Level 1, 135 Fullarton Road
Rose Park, SA 5067
Australia

Telephone +61 (0) 8 8364 3188
Facsimile +61 (0) 8 8364 4288

info@pnxmetals.com.au
www.pnxmetals.com.au

ASX Announcement
12 July 2017

Hayes Creek confirmed to be a leading Zinc and Precious Metals Project in Australia

- **Preliminary Feasibility Study (PFS) confirms the potential for PNX's NT Hayes Creek Project to become a low-cost, high-margin Australian zinc and precious metals mine**
- **PFS outlines a robust zinc and precious metals Project forecast to generate net smelter revenues of $628 million over a 6.5 year mine life**
- **$266 million pre-tax net cashflow estimated over Life of Mine (LoM) at an average of $41 million per year**
- **Pre-tax NPV10% of $133 million, IRR of 73% and a very short 15 month pay-back period**
- **Low up-front capital of $58 million to construct the 450,000tpa sulphide flotation processing plant and associated infrastructure to produce annually in concentrates**
    - **18,300t zinc,14,700 oz gold, and 1.4M oz silver**
    - **Or a combined total of 39,100t zinc equivalent**
- **Production Targets are based on Mineral Resources at the Mt Bonnie and Iron Blow VMS deposits which are classified as 98% Indicated[1]**
- **Given the exceptional outcomes of the PFS, the PNX Board has resolved to proceed with a Definitive Feasibility Study (DFS) and seek mine approvals which are considered capable of being finalised in 2018**
- **Significant opportunities exist to expand the Project's Mineral Resource base with near-mine and regional exploration. PNX will aggressively pursue exploration in tandem with ongoing DFS work**

All figures Australian dollars unless otherwise noted

PNX Metals Limited (**ASX:PNX**) is pleased to announce the completion of a PFS for its Hayes Creek zinc-gold-silver Project, located 170km south of Darwin in the Pine Creek region of the Northern Territory (Figure 1).

The PFS confirms the Project to be a high value, relatively low risk and technically strong development opportunity for the Company. Given these outcomes, the PNX Board has resolved to proceed immediately with a DFS, with baseline studies relating to long lead-time items such as the approvals process already underway. Completion of the DFS will require and is subject to further funding and the Company is evaluating a number of options in this regard.

The proposed development is based on a steady state 450,000tpa processing rate with ore sourced from initial open pit mining operations at Mt Bonnie and subsequent underground mining operations at Iron Blow. In total,

[1] See Executive Summary Pages 24 and 25 for full details of the Mineral Resources (JORC 2012)

approximately 3 million tonnes of ore is forecast to be processed over an initial 6.5 year LoM of which 98% is classified as Indicated Mineral Resources and only 2% classified as Inferred.

The PFS assumes construction of a purpose built processing plant with crushing, grinding, and flotation circuits to generate two valuable product streams, a zinc concentrate and a precious metals concentrate. The concentrates will be trucked to the Port of Darwin and then shipped to international markets for sale and smelting and refining.

A full summary of the PFS is contained in the Executive Summary attached to this announcement. Key Project parameters and assumptions from the PFS are shown in the Tables below:

Estimated Project Financial Returns

Estimated Project Returns	PFS Financial Model
Total Net Smelter Revenue (Zn, Au, Ag, Pb + Cu)	$628 million
Zinc net Revenue	$271 million, 43%
Silver net Revenue	$187 million, 30%
Gold net Revenue	$117 million, 19%
Lead + Copper net Revenue	$53 million, 8%
Pre-tax net Cash flow (over LoM)	$266 million
Annual Average pre-tax net Cash flow	$41 million
Pre-tax net Cash flow per tonne of ore over LoM	$90 per tonne
Up-front Plant Capital/Mine Development	$58 million
Peak Cash Draw (prior to first revenue)	$66 million
Pre-tax Net Present Value (NPV), 10%	$133 million
Internal Rate of Return (IRR)	73%
Payback Period	15 months

Summary of Forward consensus metals prices and USD exchange rate used

Zinc (t)	Gold (oz)	Silver (oz)	Lead (t)	Copper (t)	AUD/USD
US$2,570	US$1,289	US$19.40	US$2,129	US$6,366	US$0.73

Total Project Mineral Resources by JORC Classification as at 3 May 2017

Mineral Resources Mt Bonnie + Iron Blow	Tonnage (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)
Total Indicated (84.7%)	3,455	4.88	1.01	0.27	137	1.88
Total Inferred (15.3%)	622	1.39	0.37	0.1	52	1.46
Total Indicated + Inferred Mineral Resources	4,077	4.35	0.91	0.25	124	1.81
Total Contained Metal (t)		177,200	37,000	10,050	16.2Moz	237.7koz

Mineral Resources used to generate Production Targets

Resource	Category %	Plant Feed (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	Waste (kt)	Material (kt)
Mt Bonnie Indicated	97%	987	4.43	1.34	0.26	152.5	1.69	-	987
Mt Bonnie Inferred	3%	29	1.29	1.15	0.09	97.4	1.94	-	29
Mt Bonnie Waste		-	-	-	-	-	-	8,144	8,144
Iron Blow Indicated	99%	1,938	4.50	0.79	0.25	120.9	1.81	-	1,938
Iron Blow Inferred	1%	20	4.31	0.20	0.10	24.2	0.53	-	20
Iron Blow Waste		-	-	-	-	-	-	334	334
TOTAL	98%	2,974	4.45	0.97	0.25	130.5	1.76	8,478	11,452

Production: Average annual and LoM production of metals in concentrate

Metals produced in concentrates	Average Recovery of Metals to Concentrate over LoM	Average Annual Production of Metals in Concentrate over LoM	Total Metals Production in Concentrate over LoM
Zinc (t)	89.9%	18,300	118,900
Gold (oz)	56.6%	14,700	95,400
Silver (oz)	74.4%	1,427,000	9,278,000
Lead/Copper (t)	58.8%	3,300	21,400

Commenting on the results of the PFS, PNX Managing Director James Fox said:

"The completion of this PFS is a significant milestone for the Company and confirms the strong potential for the Hayes Creek Project to become a low-cost, high-margin zinc and precious metals mine. The low upfront capital requirement of less than $60 million will enable the Project to produce in-demand, high-value zinc and precious metals concentrates over an initial 6.5 year period. The Project is expected to yield a high rate of return resulting in rapid investment payback and a low level of risk appropriate to a junior developer.

The Project contains an attractive mix of commodities with a strong outlook, and significant project upside if prices are higher than forecast. Significant near-mine exploration potential exists where discovery and delineation of any additional economic resources would further enhance the value of the Project."

Project snapshot

1. **High-Grade:** Mining inventory contains high-grade zinc-gold-silver sulphide ore amenable to flotation
2. **Strong Economics:** Fast payback of less than 15 months driven by the initial 2 years of low-cost open-pit mining at Mt Bonnie
3. **Low Capital Hurdle:** Estimated capex of $58 million provides a relatively low capital hurdle for Project financing
4. **High Margin:** Low unit operating costs and high net smelter returns resulting in expected high margins
5. **Commodity Mix/Hedge:** Project revenues are split evenly between zinc, silver and gold providing a natural hedge against individual commodity price fluctuations
6. **Risk Managed:** Low up-front capital, very short payback period, low throughput rates and near-surface deposits result in the Hayes Creek Project being a low risk enterprise with an IRR of greater than 70%
7. **Commodity Price Outlook:** Attractive mix of commodities with strong outlook & price upside potential
8. **Exploration Potential:** Strong exploration potential with VMS deposits typically occurring in clusters; multiple exploration targets in prospective near-mine lithology
9. **Infrastructure:** Located in existing infrastructure corridor with rail, gas, power and other mining operations, only 170km from Darwin

Near-mine and Regional Exploration Opportunities

Existing Mineral Resources at Mt Bonnie and Iron Blow may be increased by further drilling as the PFS only considers a portion of the Mineral Resources with approximately 75% reporting to Plant feed. The potential also exists to expand the Project through near-mine and regional exploration.

As VMS deposits typically occur in clusters the potential to find new VMS mineralisation in proximity to the Project is considered to be very good. Across the Company's Burnside, Moline and Chessman project areas PNX is engaged in exploration activities:

- **Margaret** (Burnside project) - 3km to the north of Mt Bonnie in the same stratigraphic unit where a large untested 1km in length lead-zinc-gold in-soils anomaly has been defined.
- **School** (Moline project) – follow-up exploration drilling will occur in 2017 where in 2016 PNX intersected significant gold mineralisation only 50m below the historical pit, including: **MORC001: 9m @ 2.66 g/t Au** (from 68m), and **MORC002: 7m @ 11.89 g/t Au** (from 115m), including **3m @ 23.79 g/t Au** (from 116m).
- **Cookies Corner** (Burnside project) - a large ~1km in length gold-in-soils anomaly 40km north-west of Hayes Creek. Historical high-grade rock chip assays up to **29.3g/t Au**. Limited RC and RAB drill testing generated numerous open near-surface intersections, including **3m @ 19.7g/t Au from 3m** in CKRB035 and **6m @ 3.12g/t Au from 42m** in CC03.

Definitive Feasibility Study

The DFS is anticipated to take approximately 12 months, and will provide increased confidence in all aspects of the Project and will investigate opportunities to further improve overall Project economics, and increase the prospect for favourable funding terms and structure. As noted above, the Company considers that the exploration potential of the area surrounding the Project is very good and will aim to increase the Project's Mineral Resources through exploration during the DFS timeframe.

Completion of the DFS by late-2018, along with continued progression of environmental and mining approvals would allow Project construction, subject to Project funding, to commence in late 2018 or early 2019. This would allow mining and production activities to commence in late 2019 as contemplated in the PFS.

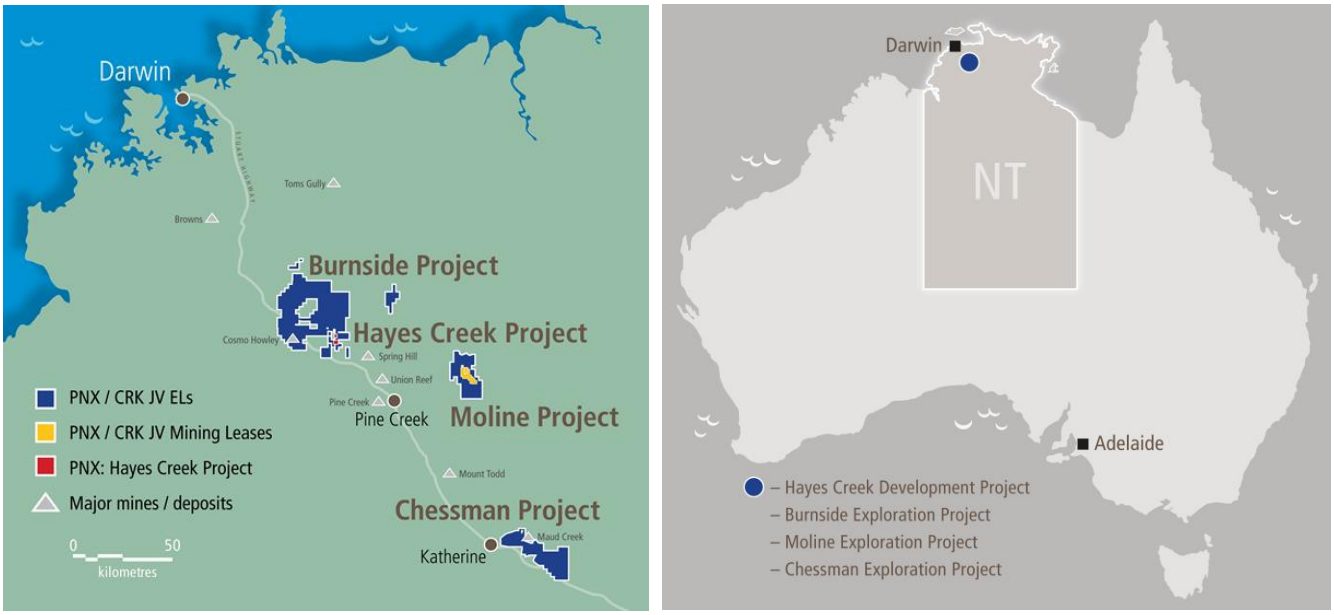


Figure 1: *PNX Hayes Creek and other project locations in the NT*

CAUTIONARY STATEMENTS AND COMPETENT PERSONS' STATEMENTS

Scope of Pre-Feasibility Study (PFS) & Forward Looking Statements

Under the JORC Code (2012), a PFS is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors. A PFS is at a lower confidence level than a Definitive Feasibility Study (DFS).

The information presented in this announcement is based on the PFS. The PFS has been conducted to determine the potential viability and optimum pathway to production for the Project. The outcomes of the PFS confirm the technical and financial viability of the Project and provide a strong rationale for the Company to continue to advance the Project through a DFS and toward development.

The production target and the forecast financial information and income-based valuation derived from the production targets reported in this document are based on Mineral Resources which are classified as 98% Indicated and 2% Inferred. There is a low level of geological confidence associated with Inferred Mineral Resources, and there is no certainty that further exploration work will result in their conversion to Indicated Mineral Resources, or that the production targets themselves will be realised. The Company is however satisfied that the use of 2% Inferred Mineral Resources in the production targets is not the determining factor in the overall viability of the Project and that it is reasonable to report the PFS including this 2% Inferred Mineral Resources component.

The PFS results and the production targets and forecast financial information and income-based valuation derived from the production targets contained in this document are preliminary in nature and are not sufficient at this time to support the estimation of Ore Reserves or to provide an assurance of economic development. The Company cautions that there is no certainty that the production targets or the forecast financial information and income-based valuation derived from the production targets will be realised. The financial analysis in the PFS, summarised in this document, is conceptual in nature and should not be used as a guide for investment.

This announcement contains 'forward-looking statements' that are based on the Company's expectations, estimates and projections as of the date on which the statements were made. Forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by the forward-looking statements.

The Company believes there is a reasonable basis for the production targets and the forecast financial information and income-based valuation derived from those production targets provided in this document based on the detailed reasons and material assumptions which are outlined throughout this document. In addition, the forward-looking statements are based on the Company's belief that it has reasonable grounds to expect that funding will be secured to advance the Project through to the completion of a DFS and that the capital costs of the Project will be financed. The '*Project Financing and Sources of Capital*' section on Page 17 of the attached PFS Executive Summary contains further detail on why the Company has a reasonable basis to believe the Project will be financed by the Company. There is no certainty, however, that sufficient funding will be raised by the Company when required.

Refer to Page 5 of the attached PFS Executive Summary for further detail on the scope of the PFS, nature of forward-looking statements, and why the Company believe it has reasonable grounds to make forward-looking statements.

Competent Persons' Statements

The information in this report that relates to Mineral Resources is based on information compiled by Mr Aaron Meakin and Mr Andrew Bennett. Mr Aaron Meakin is a full-time employee of CSA Global Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Andrew Bennett is a full-time employee of PNX Metals Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Aaron Meakin and Mr Andrew Bennett have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC code). Mr Aaron Meakin and Mr Andrew Bennett consent to the inclusion of this information in the form and context in which they occur.

The information in this report that relates to Exploration Results is based on information compiled by Mr Andrew Bennett 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
Telephone: +61 (0) 8 8364 3188

30 June 2017

Level 1, 135 Fullarton Road
Rose Park, SA 5067
Australia

Telephone +61 (0) 8 8364 3188
Facsimile +61 (0) 8 8364 4288

info@pnxmetals.com.au
www.pnxmetals.com.au

HAYES CREEK PRELIMINARY FEASIBILITY STUDY EXECUTIVE SUMMARY

Contents

INTRODUCTION & PROJECT OVERVIEW

Unless otherwise stated, all dollar figures are in Australian dollars, tonnages are metric tonnes, ounces are troy ounces

PNX Metals Limited (PNX) is planning the development of its 100% owned Hayes Creek project (Hayes Creek or Project) containing the Mt Bonnie and Iron Blow zinc-gold-silver VMS deposits which are located on granted Mineral Leases approximately 170km from Darwin within the Pine Creek region of the Northern Territory.

In 2016 PNX completed a Scoping Study on the Project which indicated that mining and processing ore from the Mt Bonnie and Iron Blow deposits would generate strong financial returns for PNX. The positive results of the Scoping Study formed the basis for proceeding with the Preliminary Feasibility Study (PFS or Study).

The PFS is based on a steady state 450,000tpa mining and processing schedule derived from initial open pit mining operations at Mt Bonnie and subsequent underground mining operations at Iron Blow. In total approximately 3 million tonnes of ore, of which 98% is classified in the Indicated category within the Project's estimated JORC 2012 Mineral Resources, are forecast to be processed over a 6.5 year Life of Mine (LoM) commencing in 2019.

PNX's strategy to develop the Project includes construction of a purpose built processing plant (Plant) approximately 12 km to the north of Mt Bonnie and Iron Blow. The Plant will consist of crushing, grinding, and flotation circuits to generate two valuable product streams, a zinc concentrate and a precious metals concentrate, as well as a tails management and distribution system. The concentrates will be trucked to the main port of Darwin where they will be shipped to international markets for sale and further smelting and refining.

The Project, if developed as planned, would directly employ approximately 130 personnel at full capacity.

PFS Outcomes Summary

Table 1 Key Project financial returns

Hayes Creek Project	PFS Financial Model
Total Net Smelter Revenue (Zn, Au, Ag, Pb, Cu)	$628 million
Total Pre-tax net Cash flow	$266 million
Annual Average pre-tax net Cash flow	$41 million
Up-front Plant Capital/Open-pit Mine Development	$58 million
Peak Cash Draw (prior to first revenue)	$66 million
Pre-tax Net Present Value (NPV), 10%	$133 million
Internal Rate of Return (IRR)	73%
Payback Period	15 months

The financial returns of the Project (Table 1) are based on the assumptions outlined in this document. Overall, the PFS confirms and enhances the findings of the Scoping Study released by PNX in 2016.

The Project is financially robust, requiring a low amount of upfront capital to produce in-demand and high-value products over a 6.5 year period. The initial capital investment is expected to yield a high rate of return resulting in a fast 15 month pay-back period commensurate with the low upfront capital and having an appropriate level of risk for a junior developer.

PFS Concentrates Production and Sales

Average annual and LoM production of metals in concentrate are shown below (Table 2).

