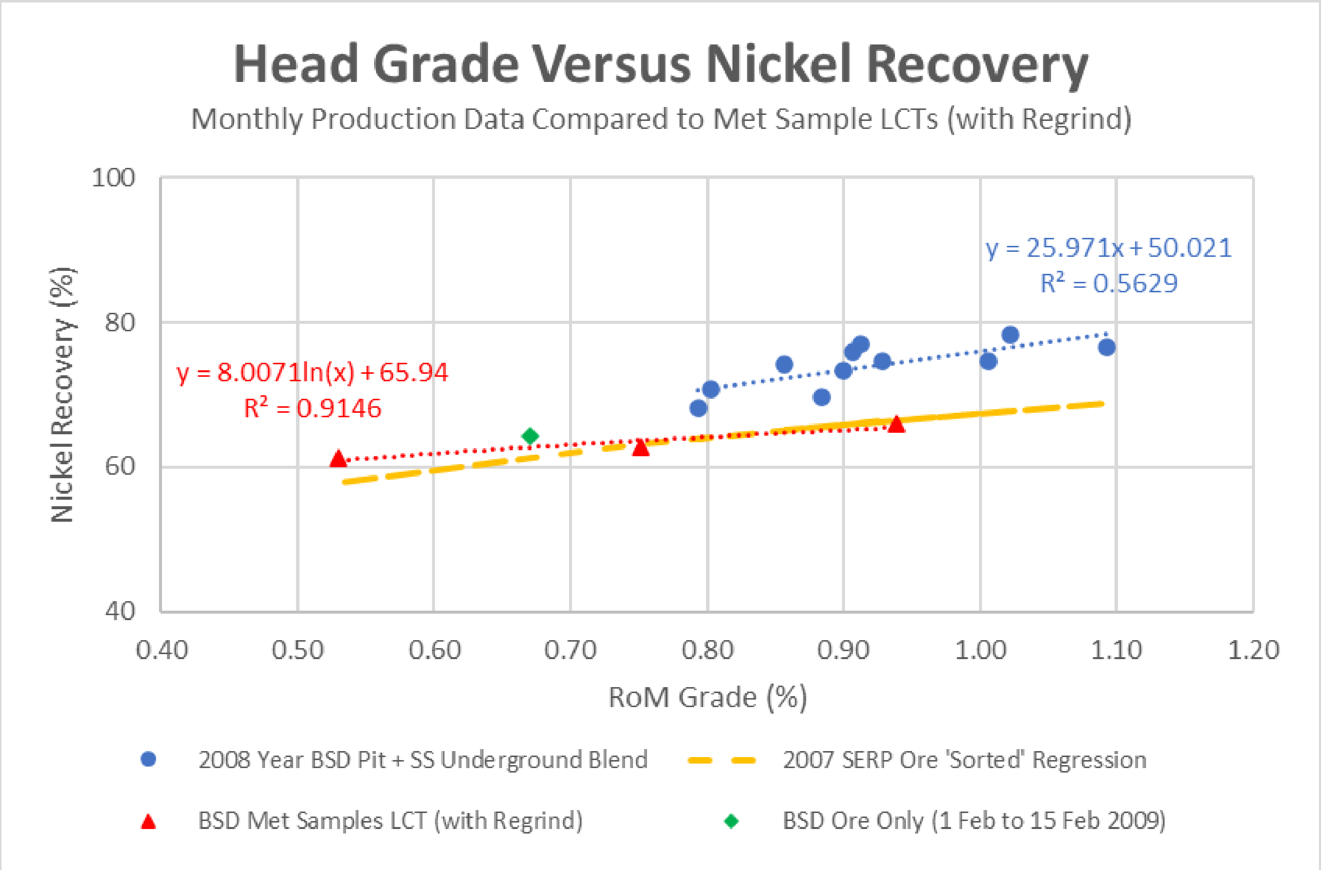


FIGURE 17: BLACK SWAN CONCENTRATOR PRODUCTION DATA – HEAD-GRADE VS NICKEL RECOVERY RELATIONSHIP

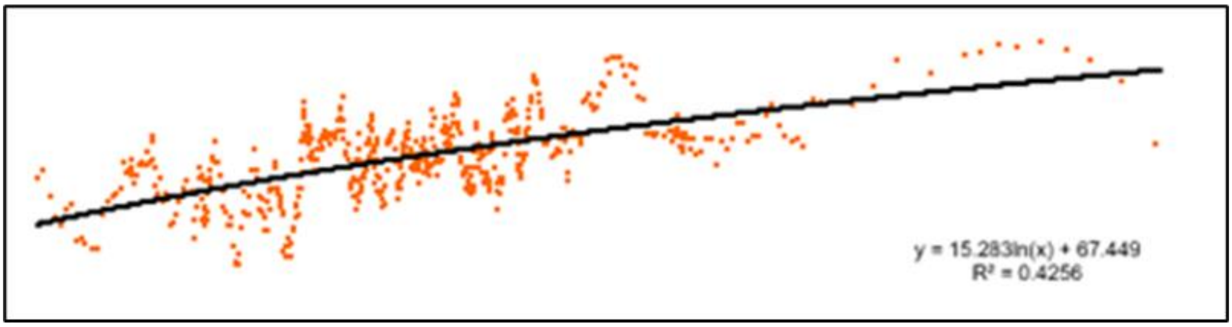


FIGURE 18: 2007 SERPENTINITE ORE 'SORTED" REGRESSION

The correlation derived by NNA from previous production data - 2007 Serpentinite ‘sorted’ data set, sits well below the 2008 production data (blue data points) in Figure 17. The 2008 monthly production data (blue data points) is calculated from the nickel contained in the final concentrate for the month, reconciled back to a combined (BSD/SS) ‘back calculated’ Run-of-Mine head-grade, taking into consideration the combined tailings tonnage and associated nickel assays (i.e., combined tailings nickel losses). It is not possible to accurately assess the recovery of the BSD ore alone when it is being blended with the high-grade Silver Swan underground ore. Only a back calculation (as noted above) to calculate a combined ore head-grade can be made with reasonable accuracy. Therefore, when blending in another ore source that has a significantly higher nickel grade, only estimates (or ‘allocations’) could be made to predict the recovery of nickel from the much lower grade ore source. An assessment of the NNA metallurgical reconciliation process used during production was completed during the BFS and concluded that NNA was allocating a ‘nominal’ 85% nickel recovery to the Silver Swan underground ore. In doing so, inadvertently overstating the nickel recovery attributable to the lower grade BSD serpentinite ore.

The reason for the significant difference in the recovery between the 2008 production data and the 2007 Serpentinite ‘sorted’ data set is due to the much higher nickel recovery that is realised from the Silver Swan underground ore. The recovery of nickel from the high-grade Silver Swan underground massive sulphide ore type is approximately 92%, as established in the BFS testwork program. Therefore, when adding a small proportion of the high-grade Silver Swan underground ore, this ‘uplifts’ the nickel recovery for the combined feed (back calculated RoM head grade) significantly, by the difference between the 2007 Serpentinite ore regression and the regression line plotted through the 2008 production data.

As part of the BFS, a review and reconciliation of the 2008/09 and 2007 production data from the Black Swan concentrator was completed by Poseidon’s project team. The project team also completed a review of detailed ore blending flotation testwork undertaken by NNA in 2007. Both reviews concluded that the Silver Swan ore was yielding a nickel recovery of approximately 92% when blended with the BSD ore. The review of the NNA ore blending testwork program concluded that there was no discernible difference in the flotation performance of the Silver Swan ore when tested in isolation or as a blend with the BSD serpentinite ore. This outcome is consistent with the data presented in Figure 17 and the results from the BFS metallurgical testwork program. This outcome also highlights the important contribution that the high-grade massive sulphide ore from the Silver Swan underground mine makes to nickel recovery/production and concentrate quality.

10. Process Plant Description

10.1. Introduction

The Black Swan concentrator is a standard sulphide nickel flotation operation. The layout could be considered non-standard as a result of its evolution from the original plant build for the treatment of the low tonnage high-grade Silver Swan underground mine (with a throughput of 0.3Mtpa) through to a capacity of 2.2Mtpa via two expansions to allow treatment of low grade disseminated ore.

The flowsheet, Process Design Criteria (PDC) and mass balance were compiled by GRES and are based on the existing plant, previous operating data, and results of testwork. The flowsheet is generally as per the historical concentrator operation with allowances for the decrease in tonnage through the Black Swan circuit.

The overall flowsheet for the Project (1.1Mtpa ore throughput) to produce a smelter-grade concentrate, is depicted in Figure 19.

The processing stages to produce a smelter-grade nickel concentrate will be:

- Single stage crushing with coarse ore bin storage (existing);
- Single stage SAG mill with a flash flotation circuit treating cyclone underflow and provision to incorporate the existing pebble recycle conveyors (existing equipment with modifications). Pebble crushing is not currently included and would require additional refurbishment of the pebble crusher and additional bins and conveyors if required for use;
- Flotation with rougher, rougher-scavenger, cleaner, cleaner-scavenger, cleaner 2 and cleaner 3 stages with open circuit operation of the cleaner-scavenger (existing modified and two new cells in rougher 1 cleaner duty due to the poor condition of the existing cells);
- Regrinding of rougher 2, rougher-scavenger and cleaner-scavenger concentrates (new circuit using existing Silver Swan ball mill);
- Concentrate thickening (new thickener due to condition of existing concentrate thickener) and filtration (existing ceramic vacuum disc filters, two of three to be refurbished); and
- Tailings thickening and storage of tailings in a designated facility (existing).

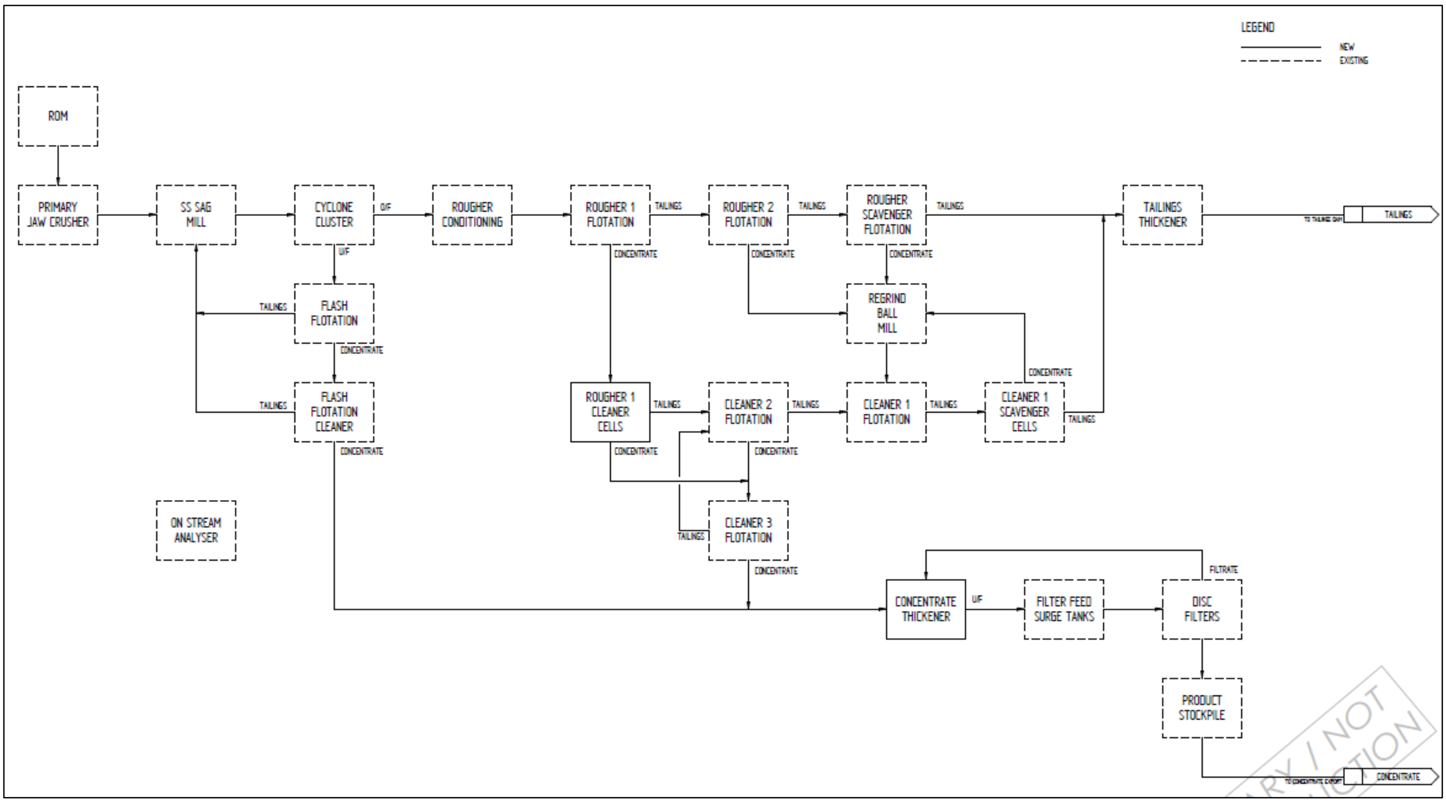


FIGURE 19: BLACK SWAN BLOCK FLOW DIAGRAM (1.1 MTPA THROUGHPUT)

The feed materials will be blended in the target ratio by feeding the required proportion via front-end loader buckets into the ROM bin. The feed materials will be drawn from separate stockpiles maintained on the ROM pad.

The Phase 1 plan proposed by Poseidon involves the treatment of 1.0Mtpa disseminated serpentinite ore from the Black Swan open pit, 0.1Mtpa of massive sulphide ore from the Silver Swan and Golden Swan underground mines and 0.082Mtpa of reclaimed tailings from historical processing of Silver Swan ore (total annual treatment of 1.182Mt). The existing Black Swan concentrator had a nameplate capacity of 2.2Mtpa. The feed blend includes massive sulphide ore and high iron sulphide tailings to increase the iron sulphide content of the concentrate to achieve a product with a Fe:MgO ratio of approximately 4:1 which will enhance the marketability of the concentrate.

To facilitate the reduced throughput, the SAG mill grate lining will be changed, the 185kW Terex Gyracone pebble crusher will not be used, the 5.5MW ball mill will be bypassed, and some cleaner flotation cells will become redundant. The main change to the flowsheet will be the inclusion of a regrind stage for rougher 2 and scavenger concentrate to improve liberation of the sulphide minerals relative to the Non-Sulphide Gangue (NSG).

During previous operations, water was obtained from the Black Swan Borefield, Federal pit and Black Swan open pit and Silver Swan underground dewatering with additional water sourced from the Avalon (Bulong) Borefield. For the 1.1Mtpa throughput the main water supply will be from the Federal pit along with the use of two Black Swan bores to supply higher quality water to the RO plant. Additional water can also be drawn from the bore field, if required.

The design of the Phase 1 operation has been based on the previous plant experience and results from the 2003 AMMTEC pilot plant which had no talc mineral in the feed, the 2009 production data when treating serpentinite only ore, and the outcomes and interpretations of the BFS testwork program. The design has assumed continuous operation and not a campaign operation.

10.2. Silver Swan Tailings Reclaim

Based on the capital and operating costs and specific advantages/disadvantages of methods that could be utilised to reclaim the Silver Swan tailings, assessed by GRES, the reclamation of the tailings using an excavator with truck haulage to the ROM pad was recommended by GRES as the method to reclaim and introduce the tailings into the Black Swan concentrator. If material handling issues are problematic, an alternative would be for the tailings to be added via the emergency feed system rather than blended through the crushing and ore storage system.

The use of a diesel hydraulic excavator to dig the tailings and load into trucks by conventional top load (excavator situated on the tailings surface) or by excavating underhand and loading trucks running on the base rock are simple methods of recovering the tailings with the flexibility to start and stop at any time.

10.3. Crushing

Ore and reclaimed tailings sand will be blended and fed through a static grizzly (600mm aperture) into the existing 110 tonne ROM bin using a front-end loader (FEL). An apron feeder (existing / refurbished) will transfer the feed from the ROM bin into the existing double toggle, Jacques Terex, 1,200mm wide by 1,065mm gape (48” x 40”) jaw crusher. The closed side setting (CSS) will be 140mm to generate a crushed product P80 of 130mm. The crusher nominal design capacity at this setting is 300 t/h however based on historical assessment where the crusher operated at a CSS of 155mm with a crushing rate of 291tph, the design capacity at 140mm is 220 tph.

Crushed product will be conveyed to the coarse ore bin (existing). A belt plough exists to enable crushed ore to be directed to ground as an emergency stockpile. The coarse ore bin active volume is stated to be 1,200t, equivalent to eight hours milling time.

10.4. Grinding Circuit

The comminution circuit design has been reviewed by Orway Mineral Consultants (OMC), who noted that the SAG configuration would produce a grind size of approximately P80 100µm despite power calculations indicating that a 75µm grind size could be achieved. Historically the grinding circuit was able to provide the design power draw from the SAG and ball mills (overall specific power of 31 kWh/t) however the design grind size of 75µm was not achieved with the grind size product ranged from 104µm to 150µm. Therefore, a target grind size P80 of 106 µm was chosen. This is coarser than the initial grind size used in historical flotation test work (P80 75µm).

Crushed ore will be reclaimed from the coarse ore bin and conveyed to the SAG mill. The SAG mill, with a diameter (inside shell) of 8.23 metres and an effective grinding length of 5.23 metres, will operate in single stage, and in closed circuit with hydrocyclones and flash flotation. Pebbles will be recycled with no provision to include pebble crushing without additional conveyor and crusher refurbishment.

The SAG mill has an installed power of 4.8MW through twin pinion drives each fitted with a fixed speed 2.4MW motor. The SAG mill discharge grates will be changed from a fully ported 70mm aperture arrangement to standard 15mm by 30mm aperture rubber grates. To draw the required power, the SAG mill will operate with the maximum stated ball charge capability of 6%, assumed to be limited by the structural integrity of the mill.

The SAG mill will discharge into a trommel screen with a 5mm aperture. Oversize will be recycled to the SAG feed conveyor. No provision has been made to direct the recycle to the 185 kW Jacques - Terex G50, pebble cone crusher. The SAG mill grinding media make up size will be 125mm forged steel balls. The SAG mill trommel undersize will fall into the mill discharge hopper where it will combine with the flash flotation rougher SkimAir top outlet and tail discharge, and the flash flotation cleaner tail before being pumped to the existing, Warman Cavex 400mm hydrocyclone cluster for classification. Eight of the ten cyclones will operate based on a circulating load of 350%. The cyclone overflow product will gravitate to the trash screen (existing). Screen undersize will flow into the flotation conditioning tank prior to rougher flotation. The hydrocyclone overflow P80 target will be 106µm. The cyclone underflow will feed the flash flotation circuit.

The flash flotation circuit consists of the existing SK-500 (23m^3) rougher and two, conventional OK1.5 cleaner flotation cells. The flash flotation tailings flow by gravity back to the SAG mill. The flash flotation concentrate will flow by gravity to the flash concentrate cleaner flotation cells. The flash cleaner flotation cell froth will be the final concentrate. The flash concentrate cleaner tailings will gravitate back to the SAG mill discharge hopper.

10.5. Flotation

The hydrocyclone overflow slurry will be diluted to 25% by weight in the existing 67m^3 flotation feed conditioning tank. Reagents added at the trash screen and conditioning tank include activator (copper sulphate), collector (SIBX), and MgO depressant (guar). Frother (W22) will be added into the feed box of the first rougher cell. The conditioning residence time will be 10 minutes.

The conditioned pulp will overflow and gravitate to the existing rougher-scavenger flotation stage consisting of two 150m^3 Outotec flotation tank cells and three 100m^3 Outotec tank cells. The scavenger tailings and cleaner-scavenger flotation tailings will report to the combined tailings hopper and be pumped to the tailings thickener.

The specific launder and crowding arrangements for all the tanks cells are not known and modifications are required to reduce the surface area due to the lower mass recoveries required for the lower throughput and to avoid recovering excessive tonnages of gangue. Despite operating with a lower pulp density (25% solids) relative to the historical operating practice (35% solids), the residence time scale up factor has been calculated at 3.8. A scale up factor from laboratory flotation time of 2 to 2.5 is typical for bulk nickel sulphide roughing. The excessive flotation residence time makes the reduction in surface area a critical component of the restart design.

The testwork has shown the advantage of regrinding in achieving higher nickel grade and sulphide/non-sulphide mineral selectivity in subsequent cleaner stages. To minimise capital and maximise use of existing plant equipment, a decision has been made not to install a regrind mill specific for the duty but to utilise the ball mill previously used as the primary ball mill for treatment of Silver Swan ore. The 325kW Silver Swan ball mill, 2.74 metre diameter by 3.0 metres long therefore limits the tonnage to 30tph that can be reground to a P80 of 38µm (from a rougher-scavenger concentrate with P80 of 63µm) based on a specific energy of 12kWh/t determined from extrapolating Levin testwork data. Therefore, not all the rougher-scavenger concentrate can be reground in the existing Silver Swan ball mill. The design allows for the concentrate from the first rougher cell to bypass the regrind circuit and to be upgraded in a separate dedicated cleaner stage. This will also allow for the relatively coarse-grained pentlandite nickel mineralisation associated with the Silver Swan and Golden Swan massive sulphide ore sources, which are generally fast floating and produce a relatively clean concentrate, to bypass the regrind stage and therefore not be exposed to excessive overgrinding. The launder outlet from the first rougher cell will be directed to a rougher-cleaner cell while the rougher cell 2 and scavenger flotation concentrates will be combined and pumped to the regrind circuit.

