HORIZON MINERALS LTD

PENNYS FIND RESOURCE UPDATE

HIGHLIGHTS

- Horizon Minerals owns 100% of the fully permitted Pennys Find gold mine located 50km northeast of Kalgoorlie in the Goldfields of Western Australia
- The 2022 independent Mineral Resource estimate stood at:
  - 270,000t grading 4.99g/t Au for 43,000 ounces with 81% in the Indicated Category [1]
- During 2023, a total of 10 RC and diamond tail drill holes were completed for 3,298.4m to expand and infill the resource at depth and convert some of the Inferred ore to the Indicated Resource classification category.
- An updated underground (<260 m RL) Mineral Resource Estimate has now compiled by the Company and stands at:
  - **429kt grading 4.57 g/t Au for 63,000 oz at a 1.5g/t Au lower grade cut-off [2]**
- Over 80% of the resource is now in the Indicated Resource category and can now be incorporated into the ongoing mine optimisation and underground design work. The Indicated Resource stands at:
  - 305kt grading 5.19 g/t Au for 51,000 oz at a 1.5g/t Au lower grade cut-off [2]
- A feasibility study shall be undertaken with a maiden Ore Reserve for Pennys Find is expected in the June Quarter 2024.
- The mine is permitted for development via a previously approved Mining Proposal and Project Management Plan.

Commenting on the resource upgrade, Chief Executive Officer Mr Grant Haywood said:

"It is pleasing to see the Resource growth at Pennys Find on the back of the 2023 drill programmes, including extensions at depth and to the north of the existing resource, which still remains open. We look forward to completing the underground mining study and economic review in the June 2024 quarter for a development decision to be made shortly thereafter."

[1] As announced to the ASX on 28 September 2022. [2] See JORC Table 1 on page 20 and Confirmations on Page 6
[3] See Forward Looking and Cautionary Statements on Page 19.

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Overview

Horizon Minerals Limited (ASX: HRZ) ("Horizon" or the "Company") is pleased to announce an updated Mineral Resource Estimate for the Company's 100% owned Pennys Find project located 50 km northeast of Kalgoorlie-Boulder in the heart of the Western Australian goldfields (Figure 1).

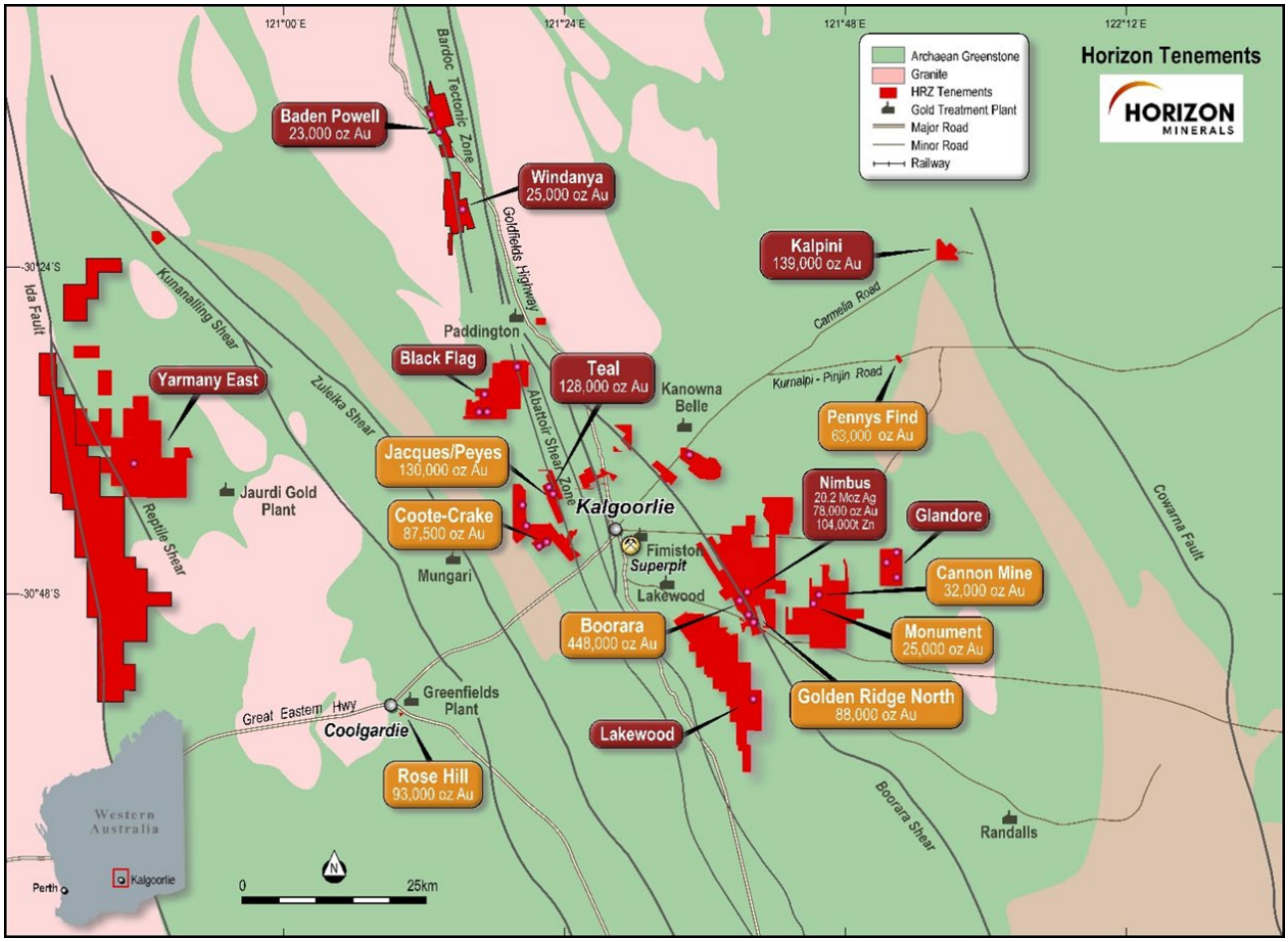

Figure 1: Kalgoorlie project area locations and surrounding infrastructure

The Company acquired the remaining 50% interest in the project from joint venture partner Labyrinth Resources Ltd (ASX: LRL) in December 2021. [1] The project presents an early underground development and production opportunity to generate cash under a toll milling and underground contractor / JV arrangement.

The infill and extension program aimed to improve resource classification and test extensions with excellent results and new mineralisation intercepted to the north. The deposit also remains open at depth and will be tested from underground drilling positions. [1]

[1] As announced to the ASX on 30 August 2022
Forward Looking and Cautionary Statements on Page 17.

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Project Geology

The high-grade gold mineralisation at Pennys Find is hosted in thin quartz veins at the contact between footwall sediments including black shale and siltstone and a hangingwall basalt. The quartz veins dip about 60° to the northeast and collectively average 1 m to 5 m true width.

Open cut mining to 85 m depth (242 mRL) was completed by Empire Resources in 2018 with toll treatment processing at Lakewood (Kalgoorlie) and Burbanks (Coolgardie). Production from the open pit totalled 18,300 oz at 4.47 g/t Au (as announced to the ASX by Empire (ASX: ERL) on 25 July 2018). Metallurgical test work and toll milling data has shown fresh mineralisation to be free milling with a high gravity recoverable gold component and a total gold recovery which has exceeded 90%.

Resource Update

An eight-hole RC and diamond tail drill program for 2,550m was completed in Q2 2023, and an additional four RC holes drilled in Q3 2023 for 906m. [1] The total resource drilling, mostly RC with diamond tails, completed by Horizon at Pennys Find since 2021 stands at 8,085.1m.

The 2023 drilling primarily focussed on the inferred or peripheral ore zones, especially to the north. In addition to the assaying, the diamond core was subsequently used to confirm geotechnical observations and interpretations and further structural assessment.

Significant downhole intercepts reported in 2023 include: [1]

- 1.45m @ 2.61g/t Au from 314.75m and 3.2m @ 4.19g/t Au from 318.3m (PFRCD23003)
- 1.05m @ 6.36g/t Au from 355.5m (PFRCD23001)
- 1.0m @ 7.49g/t Au from 363.9m (PFRCD23002)
- 2.90m @ 1.73g/t Au from 292.0m (PFRCD23007)
- 0.78m @ 12.85g/t Au from 331.48m (PFRCD23006
- 5m @ 2.97g/t Au from 370m (PFRC23012A)
- 2m @ 1.27g/t Au from 305m (PFRC23011)

[1] As announced to the ASX on 31 May 2023 and 5 December 2023.

Table 1: *Pennys Underground (<260m RL) Resource Estimate, 1.5 g/t Au cut off*

Project Area	Resource Category	Tonnes (kt)	Gold (g/t)	Gold Ounces (kOz)
Pennys Find	Indicated	305	5.19	51
	Inferred	123	3.02	12
Total		429	4.57	63

There was no Measured ore category beneath the current open pit as this was deemed unnecessary as the economics involved in a significant cut back mining operation for a relatively small amount of ore at high strip ratios made it more economic to consider underground operations only.

Next Steps [1]

The updated resource will now be incorporated into a feasibility study for mine design and financial analysis and incorporate a maiden Ore Reserve for Pennys Find. The results of the study are expected in the June Quarter 2024, with a financial investment decision (FID), pending favourable study results, made thereafter.