Table 2 Average annual and LoM production of metals in concentrate

Metals produced in concentrates	Average Recovery of Metals to Concentrate over LoM	Average Annual Production of Metals in Concentrate over LoM	Total Metals Production in Concentrate over LoM
Zinc (t)	89.9%	18,300	118,900
Gold (oz)	56.6%	14,700	95,400
Silver (oz)	74.4%	1,427,000	9,278,000
Lead/Copper (t)	58.8%	3,300	21,400

Consensus economics commodity price (nominal) and foreign exchange rate forecasts commencing in 2019 have been used in the Study, which over the life of the project average as follows (Table 3):

Table 3 Summary of metals prices (nominal) and USD exchange rate

USD Commodity Prices and FX rate used	Average price over LoM	Spot price at 30 June 2017	% variance over LoM from spot
Zinc price per tonne	$2,570	$2,756	-6.8%
Gold price per ounce	$1,289	$1,247	3.4%
Silver price per ounce	$19.40	$16.60	17.0%
Lead price per tonne	$2,129	$2,298	-7.4%
Copper price per tonne	$6,366	$5,931	7.3%
AUD/USD exchange rate	$0.73	$0.77	-5.7%

The main financial risks and uncertainties around the Project which are outside of the direct control of the Company include movements in the AUD/USD exchange rate and prices for the key commodities of zinc, gold and silver. The Project's returns are most sensitive to movements in the commodity price and exchange rate assumptions as well as variations in metal recoveries. Refer to the 'Sensitivity Analysis' on Pg. 15 for further detail.

Movement in the Australian dollar relative to the US dollar has the largest potential impact on the Project due to metals prices being US dollar-based while costs are (primarily) Australian dollar-based. A ±10% (low of 66c, high of 80c) movement in the AUD/USD exchange rate has an approximate ±$65 million effect on project net smelter revenue, and a ±$45 million impact on project NPV (at a 10% discount rate).

While exposure to commodity price and exchange rate movement are risks, they also provide potential upside to the Project should metals prices rise or the Australian dollar weaken against the US dollar by more than what is assumed in the consensus forecasts. Consideration will be given to implementing initiatives to manage these risks (for example through hedging arrangements) during the completion of the Definitive Feasibility Study (DFS) and through discussions with Project financiers.

As is typical with projects at the PFS stage, Project finance has not yet been secured. Refer to the 'Project Financing and Sources of Capital' section on Pg. 17 for further discussion including why PNX believes there are reasonable grounds to expect the Project will be funded.

Additional funds are also required to proceed with the DFS. This approximately 12 month study would provide increased confidence in all aspects of the Project and would focus on continuing to reduce Project risks and investigate areas with upside potential to improve the overall Project economics. Completion of the DFS by late-

2018 along with continued progression of environmental and mining approvals would allow, subject to securing project financing, a commitment to start construction resulting in the Project's mining and production activities commencing in late 2019.

With baseline studies relating to the Project's Environmental Impact Statement already having commenced, the proposed Project development timeframe is shown in Table 11 on Pg. 21.

CAUTIONARY STATEMENTS AND COMPETENT PERSONS' STATEMENTS

Pre-Feasibility Study (PFS)

The information presented in this document is based on the PFS. The PFS has been conducted to determine the potential viability and optimum pathway to production for the Project. The outcomes of the PFS confirm the technical and financial viability of the Project and provide a strong rationale for the Company to continue to advance the Project through a definitive feasibility study (DFS) and toward development.

The PFS has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules.

Under the JORC Code (2012), a PFS is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors. A PFS is at a lower confidence level than a DFS.

The Hayes Creek PFS has followed industry accepted guidelines, particularly those provided by AusIMM[1], to develop an accuracy level within a range of up to ±30% using the parameters and assumptions set out in this document. The PFS results and the production targets and forecast financial information and income-based valuation derived from the production targets contained in this document are preliminary in nature and are not sufficient at this time to support the estimation of Ore Reserves or to provide an assurance of economic development. The Company cautions that there is no certainty that the production targets or the forecast financial information and income-based valuation derived from the production targets will be realised. The financial analysis in the PFS, summarised in this document, is conceptual in nature and should not be used as a guide for investment.

The production target and the forecast financial information and income-based valuation derived from the production targets reported in this document are based on Mineral Resources which are classified as 98% Indicated and 2% Inferred[2]. There is a low level of geological confidence associated with Inferred Mineral Resources, and there is no certainty that further exploration work will result in their conversion to Indicated Mineral Resources, or that the production targets themselves will be realised. The Company is however satisfied that the use of 2% Inferred Mineral Resources in the production targets is not the determining factor in the overall viability of the Project and that it is reasonable to report the PFS including this 2% Inferred Mineral Resources component.

[1] *AusIMM 2012. Cost Estimation Handbook. 2nd Edition Monograph 27. The Australian Institute of Mining and Metallurgy.*

[2] *Total Hayes Creek Mineral Resources are classified as 85% Indicated and 15% Inferred as noted on Pgs. 24 and 25 in the Geology section of this report; however 98% of the Project's estimated mining inventory is from the Indicated component of the Mineral Resource and 2% from the Inferred component.*

Forward-Looking Statements

This document contains 'forward-looking statements' that are based on the Company's expectations, estimates and projections as of the date on which the statements were made. Forward-looking statements are statements about a future matter and are not just statements about the Company's present intention. Forward-looking statements in this document include, among other things, statements with respect to the Hayes Creek PFS and future feasibility studies, and the Project's objectives, outlook, growth, cash flow, projections, targets and expectations, and mineral resources, as well as commodity prices, foreign exchange rates and results of exploration. Generally, the forward-looking statements can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'will be', 'plan', 'forecast', 'evolve' and similar expressions.

Forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Forward-looking statements are developed based on assumptions about the risks, uncertainties and other factors identified in this document. The risks, uncertainties and other factors identified in this document are not exhaustive of the factors that may affect the forward-looking statements. They and other factors should be considered carefully and readers should not place undue reliance on any forward-looking statement. Readers are therefore cautioned that the forward looking statements are predictive only and that the actual results, level of activity, performance or achievements may be materially different.

The Company disclaims any intent or obligations to revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law.

Under the *Corporations Act 2001* (Cth), a company may only make forward-looking statements when it has a reasonable basis for doing so. The Company believes there is a reasonable basis for the production targets and the forecast financial information and income-based valuation derived from those production targets provided in this document based on the detailed reasons and material assumptions which are outlined throughout this document. The material assumptions related to the Project's geology, mining, metallurgy, infrastructure, economics, marketing, social and government (JORC Modifying Factors) underlying the production targets and the forecast financial information and income based valuation derived from the production targets are well understood, and have been thoroughly assessed and examined by qualified technical personnel including independent specialists and subject matter experts.

Third party consultants utilised and the reports and studies they prepared for the PFS are listed in the 'Study Objectives and Parameters' section of this document. These studies support and form the basis for a number of the material assumptions used in the PFS.

The forward-looking statements contained in this document are based on the Company's belief that it has reasonable grounds to expect that funding will be secured to advance the Project through to the completion of a DFS and that the capital costs of the Project will be financed. The 'Project Financing and Sources of Capital' part of the 'Financial Analysis' section on Pg. 17 of this document contains further detail on why the Company has a reasonable basis to believe the Project will be financed by the Company. There is no certainty, however, that sufficient funding will be raised by the Company when required.

Competent Persons' Statements

The information in this document that relates to Mineral Resources is based on information compiled by Mr Aaron Meakin and Mr Andrew Bennett. Mr Aaron Meakin is a full-time employee of CSA Global Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Andrew Bennett is a full-time employee of PNX Metals Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Aaron Meakin and Mr Andrew Bennett have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC code). Mr Aaron Meakin and Mr Andrew Bennett consent to the inclusion of this information in the form and context in which they occur.

The information in this document that relates to Exploration Results is based on information compiled by Mr Andrew Bennett 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.

The information in this document that relates to mineral processing, metallurgy, and engineering is based on information compiled by Mr David Readett, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy and Chartered Professional Metallurgical Engineer FAusIMM CP (Met). Dave Readett is employed by Mworks Pty Ltd who have provided mineral processing, metallurgical and PFS project management services to PNX Metals Ltd. Mr Readett has sufficient experience that is relevant to the style of mineralisation and type of deposit 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 Readett consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

STUDY OBJECTIVES and PARAMETERS

Prior to commencing the PFS, a scope of work and schedule of deliverables was defined to address the main risks and identify key opportunities within the Project. The main objectives were to:

- Assess the likely technical and economic viability of the Project
- Consider different mining, process, location and project configuration alternatives to determine and recommend the preferred alternative for a DFS
- Consider different throughput capacities for the Project
- Determine the risk/reward profile of the Project considering the key value drivers, material risks and uncertainties
- Determine if there are any "fatal flaws" in the Project
- Determine the nature and extent, and develop the scopes of work needed for the DFS, and the time and resources required to develop the Project following completion of the DFS.

PNX engaged a number of appropriately qualified and recognised specialist technical consultants and subject matter experts (Table 4), commissioned specific reports and utilised in-house expertise to prepare the various technical and financial inputs. PNX believes it has used consistent and reasonable information in establishing the potential financial outcomes and objectives of the Project, and in compiling the PFS.

Table 4 Technical specialists and technical reports utilised in the PFS

Area	Scope	Company	Authorised person
Geology	Planning and managing Project resource drill programs	PNX Metals Ltd (PNX)	Andy Bennett Exploration Manager
Resource Statement Mt Bonnie	Define Resource model for the Mt Bonnie deposit	CSA Global Pty Ltd (CSA)	Aaron Meakin Global Manager - Resources
Resource Statement Iron Blow	Define Resource model for the Iron Blow deposit	CSA	Aaron Meakin
Mining Study - Iron Blow Underground option	Develop mining plan, production schedule, Capex and Opex	CSA	Wayne Ghavalas Principal Mining Engineer
Mining Study - Iron Blow open cut option	Develop mining plan, production schedule, Capex and Opex	CSA	Paul O'Callaghan Principal Mining Engineer
Mining Study - Mt Bonnie open cut	Develop mining plan, production schedule Capex and Opex	CSA	Paul O'Callaghan

Area	Scope	Company	Authorised person
Metallurgical testwork	Metallurgical testwork program design Defining recovery of metal from ore, including mass balance, Process Design Criteria, process flow diagram Capex and Opex estimations Metallurgical testwork	BHM Process Consultants Pty Ltd (BHM) Nagrom the Mineral Processor	Steve Hoban Craig Headley Principal Metallurgists Lisa Allen Metallurgical Co-ordinator
Processing and Project management	Review processing and metallurgical test results and studies, verifying assumptions and outcomes are acceptable for study	Mworx Pty Ltd	David Readett Principal Consultant
Process Plant design	Review of PDC, PFDs, establish Mechanical Equipment List and plant layout and design, capital cost estimate	Primero Group (Primero)	Ned Hambling Project Design Manager
Infrastructure design	Investigation, layout and design, capital cost estimate	Primero	Ned Hambling
Tailings design	Tailings Testwork Tailings investigation, design and study	TriLab Pty Ltd (Trilab) Land & Marine Geological Services Pty Ltd (L&MGS)	Gerard Creely Laboratory Manager Chris Lane Principal Consultant
Concentrates marketing	Concentrate marketing and shipping assessments	Cliveden Trading AG (Cliveden)	Ashley Woodhouse Edward Schonfeld Consultants
Northern Territory Mining Approvals	Provide summary of NT approvals process and strategy to obtain Authorisation	ERIAS Group Pty Ltd (ERIAS)	David Browne Principal Consultant
Study document	Compilation of Study document	Primero	Richard Kelso-Marsh Study Manager

FINANCIAL ANALYSIS

The financial model for the Project was developed based on a steady state 450,000tpa mining and processing schedule from open pit mining operations at Mt Bonnie and subsequent underground mining at Iron Blow over a 6.5 year LoM.

Anticipated average annual and LoM payable metals sales of the key commodities are shown in Table 7, Pg. 12. The Project is estimated to return a pre-tax NPV (at a nominal 10% discount rate) of $133 million with an IRR of 73% resulting in a fast payback period of less than 15 months. The Project is estimated to generate for the Company a life of mine pre-tax net cashflow of $266 million (approximately $213 million after-tax), available to re-pay the initial Plant and mine infrastructure capital costs of $58 million.

Plant and infrastructure construction and pre-strip at Mt Bonnie will occur concurrently followed by Plant commissioning. The Mt Bonnie open-pit will contribute 1.02 million tonnes of ore production over an approximate 2 year period declining early in year three when the Iron Blow underground mine will ramp up and contribute 1.96 million tonnes of ore for a further 4.5 years of steady-state production.

Approximately 1.6 million tonnes of waste rock are expected to be mined at Mt Bonnie during the pre-strip phase. The LoM stripping ratio at Mt Bonnie is estimated to be 8:1 and reduces to 1.1:1 at the base of the open-pit during the final phase of mining.

The proposed Plant is planned to be constructed at the nearby historic Fountain Head mining area located approximately 12 km to the north of Iron Blow and Mt Bonnie. Processing will consist of crushing, grinding, and flotation to generate two product streams, a zinc concentrate and a precious metals concentrate, as well as tails. All concentrates are planned to be trucked to the main port of Darwin and then shipped to international markets.

Project Returns

Key financial returns expected for the Project are shown below in Table 5.

Table 5 Key Project financial returns

Project Returns	PFS Financial Model	At Spot Prices & FX (30 June 2017)
Total Net Smelter Revenue (Zn, Au, Ag, Pb + Cu)	$628 million	$582 million
Zinc	$271 million, 43%	-
Silver	$187 million, 30%	-
Gold	$117 million, 19%	-
Lead + Copper	$53 million, 8%	
Total Pre-tax net Cash flow	$266 million	$232 million
Annual Average pre-tax net Cash flow	$41 million	$36 million
Pre-tax net Cash flow per tonne of ore, LoM – *refer Table 6a*	$90/tonne	
Up-front Plant Capital/Mine Development	$58 million	$58 million
Peak Cash Draw (prior to first revenue)	$66 million	-
Pre-tax Net Present Value (NPV), 10%	$133 million	$103 million

Project Returns	PFS Financial Model	At Spot Prices & FX (30 June 2017)
Internal Rate of Return (IRR)	73%	60%
Payback Period	15 months	17 months

Table 6 PFS Financial Model – Margin and Costs per Tonne of Ore Processed over LoM

		Per Tonne of Ore Processed over LoM
Net Smelter Revenue		$211.11
Open-pit Mining per tonne of ore Mt Bonnie	$39.75	$13.58
Underground Mining per tonne of ore Iron Blow	$72.72	$47.88
Total Mining		$61.46
Processing		$39.75
General and Administration		$4.49
Royalties		$13.32
Underground Capital equipment		$2.52
LoM Margin		$89.57

The Project is expected to generate for the Company an average LoM pre-tax net cashflow of approximately $41 million per year over its 6.5 year mine life, and $266 million in total. Total net cashflow is available to repay any project debt, settle income tax obligations (estimated at $53 million over the LoM after utilisation of carried forward tax losses), and otherwise for reinvestment by the Company or return to shareholders.

As shown in Table 6 above, the Project is forecast to generate just under $90 of pre-tax cashflow per tonne of ore. This is based on net smelter revenue of $211 per tonne of ore less operating costs (mining, processing, general & administration), royalties and pre-mine capital equipment required at Iron Blow (underground development capital is included in the mining cost rate).

From an investment analysis standpoint, the initial $58 million investment in pre-production process plant and mine development capital yields a pre-tax NPV, at a nominal 10% discount rate, of approximately $133 million. The pay-back period on this investment is less than 15 months, reflected in the Project's expected IRR of 73%. Note: the NPV increases to $145 million if an 8% discount rate is used.

Expected net smelter revenue from the sale of metals over the LoM averages $97 million per year and is derived from payable metals at consensus forecast commodity prices and the US dollar exchange rate (Table 3, Pg. 4) after deducting the Australian inland and overseas transport and shipping costs to smelter as well as treatment charges and refining charges (TCs and RCs) levied by the smelter. These ex-mine gate charges represent approximately 15% of gross metal revenue and average $229 per tonne of concentrate across the two product streams, including estimated freight charges of US$50 per tonne of concentrate (together these equal $26.69 per tonne of ore).

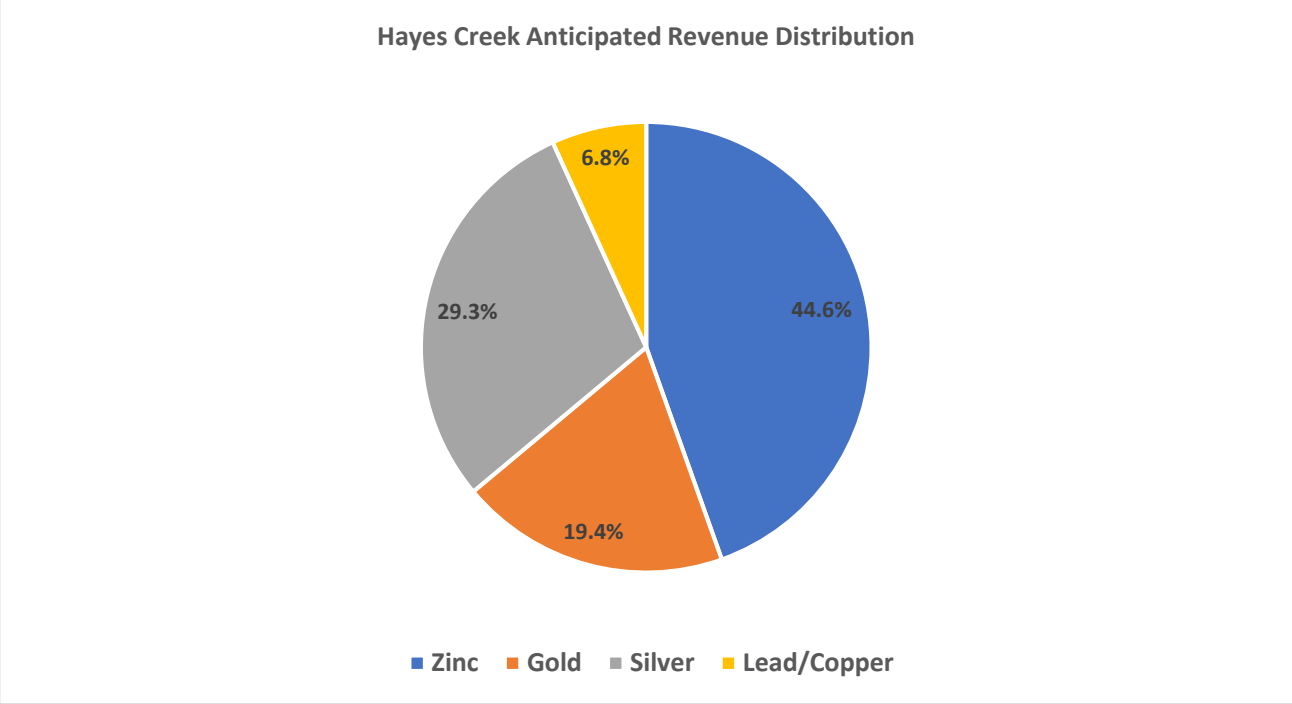
Expected annual average payable metals sales over the LoM calculated from payable metal percentages (recovered metals to concentrates taking into account smelter payable rates and deductions) are shown below in Table 7 and in more detail in Table 8, Pg. 13. For further information on metallurgical recoveries refer to the 'Mineral Processing' section, Pg. 35, and for further information on smelter payable rates refer to the 'Marketing' section on Pg. 50.