A new cyclone cluster comprising 150mm diameter cyclones will be installed at the regrind mill. Due to the use of steel media in the regrind mill, it is anticipated that the reground slurry will have low dissolved oxygen levels and some aeration will be required in the regrind cyclone overflow transfer tank prior to flotation in the cleaning stage. The regrind overflow will be pumped from the aeration tank to the existing cleaner 1 conditioning tank that will overflow to the existing cleaner 1 circuit. The cleaner 1 circuit will comprise the existing bank of four OK16 conventional 'U' shaped cells followed by the existing bank of four OK16 cells that will operate in the cleaner scavenger duty. The cleaner scavenger concentrate will be directed to the regrind circuit. Cleaner scavenger tailing will be open circuited to final tail.

The concentrate from the cleaner 1 flotation cells will be pumped to the cleaner 2 flotation circuit consisting of four OK3HG cells each 4.25m^3 in capacity. The cleaner 2 tailing will be recycled back to the cleaner 1 flotation circuit. The cleaner 2 concentrate will be pumped to the third stage of cleaning consisting of four OK3HG 4.25m^3 flotation cells. The concentrate from the rougher 1 cleaner stage will be added to the cleaner 3 feed. The cleaner 3 tailing will recycle back to the cleaner 2 cells. The cleaner 3 concentrate will combine with the flash flotation cleaner concentrate and be pumped to the concentrate thickener.

10.6. Concentrate Dewatering

The final concentrate will be fed to the concentrate trash screen (new) before being thickened in a new 15 metre diameter Takraf (Delkor) thickener. The existing 15 metre concentrate thickener has undergone extensive corrosion and will be replaced. The concentrate will be thickened to an underflow density of 70% solids. The thickener overflow will be pumped to process water storage for reuse in the plant. Thickener underflow will be pumped to one of two concentrate filter feed tanks.

10.7. Concentrate Filtering

Three CC-30 disk type ceramic vacuum filters are available to be used for concentrate filtration. Two of the ceramic filters will be refurbished to dewater the concentrate produced at the reduced throughput. To reduce the chloride content in the final filter cake, the solids will be washed by low TDS (RO) water. The mass balance has used a wash water rate of 0.6m^3 of water per tonne of concentrate although records from 2004 indicate up to 0.9m^3/t concentrate was used at times.

The moisture of the filtered cake is expected to be below the transportable moisture limit (TML). Final product will be stored in the concentrate storage building where additional air drying will occur. The product can be loaded into bags or containers before transport via truck off site.

10.8. Tailings Disposal

Flotation tailings will be pumped from the tailings hopper to the existing 22 metre diameter Outotec tailings thickener. The tailings are thickened to 45% solids. Thickened tailings will be pumped to the TSF. The tailing thickener overflow will be directed to the process water pond for reuse.

Note there are two tailings facilities at Black Swan, the Black Swan tailings facility and the Silver Swan tailings facility. Tailings disposal will be to the Black Swan tailings facility, while the separate Silver Swan tailings facility is a feed source for processing. Refer to Figure 20 for the location of tailings facilities at the Project.

10.9. Reagents

The key circuit reagents for which there are existing mixing and storage facilities are:

- SIBX or PAX collector reagent - stage added to each flotation section;
- Copper sulphate activator - stage added to the rougher-scavenger and cleaner-scavenger circuits;
- W22 frothing agent - stage added to each flotation section;
- Guar or CMC for depression of magnesia - added to rougher, rougher-scavenger and cleaner flotation sections;
- Flocculant for thickening - added to the concentrate and the tailings thickeners; and
- Nitric acid - for cleaning the ceramic filter discs.

The plant also has the provision to add lime via a silo discharging onto the mill feed conveyor to provide alkaline conditions for flotation if the ore changes and iron sulphide minerals or arsenic minerals need to be depressed.

11. Concentrator Refurbishment Requirements

11.1. Current Plant Condition

The Black Swan concentrator has been in care and maintenance for over thirteen years, after production ceased in February 2009. GRES undertook an extensive site visit to understand the current condition of the Black Swan plant and equipment. These inspections indicate that the Black Swan processing facility is in a reasonable condition. This is due in part to most of the new Black Swan concentrator being operated for less than three years and being of a robust design. The major issues are associated with the substandard shutdown and the subsequent corrosion because of the very high total dissolved solids (TDS) hypersaline water used for processing, which is typical for this location.

The old Silver Swan concentrator is in poor condition and is not planned to be reused other than the ball mill which is in reasonable condition for its age. The parts of the old Silver Swan circuit integrated into the new Black Swan concentrator, specifically the flotation cells, can be made serviceable but will require more refurbishment work to return them to an operable condition.

The major costs and considerations to restart the plant are the refurbishment of mechanical equipment, inspection, overhaul, realignment, lubrication and general repairs to the SAG mill, relining of chutes and hoppers, possible replacement of the cyclones, electrical and instrumentation refurbishment, upgraded SCADA control system, overhaul of reagent/utilities systems, restocking of some stores consumables, inventory first fills and initial stocks of reagents, and refurbishment of the Federal pit water supply.

Two independent assessments of the Black Swan SAG mill shell have concluded that a crucifix flange parting is repairable and has been completed successfully on other similar mills. An assessment by Metso concluded that the SAG mill has damage to the mill shell longitudinal flanges in the form of a gap between the flanges on both sides of the mill in the area of the crucifix formed by the junction of the circumferential flanges and the longitudinal flanges. The damage is consistent with damage that occurs from excessive hoop stress resulting from metal flow of the steel liners. It is apparent that the peening of the steel liners has forced a growth in the circumference of the mill shell, resulting in localised separation of the longitudinal flanges. This type of damage has been observed in mills at other installations. In those cases, the mill has been able to be repaired in-situ with minimal disassembly. Metso advised a similar repair was completed for another SAG mill at another project around 1994 and the repaired mill has been in service since that time.

11.2. Major Refurbishment Maintenance Activities Required

A summary of the major refurbishment activities is listed below.

The dry plant has the following generic equipment areas requiring the following typical repairs:

- foundations
- structures
- primary crushing
- coarse ore storage
- coarse ore reclaim
- mill feed conveyor
- scats conveying
- scats crushing
- fine ore storage and reclaim

The wet plant includes the following areas:

- bunded areas
- structures
- pumps
- valves
- grinding and classification
- flotation
- concentrate thickening
- filtration and concentrate storage
- tails thickening
- reagents

The following works will typically be carried out:

- prepare detailed work packs
- order parts and raise contracts
- grade and clear the site
- repair/replace dangerous floor mesh
- repair/replace dangerous handrails
- clean up spillages and high-pressure water wash down
- address spillage issues
- strip down equipment to allow detailed inspection to occur
- change all oils, filters and lubricants
- change all drive belts
- check all bearings and seals, adjust and lubricate – replace if required
- repair and make good all equipment guarding
- replace approximately 20% of the conveyor idler frames on all conveyors
- check conveyor pulleys and re-lag if necessary
- check and run all motors – repair if necessary
- pressure test and replace all flexible hydraulic hoses as required
- repair all dust collection spray water piping and valves
- replace instrumentation where deemed applicable (damaged or superseded)
- replace filter bags
- service and recertify hoists and lifting equipment to meet compliance requirements

- remove and refurbish all pumps
- pressure test all air receivers and vessels and recertify
- testing and replacement of electric cables
- certify all registered equipment and update records
- test run and dry commission all equipment
- remove and refurbish all pumps
- test run and water commission all equipment.

Additionally, the following areas are considered in the GRES refurbishment capital cost estimate for the Black Swan concentrator and associated processing infrastructure:

- pumps, valves, and piping
- air services
- electrical, instrumentation and control system
- infrastructure
- spares and reagents
- plant commissioning

A high-level review of the warehouse and laydown areas was undertaken. Most of the warehouse and spares remain intact including some critical spares such as spare SAG mill motors. Wear parts such as crusher liners are available. There are no reagent inventories remaining and a first fill of reagents is required prior to start-up.

12. Infrastructure

In addition to the Black Swan open pit, Silver Swan underground mine and the associated processing facility, there is significant infrastructure at Black Swan including access and internal roads, tailings storage facilities, two incoming high voltage powerline lines connecting to the Southwest Integrated System (SWIS) grid, borefield, water systems, offices, workshops, store yards, changerooms, crib rooms and ablution blocks, laboratory, diesel storage, mining workshops and surface magazine and other associated support facilities. The significant infrastructure at Black Swan is presented in Figure 20.

FIGURE 20: AERIAL PICTURE OF BLACK SWAN PROJECT

These facilities have been kept on care and maintenance since operations ceased in 2009 and many will require refurbishment to bring back to an operational state, as included in the refurbishment plans detailed in Section 11.2 - Major Refurbishment Maintenance Activities Required. Some infrastructure remains operational as it is used to support the ongoing care and maintenance activities or able to be readily returned to service when required.

There is no accommodation village at Black Swan. It was historically operated on a residential basis with the workforce located in the nearby city of Kalgoorlie-Boulder. Although there is a strong preference to use a local workforce were possible, a proportion of the workforce will operate on a FIFO roster and the costs for commercial flights and motel accommodation in Kalgoorlie have been included in the cost estimate.

Access to site from Kalgoorlie is via Yarri Road, of which approximately 28 km is sealed, and then gravel for the remaining 26 km. The unsealed section of the road is not all weather but is rarely closed for any length of time. The site access roads are in good condition. There is an extensive internal unsealed road network existing over the Black Swan site.

There are two paddock style tailings storage facilities (TSF) at Black Swan. The Black Swan Disseminated TSF was commissioned in September 2004 to replace the Silver Swan and Cygnet TSF. Tailings facilities are discussed in further detail in Section 10.8 – Tailings Disposal and Section 16.4 – Tailings Recovery and Storage.

As a Brownfield operation, there is established water infrastructure, this includes:

- Silver Swan Underground dewatering
- Black Swan and Federal Pit dewatering
- Borefield
- Process water ponds and pumping systems
- Potable water systems
- Reverse osmosis (RO) plants
- Safety showers, potable, gland, fire

Water sources associated infrastructure is discussed in further detail in Section 16.3 – Water Supply.

BSO currently has two overhead power lines connected to the Western Power grid providing power to the Project. Earlier this year the Company commissioned Western Power to complete a study to confirm whether electrical demand required for the Project could be supplied from the grid. The study confirmed that the electrical demand (totalling 15.7MVA), can be supplied by the grid under the Eastern Goldfields Load Permissive Scheme (EGLPS) utilising existing power reticulation infrastructure available at the Project.

The Project has existing IT and communication infrastructure including a microwave link tower. Poseidon's IT management is supported by external consultants Fireblade-IT who provided a refurbishment plan and costings into the BFS for upgrading IT and communication infrastructure.

13. Environmental, Social & Governance (ESG)

Poseidon aims to become a sustainable nickel producer, supplying the nickel the world needs to transition to a low-carbon economy. To achieve this, the Company has embedded ESG considerations into its operating practices and decision-making processes.

Of particular significance, ESG has been elevated to a standing item at every Board meeting to ensure that key ESG considerations, risks and opportunities are given appropriate focus. The Company has formally adopted an ESG policy with good progress made on development of the Company's ESG framework. The Company's ESG framework is aligned with the Minerals Council of Australia Enduring Value framework, the United Nations Sustainable Development Goals and the recommendations of the Taskforce on Climate related Financial Disclosures.

As the Company progresses toward a restart of BSO measurable targets will be set in relation to ESG performance. A gap analysis of the Company's ESG framework will be undertaken after the release of the BFS to address any deficiencies in its practices before the Company's transition to Project development and production.

An important element of ESG considerations for the Project will be selecting reputable contractors whose policies and procedures are aligned with the Company's ESG expectations, including in relation to environmental management, safety, social engagement, diversity and indigenous relations.

Refer to the following sections of this document for further information on ESG elements related to the Project:

Environment:

- Environmental & Permitting Approvals – Section 16.1
- Carbon Emissions – Section 16.2
- Sustainable Water Supply – Section 16.3
- Tailings Disposal – Section 10.8
- Tailings Recovery & Storage – Section 16.4
- Waste Management – Section 16.5
- Mine Closure – Section 19

Social:

- Taxation – Section 23
- Royalties – Section 14.2
- Pastoralists – Section 14.4
- Native Title & Aboriginal Heritage – Section 15
- Human Resources – Section 18

Governance:

- Tenement Management – Section 14.1
- Major Contracts – Section 14.3

14. Legal

14.1. Tenure

The Project comprises four granted mining leases (M27/39, M27/200, M27/214 and M27/216), eleven miscellaneous licences (L24/219, L24/222, L27/57, L27/58, L27/59, L27/74, L27/75, L27/77, L27/78, L27/95 and L27/96) and one general purpose lease (G27/2) (Figure 21). The tenement expiry dates are listed in Table 20.

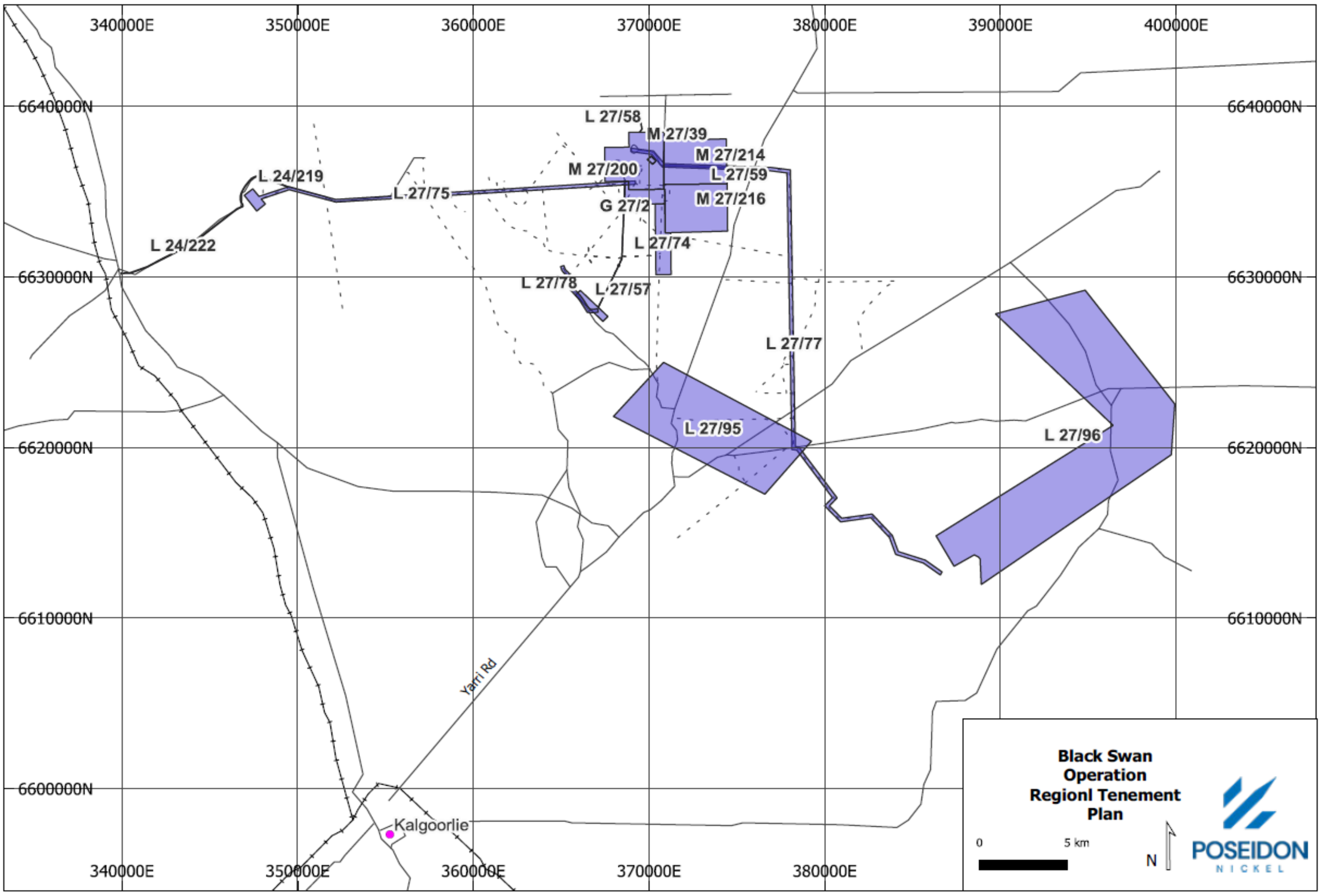


FIGURE 21: BLACK SWAN TENURE MAP

Table 20: Summary of Black Swan Tenements

Tenement	Expiry Date
M27/39	29-Oct-28
M27/200	24-Jan-37
M27/214	7-Jul-39
M27/216	7-Jul-39
L24/219	25-Aug-37
L24/222	25-Aug-37
L27/57	19-Feb-27
L27/58	19-Feb-27
L27/59	21-May-27
L27/74	26-Jun-26
L27/75	19-Oct-26
L27/77	19-Nov-28
L27/78	16-Aug-33
L27/95	19-Jul-42
L27/96	2-Mar-43
G27/2	8-Sep-40

The Company is the 100% legal and beneficial owner of all tenements. All tenements are in good standing.

14.2. Royalty

In accordance with the Mining Act 1978 (WA) (Mining Act), a 2.5% royalty is payable to the Western Australian State government in respect of nickel and nickel by-products (e.g. cobalt) produced by the Company from the tenements.

In addition to the State government royalty, a private royalty is payable pursuant to a historical royalty agreement entered into in 1995 by the Company's predecessors. In accordance with this agreement, the Company is required to pay a royalty in respect of nickel, copper, platinum group metals and other metals (excluding gold and silver) produced by the Company from Mining Lease 27/200.

14.3. Major Contracts

The Company is yet to enter into any major contracts (e.g. open pit and underground mining contracts) in respect of the Project. The Company anticipates that major contracts will be tendered prior to the Board making an FID and executed post this milestone.

As mentioned in Section 13, alignment of ESG principles will be a consideration in selection of contractors undertaking works for the Project.

14.4. Pastoralists

The Project is located within the boundaries of the Mt Vetters and Hampton Hill pastoral leases. Access and compensation agreements are in place with both pastoral lease holders.

15. Native Title & Aboriginal Heritage

There is no determined native title at the Project but there are three claims, namely:

- Maduwongga (WC2017/001);
- Marlinyu Ghoorlie (WC2017/007); and
- Kakarra Part A (WC2020/005).

There are also a number of registered Aboriginal heritage sites and other heritage places within the Project area, but none of these sites are within proximity to the proposed mining operations and are unlikely to be affected by the proposed restart.

As the proposed operations are within the existing mine footprint (which is located on granted mining leases predating the three native title claims) and do not overlap any registered Aboriginal heritage sites or other heritage places, the Company understands that no Aboriginal heritage surveys or approvals are required under Aboriginal heritage legislation prior to the restart of operations.

Although no Aboriginal heritage surveys or approvals are required, the Company is committed to building respectful and mutually beneficial relationships with relevant Aboriginal parties. The Company has been engaging with some of the claimants in relation to the proposed operations and will continue to engage proactively with the claimants to ensure Aboriginal heritage at the Project is protected.

16. Environmental & Permitting

16.1. Approvals

The Project has various environmental approvals issued under relevant legislation. Approvals were transferred to Poseidon at the time of acquisition. The following environmental approvals are current for the Project:

- Mining Proposals – there are currently a large number of mining proposals and notices of intent on the tenements which are understood to cover the Project as it stands, and the proposed restart and continuation of operations. The Company will need to amend the Works Approval for the mining and treatment of the Silver Swan Tails, next stage of the TSF lift as well as an approval for a larger footprint for the open pit;
- Mine Closure Plan – discussed in Section 19 - Mine Closure;
- Environmental Licence L6933/1996/14 – this licence allows processing of up to 3Mt of ore per year, and dewatering of up to 450,000 tonnes of mine water per year;
- Groundwater Licence GWL182644(1) – discussed in Section 0 - Water Supply; and
- Clearing Permits – although there are no current native vegetation clearing permits, up to 10 ha per tenement per financial year can be cleared without a clearing permit if the activities requiring the clearing are approved via the approved Mining Proposals.

The existing approvals are understood to cover the restart of operations as the Project was historically operated. Additional approvals will be required in relation to the proposed reclamation of the tailings from the Silver Swan TSF and their reprocessing through the Black Swan concentrator and for tailings deposition into the Black Swan TSF (see Section 16.4 – Tailings Recovery and Storage).

16.2. Carbon Emissions

The Company recognises the importance of understanding and taking action to reduce its greenhouse gas (GHG) emissions. The Company's Scope 1 emissions are direct GHG emissions from operations (e.g. from vehicles), its Scope 2 emissions are indirect emissions from the generation of purchased electricity (e.g. from Western Power), and its Scope 3 emissions are indirect GHG emissions generated as result of activities undertaken either upstream or downstream from operations (e.g. from employees commuting).

The Company intends to source power from the local grid, see Section 12 – Infrastructure for further information on sourcing grid power. Grid power supply will reduce the Project's carbon emissions compared to diesel fired power generation.

The Company intends to undertake a detailed assessment of its activities to understand its current and projected GHG emissions, and to identify possible decarbonisation opportunities.

16.3. Water Supply

The Company holds Groundwater Licence GWL182644(1) (GWL) which allows it to take water from the Federal pit, the Black Swan open pit, the Silver Swan underground mine and the Black Swan borefield for ore processing and dust suppression purposes. The annual water entitlement provided by the GWL is 2.66GL. This annual entitlement is adequate for the proposed restart of operations.