Authorised for release by the Board of Directors

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[1] See Forward Looking and Cautionary Statements on Page 19.

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Listing Rule 5.8 Disclosures

Mineral Resource Statement

The Mineral Resource Statement for the Pennys Find Underground Gold Mineral Resource Estimate (MRE) was prepared during December 2023 and is reported according to the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the 'JORC Code') 2012 edition.

This MRE update includes an additional 3,456m of drilling from 12 RC and Diamond holes, completed in 2023 by HRZ and 24 historical RC holes (2,794m) drilled by Brimstone in 2012. The Mineral Resource is reported excluding all historical mining activity, surveyed up to 23 April 2018. The depth from surface to the current vertical limit of the Mineral Resources is approximately 380m.

In the opinion of Horizon Minerals Competent Person, the resource evaluation reported herein is a reasonable representation of the global underground gold mineral resources within the Pennys Find deposit, based on sampling data from reverse circulation and diamond drilling available as of 1 December 2023. The Indicated and Inferred Mineral Resources comprise fresh rock. The Mineral Resource Statement is presented in Table 2.

Table 2: *Pennys Find Underground Mineral Resource (<260mRL) at a 1.5 g/t gold cut-off.*

Project Area	Resource Category	Tonnes (kt)	Gold (g/t)	Gold Ounces (kOz)
Pennys Find	Indicated	305	5.19	51
	Inferred	123	3.02	12
Total		429	4.57	63

Tonnages are dry metric tonnes. Minor discrepancies may occur due to rounding.

A total of 28,898m of drilling from 338 drill holes was available for this MRE. Mineralisation interpretations were informed primarily by reverse and diamond drilling for 1,039m of drilling intersecting the resource.

This MRE comprises Inferred Mineral Resources, which are unable to have economic considerations applied to them, nor is there certainty that further sampling will enable them to be converted to Measured or Indicated Mineral Resources.

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Competent Person's Statement

The information in the report to which this statement is attached that relates to the Estimation and Reporting of Underground Gold Mineral Resources at the Pennys Find deposit is based on information compiled by Mr Stephen Godfrey, a Competent Person who is a current Fellow of the Australian Institute of Mining and Metallurgy (FAusIMM 110542) and Member of the Australian Institute of Geoscientists (MAIG 3993). Mr Godfrey is the Resource Development Manager for Horizon Minerals Ltd and has sufficient experience relevant to the style of mineralisation and deposit type under consideration and to the activities being undertaken 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. Mr Godfrey consents to the inclusion in the report of matters based on the information in the form and context in which it appears.

Mr Godfrey has visited the Pennys Find site on numerous occasions, including during the two HRZ drilling programs.

Drilling Techniques

HRZ RC drilling was completed with a 142mm face sampling hammer bit. Diamond tail drilling was carried out using an HQ3 (2021) and NQ2 (2023) size triple tube. All collar locations were picked up by licensed surveyors. Core recovery was good. Continuous downhole surveying was carried out and recorded at approximately 5m downhole intervals. Magnetically affected azimuth readings have been estimated to reflect downhole trends.

Historical Drilling

The historical drilling comprises rotary air blast (RAB), reverse circulation (RC), Air core (AC) and diamond core drilling undertaken from the 1980s through to 2017. All RAB drilling and drilling prior to 2007 was not used for Mineral Resource estimation. Limited details of historical drilling techniques were available to HRZ, therefore a key focus of the HRZ drilling (2020–2021) was to infill areas of the MRE informed by historical drill information. All areas included in the MRE are now considered sufficiently supported by HRZ drill information.

Historical diamond core recovery is generally very good, averaging more than 95%. Early RC recovery (2007 and 2012 series) varied from good (>75% recovery) in dry conditions to poor (<25% recovery) in wet conditions. Between 2015 and 2017 RC recoveries averaged 84% and >95%, respectively. The 2017 drilling used a sealed collar and air pressure to maximise the return of RC sample recovery.

All drill collars were surveyed by differential global positioning system (DGPS) and the orientation and inclination at collar were set out using compass and clinometer. The 2007 holes were surveyed by downhole camera where deeper than 50m. Only dip was measured for the 2007 holes, with the exception of holes at the end of the program, for which azimuth was also measured. Dip was surveyed for all 2012 holes using a downhole camera. The 2012 diamond tails were surveyed using gyroscopic methods. For the 2015 program, drill collars were positioned by tape and compass from existing holes, or by handheld GPS. One inclined hole was oriented using a compass, sighter pegs and a clinometer. The 2016 and 2017 collars were picked up by the site surveyor using a DGPS.

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Downhole orientation for these holes was measured using a Reflex EZ-SHOT tool.

Sampling and Sub-Sampling Techniques

2021 drilling of 21 diamond drill holes by HRZ produced core for geotechnical testing and bulk density measurements, as well as lithology logging and assaying. Half of the core was sampled, and the remaining half was transferred to permanent storage. The core was predominantly sampled at 1.0m intervals, with some sampling undertaken on geological intervals from 0.3m to 1.0m.

The RC samples were obtained by cone splitter (1.5kg – 2.0kg) and were used for lithology logging and assaying. Samples collected in mineralisation were all dry. All recent collar locations have been surveyed using a DGPS accurate to approximately ±10mm.

Diamond drill core collected by HRZ was HQ3 (2021) and NQ2 (2023) size. Continuous downhole surveying was carried out with digital cameras, at approximately 5m downhole intervals. Magnetically affected azimuth readings have been estimated to reflect downhole trends.

Historical Sampling

Historical drilling of 27 RC holes was completed between 1986 and 2006. The metadata pertaining to the sub-sampling collection methodology is considered incomplete.

In 2007 Empire completed 78 RC holes using a 135mm hole diameter face-sampling hammer and bit, and 4 diamond holes using an HQ size bit to 40m depth and an NQ size bit to the end of the hole. All holes were surveyed using DGPS.

Between 2008 and 2013 Brimstone drilled 26 RC holes using a face-sampling hammer bit, with two holes completed with an NQ diameter diamond tail. Brimstone noted some wet RC samples due to groundwater inflow; however, the wet samples were typically located in the hanging wall above the mineralisation. The diamond tails had an average recovery of 93%. All holes were surveyed using real-time kinematic GPS (RTKGPS). Between 2015 and 2017 Empire drilled another 8 RC holes and 10 diamond holes. The sampling methodologies were similar to Empire's 2007 program.

The historical sampling data comprised:

- 16 diamond drill holes ranging in depth from 95m to 347m, with an average depth of 207m.
- 137 RC holes ranging in depth from 17m to 230m, with an average depth of 90m. The RC samples were generally noted as dry 1m downhole intervals. Stainless steel rods were generally used at the base of the RC percussion rod string to obtain reasonably accurate downhole surveys in the inner tube.

For all historical RC programs, chips were collected at 1m intervals, via the cyclone, into sample bags. For most samples a rotary or cone splitter was used to also collect a smaller sample at the same time. Individual 1m samples were dispatched if the material was obviously mineralised, otherwise composites were created for dispatch by combining 4 consecutive samples. If a 4m composite sample returned an assay above a designated threshold, then the large sample was re-speared or the rotary splitter sample was taken and submitted individually. Dispatch samples were generally between 2.5kg and 4kg and were then processed at the laboratory to produce 30g, 40g or 50g sub-samples. It was specifically noted for the 2017 program that the cyclone was cleaned between rod changes to minimise cross-contamination of samples and that there was a visual

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correlation between recovery and mineralisation, indicating minimal potential for sampling bias.

The RC chips were logged geologically for lithology, mineralisation, veining, alteration and/or weathering.

The diamond drill core was immediately placed in core boxes and transported to the core storage area. The core was then logged for lithology, mineralisation, veining, alteration, weathering and/or geotechnical features, and marked-up for sampling intervals. Selected sample intervals were halved (the 2017 core was halved at a laboratory facility in Kalgoorlie, the rest was done on site), and then dispatched for preparation and analysis. Sub-samples between 30g and 50g were selected at the laboratory. Standards and blanks were dispatched with samples from the 2012, 2015 and 2017 programs.

Sample Analysis Method

HRZ DD samples were submitted to Intertek Genalysis (Perth) and RC samples were submitted to Jinnings Testing and Inspection (Kalgoorlie) for analysis. Samples were dried, crushed and pulverised to 90% passing 75µm. They were then split to a 50g charge weight for fire assay. DD samples were analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (to 0.005ppm Au detection limit). RC samples were analysed by AAS (0.01 99m detection limit)

Commercially prepared, predominantly matrix-matched low, medium and high value certified reference Quality Assurance and Quality Control (QAQC) standards were inserted at a rate of 1 in 20 into the sample stream. These techniques are industry standard for gold and are considered appropriate.

Historical Analysis

Methodology information was incomplete for 27 RC holes drilled in the period between 1986 and 2006.

Drill samples were prepared and analysed at accredited commercial laboratories in Western Australia.