Anticipated revenue distribution by commodity is shown in Figure 1.

Table 7 Average annual and LoM payable metals in concentrates

Metals in concentrates	Mt Bonnie payables	Iron Blow payables	Per year	Over LoM
Zinc	66.9%	71.3%	14,200 tonnes	92,300 tonnes
Gold	58.0%	42.5%	12,350 ounces	80,200 ounces
Silver	64.4%	64.1%	1,233,000 ounces	8,014,000 ounces
Lead/Copper	49.8%	44.8%	2,600 tonnes	17,100 tonnes

Figure 1 Net smelter revenue percentages broken down by commodity



NOTE: Using commodity prices as of 30 June 2017 (Table 3, Pg. 4), the Project is anticipated to return a pre-tax NPV (at a nominal 10% discount rate) of $103 million, and life of mine pre-tax net cashflow of $232 million.

Table 8 Summary of planned mining and production figures

	Units	Total/ Average	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
Mt Bonnie OP Ore	t	1,015,400	59,836	451,411	451,026	53,127	-	-	-	-
Mt Bonnie OP Waste	t	8,143,674	1,588,526	4,791,802	1,703,261	60,084	-	-	-	-
Strip Ratio		8.0	26.5	10.6	3.8	1.1	-	-	-	-
Zinc	%	4.34%	0.66%	3.52%	5.62%	4.67%	-	-	-	-
Gold	g/t	1.7	2.88	2.04	1.31	0.83	-	-	-	-
Silver	g/t	150.9	100.9	158	152.2	136.5	-	-	-	-
Copper	%	0.26%	0.12%	0.23%	0.31%	0.22%	-	-	-	-
Lead	%	1.34%	1.93%	1.44%	1.18%	1.12%	-	-	-	-
Iron Blow UG Ore	t	1,957,565	-	-	-	396,873	450,000	450,000	450,000	210,692
Iron Blow UG Waste	t	333,705	-	-	247,268	70,013	6,150	10,275	-	-
Zinc	%	4.50%	-	-	-	3.47%	4.72%	5.12%	4.78%	4.05%
Gold	g/t	1.8	-	-	-	1.87	1.83	1.92	1.81	1.29
Silver	g/t	120	-	-	-	82.88	124.17	144.31	134.02	98.83
Copper	%	0.25%	-	-	-	0.25%	0.28%	0.26%	0.24%	0.14%
Lead	%	0.78%	-	-	-	0.49%	0.82%	0.96%	0.89%	0.65%
Total Ore Processed	t	Total	59,836	451,411	451,026	450,000	450,000	450,000	450,000	210,692
Recoverable metals to Concentrate										
Zinc	t	118,881	358	14,269	22,792	14,612	19,109	20,713	19,358	7,671
Gold	oz	95,423	3,141	16,734	10,770	14299	14,945	15,738	14,835	4,961
Silver	oz	9,278,398	144,337	1,705,000	1,641,397	959,714	1,335,803	1,552,521	1,441,795	497,831
Lead/ Copper	t	21,390	703	4,375	3,954	2,201	2,935	3,248	2,990	983
Concentrates Produced and Shipped										
Zinc	t	207,834	625	24,946	39,846	25,546	33,407	36,211	33,843	13,411
Precious Metals	t	139,176	2,165	25,575	24,621	14,396	20,037	23,288	21,627	7,467

	Units	Total/ Average	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
Payable metals in concentrate										
Zinc	t	92,308	266	10,610	16,947	11,477	15,152	16,424	15,350	6,083
Gold	oz	80,247	3,220	17,153	11,040	10,951	11,216	11,811	11,133	3,723
Silver	oz	8,013,985	125,079	1,477,519	1,422,401	827,959	1,151,278	1,338,059	1,242,628	429,062
Lead/ Copper	t	17,099	610	3,746	3,346	1,683	2,218	2,470	2,275	752

Income Tax

Forecast Project financial metrics such as NPV and IRR have been calculated on a pre-tax basis. The estimated free cash flow generated by the Project is expected to result in a LoM tax liability of approximately $62 million before applying the benefit of carried forward losses, taking post-tax free cash flows to $213 million.

Taxes payable on Project profits have been determined at the tax rate of 30% applicable to a corporation not qualifying for the reduced small businesses tax rate that was recently enacted by the Australian Parliament (27.5% reducing to 25% by 2026). PNX will not qualify for the reduced rate as annual revenues are forecast to exceed the $50 million qualifying threshold.

At 31 December 2016, PNX had carried forward tax operating losses of approximately $31 million (representing an approximate future tax benefit of $9.3 million at a 30% tax rate). These losses are expected to be available to reduce future Project profits. Total tax payable over the life of the Project is forecast at $53 million, representing an effective rate of 25.5%, with the lower effective rate due to the tax benefit of fully utilising carried forward tax losses.

Royalties and Silver Stream Agreement Costs

Three royalties are applicable to the Project:

- NT Government minerals royalty – 20% of project profit, as calculated under the legislation – equivalent to an approximate 5% Net Smelter Return (NSR) royalty on all metals
- Newmarket Gold NT Holdings Pty Ltd – 2% NSR on gold and silver
- Counterparties to Silver Streaming Agreement – 0.48% NSR on gold and silver (0.24% to each of two parties).

The total of all royalties that would be paid are $35.3 million over the LoM ($5.4 million per year), equal to $11.90 per tonne of ore processed.

Under the Silver Streaming agreements (identical agreements with 2 parties), PNX is required to deliver a total of 224,000 oz of silver to the parties over 2 years. This represents a total cost to the Project of $4.3 million ($1.46 per tonne of ore) at the consensus forecast commodity prices and the US dollar exchange rates for the relevant period. The above amounts have been included in the financial model as a cost, separately to the Operating costs discussed below.

Capital Costs

The capital cost of Plant construction and mine infrastructure is estimated to be approximately $58 million, including an approximate 10% cost contingency and a 7.5% contractor margin. For further information refer to the more detailed discussion on capital costs in the ‘Costs’ section Pg. 44.

A further estimated $7.5 million of capital is required for pre-mining underground specific infrastructure at Iron Blow early in year 3, and includes all of the specific equipment, portal construction, ventilation shafts and fans, development and set-up costs required to access the orebody prior to production. The estimated cost of demobilising equipment is also included at the end of both Mt Bonnie and Iron Blow mining periods.

Underground capital development costs estimated to be $25.5 million ($13.00 per tonne of underground ore) have been treated as sustaining capital and are included in the overall underground mining cost rate of $62.13 per tonne of material mined.

Operating Costs

The average LoM ore and waste contract mining cost for the open pit at Mt Bonnie has been estimated to be $4.19 per tonne. An additional $1.96 per tonne of ore has been included for the estimated transport costs from mine to Plant RoM and ore specific costs resulting in an overall ore mining cost of $6.15 per tonne. For further information refer to the more detailed discussion regarding operating costs in the 'Costs' section Pg. 44.

Estimated underground mining costs at Iron Blow over LoM are $71.56 per tonne of plant feed ($72.72 per tonne including RoM haulage), this equates to $61.14 per tonne of material planned to be mined (as it includes a small amount of waste rock movement over the LoM) or $62.13 per tonne of material mined including RoM haulage costs.

Plant operating costs are estimated at $39.75 per tonne of ore processed at an average annual feed rate of 450,000 tonnes per year, with labour, utilities, maintenance and reagents estimates included. Refer to Table 28, Pg. 50 for further detail.

General and Administration (G&A) costs are estimated at $4.49 per tonne of ore processed and include an allowance for site overheads, including general freight and administration. An operating cost allowance is also included for wet hire of a RoM loader and other mobile and equipment costs not included in mining and processing cost centres. Fuel costs for mobile equipment are included in mining and processing costs at a rate of $1.30 per litre for diesel less the $0.38 per litre diesel cost rebate ($0.92 per litre net).

G&A costs also include $0.85 per tonne of ore processed representing the estimated costs of maintaining a bank guarantee (anticipated to be $12 million) in favour of the NT Government to cover the Project environmental bond required prior to commencing mining activities as well as the cost of the NT Government's 1% annual rehabilitation fund levy.

Mine site rehabilitation costs are planned to be incurred progressively over the life of the Project, and an estimate is included in mining costs. Plant site rehabilitation and closure costs are expected to be largely offset by the salvage value of plant and equipment at the end of the LoM.

Sensitivity Analysis – Key Financial Assumptions

The financial projections of the Project are most sensitive to movements in the AUD/USD exchange rate, recoveries of payable metals, prices for zinc, gold and silver, and processing costs per tonne of ore. Project economics are least sensitive to the cost of initial capital.

The chart below (Figure 2) shows the impact on project NPV of a range of percentage variances in key project assumptions, while Table 10, Pg. 16 shows the LoM impact on net smelter revenue, pre-tax net cashflow, NPV and IRR of a ±10% movement in key variables.

As shown, the Project is particularly sensitive to overall metal recoveries (as a key driver of revenue) and movements in the Australian dollar relative to the US dollar due to metals prices being US dollar-based while the Project's costs are (primarily) Australian dollar-based. A ±10% movement in the AUD/USD would have an approximate ±$65 million effect on Project net smelter revenue, and a ±$45 million impact on Project NPV.

Figure 2 NPV sensitivity analysis

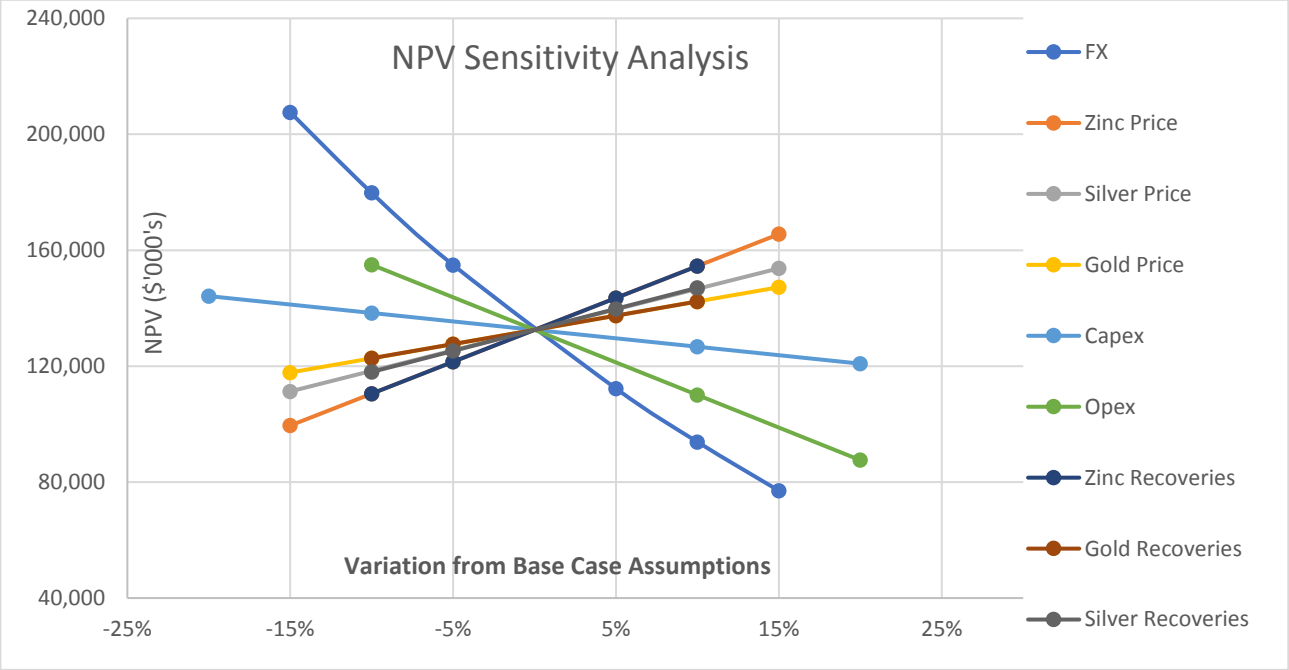


Table 10 Key project sensitivities

Key Sensitivities	Hayes Creek Project Life of Mine			
Variable	Revenue $000's	Pre-tax Net Cashflow $000's	NPV $000's	IRR
BASE CASE	628	266	133	73%
USD Rate+10% (~$0.80)	571	212	94	55%
USD Rate -10% (~$0.66)	697	332	180	94%
Zinc Recoveries +10%	661	298	155	81%
Zinc Recoveries -10%	595	235	111	64%
USD Gold price +10% (~US$1,418/oz)	642	280	142	78%
USD Gold price -10% (~US$1,160/oz)	613	253	123	66%
USD Zinc price +10% (~US$2,827/t)	658	298	155	81%
USD Zinc price -10% (~US$2,313/t)	592	235	111	64%
Capital costs +10% ($64.1m)	No impact	No impact	127	65%
Capital costs -10% ($52.5m)	No impact	No impact	138	82%
Total Operating costs +10%	No impact	235	110	63%
Total Operating costs -10%	No impact	298	155	83%

Project Financing and Sources of Capital

Financing for the construction of the mine Plant and infrastructure required for the Project to achieve the production targets outlined in this report has not yet been secured, which is typical for a PFS stage project.

The Hayes Creek financial model makes no assumption about the source of financing, however, it will likely be a mix of debt and equity funding (reflected in the nominal discount rate used of 10%). PNX will consider a range of financing alternatives outside of regular debt and equity sources, including potential equity-sharing arrangements with future offtake partners, mine contractors or other interested parties, as well as the potential for further forward sale of metals, in particular silver and/or gold.

There are no assurances that Project finance will be obtained. However, PNX believes there are reasonable grounds that the approximate $58 million in initial capital required to develop the Project, plus working capital of an approximate $8 million for pre-strip and operating costs to be incurred prior to first receipt of sales proceeds, will be funded on the basis of the following:

1. Project economics support a decision to invest. The Project is forecast to generate $266 million of pre-tax net cashflows, an NPV in excess of $130m and a strong IRR (greater than 70%) with a very short (15 month) pay-back period.
2. Capital, mining and processing costs are well understood. Capital costs are comparatively low and as a result it is not unreasonable to assume that a company the size of PNX (recent market capitalisation range $7-12 million) could secure the necessary project funding.
3. The Project has been technically de-risked with resources, mining, processing, and product marketing well understood and at a high confidence level.
4. The Project is located in a favourable mining jurisdiction (the Northern Territory) only 170 km from Darwin, and the development strategy includes the use of existing infrastructure which boosts project economics and further reduces Project risk.
5. The Project hosts attractive key commodities: zinc, gold and silver, all broadly expected to have continuing strong global demand into the near future.
6. The main financing commitment for Plant and infrastructure is not required until environmental and mining approvals have been received, at which stage the Project will have a lower risk profile.
7. PNX has been able to raise equity capital over its 10 year history to fund its mineral exploration and project development activities, with approximately $35 million raised by the Company to date. PNX investors have been supportive of the Company strategy and have provided funds through equity placements and pro-rata offerings.
8. The Board and senior management of PNX have experience in financing and developing mining projects in Australia and overseas and have an appropriate mix of skills and expertise to oversee and direct the progression of the Project through to a decision to mine.

Expenditure in the order of $6 million is also required to progress the Project to the completion of a DFS which would allow the Company to seek the required Project finance and make a formal decision to mine. DFS funding has not yet been secured. PNX believes, on the same basis as noted above, that the necessary capital can be raised. The PNX Board and Management consider the robust Project economics estimated in the PFS provide several options for funding this final stage of feasibility. PNX had cash on hand at 30 June 2017 of approximately $1.4 million and no debt requiring cash repayment.

PROJECT LOCATION AND TENURE

The Project is located approximately 170 km south of Darwin in the Northern Territory approximately 6 km east of the Stuart Highway (Figure 3).

The Project comprises 14 Mineral Leases (MLs) of 168 hectares containing the Mt Bonnie and Iron Blow deposits. The MLs provide continuous coverage of the deposits and unrestricted access to each site. The Project is ideally located within an existing infrastructure services corridor in a historic and currently active mining region.

The MLs were acquired in August 2014 from Newmarket Gold NT Holdings Pty Ltd (Newmarket), previously Crocodile Gold Australia Pty Ltd a subsidiary of Canadian-listed Kirkland Lake Gold Ltd (Kirkland). Refer to PNX's ASX release from 18 August 2014 for details of this transaction. Newmarket holds the right to clawback a 30% interest in the Project by paying PNX three times (3 x) its accumulated expenditure on the Project (an approximate $14 million payment). This right expires 6 months after PNX advises Newmarket of the completion of the PFS.

The Plant, associated infrastructure and in-pit tailings storage facility are planned to be located at the nearby historic Fountain Head mining area 11.6 km north of Iron Blow.

Fountain Head is owned by Kirkland with whom PNX has been in discussions with over the course of the PFS regarding securing long-term access to the Fountain Head MLs.

All assumptions made in the PFS relating to the Plant site are based on PNX finalising access to the Fountain Head MLs, which PNX expects will occur in due course.

The Mt Bonnie and Iron Blow MLs are underlain by Exploration License (ELs) EL25748 to the east, EL23431 to the west and EL9608 to the southeast, all part of the Burnside Project in which PNX holds a 51% interest and is earning a 90% interest from Newmarket. To the west of Iron Blow, mineral leases associated with alluvial gold operations are held by third parties.

