



Robust Black Swan Bankable Feasibility Study

ASX Release "Positive Black Swan Feasibility Study"
lodged 21 November 2022

22 November 2022



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COMPETENT PERSON STATEMENTS

The information in this presentation 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 this presentation 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 this presentation that relates to open pit mining methods and open pit Ore Reserve 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 this presentation that relates to underground mining methods and underground Ore Reserves for Silver Swan and Golden Swan 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.

The Company is not aware of any new information or data that materially affects the information in the relevant market announcements. All material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

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

FORWARD LOOKING STATEMENTS

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

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

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

BLACK SWAN BANKABLE FEASIBILITY STUDY HIGHLIGHTS



- **Robust project economics** – NPV_g of \$248M, free cashflow of \$333M and an IRR of 103% at spot Ni and FX
- **Low pre-production capital** – \$50M capital including ~\$38M for the refurbishment
- **Plant capacity** – 1.1Mtpa with the ability to upgrade to nameplate of 2.2Mtpa
- **Construction period** – 46 weeks for plant refurbishment
- **High-grade nickel concentrate** – 15% Ni, < 6% MgO and Fe:MgO ratio of 5:1 which is **highly desirable for conventional nickel smelters**
- **ESG focus** – carbon emissions reduced compared to 2018 Feasibility Study by using grid power



ECONOMIC OUTCOMES



Economic Summary

Description	Base	Spot	Upside
Revenue	\$809M	\$919M	\$1207M
Net Cash Flow	\$227M	\$333M	\$610M
Pre- tax NPV ₈ ¹	\$167M	\$248M	\$470M
IRR	86%	103%	188%
Payback Period ²	1.3	1.4	1.0
C1 Cash Cost ³	US\$4.56/lb	US\$4.52/lb	US\$4.36/lb
AISC Cash Cost ⁴	US\$4.90/lb	US\$4.89/lb	US\$4.81/lb
Ni price	US\$11.60/lb	US\$11.80/lb	US\$15.00/lb
FX (USD/AUD)	0.69 USD:AUD	0.67 USD:AUD	0.65 USD:AUD

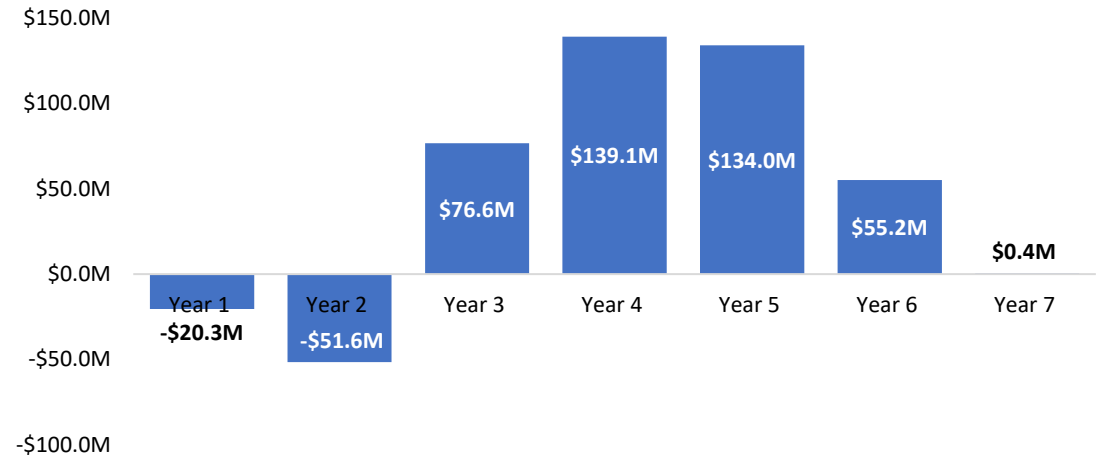
1. NPV is based on real cash flow forecasts and represents value as at projected start date of concentrator refurbishment being 1 July 2023.

2. Period post completion of concentrator refurbishment.

3. 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.