Empire's sample methodology comprised the following:

- Samples were dried. Any sample over 3.5kg in weight was riffle split.
- All samples were then pulverised to nominal 75µm.
- All samples were assayed for gold by fire assay using a lead collection technique and a 50g sample charge weight, and detection limits of 0.01–2,000 ppb.
- Final readings were done by AAS or ICP.
- With the exception of the 2007 assays, standards and blanks were included at a rate of approximately 1 in 12 routine samples, with generally acceptable results.
- Duplicate sampling was used as QAQC for RC drilling in 2007 and 2016, with acceptable results.
- The 2007 sample analysis was validated using an umpire laboratory and SFA vs FA comparisons.

Brimstone's sample methodology comprised the following:

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- Samples were dried. Any sample over 3.5kg in weight was riffle split.
- All samples were then pulverised to nominal 75µm.
- All samples were assayed for gold by fire assay using a lead collection technique and a 50g sample charge weight, and detection limits of 0.01–2,000ppb.
- Final readings were done by AAS.
- Standards and blanks were included at a rate of approximately 1 in 12 routine samples. There was some evidence of bias of the lower grade standard (1.3g/t), but results were generally acceptable.

Geology and Geological Interpretation

The Pennys Find deposit lies within the Gindalbie Domain of the Kurnalpi Terrane, approximately 50km northeast of Kalgoorlie.

The Gindalbie Domain is a layered sequence of supracrustal rocks that have been deformed, metamorphosed and intruded by granitic rocks and comprises three key units. The basal unit consists of a tholeiitic suite comprising basalt, komatiite and calc-alkaline volcanic rocks and is the same basal unit that occurs in the adjacent Kurnalpi Domain. This unit is unconformably overlain by a bimodal suite of mafic and felsic volcanic rocks referred to as the Gindalbie Volcanics. Both the basal suite and the Gindalbie Volcanics have been intruded by mafic to intermediate sills and dykes. The uppermost unit is separated from the underlying Gindalbie Volcanics by an unconformity and consist of (mostly) coarse clastic sedimentary rocks, which have been named the Pennys Dam Conglomerate, after the outcrop at Pennys Dam.

Deformation has occurred during several events and has resulted in complex refolding of earlier folds and extensive shearing and faulting at local and regional scales. Gold mineralisation formed during a late deformational event.

The Emu Fault is a major regional structure, and key mineralisation control, at the Pennys Find Project. This is a major regional shear zone that extends approximately 200km northwards to the Leonora region, where it merges with the Keith-Kilkenny Fault. The Emu Fault has a generally north–south trend and underlies the eastern part of the projected area. The Pennys Dam Conglomerate does not occur west of the Emu Fault.

Gold mineralisation in the Pennys Find Project is associated with shear zones interpreted as splays off the Emu Fault. Primary mineralisation is contained within a shear zone informally referred to as the Pennys Find Shear Zone. The best mineralisation occurs in a 230m section of the shear zone that trends north–northwest, dips toward the east and is close to the contact between volcanic rocks (hanging wall) and shale (footwall). The mineralised zone has an average thickness of 9m and contains a number of mineralised quartz veins varying from 30cm to 11m in thickness.

Interpretations of domain continuity were initially undertaken in Leapfrog3D™ software, with mineralisation intercepts correlating to individual domains manually selected prior to creation of a vein model. Interpretation was undertaken by HRZ incorporating site-based observations and the current understanding of geology and mineralisation controls.

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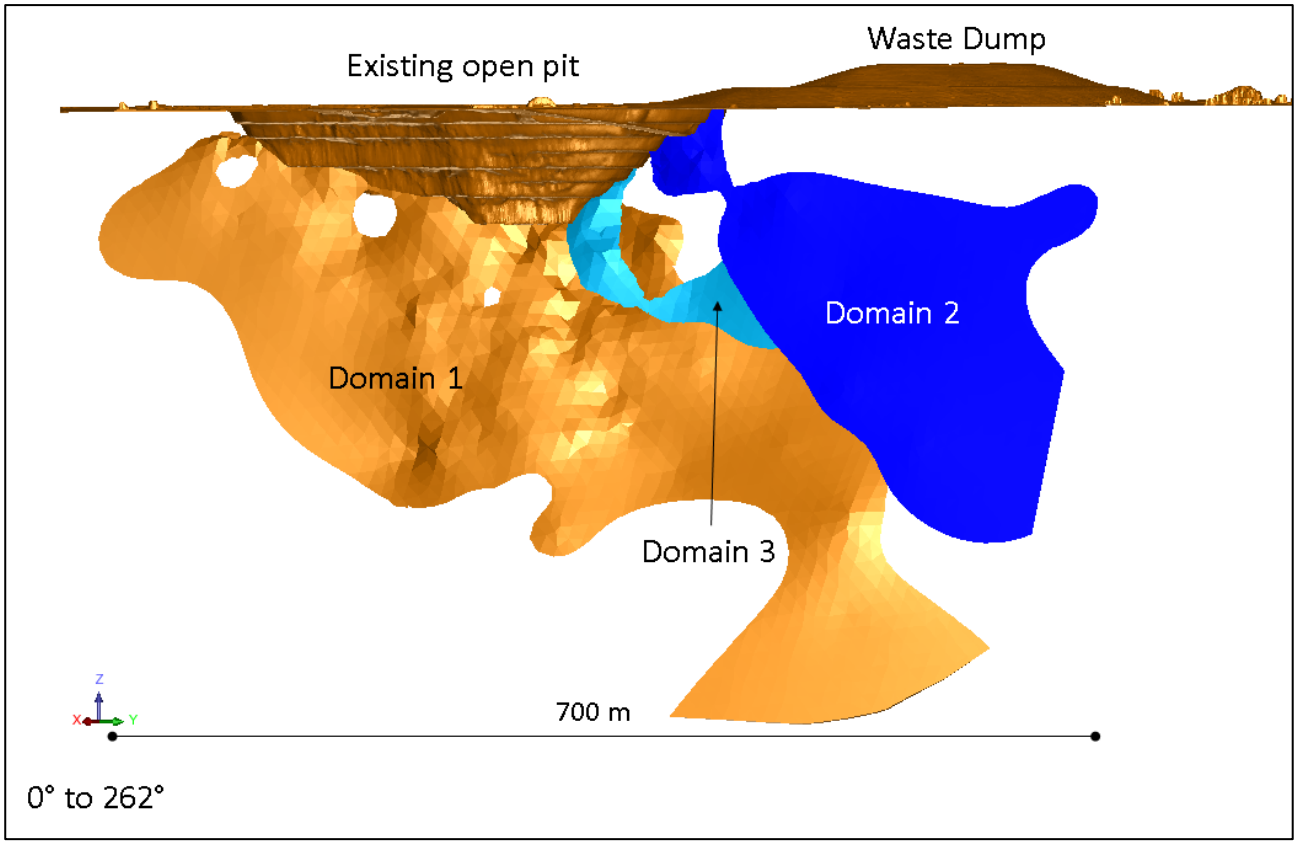
Following this, a total of three mineralisation domains (Figures 2 and 3) were delineated, underpinned by:

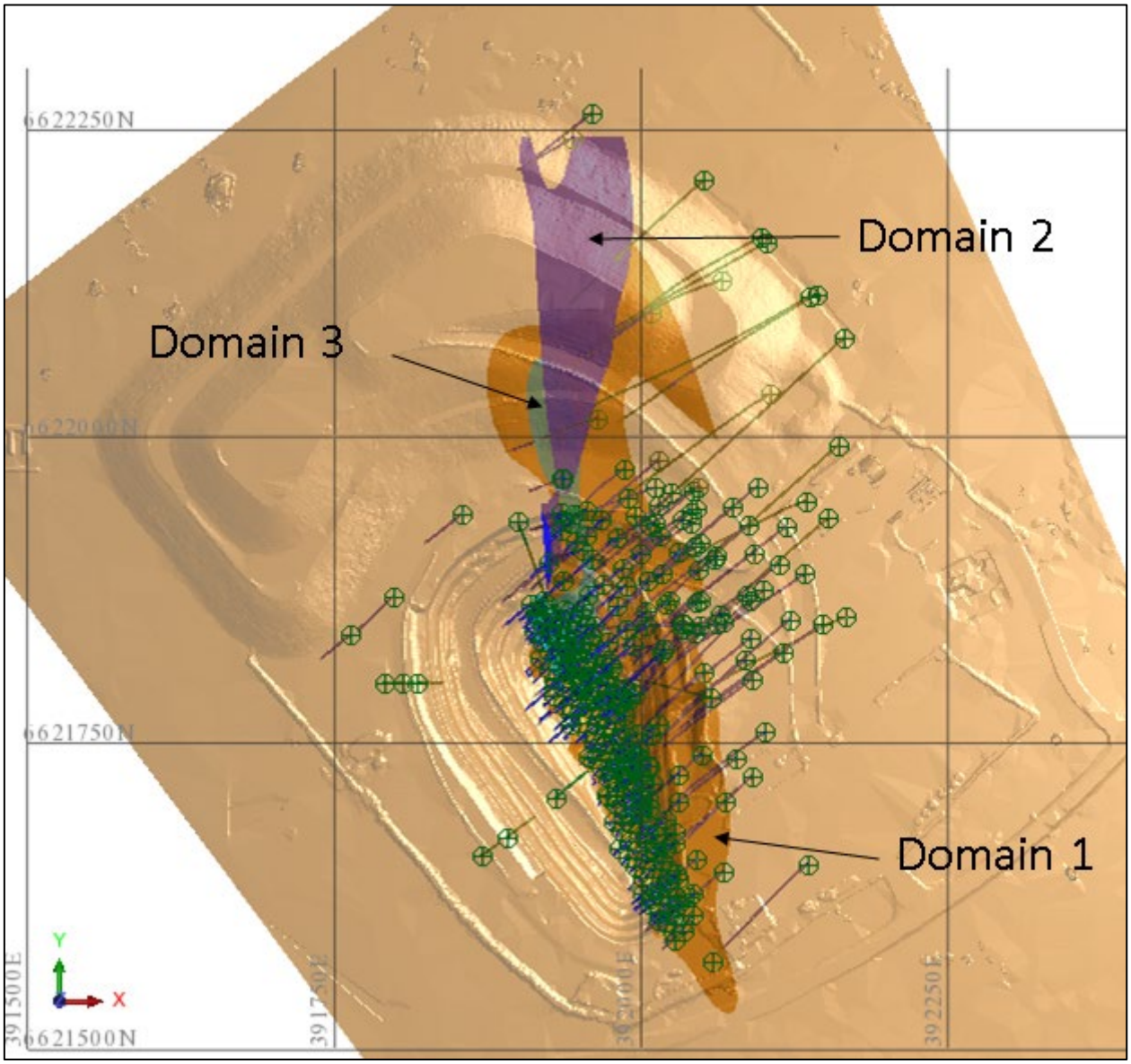
- Geological information on lithology and quartz veining
- Historical interpretations, in-pit dig ore blocks and surface mapping
- Nominal 1.5g/t gold grade; this value was based on Exploratory Data Analysis (EDA) of mineralisation sample population as well as visual review of the mineralisation tenor and strike, and dip continuity.