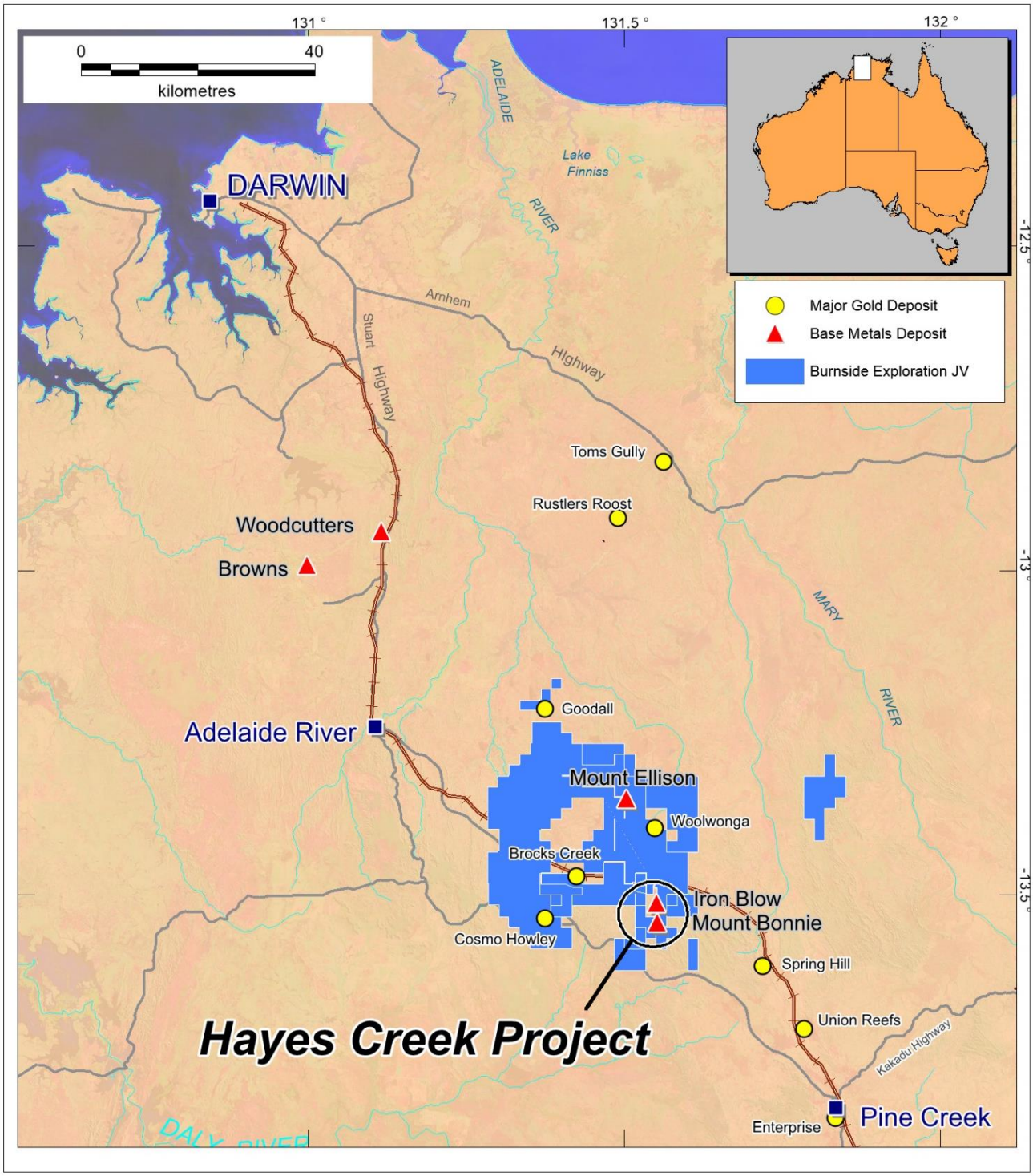
All MLs are situated within Perpetual Pastoral Lease 1217, NT Portion 07122 known as Douglas Station, held by Dr Tony Hayne. There are no pastoral activities in the area. A current land access agreement relating to exploration and resource drilling activities is in place with Douglas Station; however, an access agreement for mining activities will be required.

The Project is located in the tropical zone with monsoonal rain patterns defining two distinctive seasons, wet and dry. Generally the wet season commences in November and continues until March, with the highest rainfall months in January and February. June and July has the lowest mean monthly rainfall.

The topography of the Project area exhibits generally north-south trending ridge lines up to 200m high with steep slopes and sharp crests dissected by numerous small immature creeks. Small narrow alluvial flats are associated with local changes in grade. The Mt Bonnie deposit is associated with a north-south trending ridge line. The ridge lines merge into foothills and undulating alluvial soil plains sourced from the erosion of the ridge lines.

The Project lies within the headwaters of Margaret River which flows northwards into the Adelaide River. The creeks and drainage lines are perennial, flowing in wet season and consequently are dry during the dry season.

Figure 3 Hayes Creek Project location



ENVIRONMENT AND APPROVALS PROCESS

Overview

The Mt Bonnie and Iron Blow deposits are located on granted MLs where Native Title has been extinguished and the natural environment is disturbed from previous mining activities. The likelihood of the Project gaining authorisation to mine is considered high.

PNX has developed a framework as part of a risk based assessment that identifies risks to be managed and mitigated during the development, construction and operational stages of the Project. Early stage work in particular will involve stakeholder engagement on all levels from local communities to government officials and Ministers, as well as environmental assessments, monitoring and closure plans. The approvals strategy presents concepts aimed at ensuring that the Project is not unduly delayed by using sound engagement practices and scientific based solutions to any potential issues.

With baseline studies relating to the Environmental Impact Statement (EIS) already having commenced, the proposed Project development timeframe is shown below in Table 11, Pg. 21.

In the Northern Territory environmental permitting of mining activities is regulated under the Environmental Assessment Act (EAA) and the Mining Management Act (MMA) and is administered by the Department of Environment and Natural Resources and the Department of Primary Industry and Resources (DPIR) respectively. The EAA and MMA provide the framework for the authorisation of mining activities, the management and protection of the environment, and the provision of economic and social benefits to communities affected by mining activities.

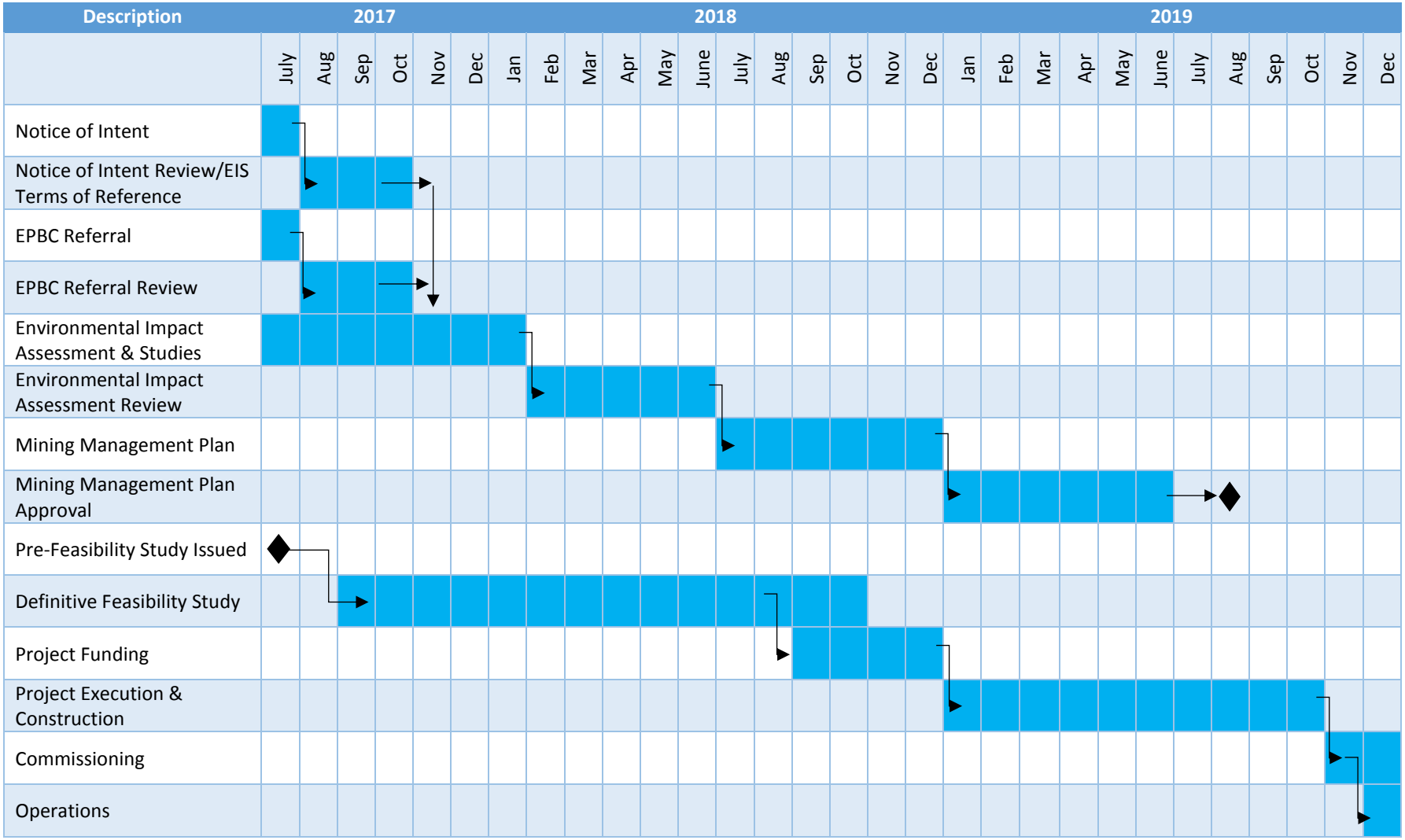
Submission of a Notice of Intent (NOI) to DPIR and the Northern Territory Environmental Protection Authority (NT EPA) is required to determine the level of Project assessment, being either a Public Environmental Report (PER) or an EIS.

An environmental assessment (PER or EIS) is then prepared and submitted to the NT EPA for review and recommendation to the Minister for Primary Industry and Resources for approval. Following this approval, Project authorisation would be obtained under the MMA and Mining Act via the preparation and subsequent approval of a Mining Management Plan (MMP).

The various environmental aspects and impacts of the Project will be managed via the MMP (to be completed after the EIS/PER approval) which will detail environmental management measures relating to vegetation clearing, flora, fauna, dust, weeds, and rehabilitation. The MMP will be revised and submitted for approval by DPIR on an annual basis to ensure environmental management practices are regularly reviewed and updated in light of new information and regulatory requirements.

PNX and ERIAS have identified the objectives of the approvals strategy of the Project and developed a logical and comprehensive approach for addressing these approvals. ERIAS has provided the necessary consulting services and managed specialist consultants to allow for the preparation of the NOI and referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Submission of the NOI and EPBC Act referral will occur when a formal agreement is reached with Kirkland to access the Fountain Head MLs.

Table 11 Project development and approvals timetable



Environmental Considerations

The management of waste rock and tailings, in particular materials classified as Potentially Acid Forming (PAF), and surface water management are key considerations for the Project. PNX's Project development strategy has focused specifically on identifying how these materials will be managed for the Project to be developed, operated and closed with minimal adverse impact on the environment. As a result of this approach, the closure plan of the Project is a key driver in its development.

Identification and detailed assessment of suitable sites for the proposed Plant location and tailings management was completed by PNX and ERIAS with the main considerations being:

- Proximity to the mining centres at Mt Bonnie and Iron Blow
- Suitability of a historic mining void for in-pit tails deposition and permanent water cover (capacity, geology, groundwater movement)
- Access to the preferred area (existing Mineral Leases, ownership)
- Access to existing infrastructure including roads, rail, gas, grid power
- Liabilities and costs relating to historic mining activities.

The Mt Bonnie pit (once mined out), and the Brocks Creek, Northpoint and Fountain Head historical mines were all assessed. The Fountain Head site was identified as being the most suitable for long-term, stable tailings management and would enable a substantial part of the footprint of the Project to be limited to areas that have already been disturbed thereby avoiding new disturbance wherever possible.

An EPBC Act referral has been prepared for the Project. As the Fountain Head, Mt Bonnie and Iron Blow sites are highly disturbed and have been previously cleared and mined it is considered unlikely that the Proposed Action will have a significant impact on flora or fauna. Additionally, searches were completed and no World Heritage Properties, National Heritage Places or Wetlands of International Importance were identified in the vicinity of the Project area.

Detailed results of current and historic flora and fauna surveys and heritage surveys have been summarised in the referral. Only one species of conservation significance, the Gouldian Finch (*Erythrura gouldiae*), an endangered species, was discovered in the region during a recent Flora and Fauna survey. The implications of the identification of the Gouldian Finch for the project are:

- The Project is likely to be considered a Controlled Action under the EPBC Act
- Both the Northern Territory and Commonwealth Governments will assess the Project
- Further surveys may be required to demonstrate that the population is not confined to this one area
- A specific management plan which addresses how impacts will be minimised will be required.

On the basis that the various sites are pre-existing mining areas and heavily disturbed by historical mining activities it is not likely that the Project will substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species, or seriously disrupt the lifecycle (breeding, feeding, migration or resting) of an ecologically significant proportion of each species population (based on criteria outlined in the draft referral guideline for birds listed as migratory species under the EPBC Act).

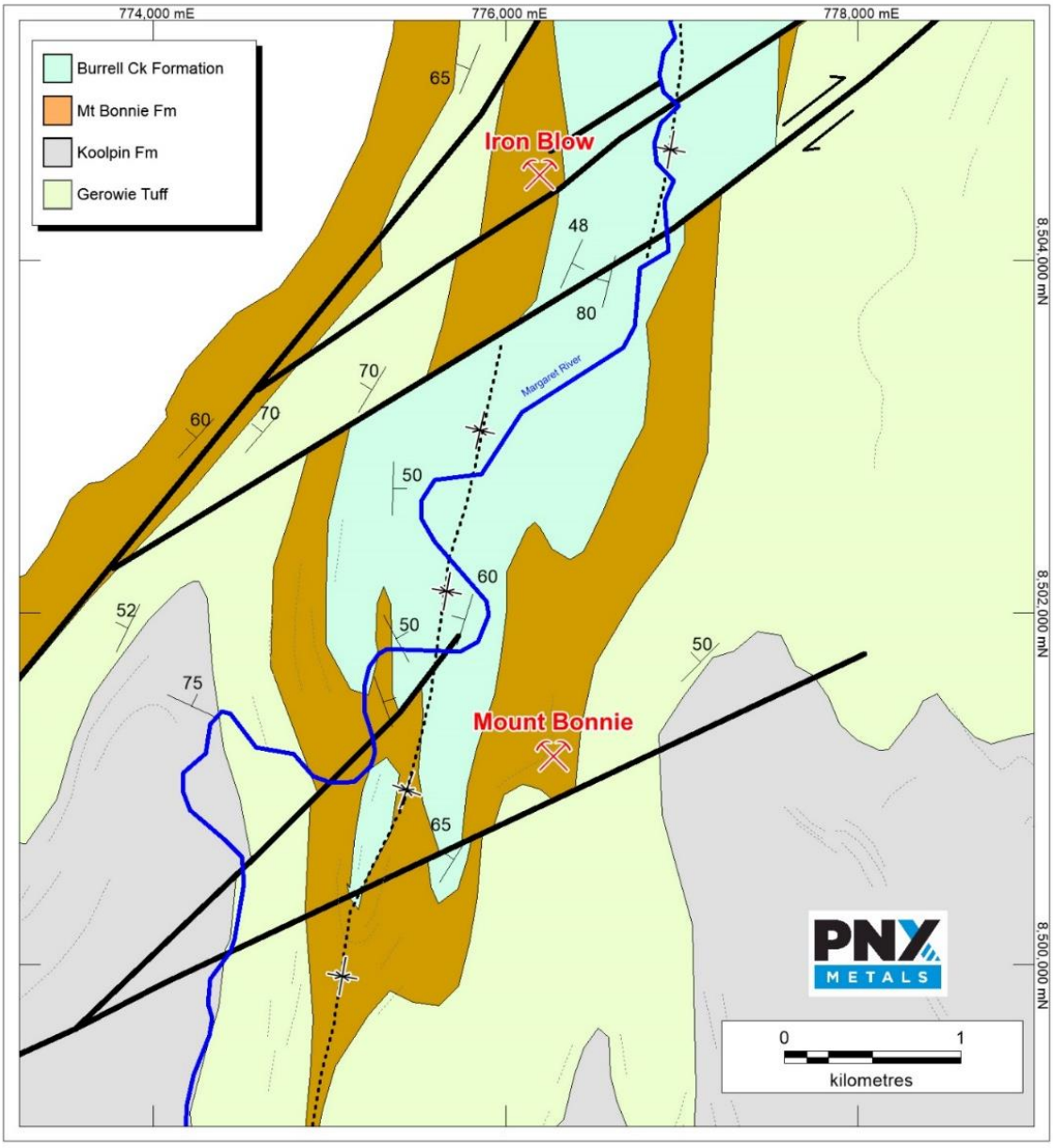
GEOLOGY

The Project is located within the Pine Creek Orogen, a highly prospective mineral province in the Northern Territory.

Both the Iron Blow and Mt Bonnie deposits were discovered during the 1870s as part of the 1872–73 gold rush. Between 1896 and 1906 approximately 13,700t of oxide and sulphide ore was extracted via open cut mining at Iron Blow. Mining of oxide mineralisation recommenced between 1983-86 via open cut mining with the extraction of approximately 110,000 tonnes of gold rich ore from Mt Bonnie and approximately 15,000 tonnes from Iron Blow.

The Mt Bonnie and Iron Blow deposits (Figure 4) occupy approximately the same stratigraphic location in the Margaret Syncline near the base of the Mount Bonnie Formation close to the contact with the underlying Gerowie Tuff. Both are mineralogically similar, thought to be volcanogenic massive sulphide (VMS) in origin being formed at or near the sea floor by submarine felsic volcanic activity.

Figure 4 Local geology



The original geometry of both deposits has been distorted by folding which produced the Margaret Syncline. The Mt Bonnie deposit has been tilted to the west and forms a body dipping relatively consistently to the west at approximately 45°. The Iron Blow deposit has been tilted steeply to the east at approximately 75°. Both deposits are considerably dismembered by east-west, northeast and northwest trending faults.