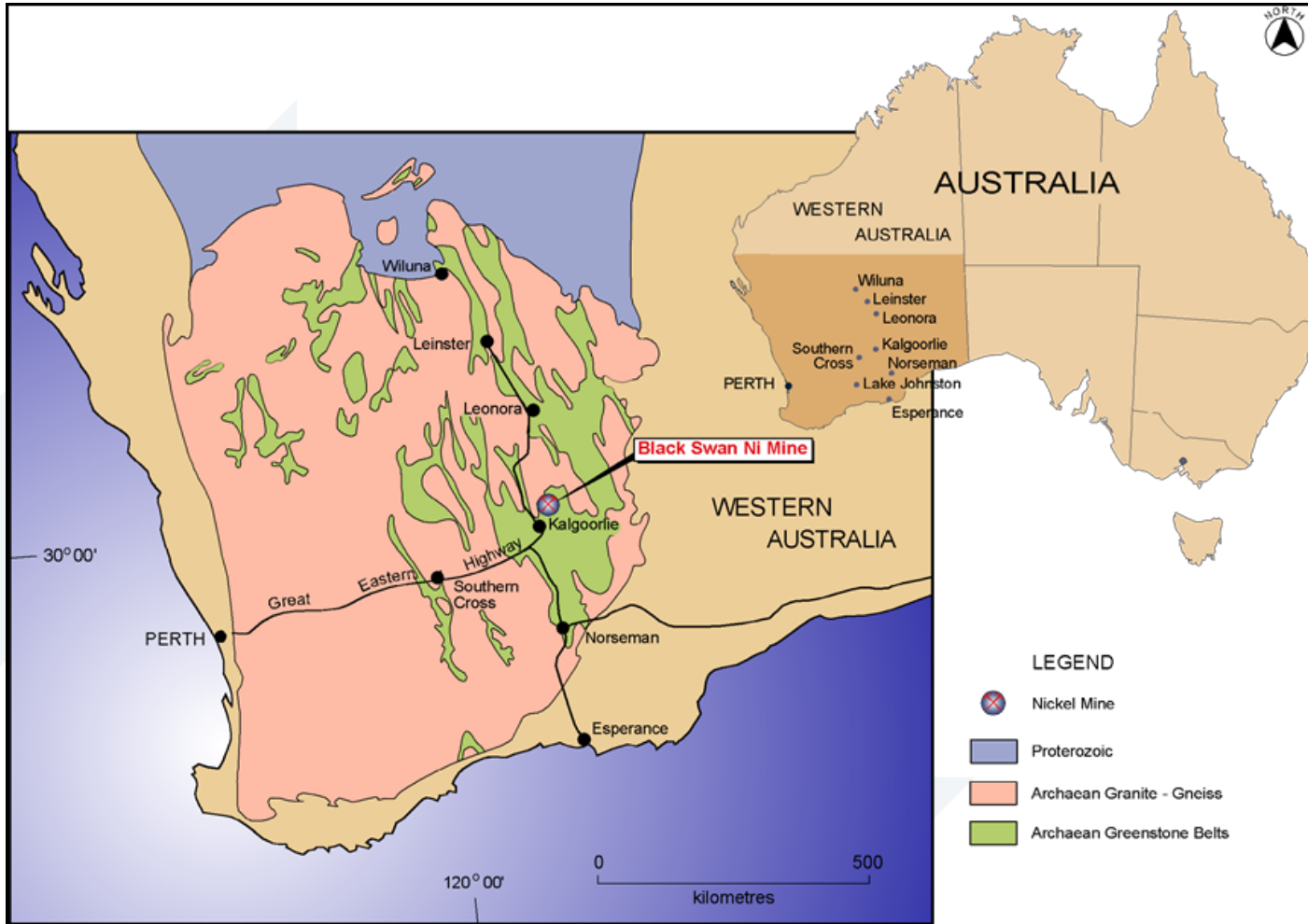
4. AISC - are C1 cash costs plus royalties and sustaining capital. Excludes development capital and preproduction costs.

Annual Free Cashflow



- **Attractive NPV** – \$248M NPV₈ at spot Ni price and FX rate
- **High IRR** – 103% IRR at spot Ni price and FX rate
- **Low Capital Cost** – \$99M capital cost
- **Payback period** – relatively short payback period due to low capex requirements
- **C1 Costs** – based on 100% of contained nickel – confidential Ni payability assumptions based on indicative offers received

PROJECT LOCATION & HISTORY



Location

- Mine to Kalgoorlie is 43km
- Mine to Esperance port is 433km

History

- **1995** – Silver Swan massive sulphide deposit discovered
- **1997** – mining and processing of Silver Swan orebody through 150ktpa plant commenced
- **2006** – major plant upgrade to 2.2Mtpa to allow processing of low-grade Black Swan Disseminated ore body
- **2009** – Project placed on care and maintenance due to historically low Ni price
- **2015** – Poseidon acquired project from Norlisk
- **November 2022** – BFS released