Figure 2: *Long section of Pennys Find deposit (azimuth 262˚) showing mineralised domains, topography and pit void.*



Domain 1 contains most of the mineral resource with good drilling support. Domain 2 is a subparallel lode, possibly a splay, that to date is only represented in limited drilling. Domain 3 is similarly a subparallel lode, but with very poor drilling support.

Figure 3: *Plan section of Pennys Find deposit showing drill hole traces, mineralisation domains and open pit void.*



In instances where the intercept gold value was below the nominal cut-off, but mineralisation continuity was supported by veining and alteration, the intercept was included in the domain due to the commodity and the style of deposit.

Visual analysis indicated the presence of a high-grade plunge component associated with a thickening and flexure of the mafic-sedimentary contact. This plunge and its relationship to vein width was confirmed during Exploratory Data Analysis (EDA) and underpinned interpolation of metal direction during estimation.

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Estimation Methodology

A two-dimensional (2D) Ordinary Kriging interpolation approach was selected for the domains to address some of the main issues encountered when estimating narrow vein mineralisation, such as Pennys Find, which were:

- Additivity issues due to non-uniform support and resulting grade bias. Instances of highly variable individual intercepts (e.g. 0.3m to 11m) which would be difficult to incorporate and represent statistically using downhole composites of equal lengths (e.g. 0.5m, 1.0m or 2.0m)
- Varying mineralisation geometry across lode, down dip and along strike.

Assumptions discussed and tested during the estimation include:

- The assumed intrinsic correlation between grade and true width (TW) was tested and met during variogram analysis.
- 2D estimation technique assumes full horizontal extraction of the modelled vein.

The 2D interpolation approach used for the MRE varies from a three-dimensional approach (3D) in that estimation of both an accumulation variable (intercept gold composite multiplied by TW) and the TW variable, is undertaken in a 2D plane using identical variogram and search parameters to ensure consistency for subsequent back-calculation of gold block grades.

The RC and DD samples were composited for the full width of the domain intercept, followed by trigonometric calculation of TW using the orientations of the drill hole intercept and ore domain. A gold accumulation variable was then calculated by multiplying the intercept grade by TW.

Samples from RAB drilling and water bore drill holes were excluded from all compositing processes and subsequently the MRE outcomes.

Statistical analysis undertaken on accumulation, width and grade variables. Evidence for further sub-domaining of composite data by weathering or hole type, for the purposes of interpolation, was not supported by statistical and spatial analysis.

Assessment and application of top-cutting for the 2D estimate was undertaken on the gold accumulation variable in the individual domains. A top cut of 100 was applied to the au accumulation variable in Domain 1.

No top-caps were applied to the North Lode (Domain 2) or Bifurcation Lode (Domain 3).

Geostatistical analysis was undertaken on the gold accumulation variables in 2D space for the Main Lode domain, with robust variogram models delineated plunging 40° to 360°.

Ordinary Kriging (OK) grade interpolation of the top cut gold accumulation and TW was undertaken in pseudo-2D space using OK (GEOVIA Surpac™) at the parent cell size of 10Ym × 10Zm. The parent cells are the full width of the model. Considerations relating to appropriate block size include drill hole data spacing, conceptual mining method (SMU analysis), variogram continuity ranges and search neighbourhood optimisations.

The mineralisation interpretation was used as a hard boundary for volume delineation.

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Once the interpolation was optimised and validated, gold parts per million (ppm) values for each block were calculated by dividing interpolated gold accumulation by interpolated TW, whereby for each block:

- Block gold ppm = Block gold accumulation value/Block TW value

As the parent cell covers the full width of the lode, all blocks across the lode and within the parent cell have the same gold grade.

The 3D block model was coded with density, geology, depletions, and classification, prior to global, local validations and evaluation for Mineral Resource reporting.

Validation of the gold accumulation, TW estimations and gold ppm back-calculation was completed by statistical and visual inspections in 2D and 3D space.

Only DD and RC data was used during the estimation. Average sample spacing is variable, ranging from 10m × 10m within 50m of topographic surface to a nominal 20m × 20m in the upper portions of the underground resource and 50m × 50m at depth (approximately greater than 200m).

Classification Criteria

Mineral Resources were classified as Indicated and Inferred to appropriately represent confidence and risk with respect to data quality, drill hole spacing, geological and grade continuity, mineralisation volumes, historical mining activity, tenement boundaries as well as metal distribution (Figure 4). Additional considerations were the stage of project assessment, amount of diamond drilling, current understanding of mineralisation controls and selectivity within an underground mining environment.

Indicated Mineral Resources were defined where a moderate level of geological confidence in geometry, continuity and grade was demonstrated.

Inferred Mineral Resources were defined where a low to moderate level of geological confidence in geometry, continuity and grade was demonstrated.

Most of Domain 1 has sufficient data support and confidence to be classified as Indicated, with the distal lower extension classified as Inferred. Domain 2, with limited drilling support is classified as Inferred. Domain 3 has been left unclassified (Figure 4).

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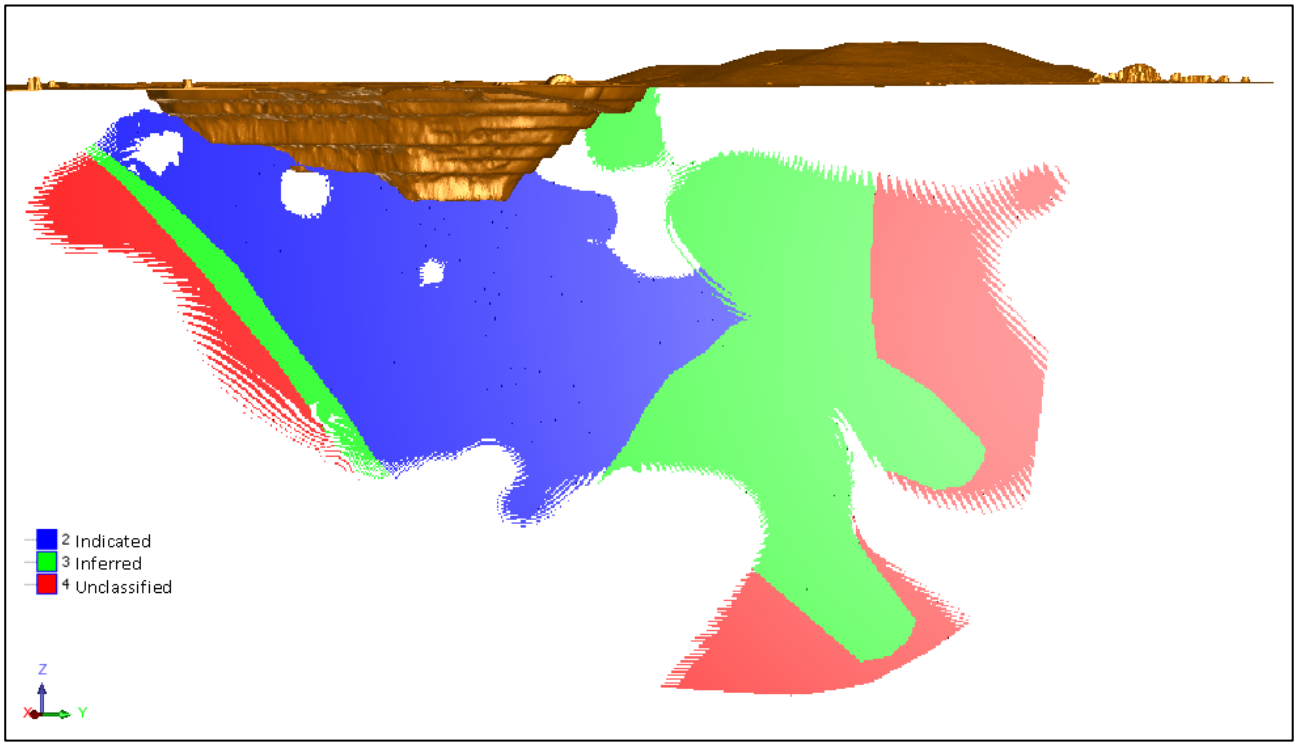
Figure 4: *Long section view of Ore Classification (Blue is Indicated, Green is Inferred ore)*



Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The MREs do not account for selectivity, mining loss and dilution. This MRE update includes Inferred Mineral Resources which are unable to have economic considerations applied to them, nor is there certainty that further sampling will enable them to be converted to Measured or Indicated Mineral Resources.

