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ASX Announcement
19 September 2016

Drill program complete at Mt Bonnie - Hayes Creek gold-silver-zinc project

- **Resource and extensional drilling successfully completed at Mt Bonnie. Assays are expected from the end of September 2016, and a Resource upgrade by the end of 2016**
- **Diamond drill program at Iron Blow VMS deposit, also part of PNX's Hayes Creek project, to commence shortly as well as exploration drilling at Barossa (VMS) and Tractor Corner (SEDEX)**
- **Assays received from exploration drilling at Langleys prospect**

PNX Metals Limited **(ASX: PNX)** is pleased to advise that it has successfully completed 27 holes for 1,826 metres of infill and extensional reverse circulation (RC) drilling at the Mt Bonnie VMS deposit (Figure 1) which forms part of its Hayes Creek gold-silver-zinc project in the Pine Creek region of the Northern Territory.

Mineralisation was intercepted in all holes drilled at Mt Bonnie and is consistent with the current geological model. Based on visual indications of the rock chips and results from field portable XRF measurements, the drill program was expanded and several additional holes were drilled to test for a near-surface southerly extension to mineralisation.

Assays results from this drill program are expected to be received from the end of September 2016 with an updated mineral resource expected by the end of the year. This will be a key component of the fully funded Hayes Creek pre-feasibility study (PFS) which is due for completion by mid-2017.

Previous drilling at Mt Bonnie by PNX in 2015 generated excellent results (see ASX release 3 June 2015) where massive sulphide intersections returned consistent near-surface, high-grade, multi-element mineralisation, including:

8.0m @ 12.3% Zn, 2.41g/t Au, 321g/t Ag, 0.48% Cu, and 2.50% Pb from 89.0m in MBRC014, and

12.0m @ 8.37% Zn, 2.57g/t Au, 228g/t Ag, 0.67% Cu, and 1.97% Pb from 48.0m in MBRC015

PNX has also received all assay results from the Langleys gold prospect where a drill program was completed to test for depth extensions to gold mineralisation underneath the historic oxide pit (see full assays in the attached JORC tables), with the best intercept being:

2m @ 5.10 g/t Au from 72m in LAR006

The Langleys drill program comprised eight exploration RC holes for 602 metres, with four holes containing narrow zones of gold mineralisation. Assay results received were in general of a lower grade and narrower width than historically drilled, and as such the gold mineralisation intercepted is unlikely to be economic. Based on current knowledge and geological interpretation of the results, the mineralising system appears to be pinching out. Whilst the mineralisation system remains open and there is potential for it to swell in thickness at depth, Langleys is now considered a lower priority target.

Exploration attention will now shift to Northern Territory government co-funded drilling at Burnside - Barossa (VMS), and Chessman – Tractor Corner (SEDEX) which is due to commence in October 2016.

PNX Managing Director James Fox said: "The RC drill program at Mt Bonnie has gone very well with consistent thicknesses of massive sulphide mineralisation being intercepted as predicted by the geological model, and with new near-surface mineralisation being drilled beyond the existing resource envelope towards the Southern Gossan. Assay results from Mt Bonnie will start to come in from the end of September. Diamond infill and extensional drilling at Iron Blow is to commence shortly, and PNX will also commence Northern Territory government co-funded drilling at the Barossa VMS and Tractor Corner SEDEX exploration targets within the Burnside and Chessman projects from early October. The next 3 months will be a busy period for the Company with multiple drill programs generating regular and exciting news flow."