The mineralogy of the massive sulphides in the primary zone of each deposit is dominated by pyrrhotite and sphalerite, with subordinate pyrite, galena, chalcopyrite, arsenopyrite, marcasite and tetrahedrite. Pyrrhotite constitutes up to 80% of the rock. Sphalerite constitutes between 5-10% of the rock, and chalcopyrite occurs as ex-solution inclusions within the sphalerite. Galena usually forms less than 5% of the rock. Sulphide minerals range in grain size from 0.5 mm to 5 mm and are massively textured. Mineral associations and textures are consistent with hydrothermal ore formation at temperatures between 350-450°C (Pontifex, 1964). The gangue minerals are dominated by dolomite, chlorite, talc, actinolite and quartz.

Mineral Resource Estimates

Mineral resources at both the Mt Bonnie and Iron Blow deposits have been estimated independently by CSA in accordance with the JORC Code (2012)[3]. CSA considers that data collection techniques are consistent with industry good practice and suitable for use in the preparation of a Mineral Resource estimates (see ASX releases 09 February 2017 and 03 May 2017).

The Hayes Creek Project hosts total Indicated (84.7%) and Inferred (15.3%) Mineral Resources:

- 4.1 million tonnes containing 177,200 tonnes of zinc, 238,000 ounces of gold, 16.2 million ounces of silver, 37,000 tonnes of lead, and 9,950 tonnes of copper[4]
- This is equivalent to 445,000 tonnes of ZnEq or 1.11 million ounces of AuEq[5]

The results of the estimation are summarised in Tables 12, 13 and 14.

Table 12 Total Project Mineral Resources (Mt Bonnie + Iron Blow) by JORC Classification as at 3 May 2017

JORC Classification	Domain	Cut-off grade	Tonnage (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)
Total Indicated (84.7%)			3,455	4.88	1.01	0.27	137	1.88	11.99	9.29
Total Inferred (15.3%)			622	1.39	0.37	0.10	52	1.46	5.03	3.91
Total Indicated + Inferred Mineral Resource			4,077	4.35	0.91	0.25	124	1.81	10.93	8.47
Total Contained Metal (t)				177,200	37,000	10,050	16.2Moz	237.7koz	445,000t	1.1Moz

[3] *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).*

[4] *All material assumptions and technical parameters underpinning the estimate continue to apply and have not changed materially*

[5] *Refer definition of ZnEq (zinc equivalent) and AuEq (gold equivalent) below* on Page 26

Table 13 Iron Blow Mineral Resources by JORC Classification as at 3 May 2017

JORC Classification	Lode	AuEq Cut-off (g/t)	Tonnage (Mt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)
Indicated	East Lode	1.0	0.80	7.64	1.83	0.30	275	2.90	20.64	15.53
	West Lode	1.0	1.28	4.14	0.33	0.31	60	1.73	8.84	6.66
Total Indicated			2.08	5.49	0.91	0.30	143	2.19	13.39	10.08
Inferred	East Lode	1.0	0.02	0.48	0.34	0.16	132	6.01	13.65	9.43
	West Lode	1.0	0.02	0.76	0.96	0.13	109	1.02	5.90	4.44
	FW Gold	1.0	0.21	0.25	0.07	0.03	16	2.03	3.48	2.62
	HW Gold	1.0	0.04	0.06	0.09	0.01	6	1.68	2.57	1.94
	Interlode Gold	1.0	0.04	0.21	0.03	0.07	8	1.66	2.79	2.10
	Interlode Base Metal	1.0	0.12	3.52	0.32	0.14	35	0.69	5.87	4.42
Total Inferred			0.45	1.11	0.18	0.07	27	1.71	4.38	3.30
Total Indicated + Inferred Mineral Resource			2.53	4.71	0.78	0.26	122	2.10	11.79	8.87
Total Contained Metal (t)				119,200	19,700	6,650	9.9Moz	170.9koz	298,000t	721.5koz

Table 14 Mt Bonnie Mineral Resources by JORC Classification as at 8 February 2017

JORC Classification	Domain	Cut-off grade	Tonnage (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)
Indicated	Oxide/ Transitional	0.5g/t Au	195	0.94	2.43	0.18	171	3.80	11.50	9.44
Indicated	Fresh	1% Zn	1,180	4.46	0.94	0.23	121	1.02	9.60	7.88
Total Indicated			1,375	3.96	1.15	0.23	128	1.41	9.87	8.11
Inferred	Oxide/ Transitional	0.5g/t Au	32	0.43	1.33	0.29	74	2.28	6.37	5.23
Inferred	Fresh	1% Zn	118	2.91	0.90	0.15	135	0.54	7.61	6.25
Inferred	Ag Zone	50g/t Ag	21	0.17	0.03	0.04	87	0.04	2.36	1.94
Total Inferred			171	2.11	0.87	0.16	118	0.80	6.73	5.53
Total Indicated + Inferred Mineral Resource			1,545	3.76	1.12	0.22	127	1.34	9.53	7.82
Total Contained Metal (t)				58,000	17,300	3,400	6.3Moz	66.8koz	147,000t	388.5koz

Notes relating to Resource Tables

Due to effects of rounding, the total may not represent the sum of all components. No material changes in the estimates of the Mineral Resources at Mt Bonnie and Iron blow have occurred since they were originally reported. Metallurgical recoveries and metal prices (Table 15) have been applied in calculating zinc equivalent (ZnEq) and gold equivalent (AuEq) grades.

Iron Blow - A mineralisation envelope was interpreted for each of the two main lodes, the East Lode (Zn-Au-Ag-Pb) and West Lode (Zn-Au), and four subsidiary lodes with a 1 g/t AuEq cut-off used to interpret and report these lodes.

Mt Bonnie - Zinc domains are reported above a cut-of grade of 1% zinc, gold domains are reported above a cut-off grade of 0.5 g/t gold and silver domains are reported above a cut-off grade of 50 g/t silver.

Table 15 Summary of metal prices and metallurgical recoveries used to estimate the Mt Bonnie and Iron Blow Mineral Resources

Metals	Unit	Price*	Recovery Mt Bonnie	Recovery Iron Blow
Zinc	USD / t	2,450	80%	80%
Lead	USD / t	2,100	60%	60%
Copper	USD / t	6,200	60%	60%
Silver	USD / troy ounce	20.50	70%	80%
Gold	USD / troy ounce	1,350	55%	60%

**consensus prices at the time of the resources estimates. More recent prices have been used in the PFS financial model as outlined in Table 3, Pg. 4*

In order to assess the potential value of the total suite of minerals of economic interest, formulae were developed to calculate metal equivalency for the gold and zinc (see below). Metal prices as set out in Table 14 were derived from average consensus forecasts at the time of the Resource Estimates.

Metallurgical recovery information was sourced from test work completed at the Mt Bonnie and Iron Blow deposits, including historical test work. In PNX's opinion all the metals used in the equivalence calculation have a reasonable potential to be recovered and sold. PNX has chosen to report both the ZnEq and AuEq grades as although individually zinc is the dominant metal by value, the precious metals are the dominant group by value and are planned to be recovered and sold separately to the zinc.

The formulae below were applied to the estimated constituents to derive the metal equivalent values:

*Gold Equivalent (field = "AuEq") (g/t) = (Au grade (g/t) * (Au price per ounce/31.10348) * Au recovery) + (Ag grade (g/t) * (Ag price per ounce/31.10348) * Ag recovery) + (Cu grade (%) * (Cu price per tonne/100) * Cu recovery) + (Pb grade (%) * (Pb price per tonne/100) * Pb recovery) + (Zn grade (%) * (Zn price per tonne/100) * Zn recovery) / (Au price per ounce/31.10348 * Au recovery)*

*Zinc Equivalent (field = "ZnEq") (%) = (Au grade (g/t) * (Au price per ounce/31.10348) * Au recovery) + (Ag grade (g/t) * (Ag price per ounce/31.10348) * Ag recovery) + (Cu grade (%) * (Cu price per tonne/100) * Cu recovery) + (Pb grade (%) * (Pb price per tonne/100) * Pb recovery) + (Zn grade (%) * (Zn price per tonne/100) * Zn recovery) / (Zn price per tonne/100 * Zn recovery)*

Near-mine and Regional Exploration Opportunities

Excellent potential exists to expand the Project through near-mine and regional exploration.

The Company's aim is to delineate high-value, highly profitable gold and/or base metals deposits which can be treated through the proposed Plant, or through existing free-gold milling infrastructure owned by Kirkland.

Further drilling in the footwall or interlode zone at Iron Blow and by testing open mineralisation to the south and at depth of Mt Bonnie may increase existing Mineral resources. Additionally, high-grade mineralisation identified in vent structures beneath the proposed open-pit at Mt Bonnie may become a viable underground target.

As VMS deposits typically occur in clusters the potential to find new VMS mineralisation in close proximity to the Project is also considered to be very good.

Promising geochemical and geophysical anomalies have been defined for drill testing including the Margaret prospect, located 3km to the north of Mt Bonnie. Here, a large untested 1km in length Pb-Zn-Au-As in-soils anomaly has been defined.

PNX is also engaged in regional exploration activities over a large exploration tenure in the region including the Burnside, Moline and Chessman Projects where numerous base metals and gold mineral occurrences occur. Exploration in 2017 will commence with drilling at the **School** prospect where in 2016 PNX intersected significant gold mineralisation only 50m below the historical pit, including:

- **MORC001: 9m @ 2.66 g/t Au** (from 68m), and
- **MORC002: 7m @ 11.89 g/t Au** (from 115m), including **3m @ 23.79 g/t Au** (from 116m)

At **Cookies Corner**, a large ~1km in length gold in soils anomaly has been discovered 40km north-west of Hayes Creek. Historical high-grade rock chip assays up to 29.3g/t Au and limited RC and RAB drill testing generated numerous open near-surface intersections, including:

- **3m @ 19.7g/t Au from 3m** in CKRB035, and **6m @ 3.12g/t Au from 42m** in CC03

OPEN-PIT AND UNDERGROUND MINING STUDIES

CSA was requested to undertake a comprehensive mining study to at least PFS standard and complete an options analysis to optimise the extraction of ore from the Mt Bonnie and Iron Blow deposits, produce and recommend open pit and underground mine designs, and develop mine schedules based on the outputs. A recommended list of mining equipment and productivity ranges was also developed with preliminary mining capital and operating costs.

As part of the options analysis process both Mt Bonnie and Iron Blow were initially optimised for open cut mining. Underground mining, however, was ultimately selected as the preferred extraction method for the Iron Blow deposit.

Run of mine schedules were generated on an annualised and quarterly basis from the Mt Bonnie and Iron Blow Mineral Resources. The schedules were based on open pit and underground mine designs to provide steady-state Plant throughput rates of 400,000 and 450,000 tonnes per annum. The schedule for Mt Bonnie was generated in a conventional bench by bench fashion.

Long-hole open-stoping with fill was assessed as being the most suitable mining method for Iron Blow with the underground mine being accessed via a dedicated decline and stopes extracted in a 'bottom up' sequence.

The bench by bench and stope by stope production schedules contain total Indicated (98%) and Inferred (2%) tonnes and grades for Plant feed (at a cut-off grades of 3.15% ZnEq for open cut and 3.90% ZnEq for underground), waste tonnes and total tonnes.

The proposed mine plan will see mining operations commence at Mt Bonnie with an initial period (four-six months) of mining pre-production (including pre-strip) required to prepare the haul roads, tailing storage facility at Fountain Head and commencement of ore stockpiling. From month six, mining will be at full capacity with the Plant commissioning already having commenced. The mining schedule has allowed for 26 quarters of full production thereafter.

In the proposed mining plan the Mt Bonnie open-pit contributes 1.02 million tonnes of ore production over an approximate 2 year period, declining early in year three where Iron Blow underground mine then ramps up and contributes 1.96 million tonnes of ore for a further 4.5 years of steady-state production as the main Plant feed source.

A summary of the combined physicals for both deposits is shown below in Table 16.

Table 16 Mineral Resources used to generate Production Targets

Resource	Category %	Plant Feed (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	Waste (kt)	Material (kt)
Mt Bonnie Indicated	97%	987	4.43	1.34	0.26	152.5	1.69	-	987
Mt Bonnie Inferred	3%	29	1.29	1.15	0.09	97.4	1.94	-	29
Mt Bonnie Waste		-	-	-	-	-	-	8,144	8,144
Iron Blow Indicated	99%	1,938	4.50	0.79	0.25	120.9	1.81	-	1,938
Iron Blow Inferred	1%	20	4.31	0.20	0.10	24.2	0.53	-	20
Iron Blow Waste		-	-	-	-	-	-	334	334
Total	98%	2,974	4.45	0.97	0.25	130.5	1.76	8,478	11,452

Mt Bonnie Open Cut Mining

The pit design at Mt Bonnie shown in oblique view (with blocks ZnEq ≥ 5.0%) looking north-west (Figure 5) was based on typical open cut and project specific geotechnical parameters.

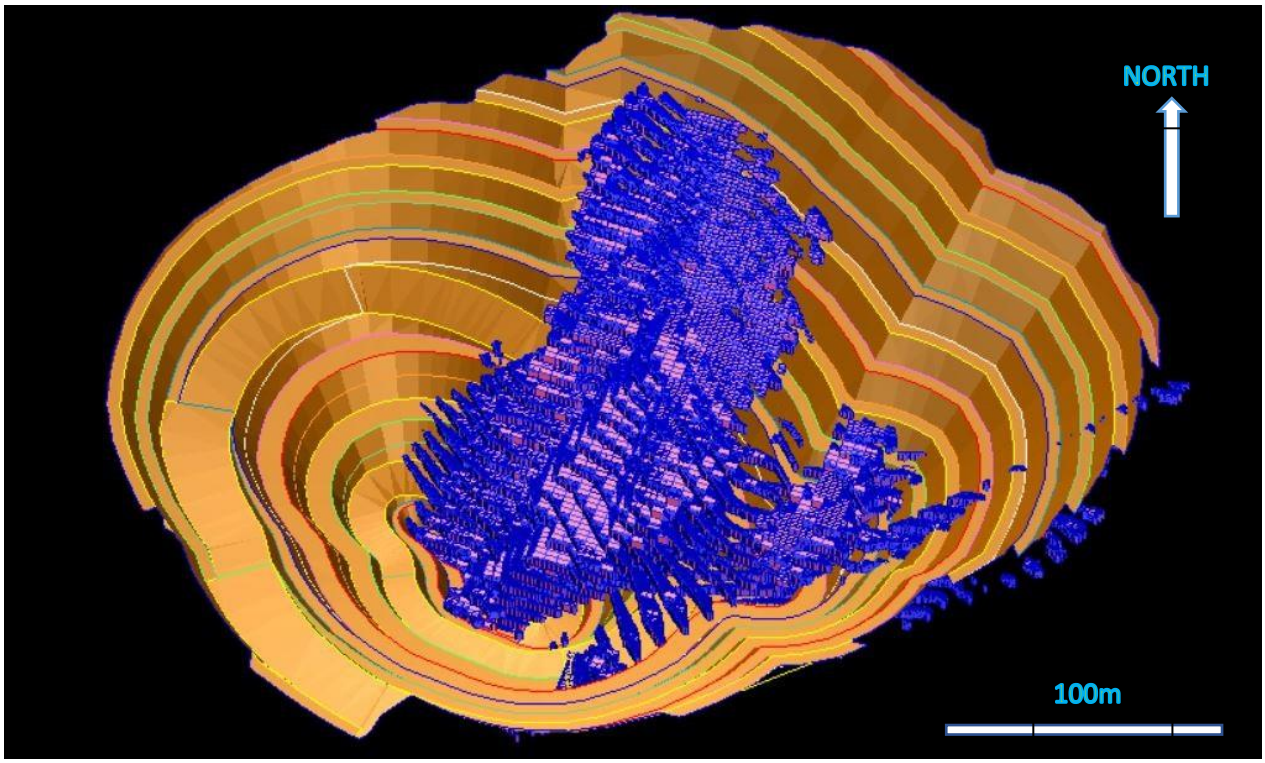
The mining schedule (Table 16) includes the components of the Mineral Resource that that have been classified as Indicated (97%) and Inferred (3%).

Slope stability assessment studies at Mt Bonnie have included stereographic kinematic analyses to assess fracture set orientations and probabilities of various modes of failure for each wall sector. Based on the assessment, base case slope angles were recommended for four wall sectors, assuming successful dewatering and de-pressurisation is implemented. The inter-ramp angles ranged from 36.8° to 42.9° in the oxide zone and 41° to 48.3° in the fresh zone.

Haul road width and gradient have been estimated based on the usage of a Cat 777D haul truck (90 tonne class), chosen due to the open cut size and the need to minimise mining dilution.

A dual-lane ramp width of 23m from the surface to the 80 RL at a gradient of 1:9 is used, transitioning towards the base of the pit to a single lane ramp of 13m width. A passing bay designed for empty trucks is incorporated in the design. Bench heights were set at 10m with pit batter angles of 50° to 60°.

Figure 5 Mt Bonnie pit design oblique view showing ZnEq ore blocks >5.0% (in blue) and pit shell



Conventional load and haul open-cut mining equipment is proposed. Mining is expected to be carried out on 10m benches for waste, and 5m flitches for Plant feed to minimise dilution. A maximum rate of 90m of vertical advancement per year was used.

A small excavation at the Mt Bonnie site exists relating to historic oxide mining. This and the excavation of the Mt Bonnie hill have been taken into account in all volume and tonnage estimations. The Mt Bonnie pit design measures approximately 410m in length, 320m in width, and 155m in depth.

Mine personnel requirements are based on the owner managing the mining contractor and explosives supplier, and performing all engineering, geological and surveying functions for the management of safe mining operations.

Work force and equipment utilisation have been based on a roster, (typical of those currently employed in this established mining region), of two 12 hour shifts per day for seven days a week for 365 days per year. A three-panel crew will rotate through the shifts to provide total coverage for the mining and processing operations. All mining services relating to the usage of the mining equipment will be managed by the earth-moving contractor with on-site supervision.

Mining operating costs have been estimated based on contractor quotations and industry experience with bench by bench open-cut mining costs applied. This is considered reasonable when compared with the costs of several mining contractors currently operating in close proximity to the Project. The estimation of the mining overhead unit cost includes the costs associated with the staff positions and other miscellaneous items and includes allowances for standard drill and blast, and grade control activities. See 'Operating Costs' Pg. 48.