It is expected that water supply from the Federal pit will be sufficient for a 1.1Mtpa throughput. To secure this water supply, in August 2021 the Company entered into a 5-year water access agreement with Norton Gold Fields Pty Ltd, the underlying tenement holder and asset owner, to take up to 3,600m^3 of water per day (1.3 GL per year) from the Federal pit. The Company holds a miscellaneous licence over the Federal pit and the pipeline corridor running to the Project (Miscellaneous Licence 27/75). It also owns all relevant infrastructure including a pipeline and associated pumping equipment.

Additional water supply is available via:

- the Black Swan borefield which is covered by the GWL; and
- Environmental Licence L6933/1996/14 which allows dewatering of up to 450,000 tonnes of mine water per year.

16.4. Tailings Recovery and Storage

There are two existing tailings storage facilities (TSFs) at the Project, namely:

- the Silver Swan TSF, which has been decommissioned; and
- the Black Swan TSF, which was previously used for storage of tailings resulting from processing of Black Swan disseminated and Silver Swan massive sulphide ores treated between 2004 and 2009.

Recovery of tailings from the Silver Swan TSF will be used for blending into the plant feed.

The Black Swan TSF will be used for the storage of tailings on restart of operations. The Company understands that the Black Swan TSF will require an embankment raise to fully contain all the tailings within the BFS mine plan.

The reclamation and reprocessing of tailings from the Silver Swan TSF will require a new regulatory approval. The Black Swan TSF embankment raise will also require an approval. The Company has engaged MBS Environmental to prepare and submit the relevant approval applications. The Company has reasonable grounds to expect that these approvals will be granted.

16.5. Waste Management

Waste rock generated from the proposed operations will either be stored within the existing Black Swan Waste Rock Dump (WRD) or will be used for the future Black Swan TSF embankment raise. Sufficient capacity exists within the WRD for storage of waste rock for the Project.

17. Business Support

Business support service functions including accounting, accounts payable, payroll and other commercial services will be undertaken on site and from the Poseidon head office in Perth.

Health and emergency response professionals will be employed on-site using the existing medical and emergency response facilities. Safety management for the operation will be an integral aspect of the management systems. As a formerly operating mine site, there are extensive safety management systems currently in place and in use supporting the care and maintenance team. These systems will also be used as the foundation for refurbishing and operating BSO.

There is an existing first aid post/clinic at BSO including site ambulance. Kalgoorlie is well situated to provide any additional medical requirements.

18. Human Resources

The Company has developed an organisational structure for the Project which draws on historical NNA organisational charts, underground contract mining proposals and typical structures used in similar projects. It has been adjusted to reflect a two weeks on/one week off roster for processing and operational staff and a 5-day week (with rostered weekends) for Kalgoorlie based residential administration and technical staff where possible. Open pit and underground contractors have varying rosters which are reflected in their respective cost inputs. Other market competitive operational rosters will be considered and may be implemented if required to attract and retain a high performing workforce.

The headcount post-refurbishment and into operation is expected to be 89 people (Table 21), excluding underground and open pit mining contractors. This headcount has been used to estimate staffing costs and to assess infrastructure requirements and demands such as water and sewerage needs.

TABLE 21: BLACK SWAN OPERATION HEADCOUNT

Department	Headcount
General Manager	1
Administration, Training & OHSE	10
Geology	11
Mining	15
Underground Mining Contractor	Contractor dependent
Open Pit Mining Contractor	Contractor dependent
Processing	35
Maintenance	17
Total (excluding contractors)	**89**

19. Mine Closure

A mine closure plan (MCP) in respect of the Project was approved by DMIRS in 2018. A revised MCP was lodged with DMIRS in 2021 and is yet to be assessed. As per Mining Act requirements and associated guidelines, the closure plan will be amended over the life of the Project in order that a detailed closure plan can be completed in good time to direct final closure and rehabilitation of the site.

The MCP will require further revisions to cover the proposed Silver Swan tailings recovery and the Black Swan TSF embankment raise (see Section 14.4 'Tailings Recovery and Storage'). The Company understands that the revisions to the MCP are unlikely to significantly affect the overall closure domains or closure risk assessment.

The Company carries a liability for closure obligations at BSO which at 30 June 2022 totalled $33 million. Refer to the Company's 2022 Annual Report for further information.

Mine closure costs have not been incorporated into the economic model given the Company's intention to extend Project life from a number of potential growth opportunities.

- processing the talc-carbonate ore type as proposed in the 2.2Mtpa rougher concentrate feasibility study currently underway;
- completing mining studies to consider a mining restart at Windarra and trucking ore to BSO;
- processing ore acquired from proximal nickel resources (via tolling arrangements); and
- growing Mineral Resources from exploration activities at Black Swan.

20. Logistics

The Company engaged Qube Bulk to undertake a logistics study on transporting the Black Swan nickel concentrate from the mine site to Esperance and Minerals to Market Pty Ltd to seek indicative freight rates from Esperance to Lianyungang (main Chinese port) from various shipping companies.

Mine to Port

The Qube Bulk logistics report dated October 2022 investigated two possible transport options for the Black Swan concentrate from the mine site to a suitable port for export:

- mine to Esperance in containers via triple road trains
- mine to Fremantle in containers via rail

The mine to Esperance option was used in the BFS and Qube has provide indicative rates for transport of the concentrate from Black Swan, storage of the concentrate in Esperance (in a container park) and ship loading charges.

Ocean Freight

Minerals to Market Pty Ltd requested indicative ocean freight rates from Esperance to Lianyungang based on the following parameters:

- Product: nickel concentrate in bulk
- Cargo sizes: 6,000wmt and 12,000wmt
- Load rate: 5,000 tonnes per weather working day, Sundays included
- Discharge rate: 3,000 tonnes per weather working day, Sundays excluded

The indicative freight rates received from Hudson Shipping Lines Pty Ltd dated 15 September 2022 included historical rates between 2016 and 2020, current rates as at 15 September 2022 and indicative rate estimates basis second quarter 2023. The Company used the indicative rates basis second quarter 2023 estimates in the BFS.

21. Marketing

The Company has undertaken an extensive market review of potential customers for the typical specification of the concentrate (i.e. 15% Ni, <6% MgO, Fe:MgO ~5:1) that could be produced from Black Swan. This typical concentrate specification is suitable for conventional nickel smelters, however it could also be processed in pressure oxidation (POX) and high pressure acid leach (HPAL) autoclaves.

Detailed indicative offers for 100% of targeted annual concentrate produced under the 1.1Mtpa BFS Project were received from a number of sources including companies operating smelters and trading companies. These are detailed offers including:

- percentage nickel payability at different nickel US$ price ranges, based on the LME Cash nickel price averaged over a monthly quotational period;
- percentage cobalt payability, based on MB 99.3% Co price average over a monthly quotational period;
- penalty charges for MgO and arsenic;
- provisional and final payment terms;
- delivery in bulk in minimum shipments of 5,000 wet metric tonnes to nominated discharge port;
- freight to the seller's account; and
- other standard terms and conditions for an indicative offer of this nature.

The BFS is based on a set of indicative terms which the Company believes reflects the current market for the proposed Black Swan concentrate annual tonnages and specifications and assumes the delivery basis is in bulk to a mainland Chinese port and the end customer is a conventional nickel smelter.

For commercial and confidentiality reasons the actual terms cannot be disclosed.

The indicative offers received demonstrated that the Black Swan concentrate is a highly sort after feed and when the Company proceeds to seeking firm offers the process is expected to be highly competitive which could result in the final terms agreed being superior to the ones use in this study.

In relation to the Black Swan concentrate being treated through a POX or HPAL plant the Company has been in contact with various companies who are currently operating such facilities or plan to in the future. On such possible future customer is Pure Battery Technologies (PBT) who in October 2021 announced plans to build a A$460M pCAM Hub (WA pCAM HUB) refinery in the Kalgoorlie region of Western Australia. The Company is in ongoing dialogue with PBT who is undertaking a feasibility study on the WA pCAM Hub which is due for completion in Q1 2023.

The PBT refinery, should it be constructed, would be an ideal plant configuration (front end POX) to process the Black Swan rougher concentrate that is the proposed product from the 2.2Mtpa feasibility study current being undertaken by the Company.

22. Capital Costs

Capital costs for open pit mining, underground mining and processing were developed by the respective consultants and aggregated by Poseidon. The Company added further capital expenditure to cover infrastructure upgrades required to support operational restart.

The processing plant refurbishment capital cost estimate provided by GRES was $37.8 million, inclusive of a 7.5% contingency of $2.6 million. A summary is presented in Table 22.

TABLE 22: BLACK SWAN CONCENTRATOR RESTART CAPITAL COST ESTIMATE

Cost Description	Cost (A$ million)
Plant refurbishment	23.9
Project management, engineering & drafting	2.0
Site supervision & management	3.5
Construction equipment & facilities	3.1
Commissioning	0.8
First fills & spare parts	1.3
Contractor indirect costs	3.0
Other capital expenditure	0.3
Total capital expenditure	**37.8**

Rounding of numbers may result in slight differences in calculated and cumulative numbers.

In addition to this, an estimate of $5.3 million for pre-production owner's costs has been made by Poseidon and allowed for in economic modelling. Annual G&A costs are included in pre-production owner costs. Economic modelling has incorporated a sustaining capital cost for the concentrator of $0.2 million a year, which is an estimate based on 0.5% of the refurbishment cost.

Mining capital and development costs provided by Entech totalled a combined $48.9 million for the open pit and underground operations, inclusive of a nil contingency.

The Black Swan open pit capital cost estimate of $28.8 million reflects surface mining contractor quotes and unit cost rates received during the RFQ process. A summary of the underground capital costs is presented Table 23. Capital expenditure for the open pit includes establishment of the contractor, clearing topsoil and pre-strip works and completing the proposed cutback to expand the open pit.

The restart of mining operations at the Black Swan open pit is direct into ore which is exposed at the bottom of the open pit floor. Whilst mining operations are direct into ore the Company intends to concurrently complete a cutback of the open pit in preparation of future mining activities included in the proposed mine schedule. The estimated cost to undertake the cut-back are included in the capital cost estimate as post first ore production mine development costs.

TABLE 23: BLACK SWAN OPEN PIT CAPITAL COST ESTIMATE

Cost Description	Cost (A$ million)
Topsoil and grub clearing	1.2
Contractor establishment	0.6
Open pit mine development	26.8
Demobilisation	0.2
Total capital expenditure	**28.8**

The capital cost estimate for the underground mining of Silver Swan and Golden Swan of $20.1 million reflects surface mining contractor quotes and unit cost rates received during the RFQ process. A summary of the underground capital costs is presented Table 24.

TABLE 24: SILVER SWAN AND GOLDEN SWAN UNDERGROUND MINING CAPITAL COST ESTIMATE

Cost Description	Cost (A$ million)
Pre-production mine development[1]	15.2
Re-establishment of underground infrastructure	3.1
Contractor establishment	1.5
Demobilisation	0.3
Total capital expenditure	**20.1**

1. *Pre-production mine development includes costs incurred prior to first ore mined from Silver Swan. Vertical capital development costs have been included in underground mining operating costs as these are incurred during ore production over the LOM.*

Economic modelling has incorporated a sustaining capital cost of circa $0.5 million a year during underground mining operations to maintain the underground dewatering pump system.

Additional costs for scope items not included by Entech or GRES such as road construction and upgrades, re-establishment of bore fields, stores and workshop restocking allowances, administration building refurbishment, re-equipping the metallurgical laboratory, light vehicles, project insurance and minor works allowances have been included in the total capital cost.

A summary of other capital costs is presented Table 25.

TABLE 25: OTHER CAPITAL ITEM COST ESTIMATE

Cost Description	Cost (A$ million)
Pre-production site services	5.3
Sustaining capital – Processing plant	0.8
Sustaining capital – Underground mining	1.5
Sustaining capital – Tailings facility uplift	2.9
Other	1.7
Total capital expenditure	**12.2**

In addition to pre-production items included in the table above, $2.9 million is included in sustaining capital expenditure to complete a tailings facility uplift in year 2 of processing operations.

The total capital cost to restart and operate the Black Swan open pit, Silver Swan and Golden Swan underground mine and to refurbish the Black Swan concentrator and infrastructure is estimated at $98.9 million as shown in Table 26.

TABLE 26: TOTAL BLACK SWAN PROJECT RESTART SUMMARY CAPITAL COSTS

Cost Description	Cost (A$ million)
Concentrator restart capital costs	37.8
Open pit mine establishment and pre-strip	1.8
Underground mine establishment and development	19.8
Other capital items	7.0
Open pit mine development	26.8
Open pit & underground contractor demobilisation	0.5
Sustaining capital – Processing plant	0.8
Sustaining capital – Underground mining	1.5
Sustaining capital – Tailings facility uplift	2.9
Total capital expenditure	**98.9**

23. Operating Costs

BSO estimated operating costs have been produced for the key cost centres of mining (open pit and underground), processing, concentrate transport and general and administrative (G&A) costs. The mining costs are based on unit rates applied to the mine schedules and were consolidated into a single mining cost. The processing costs were primarily built up from using first principles methodology and historical costs and consumptions as the basis. G&A costs are largely estimates drawn from Poseidon management and consultants based on historical costs or projected forecasts from experience operating at other mines. The indicative concentrate transport costs were provided by Qube Holdings Ltd (Qube), Hudson Shipping (Hudson) and an external logistics consultant (Minerals to Market).

Operating costs for BSO are based on mining requests for quotation (RFQ), the mine schedule and first principles. Processing operating costs are built up from manning estimates, historical power requirements adjusted for throughput, and design reagent consumptions, all using updated reagent, power, messing, concentrate transport and other unit costs.

The Black Swan open pit mine operating costs are based on estimates provided by a Kalgoorlie based open pit mining contractor. A summary of the Black Swan open pit mining costs is shown in Table 27.

TABLE 27: SUMMARY OF BLACK SWAN OPEN PIT MINING COSTS

Cost Description	Unit Rate ($/ore mined)	Cost (A$ million)
Drill & blast	3.7	12.1
Load & haul	20.1	66.0
Dayworks	0.2	0.8
Grade control	0.8	2.5
Owners costs	1.3	4.4
Overheads	0.3	1.0
Open pit mining costs	26.5	86.8

The planned mill feed includes several on surface stockpiles which remain at the Black Swan site from previous mining operations. This material is on surface and already blasted, the unit costs to load and haul this material of $2.03/t stockpiled material moved is significantly less than in-situ material in the pit. Total stockpile rehandle costs over the life of the Project is $2.4 million.

Similar to surface stockpiles, Silver Swan tailings reclamation costs are significantly less than the in-situ material in the pit. Tailings reclaim equipment and contractor costs are estimated to be $4.64/t tailings reclaimed. This amounts to a total cost of $1.7 million of the life of the Project.

The Silver Swan and Golden Swan underground mining operating costs are based on using contractor mining as the mine operating model. Costings were based on a RFQ process in May 2022 used to determine underground mining operating costs to a degree of accuracy suitable for a feasibility level of study.

Underground mining operating costs are estimated to be $553.4/t of feed. This is the total unit mining cost including:

- Operating lateral development
- Capital vertical development
- Stoping
- Mine overheads and Services
- UG Haulage
- Geology

It also incorporates geology costs related to grade control drilling, sludge drilling, face sampling and assaying. The mine overheads include the Poseidon geology and mining personnel costs.

A summary of the mining costs (excluding sustaining capital and contingency) is presented in Table 28.

TABLE 28: SUMMARY OF UNDERGROUND MINING COSTS

Cost Description	Unit Rate ($/t ore mined)	Cost (A$ million)
Lateral development	160.4	44.7
Vertical development	12.7	3.5
Drilling	15.4	4.3
Charging	4.3	1.2
Bogging & Backfill	25.1	7.0
Haulage	31.6	8.8
Mine Services	204.5	57.0
Overheads	34.7	9.7
Power	49.2	13.7
Fuel	15.3	4.3
Underground mining costs	**553.4**	**154.2**

Processing and general administration (G&A) operating costs were provided by GRES with a number of immaterial items included by Poseidon. The estimated unit processing cost is $27.8/t when processing through the Black Swan concentrator. This is summarised in Table 29. No contingency has been included.

TABLE 29: BLACK SWAN CONCENTRATOR OPERATING COST ESTIMATE

Cost Description	Unit Rate ($/t feed processed)	Cost (A$ million)
Crushing and screening	2.1	10.6
Grinding & classification	8.7	44.5
Flotation	6.3	32.1
Concentrate thickening	0.1	0.6
Concentrate filtration	0.8	4.1
Concentrate storage	0.1	0.3
Tailings thickening and disposal	0.8	4.3
Reagent mixing	0.5	2.7
Water & air services	0.8	4.2
Laboratory	1.5	7.5
Workshop	4.2	21.7
Plant management	2.0	10.0
Total processing costs	**27.8**	**142.4**

Rounding of numbers may result in slight differences in calculated and cumulative numbers.

General and administration costs (G&A) largely represent management and administration staff and facilities supporting the Black Swan operations. Allowances and estimates have been used for the bulk of the G&A costs based on similar operations and from high level calculations. These costs are summarised in Table 30.

TABLE 30: BLACK SWAN G&A COSTS

Cost Description	Cost (A$ million)
Employee costs	9.7
Vehicles and Equipment	1.8
Diesel usage	0.3
Power	0.5
Site Administration	9.7
Other	4.1
G&A costs	**26.1**

The operating cost to haul nickel concentrate from Black Swan to port and ocean shipping to ports in China are based on indicative costings provided by Qube and Hudson Shipping. A summary transport cost of $216/wmt of concentrate has been estimated using indicative costings.

The overall unit operating cost for the Project is dependent on the mine blend and the feed grades and feed types in respect to the concentrate produced.

Mine closure costs have not been incorporated into the economic model given the Company's intention to extend Project life from a number of potential growth opportunities.

C1 costs are presented in Table 31. This operating cost includes mining, processing, geology, OHSE, site G&A, concentrate transport, royalties, less by-product credits (none claimed), divided by nickel in concentrate produced on a 100% payable basis.

TABLE 31: BLACK SWAN INTEGRATED C1 SUMMARY OPERATING COSTS

Cost Description	C1 unit cost (US$/lb)	C1 unit cost (A$/lb)*
Open pit mining	0.9	1.3
Underground mining	1.6	2.4
Tailings & stockpile reclaim	0.0	0.1
Processing	1.5	2.2
Transport	0.5	0.7
G&A	0.3	0.4
By-product credits (cobalt)	(0.2)	(0.3)
**Total C1 cost ** **	4.6	6.7

Rounding of numbers may result in slight differences in calculated and cumulative numbers.
** A$:US$ – $0.69 rate assumed in economic analysis*
*** Calculated per nickel in concentrate produced, not payable nickel. Does not include pre-production costs*

24. Economic Evaluation

Economic modelling was undertaken internally by Poseidon. The modelling utilises the capital and operating cost estimates previously discussed in conjunction with the mine production physicals which reflect the Black Swan, Silver Swan and Golden Swan Ore Reserves, Silver Swan tailings reclaimed and surface ore stockpiles.

The BFS Base Case economics inputs are forward curves for nickel price and foreign exchange have been inputted for the first 16 months of concentrate sales, with flat nickel price (US$10.00/lb) and foreign exchange (AUD:USD $0.70) assumptions beyond this period. The key input assumptions are summarised in Table 32, with economic inputs by year during the Project life presented in Table 33.

TABLE 32: KEY ECONOMIC ASSUMPTIONS

Input	Value
Average Nickel price:	US$11.60/lb
US$:A$1.00	US$0.69
Discount rate	8%

TABLE 33: BASE CASE ECONOMIC INPUTS

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Concentrate Production	kt	-	17.7	61.3	57.7	43.8	15.4
Nickel Price	US$/lb	12.15	12.58	12.18	10.00	10.00	10.00
AUD:USD rate	AUD:USD	0.68	0.68	0.68	0.70	0.70	0.70
Basis of assumption		Forward Curves[1]			Management Forecast[2]		

1. *Nickel Price forward curves for 2023, 2024 and 2025 from LME website on close of Thursday 17th November 2022 inputted as Year 1, Year 2 and Year 3 respectively. AUD:USD forward curves inputted from an external source based on close of Thursday 17th November 2022.*
2. *Management estimate for period beyond forward curve inputs is US$10.00/lb nickel price and AUD:USD $0.70. Management has conservatively estimated these economic inputs based on expected nickel pricing to support the projected nickel demand over the medium term. Alternative upside nickel pricing scenarios have been considered based on positive outlook for nickel, see below.*

Poseidon has been in discussion with potential offtake partners throughout the study process with indicative terms received from a number of parties indicating strong interest in our nickel concentrate. Economic analysis represents offtake terms typical to the current market. Beyond release of the BFS the Company will continue discussions with these parties and progress toward a definitive agreement which represents the most favourable terms for the Company.

Economic evaluation has been completed on pre-tax earnings. It does not consider offsetting losses, research and development tax rebates and other tax optimisation opportunities. The Australian company tax rate is currently 30%.

The Company had carried forward tax losses of $187 million at 30 June 2022 (refer 2022 Poseidon Nickel Annual Report). The Company will assess the potential to utilise these carried forward losses against the projected tax obligations of the Project.

The key production and financial information used for economic analysis is summarised below:

- Life of Mine – 4 years
- LOM mine inventory – 5.0Mt averaging 0.9% Ni for 43.5kt nickel contained
- Ore treatment rate– 1.1 Mtpa
- Total LOM concentrate produced – 200kt dry metric tonnes
- Concentrate nickel grade – 15%
- Operating cost – As per Section 23 – Operating Cost
- Pre-production capital cost – As per Section 22 – Capital Expenditure
- Sustaining capital cost – As per Section 22 – Capital Expenditure
- Discount rate – 8%
- Nickel Price – US$11.6/lb average life of project
- Nickel concentrate payable nickel – commercially confidential
- Foreign exchange – US$0.69:A$ 1.00 average life of project
- Third party royalty - 1.75% payable (on Silver Swan and Golden Swan ore only)
- Payable cobalt in concentrate – commercially confidential
- No payable copper in concentrate
- Penalties for As and MgO in concentrate – from indicative offers received
- Bulk shipping of concentrate from Esperance to China – from third party supplied cost estimates
- Excludes depreciation, corporate overhead, taxation and financing costs

The Project financial summary is listed in Table 34. It has an estimated total Project AISC cash cost of US$4.90/lb of recovered nickel including the overall capital, LOM operating and sustaining capital costs but excluding corporate overheads, the cost of financing debt, closure costs, depreciation, tenement costs, insurances and other minor capitalised preproduction costs prior to start-up and contingency.