BLACK SWAN – RESOURCES OVERVIEW



Silver Swan Tailings

September 2021 Mineral Resources: 6.2kt Ni

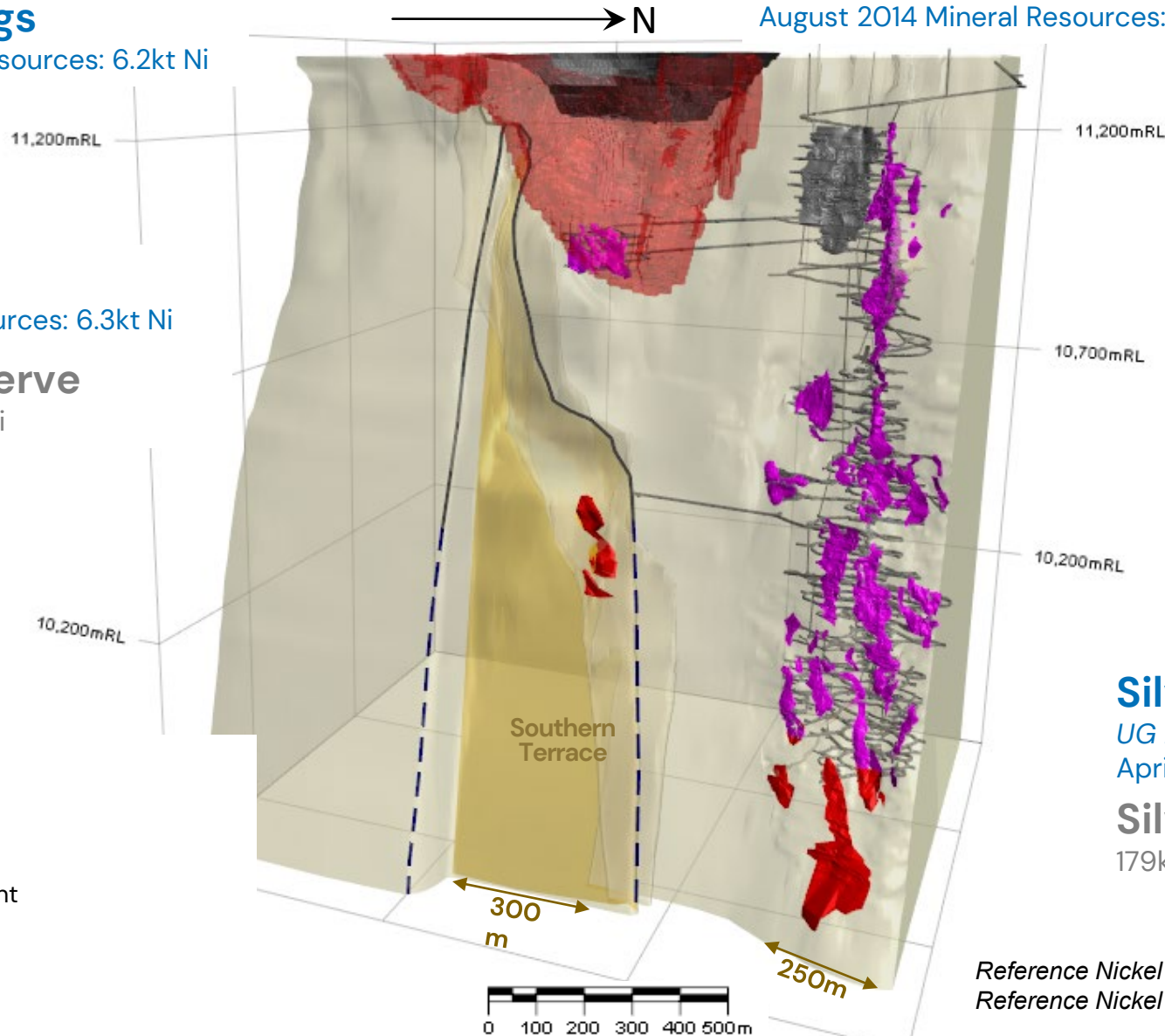
Golden Swan

October 2021 Mineral Resources: 6.3kt Ni

Golden Swan Reserve

100kt @ 4.0% Ni for 4.0kt Ni

- Mineral Resource Shapes
- Mined Areas
- Footwall Surface
- Underground Development



Existing Surface Stockpiles

August 2014 Mineral Resources: 7.8Kt Ni

Black Swan

Pit Production: 5.9Mt @ 0.7% Ni for 41kt Ni
 July 2022 Mineral Resources: 181kt Ni

Black Swan Reserve

3,187kt @ 0.69% Ni for 21.9kt Ni

Silver Swan

UG Production: 2.7Mt @ 5.1% Ni for 137.5kt Ni
 April 2022 Mineral Resources: 12.9kt Ni

Silver Swan Reserve

179kt @ 5.0% Ni for 9.0kt Ni

Reference Nickel Mineral Resources Statement Table 1 attached
 Reference Nickel Mineral Reserves Statement Table 2 attached



Nickel Sulphide Reserves

	JORC		Tonnes (kt)	Ni% Grade	Ni Metal (kt)
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