The reported Mineral Resource for underground was constrained at depth by the available drill hole spacing outlined for Inferred classification.

Upper limit constraints on the Mineral Resources were demarcated by the pit void at 70m from surfaces (260m RL).

Mineralisation within the model which did not satisfy the criteria for Mineral Resource remained unclassified. No estimation or assumptions with respect to deleterious elements, non-grade variables or by-products was made.

Cut-off Grade

The Mineral Resource cut-off grade for reporting of underground global gold resources at Pennys Find was 1.5. g/t. This was based on consideration of grade-tonnage data, selectivity and potential underground mining method, and benchmarking against comparable sized deposits of similar mineralisation style and tenor. Tonnages were estimated on a dry basis.

Bulk density values at Pennys Find were derived from measurements taken from 24 diamond drill

holes, with a total of 227 samples collected across the deposit. The samples were all measured on site using the water immersion method on fresh rock core. Statistical analysis indicated a variation of bulk density values between weathering state and lithology. The following bulk density mean values were applied within the MRE:

- Fresh:
  - Mafic: 2.82t/m^3
  - Quartz (mineralisation): 2.68t/m^3
  - Sedimentary: 2.76t/m^3.

Project History and Historical Mineral Resources

The underground Mineral Resource for Pennys Find was previously reported as follows:

- Empire Resources Limited, 13 December 2017: 248kt at 7.04g/t gold for 56,000oz (reported at a 1.5g/t cut-off grade).
- Empire Resources Limited, 28 November 2016: 170kt at 5.4g/t gold for 29,500oz (reported at a 1.5g/t cut-off grade).
- Horizon Minerals (Entech), November 2021: 250kt at 5.22 g/t gold for 42,000oz (reported at a 1.5g/t cut-off grade).

Assessment of Reasonable Prospects for Eventual Economic Extraction

HRZ considers the Pennys Find MRE, as reported, as meeting the criteria for *reasonable prospects for eventual economic extraction* based on the following considerations.

Mining

The Pennys Find deposit open pit was mined to completion in 2018 and consists of an excavation of approximately 85m in depth. The open pit operations targeted and excavated the main Pennys Find lode, coincident with thickening and flexure of the mafic-sedimentary contact and minor supergene enrichment in oxide and transitional material.

The MRE consists of an underground resource, from 85m to approximately 300m below surface. The reported Mineral Resource for underground was constrained both laterally, and at depth, by the available drill hole spacing outlined for Inferred classification.

Within an underground mining framework of mechanised conventional underground longhole mining methods and assuming access to the Mineral Resources would be possible from the base of the completed pit, HRZ considers the vertical extent of the Mineral Resources would fall within the definition of *reasonable prospects for eventual economic extraction*.

No dilution or cost factors were applied to the estimate.

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Metallurgy

Metallurgical testwork undertaken in 2015 [3] on fresh material to determine gold recovery (by gravity and cyanide leaching) concluded that gold occurs in free-milling form and is readily liberated. The proportion of gravity recoverable gold is reported as very high.

It was noted that recovery of open pit, oxide and transitional material [1] was 92.4%, with a high gravity recoverable gold component.

No evidence of metallurgical amenability risks were noted during documentation reviews.

No metallurgical recovery factors were applied to the Mineral Resources or Resource Tabulations.

[1] *ERL. Australian Securities Exchange announcement. Financial Results from Pennys Find Open Pit Operations. 25 July 2018.*

[2] *HRZ. Australian Securities Exchange announcement. Horizon Enters Development Joint Venture for the Pennys Find Underground Gold Project. 30 November 2020, Appendix 2. Page 31.*

[3] *Sceresini, B. Pennys Find Metallurgical Study, prepared for Empire Resources Limited. 7 October 2015.*

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Horizon Minerals Limited – Summary of Gold Mineral Resources

Project	Cutoff	Measured			Indicated			Inferred			Total		
	Au g/t	Mt	Au g/t	Oz	Mt	Au g/t	Oz	Mt	Au g/t	Oz	Mt	Au g/t	Oz
Boorara OP	0.5	1.28	1.23	50,630	7.19	1.27	294,140	2.6	1.3	103,470	11.03	1.26	**448,240**
Golden Ridge	1.0				0.47	1.83	27,920	0.1	1.7	2,800	0.52	1.82	**30,720**
Golden Ridge North	0.8				0.65	1.15	24,260	0.77	1.30	32,340	1.42	1.23	**56,600**
Cannon UG	1.0				0.19	4.80	28,620	0.1	2.3	3,450	0.23	4.29	**32,070**
Monument	0.8							0.39	1.97	25,000	0.39	1.97	**25,000**
Pennys Find	1.5				0.30	5.19	51,000	0.12	3.0	12,000	0.43	4.57	**63,000**
Kalpini	0.8				1.40	2.43	108,000	0.5	2.0	31,000	1.87	2.33	**139,000**
Rose Hill UG	2.0				0.33	4.50	47,100	0.2	4.8	27,800	0.51	4.60	**74,900**
Rose Hill OP	0.5	0.19	2.00	12,300	0.09	2.00	6,100				0.29	2.00	**18,400**
Jacques-Peyes	0.8				0.97	2.59	81,000	0.8	2.0	49,000	1.74	2.32	**130,000**
Teal	1.0				1.01	1.96	63,680	0.8	2.5	64,460	1.81	2.20	**128,140**
Crake	0.8				1.33	1.47	63,150	0.1	1.3	3,300	1.42	1.46	**66,450**
Coote	1.0							0.4	1.5	21,000	0.42	1.54	**21,000**
Capricorn	0.5							0.7	1.2	25,500	0.70	1.20	**25,500**
Baden Powell	0.5							0.6	1.2	23,000	0.60	1.20	**23,000**
Total		**1.47**	**1.33**	**62,930**	**13.93**	**1.78**	**794,970**	**8.18**	**1.61**	**424,120**	**23.38**	**1.71**	**1,282,020**

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Confirmation

The information in this report that relates to Horizon's Mineral Resources estimates is extracted from and was originally reported in Horizon's ASX announcements "Intermin's Resources Grow to over 667,000 Ounces" dated 20 March 2018, "Rose Hill firms as quality high grade open pit and underground gold project" dated 8 December 2020, "Updated Boorara Mineral Resource Delivers a 34% Increase In Gold Grade" dated 27 April 2021, "Pennys Find Resource Update" dated 29 December 2023, "Updated Crake Resource improves in quality" dated 7 September 2021, "Jacques Find- Peyes Farm Mineral Resource update" dated 15 September 2021 and "Kalpini Gold Project Mineral Resource Update" dated 28 September 2021, each of which is available at www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings in relation to those Mineral Resources estimates or Ore Reserves estimates have not been materially modified from the original market announcements.

Horizon Minerals Limited – Summary of Silver / Zinc Mineral Resources

Nimbus All Lodes (bottom cuts 12g/t Ag, 0.5% Zn, 0.3g/t Au)

Category	Tonnes	Grade	Grade	Grade	Ounces	Ounces	Tonnes
	Mt	**Ag (g/t)**	**Au (g/t)**	**Zn (%)**	**Ag (Moz)**	**Au ('000oz)**	**Zn ('000t)**
Measured Resource	3.62	102	0.09	1.2	**11.9**	10	**45**
Indicated Resource	3.18	48	0.21	1.0	**4.9**	21	**30**
Inferred Resource	5.28	20	0.27	0.5	**3.4**	46	**29**
Total Resource	12.08	52	0.20	0.9	**20.2**	77	**104**

Nimbus high grade silver zinc resource (500g/t Ag bottom cut and 2800g/t Ag top cut)

Category	Tonnes	Grade	Grade	Ounces	Tonnes
	Mt	**Ag (g/t)**	**Zn (%)**	**Ag (Moz)**	**Zn ('000t)**
Measured Resource	0	0	0	**0**	**0**
Indicated Resource	0.17	762	12.8	**4.2**	**22**
Inferred Resource	0.09	797	13.0	**2.2**	**11**
Total Resource	0.26	774	12.8	**6.4**	**33**

Confirmation

The information is this report that relates to Horizon's Mineral Resources estimates on the Nimbus Silver Zinc Project is extracted from and was originally reported in Intermin's and MacPhersons' ASX Announcement "Intermin and MacPhersons Agree to Merge – Creation of a New Gold Company Horizon Minerals Ltd" dated 11 December 2018 and in MacPhersons' ASX announcements "Quarterly Activities Report" dated 25 October 2018, "New High Grade Nimbus Silver Core Averaging 968 g/t Ag" dated 10th May 2016 and "Nimbus Increases Resources" dated 30th April 2015, each of which is available at www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings in relation to those Mineral Resources estimates have not been materially modified from the original market announcements.