TABLE 34: PROJECT BASE CASE PRE-TAX ECONOMIC SUMMARY

Economic Outputs	Base Case
Revenue	$809M
Operating Costs	$483M
Capital Expenditure[1]	$99M
Net Cash Flow	**$227M**
Pre-tax NPV_8 [2]	**$167M**
IRR	**86%**
Payback Period[3]	1.3 years
C1 Cash Cost[4]	US$4.56/lb
AISC Cash Cost[5]	US$4.90/lb
Average Ni price	US$11.6/lb
Average FX (USD/AUD)	0.69

1. *Capital expenditure includes $50 million of pre-production capital expenditure with the remainder of capital expenditure incurred post first ore production.*
2. *NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.*
3. *Period post completion of concentrator refurbishment.*
4. *C1 cash costs include operating cash costs including mining, processing, geology, OHSE, site G&A, concentrate transport, less by-product divided by nickel in concentrate produced (100% basis before smelter deductions). Excludes development and sustaining capex, pre-production costs and royalties.*
5. *AISC - are C1 cash costs plus royalties and sustaining capital. Excludes development capital and preproduction costs.*

The project is forecasted to be cash positive, with pre-tax capital payback estimated to be achieved 1.0 years after the concentrator refurbishment is completed. Cash flow projection for the Project are shown in Figure 22.

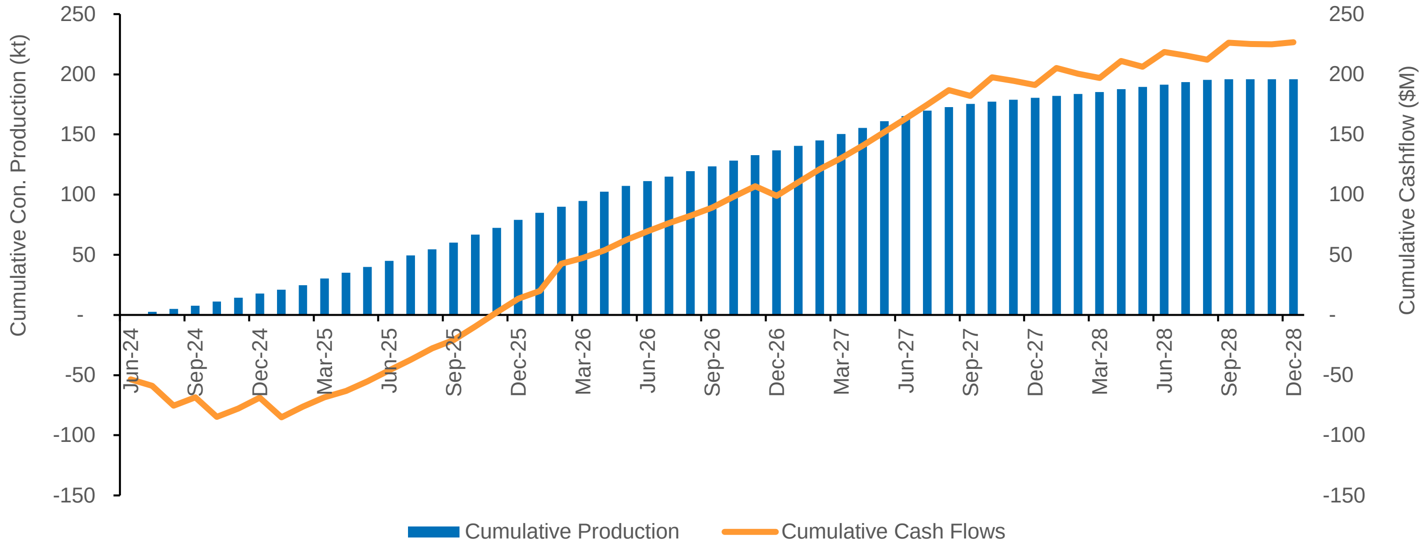


FIGURE 22: CUMULATIVE NICKEL PRODUCTION AND CUMULATIVE PROJECTED PRE-TAX FREE CASH FLOW

Alternative economic scenarios considered were the 'Spot Case', being the current nickel price of US$11.80/lb and foreign exchange of AUD:USD $0.67, and an 'Upside Case' which assumed a flat US$15.00/lb nickel price and flat AUD:USD $0.65. Both scenarios presented positive economic outcomes as presented in Table 35 .

TABLE 35: ALTERNATIVE PROJECT PRE-TAX ECONOMIC SCENARIOS

Economic Outputs	Upside Case	Spot Ni Price & FX
Revenue	$1,207M	$919M
Operating Costs	$498M	$487M
Capital Expenditure[1]	$99M	$99M
Net Cash Flow	**$610M**	**$333M**
Pre-tax NPV_8 [2]	**$470M**	**$248M**
IRR	**188%**	**103%**
Payback Period[3]	1.0 year	1.4 years
C1 Cash Cost[4]	US$4.36/lb	US$4.52/lb
AISC Cash Cost[5]	US$4.81/lb	US$4.89/lb
Average Ni price	US$15.0/lb	US$11.8/lb
Average FX (USD/AUD)	0.65	0.67

1. *Capital expenditure includes $50 million of pre-production capital expenditure with the remainder of capital expenditure incurred post first ore production.*
2. *NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.*
3. *Period post completion of concentrator refurbishment.*
4. *C1 cash costs include operating cash costs including mining, processing, geology, OHSE, site G&A, concentrate transport, less by-product divided by nickel in concentrate produced (100% basis before smelter deductions). Excludes development and sustaining capex, pre-production costs and royalties.*
5. *AISC - are C1 cash costs plus royalties and sustaining capital. Excludes development capital and preproduction costs.*

25. Sensitivity Analysis

The Base Case financial model was subjected to a sensitivity analysis against key variables including:

- Nickel price
- FX
- Mining operating costs
- Processing operating costs
- Capital expenditure and pre-production costs

The analysis showed the Project to be sensitive to the nickel price, i.e., to revenue. It is also sensitive to nickel grade and nickel recovery with a strong increase in the NPV with an increase in these revenue drivers. Conversely, the modelling showed the Project to be negatively impacted by an increase in the foreign exchange rate and to a lesser extent changes to the operating and the capital costs.

Results of the sensitivity analysis -/+20% are shown in Figure 23.

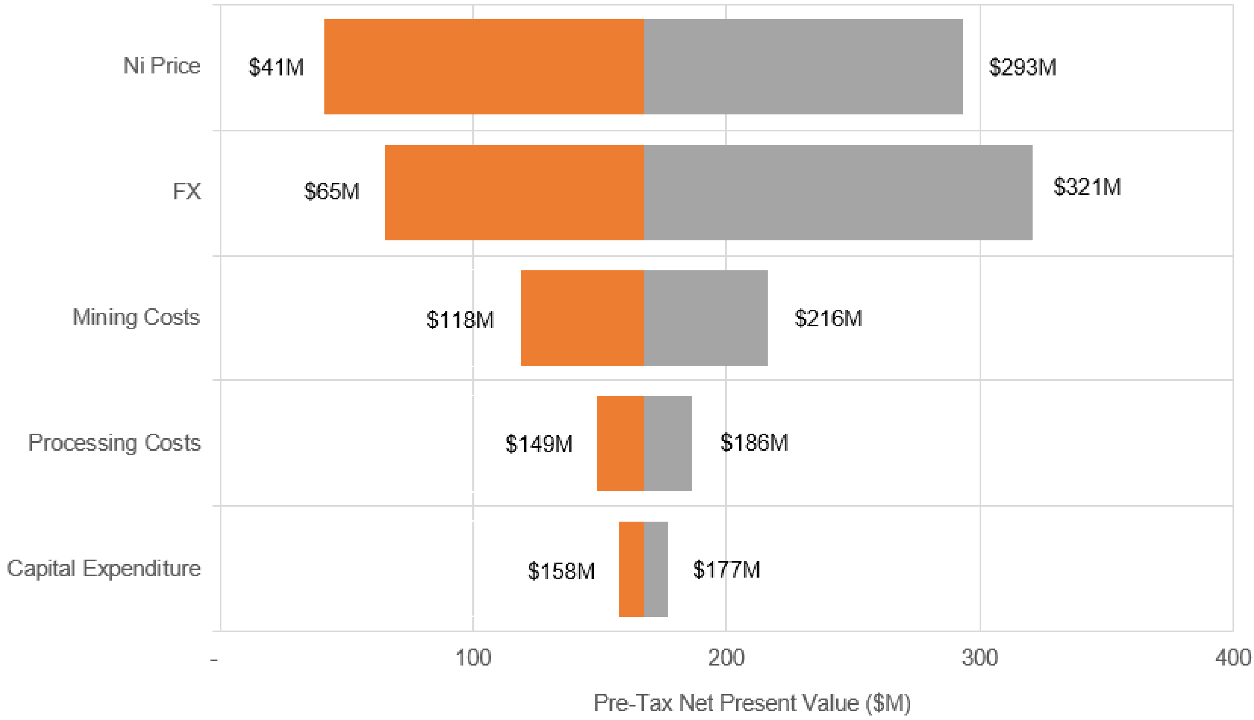


FIGURE 23: BASE CASE NPV$_8$ SENSITIVITY ANALYSIS

The data used for the sensitivity analysis are shown in Table 36.

TABLE 36: BASE CASE PRE-TAX NPV$_8$ SENSITIVITY ANALYSIS DATA

Sensitivity	Unit	-20%	-10%	0%	10%	20%
Ni Price	A$M	41	104	167	230	294
FX	A$M	321	236	167	112	65
Mining costs	A$M	216	192	167	143	119
Processing Costs	A$M	186	176	167	158	149
Capital Expenditure	A$M	177	172	167	163	158

1. *NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.*

26. Project Funding

The BSO restart is not currently funded with the Company having ongoing discussions with potential funding partners during the study period. The outlook for the nickel price is currently strong and Poseidon has received inbound interest from potential funding partners, particularly from parties seeking exposure to our nickel tonnes (i.e., commodity traders, battery manufacturers, automotive manufacturers, etc.).

The BFS presents a Project funding requirement of $90 million. This funding requirement comprises ~$50 million pre-mine production capital expenditure with the remainder representing working capital to build up sufficient concentrate inventory stockpiles for assumed 5,000 tonne shipments and time to first concentrate sales.

Beyond release of the BFS the Company will continue discussions with potential project financiers and progress toward a definitive agreement which represents the most favourable terms for the Company.

27. Information Provided in Accordance with ASX Listing Rule 5.9

In accordance with the ASX Listing Rule 5.9.1, the following summary information is provided to understanding the reported estimates of the production targets:

27.1. Material Assumptions

The following tables show the key economic inputs for the Black Swan BFS for the 1.1Mtpa mill feed project.

TABLE 37: KEY ECONOMIC INPUTS

Key Economic Inputs	Unit	Value
Nickel Price	US$	$11.60/lb
FX (AUD:USD)	ratio	0.69
LOM Head Grade	%Ni	1.0
Accumulated Tax Losses	A$M	$0.1/lb
Process plant refurbishment period	months	11
Process Plant ramp up period	months	3 months to attain target ore production rate
WA State Royalties	%	2.5
Other Royalties	%	1.75 (on Silver Swan and Golden Swan ore only)
Plant Utilisation	%	91.3
Plant Nickel Recovery: BSD Serpentinite: Silver Swan: Golden Swan: Silver Swan Tailings: Surface Stockpiles:	%	Via Head Grade vs Nickel Recovery algorithm based on testwork and production data history (reconciliation). Algorithm applied: - Recovery (Y) = 8.0071 x ln(Head Grade) + 65.94 92.5% based on testwork / production data history (reconciliation) 85.0% based on testwork 30.0% based on interpretation from testwork results - Calculated via BSD Serpentinite Head Grade Vs Nickel Recovery algorithm - 0.9 multiplication 'factor' applied to the calculated recovery to derate recovery for potential stockpile weathering (sulphide oxidation) effects
Concentrate Quality		Nominal grades for payable and deleterious elements applied in financial modelling - Ni - 15% - Co - 0.4% - MgO - <6% - As - 3,800ppm

Table 38: Project Unit Operating costs

Operating Costs (Life of Mine)	A$/t Milled
Open Pit Mining	17.5
Underground Mining	31.1
Processing	28.9
G&A	5.2
Transport	9.4
Royalties	5.4
Total	97.5
Capital	20.0
Total Site Costs	117.5

In addition to the above, the following economic assumptions are noted:

- Mine capital costs were mainly based on a Request for Quotation (RFQ) process involving three experienced and reputable mining contractors using the physical layout and mining schedule results of this study. Costing for major infrastructure items not included in the contractor quotes was sourced from vendors.
- Capital cost estimates for refurbishment of the processing plant and other non-processing infrastructure were provided by GR Engineering Services Ltd (GRES) to a feasibility study level of detail.
- Mine operating costs were sourced from the RFQ process based on the mining schedules provided.
- Operating costs for the processing plant were estimated by GRES to a feasibility study level of accuracy.
- Employee salaries and business services costs have been determined based on current industry benchmarks.
- The operating costs have made allowance for transportation charges within the pricing of consumables, reagents and supplies.
- Transport charges for the product (nickel concentrate) have been supplied by third party logistics contractors.
- Treatment and refining charges are included in the payability factors determined from detailed discussions with potential offtake partners terms have been supplied by third party operators

27.2. Criteria for Classification

The Mineral Resources used as the basis for this Ore Reserve were estimated by independent geology consultants, Golder and Optiro. The Mineral Resources have been announced to market as detailed below:

- Black Swan Disseminated Resource – refer to ASX announcement "More Nickel in Updated Black Swan Disseminated Mineral Resource" (4 July 2022)
- Silver Swan Resource – refer to ASX announcement "Updated Silver Swan Resource underpins significant increase in high grade indicated resource base" (27 April 2022)
- Golden Swan Maiden Resource – refer to ASX announcement "Golden Swan Maiden Resource and Golden Swan Maiden Resource – Additional Information" (27 October 2021 and 12 November 2021)
- Silver Swan Tailings Maiden Resource – refer to ASX announcement "Silver Swan Tailings – Maiden Resource Estimate" (15 September 2021)
- Black Swan Stockpiles – refer to ASX announcement "Poseidon Announces Black Swan Mineral Resource" including stockpiles (4 August 2014)

All Resources are current for November 2022. Refer to Section 4 – Mineral Resources for further information.

The Ore Reserve estimate represents that portion of the BFS mine plan based on Measured and Indicated Mineral Resources only. All material classified as Inferred Mineral Resources was set to waste grade for the purposes of the Ore Reserve evaluation. The updated Black Swan Project Ore Reserve is summarised in Table 39.

TABLE 39: 2022 BLACK SWAN PROJECT ORE RESERVE ESTIMATE

	JORC Compliance		Nickel Sulphide Reserves		
			Tonnes (Kt)	Ni% Grade	Ni Metal (kt)
BLACK SWAN PROJECT					
Black Swan	2012	Proved	579	0.7	4.2
		Probable	2,608	0.7	17.7
Silver Swan	2012	Proved			
		Probable	179	5.0	9.0
Golden Swan	2012	Proved			
		Probable	100	4.0	4.0
Total Ni, Co, Cu Reserves	2012	Proved	579	0.7	4.2
		Probable	2,887	1.1	30.7
		Total	3,466	1.0	34.9

**Calculations have been rounded to the nearest 1,000t of ore, 0.1% Ni grade and 100 t of metal*

Physical and economic modifying factors have been applied to the Mineral Resource during the mine design process to ensure the resultant Ore Reserve can be economically mined and processed to produce saleable nickel concentrate. Refer to Section 7 – Ore Reserves & Mining Inventory for further information.

Material uncertainties relating to this Ore Reserve estimate are discussed below:

- There is a degree of uncertainty associated with geological estimates. The Reserve classifications reflect the levels of geological confidence in the estimates;
- Nickel price and exchange rate assumptions set out by POS are subject to market forces and present an area of uncertainty;
- There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the BFS level of detail of the study; and
- No offtake agreement has yet been signed for the final product and there is no guarantee that such an agreement will be reached.

Factors in favour of confidence in the Ore Reserve estimate include:

- The mine plan assumes simple mechanised mining methods that have been successfully implemented at various sites in the local area;
- The underground mine has been successfully operated previously and has been kept dry and accessible during the care and maintenance period, allowing detailed inspection of the workings and infrastructure; and
- The Project, as previously operated, has a very high likelihood of being successfully permitted.

The BSD production target includes feed sources for processing which are not included in the Mined Ore Reserves, this includes 0.4Mt of Silver Swan Tailings and 1.0Mt of on surface BSD stockpiles, serpentinite ore only. These feed sources represent 21% of the contained nickel in ore sources in the production schedule. The

Silver Swan Tailings are a Measured Resources (refer to Section 4 – Mineral Resources) and the on surface stockpiles are Measured & Indicated Resources (refer to Section 4 – Mineral Resources).

The surface BSD stockpile mining inventory is based on surveyed volume models, a loose cubic metre estimate for density and the grade determined from the grade control estimations and reconciliations during operations. The calculation is also the basis of the 2014 "Indicated Mineral Resource" estimate. Since the surface stockpiles are post mining, no dilution or mining recovery parameters have been applied to estimate the Mining Inventory. Stockpiles included in the mining inventory do not include stockpiled Talc Carbonate material. Processing recovery for BSD stockpiles has a reduced recovery factor of 90% further applied to the algorithm derived recovery to address any additional recovery loss as a result of weathering of the material.

The Silver Swan Tailings is based on a Maiden Measured Resource Estimate (see ASX announcement "*Silver Swan Tailings – Maiden Resource Estimate*" released 15 September 2021). The Mining Inventory was applied the following modifying factors based on GR Engineering reclaim studies. An estimation of the operating costs has been sourced from recent contract tender appraisals for similar scopes of works. A feed rate of 15t/h has been assumed with operations occurring on the day shift only. Capital allowances have been included for the construction of a haul road to access the TSF.

27.3. Mining

The Feasibility Study contemplates a combination of open pit mining underground mining and reclamation of tailings material as described in Section 5 – Open Pit Mining and Section 6 – Underground Mining of this release.

27.3.1. Open Pit Mining

The Black Swan open pit is planned to be mined using a conventional diesel fleet of excavators and trucks. The minimum mining widths adopted are considered adequate given the geometry of the open pit designs to achieve full access and manoeuvrability for the proposed mining fleets. A 20 metre minimum mining width was chosen for the open pit design and physical cut-back distance from the existing pit void.

An open pit optimisation was established using Datamine's NPV Scheduler. The optimisation considered Measured, Indicated and Inferred Mineral Resource material in its economic evaluation.

The Mineral Resource model was prepared for open pit optimisation by adding cost, recovery, royalties, and revenue drivers to individual blocks within the model using macros. All cost assumptions were aggregated to create a total ore related cost assigned to ore blocks.

Mining dilution and mining recovery factors of 10% and 95% respectively were applied. These factors have been based on mining recovery of the ore, factoring some losses during mining.

An open pit optimisation was carried out to assess the economic viability of a potential cut-back and assess the inherent risk of various options. Key factors considered were the remediation requirements of the current wall failure and the minimum cut-back distance required to safely mine the Black Swan open pit to depth.

An optimised pit shell was deemed appropriate for maximising metal within the proposed pit design whilst providing a strong NPV value. Previous studies identified a smaller open pit option which mined the base of the pit without encroaching on existing pit walls. However, as a result of the upper wall failure on the southern extents of the pit, it was deemed favourable to mine a larger open pit, cutting a new wall to the east and to the north to gain access to ore at depth. A cut-back design was subsequently carried out on a chosen optimisation outcome and a detailed mining cost analysis undertaken using contractor mining rates for Load & Haul and Drill & Blast and costs associated with the processing of ore from the open pit.

The proposed final open pit design incorporates the remediation of the existing wall failure on the south-eastern wall. Due to the initial cut-back and wall failure remediation will require a large amount of waste to be removed before accessing the ore in the base of the existing pit. It is planned that an initial starter pit be mined, utilising the existing pit ramp and mining within the current open pit footprint, allowing for a minimum of 50 metres standoff from the base of the current pit wall failure. This will provide ore feed in the early months of the mine schedule and allow for the safe and effective remediation of the wall failure as the pit mines to depth.

Geotechnical design parameters were consistent with the previous 2018 Feasibility Study, with the addition of a pit wall failure remediation plan report (Green, 2022)

The inventory mined from within the Black Swan open pit is reported as slightly different to the estimated Reserve. This is due to the Reserve being estimated using the JORC compliant July 2022 MRE and the mining inventory being estimated using the TWM as described in Section 4 – Mineral Resources.

27.3.2. Underground Mining

The mining method proposed for Silver Swan underground is unchanged from that in the 2017 mining study that consisted of mechanised bottom-up longhole stoping with continuous cemented rockfill (CRF) on 25 metre vertical sub-levels. Stoping voids without top access will be left open with rib pillars retained for support. The same mining method for the Golden Swan underground is being applied but will use 15m sub-levels.

Mining activities are planned to be carried out by reputable mining contractors, with Poseidon providing mine management and technical support.