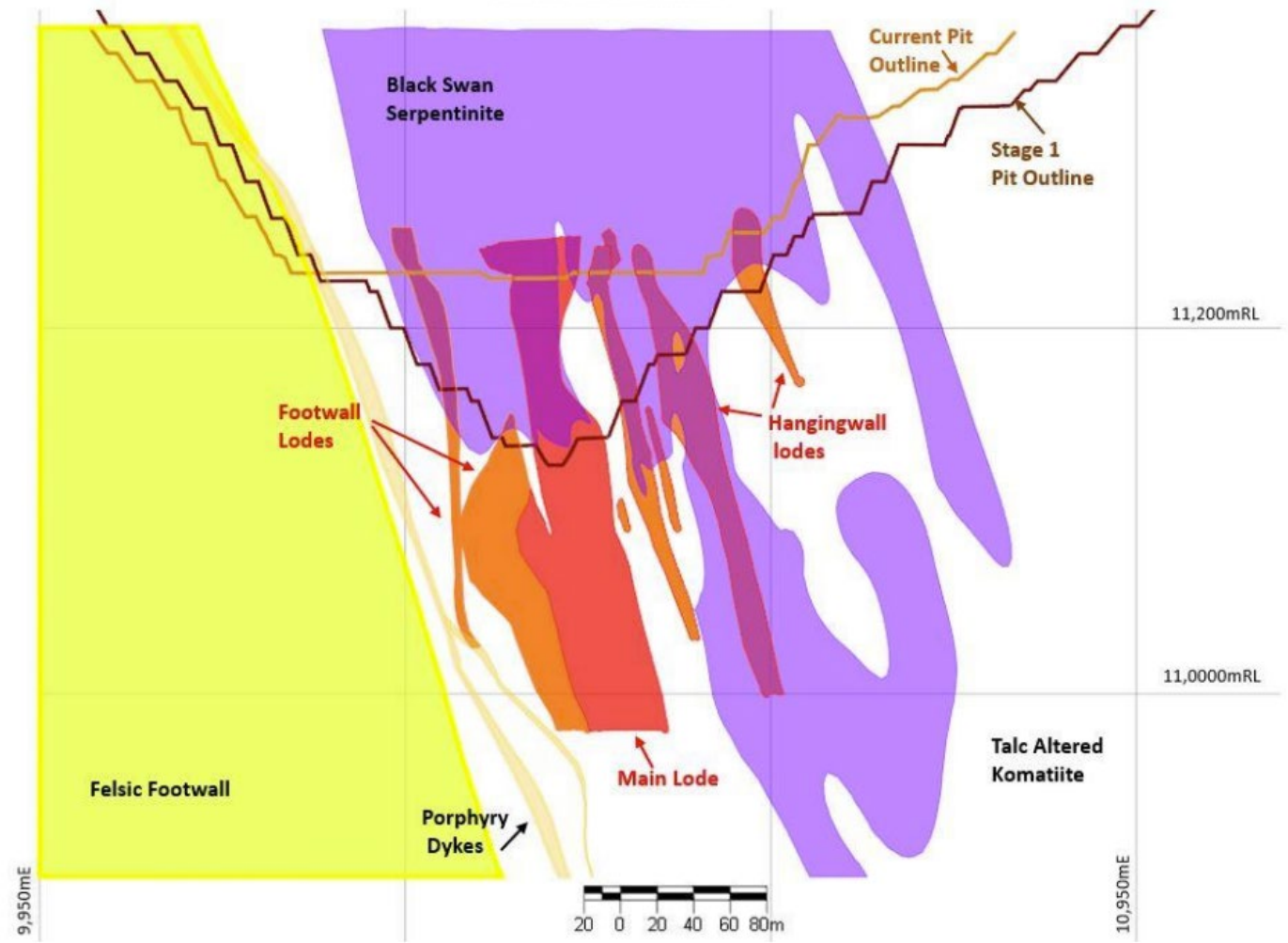
Key Points¹

- Combined Black Swan Ore Reserves are **3.5Mt averaging 1.0% Ni for ~35kt Ni contained nickel**
- Metal contained in Mineral Reserve has **increased 40%** since the 2018 Feasibility Study
- Portion of Black Swan Disseminated (BSD) Resource not included in the Mineral Reserves is subject to the ongoing 2.2Mtpa rougher grade concentrate Feasibility Study
- 10,000m RC drilling program from bottom of dewatered open pit planned to commence in mid December 2022 – aim of drilling is to convert a larger amount of the BSD Resource to Reserves for the 2.2Mtpa scenario

MINING – BLACK SWAN OPEN PIT

- Optimised pit shell to be mined using a conventional drill, blast, load and haul method
- Ore in existing pit floor concurrently mined with pit cut back