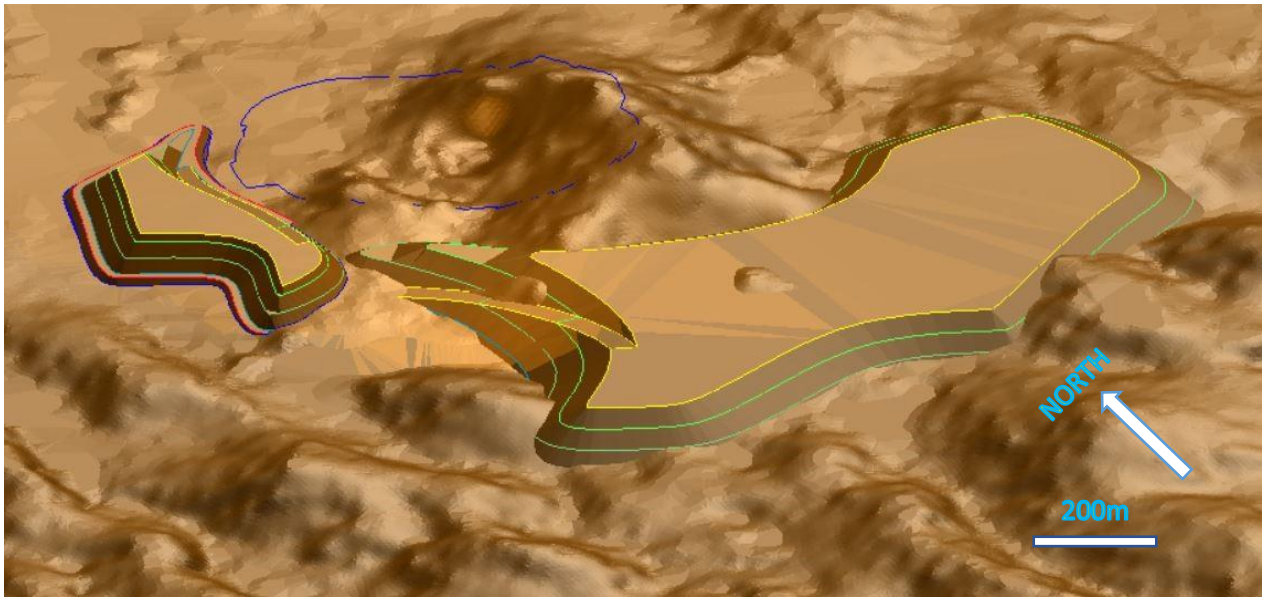
Mt Bonnie Waste Rock Design

The waste rock design (WRD) was based on industry standards and advice from ERIAS. Due to tenement constraints, PNX's strategy to minimise the Project footprint within existing granted MLs, topography, previous site infrastructure and a minimum 60m buffer from the Mt Bonnie pit crest to the toe of the WRD there was a need to create two separate WRD locations (Figure 6).

The Mt Bonnie resource block model allowed for the differentiation of waste rock types resulting in two separate WRDs to cater for both Non Acid Forming (NAF) and Potentially Acid Forming (PAF) material.

The mine design allows for contained surface storage of the PAF during the mining phase which would then be relocated back into the Mt Bonnie pit void for storage on completion of mining, assuming no extension of the orebody at depth, pertaining to possible future underground extraction. The pit would then re-charge with water and the PAF material will remain stored long-term sub aqueously.

Figure 6 Mt Bonnie Pit outline (blue) with WRDs in oblique view



Iron Blow Underground Mining

The Iron Blow resource model was reviewed by CSA to determine how best to derive the maximum value from the resource. Initially, both open pit and underground methods were considered with Whittle and Datamine MSO optimisations completed. Figure 7 illustrates the selected pit shells and minable stopes that were considered optimum for both underground and open pit mining with the corresponding mining physicals shown in Table 17.

Figure 7 Comparison of open pit shells and MSO shapes, green = stopes

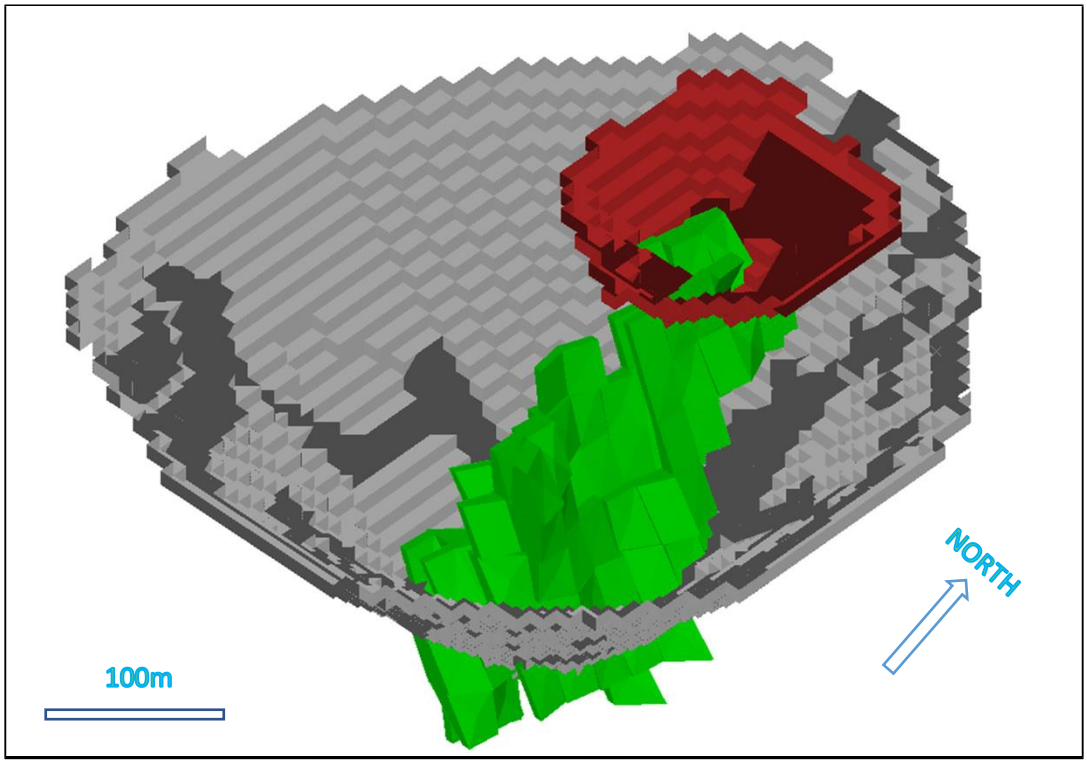


Table 17 Comparison of key mining physicals

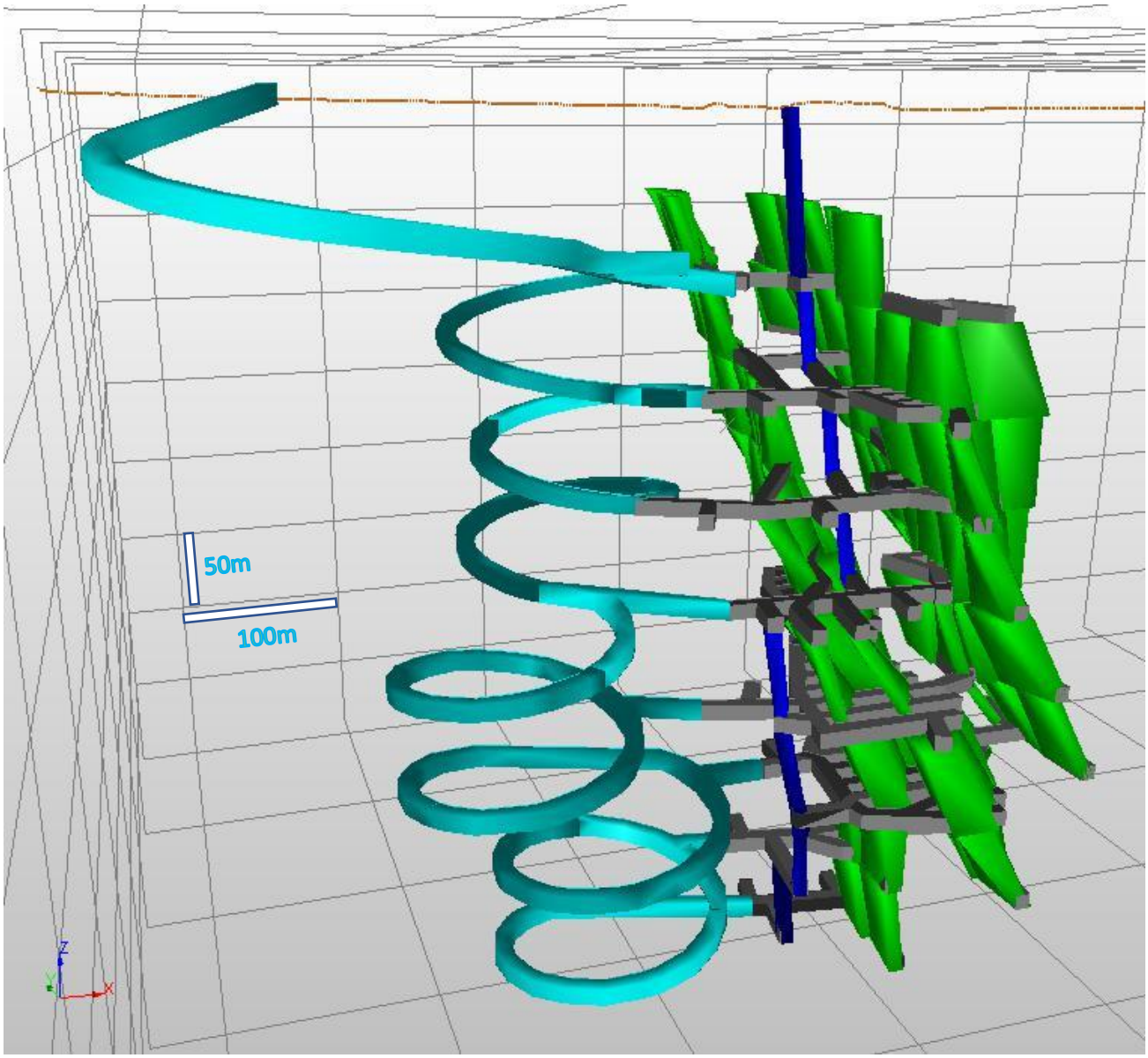
	Depth (m)	Waste Mined (Mt)	Ore Mined (Mt)	Strip Ratio (SR)	Grade Au (g/t)	Grade Ag (g/t)	Grade Zn (%)	Grade Pb (%)	Grade Cu (%)
Small Pit	90	1.3	0.2	6	2.3	154	5.6	0.8	0.2
Large Pit	250	32.7	1.8	18.2	2.0	138	5.2	0.9	0.3
Underground (MSO)	290	0.3	2.0	-	1.8	120	4.5	0.8	0.2

Underground mining was selected as the preferred ore extraction method for the Iron Blow deposit (Figure 8), following consideration of:

- Total metal mined
- Efficiency of mining based on geometry of the mineralisation
- Overall cost of mining
- Waste rock handling and disposal requirements
- Mining and scheduling interactions if both open pit and underground mining were selected
- Mine closure and rehabilitation liabilities

Mineralisation at Iron Blow comprises several separate, steeply-dipping lenses with thicknesses ranging between 20m and 40m allowing for long-hole-stoping, with fill, as the most suitable mining method.

Figure 8 **Long section of Iron Blow underground mine, green = stopes, light blue = decline, blue = vent raise, grey = ore drives,**



Geotechnical studies at Iron Blow recommended that bottom-up stoping be adopted, necessitating stope backfilling, but increasing achievable extraction ratios. The footwall rock mass is typically more ductile and sheared relative to the hanging wall, but the enhanced stope stability and shorter stand-off, afforded by locating the decline in the foot wall makes this the preferred option. The majority of the stopes will be mined in a transverse direction, limiting the hanging-wall area exposure during mining, helping to control the level of dilution and maintaining an acceptable hydraulic radius.

Access to the underground workings will be via a dedicated decline with the box cut and portal located to the south west of the existing small historical open pit. This design accommodates potential open pit mining of the near-surface parts of the orebody towards the end of the mine life without adversely impacting the decline. The box cut excavation requires 4,500 bank cubic metres (BCM) of waste rock before the portal can be constructed.

Steel arches and shotcrete are likely to be required in the portal and upper parts of the decline and provisions are included in the cost estimates.

Minimum stand-off distance from the decline to the orebody is planned at 20m in the upper parts of the mine and 45m in the lower areas. The levels are planned to be spaced at 30m floor to floor resulting in eight levels of development. Ore drives are planned to best accommodate production drilling and bogging of stopes.

Mineable stopes were designed based on ore body thickness, geotechnical competencies of the stopes, orientation, cut-off grade and the practical limits of the proposed equipment. A high strength cemented rock fill (CRF) backfill is proposed for the stopes where the backfill will be exposed by future mining activities, or as required to maintain geotechnical competency of the overall underground operations.

The mining schedule (Tables 16 and 18) includes the components of the Mineral Resource that that have been classified as Indicated (99%) and Inferred (1%) and is based on the assumed stoping and development parameters. It also includes allowances for dilution and mining losses.

A standard 10% mining dilution factor was applied to each stope. No external waste dilution, (waste wall collapse), was applied due to the width of the orebody relative to the proposed development width. Mining recovery has been estimated at 90% for stoping and 100% of all ore development.

The development profile of the decline has been designed as 5.5m x 5.5m at a 1:7 gradient with a minimum radius of curvature of 35m. Other production and development profiles have been designed as 5m x 5m with ventilation rise profile as 4.5m x 4.5m. Escape way ladders will be installed in the ventilation rises to provide a secondary means of emergency egress from each level.

No detailed ventilation studies have been completed. Initial airflow requirements are based on Western Australian Mine Regulations of 0.05m^3 of air per kW of diesel powered equipment. Based on the expected fleet the total mine requirement is 211m^3 per second.

For mine dewatering an allowance has been made for a main pump station and sump above the first operational level. Other stations and sumps operating in a cascade fashion near the level access points will transfer the mine water to surface storage dam via a dedicated rising main.

Underground mining at Iron Blow has been planned on the basis that it will operate continuously 24 hours per day 365 days per year utilising a dedicated mining contractor with management and technical support staff. The mine equipment requirements have been derived from industry experience and first principals.

Table 18 450,000 tonnes per annum underground mining schedule – Iron Blow

	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Decline Development (m)	1960	1080	880	0	0	0	0	0
Other Capital Development (m)	1573	128	570	690	70	116	0	0
Operating Development (m)	3483	23	101	1120	1559	354	327	0
Total Lateral Development (m)	7016	1230	1550	1810	1629	470	327	0
Vertical Development (m)	280	0	130	150	0	0	0	0
Development Waste (t)	333,705	109,260	138,008	70,013	6150	10,275	0	0
Development Ore (t)	256,400	0	0	79,840	123,760	26,640	26,160	0
Production Ore (t)	1,701,165	0	0	317,033	326,240	423,360	423,840	210,692
Haulage (t/km)	2,796,095	83,193	191,258	727,045	620,895	544,423	486,310	142,970
Cable Bolting (m)	77,752	97	431	13,867	12,457	16,357	18,553	15,990
Production Drilling (m)	170,117	0	0	31,703	32,624	42,336	42,384	21,069
CRF (m^3)	382,921	0	0	71,186	73,232	99,169	103,493	35,841
Total Ore (t) (99% Indicated)	1,957,565	0	0	396,873	450,000	450,000	450,000	210,692

MINERAL PROCESSING

The PFS mineral process development testwork program was designed and managed by BHM Process Consultants on behalf of PNX to identify and assess the potential of the most viable process route derived from the 2016 Scoping Study.

The lowest risk, most viable, and economic process operating route ultimately chosen for the PFS was sequential flotation with the targeted aims of maximising recoveries whilst producing a clean zinc concentrate containing greater than 50% zinc, and a precious metal concentrate containing greater than 2,000 ppm silver, whilst minimising deleterious and penalty elements. Future DFS testwork is required to fully evaluate the potential to improve recoveries whilst improving specific impurity rejection.

The testwork program was completed in stages targeting optimisation and performance variability in the following areas:

- Rougher grind variability
- Rougher reagent optimisation – both zinc and precious metals concentrate circuits
- Regrind variability
- Cleaner reagent optimisation
- Re-Cleaner performance optimisation in respect to both grade and recovery.

The goal of the test work was to also adequately satisfy the level of technical input data to complete the PFS, including:

- Comminution properties
- Flotation recoveries and product grades
- Operating cost development via power and reagent optimisation
- Mass balance to generate criteria for plant design.

Metallurgical samples used for the PFS were selected based on bulk characteristics of the ore proposed to be mined combined with a knowledge of:

- Historical drilling results (pre-2016)
- Preliminary drilling results from 2016/17 campaign
- Geological interpretation and block models
- Pit optimisations and mining blocks
- Scoping Study mineralogy and metallurgical performance.

Representative composite samples of Mt Bonne and Iron Blow ore were obtained to represent the average LoM ore generated from the optimised mine plan. Variability samples were also obtained to represent the Massive Sulphide Unit and Low Grade Carbonate Zone for Mt Bonnie. For Iron Blow, these were based on two main geological zones, the Eastern and Western massive sulphide lodes. Whole diamond core samples of ore and waste were also selected for specific geotechnical and metallurgical testing.

Overall plant recoveries as defined by the testwork flowsheet were generated by the rougher flotation performance during a series of bulk float tests (Table 19). The respective recoveries displayed are consistent and combined with a constant mass rejection of greater than 70% to tailings indicate the effectiveness of the rougher flotation process.

Table 19 Bulk rougher test result – Mt Bonnie and Iron Blow

Stream	Zn Rec %	Au Rec %	Ag Rec %	Pb Rec %	Cu Rec %
Mt Bonnie total rougher recovery	89.7	73.2	88.2	82.5	84.4
Iron Blow total rougher recovery	92.9	74.1	87.0	80.2	71.6

A series of locked cycle flotation test were completed to recirculate internal recycle streams, achieve a steady state continuous system and assess anomalous effects of recirculating finer particles from regrind processes to reflect conditions of a commercial plant scenario (Tables 20 and 21).