All stoping areas are based on geotechnical advice resulting in a minimum width of 3.25 metres for Silver Swan and 2.75 metres for Golden Swan. Fill stopes will have an additional 3% dilution at zero grade included in the schedule to account for overbog of fill material. Mining recoveries of 95% have been applied to stopes to allow for issues such as local orebody spatial variability and material left behind during remote loading.

A sill pillar will be used at both Silver Swan and Golden Swan to allow for two concurrent working areas respectively for more efficient mine scheduling:

- The Silver Swan sill pillar designed between the 9900-9925 level - Geotechnical analysis indicated that the sill pillar will need to be fully sub-level in height to remain stable. On the 9,875 level beneath the sill. 5 metre rib pillars will be used in-situ due to the inability to fill the stopes from the absent 9900-9925 level.
- Golden Swan will use a 2 metre thick CRF sill pillar placed in the floor of the 10,350 level ore drive.

The economic nickel cut-off grades (COG) were determined by using mining and processing costs assumptions along with revenue inputs, assuming processing of all ore at the Black Swan concentrator. Optimisation software to determine mineable shapes was based on the Indicated and Inferred resource categories only.

The optimisation results were reviewed for mineability with any stopes falling below the calculated COG being removed from the mine plan. Drill and blast, backfilling and updated ground support costs were applied to the optimised stope shapes to determine the final designs.

Productivity assumptions have been applied based on similar equipment and mining methods prevalent within the Western Australian hard rock mining industry and assuming the engagement of an experienced and competent underground contractor. The stoping sequence is unchanged from the previous 2017 mining study, being bottom-up methods retreating back from the end of each stope drive.

The mine will be ventilated using a series ventilation method where the air is re-used by reintroducing air back into the decline until it reaches the last Return Air Raise (RAR) connection at depth. An updated analysis for the current mine plan includes the following points:

- The existing primary fan infrastructure is sufficient to meet the needs of the Silver Swan and Golden Swan mine at peak production so long as the return blockage in the Northern Vent Rise (NVR) is bypassed. This series of bypasses are accounted for in the first 2 months of the mine plan.
- The mine will require mechanical cooling for operating conditions to be within regulatory requirements. A 6MWh decline cooling plant has been allowed for in the financial model and can be switched off in the cooler months.

Underground mining costs have been estimated based on contractor rates from a detailed request for quote (RFQ) process carried out in April 2022. These rates were provided on a fixed and variable basis.

27.4. Processing

The Black Swan concentrator is a standard sulphide nickel flotation operation. The layout could be considered non-standard as a result of its evolution from the original plant build for the treatment of the low tonnage high-grade Silver Swan underground mine (with a throughput of 0.3Mtpa) through to a capacity of 2.2Mtpa via two expansions to also treat low grade disseminated ore.

The flowsheet, Process Design Criteria (PDC) and mass balance were compiled by GRES and are based on the existing plant, previous operating data, and results of testwork. The flowsheet is generally as per the historical concentrator operation with allowances for the decrease in tonnage through the Black Swan circuit.

The processing stages to produce a smelter-grade nickel concentrate will be:

- Single stage crushing with coarse ore bin storage (existing);
- Single stage SAG mill with a flash flotation circuit treating cyclone underflow and provision to incorporate the existing pebble recycle conveyors (existing equipment with modifications). Pebble crushing is not currently included and would require additional refurbishment of the pebble crusher and additional bins and conveyors if required for use;
- Flotation with rougher, rougher-scavenger, cleaner, cleaner-scavenger, cleaner 2 and cleaner 3 stages with open circuit operation of the cleaner-scavenger (existing modified and two new cells in rougher 1 cleaner duty due to the poor condition of the existing cells);
- Regrinding of rougher 2, rougher-scavenger and cleaner-scavenger concentrates (new circuit using existing Silver Swan ball mill);
- Concentrate thickening (new thickener due to condition of existing concentrate thickener) and filtration (existing ceramic vacuum disc filters, two of three to be refurbished); and
- Tailings thickening and storage of tailings in a designated facility (existing).

The feed materials will be blended in the target ratio by feeding the required proportion via front-end loader buckets into the ROM bin. The feed materials will be drawn from separate stockpiles maintained on the ROM pad.

The metallurgical process is conventional, well understood and has many years of operational data to support the flotation responses of the Silver Swan (SS) and Black Swan ores. A metallurgical recovery of 92.5% for SS ore, 85% for Golden Swan (GS) ore and up to 75% for Black Swan Disseminated Serpentinite ore (depending on grade) has been applied to material for economic analysis, based on this data. Although GS ore has not been processed previously its attributes of a high nickel grade, low arsenic content and a good Fe:MgO ratio are positive.

27.5. Cut Off Grades

The Cut-off grade parameters for the underground ore were determined based on the 2017 FS financial analysis and an underground contractor tender process carried out in late 2018 for mining costs with a 16% rates inflator based on the increase in costs seen by Entech to early 2022. All material was assumed to be processed at the Black Swan Operations processing plant located at the site.

- For SS the fully costed stoping cut-off grade (COG) applied was 2.5% Ni, and the incremental stoping COG for SS was 2.1% Ni;
- For GS the fully costed stoping COG applied was 2.4% Ni, and the incremental stoping COG for GS was 2.1% Ni; and
- the open pit used a cut-off dollar value of $31/t of ore based on the processing cost.

A nickel price of $US8.50/lb and a USD:AUD exchange rate of $0.75 was used to determine the cut-off grades. The estimated Ore Reserves are economic at these assumptions.

27.6. Estimation Methodology

The Ore Reserve estimate represents that portion of the BFS mine plan based on Measured and Indicated Mineral Resources only. All material classified as Inferred Mineral Resource was set to waste grade for the purposes of the Ore Reserve evaluation.

Modifying factors were determined based on geotechnical inputs, and the proposed mining methods and fleet equipment and are summarised below:

- Minimum stope width of 3.25m for SS and 2.75m for GS including 1.0m hangingwall dilution and 0.25m footwall dilution
- SS & GS UG fill stopes have an additional 3% dilution at 0% grade
- 100mm overbreak was modelled for walls and backs or ore development
- Sub level intervals are 25m for SS and 15m for GS
- Maximum stope spans opened prior to filling are 5 m along strike
- 20m minimum mining width in the open pit
- Designed cut back parameters of the south wall failure

27.7. Additional Modifying Factors

Tenure & Royalties

The Company is the 100% legal and beneficial owner of all tenements. All tenements are in good standing

In accordance with the Mining Act 1978 (WA) (Mining Act), a 2.5% royalty is payable to the Western Australian State government in respect of nickel and nickel by-products (e.g. cobalt) produced by the Company from the tenements.

In addition to the State government royalty, a private royalty is payable pursuant to a historical royalty agreement entered into in 1995 by the Company's predecessors. In accordance with this agreement, the Company is required to pay a royalty in respect of nickel, copper, platinum group metals and other metals (excluding gold and silver) produced by the Company from Mining Lease 27/200. For the proposed Project the private royalty applies to all production from the underground Silver Swan and Golden Swan resources.

Environmental Approval and Permitting

The Project has various environmental approvals issued under relevant legislation. Approvals were transferred to Poseidon at the time of acquisition. The following environmental approvals are current for the Project:

- Mining Proposals – there are currently a large number of mining proposals and notices of intent on the tenements which are understood to cover the Project as it stands, and the proposed restart and continuation of operations. The Company will need to amend the Works Approval for the mining and treatment of the Silver Swan Tails, next stage of the TSF lift as well as an approval for a larger footprint for the open pit;
- Mine Closure Plan
- Environmental Licence L6933/1996/14 – this licence allows processing of up to 3Mt of ore per year, and dewatering of up to 450,000 tonnes of mine water per year;
- Groundwater Licence GWL182644(1); and
- Clearing Permits – although there are no current native vegetation clearing permits, up to 10 ha per tenement per financial year can be cleared without a clearing permit if the activities requiring the clearing are approved via the approved Mining Proposals.

The existing approvals are understood to cover the restart of operations as the Project was historically operated. Additional approvals will be required in relation to the proposed reclamation of the tailings from the Silver Swan TSF and their reprocessing through the Black Swan concentrator and for tailings deposition into the Black Swan TSF.

28. Risk Assessment

The Company has reviewed and updated its risk registers and procedures in anticipation of the proposed restart of operations. The updated procedures:

- set out the processes required to identify and manage risks in the business;
- clearly define roles and responsibilities; and
- set out formal monitoring and review requirements.

In line with the updated procedures, the Company has completed a risk assessment to identify key risks associated with the proposed Project. Key risks identified for the Project are presented in Appendix 1.

29. Project Opportunities

During the study, the following project opportunities were identified:

- The reserves, resources and exploration potential are well known and understood for both the Silver Swan and Black Swan Projects. The reserves, resources and exploration potential are well known and understood for both the Silver Swan and Black Swan Projects. There is significant potential to upgrade the geological confidence for the large amount of Inferred Mineral Resources that are identified within the proposed pit outline, importantly not included in the mining inventory. A major infill drilling program is required and is best drilled from the dewatered pit floor. If successful and subject to mine studies, a potential material increase of ore reserves could be achieved that could further bolster the economics of either the 1.1Mtpa feed to produce saleable concentrate case, or the 2.2Mtpa feed to produce rougher concentrate study currently underway.
- The ultimate treatment plant capacity of approximately 2.2 Mtpa provides the opportunity to introduce new feed sources to the LOM blend. This includes blending and processing the talc-carbonate ore type with the serpentinite ore type to produce a rougher concentrate. This opportunity is subject to the ongoing 2.2Mtpa feasibility study.
- Potential to construct a pressure oxidation plant at BSO to process rougher concentrate producing mixed hydroxide precipitate or transport rougher concentrate to a nearby third-party pressure oxidation plant, such as that proposed by Pure Battery Technologies in their Kalgoorlie pCAM refinery.
- There is an opportunity to source new feed from remote mines or toll treat third party ore to increase the circuit throughput and utilise the full capacity of the plant.
- Subject to progressing with the 2.2Mtpa rougher concentrate project, there is potential for further cutbacks of the Black Swan Open Pit to increase the mining inventory and extend the Project LOM.
- There is an opportunity to review the Silver Swan underground and Black Swan open pit mining costs with those more aligned to an Owner Operated model.

30. Next Steps

This study proposes a restart plan for the Black Swan Nickel Operation which incorporates the Black Swan open pit (and stockpiles), Silver Swan and Golden Swan underground mines and refurbishment of the concentrator and associated infrastructure.

The concentrator capacity can be relatively simply reduced to the proposed 1.1Mtpa throughput by bypassing the ball mill and operating with a single stage of closed-circuit SAG milling. The concentrator is in relatively good condition and there is good confidence in the costs required to refurbish and restart. Mining can recommence in the Black Swan pit once it is dewatered and minor roadworks completed. Resource extension drilling has been undertaken on the Silver Swan underground mine and a clear development plan is in place to resume underground operations. The underground mine is currently dewatered and capital infrastructure is well maintained and can be easily and quickly accessed.

There is sufficient water and power infrastructure to meet the new throughput requirements and grid power allocations sufficient to meet the power requirements of the Project have been confirmed with Western Power. The capacity of the Black Swan TSF at the current embankment height is sufficient for the first 2 years of production tailings storage demand. An embankment raise forecast for the Project during year 2 will support the Project tailings deposition requirements LOM.

Other aspects of the Black Swan Project restart including the environmental, legal, licensing, compliance, native title, social and heritage aspects have been reviewed and all have been found to be in good standing with no issues likely to impede the restart of the BSO.

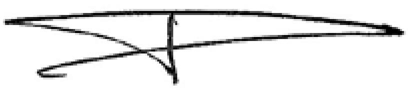
The economic modelling at the assumed metal prices shows that mining the BSD, Silver Swan and Golden Swan ores, processing on site to produce a smelter-grade concentrate has a positive overall cash flow, NPV and IRR.

Based on the positive BFS outcomes the Company is undertaking the following works to progress toward FID and further improve the Project economics:

- Finalise the approvals in relation to the amendments required to the Works Approval for the mining and treatment and reclamation of the Silver Swan Tailings.
- Following receipt of indicative offtake term sheets from potential offtake partners, progress discussions to agree definitive terms and conclude an offtake agreement or agreements.
- Commence discussions with potential contractors:
  - for refurbishment of the Black Swan concentrator and associated infrastructure; and
  - proposed mining and ore processing operations.
- Complete the 2.2Mtpa feasibility study, which presents an opportunity to significantly increase concentrate and contained nickel production and provide an extension option for the Project beyond the 1.1Mtpa Project.
- Complete the 10,000 metre resource drilling program to convert more Inferred Resources at Black Swan to Indicated, growing the Measured and Indicated resource base for the 1.1Mtpa and 2.2Mtpa projects.
- Continue discussions with potential project finance partners to fund the proposed restart of operations at Black Swan.

The Company looks forward to progressing the project to FID and restarting operations at Black Swan. Assuming an FID is made during first half 2023 (whether based on a 1.1Mtpa or 2.2Mtpa throughput operation), production of concentrate could commence in early 2024 to take advantage of the strong nickel price environment.

The announcement was authorised for lodgement by the board of Poseidon Nickel Limited.



Peter Harold
Managing Director & CEO
21 November 2022

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About Poseidon Nickel Limited

Poseidon Nickel Limited (ASX Code: POS) is a nickel sulphide exploration and development company with three projects located within a radius of 300km from Kalgoorlie in the Goldfields region of Western Australia and a resource base of around 400,000 tonnes of nickel and 180,000 ounces of gold.

Poseidon's strategy is focused on the exploration and eventual restart of its established nickel operations in Western Australia. A critical element of this strategy has been to acquire projects and operations with significant existing infrastructure, large nickel resources and geological prospectivity likely to lead to resource growth through the application of modern exploration techniques.

Poseidon owns the Windarra, Black Swan and the Lake Johnston Nickel Projects. In addition to the mines and infrastructure including concentrators at Black Swan and Lake Johnston, these projects have significant exploration opportunities demonstrated by the discovery of the Golden Swan Resource at Black Swan and the Abi Rose mineralisation at Lake Johnston.

Black Swan will be the first project to restart followed by Lake Johnston and then Windarra, subject to favourable Feasibility Studies, appropriate project financing structures being achieved, the outlook for the nickel price remaining positive and all necessary approvals being obtained.

The Company has completed a Definitive Feasibility Study on retreating the gold tailings at Windarra and Lancefield and has entered into a Heads of Agreement with Green Gold Projects whereby Green Gold will develop the project and Poseidon can retain an 8% free carried interest, subject to certain conditions precedent being satisfied.

APPENDIX 1 – Risk Assessment

Key risks identified for the Project include, but are not limited to:

Economic input volatility risks:

- Project economics are most sensitive to revenue volatility which can be negatively impacted by changes to nickel recovery, nickel price and foreign currency. The impact of revenue volatility has been assessed in Section 25, Sensitivity Analysis.

Forecasting risks:

- The Company has prepared operating cash costs, future production targets and revenue forecasts for the Project. These forecasts, although considered to have reasonable grounds, may be adversely affected by a range of factors including mining rates, processing and loading equipment failures, unexpected maintenance problems, limited availability or increased operating costs, supply chain issues, mine safety accidents, adverse weather and natural disasters, and a shortage of skilled labour. If any of these or other conditions or events occur in the future, they may increase the cost of mining or delay or halt planned commissioning, ramp up and production, which could adversely affect our results of operations or decrease the value of our assets.
- The Company has in place a risk framework to manage operational risks and an insurance program which provides coverage for a number of these operating risks. Any unforeseen increases in capital or operating costs of the Project could have an adverse impact on the Company's future cash flows, profitability, results of operations and financial condition. No assurance can be given that the Company's estimates will be achieved or that the Company will have access to sufficient capital to develop the Project due to an increase in capital and operating costs estimates.

Financing risks:

- The Company is yet to secure financing for the Project. Although the Company is confident that it will obtain financing on acceptable terms, there is no guarantee that funding will be available. Refer to Section 26, Project Funding for further details.

Economic risks:

- Changes in both Australian and world economic conditions may adversely affect the financial performance of the Company. Factors such as inflation, currency fluctuations, interest rates, industrial disruption and economic growth may impact on future operations and earnings.

Mining and Reserve risks:

- Mining Inventory for Underground and Black Swan Open Pit Reserves are Proved and Probable Reserves based on Measured and Indicated Mineral Resources. Silver Swan Tailings production targets are also based on mining and recovery factors applied on Measured Mineral Resource but not published as a Reserves until permitting is finalised. The existing surface stockpile material is based on an Indicated and Inferred Resource with mining and recovery factors applied.
- The risks for the Mining Dilution and Reserve parameters assumed are considered to be relatively low given the knowledge of both the Silver Swan and BSD deposits gained during previous mining.

Production Risks

- Silver Swan is a deep mine with a history of seismic issues from its previous operating life. An appropriate ground control management strategy has been designed by Green Geotechnical with the support of dynamic modelling by Beck Engineering. Significant works have recently been undertaken in the mine to rehabilitate the existing decline and ventilation systems. Mining and reduced scheduling constraints have been incorporated into the modelling for the anticipated operating environment.

- Black Swan is an existing open pit where a significant pit wall failure has occurred post previous mining activities. Geotechnical investigations have been completed to assist with mine planning activities and have been incorporated into scheduled activities to both access the bottom of the pit and remediate the slip.

Throughput risks:

- Any tonnage restrictions are likely during early operations as the early schedule treats stockpiled Black Swan serpentinite ore. To mitigate this issue, blasting will be optimised, crusher settings adjusted to reduce the mill feed size and the ball mill could be easily brought back into service in the future as a fall-back position.
- At 1.1 Mtpa throughput, an estimated grind size P80 of 106 µm and assuming 91.3% effective utilisation, the SAG mill will be operating near capacity. Variations in ore hardness and blend could conceivably reduce throughput. This can be mitigated by careful management of the blend and ongoing monitoring of ROM hardness as well as adjusting grind size.

Plant risks:

- There is damage to the SAG mill shell longitudinal flanges in the form of a gap between the flanges on both sides of the mill in the area of the crucifix formed by the junction of the circumferential flanges and the longitudinal flanges. This damage has been inspected by both Metso and A Boughey Pty Ltd. Both have reported that the damage is repairable and is not considered a fatal flaw.
- Only preliminary plant inspections have been undertaken and no power was available to instruments or mechanical equipment. Whilst no fatal flaws have been identified, a more thorough assessment is required at the start of the refurbishment schedule to provide additional detail and further confidence in the concentrator refurbishment cost and scope.
- Access to the Federal pit water supply is via a third party which presents a minor risk. Additional water is available in the Black Swan borefield which can be fully re-established if required. Changes to abstraction rates of bores have not been tested.

Nickel recovery risks:

- There is a risk the superior flotation performance of the coarse-grained (rapidly floating) pentlandite nickel minerals (associated with the Silver Swan / Golden Swan massive sulphide ores) could be negatively impacted if these minerals are reground much finer than their natural liberation size. The Skim Air flotation circuit positioned in the grinding circuit (targeting nickel recovery from the cyclone underflow) and the proposed bypass of the Rougher Stage 1 concentrate, to feed the Cleaner 1 circuit directly (bypassing the regrind mill) should assist to mitigate the risk of overgrinding coarser grained nickel sulphides.
- Contamination of the serpentinite ore with talc-carbonate ore would require additional talc depressant to be used during flotation to remove the Talc content when producing a smelter-grade concentrate. Adding more talc depressant reduces nickel recovery. A focus on quantifying the talc content during mine grade-control will mitigate this risk.

Capital and operating cost risks:

- The de-rating of the capacity of the comminution circuit is an underutilisation of the asset. It will result in higher unit operating costs.
- Labour costs are based on a 2/1 roster. Whilst this has been a reasonable assumption and is still a common roster in the resources sector, the improving job market may result in difficulties in employing and retaining staff if more appealing rosters become available. It could result in a higher than average turnover, otherwise a shift to a 4-panel roster will be required.

- There is a general strengthening of the mining sector including the mining contractor and labour market and this will likely be reflected in higher capital and operating costs. This presents the largest cost risk to the Project.
- A major capital cost risk is the possible underestimation of the refurbishment work required even though provisional allowances have been made for work and contingency is included.

Implementation risks:

- Project implementation is unlikely to be a major risk. Refurbishment requirements are not particularly complicated or elaborate.
- A number of competing base case scenarios are available to the Company and a final decision on the preferred case also potentially impacts the preferred timing of implementation.
- The major schedule risk is likely to be reaching a final investment decision, obtaining financing and obtaining updated approvals.

Product quality and marketing risks:

- While there is a large number of offtake offers and proposals made by reputable traders and customers, formal agreements have not yet been entered into. Final execution of an offtake agreement remains a minor risk in the current market.
- The typical Black Swan concentrate product specification has been provided to the offtake partners and is acceptable to the prospective offtake partners. The Company is confident of meeting the typical specification range, which incorporates a penalty for arsenic and MgO grades but remain well below maximum rejection limits. A softening of the nickel market and resulting more selective consideration of nickel concentrate impurities may result in a softening of the payable metal content. This remains a minor risk.

Environmental risks:

- Several environmental risks have been identified by the Company including seepage of poor quality water from the TSFs, ground water mounding near the Black Swan TSF, seepage of poor quality water from existing and future WRDs, release of poor quality water from the processing facility or saline water from raw hypersaline water pipelines and land contamination in the vicinity of the concentrate shed. None of these risks are seen as causing significant environmental harm and can be addressed through implementation of suitable management measures.