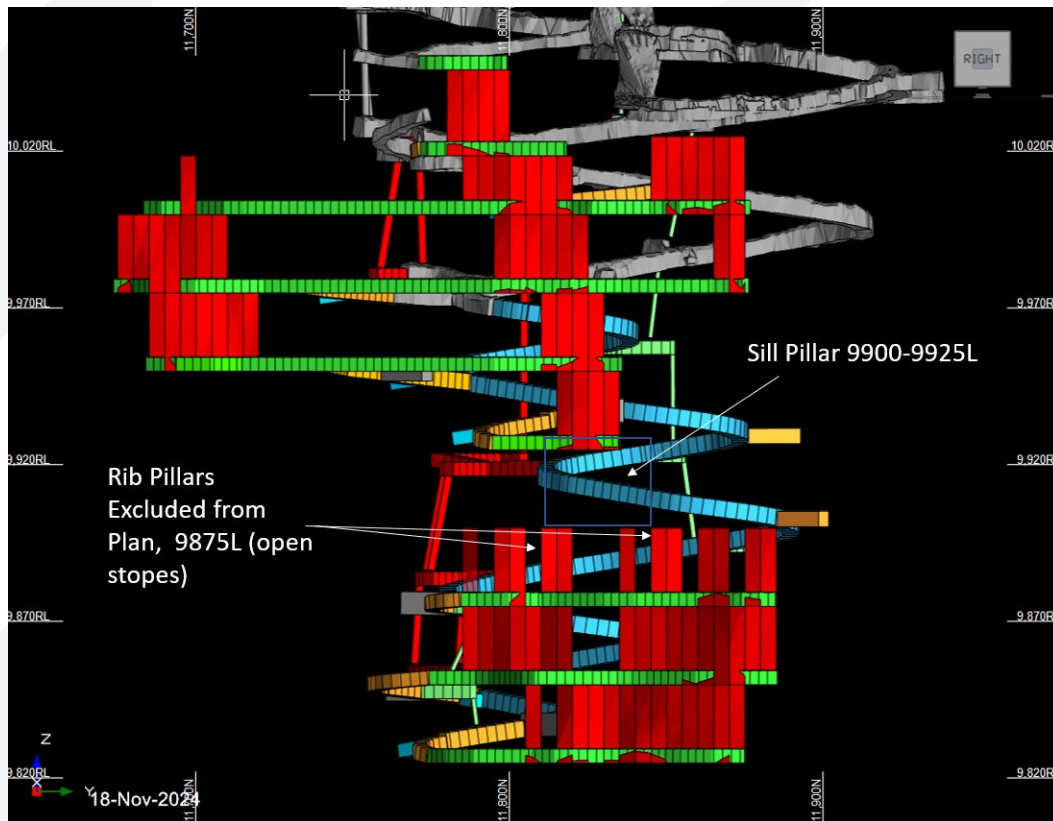
Open pit dewatering progress



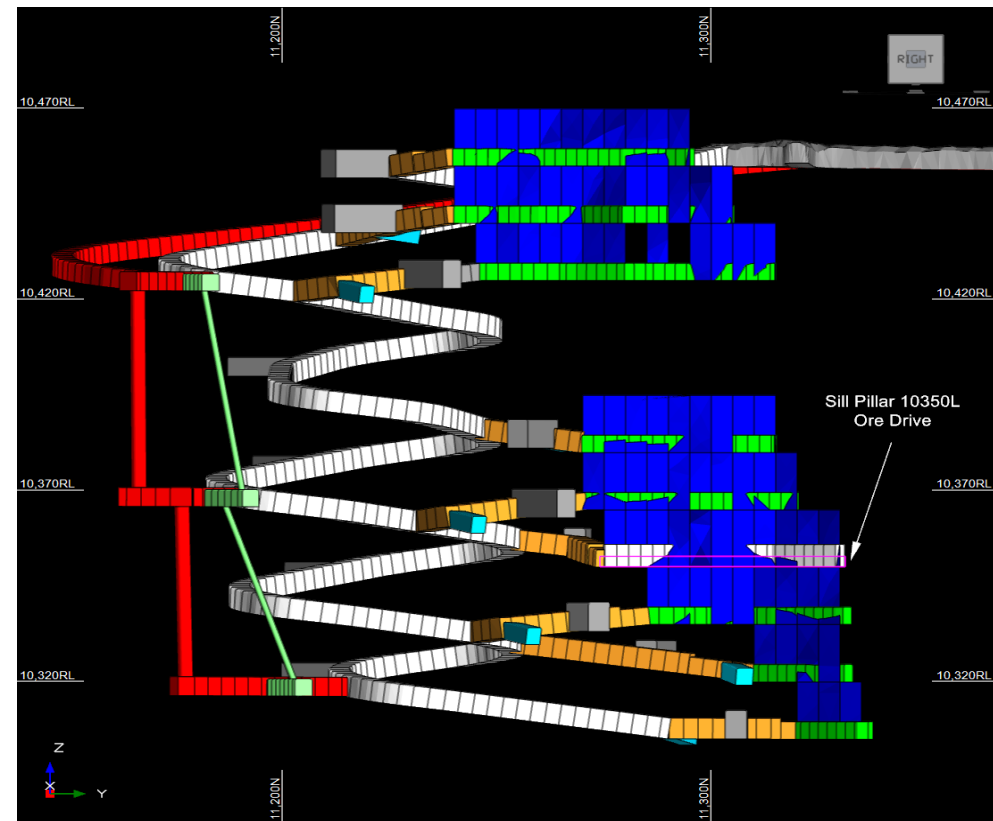
Black Swan open pit geological cross-section 11,320N

MINING – UNDERGROUND

- Mining using mechanised bottom-up longhole stoping with continuous cemented rockfill on 15–25 metre vertical sub-levels
- Minimal pre-production works required on ventilation system