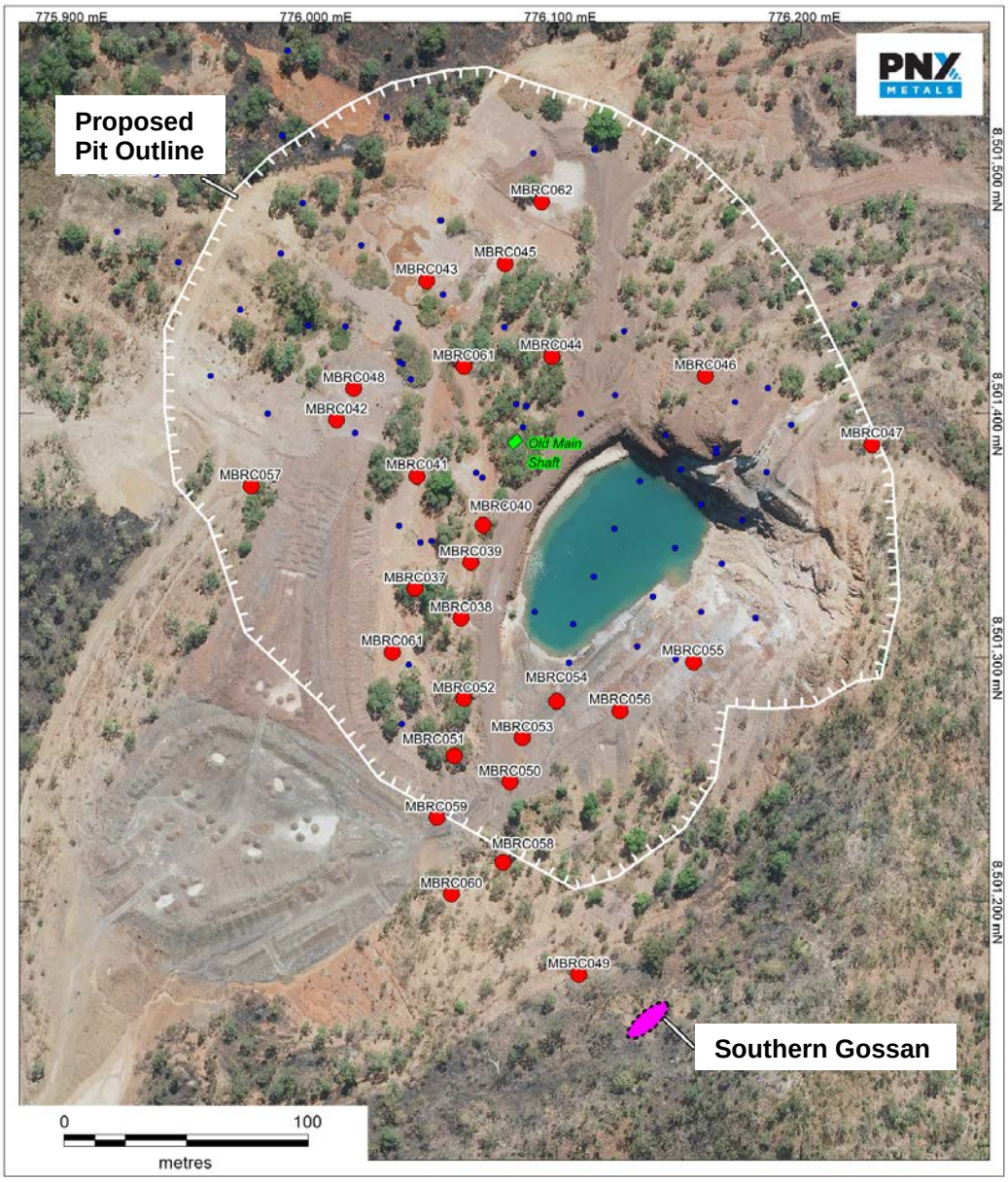

Figure 1: Mt Bonnie drilled holes Sept 2016 (red), previous drill holes (blue), and superimposed pit outline (white)

Hayes Creek Pre-Feasibility

The Hayes Creek PFS is fully funded and due for completion by mid-2017. It will expand on the recently completed Scoping Study, which found that mining and processing ore derived from both open-pit and underground operations at Hayes Creek would generate strong financial returns for PNX.

The Hayes Creek Project is located in a favourable mining jurisdiction in the Pine Creek region of Northern Territory, less than two hours by road from Darwin (Figure 2). The development strategy includes the use of existing infrastructure, designed to boost economics and reduce Project risk.