Approval risks:

- The Company has retained all relevant approvals to restart the Project as it was historically operated. However, additional approvals will be required in relation to the proposed:
    - reclamation of the tailings from the Silver Swan TSF and their reprocessing through the Black Swan concentrator;
    - tailings deposition into the Black Swan TSF; and
    - cut-back of the Black Swan pit.
- There is no guarantee that the required approvals will be granted, and delays in the grant of such approvals may lead to delays in the ramp up of operations. To mitigate the risk of delays, the Company will endeavour to engage with regulators early.

Personnel risks:

- A recent strengthening in the resources sector combined with the reduction in domestic and international travel due to COVID-19 has resulted in a shortage of skilled labour.

- This shortage of skilled labour may limit the Company's ability to attract and retain the skilled workers required for the Project. It may also lead to increased labour costs, and delays in the ramp up of operations.

Climate change risks:

- Climate change risks the Company may be exposed to include:
  - the introduction of new or revised regulations associated with the transition to a lower-carbon economy;
  - the introduction of specific taxation or penalties for carbon emissions or environmental damage;
  - market expectations related to climate change mitigation; and
  - an increase in events such as increased severity of weather patterns and incidence of extreme weather events.
- While the Company will endeavour to manage these risks, there can be no guarantee that the Company will not be impacted by climate change risks.

Insurance risks:

- The Company insures its operations in accordance with industry practice. However, in certain circumstances, the Company's insurance may not be available or of a nature or level to provide adequate cover. The occurrence of an event that is not covered or fully covered by insurance could have a material adverse effect on the Company.

Occupational, health and safety risks:

- The Company is committed to providing a safe and healthy workplace for its personnel, contractors and visitors however, the Company is aware that there are inherent risks and hazards associated with the proposed restart of operations. The Company provides appropriate equipment and training to all personnel, contractors and visitors in line with its occupational health and safety management systems (which were recently updated to ensure compliance with the new *Work Health and Safety Act 2020* and the *Work Health and Safety (Mines) Regulations 2022*.
- A safety incident at the Project may expose the Company to significant penalties. The Company's insurance may not cover such penalties or, if they are covered, may exceed the Company's policy limits or be subject to significant deductibles. Any claim under the Company's insurance policies is also likely to significantly increase the Company's future costs of insurance. Accordingly, any liabilities for safety accidents at the Project could have a material adverse effect on the Company.

Litigation risks:

- The Company is exposed to possible litigation risks including native title claims, environmental claims, royalty disputes, occupational health and safety claims and employee claims. If successful, such claims or disputes could have a material adverse effect on the Company.

Force majeure risks:

- The Project may be adversely affected by risks outside the control of the Company including labour unrest, civil disorder, war, subversive activities or sabotage, explosions or other catastrophes, natural disasters, pandemics, epidemics or quarantine restrictions.

COVID-19 risks:

- Although the effects of COVID-19 are easing, supply chain disruptions are continuing, and there is a risk of further outbreaks and the implementation of measures by government to limit the transmission of the virus (including travel restrictions, which may limit access to the Project and contribute further to the shortage of skilled labour). All of these disruptions could have a material adverse effect on the Company's operations.

- To date, the COVID-19 pandemic has not had any material impact on the Company's operations however, any infections at the Project in the future could result in operations being suspended or otherwise disrupted for an unknown period of time which may lead to delays in the ramp up of operations. The Company has processes in place to minimise the effect of such disruptions.

APPENDIX 2 – JORC 2012 Compliance Tables

Black Swan Disseminated Sections 1 – 3

Black Swan Disseminated - Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• In the recent program, which these results are based on, NQ2 core was sampled at least 10m either side of logged mineralisation by cutting the core in half using a Corewise core saw. Samples were divided into logged domains,with no individual sample being greater than 1.2m or less than 0.3m. Appropriate QAQC standards and blanks from Geostats were inserted, and duplicates taken in quarter core at selected intervals where mineralisation variability warranted it. • Historically reverse circulation and diamond drilling have been used to obtain samples. Sampling is a mixture of full core, half core, quarter core and chip sampling. Generally, 1 m samples or smaller have been used for exploration drilling, whilst grade control drilling in the Black Swan pit is on 2 m sample lengths. • Sampling protocols from drilling between 1968 and 1991 have not been well documented. • Diamond drilling sampling protocol since 1995 has followed accepted industry practice for the time, with all mineralised core sampled and intervals selected by geologists to ensure samples did not cross geological or lithological contacts. Core was halved, with a half quartered, with one quarter core sent for assay, half core kept for metallurgical testing, and the remaining quarter core retained for geological reference. • Samples from reverse circulation drilling were collected using cone splitters, with field splits taken every 20 samples. • The 2019 underground RC technique utilises air with water injection to flush sample material from the rods and send it through a rotary cone splitter. Three duplicate samples are collected and 1 in 10 duplicates are submitted for analysis as a check and balance to sample represent
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• The recent underground drilling was conducted by Webdrill using the Diamec Smart 6 Mobile Carrier rig. The holes are drilled in NQ2 and the core was orientated using the Trucore Orientation Tool. The hole was surveyed using the DHS DeviGyro OX tool.

Criteria	JORC Code explanation	Commentary
		• The majority of diamond core is NQ, the rest being HQ size. Core orientation was carried out using either spear marks or the Ezimark system. • Surface RC drilling is limited to the extent of the Black Swan open pit. • The underground RC used a combination of technologies to perform a wet RC function utilising an underground long-hole drill rig
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Core was recovered via 3m core tube usedbehind drill bit, and then transferred from tube to core trays. Recovery was calculatedon the amount recovered versus the amount drilled. Depths and recovery were recorded on wooden blocks placed in the core trays by the driller at the end of every run. Lost core was also recorded in this way. Core recovery was good, even through frequent broken ground. • Historically, core recovery and presentation has been documented as being good to excellent, with the exception of one hole used in the estimation, BSD189, which suffered significant core rotation, but little loss, within the oxide zone • Recovery from the underground RC methods is 100%. The rods are flushed clean on every sample before sample bags are removed.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Recent core was logged into Geobank Mobile. Logging was done for Geology, structure, RQD and a check against drilling records for recovery. Holes were validated before being exported to the Geobank database. • After logging, all recent core was photographed inboth dry and wet images. The photographs are stored on a Perth based network drive. • Verification of the accuracy of the logging on the historical is limited. However it is assumed to be of a high standard given the companies involved and that it includes data that was used in mining models.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• Core was sampled as half core, unless duplicates were taken which required samples to be quarter core. • Early diamond core is assumed to have been chisel cut, whilst most core was cut using a core saw, with either half or quarter core used for sampling. • Surface RC samples were collected by use of a cone splitter, with duplicates collected every 20 samples.

Criteria	JORC Code explanation	Commentary
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Later resource and grade control drilling was crushed to<3mm and then split into 3kg lots, then pulverised. This is appropriate given the sample intervals and mass • Underground RC samples were taken in triplicate
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Samples were dispatched to SGS lab in Perth • After crushing and pulverizing they were analysed by 4-acid ore grade digest with ICP-OES finish
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Sampling was conducted by the logging geologists who are employees of Newexco • Data is collected using Geobank Mobile which utilises a validation function before data can be exported into the Geobank database
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All collar surveys were completed to an accuracy of ±10mm. A local grid based on known MGA references was created.The Department of Land Information (formerly the Department of Land Administration) benchmark UO51 on the Yarri Road opposite 14 Mile Dam was usedto tie the survey control stations to the Australian Height Datum (AHD). A height datum of AHD + 1000m was adopted for the Black Swan project. • All holes are surveyed using the DHS Devishot tool. Shots were take every 2 or 3m on in and out runs across the entire length of the hole at every survey interval. The tool is True North seeking and has an accuracy of +/-1 degree of dip and azimuth.In tool analysis gave an indication of whether the survey passed or failed and successive surveys were overlayed in DeviCloud to visually check deviation between surveys with an average survey used as the base for modelling.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the*	• The holes drilled form part of a program that is intended to bring the mineral occurrence to Indicated status. The nominal spacing is 40x40m, with infill drilling to be conducted as required to

Criteria	JORC Code explanation	Commentary
	Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	comply with resource modelling requirements.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drill core is oriented using the Trucore Ori.
Sample security	• *The measures taken to ensure sample security.*	• N/A
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews were completed during drilling

Black Swan Disseminated - Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Black Swan open pit is centered on M27/39 and extends into M27/200. Silver Swan is wholly located on M27/200. They are located 42.5km NE of Kalgoorlie. They are registered to Poseidon Nickel Atlantis Operations Pty Ltd, a wholly owned subsidiary of Poseidon Nickel Ltd, following the purchase of the assets.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Silver Swan Mine was discovered by MPI Mines Ltd, then was acquired by Lion Ore in 2004. Much of the exploration drilling and development was completed by these two companies. In turn Lion Ore was taken over by Norilsk in 2007 who continued mining and developing the underground mine at Silver Swan until 2010. Poseidon Nickel purchased the operation from Norilsk in late 2014.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Silver Swan and Black Swan deposits are Kambalda style komatiite hosted nickel deposits.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* - *easting and northing of the drill hole collar* - *elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar* - *dip and azimuth of the hole* - *down hole length and interception depth* - *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The current drill hole information is listed as Table 4 in Appendix 1 of this document.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• When reporting Black Swan assay results, a cut-off grade of 0.4% Ni has been used.
Relationship between mineralisation widths and	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its*	• Mineralised widths are reported as down hole lengths. • Due to the uneven nature of the Felsic footwall, true width of the reported assays

Criteria	JORC Code explanation	Commentary
intercept lengths	*nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	cannot be stated with certainty at this time.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• No significant new discovery reported. Drilling on which this report is based have been reported previously
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not applicable
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No further observations to be reported at this stage.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Resource drilling on the Black Swan deposit was commenced in FY 2021-22, and as part of that program further diamond drilling will be done in the area in order to extend the known mineralisation.

Black Swan Disseminated - Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Logging and assay data has been electronically captured and uploaded into the site Acquire® geology SQL database. • The database used in the 2014 grade estimation was reviewed by Golder and was found to be in excellent condition. It is very clean and contains few errors, but does not contain sample and assay quality control information. • The database used in the 2022 update was validated by Poseidon. • Golder conducted visual validation checks on the drill hole data, with holes not relevant to the estimation removed from the dataset.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Golder has previously visited the Black Swan site prior to the 2014 MRE. Golder did not consider a site visit was required to support the 2022 Mineral Resource update.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The geological interpretation is validated by drill and mining activity, as well as in-pit and UG mapping. • Where possible, estimation has been restricted to lithologies controlling and surrounding mineralisation domains • The geological domaining for the 2014 model is based on data from previous resource estimates completed by Norilsk Nickel Pty Ltd and Gipronickel that have been reviewed by Golder previously, and for this resource estimate. • For the 2022 model Poseidon prepared sectional interpretation of lithology, alteration and mineralised domains based on 0.4% Ni grade thresholds.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The mineralisation associated with the Black Swan deposit runs along a strike length of approximately 250 m north-south and approximately 100 m east-west. Drilling has intercepted Ni mineralisation at up to 600 m below surface.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation*	• Mineralisation was estimated within domains defined by lithological and mineralisation information and statistical

Criteria	JORC Code explanation	Commentary
	parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	analysis of sample composite data was used for estimation purposes. • For the 2014 model the block size is 12.5 m (X) by 25 m (Y) by 5 m (Z). The sub-block size is 3.125 m (X) by 12.5 m (Y) by 2.5 m (Z). • The 2022 model used a block size of 12.5 m (X) by12.5 m (Y) by 5 m (Z) and the same sub-block size as 2014. • In 2014 high-grade restraining was applied to Ni in one domain, based on data analysis of assayed samples. The high grade samples were used only in the estimation of blocks within a 25 m radius of the high grade sample. • In 2022 estimation beyond a 15 m radius used top cut of the outlier high grade composites • Using parameters derived from the modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades for Ni. • The estimation was conducted in three passes with the search size increasing for each pass. • For some domains in 2014, where blocks had not been filled after three passes, a fourth pass was used, with samples from outside the domain of interest used to fill the remaining blocks. • Blocks not estimated in 2022 after three passes were assigned the mean grade for the domain. • The model was validated visually and statistically using swath plots and comparison to composite statistics.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Density measurements were performed using the immersion technique.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The resource model is constrained by assumptions about economic cut-off grades. The Mineral Resources were reported using a cut-off grade of 0.4% Ni which was applied on a block by block basis.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always*	• The 2022 model used an estimation cell size of 12.5 m (X) by 12.5 m (Y) by 5 m (Z) which is approximately half the drill spacing in the modelled area.

Criteria	JORC Code explanation	Commentary
	necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• The 2014 block model uses a parent cell size of 12.5 m (X) by 25 m (Y) by 5 m (Z), primarily determined by data availability and the dimensions of the mineralisation.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Metallurgical recovery of nickel was assigned based on data calculated by the Black Swan mill whilst mining operations were in progress and on metallurgical testwork • Metallurgical recovery is variable with talc alteration material having poor Ni recovery.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• As the project has previously been mined, there are existing waste storage facilities and environmental considerations are not expected to pose any issues to the resumption of mining activity.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• For the 2014 model bulk density was applied based on mean values for each lithology domain. • In 2022 the bulk density for each block was estimated using OK from individual bulk density measurements on drill core.

Criteria	JORC Code explanation	Commentary
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). • The classification of Mineral Resources was completed by Golder based on geological confidence, drill hole spacing and grade continuity. The Competent Person is satisfied that the result appropriately reflects his view of the deposit. • Continuous zones meeting the following criteria were used to define the resource class: Measured Mineral Resource • Blocks in areas of grade control drilling that were estimated with samples with an average of less than 20 m distance from Indicated Mineral Resource • Blocks that were estimated with samples with an average of less than 30 m distance from blocks. • Number of drill holes confirming grade continuity. Inferred Mineral Resource • Blocks that were estimated with samples with an average of less than 50 m distance from blocks. • Limited number of drill holes. • Mineral Resource classification was restricted to a Lerch-Grossman pit shell using a potential future nickel price of US$8:50 per pound. This was combined with the accuracy of the estimate ascertained by geological confidence, drill hole spacing and grade continuity from available drilling data.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• None
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the*	• The relative accuracy is reflected in the resource classification discussed above that is in line with industry acceptable standards. • This is a Mineral Resource estimate that includes knowledge gained from mining and milling recovery data during production.

Criteria	JORC Code explanation	Commentary
	factors that could affect the relative accuracy and confidence of the estimate. • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Silver Swan Sections 1 – 3

Silver Swan - Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• NQ2 core was sampled at least 10m either side of logged mineralisation by cutting the core in half using a Corewise core saw. Samples were divided into logged domains,with no individual sample being greater than 1.2m or less than 0.3m. Appropriate QAQC standards and blanks from Geostats were inserted, and duplicates taken in quarter core at selected intervals where mineralisation variability warranted it.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Drilling is conducted by Webdrill using the Diamec Smart 6 Mobile Carrier rig. The holes are drilled in NQ2 and the core was orientated using the Trucore Orientation Tool. The hole was surveyed using the DHS DeviGyro OX tool.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Core was recovered via 3m core tube usedbehind drill bit, and then transferred from tube to core trays. Recovery was calculatedon the amount recovered versus the amount drilled. Depths and recovery were recorded on wooden blocks placed in the core trays by the driller at the end of every run. Lost core was also recorded in this way. Core recovery was good, even through frequent broken ground.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Core was logged into Geobank Mobile. Logging was done for Geology, structure, RQD and a check against drilling records for recovery. Holes were validated before being exported to the Geobank database. • After logging, all core was photographed inboth dry and wet images. The photographs are stored on a Perth based network drive.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Core was sampled as half core, unless duplicates were taken which required samples to be quarter core.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Samples were dispatched to SGS lab in Perth • After crushing and pulverizing they were analysed by 4-acid ore grade digest with ICP-OES finish
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Sampling was conducted by the logging geologists who are employees of Newexco • Data is collected using Geobank Mobile which utilises a validation function before data can be exported into the Geobank database
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All collar surveys were completed to an accuracy of ±10mm. A local grid based on known MGA references was created. The Department of Land Information (formerly the Department of Land Administration) benchmark UO51 on the Yarri Road opposite 14 Mile Dam was usedto tie the survey control stations to the Australian Height Datum (AHD). A height datum of AHD + 1000m was adopted for the Black Swan project. • All holes are surveyed using the DHS Devishot tool. Shots were take every 2 or 3m on in and out runs across the entire length of the hole at every survey interval. The tool is True North seeking and has an accuracy of +/-1 degree of dip and azimuth.In tool analysis gave an indication of whether the survey passed

Criteria	JORC Code explanation	Commentary
		or failed and successive surveys were overlayed in DeviCloud to visually check deviation between surveys with an average survey used as the base for modelling.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The holes drilled form part of a program that is intended to bring the mineral occurrence to Indicated status. The nominal spacing is 40x40m, with infill drilling to be conducted as required to comply with resource modelling requirements.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drill core is oriented using the Trucore Ori.
Sample security	• *The measures taken to ensure sample security.*	• N/A
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews were completed during drilling

Silver Swan - Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Black Swan open pit is centred on M27/39 and extends into M27/200. Silver Swan is wholly located on M27/200. They are located 42.5km NE of Kalgoorlie. They are registered to Poseidon Nickel Atlantis Operations Pty Ltd, a wholly owned subsidiary of Poseidon Nickel Ltd, following the purchase of the assets.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Silver Swan Mine was discovered by MPI Mines Ltd, then was acquired by Lion Ore in 2004. Much of the exploration drilling and development was completed by these two companies. In turn Lion Ore was taken over by Norilsk in 2007 who continued mining and developing the underground mine at Silver Swan until 2010. Poseidon Nickel purchased the operation from Norilsk in late 2014.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Silver Swan deposit is a Kambalda style komatiite hosted nickel deposit.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* - *easting and northing of the drill hole collar* - *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* - *dip and azimuth of the hole* - *down hole length and interception depth* - *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The current drill hole information is listed as Table 4 in Appendix 1 of this document.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• When reporting Silver Swan assay results, a cut-off grade of 1.0% Ni has been used.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Mineralised widths are reported as down hole lengths. • Due to the uneven nature of the Felsic footwall, true width of the reported assays cannot be stated with certainty at this time.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• No significant new discovery reported. Drilling on which this report is based have been reported previously
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Mineralised intervals >1.0% from each assay received that are consistent with Silver Swan mineralisation for this announcement are shown in Table 2. Intervals below this threshold as well as unsampled intervals are listed below the table.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No further observations to be reported at this stage.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Resource drilling on the Black Swan deposit was commenced in FY 2021-22, and as part of that program further diamond drilling will be done in the area in order to extend the known mineralisation.

Silver Swan Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• The historical database has been previously audited by Poseidon Nickel Ltd (POS) and a third party external consultant and was found to be in good standing. • Subsequent to the database audit, data collected by POS geologists and contractors was captured electronically. The data was checked and validated before and after being uploaded to the POS SQL drillhole database, which is managed by a third-party external consultant. • The drillhole data was supplied to Optiro as CSV format extracts from SQL drillhole database, was subsequently imported into Datamine, and checks performed to test the available data; no errors or discrepancies were identified.
	• *Data validation procedures used.*	• Basic validation steps were completed on the drillhole data supplied to Snowden Optiro. During input and desurveying in Datamine Studio RM, checks for overlapping intervals and gaps in downhole interval files, checks that assays were within expected ranges and that all data integrated as expected were undertaken, with no problems identified.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	• Snowden Optiro CP, Ian Glacken, conducted a site visit on 4 August 2021, whilst exploration drilling was being conducted for the Golden Swan prospect. Exploration of the Silver Swan and Golden Swan prospects used the same exploration and database systems and protocols.
	• *If no site visits have been undertaken indicate why this is the case.*	• A site visit has been conducted.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• The geological interpretations have been validated by ongoing drilling and previous mining activity, including development and face mapping by the previous lease owners and hence, there is good confidence in the geological interpretations. • Estimation has been restricted to mineralised lithologies, that are based on the extensive previous mining operations.
	• *Nature of the data used and of any assumptions made.*	• Interpretations used all available drillhole data, but the estimated variables were informed by surface and underground diamond drillhole sampling exclusively.
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• The evidence from previous mining makes large scale alternative interpretations unlikely. There is scope for local variability

Criteria	JORC Code explanation	Commentary
		but the impact is considered to be only of local significance.
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• The mineralisation is defined by nickeliferous massive sulphide lithology and texture, which was used to interpret the mineralisation for this update.
	• *The factors affecting continuity both of grade and geology.*	• Nickel is hosted within the Black Swan Komatiite Complex (BSKC), a large series of ultramafic komatiite flows. The massive sulphide Silver Swan mineralisation is located within the lower basal komatiite flow of the BSKC. Controlling factors include presence of ultramafic, location with the ultramafic stratigraphy, and the texture of the sulphide mineralisation.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource*	• The pre-mined Silver Swan mineralisation has a length of approximately 375m striking grid north-south and has been tested down dip to a length of 1,550m vertically, with a steep plunge towards the north-east. • The March 2022 update is for 10 individual sulphide lenses grouped into four mineralised areas, that range from 12 to 170m (averaging 80 m) along strike, 70 to 300m vertically (averaging 90 m), with an average thickness of 3-5m. These lenses dip at -60° to -75° towards 090°.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• Estimation was undertaken using Datamine RM Pro software (v1.11.63.0 Beta). Prior to estimation, the samples and block model were coded using domain wireframes. Length-density weighted composites were generated using a nominal 1.0 m composite length. • Estimation was within interpreted massive sulphide domains which were treated as hard boundaries. Interpolation was by ordinary kriging (OK) for nickel, arsenic, cobalt, copper, iron, magnesium oxide, sulphur and density. A top-cut was applied to arsenic only to minimise the impact of a small number of extreme values. • Parent block estimation was used, with a parent block size of 2mE by 5mN by 5mRL, using a block discretisation of X:4, Y:4, Z:4. A variable sub-block size is 0.25mE by 0.5mN by 0.5mRL was used to optimise the block filling of the wireframes because of the narrow and variable shoot geometry. • Late, non-mineralised intrusive dykes were flagged and removed from the final Mineral Resource. • A three-pass estimation strategy was employed as outlined below: • The first pass used a minimum of 6 and a maximum of 34 samples, using a search range of 30 m in the primary direction, 15 m in the intermediate direction and 5 m

Criteria	JORC Code explanation	Commentary
		across strike for nickel. The other elements employed search distances between 40 to 55 m in the primary direction, 10 to 30 m in the intermediate direction, and 5 to 10 m across-strike. • The second pass used the same minimum and maximum number of samples, but the primary search distance was doubled. • The third pass used a minimum of 4 and a maximum of 18 samples with a search range doubled that of search pass 2. • Search passes one and two informed 99.5% of the estimate. • The maximum distance of extrapolation is 35m.
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• No check estimates have been undertaken. • The production records from those areas previously mined are not available to reconcile against the updated 2022 Mineral Resource. • The 2019 estimate was reported at a 4.5% nickel cut-off. At the same 4.5% nickel cut-off, the Indicated Mineral Resource has a 16% increase in the tonnage, a 3% increase in grade and a 19% increase in nickel metal. The Inferred Mineral Resource had a 90% reduction in tonnes, a 26% reduction in the nickel grade and 93% reduction in the contained nickel metal. These changes are the result of the Inferred Mineral Resource being upgraded to a Indicated Mineral Resource with infill drilling, and the remaining Inferred Mineral Resource being at the deeper margins of the mineralisation, with narrower mineralised widths compared to the remaining, better-informed parts of the mineralisation. • At the 2022 reporting cut-off at 1% nickel cut-off, the combined Indicated and Inferred Mineral Resource has 86% of the tonnes, at 94% of the grade for 80% of the nickel metal, compared to the 2019 Mineral Resource. This is the result of the additional drilling converting the previously lower confidence Inferred Mineral Resource located at the margins of the mineralisation being converted to higher confidence Indicated Mineral Resource.
	• *The assumptions made regarding recovery of by-products.*	• No assumptions regarding recovery of by-products have been made.
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• Arsenic, magnesium oxide and iron have been estimated to assist with future mine planning requirements.