Silver Swan Underground

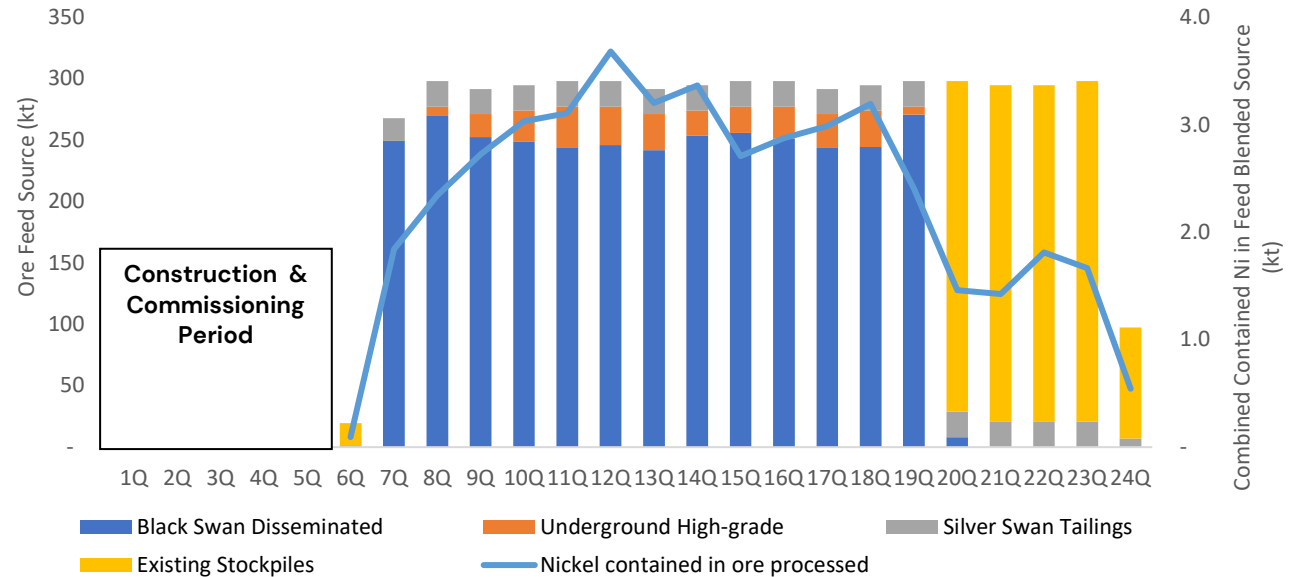


Golden Swan Underground

FEED SOURCES

Mill Feed Sources	Feed Tonnage (Mt)	Nickel Grade	Contained Nickel (kt)
Black Swan Disseminated	3.3	0.7%	22.1
Silver Swan	0.2	5.0%	9.0
Golden Swan	0.1	4.0%	4.0
Feed sourced from Ore Reserves	3.6	1.0%	35.1
Silver Swan Tailings	0.4	0.9%	3.2
Indicated Surface Stockpiles	0.6	0.5%	3.2
Inferred Surface Stockpiles	0.4	0.5%	2.0
Feed sourced from Mineral Resources	1.4	0.6%	8.4
Total feed sources	5.0	0.9%	43.5

Quarterly Mill Feed Sources



- **LOM Plan** – front ended with high-grade underground ore and Black Swan disseminated ore to feed concentrator with optimal feed source blend to maximise early cash flows
- 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
- Only 7.7% of Inferred material in total mill feed, being off-ROM BSD surface stockpiles

*Mineral resources and mineral reserves as per ASX announcement "Positive Black Swan Feasibility Study 21 November 2022"



Simple flowsheet, all equipment existing

- Single stage crushing with coarse ore bin storage
- Single stage SAG mill with a flash flotation circuit
- Flotation with rougher, rougher-scavenger, cleaner, cleaner-scavenger, cleaner 2 and cleaner 3 stages
- **New Step – Regrinding of rougher 2, rougher-scavenger and cleaner-scavenger concentrates – improves concentrate quality**
- Concentrate thickening and filtration



Black Swan Grinding Circuit and Flash Flotation



Significant improvement in concentrate quality (improved Fe:MgO ratio)

- Existing Silver Swan mill can be utilised as a regrind mill to treat rougher concentrate stream
- Silver Swan Tailings added to the overall feed blend to significantly increase Fe content of the concentrate plus additional Ni units at very low cost
- Sufficient Silver Swan tailings available for 1.1Mtpa project life