The Burnside Project (Barossa), Moline and Chessman (Tractor Corner) prospects form part of PNX's farm-in agreement with Newmarket Gold NT Holdings Pty Ltd, a subsidiary of Newmarket Gold Inc. where PNX is earning up to 90 per cent, in two stages, of 19 Exploration Licenses and four Mineral Leases (see ASX release 18 August 2014 for further details of the agreement) covering approximately 1,700sqkm.

Total expenditure for the purpose of the first stage of the farm-in is approximately $1.6 million. A further $0.4 million is required to be, and will be, spent by December 2016 to achieve the 51% stage one earn-in.

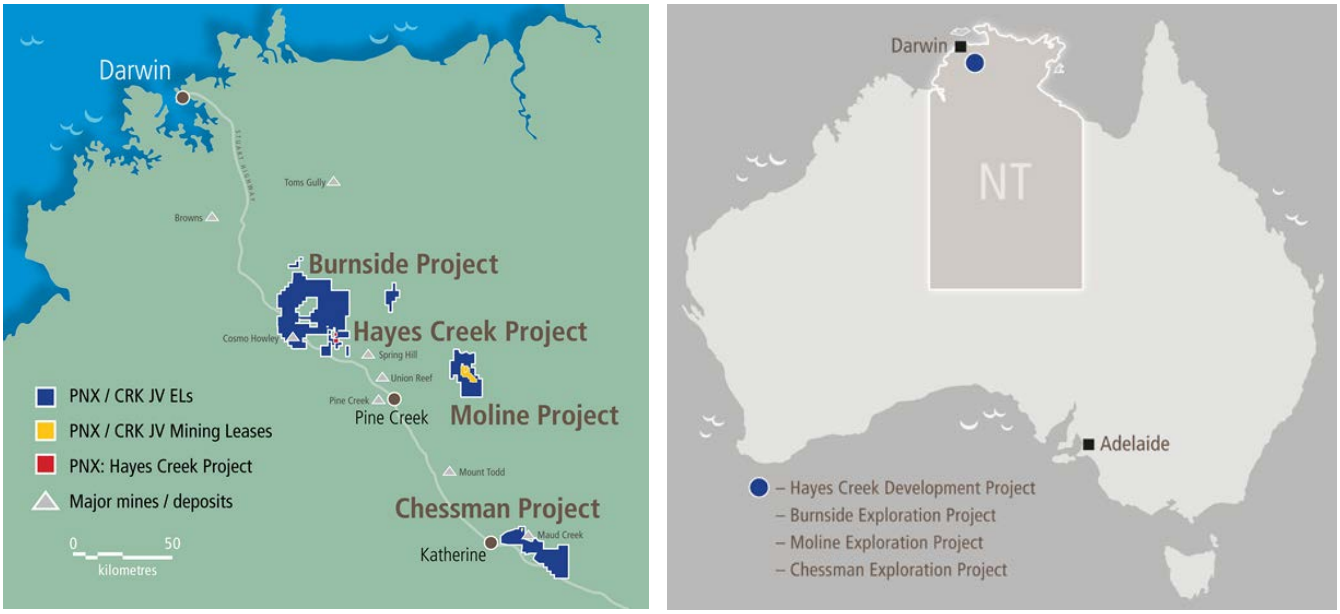

Figure 2: NT Project locations

Competent Person's Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Andrew Bennett, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Bennett has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity 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 Bennett is a full time employee of PNX Metals Ltd and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

James Fox
Managing Director & CEO
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JORC Code, 2012 Edition – Table 1

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 downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• All samples are RC chips • All samples were split using cone splitter mounted to the bottom of the cyclone to obtain a representative sample for analysis • Sample intervals were 1m in mineralised areas and composited to no more than 4m using a spear in non-mineralised areas • Sample weights were typically 2-3kg • Magnetic susceptibility measurements were taken using a portable KT-10 Magnetic Susceptibility Meter device • Field portable XRF measurements taken for 34 elements (Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Rb, Sr, Zr, Mo, Ag, Cd, Sn, Sb, W, Hg, Pb, Bi, Th, U, Pd, S, Ba, K, Cs, Sc, Se, Te, and Au) using an Niton XL3T 500 device
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• All drilling was RC drilling from surface with a 5.25" face sampling hammer. Drilling was carried out by Geo Drilling of Humpty Doo, Northern Territory
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Sample recovery was estimated visually by inspecting the size of the sample collected, and recording this in the geological log at 1m interval. Excellent recovery was obtained • The vast majority of samples were kept dry during RC drilling
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.*	• All RC chips have been geologically logged by the PNX onsite geologist at 1m intervals and chip trays have been retained and photographed • Log fields include lithology, colour, grainsize, texture, veining,