Table 20 Mt Bonnie locked cycle summary of recoveries

Mt Bonnie Recoveries	Zn Rec %	Au Rec %	Ag Rec %	Pb Rec %	Cu Rec %
To zinc concentrate	67.0	16.6	13.0	-	-
To precious metals concentrate	15.2	46.7	67.0	58.2	61.0
Overall	82.2	63.3	80.0	58.2	71.6

Table 21 Iron Blow locked cycle summary of recoveries

Iron Blow Recoveries	Zn Rec %	Au Rec %	Ag Rec %	Pb Rec %	Cu Rec %
To zinc concentrate	62.4	8.8	10.0	-	-
To precious metals concentrate	12.6	38.7	61.7	56.4	52.3
Overall	75.0	47.5	71.7	56.4	52.3

During the Iron Blow locked cycle testwork poor zinc cleaner performance was identified. Analysis of the results suggests that excess recoverable liberated zinc was present in cleaner tails and is planned to be recovered by the recycling of targeted streams. In direct comparison, the performance observed in the Mt Bonnie test displays a zinc cleaner tail grade of only 6.7% zinc representing a zinc out-of-circuit percentage of only 1.47%.

The second zinc rougher concentrate stream was not part of the original flowsheet design and was accounted for in the Plant mass balance as a loss. Future process development will target including this stream to the zinc cleaner feed as it contained a further 3.3% of the total Mt Bonnie zinc content and 8.3% of the total Iron Blow zinc content. This has been taken into account in extrapolating the Plant recoveries for concentrate production and payable calculations.

Marketing and financial analysis completed subsequent to the locked cycle testwork indicated that zinc, gold and silver metals are payable in part in both concentrate streams (Table 22). Thus the reported locked cycle recoveries may underestimate the true financial value of the concentrates.

Grade recovery curves were generated from the testwork data and based on the marketing information there is significant upside in recovery potential by relaxing the target concentrate grades (from greater than 50% zinc and greater than 2,000 ppm silver). Specific impurity rejection from concentrate streams was not a focus of this work so upside exists to further improve concentrate impurity rejection. Variability testing may also provide additional avenues for improvement.

Table 22 Metallurgical information extrapolated from testwork used to calculate concentrate payables

Recoveries	Zn Rec %	Au Rec %	Ag Rec %	Pb Rec %	Cu Rec %
Mt Bonnie					
Zinc concentrate	67.2	7.8	8.8	-	-
Precious metals concentrate	16.9	57.3	64.0	52.4	81.8
Overall as a % of plant feed	84.1	65.1	72.8	52.4	81.8
Iron Blow					
Zinc concentrate	77.7	13.6	13.7	-	-
Precious metals concentrate	15.2	38.8	61.7	60.5	58.9
Overall as a % of plant feed	92.9	52.4	75.4	60.5	58.9

FLOWSHEET DESIGN AND GENERAL PLANT ARRANGEMENT

Testwork data was used to determine the optimal process flowsheet based on a conventional crushing and milling circuit to generate a -75 µm (micron - micrometre) product. Subsequent sequential rougher flotation and regrinding to a -20 µm product size combined with cleaner and recleaner flotation were then utilised to generate a separate zinc concentrate and precious metals concentrate. Target grinding and flotation conditions and reagent consumption were derived from the testwork. On the basis of the testwork flowsheet, process design criteria were established and mass balances generated based on inputs of tonnages and grades from the developed mine schedule.

The flowsheet for Plant design consists of two-stage crushing prior to a ball mill producing a rougher flotation feed of -75 µm. The feed will be conditioned with reagents then processed first in the precious metals concentrate rougher and scavenger flotation cell followed by zinc rougher scavenger flotation. The precious metals concentrate rougher will be reground in a tower mill to -20 µm and then fed to two stages of cleaner flotation cells to produce a final precious metals concentrate product. This final product would contain the majority of the silver, gold, lead and copper recovered from the feed ore.

The zinc rougher product is also reground to -20 µm in its own dedicated tower mill prior to being fed to two-stages of cleaner flotation cells. The zinc concentrate product contains the majority of zinc that has been concentrated from an average ore head grade of approximately 4.5% zinc to approximately 50% zinc in concentrate.

Both concentrates are to be thickened and filtered to produce a product suitable for transport and further refining. Approximately 90% of the ore will be rejected as tailings and placed safely into the Fountain Head open pit following thickening for long-term sub-aqueous storage.

A block flow diagram (Figure 9) and general arrangement drawing (Figure 10) of the contemplated process facilities are provided below.

Figure 9 Block flow diagram for the Hayes Creek Process Plant

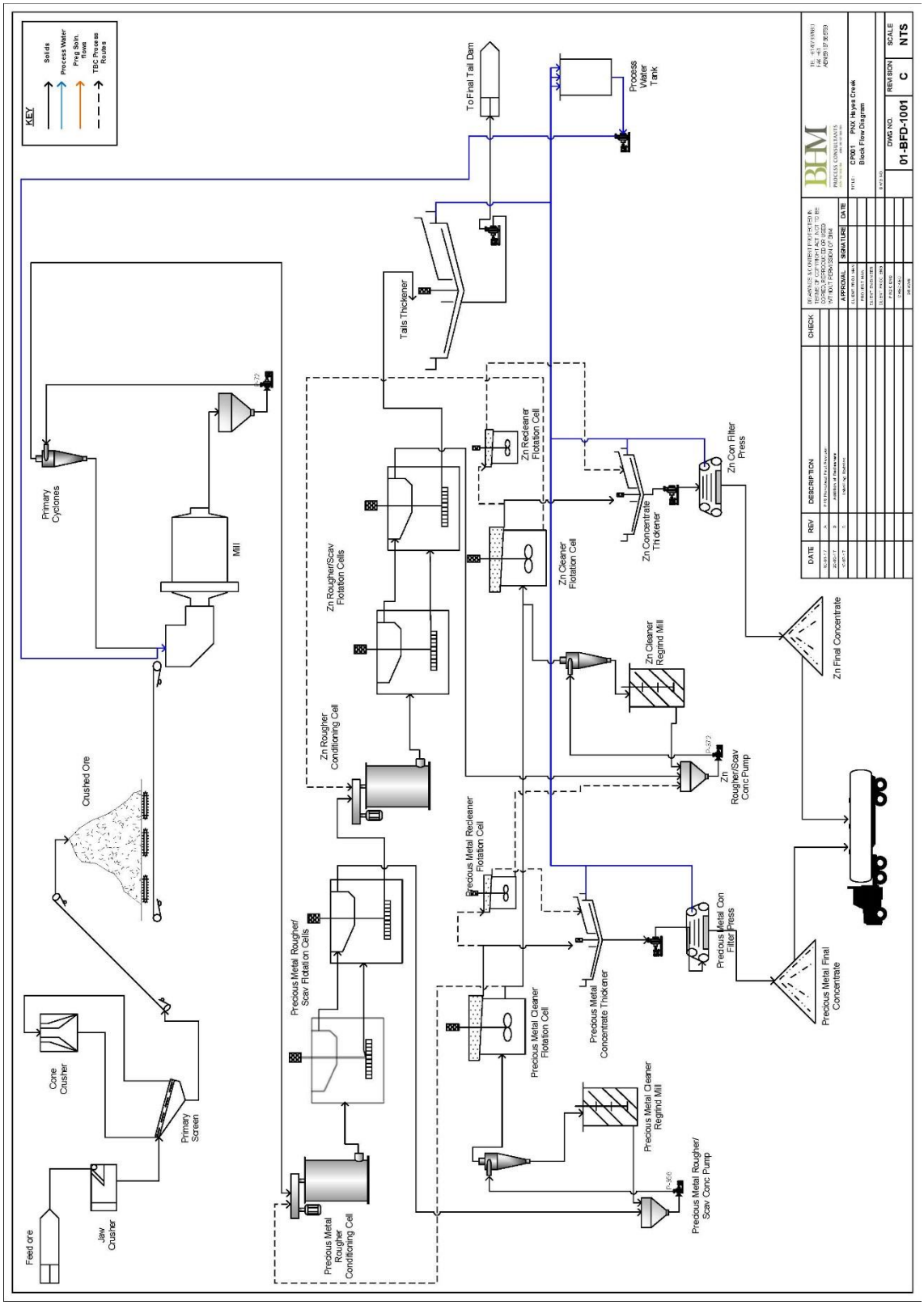
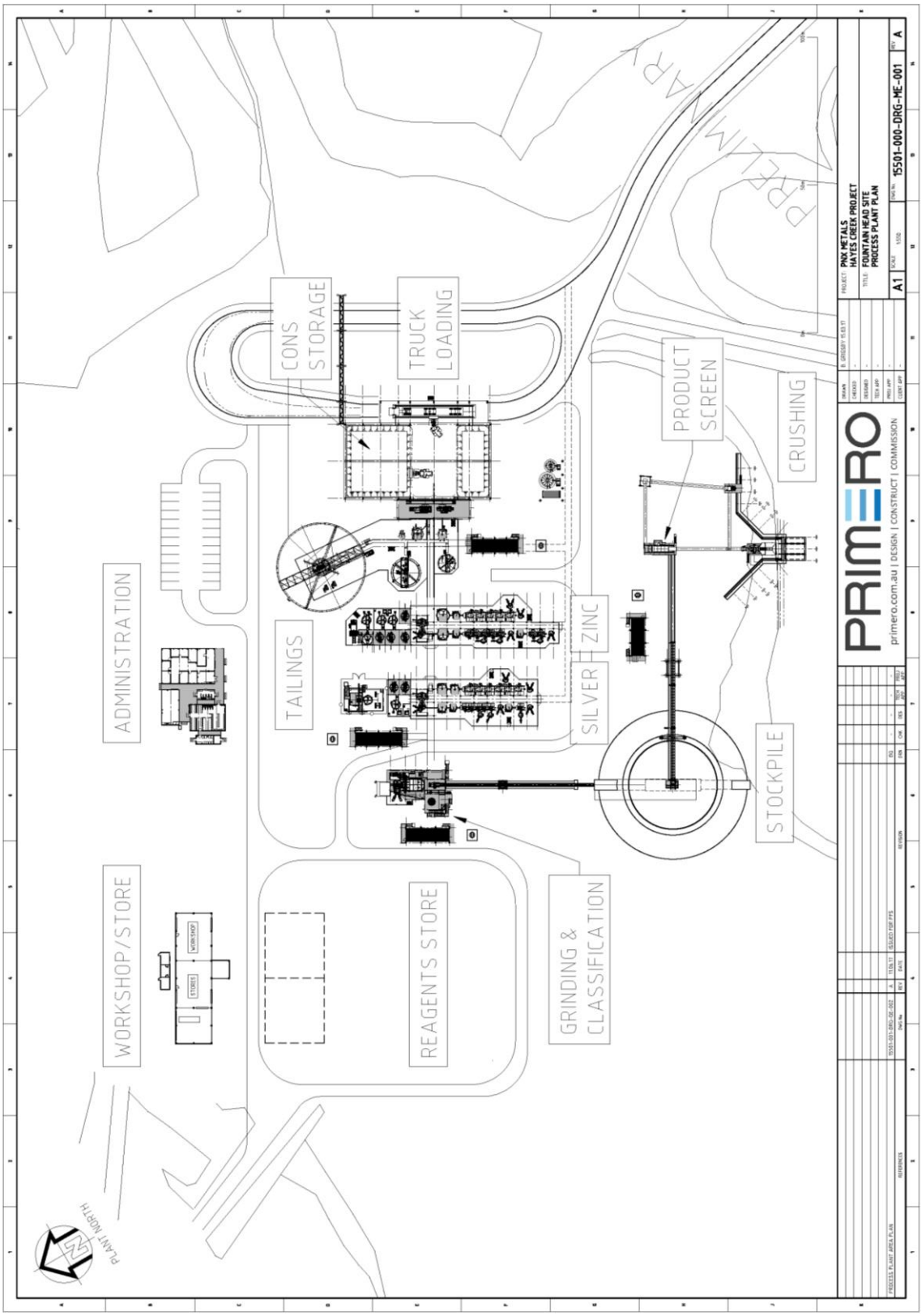


Figure 10 General layout for the Hayes Creek Process Plant



Infrastructure

Plant, infrastructure and tailings site selection investigations were undertaken by a multidisciplinary team to establish a suitable site where the LoM tailings generated could be stored sub aqueously in an existing void in close proximity to the Project. Several prospective sites were reviewed and investigated. The preferred site selected was the historic Fountain Head open pit located 11.6 km to the north of Iron Blow. The Fountain Head historic mining void has sufficient in-pit storage capacity for the projected tailings over the Project LoM and sufficient disturbed area suited to the location of the Plant and associated infrastructure. The site also has good access to existing local infrastructure including power, roads and communication.

The local infrastructure, location and contemplated general Project layout arrangements are shown in Figures 11, 12 and 13.

Figure 11 Hayes Creek local infrastructure

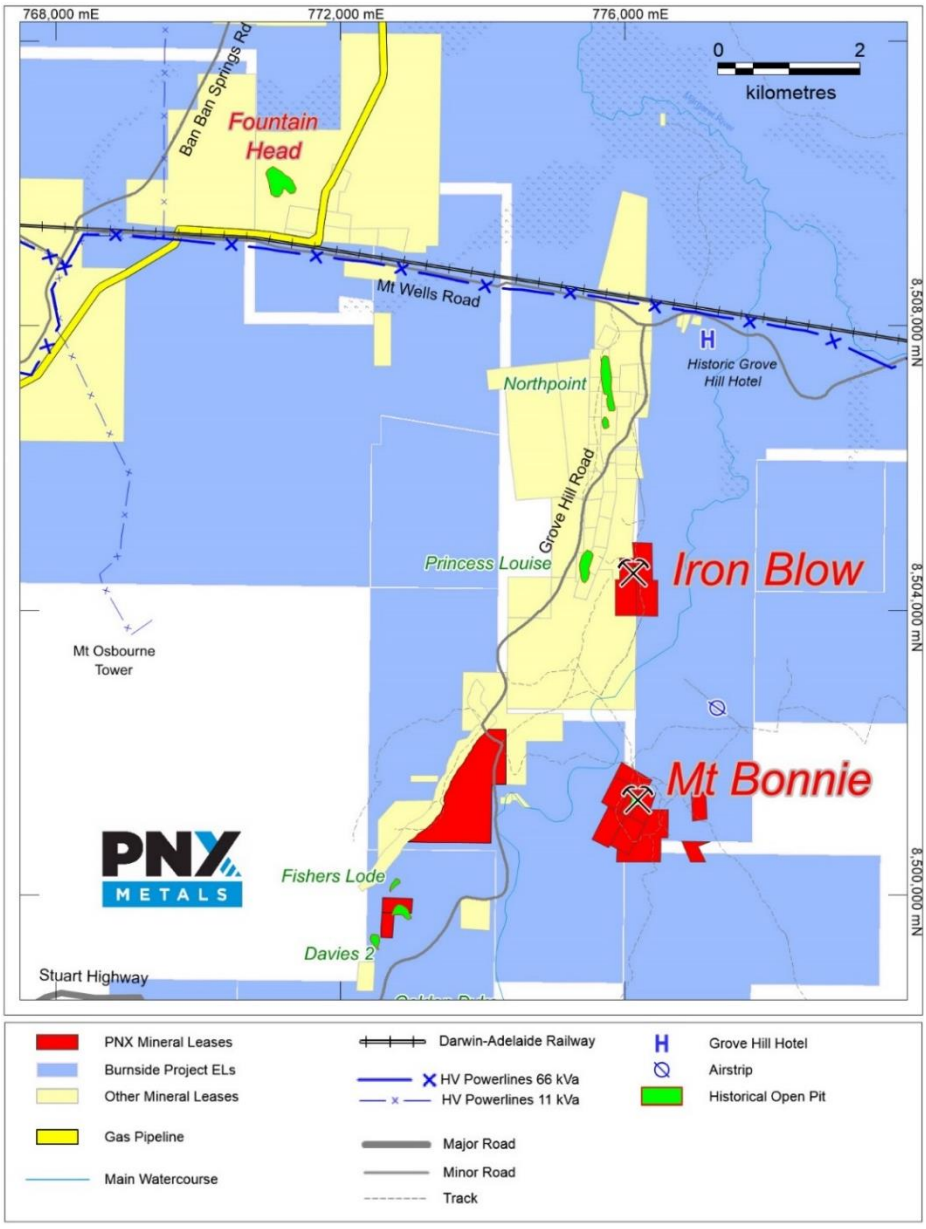


Figure 12 Hayes Creek general location plan

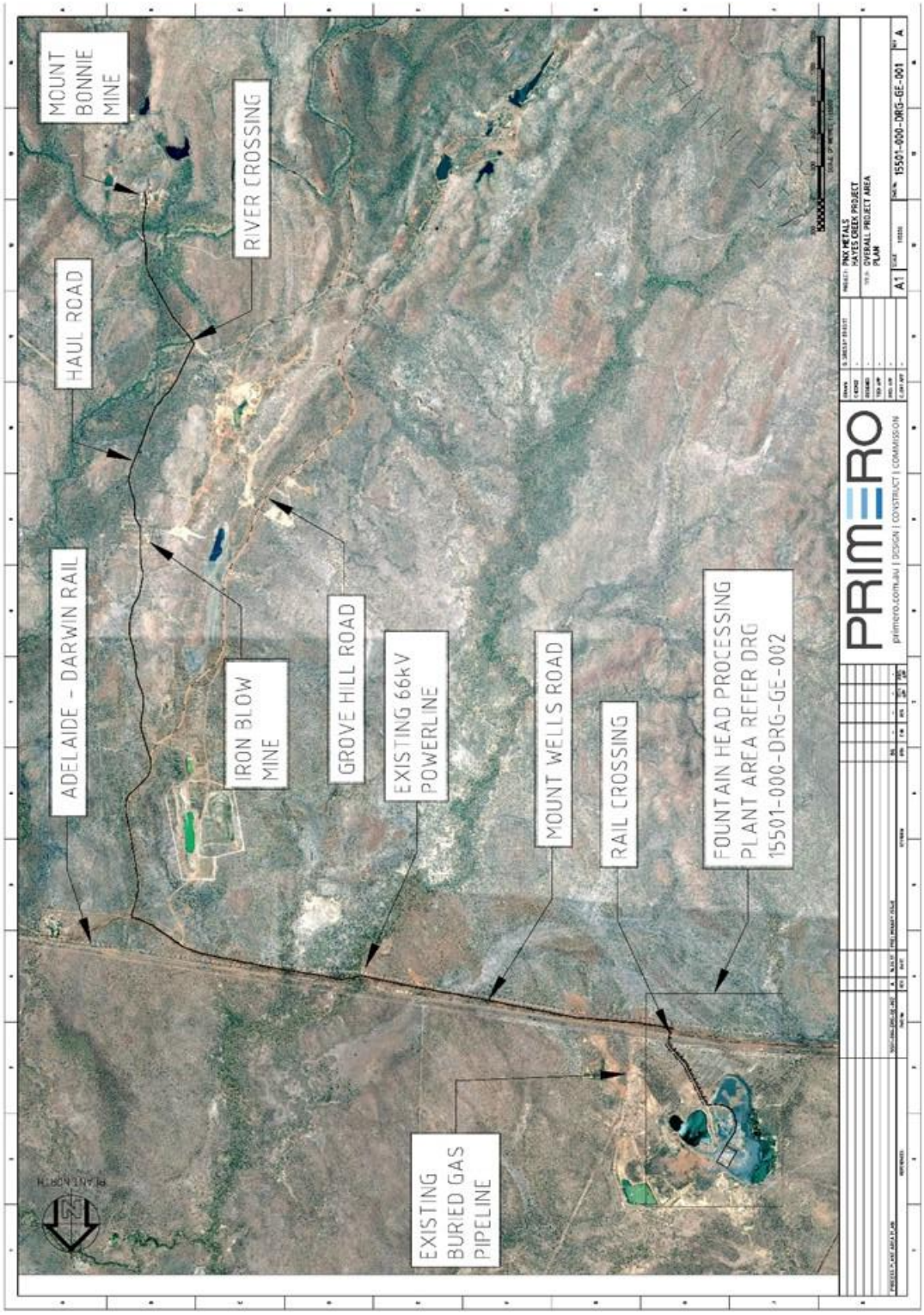


Figure 13 Fountain Head general plan

In Pit Tailings

The In-Pit Tailings study component was completed by L&MGS with testwork completed by TriLab. This study also included assessments of decant pumping requirements, water management, monitoring and instrumentation, and closure and rehabilitation.