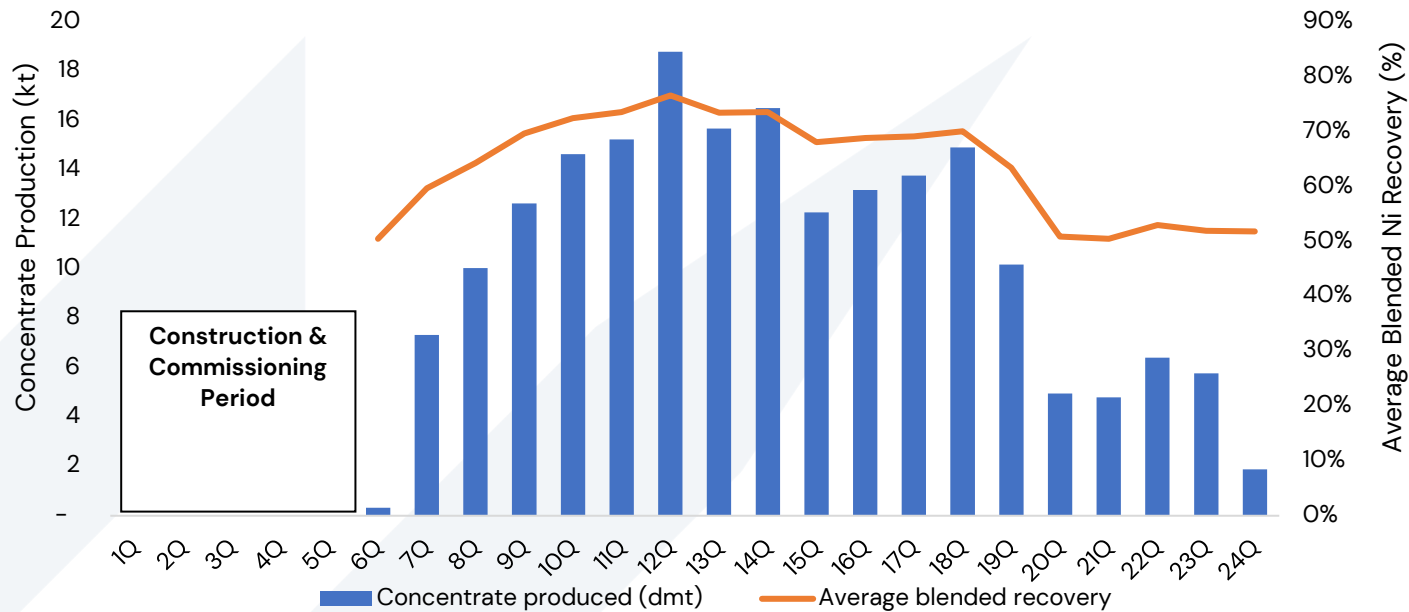


Proposed Regrind Mill

CONCENTRATE PRODUCTION & QUALITY



Quarterly Concentrate Production¹



- ~200kt of concentrate produced
- ~30kt of Ni contained
- 15% nickel grade, MgO<6%, Fe:MgO >5:1
- Strong interest from smelter companies and traders
- Multiple Indicative offers received

Concentrate Specifications

Element	Unit	BSD feed 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

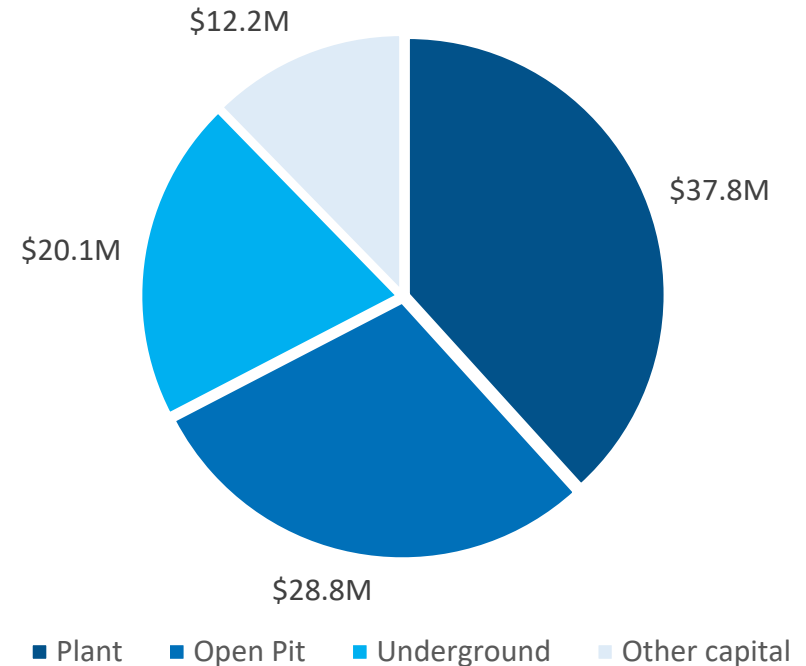


Total LOM capital costs of \$99M

- Refurbishment of the concentrator for ~\$38M
- ~\$29M for the Black Swan disseminated open pit cut-back and mine development over the life of the project
- Silver Swan underground mine re-entry and mine development of ~\$20M (note capital development during ore production period included in opex)
- Other capital items of ~\$12M over the course of the project

This represents a low cost alternative to other projects which will need to build mines and plants from scratch

Capital Expenditure Mix



OPERATING COSTS

Estimated operating costs have been determined for the key cost centres as follows:

- **Black Swan open pit** – estimates provided by a Kalgoorlie based open pit mining contractor
- **Underground mining** – based on a Contractor Operating Model with costings generated via a Request-for-Quotation process undertaken by Entech
- **Processing and G&A** – majority provided by GR Engineering Services with a number of minor items provided by Poseidon
- **Concentrate Transport** – the costs associated with hauling the concentrate from Black Swan to Esperance and ocean freight to Lianyungang, China are based on indicative costings provided by Qube Bulk and Hudson Shipping

Cost Description	C1 unit cost (US\$/lb)	C1 unit cost (A\$/lb)
Open pit mining	\$0.90	\$1.30
Underground mining	\$1.60	\$2.40
Tailings & stockpile reclaim	-	\$0.10
Processing	\$1.50	\$2.20
Transport	\$0.50	\$0.70
G&A	\$0.30	\$0.40
By-product credits (cobalt)	-\$0.20	-\$0.30
Total C1 cost	\$4.60	\$6.70

*C1 costs as per ASX announcement "Positive Black Swan Feasibility Study 21 November 2022"

EXISTING INFRASTRUCTURE





Poseidon aims to become a sustainable nickel producer, supplying the nickel the world needs to transition to a low-carbon economy