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Forward Looking and Cautionary Statements

Some statements in this report regarding estimates or future events are forward looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward looking statements include, but are not limited to, statements preceded by words such as “planned”, “expected”, “projected”, “estimated”, “may”, “scheduled”, “intends”, “anticipates”, “believes”, “potential”, “could”, “nominal”, “conceptual” and similar expressions. 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 interpretations 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 to differ from estimated results, and may cause the Company’s actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain any additional mine licenses, permits and other regulatory approvals required in connection with mining and third party processing operations, competition for among other things, capital, acquisition of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rate, currency and interest fluctuations, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, the ability to secure adequate financing and management’s ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward looking statements will prove to be correct.

Statements regarding plans with respect to the Company’s mineral properties may contain forward looking statements in relation to future matters that can only be made where the Company has a reasonable basis for making those statements.

This announcement has been prepared in compliance with the JORC Code (2012) and the current ASX Listing Rules.

The Company believes that it has a reasonable basis for making the forward looking statements in the announcement, including with respect to any production targets and financial estimates, based on the information contained in this and previous ASX announcements.

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Appendix 1 – Pennys Find Gold Project

JORC Code (2012) Table 1

Mr David O'Farrell, Exploration Manager compiled the information in Section 1 and Section 2 of the following JORC Table 1 and is the Competent Person for those sections. Mr Stephen Godfrey, the Resource Development Manager for Horizon Minerals Ltd has compiled the information in Section 3 and is the Competent Person for this section. The following Table and Sections are provided to ensure compliance with the JORC Code (2012 edition) requirements for the reporting of Mineral Resources. For further detail, please refer to the announcements made to the ASX by Horizon Minerals Ltd (2019) and Orminex Ltd relating to the Pennys Find gold project.

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.*	Pennys Find has been sampled using Reverse Circulation (RC) and Diamond Drilling (DDH). Historical sampling also included Air Core (AC) and Rotary Air Blast (RAB) drill holes. For the recent RC drilling, 1 m samples were taken using a cone splitter. 4 m composite samples of the 1 m intervals were taken with a 450 mm x 50 mm PVC spear thrust to the bottom of the sample bag. If analysis of the 4 m composite returned a grade above a nominal 0.2 g/t Au cut-off, the individual 1 m samples for the composite interval were analysed. Average sample weights about 1.5 kg – 2 kg. At Pennys Find, the RC sampling was restricted to pre-collars with no significant ore expected. The HQ3 diamond drill core was sawn in half lengthwise and one half submitted for Au analysis. For all historical RC programs, chips were collected at 1 m intervals, via the cyclone, into sample bags. For most samples a rotary or cone splitter was used to also collect a smaller sample at the same time.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For RC drilling regular air and manual cleaning of cyclone was undertaken to remove hung up sample where present. Standards & replicate assays taken by the laboratory. Duplicate field samples were submitted from the RC drilling. Commercial standards (CRM) were submitted with all samples sent for analysis. Based on statistical analysis of these results, there is no evidence to suggest the samples are not representative. Sampling of the diamond core was consistent with one side of the split core being sent for assay.
	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	Historical drilling was managed by qualified geologists. For the 2021 drilling mineralisation was identified and logged by a Senior Geologist with experience at Pennys Find. The designated ore zone was generally identifiable visually. In addition, hanging wall and footwall samples extending over several metres were taken to check for any grade halo and ensure mineralisation boundaries were identified correctly.

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Criteria	JORC Code explanation	Commentary
	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.	
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).*	RC drilling was undertaken with a 142 mm face sampling hammer bit. 2021 HQ3 (2.406 inch core) Diamond drilling used triple tube to help core recovery. 2023 Diamond drilling used NQ2 (2 inch) size core. Historical drilling was done using RC, RAB, AC and DDH. RC drilling used a 135 mm face sampling hammer. DDH were a mix of HQ and NQ.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	RC sample recovery and metreage was assessed by comparing drill chip volumes (sample bags) for individual metres. Estimates of sample recoveries were recorded. Routine checks for correct sample depths were undertaken every RC rod (6m). RC samples were visually checked for recovery, moisture and contamination. The cyclone was routinely cleaned ensuring no material build up. DDH recovery was logged over every core run (typically 3m), no significant losses were noted inside the ore zone. No sampling issues were reported for the historical drilling.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Under normal drilling conditions Horizon believes a good, representative sample is being obtained. Some bias may occur where sample recovery is poor or very wet. These instances are recorded in the geological logging. Only RC and DDH samples from 2007 onwards were used in the resource estimation.
	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.	No sample bias has been identified to date.
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.*	RC drill chips are logged at 1 m intervals. Drill core is logged by geological interval. Logging is done on standard logging forms and transferred to a digital database once back at the office. Drill core was geotechnically logged.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Geological logging was qualitative in nature. Geotechnical logging is both quantitative and qualitative.
	The total length and percentage of the relevant intersections logged.	All RC chip samples and all DDH core intervals were logged.

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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.*	Half core was sampled at geological intervals.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	For the RC drilling, 1 m samples were taken using a cone splitter. 4 m composite samples of the 1 m intervals were taken with a 450 mm x 50 mm PVC spear thrust to the bottom of the sample bag. If analysis of the 4 m composite returned a grade above a nominal 0.2 g/t Au cut-off, the individual 1 m samples for the composite interval were analysed. The RC samples collected were all predominantly dry. Exceptions were recorded on logs.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Horizon considers the RC and DDH sampling and sample preparation appropriate for the type of mineralisation being investigated.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	In recent RC drilling duplicate 1 m samples are taken every 20 m. 4 m and 1m samples were analysed by Jinnings Testing and Inspection (Kalgoorlie). The 1 m samples were consistent in size weighing 1.5 kg -2.0 kg. Historical drilling has QAQC samples every 12 to 20 drill sample intervals. DDH half core was sampled, packed and sent to Intertek Labs in Perth. Intervals were dependant on geological boundaries and typically from 0.4 m – 1.0m long. Historical samples were prepared and analysed by a variety of Kalgoorlie and Perth laboratories. All laboratories are NATA accredited.
	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.	Field duplicates were routinely taken to monitor laboratory sample preparation precision. Horizon intermittently resubmits samples to a referee laboratory and CRMs are submitted with all samples to monitor laboratory accuracy. Once samples arrived in Kalgoorlie or Perth, further work including replicates and QC was undertaken at the laboratory. Grind size is routinely recorded and monitored.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The quartz rich mineralisation is located on the contact between a fresh shale and basaltic unit. The sample sizes are considered by Horizon to be appropriate for this 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.*	The 1 m and 4 m RC samples were assayed by Fire Assay (FA50) with ICP finish. DDH ore samples were analysed by Screen Fire analysis (SFCO/OE), whilst non ore samples were analysed by fire assay (SFF50-1). These techniques are considered appropriate for this type of mineralisation and produce a near total metal content result.
	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 assay tools were used at Pennys Find.

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Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Horizon routinely use field duplicate, CRMs and blank samples in the QA process. The laboratory uses internal lab standards and replicate samples as part of their QA/QC. QC analysis indicated no bias and accurate results.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Recent diamond drill core logging was supervised by a senior geologist familiar with the Pennys Find deposit and mineralisation.
	The use of twinned holes.	No twin holes were intentionally drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Historical drilling data has been validated against historical records where available. The historical data has been imported into HRZ's central Geobank (Micromine) database. All recent drill data is imported into the HRZ Geobank database as received and original Analysis Data is stored digitally as PDF and XLS files on the Horizon servers in Perth and Kalgoorlie. File servers are routinely backed up off site.
	Discuss any adjustment to assay data.	No data were adjusted. Data pre-2007 is not used in the resource estimate.
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.*	All recent drill collar positions at Pennys Find were located by a qualified surveyor and accurate to ±10 mm. The holes were then picked again once drilling operations ceased. Down hole surveys were taken. Historical drilling is reported as having been surveyed, mostly on a local grid.
	Specification of the grid system used.	Grid - MGA94 Zone 51. The transformation coordinates from local to MGA grids are known form statutory reporting.
	Quality and adequacy of topographic control.	Topography is very flat. A high-quality digital terrain model exists for the area.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Drilling is regularly spaced across the deposit at a nominal 20 m spacing.
	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 hole spacing was determined by Horizon to be sufficient when combined with confirmed historic drilling results to define the mineralisation. In addition, information from previous mining supports the interpreted geological and grade continuity. Data density is appropriate for the resource estimation and classification applied.
	Whether sample compositing has been applied.	Samples have been composited over mineralised intervals for the reporting of drilling results. Preliminary RC sampling is done on 4 m composites. For any composite returning Au grade above a threshold, the individual 1 m intervals are assayed and reported. Historically 1 m samples were assayed where quartz veining was identified in the sample.