Criteria	JORC Code explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	sulphide mineralisation, alteration, strength, recovery and sample moisture • Logs have been aided by the use of magnetic susceptibility and portable XRF measurements on each metre sample
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• All samples within the mineralised horizon were collected at one metre intervals into a pre-labelled calico bag mounted to the bottom of the cone splitter outlet. • Samples outside the mineralised horizon were collected at one metre intervals and a composite made up of to 4m by using a spear of each residue bag • Both 1m and composited samples were subject to routine duplication in the field at a rate of 1 duplicate for every 25 samples to test sampling representivity. No material sampling bias was observed • Individual samples are placed in individual sample bags and clearly identified prior to submission to the laboratory for assay • The sample sizes are appropriate for the grain size of the material being sampled
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Samples were submitted to Northern Australian Laboratories (NAL) in Pine Creek, Northern Territory • After crushing and pulverizing to – 100 microns, each sample is roll mixed on a rubber mat after pulverizing, a barren flush is pulverized between each sample. A sub-sample of the pulverized sample is submitted for conventional fire assay for gold (FA50) • NAL conducts internal standards and blanks results which are reviewed prior to reporting to PNX • Commercially obtained standard reference samples are also submitted at a ratio of 1 for every 25 samples with the assay samples as part of the sample number sequence • In addition to the laboratory standards, PNX inserted field duplicate samples at a ratio of 1 for every 25 samples. • Blank (zero value) samples are also included at a ratio of 3 for every 100 samples to check against contamination between samples in the laboratory • Assessment of the standards, blanks and duplicates shows that a high degree of confidence can be placed in the accuracy and precision of the assay data
Verification of	• *The verification of significant intersections by either independent or*	• No additional verification of historical data has been undertaken and

Criteria	JORC Code explanation	Commentary
sampling and assaying	*alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	no adjustments have been made • No holes have been twinned • All logging has been carried out using standardised logging codes to professional standards. All geological and sampling information has been entered into digital formats for validation • All hard copies of information are stored on site. Digital copies are held on site and at PNX Adelaide office on a backed-up server • No adjustments to assays have been made. Where gold assay data has been repeated by the lab, the average value has been reported
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drillhole collar coordinates were obtained by standard GPS with nominal 5m accuracy and elevations have been estimated from the DTM available from detailed aerial geophysical surveys. Differential GPS pick-ups are planned • A GlobalTech Pathfinder single-shot survey tool was used by Geo Drilling at regular intervals (approximately every 30m downhole) as instructed by PNX's on-site geologist to monitor the downhole position. • The short nature of all holes means that any deviation errors will be small
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The previous drill spacing throughout Langleys prior to mining of oxide mineralisation was 20m between sections with typically 2-3 holes at 10m spacing on-section. The new drilling occurs directly underneath the previous drilling on irregularly selected sections along the length of the oxide pit, and extending southward (refer map below) • The results and drill spacing are not sufficient yet to define a Mineral Resource • Compositing of samples outside of the mineralised horizon has been carried out. The non-mineralised horizon was primarily determined as the dolerite in the hanging-wall, while the potentially mineralised horizon was considered the underlying metasediments
Orientation of data in relation to geological	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation*	• All drilling was oriented toward 065 MGA grid (061 magnetic) to intersect the mineralisation approximately perpendicular to its trend. • Any biasing effect is yet to be determined

Criteria	JORC Code explanation	Commentary
structure	*of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	
Sample security	• *The measures taken to ensure sample security.*	• Logging and sampling has been carried out by PNX personnel on site and samples submitted to the laboratory by the same people • No third parties have been allowed access to the samples.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits have been carried out at this point