Criteria	JORC Code explanation	Commentary
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• The parent block size is 2m (X) by 5m (Y) by 5m (Z) with drilling spaced from 5 to 40m (averaging 20m) spaced drilling in the plane of the mineralisation.
	• *Any assumptions behind modelling of selective mining units (SMU).*	• No assumptions regarding the mining SMU have been used.
	• *Any assumptions about correlation between variables.*	• There is good correlation (R> 0.85) between nickel, iron, sulphur and density. There are moderate correlations between nickel and cobalt (R=0.67) and low to no correlation between nickel and arsenic, copper and magnesium oxide.
	• *Description of how the geological interpretation was used to control the resource estimates.*	• The Mineral Resource estimate was constrained within interpretations of the nickeliferous massive sulphide lenses. These lenses were subsequently depleted for the presence of late, cross-cutting barren intrusive dykes.
	• *Discussion of basis for using or not using grade cutting or capping.*	• Grade top-cuts were applied to the arsenic grade only, to minimise the impact of a limited number of extreme grades. The top-cuts were derived using a combination of histogram, cumulative distribution and mean/variance analysis and population disintegration.
	• *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	• The estimates were initially validated visually in section and plan and there was good correlation between the composite and estimate. The whole of domain averages for the estimates were then compared with the naïve and declustered composite samples and again there was good correlation between the two. Swath plots were then used to test the estimate and again, there was good correlation and the sample trends had been maintained.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The density was measured with natural moisture. This approach is the same as was used during the previous operational phase. The core is fresh, non-porous and competent, and hence moisture is considered to be understood.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied*	• The Mineral Resource was interpreted using the massive nickel sulphide lithology and texture. The Mineral Resource has been reported using a cut-off grade of 1.0% nickel head grade to reflect the current Poseidon planned strategy.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider*	• The current Silver Swan mineralisation commences approximately 1,360m below surface and is exclusively an underground Mineral Resource. • The 2019 Mineral Resource supported a positive feasibility study (announced on 18 July 2018), which demonstrated

Criteria	JORC Code explanation	Commentary
	potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	reasonable prospects for eventual economic extraction at the time. Although the feasibility study is still to be updated, successive infill exploration programs in 2019 and 2022 support the 2018 estimate and hence, the RPEEE assumption.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• The prediction regarding the metallurgical amenability of the Silver Swan sulphide material has been demonstrated with the historical processing using conventional sulphide flotation processes on-site.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made*	• The project is located in a mature mining area, with established environmental legislation and practices that are industry standard. As the project has previously been mined, there are existing waste storage facilities and environmental considerations are not expected to pose any issues to the resumption of mining activity.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit,* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density has been measured from diamond core using the immersion method. The core is considered wet, but is also fresh, non-porous, competent and the moisture content is not considered material. • Bulk density measurements were routinely collected for all underground drill core submitted for analysis. The core is not porous. Density was obtained from all submitted samples and hence reflects all rock and alteration zones. • Density was estimated from the composited density data.
Classification		• The classification of Mineral Resources was completed by Snowden Optiro using a

Criteria	JORC Code explanation	Commentary
		range of criteria, including confidence in the geological and mineralisation model, grade and geological continuity and the available drill hole spacing
	• *The basis for the classification of the Mineral Resources into varying confidence categories*	• The Indicated Mineral Resource is of a moderate confidence. These areas are a supported by a nominal drill spacing of less than 25mN x 25mRL with a suitable intersection angle, where grade and geological continuity can be assumed and where the estimate has been well informed. • The Inferred Mineral Resource reflects a lower confidence. These areas are supported by a nominal drill spacing of greater than 25mN x 25mRL, and where a significant number of intersections are sub-parallel to the mineralisation, or where only grade or geological continuity is implied.
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• The relative accuracy is reflected in the resource classification discussed above and is in line with industry acceptable standards. • This is a Mineral Resource estimate that includes knowledge gained from previous mining and milling performance.
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resource classification applied to the March 2022 Silver Swan massive sulphide Mineral Resource appropriately reflects the Competent Person's view of the estimate.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The March 2022 Silver Swan massive sulphide Mineral Resource has been reviewed internally by Snowden Optiro, but has not been externally reviewed.
	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate*	• The current Mineral Resource classification suitably reflects the relative accuracy of the Mineral Resource. There has been no statistical procedure undertaken to quantify the relative accuracy.
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• The March 2022 Silver Swan massive sulphide Mineral Resource is considered a global estimate, because of the sample spacing and drillhole intersection angles currently available.
	• *These statements of relative accuracy and confidence of the estimate should be*	• The production records for the areas previously mined are not available.

Criteria	JORC Code explanation	Commentary
	compared with production data, where available	

Golden Swan Sections 1 – 3

Golden Swan - Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• The Golden Swan prospect has been sampled by underground diamond core that was sampled as half core, the overwhelming majority of which is NQ2 diameter core. • Underground diamond drilling completed whilst the mine was operating prior to 2021 used 32 drillholes, totalling 18,286 m of drilling testing the Golden Swan stratigraphy, of which, six drillholes with a total of 4,355 m have intersected mineralisation. • In 2021, 60 additional drillholes totalling 16,104 m were drilled from the dedicated drill drive, and 43 of these drillhole intersected mineralisation. • The 2021 drilling was all NQ2 diameter core, which was sampled at least 10m either side of logged mineralisation, by cutting the core in half using a Corewise core saw.
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used*	• Appropriate QAQC standards and blanks from Geostats were inserted, and duplicates taken as quarter core at selected intervals where mineralisation variability warranted it.
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information*	• Mineralisation was identified visually using the presence, texture and proportion of nickeliferous sulphide material, and lithology. • Samples were divided into logged domains, with no individual sample being greater than 1.2m or less than 0.3m.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• All drillholes intersecting the mineralisation were drilled after 2006 and were drilled as NQ2 diameter core. • The 2021 drilling was conducted by Webdrill using the Diamec Smart 6 Mobile Carrier rig, drilling NQ2 diameter core, with the drillhole being surveyed using the DHS DeviGyro OX tool. The core was orientated using the Trucore Orientation Tool.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed*	• Total core recovery was calculated on the amount recovered versus the amount drilled. Depths and recovery were recorded on wooden blocks placed in the core trays by the driller at the end of every run. Lost core was also recorded in this way. Core recovery was good, even though frequently fractured.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples*	• Core was recovered via 3m core tube used behind the drill bit, and then transferred from tube to core trays. • The 2021 drilling was completed from a dedicated drill drive which optimised the drillhole intersection angle.
	• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• All sampling has been from diamond core and no relationship between grade and sample recovery has been identified at Golden Swan.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• Core was logged into Geobank Mobile, with lithology, alteration, mineralogy, structure, RQD and total core recovery captured. The logging was validated before being exported to the Geobank database. • The level of detail is appropriate and supports all levels of Mineral Resource estimation and future mining and metallurgical studies.
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• Geology logging is qualitative, but RQD and recovery data was collected quantitatively. All of the core has been photographed wet and dry prior to being sampled.
	• *The total length and percentage of the relevant intersections logged*	• All of the drilled core and relevant intersections have been logged.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• Core samples are sawn and were sampled as half core, unless duplicates were taken, which required samples to be quarter core.
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• All sampling was as diamond core.
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• For the 2021 drilling, samples were dispatched to SGS in Perth. • Post sample receipt and drying, sample preparation consisted of crushing and pulverisation, followed by four acid digest. • The sample preparation is considered appropriate for the variables being assayed.

Criteria	JORC Code explanation	Commentary
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• Quarter core field duplicates were prepared by halving existing half core samples, at a nominal rate of 1 in 20 (achieved rate was 1 in 15).
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	• The results from the field duplicates were excellent, showing extremely good repeatability between the original and duplicate samples.
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The sample sizes are appropriate for the grain size of the sampled material.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• Assaying was undertaken using ICP-OES which is considered an appropriate method for the deposit and is considered a total analytical technique.
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• No geophysical tools were used.
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• CRM standards and blank samples were submitted at nominal rate of 1 in 20 (achieved rate was 1 in 15 for the CRM). The available data exhibited good analytical accuracy.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• Sampling was conducted by the logging geologists who are employees of Newexco Exploration Pty Ltd, but there has been no independent or alternative verification of significant intersections Key intercepts were viewed by Optiro onsite.
	• *The use of twinned holes.*	• No holes were designed as twinned holes, but hole PBSD0294A (drilled in wedge hole off PBSD029, March 2020) and PGSD038 (drilled in June 2021) were 5.0 m apart in 3D. - PBSD029A: 3.0 m true width @ 8.3% Ni, 1543 ppm Co - PGSD038: 2.8 m true width @ 7.5% Ni, 1,222 ppm Co. • This provides confidence in the consistency of the mineralisation. Both holes were incorporated into the estimate.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• Data was collected using Geobank Mobile which utilizes a validation function before data can be exported into the Geobank database.

Criteria	JORC Code explanation	Commentary
	• *Discuss any adjustment to assay data.*	• The only adjustment to assay data was the conversion of elemental Mg to MgO using the factor: - MgO = Mg x 1.658.
Location of data points	• *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• All collar surveys were completed to an accuracy of ±10mm. • All holes are surveyed downhole using the DHS Devishot tool, with measurements taken every 2 or 3m, at in and out runs across the entire length of the hole at every survey interval. The tool is True North seeking and has an accuracy of +/-1 degree of dip and azimuth. In tool analysis gave an indication of whether the survey passed or failed and successive surveys overlayed in DeviCloud to visually check deviation between surveys with an average survey
	• *Specification of the grid system used.*	• The collar position and downhole surveys were collected on a local grid based on known MGA references, which was used for the previous mining. • The Department of Land Information (formerly the Department of Land Administration) benchmark UO51 on the Yarri Road opposite 14 Mile Dam was used to tie the survey control stations to the Australian Height Datum (AHD). A height datum of AHD + 1000m was previously adopted for the Black Swan project.
	• *Quality and adequacy of topographic control.*	• Existing topographic controls are considered adequate.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• The nominal drillhole spacing is 15 to 20 mN x 15 to 20 mRL, with occasional drilling infilling as required.
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	• The data spacing and distribution is relatively uniform and is considered sufficient to establish the degree of geological and grade continuity appropriate for Mineral Resource and Ore Reserve estimation and classification.
	• *Whether sample compositing has been applied.*	• All sampling has been done as individual drillholes and no sample compositing has been applied.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• Considering the style of mineralisation and mineralised geometry, the orientation of the sampling is not considered to have introduced a sampling bias.

Criteria	JORC Code explanation	Commentary
	• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The orientation of the drilling/sampling and the mineralisation is not related.
Sample security	• *The measures taken to ensure sample security.*	• Sampling was conducted on-site by the logging geologists who were employees of Newexco Exploration Pty Ltd, an independent exploration consultancy. No specific sample security measures were taken during sample dispatch and transport to Perth. On arrival at the laboratory, the laboratory reconciled submitted and received samples.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews were completed during drilling.

Golden Swan Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	• The Black Swan Project, which hosts the Golden Swan prospect, is located 42.5km NE of Kalgoorlie. The tenement is registered to Poseidon Nickel Atlantis Operations Pty Ltd, a wholly owned subsidiary of Poseidon Nickel Ltd, following the purchase of the assets. The Black Swan open-pit is centred on M27/39 and extends into M27/200. • Historical royalties of 3% NSR exist over the minerals produced.
	• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Tenement M27/39 is currently in good standing and is due to expire in 2028. Tenement M27/200 are currently in good standing and is due to expire in 2037. • At the time of reporting there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Silver Swan Mine was discovered by MPI Mines Ltd, then was acquired by Lion Ore in 2004. Much of the exploration drilling and development was completed by these 2 companies. In turn Lion Ore was taken over by Norilsk in 2007 and continued mining and developing the underground mine at Silver Swan. Poseidon Nickel purchased the operation from Norilsk in late 2014.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Golden Swan deposit is a Kambalda style komatiite hosted nickel deposit.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* - *easting and northing of the drill hole collar* - *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* - *dip and azimuth of the hole* - *down hole length and interception depth* - *hole length.*	• The Golden Swan drillhole information has previously been reported in the following ASX releases: - ASX release, 31/08/2021, "*Final Assays Received for Golden Swan*" - ASX release, 16/08/2021, "More High Grade Nickel at Golden Swan" - ASX release, 09/08/2021, "More High Grade Nickel at Golden Swan" - ASX release, 27/07/2021, "Latest Drilling and Assay Results add to Golden Swan" - ASX release, 06/07/2021, "Golden Swan Drilling and DHEM Update" - ASX release, 16/06/2021, "Further Golden Swan Drilling Results Add To High Grade Continuity" - ASX release, 09/06/2021, "Initial Golden Swan Drilling Results Demonstrate High Grade Continuity" - ASX release, 29/04/2021, "Golden Swan Drill Drive Completed and Resource Definition Drilling Underway".

Criteria	JORC Code explanation	Commentary
		- ASX release, 18/03/2021, "Golden Swan Development Update" - ASX release, 09/12/2020, "Golden Swan Drill Drive Underway". - ASX release, 25/11/2020, "Assays confirm more high-grade nickel at Golden Swan". - ASX release, 19/11/2020, "Golden Swan and Southern Terrace continues to grow". - ASX release, 1/10/2020, "EM Surveys Extends Golden Swan Potential" - ASX release, 18/08/2020, "Golden Swan assays confirm exceptional drillhole intersection". - ASX release, 05/08/2020, "Second Golden Swan Massive Sulphide Intersection". - ASX release, 14/0842020, "Exceptional Grades Received at Golden Swan and Windarra Gold Tailings Update" - ASX release, 26/03/2020, "New Massive Sulphide Intersection in Golden Swan EM Anomaly"
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	• When reporting Golden Swan assay results, a minimum cut-off grade of 0.5% Ni has been used, with no cutting of high grades applied.
	• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	• The Golden Swan drillhole intercepts have previously been reported.
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No metal equivalents have been reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• Mineralised widths are reported as down hole lengths. • Due to the apparent variability of the Southern Terrace mineralisation, true width cannot be stated with certainty at this time.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Maps and sections have been supplied with previous ASX releases relating to disclosure of drillhole results: - ASX release, 31/08/2021, "*Final Assays Received for Golden Swan*" - ASX release, 16/08/2021, "More High Grade Nickel at Golden Swan"

Criteria	JORC Code explanation	Commentary
		- ASX release, 09/08/2021, "More High Grade Nickel at Golden Swan" - ASX release, 27/07/2021, "Latest Drilling and Assay Results add to Golden Swan" - ASX release, 06/07/2021, "Golden Swan Drilling and DHEM Update" - ASX release, 16/06/2021, "Further Golden Swan Drilling Results Add To High Grade Continuity" - ASX release, 09/06/2021, "Initial Golden Swan Drilling Results Demonstrate High Grade Continuity" - ASX release, 29/04/2021, "Golden Swan Drill Drive Completed and Resource Definition Drilling Underway". - ASX release, 18/03/2021, "Golden Swan Development Update" - ASX release, 09/12/2020, "Golden Swan Drill Drive Underway". - ASX release, 25/11/2020, "Assays confirm more high-grade nickel at Golden Swan". - ASX release, 19/11/2020, "Golden Swan and Southern Terrace continues to grow". - ASX release, 1/10/2020, "EM Surveys Extends Golden Swan Potential" - ASX release, 18/08/2020, "Golden Swan assays confirm exceptional drillhole intersection". - ASX release, 05/08/2020, "Second Golden Swan Massive Sulphide Intersection". - ASX release, 14/0842020, "Exceptional Grades Received at Golden Swan and Windarra Gold Tailings Update" - ASX release, 26/03/2020, "New Massive Sulphide Intersection in Golden Swan EM Anomaly"
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Mineralisation characteristic of the overlying non-mineralised Black Swan flows are not included, other than where they directly contact the Golden Swan mineralisation.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results;*	• There is no other exploration data or information available.

Criteria	JORC Code explanation	Commentary
	bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	• Resource drilling on the Golden Swan deposit was completed in FY 2021-2022, and as part of that programme, further diamond drilling will be done in the area known as the Southern Terrace in order to extend the known mineralisation of the Golden Swan deposit.

Golden Swan Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The drillhole data is captured electronically by Poseidon Nickel Ltd (POS) geologists. The data is checked and validated before and after being uploaded to the POS SQL drillhole database, which is managed by a third-party external consultant. • The drillhole data was supplied to Optiro as CSV format extracts from SQL drillhole database. • The CSV data was then imported into Datamine, and checks performed to test the available data; no errors or discrepancies were identified. • Validation steps were completed on the drillhole data supplied to Optiro. • During input and desurveying in Datamine Studio RM, checks for overlapping intervals and gaps in downhole interval files, checks that assays where within expected ranges, that the end of hole depths matched logged/sample data, there were no FROM-TO discrepancies in the downhole data, the rate of change of the down hole surveys were with expected ranges. After importing the data, the logged lithology/alteration were within expected assay ranges, logging was spatially consistent, and no material discrepancies were identified.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Optiro CP Ian Glacken conducted a site visit on the 04th of August, whilst exploration drilling was still underway. • A site visit has been undertaken.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• As a function of the tight spaced drillhole spacing (nominally 10 mN x 10 mRL) and relatively consistent geology in the mineralisation, there is good confidence in the geological interpretations. • Estimation has been restricted to mineralised lithologies and domains consistent with the extensive previous mining operations. • All diamond drillholes that tested the stratigraphy were used to inform the interpretations and estimate. This includes holes drilled when the mine was previously in production and which matched the drilling from the 2021 campaign. • The evidence from the previous mining operation makes large scale alternative interpretations unlikely. There is scope for very localised variability, but the impact is considered to be only of very local significance. • Initial mineralised envelopes were prepared based on the ultramafic stratigraphy (whether located at the felsic-

Criteria	JORC Code explanation	Commentary
		ultramafic contact or ultramafic hangingwall stratigraphy), nickeliferous sulphide texture (massive/semi-massive and disseminated sulphides), in combination with nickel and sulphur grades.
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• Within the contact mineralisation, the mineralisation was categorised as either dominantly massive/semi-massive or dominantly disseminated sulphides using a 5.0% sulphur indicator and a 50% probability threshold. Estimation was then undertaken within the contact domain and sulphide category. • The ultramafic domains have a consistent disseminated sulphide texture and were estimated on a domain basis exclusively.
	• *The factors affecting continuity both of grade and geology.*	• Nickel is hosted within the Black Swan Komatiite Complex, a large series of ultramafic komatiite flows. The massive sulphide Golden Swan mineralisation is located within the basal komatiite flow of the Black Swan Complex. Controlling factors include presence of ultramafic host, location within the ultramafic stratigraphy, and the texture of the sulphide mineralisation.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource*	• There are three contact massive sulphide domains: • C10460 – located on the basal ultramafic contact, dipping 70-75° to vertical towards 110°, approximately 50 m along strike, 40 m vertically, averaging 3.2 m horizontally and with the top of the mineralisation located approximately 880 m below surface. • C10360 – located on the basal ultramafic contact, dipping 70-75° to vertical towards 110°, approximately 70 m along strike, 85m vertically, averaging 3.6 m horizontally and with the top of the mineralisation located approximately 960 m below surface. • C10300 – located on the basal ultramafic contact, has a near vertical dip with variable dip directions flipping between 095° and 275°. This mineralisation is approximately 40 m along strike, 35m vertically, averaging 2.1 m horizontally and with the top of the mineralisation located approximately 1,000m below surface. • In addition there are two hangingwall ultramafic domains adjacent to the contact mineralisation, but located entirely within the ultramafic stratigraphy: • U10450 – is adjacent to but approximately 5 m to the east of the C10460 domain, the U10450 domain dips at 80° towards 110°.