- In relation to the Black Swan project, the Company recognises the importance of understanding and taking action to reduce its greenhouse gas (GHG) emissions
- The Company intends to source power from the local grid. Grid power supply will reduce the Project's carbon emissions compared to diesel fired power generation
- Now that the BFS is completed, the Company will undertake a detailed assessment of the proposed Black Swan operations to understand the projected GHG emissions, and to identify possible decarbonisation opportunities





The following environmental approvals are current for the Project:

- **Works Approval** – current for mining and treatment of the underground and open pit. An amendment required to recover and treat the Silver Swan Tailings and the next tailings storage facility lift
- **Mine Closure Plan** – A mine closure plan in respect of the Project was approved by DMIRS in 2018. A revised plan was lodged with DMIRS in 2021 and is yet to be assessed
- **Environmental Licence** – current licence allows processing of up to 3Mtpa of ore and dewatering of up to 450,000tpa of mine water
- **Groundwater** – the existing Groundwater Licence allows access to water from the Federal pit, Black Swan pit, Silver Swan underground and the Black Swan borefield, providing a total annual entitlement of 2.7 GL. The Company entered into a 5-year water access agreement with Norton Gold Fields Pty Ltd to take up to 3,600m³ per day (1.3 GL per year) from the Federal pit in August of 2021
- **Clearing Permits** – no current native vegetation clearing permits are held. Up to 10 hectares per tenement per year can be cleared without a permit, if the activities requiring the clearing are approved via the approved Mining Proposals

PROGRESS SINCE THE 2018 STUDY



2018 Feasibility Study

November 2022 Feasibility Study

Resource Base	BSD – 30.7Mt @ 0.58% Ni for 179kt Ni Silver Swan – 136kt @ 9.0% Ni for 12.4kt Ni No Golden Swan / Silver Swan Tailings in Mineral Resource	Following resource drilling programs and Mineral Resource updates, current combined Black Swan Mineral Resource is now 31.5Mt @ 0.68% Ni for 214kt Ni
Marketable Product	2018 Study did not include mitigating factors to address MgO issues or include indicative terms from potential offtakers based on assumed concentrate product specifications	Regrind circuit and addition of Silver Swan tailings significantly reduces MgO levels and improved the Fe:MgO ratio to >5:1 (well above smelter rejection limits)
Pre-production Works	None of the pre-production works identified in the 2018 Study had commenced	Completed or commenced a number of pre-production projects – underground ladderways, rehabilitation of decline, pump station upgrades and dewatering, access drive for Golden Swan, communications upgrade & pit dewatering
Process Water	No committed water source for the project	5-year water access agreement executed with Norton Goldfields, supplemented with Black Swan borefield to be used as a back-up water source
Power Source	Assumed on-site diesel fire power station	Grid power allocation from Western Power sufficient for 1.1Mtpa, significantly reducing operating costs and carbon emissions



- **Offtake** – continue discussions with potential customers to agree definitive terms ahead of signing an offtake agreement
- **Mill Refurbishment & Operations** – commence discussions with potential contractors:
 - for the refurbishment of the Black Swan concentrator and associated infrastructure
 - for mining and feed processing operations
- **Increase Measured and Indicated** – complete 10,000m resource drilling program in the open pit to convert more BSD Inferred Resources to Indicated and grow the Measured and Indicated resource base
- Assess additional feed opportunities from Windarra and third parties
- **2.2Mtpa BFS** – complete the study on the rougher concentrate project which presents an opportunity to significantly increase contained Ni production and enhance project economics
- **Project Financing** – continue discussions with selected project finance partners to secure appropriate funding for the restart
- **Financial Investment Decision** – make FID during first half 2023, whether based on a 1.1Mtpa or 2.2 Mtpa operation so production of concentrate could commence in early 2024



Peter Harold Managing Director & CEO

- T: +61 (0) 6167 6600
- E: admin@poseidon-nickel.com.au
- W: poseidon-nickel.com.au
- ASX: POS



Nickel Mineral Resources



Table 1: Black Swan Project Nickel Resources Statement

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.

•**Black Swan Resource** as at 4 July 2022 (see ASX announcement "More Nickel in Updated Black Swan Mineral Resource" released 4 July 2022)

•**Silver Swan Resource** as at 27 April 2022 (see ASX announcement "Updated Silver Swan Resource underpins significant increase in high-grade Indicated resource base" released 27 April 2022)

•**Golden Swan Resources** as at 27 October 2021 (see ASX announcement "Golden Swan Maiden Resource" released 27 October 2021).

•**Silver Swan Tailings Resource** as at 15 September 2021 (see ASX announcement "Silver Swan Tailings – Maiden Resource Estimate" released 15 September 2021)

•**Black Swan Surface Stockpiles** as at 4 August 2014 (see announcement "Poseidon Announces Black Swan Mineral Resource" including surface stockpiles released 4 August 2014)

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Nickel Mineral Reserves



Table 2: Black Swan Nickel Projects Reserves Statement

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

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

•Black Swan Reserve, Silver Swan Reserve and Golden Swan Reserve as at 21 November 2022 (see ASX announcement "Positive Black Swan Feasibility Study" released 21 November 2022)

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