Criteria	JORC Code explanation	Commentary
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.*	At Pennys Find, holes were angled at approximately 60° and intersect the mineralised lodes at close to perpendicular.
	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 relationship between the drilling orientation and the orientation of mineralised structures is not considered to have introduced a sampling bias.
The measures taken to ensure sample security	*The measures taken to ensure sample security.*	Recent RC drill samples and drill core were under the control of Horizon personnel at all times. Core trays were usually collected daily by Horizon and photographed before transport to the Nimbus site for processing. Visitors need permission enter the Nimbus site. Once cut, the samples were labelled, bagged, secured and transported to Penns Cartage in Kalgoorlie for transport to Perth for analysis. Dispatch and consignment notes were delivered and checked for discrepancies.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No Audits have been commissioned. Sample practices are monitored by senior Horizon geologists.

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SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria listed in section 1 also apply to this section.)

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.*	Pennys Find has been in Mining Lease M27/156 since 1992. Horizon acquired a 50% interest in the project from joint venture partner Orminex Ltd (ASX: ONX) for $1.5M and agreed to sole fund the first $1M in pre-development expenditure with the joint venture partners funding the project on a 50:50 basis thereafter. Royalties are payable to Empire Resources that include a 5% NSR on the first 5,000 oz of Au produced and thereafter a 2.5% NSR royalty for life of mine. Prior to 1992, Pennys Find was in P27/661.
	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 tenements are in good standing and no known impediments exist.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Previous work in the area has been undertaken by Defiance Mining N.L., Black Swan Gold Mines Ltd, Croesus Mining N.L., Hunter Exploration, Rubystar Nominees Pty Ltd, White Gold Mining Ltd, Empire Resources Ltd., Brimstone Resources Ltd and Orminex Limited, as operators.
Geology	*Deposit type, geological setting and style of mineralisation.*	Pennys Find is Archaean contact mineralisation between a hanging-wall basalt and sedimentary footwall rocks. The mineralisation is typically in small quartz veins with variable amounts of sulphide mineralisation.
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.*	Horizon ASX announcement of 14 April 2021 details the drilling undertaken towards the resource update.
	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.	No information has been intentionally excluded.

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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.*	The reporting of drilling results uses length weight average grades for mineralised intersections.
	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 reporting of drilling results uses length weight average grades for mineralised intersections.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent calculations were applied.
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').*	Drill intercepts and true widths appear to be close to each other, or within reason allowing for the minimum intercept width of 1 m. Horizon estimates that the true width is variable but probably around 75% of most intercept widths.
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*	See body of announcement.
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.*	Exploration results are not being reported in detail. All exploration data has been incorporated into the resource update.
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;*	Some historic comprehensive metallurgical work has been completed at Pennys Find, however HRZ is currently planning some new metallurgy on the ore zone and underlying black shale. Free gold has been observed in the core. Pennys Find has previously been mined by open pit. Historical exploration details can be found in previous ASX releases from Empire Resources Limited (ASX; ERL). This includes broader RAB and soil sampling.

	metallurgical test results; 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).*	Underground mining economic assessment will be undertaken. Underground operations will include further drilling to investigate the strike and plunge continuation of the mineralisation.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Commercially sensitive.

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SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

(Criteria listed in section 1, and where relevant in sections 2, also apply to this section.)

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.*	In the field, after geological data is entered into Geobank logging software. The logs are routinely uploaded to the main Geobank database. Data validation routines are run in the logging software and the main database. Unique sample numbers and pre-numbered calico sample bags are used, together with initial 4 m composites of drilling. Geological data is centrally stored in HRZ's Perth office and is managed in Micromine Geobank software. Historical data was verified and checked by HRZ geologists and, along with HRZ's recent drilling,
	Data validation procedures used.	Database checks were completed and included the following: • Checking for duplicate drill hole names and duplicate coordinates in the collar table. • Checking for missing drill holes in the collar, survey, assay and geology tables based on drill hole names. • Checking for survey inconsistencies including dips and azimuths <0˚, dips >90˚, azimuths >360˚, and negative depth values. • Checking for inconsistencies in the "From" and "To" fields of the assay and geology tables. The inconsistency checks included the identification of negative values, overlapping intervals, duplicate intervals, gaps and intervals where the "From" value is greater than the "To" value. Database checks were conducted in MS Excel, MS Access, Micromine, Leapfrog™ and Surpac™ Mining software. Drillhole data was validated against WAMEX data. HRZ has suitable processes and due diligence in place to ensure acceptable integrity of the drill hole data that underpins the Mineral Resource.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Horizon CP's regularly visit the Pennys Find site and manage/supervise the drilling programs.
	If no site visits have been undertaken indicate why this is the case.	N/A
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The geological model for Pennys Find has been developed over a number of years incorporating information from drill data and open pit mining resulting in the creation of a geological interpretation of the mineral deposit which defined the Hanging Wall Mafic and Footwall Shale units. Mineralisation occurs in several mineralised, stacked, lensing quartz veins on this contact.

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Criteria	JORC Code explanation	Commentary
		The contact is well defined by lithological and surface mapping and well supported by a drill density of 20 × 20 m and continuity within the quartz zone over the strike. The mineralised quartz vein is also visible in the pit wall and HRZ understands the vein was also easily defined in the pit floor during mining. Factors which limit the confidence of the geological interpretation include a limited understanding of structural controls on mineralisation and therefore plunge control on the high-grade component of the mineralisation. Factors which aided the confidence of the geological interpretation included historical geological mapping, available orientated drill core, analysis of lithological, veining and alteration controls and some close-spaced drill data within the existing open pit. Although pit mapping was not undertaken during mining, dig ore blocks, are indicative of the vein location in the pit. HRZ considers confidence is high for the geological interpretation, geometry and continuity of the structures that support the MRE. Mineralisation is predominantly contained in quartz veins at the contact between the mafic and sedimentary units. Reverse circulation (RC) and diamond drilling (DD) to date supports the geometry and continuity implied in the MRE classification.
	Nature of the data used and of any assumptions made.	Mineralisation interpretations were informed by 280 RC (inclusive of grade control), and 42 DD holes. Mineralisation within the quartz host lithology was based on a combination of geological logging (veining percentage), the location of the mafic hanging wall and sedimentary footwall contact, and a nominal cut-off grade of 1.5 g/t gold. Visual analysis of high tenor mineralisation showed a relationship between gold tenor, vein thickness and structural flexures. This underlying control on mineralisation was confirmed during Exploratory Data Analysis (EDA) and was used to control the metal direction during estimation. A total of three mineralisation domains were interpreted. Within the mineralised wireframe, if an intercept fell below the nominal cut-off but continuity was supported by geological veining/alteration, the intercept was retained for continuity purposes due to the commodity and the style of deposit.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Alternative mineralisation geometries have previously been compared against indicator based numerical modelling (Leapfrog Indicator RBF Interpolants) at varying cut-offs and probability outcomes. All modelling was underpinned by statistical and spatial (variogram) analysis. These alternative models supported the metal distribution within the interpreted mineralised wireframes (Entech 2021).
	The use of geology in guiding and controlling Mineral Resource estimation.	A lithological model of the mafic and sedimentary host units was generated prior to the mineralisation domain interpretation commencing. The mineralisation geometry and tenor had a strong relationship with the lithology width and structural orientation. The orientation of the

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Criteria	JORC Code explanation	Commentary
		broad mineralised domain was aligned to the contact between the mafic and sedimentary units and mineralisation continuity (as supported by indicator based numerical modelling) supported HRZ's current structural understanding of mineralisation controls and the presence of a high-grade plunge zone. Weathering surfaces were created by interpreting existing drill logging for regolith and oxidation state and were extended laterally beyond the limits of the Mineral Resource model.
	The factors affecting continuity both of grade and geology.	Localised shearing appears to control the gold mineralisation within the quartz veins. Flexures in the host rock were correlated with increased thickness of the mineralisation and high tenor gold assay values.
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.*	Mineralised domains in Pennys Find (3 domains in total) extend over a 700 m strike length. Plan widths are highly variable and range from 0.3 m to 11 m. The depth below surface to the upper limits of the MRE is 70 m (260 mRL). The MRE extends 200 m to a lower limit of ~330 m (~0 mRL). Mineralisation within the model which did not satisfy the classification criteria for the MRE remained unclassified.
Estimation and modeling 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.*	Interpretations of domain continuity were undertaken in GEOVIA Surpac™ software, with mineralisation intercepts correlating to individual domains manually selected prior to creation of a vein model using Leapfrog™ Geo implicit modelling software. Domain interpretations used all available RC and DD data. A pseudo two-dimensional (2D) Ordinary Kriging (OK) interpolation approach was selected for the lodes, to address some of the main issues encountered when estimating narrow vein mineralisation, such as those at Pennys Find, which were: • additivity issues due to non-uniform support and resulting grade bias; instances of highly variable individual intercepts (e.g. 0.3 m to 11.0 m) which would be difficult to incorporate and represent statistically using downhole composites of equal lengths (e.g. 0.5 m, 1.0 m or 2.0 m) • varying mineralisation geometry across lode, down dip, and along strike. RC and DD samples were composited for the full width of the domain intercept, followed by trigonometric calculation of true width (TW) using the orientations of the drill hole intercept and ore domain defined by the Leapfrog reference (midpoint) surface. A gold accumulation variable was then calculated by multiplication of intercept grade by TW. Samples from RAB and water bore drill holes were excluded from all compositing processes and subsequently the MRE outcomes. Statistical analysis was undertaken on accumulation, width, and grade variables, to assist with determining estimation search parameters, top-cuts, etc. Variography analysis of individual domains was undertaken on top cut gold accumulation variables in pseudo-2D space.