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Langleys and Shady Camp prospects are wholly contained within EL10347 granted to Newmarket Gold NT Holdings Pty Ltd and are subject to an earn in agreement (see PNX ASX announcement 14/8/14) whereby PNX can earn up to a 90% interest through staged project based expenditure • There is no native title claim over the area
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Modern exploration at Langleys-Shady Camp prospects began when Geopeko undertook costeaning (4 trenches totaling 100m) and diamond drilling (6 assumed HQ holes totaling 555.5m; *GDP30-35*) between 1981 and 1983. • In 1984, the Mt Bonnie Gold Unit Trust undertook close spaced costeaning on the main Langleys lode (12 trenches totaling 250m) • Between 1986 and 1988 Oceania Exploration and Mining (owned by Zapopan) completed further costeaning (12 trenches totaling 250m), diamond drilling (12 holes totaling 536.2m; *KD6-17*) and airtrack drilling (26 holes totaling 542.7m; *KD22-55*) all at Langleys. This work defined an insitu reserve at the time of 64,000t @ 3.7 g/t (Nicholson, 1988) • In 1987, Oceania also completed 12 shallow 3" airtrack holes (*SCD1-12* totaling 277m) at Shady Camp • In 1988, a further 11 percussion holes (5.25") were drilled at Langley (*KD56-66* totaling 497m) • Mining at Langleys in 1988 reportedly produced 50,000t @ 3.9 g/t (Ahmad etal 1993) and oxide was trucked to the nearby Mt Bonnie process plant • No further field exploration is known since 1988
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Langleys and Shady Camp are stratiform gold prospects in the southern part of the Golden Dyke Dome, hosted within interbedded iron formation and mudstone of the Koolpin Formation that typically dips 65 degrees southwest but folded in places. Metadolerite sills of the Zamu Dolerite intrude the Koolpin sediments with broadly conformable contacts • Gold mineralisation occurs in two sulfidic (or gossanous) beds of the

Criteria	JORC Code explanation	Commentary
		iron formation. The upper (main) lode where mined was 4-6m thick and the lower lode, which is separated by 1-3m mudstone, is itself 1-3m thick. Mineralisation is accompanied by 5-20% pyrite and 0.5-5% arsenopyrite. Gold grains average 10-20 microns and are usually included within or on the boundaries of the sulfide grains. Coarse gold also occurs within rare quartz veins.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	

Hole ID	Hole Type	East	North	RL	Azi MGA	Dip	Depth (m)	From (m)	To (m)	Interval (m)	Au (g/t)
LARC001	RC	772879	8497633	174	65	-60	73	61	62	1	2.42
LARC002	RC	772847	8497619	177	67	-60	85	NSI			
LARC003	RC	772804	8497626	181	65	-60	61	NSI			
LARC004	RC	772745	8497686	190	65	-60	79	NSI			
LARC005	RC	772644	8497755	189	65	-60	85	69	70	1	1.93
LARC006	RC	772766	8497646	189	65	-60	85	72	74	2	5.10
SCRC001	RC	773083	8497619	198	65	-60	73	25	26	1	3.53
SCRC002	RC	773011	8497579	176	65	-60	61	NSI			

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Significant intersections reported in the main body of the text and figures are aggregated from downhole interval weighted assay results that occur within the main body of mineralisation and typically bounded by intersections >1 g/t, but may include intervals of lower grade mineralisation that would be considered internal dilution if mined • No high cuts have been applied • Interval weighted averages are reported in significant intersections tables
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').*	• The true width of mineralisation is estimated to be approximately 65-70% of the downhole width

Criteria	JORC Code explanation	Commentary
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.*	
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.*	• PNX is not aware of any material information that has been omitted
Other substantive	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical*	• All relevant information has been included

Criteria	JORC Code explanation	Commentary
exploration data	*survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Infill and deeper drilling will be required to understand the size potential of the mineralisation intercepted, however this has not yet been planned or scheduled