Criteria	JORC Code explanation	Commentary
		This domain is approximately 60 m along strike, 25m vertically, averaging 2.5 m horizontally, and with the top of the mineralisation located approximately 895m below surface. • U10370– is adjacent to, but approximately 0 to 5 m to the east of the C10360 domain, the U10370 domain dips at 65° towards 095°. This domain is approximately 65 m along strike, 50 m vertically, averaging 2.6 m horizontally, and with the top of the mineralisation located approximately 960m below surface.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• Estimation was undertaken using 1.0 m composite samples. The grades of variable populations exhibited low variability and did not require top-cutting. As a function of the low variability ordinary kriging was selected as the preferred estimation technique, which is considered appropriate. A dynamic anisotropy search strategy was used to control the search direction and a three-pass search neighbourhood adopted for the estimate. The contact mineralisation used a search distance of 65 m in the plane of the mineralisation and 7.5 m across. The ultramafic mineralisation used a search distance of 32.5 m in the plane of the mineralisation and 7.5 m across. The search distance was doubled for the second pass and quadrupled for the last estimation pass, with the first pass informing 95% of the Mineral Resource. • All domains used a minimum of 6 and a maximum of 20 samples for search passes 1 and 2. The third search pass used a minimum of 4 and a maximum of 12 samples, which informed less than 0.5% of the mineralisation. • For the C10460and C10360 contact mineralisation, a maximum of 4 samples per drillhole was used. The other domains had no such restriction applied. • Within the contact mineralisation the maximum distance of extrapolation is 44 m and within the ultramafic domain the maximum distance of extrapolation is 55 m. • Estimation was completed using Datamine RM software (v1.6.87.0),
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• This is a maiden Mineral Resource estimate and no alternative check estimates are available; there has been no production as yet from the Mineral Resource.
	• *The assumptions made regarding recovery of by-products.*	• There are no assumptions about the recovery of by-products.

Criteria	JORC Code explanation	Commentary
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• Nickel, cobalt, copper and density were estimated. Iron, sulphur, arsenic and magnesium oxide have been estimated to assist with future mine planning assessment.
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• The parent cell size was reviewed using Kriging Neighbourhood Analysis and the final parent block size of 5.0 mN x 1.25 mE x 5.0 mRL was selected. This compares to average drillhole spacing of 10 mN x 10 mRL with samples spaced 1.0 m downhole. The first pass search was 65 m along strike and down dip.
	• *Any assumptions behind modelling of selective mining units.*	• No assumptions regarding the mining SMU have been used.
	• *Any assumptions about correlation between variables.*	• For the contact mineralisation there is good positive correlations (R > 0.8) between nickel and cobalt, iron, sulphur, and density, and a good correlation with magnesium oxide. The nickel correlation with copper is poor to moderate (R >0.49) while there is no correlation between nickel and arsenic. • For the hangingwall ultramafic mineralisation, there are moderate to good positive correlations (R > 0.75) for nickel, cobalt, copper, iron and sulphur. However, the correlation between these elements and density, magnesium oxide and arsenic is variable, ranging from poor to moderate at best.
	• *Description of how the geological interpretation was used to control the resource estimates.*	• The Mineral Resource estimate was constrained within interpretations of the nickeliferous contact or ultramafic lenses. The massive/semi-massive sulphide contact mineralisation was then categorised as either massive/semi-massive or disseminated sub-domains within that lens, and are located along the contact between the meta-sediment and ultramafic contact. The ultramafic mineralisation is disseminated nickel sulphides wholly contained within the ultramafic lithology.
	• *Discussion of basis for using or not using grade cutting or capping.*	• Following a review of the histogram, cumulative distribution, mean/variance analysis combined with all domain and grade/variables having low variances and coefficients of variance, no caps or top-cuts were required.
	• *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	• The estimates were initially validated visually in section and plan and there was good correlation between the composite and estimate. The whole of domain averages for the estimates were then compared with the naïve and declustered composite samples and again there was good correlation between the two. Swath plots were then used to test the estimate

Criteria	JORC Code explanation	Commentary
		and again, there was good correlation and the sample trends had been maintained.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The density was measured with natural moisture. This approach is the same as was used during the previous operational phase, with the core being fresh, non-porous and competent.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied*	• The Mineral Resource was interpreted using the massive nickel sulphide texture and stratigraphic position of the mineralisation. • The Mineral Resource has been reported using a cut-off grade of 1.0% nickel which reflects a nominal cut-off.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The current Golden Swan mineralisation commences approximately 880 m below surface and is exclusively an underground Mineral Resource and is amenable to narrow vein mining methods.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• It has been assumed that the previous successful mining and treatment of the Silver Swan, Cygnet and Black Swan material implies the Golden Swan material will be amenable with the historical processing using conventional sulphide floatation processes.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made*	• Golden Swan mineralisation is located within the previously mined Black Swan Project, which operated within established environmental legislation and practices that are industry standard. As the project has previously been mined and treated, the existing waste storage facilities, procedures and environmental considerations are not expected to pose any issues to the resumption of mining.

Criteria	JORC Code explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	• The bulk density (and specific gravity) has been measured from diamond core using the immersion method. The density measurements contain natural moisture, is fresh, not-porous, competent and the natural moisture content is not considered material. • Only measured density values were used for the estimation of density.
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit,* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density measurements were routinely collected for all underground drill core submitted for analysis. The core is not porous, and porosity is negligible. Density was obtained from all submitted samples and hence, reflects all rock and alteration zones. • As a function of the moderate to good nickel-density correlation, density was estimated from the composited core density data using the same estimation domains and parameters as the nickel grade.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories* • *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The classification of Mineral Resources was completed by Optiro using a range of criteria, including confidence in the geological and mineralisation model, grade and geological continuity and the available drillhole spacing. • The Indicated Mineral Resource is of a moderate confidence. These areas are considered to have a moderate to high confidence in the geological interpretation, are considered well informed supported by a nominal drill spacing less than 20 mN x 20 mRL, with suitable drillhole intersection angles, and where grade and geological continuity can be assumed. • The Inferred Mineral Resource is of a low confidence. These areas are considered to have a low or variable confidence in the geological interpretation, are considered poorly informed supported by a nominal drill spacing greater than 20 mN x 20 mRL, and/or with increasingly acute drillhole intersection angles, and where grade and geological continuity is implied but cannot be assumed. • The classification has taken into account of all relevant factors and is in line with industry acceptable standards. • The Mineral Resource classification applied to the September 2021 maiden Golden Swan Mineral Resource appropriately reflect the Competent Person's view of the deposit.

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.* • *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available*	• The September 2021 maiden Golden Swan Mineral Resource has been reviewed internally by Optiro Pty Ltd, but has not been externally reviewed. • The current Mineral Resource classification suitably reflects the relative accuracy of the Mineral Resource. No statistical procedure has yet been undertaken to quantify the relative accuracy. • The September 2021 maiden Golden Swan Mineral Resource is considered a global estimate. • There has been no mining of the Golden Swan mineralisation.

Black Swan Project – Section 4: Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Silver Swan Mineral Resource used as the basis of this Ore Reserve were estimated by Optiro Pty Ltd and was announced to market in April 2022. • The Golden Swan Mineral Resource used as the basis of this ore reserve were estimated by Optiro Pty Ltd and was announced to market in Nov 2021. • The Black Swan Mineral Resource used as the basis for this ore reserve were estimated by Golder Associates and was announced to market in July 2022. • Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person (Mr Matthew Keenan - Entech) for the 2017 FS Report visited the site on 7th June 2016. The visit included inspection of the Silver Swan underground workings and surface infrastructure. • The site visit did not give the Competent Person at that time any reason to believe that any portion of the Reserve Estimate will not be mineable. The competent Persons for this report (Charles Walker/Craig Mann) have not visited the site.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• A Definitive Feasibility Study was completed in 2017 for the Silver Swan (SS) and Black Swan material being converted from Mineral Resource to Ore Reserve ("2017 FS"). The level of study undertaken in this ore reserve update for Golden Swan (GS) is to a Feasibility Study level. • Modifying factors accurate to the study level have been applied based on detailed stope and pit design analysis. Modelling indicates that the resulting mine plans are technically achievable and economically viable.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• Cut-off grade parameters for the underground ore were determined based on the 2017 FS financial analysis and an underground contractor tender process carried out in late 2018 for mining costs with a 16% rates inflator based on the increase in costs seen by Entech to early 2022. All material was assumed to be processed at the Black Swan Operations processing plant located at the site. The fully costed stoping cut-off grade (COG) applied for

Criteria	JORC Code explanation	Commentary
		SS was 2.5% Ni, and the incremental stoping COG was 2.1% Ni. For GS the fully costed stoping COG applied was 2.4% Ni and the incremental stoping COG was 2.1% Ni based on an analysis done in late 2021 – it was not updated for this report. The open pit used a cut-off dollar value of $31/t of ore based on the processing cost. • A nickel price of $US8.50/lb and a USD:AUD exchange rate of 0.75 was used to determine the cut-off grades.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors*	• Detailed mine designs were carried out on the SS/GS underground, and Black Swan open pit - these were used as the basis of the Reserve estimate. • The SS/GS Ore Reserve is planned to be mined using a bottom-up modified Avoca method with cemented rock backfill. This mining method has been selected based on detailed dynamic geotechnical modelling. Diesel powered trucks and loaders will be used for materials handling. Diesel-electric jumbo drill rigs will be used for development and ground support installation, and diesel-electric long-hole rigs used for production drilling. The Black Swan open pit will employ a cut-back on the existing mine. • The mining methods chosen are well-known and widely used in the local mining industry and production rates and costing can be predicted with a suitable degree of accuracy. Suitable access is available through the existing workings, which have been kept pumped dry during care and maintenance. The BS OP does have water in it and will be pumped out, but it is recommended a further Geotech assessment is done after this. • Underground re-entry and refurbishment of capital development has been underway for some time and was costed in the 2017 FS mine plan based on detailed independent expert inspection. As this work is quite advanced it has not been costed in this ore reserve update. • Independent geotechnical consultants Green Geotechnical Pty Ltd, MineGeotech Pty Ltd and Beck Engineering Pty Ltd contributed appropriate geotechnical analyses to a suitable level of detail. These form the basis of mine design, ground support and mining method selection for the Reserve estimate. • An undiluted stope minimum mining width (MMW) of 2.0m (true width) was applied to SS stoping whilst GS used 1.5m. A minimum unplanned dilution of

Criteria	JORC Code explanation	Commentary
	used. • *The mining recovery factors used.* • *Any minimum mining widths used.*	1.0m true width on the hanging-wall (HW) contact and 0.25 m on the footwall (FW) contact was applied additional to the MMW by expanding the stope shapes in the stope optimisation process for both SS and GS. The grade of this dilution material was determined based on the contained Resource. This generated a minimum void width of 3.25m for SS and 2.75m for GS. A 20 m minimum mining width was chosen for the Black Swan open pit design and physical cut-back distance from the existing pit void. A 5 m deep 'good-bye' cut has been assumed achievable at the base of the proposed open pit designs and have been included in this assessment. • SS/GS UG Fill stopes had an additional 3% dilution at zero grade included in the schedule to account for over-bog of fill material. 100 mm overbreak was modelled for walls and backs of ore development by expanding the development profile shape. Sub-level intervals are 25m and 15m for SS and GS respectively based on geotechnical advice. Maximum stope spans opened prior to filling are 5 m along strike. A mining recovery of 95% has been applied to all stopes. Ore development had an assumed 100% mining recovery, based on historical experience and industry standards. For Black Swan Entech were supplied mining dilution and mining recovery factors, 10% and 95% respectively. These factors have been based on mining recovery of the ore, factoring some losses during mining.
	• *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.*	• Only the Indicated portion of the Mineral Resource was used to estimate the Ore Reserve. All Inferred material has had grade set to waste for the purposes of evaluation. The Ore Reserve is technically and economically viable without the inclusion of Inferred Mineral Resource material. No Measured material was contained within the Mineral Resource
	• *The infrastructure requirements of the selected mining methods.*	• Most of the infrastructure required for the operations is already in place and has been under care and maintenance for approximately 11 years, including a processing plant and associated infrastructure, access roads, offices and ablutions, connections to the Western Power grid, power reticulation, and borefields. Allowance has been made for refurbishment of this infrastructure where required based on quotes provided by reputable independent vendors to an appropriate standard of detail.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.*	• The SS/GS Reserve estimate has been determined based on processing the material at the Black Swan Operations processing plant, in parallel with material from the Black Swan open pit, Silver Swan Tailings and surface stockpiles. This processing plant is a conventional sulphide flotation concentrator consisting of a crushing circuit, grinding circuit, flotation circuit, thickening circuit and concentrate storage and handling facilities. • The Black Swan concentrator was successfully operated at throughput rates up to 2.2Mtpa during

Criteria	JORC Code explanation	Commentary
	• *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*	previous operations. All Reserve ore is expected to be processed through this concentrator at a nominal production rate of 1.1 Mtpa (inclusive of all ore sources). Suitable associated infrastructure is in place including power, water supply and storage, reagents storage, and tailings disposal and storage systems. • Extensive historical data exists on metallurgical characteristics of the Reserve orebodies.
	• *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	• Allowance was made in the 2017 FS for the presence of deleterious elements (As and MgO) in the concentrate, based on historical realised penalties during sales from previous operations. No penalties were subtracted from the calculations for this ore reserve due to them not being instrumental in the value of the project, just as no by-products such as Cu and Co were included. • The metallurgical process is conventional, well understood and has many years of operational data to support the flotation responses of the SS/GS and Black Swan ores. A metallurgical recovery of 92.5% for SS ore, 85% for GS ore and up to 75% for Black Swan (depending on grade and ore type, either Serpentinite or Talc – see table 6.3) has been applied to material for economic analysis, based on this data. • The mineral value is not defined by a specification.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• Geochemical characterisation studies have been conducted that indicate that the rock mass is non-acid forming. • Poseidon has advised that most required approvals already issued under the *Mining Act* and *Environmental Protection Act* from previous operations remain current. • An additional geochemical study was conducted by MBS Environmental to assess the potential implications of storing tailings from the proposed ore blend on top of existing material in the tailings storage facility (TSF). • Works for the Stage 5 lift of the TSF commenced prior to the project being placed in care and maintenance. These works were incomplete and, as such, certification of the works by the Department of Environmental Regulation (DER) could not be obtained. The Works Approval authorising construction of the new embankment raise has since lapsed. A new Works Approval will be required prior to completing the lift. Under current approvals tailings cannot be deposited above RL11378.5 m. • Based on current approvals, it is estimated that

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		there is currently 4 years of storage capacity in the TSF. This is sufficient to cover storage of tailings generated by processing the estimated Reserve ore. • Approvals for the Silver Swan Tailings reclamation and the Phase 1 mine cutback for Black Swan – are currently under consideration by MBS Environmental. • At this point in time the Competent Person sees no reason permitting will not be granted within a reasonable time frame.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.*	• The SS/GS project site is already developed and on care and maintenance with decline rehabilitation ongoing. The underground workings are powered and kept dry through the installed pumping system. • All required surface infrastructure is already in place and requires only minor refurbishment. • Most required SS/GS underground infrastructure is in place to commence mining including primary ventilation fans, escapeways, high voltage power reticulation, service water and compressed air. Allowance has been made for refurbishment and recommissioning of this infrastructure based on inspections and detailed quotes. Allowance has also been made for installation and hire of a refrigeration plant for cooling of air flowing into the workings. • Included setup requirements/costs for Black Swan is the remediation of the current wall failure and pumping of water that has collected at the base of the existing pit (as-built surveys of the open pit indicates that there is a total of 295,000 cubic meters of water remaining in the existing pit void). • As the site is 53 km from Kalgoorlie along well-maintained gazetted roads, a residential workforce will commute to site daily). • The mine is connected to the Western Power grid through two lines, one feeding the concentrator and one feeding the other surface infrastructure and underground workings. Allowance has been made for additional diesel generated power to supplement this underground feed. • The existing water supplies from the Black Swan borefield, silver Swan underground dewatering system, Black Swan pit dewatering and the Federal pit are sufficient to operate the plant at a throughput of 1.1Mtpa
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.*	• The cost of refurbishment and site restart has been determined to an FS standard of accuracy. • The SS/GS and Black Swan capital and operating mining costs are based on detailed quotes from suppliers and mining contractors gathered as part of a contract tender process involving three (for underground) and five (for the open pit) reputable and experienced underground contractor firms carried out in June (SS/GS) and August (Black Swan) of 2022. These were also benchmarked

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	• *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	against similar operations in the WA Goldfields and historical data from previous operations at Silver Swan and Black Swan. • Operating costs for the processing plant were estimated from a combination of first principles, 2008/2009 historic operating costs and recent contractor quotations. They were also benchmarked against similar sized concentrators. • Allowance was made in the 2017 FS for the presence of deleterious elements (As and MgO) in the concentrate, based on historical realised penalties during sales from previous operations. No penalties were subtracted from the calculations for this ore reserve due to them not being instrumental in the value of the project, just as no by-products such as Cu and Co were included. • The USD: AUD exchange rate assumed for the cost modelling was 0.75 based on recent market conditions whilst this study was being conducted. • Road and sea transport charges for concentrate are based on quotes from suppliers. • Treatment and refining charges are included in the payability factors determined from detailed discussions with potential offtake partners. • SS/GS and Black Swan have WA state royalties of 2.5 %. SS and Black Swan also have third-party royalties of 1.75% and 2.0% respectively - these have been applied to gross concentrate nickel revenues.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity*	• Forecasts for head grade delivered to the plant are based on detailed mine plans and mining factors. • A global payability of 78.5% has been applied to SS/GS and Black Swan Reserve Ore concentrate based on detailed discussions with potential offtake partners • A flat USD:AUD exchange rate of 0.75 was used in the financial model based on recent market conditions whilst this study was being conducted. • A flat nickel price of US$8.50/lb has been assumed for the financial analysis, based on recent market pricing whilst this study was being conducted. • No value was assigned to any co-products as the forecast concentrate grades for these elements will not be sufficient to trigger payability.

Criteria	JORC Code explanation	Commentary
	price(s), for the principal metals, minerals and co-products.	
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• Poseidon is currently reviewing offtake agreements with several potential offtake partners. • The volume of concentrate produced by processing the estimated Reserve will be too small to have an impact on the global market of nickel sulphide concentrate. • The product is not an industrial mineral.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• The SS/GS underground and Black Swan open pit Ore Reserves have been assessed in detailed financial models assuming cost and revenue factors described above. • The Reserve plan is economically viable and has a positive NPV at a 6% discount rate for SS/GS and Black Swan at the stated commodity price and exchange rate. Inflation has not been applied to the model. • Sensitivity analysis shows that the SS/GS project is sensitive to a 20% reduction in revenue or 20% increase in Capex/Opex costs where the mine plan is NPV negative if these occur - it should be noted that this does not take into account the additional revenue generated by blending the high-grade SS/GS material with Black Swan as discussed in Section 7.2.7. Black Swan is more robust but is most sensitive to a 20% reduction in revenue where NPV before tax will reduce to almost zero if this were to happen.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The Black Swan project is located within the boundaries of the Mt Vetters and Hampton Hill pastoral leases. Access and compensation agreements exist between Poseidon and both pastoralists, and a good relationship is maintained. Poseidon will continue to communicate and negotiate in good faith with key stakeholders
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing*	• A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation. • No marketing agreement has been signed but it is

Criteria	JORC Code explanation	Commentary
	arrangements. • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	expected that such an agreement is highly likely to be arrived upon. Interest has been expressed by various potential offtake partners for the concentrate and it was successfully marketed during previous operations. • Based on the information provided, the Competent Person sees no reason all required approvals will not be successfully granted within the anticipated timeframe.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss. • None of the Probable Ore Reserves have been derived from Measured Mineral Resources. • The result appropriately reflects the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• The Ore Reserve estimates, along with the mine designs and life of mine plans, have been peer-reviewed by Entech internally.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify*	• The SS/GS and Black Swan design, schedule, and financial model on which the Ore Reserves are based has been completed to a Definitive Feasibility study standard, with a corresponding level of confidence. • Considerations in favour of a high confidence in the Ore Reserves include: - The mine plans assume low complexity mechanised mining methods that have been successfully implemented at various sites in the local area. - The mines have been successfully operated previously and has been kept dry and accessible during the care and maintenance period, allowing detailed inspection of the workings and infrastructure. Black Swan pit currently contains water and still needs to be pumped out before a final Geotech evaluation in undertaken.

Criteria	JORC Code explanation	Commentary
	whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	- Material from the SS and Black Swan area has previously been successfully processed through the BSN plant and sufficient historical data exists to forecast metallurgical performance with a high degree of accuracy; - Concentrate generated from SS and Black Swan ore has previously been successfully marketed; and - The project, as previously operated, has a very high likelihood of being successfully permitted. • Considerations in favour of a lower confidence in Ore Reserves include. - There is a degree of uncertainty associated with geological estimates. The Reserve classifications reflect the levels of geological confidence in the estimates. - Nickel price and exchange rate assumptions are subject to market forces and present an area of uncertainty; - There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the DFS level of detail of the study; and - No offtake agreement has yet been signed for the SS/GA and Black Swan products and there is no guarantee that such an agreement will be reached. • The Ore Reserve is based on a global estimate. Modifying factors have been applied at a local scale. • Further, i.e., quantitative, analysis of risk is not considered warranted or appropriate at the current level of technical and financial study.