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		Considerations relating to appropriate block size include drill hole data spacing, conceptual mining method (SMU analysis), variogram continuity ranges and search neighbourhood optimisations. The final model used a 10Y x 10Z x 400X parent cell size. With the cell constrained by the domain the X dimension became the width of the lode. Grade interpolation of cut gold accumulation and TW was undertaken using OK (GEOVIA Surpac™) at the parent cell size. The mineralisation interpretation was used as a hard boundary for volume delineation. No assumptions were made for metallurgical recovery applied in the MRE estimation or reporting process. After estimation: Gold parts per million (ppm) values for each block were calculated by dividing interpolated gold accumulation by interpolated TW, whereby for each block: • Block gold ppm = Block gold accumulation value/Block TW value Only DD and RC data was used during the estimation. Average sample spacing is variable, ranging from 10 m × 10 m within 50 m of topographic surface to a nominal 20 m × 20 m in the upper portions of the underground resource and 50 m × 50 m at depth (approximately greater than 200 m). Assumptions discussed and tested during the estimation include: • Assumption of intrinsic correlation between grade and TW was tested and met during variogram analysis. • 2D estimation technique assumes full horizontal extraction of the modelled vein. Validation of the gold accumulation, TW estimations and gold ppm back-calculation was completed by global and local bias analysis, statistical and visual.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Check estimates in 3D was undertaken for Domain 1 using Inverse Distance Squared for gold ppm, accumulated gold and TW to confirm estimation integrity. ID2 estimate of Au compares favourably with the Accumulation estimate. Mine productions records pertaining to Pennys Find includes: • Not available for underground. • Open pit data financial results from 25 July 2018 stated production of 138,272 tonnes at 4.47 g/t gold for 18,356 ounces. Entech (2021) estimated a global underground grade of 5.22 g/t gold. Direct comparison of open pit oxide, transitional grade against underground fresh grade is not considered a suitable comparison due to variability between mining diluted SMU and undiluted domain boundaries. However, Entech was comfortable that the MRE global grade presented a block estimate outcome fit for underground feasibility assessment. • Scoping study outcomes from 2016, underpinned by an earlier block model stated undiluted underground grades would be in the vicinity of 5.2 g/t gold (HRZ, Australian Securities Exchange announcement, Horizon Enters Development Joint Venture for the

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		Pennys Find Underground Gold Project, 30 November 2020, Appendix 2, page 31).
	The assumptions made regarding recovery of by-products.	No assumptions with respect to by-products were made.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No estimation for deleterious elements or other non-grade variables was made.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Block dimensions for interpolation were Y: 10 mN, X: 400 mE, Z: 10 mRL with sub-celling of Y: 1.25 mN, X: 0.391 mE, Z: 1.25 mRL to provide adequate domain volume definition and honour wireframe geometry. Considerations relating to appropriate block size include drill hole data spacing, conceptual mining method, variogram continuity ranges and search neighbourhood optimisations. DD and RC data was used during the estimate. Average sample spacing ranges from 20 to 60 m, with a nominal 20–40 m spacing maintained for all classified domains. A three-pass search strategy was employed, with all domains estimated a maximum distance of 50 m for both passes and a reduction of minimum neighbourhood composites from 4 to 2 to 1 applied.
	Any assumptions behind modelling of selective mining units.	No selective mining units were assumed in this estimate.
	Any assumptions about correlation between variables.	No correlated variables have been investigated or estimated.
	Description of how the geological interpretation was used to control the resource estimates.	All domain estimates were based on mineralisation domain constraints underpinned by geological logging (lithology and veining) and a nominal cut-off grade of 1.5 g/t gold. The mineralisation constraints have been used as hard boundaries for grade estimation wherein only composite samples within that domain are used to estimate blocks coded as falling within that domain. The relationship of width to grade was considered a key control of metal distribution in the MRE. Therefore, accumulation variables were used to appropriately reflect this geological control.
	Discussion of basis for using or not using grade cutting or capping.	Assessment and application of top-cutting for the estimate was undertaken on the gold accumulation variable within individual domains. Top-cuts, where appropriate, were applied on an individual domain basis, as outlined below: Main Lode (1). Top-cut = 100 Gold Top Cuts only applied to six samples.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the estimation outcomes was completed by global and local bias analysis (swath plots), statistical and visual comparison (cross and long sections) with input data. No relevant underground production data was available for reconciliation against current or historical Mineral Resources.

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Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages were estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The Mineral Resource cut-off grade for reporting of underground global gold resources at Pennys Find was 1.5 g/t. This was based on consideration of grade-tonnage data, selectivity and potential underground mining method, and benchmarking against comparable sized deposits of similar mineralisation style and tenor.
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.*	Underground mining methods based on mechanised conventional underground longhole mining methods are assumed. The MRE extends nominally 330 m below the topographic surface. HRZ considers material at this depth would fall under the definition of 'reasonable prospects of eventual economic extraction' in an underground mining framework. No dilution or cost factors were applied to the estimate.
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 testwork undertaken by previous owners in 2015 on fresh material to determine gold recovery (by gravity and cyanide leaching) concluded that gold occurs in free-milling form and is readily liberated. The proportion of gravity recoverable gold is very high proportion. It was noted that recovery of open pit, oxide and transitional material, was 92.4% with a high gravity recoverable gold component. No evidence of metallurgical amenability risks was noted during documentation reviews. No metallurgical recovery factors were applied to the Mineral Resources or resource tabulations.
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*	No environmental factors were applied to the Mineral Resources or resource tabulations. The deposit is located on a granted mining licence.

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	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.	

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.*	Bulk density values at Pennys Find were derived from measurements taken from 24 DD holes, with a total of 227 samples collected across the deposit. The samples were all measured on site using the water immersion method on fresh rock core.
		Analysis of HRZ bulk density data indicated a variation of bulk density values between weathering state and lithology. Values were therefore statistically evaluated split by these factors. The following bulk density mean values were then applied in the block model:
		• Oxide: 2.0 t/m^3
		• Transitional: 2.20 t/m^3
		• Fresh:
		  ○ Mafic: 2.82 t/m^3
		  ○ Quartz (mineralisation): 2.68 t/m^3
		  ○ Sedimentary: 2.76 t/m^3

	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.	Onsite measurements using the water immersion method were undertaken on competent fresh core. This approach is adequate in accounting for void spaces and moisture within the deposit.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Due to the statistical variation in lithology, bulk densities were averaged in each weathering unit for oxide and transitional material, and further broken down into lithologies for fresh material. An average bulk density based on weathering and lithology coding has been assigned for tonnage reporting.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	Mineral Resources were classified as Indicated and Inferred to appropriately represent confidence and risk with respect to data quality, drill hole spacing, geological and grade continuity, mineralisation volumes, recent and historical mining activity as well as metal distribution. Additional considerations were the stage of project assessment, amount of diamond drilling, current understanding of mineralisation controls and selectivity within an underground mining environment. The drilling, surveying and sampling undertaken, and analytical methods and quality controls used are appropriate for the style of deposit under consideration.

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		Indicated Mineral Resources were defined where a moderate level of geological confidence in geometry, continuity and grade was demonstrated, and were identified as areas where: Inferred Mineral Resources were defined where a low to moderate level of geological confidence in geometry, continuity and grade was demonstrated, and were identified as areas where: The reported Mineral Resource for underground was constrained at depth by the available drill hole spacing outlined for Inferred classification. All classified Mineral Resources were reported inside the tenement boundary. Mineralisation within the model which did not satisfy the criteria for Mineral Resources remained unclassified.
	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).	Consideration has been given to all factors material to the Mineral Resource outcomes, including but not limited to confidence in volume and grade delineation, quality of data underpinning Mineral Resources, mineralisation continuity and variability of alternate volume interpretations and grade interpolations (sensitivity analysis). In addition to the above factors, the classification process considered nominal drill hole spacing, estimation quality (conditional bias slope, number of samples, distance to informing samples) and reliability of input data, specifically.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The delineation of Indicated and Inferred Mineral Resources appropriately reflects the Competent Person's view on continuity and risk at the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Internal audits and peer review were undertaken by HRZ with a focus on data veracity, block model validation, verification of technical inputs, and peer review of approaches to domaining, interpolation and classification. In addition, Entech have reviewed the drill hole database up to 2022 and the modelling used for the previous Mineral Resource estimate (MRE). Entech have visited the HRZ projects on 2 June 2021 to inspect mineralisation exposures in the Pennys Find open pit, review drilling and sampling processes and examine diamond core in relation to the upcoming MRE. Areas visited include the Pennys Find open pit, current drill locations, and the Nimbus core yard. No material issues or risks pertaining to the resource were observed during the site visit.
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*	Variances to the tonnage, grade and metal tonnes of the Mineral Resource estimate is expected with further definition drilling. It is the opinion of the Competent Person that the classification criteria for Indicated and Inferred Mineral Resources appropriately captures and communicates these variances and risks to all downstream users. The MRE is considered fit for the purpose of underpinning feasibility-level studies.

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	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.	The Mineral Resource Statement relates to global tonnage and grade estimates. No formal confidence intervals nor recoverable resources were undertaken or derived.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No relevant underground production data was available for comparison purposes. The project is currently at feasibility stage.

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