The drainage characteristics, high soil particle density of the tailings, percentage of sand within the tailings, and non-plastic behaviour of the tails suggest that loss of moisture will readily occur in the sub-aqueous tailings deposition process, resulting in a compacted, high-density settlement.

Tailings storage capacity at the Fountain Head pit is approximately 3.0 million cubic metres. Based on a tails in-situ dry density of 1.5 tonnes per cubic metre and ore processing of approximately 3 million tonnes the Fountain Head pit void is expected to be more than adequate for the Project.

It is anticipated that the tailings would be initially discharged by a single spigot placed over the southern wall of the eastern, deepest section of the pit. When this section is partially filled, an additional spigot point would allow tailings deposition over the southern wall and into the western section of the pit. The objective would be to direct the supernatant water towards the supernatant collection pump.

Under average rainfall and evaporation conditions and assuming that the water recovery for recycling to the plant is maximised, the preliminary water balance indicates a positive response to the proposed in-pit tailings storage facility, where the seepage inflows and outflows are equal. This will allow for long term sub aqueous storage of the tailings.

Power

Three options for power were investigated.

- Northern Territory electrical grid connected power supply - NT Power and Water have indicated a 66 kV spur line from the Mt Wells road (less than 1 km to Fountain Head) could be delivered in 12 months.
- Diesel-fired power station - KPS Power Generation indicated that an on-site power station could be delivered in 34 weeks.
- Gas pipeline connected build own operate (BOO) power station - gas pipeline spurs can typically take 18 to 24 months to deliver.

The preferred option, incorporated in the Plant operating power costs, utilises a BOO Diesel/Gas power station with a connection to the Amadeus Gas Pipeline which runs through the Fountain Head site. A dual fuel reciprocating power station has been incorporated in the PFS using diesel as an interim option in order to accelerate the schedule.

General Infrastructure

- Existing telecommunications systems will be accessed to provide necessary provision of services to the sites. The Project area is covered by intermittent 3G mobile coverage provided by the tower at Mt Osborne which will be used with installation of an aerial and booster facilities to provide data and voice connections. An optic fibre network also services the nearby Mt Osborne tower. Installation of satellite data connections is not envisaged to be required due to the existing telecommunications infrastructure within the area.
- Water will be derived from existing storage systems including access to bores. The relatively small quantity of potable water required for Plant and mine areas will be provided via a small containerised reverse osmosis plant sourcing water from the Fountain Head raw water dam.
- Grey and black water from the site facilities will be disposed of using contracted tank collection and removal to approved off-site facilities to meet required Northern Territory regulations and approvals.

- Labour requirements will be derived from existing qualified and trained personnel within Australia.
- Existing fully services mine camp facilities in the region will be utilised for the operations personnel.
- New offices and facilities have been proposed as part of the Plant facilities at Fountain Head. The mining contractor will provide the necessary mobile offices and facilities at the mine sites. These facilities will include fuel storage and distribution. All buildings will be compliant with AS4055-2012 for wind loading in a cyclone area.
- The PFS assumes concentrates will be transported by truck via the Stuart highway and discharged at the Darwin port facilities for bulk shipping internationally.

COSTS

This section identifies the assumptions made to establish the lump sum capital cost estimates for open-pit and underground mining and for the Plant and related infrastructure, and the basis for Project operating costs contemplated in the PFS.

Capital Costs – Surface Mining, Mt Bonnie

The capital cost estimates for Mt Bonnie open-pit mining were established by CSA and consist of the following items:

Table 23 Mt Bonnie capital cost estimates

Capital Item	Cost (A$)
Mobilisation of all surface mining equipment	700,000
Demobilisation of all surface mining equipment	500,000

The mining contractor is responsible for the following which have been included in the estimated unit mining cost rate:

- Workshop suitable for maintenance and storage of all mobile equipment
- Management and operation of fuel facility and lubricants
- Work offices, lunchrooms and furnishings for all contractor staff and management
- Provision of all mining equipment and light vehicles to maintain the specifications of the mining contract

The estimated cost of pre-stripping is included in operating costs at the unit mining cost rate.

Capital Costs – Underground Mining, Iron Blow

Underground mining capital costs were established by CSA as an integral component of their mining study, and are summarised below (Tables 24 and 25).

The majority of the surface infrastructure will be common for all parts of the operation. A cost estimate of $7.5 million has been provided for the pre-mining underground specific infrastructure and capital items. Additionally, a sustaining capital allowance has been made for the underground development costs which total $25.5 million over the LoM.

Table 24 Underground capital cost estimate

Capital Item	Cost ($)
Mobilisation and site establishment, including misc. (tag board, surface blast ignition point, stench gas cylinders, etc)	700,000
Demobilisations	500,000
Earthworks - roads, dams, laydown, RoM	200,000
Explosive magazine	200,000
Fuel farm	100,000
Air compressor	300,000
Office, change house, workshops	250,000
Substations and associated infrastructure	800,000
Primary ventilation fan	900,000
Portal and box cut, including sump	500,000
Light vehicles	700,000
Integrated Tool Carrier	400,000
Pumps	300,000
Refuge chambers	950,000
Escape ways	700,000
Total Pre-mining capital	7,500,000

Table 25 Sustaining capital cost estimate

Capital item	Metres	Cost ($) million*
Decline development	1,960	14.7
Level development	1,573	10.2
Vertical development	280	0.6
Total development capital	3,813	25.5

**refer Table 28b for cost per metre assumptions*

Capital Costs – Plant and Infrastructure

The capital cost estimate for the Plant has been developed by Primero for the individual areas as outlined (Table 26).

Equipment sizing was calculated using BHM supplied process design criteria data together with Primero experience to generate an equipment specification for the individual items of equipment. All equipment is assumed available as new.

Major equipment costing was determined by obtaining budget pricing (±25%) from a variety of vendors for the individual pieces of equipment based on the equipment specification. Vendors selected to provide budget pricing are considered reputable suppliers of the equipment with experience providing similar equipment to other minerals processing facilities in Australia, and all have offices and service facilities within Australia. The cost for each equipment item has been based on the lowest cost, technically compliant bid for the equipment package.

The following areas have had costs developed based on bulk rates from internal data bases utilising a material take off method.

- Bulk earthworks
- Civil works
- Structural steel
- Platework
- Piping
- Electrical reticulation

Estimates of Insurance and operating spares have been included in the capital cost estimates for Plant and Infrastructure, as have Engineering Procurement and Construction Management (EPCM) costs, labour, hire equipment, freight, accommodation, travel and logistics.

Contingency costs and allowances and an estimate for contractor margin commensurate with the level of design and estimating confidence have been included and equate to 10% and approximately 7.5% respectively.

Table 26 Process plant capital

	Hours		Supply Cost ($)	Labour Cost ($)	Freight Cost ($)	Total Cost ($)	Ratio (%)
	In-Direct	Direct					
Indirect Costs							
Engineering	12,597	---	1,556,100			1,556,100	3%
Design	12,103	---	1,320,327			1,320,327	3%
Mobilisation - Personnel	1,220	---	142,030			142,030	0%
Mobilisation - Plant & Equipment	---	---	50,000			50,000	0%
Insurances & Bank Guarantees	---	---	268,388			268,388	1%
Flights & Accommodation	---	---	1,545,566			1,545,566	3%
Site Establishment	390	---	217,690			217,690	0%
Site Management	27,560	---		2,463,500		2,463,500	5%

	Hours		Supply Cost ($)	Labour Cost ($)	Freight Cost ($)	Total Cost ($)	Ratio (%)
	In-Direct	Direct					
Off-Site Management	6,120	---		636,400		636,400	1%
Site Support - Indirect	2,665	---		173,225		173,225	0%
Demobilisation & Site Clean up	818	---	100,716			100,716	0%
Total Indirect Costs:	63,473	---	5,200,817	3,273,125	---	8,473,942	17%
Direct Costs							
Earthworks	---	15,000	1,436,600	930,000	50,000	2,416,600	5%
Civil	---	27,260	2,527,831	1,690,147	213,691	4,431,668	9%
Architectural	---	400	300,000	24,800	---	324,800	1%
Structural	---	13,795	3,049,750	855,294	238,417	4,143,461	8%
Platework	---	4,265	1,344,363	264,399	61,439	1,670,201	3%
Mechanical	---	20,745	11,715,038	1,286,190	230,756	13,231,985	27%
Piping	---	13,420	2,240,000	832,040	62,000	3,134,040	6%
Electrical	---	27,996	5,876,921	2,015,712	213,607	8,106,240	16%
Sub-Contracts	---	---	---	---	---	---	0%
Commissioning	---	4,680	---	336,960	---	336,960	1%
Site Support - Direct	---	9,750	---	662,350	---	662,350	1%
Plant & Equipment	---	---	2,135,009	---	---	2,135,009	4%
Tools & Consumables	---	---	464,683	---	---	464,683	1%
Total Direct Costs:	---	137,311	31,090,195	8,897,891	1,069,910	41,057,996	83%
Contractor Margin And Contingency						8,740,930	
Total	63,473	137,311	36,291,012	12,171,016	1,069,910	58,272,869	100%

Operating Costs

Project operating costs have been compiled for each of the key operational areas. These costs have been developed from first principles and where appropriate, Contractor quotes and reflect current cost structures and unit rates that have been verified by the subject matter experts (Table 4, Pg. 8). The cost estimates also compare reasonably with current costs by mining operations in this region.

Operating Costs – Surface Mining, Mt Bonnie

The estimated average mining cost over the life of the open cut mine at Mt Bonnie is $4.19 per tonne of ore and waste movement. This cost includes $0.92 per litre for diesel fuel ($1.30 per litre less $0.38 diesel fuel rebate). An additional $1.96 per tonne has been apportioned as ore specific costs for the movement and handling of the ore bringing the total estimated ore mining costs to $6.15 per tonne. These estimated costs include transport of ore from mine to Plant RoM and for the extra treatment and handling of ore within the pit. The mining costs estimates take into account time for pre-stripping of the waste from the Mt Bonnie hill and a gradual drop off in the number of trucks required as the mining progresses.

The following battery limits were applied to the mining cost estimate (Table 27):

- All load and haul activity (including all ancillary equipment and consumables)
- All drill and blast activity (including all magazines, drill rigs and consumables and pre-splitting)
- Fuel usage costs relating to the above mining equipment
- All service and maintenance relating to the above plant
- All fixed costs relating to contractor workshops, offices, staffing, vehicles and overheads
- Clearing and grubbing and topsoil removal
- Pit dewatering activities
- Rehabilitation of the waste dump and associated mining areas

Table 27 Open cut and miscellaneous unit operating costs

Activity	Unit	Cost
Mining open-pit ore and waste	$/t material	4.19
Ore transport from Mt Bonnie to RoM	$/t ore	1.46
Ore specific costs	$/t ore	0.50

Operating Costs – Underground Mining, Iron Blow

Operating costs have been estimated based on contractor quotations and industry experience and include an allowance for dewatering and ventilation (Table 28b). The estimation of the mining overhead unit cost includes the costs associated with the staff positions and other miscellaneous costs. The estimated average mining cost over the life of underground mine is $71.56 per tonne of ore. This equates to $62.13 per tonne mined (including transport of ore to Plant RoM) due the small amount (333,705 tonnes) of waste mined. A break-down of the estimated $71.56 per tonne of ore underground mining cost is shown below in Table 28a which incorporates the unit costs shown in Table 28b Pg. 49.

Table 28a Underground unit operating costs

Underground Mining Activity	Cost per Tonne Ore
Decline Development	$7.51
Lateral Development	$17.76
Vertical Development	$0.29
Drill and Blast	$6.00
Bogging	$10.00
Haulage	$3.14
Backfill	$4.89
Cable Bolting	$3.97
Mining labour/overheads	$18.00
Total	$71.56

Table 28b Underground operating costs

Activity	Unit	Cost
Decline development	$/m	7,500
Level development	$/m	6,500
Vertical development	$/m	2,000
Production drill and blast	$/t ore	6.00
Bogging	$/t ore	10.00
Haulage	$/t-km	2.20
Backfill	$/m^3	25.00
Cable bolting	$/m	100.00
Mining overheads	$/t ore	18.00
Ore transport from Iron Blow to RoM	$/t ore	1.16

Operating cost estimates for the Plant (Table 29) have been based on first principles with power, reagents and consumables based on testwork and the subsequent flowsheet mass balance.

Table 29 Processing, general and administration operating costs

450,000 tonnes per annum Cost Centres	% Total Operating Cost	Total average Operating cost per annum ($)	Operating cost per tonne milled ($/t)
Labour	25.3%	5,032,185	11.18
Power (16.8 c per kw/hr based on BOO gas power)	26.3%	5,228,340	11.62
Reagents	26.3%	5,230,476	11.62
Consumables	10.1%	2,016,524	4.48
Maintenance, including materials	1.9%	377,134	0.84
Sub-total	89.9%	17,884,659	39.75
General and Administration	10.1%	2,018,385	4.49
Total	100%	19,903,044	44.24

MARKETING

PNX commissioned Cliveden, a specialist trader, consultant and concentrate marketing agent to review, analyse and assess the marketability of the zinc and precious metals concentrates proposed in the PFS. Recommendations were made regarding the potential market for PNX concentrates, indicative pricing, effects of impurities, standard treatment charges (TC) and refining charges (RC), and concentrate handling, transport and shipping options. The report concluded that PNX's contemplated zinc concentrates and precious metals concentrates are likely to be in demand and readily saleable as high-value products.

Standard industry practice to determine the payable value of concentrate material involves application of payable percentages based on assayed metal content and unit deductions, TCs and RCs, and penalties on a dry metric tonnes (dmt) basis.

TCs are the main variable when buying or selling concentrates with benchmark treatment charges based on long term contracts between mine and smelter. TCs are payable per dmt of concentrate and are charged by the smelter to cover the processing cost of refining the concentrate into product. RCs are typically charged by the smelter to cover the cost of refining the gold and silver in concentrates.

Typical payment terms and penalty elements have been incorporated into PNX's financial model, and are as follows:

Standard Zinc Concentrate Terms

- **Zinc:** Buyer pays for 85% of the final assayed zinc content, subject to a minimum deduction of 8 units, at the LME cash settlement price for zinc averaged over the Quotational Period (QP). In practice this means that any concentrate with a final contained zinc grade of greater than 53.33% per dmt will be payable at 85% contained Zn; Materials under 53.33% will incur an automatic deduction of 8 units.
- **Silver:** Buyer pays for 70-75% of the final assayed silver content, subject to a deduction of 3 troy ounces from the final assayed silver content per dmt of concentrate, at the London Bullion Market Association (LBMA) silver price averaged over the QP for silver.
- **Gold:** Buyer pays for 70-75% of the final assayed gold content, subject to a deduction of 1-1.5g/t (depending on the smelter) from the final assayed gold content per dmt of concentrate, at the daily AM/PM

mean of the LBMA's Initial and Final 'fixes' averaged over the QP for gold. Gold refining charges are not normally charged.

- **Penalties:** Standard penalty elements (or compounds), and importation limits may apply to the following (Arsenic, Cadmium, Mercury, Iron, Manganese, Silicon Dioxide, Magnesium Oxide, Fluorine + Chlorine, Antimony or Lead)

Standard Terms for Bulk Concentrates

- **Lead:** Buyer pays for 95% of the final assayed lead content, subject to a 3 unit minimum deduction, at the official LME Cash Settlement quotation for lead, as published in the Metal Bulletin, London, and averaged over the QP for lead.
- **Zinc:** Buyer pays for 85% subject to 8 unit minimum deduction of the full and final zinc content contained in the material, at the LME cash settlement price for zinc averaged over the QP for zinc.
- **Silver:** Buyer pays for 70% to 90% (depending on the material) of the full and final silver content contained in the material after a deduction of 2.0 - 3.0 troy ounces per dry metric ton of concentrates, at LBMA's silver price averaged over the QP for silver.
- **Gold**: Buyer pays for 70% to 80% (depending on the material) of the full and final gold content contained in the material after a deduction of 1 gram per dmt of concentrates, at the daily AM/PM mean of the LBMAs Initial and Final 'fixes' averaged over the QP for gold.
- **Penalties:** Standard penalty elements (or compounds) and importation limits may apply to the following (Arsenic, Mercury, Iron, Silicon Dioxide, Magnesium or Antimony)

Zinc Concentrate Market Overview

The zinc concentrate market in 2016 and 2017 has been extremely tight due to limited supply (Table 29). Spot treatment charges have fallen as low as US$0.00 (nil) for specific materials. In 2018 a small surplus is expected due to smaller mines re-opening and expanding production, however, there are only a few projects forecast to commence production within the next two years.

Market consensus view is that 2019 is expected to be the first year of surplus with Gamsberg and Dugald River expected to commence production together with the re-opening of Glencore's zinc mines in Australia and Peru. The zinc concentrate market is expected to remain tight in the short to medium term and well supported beyond that.

Table 30 Zinc global concentrates balance 000'tonnes

	2016	2017	2018
Mine Production	12,353	13,365	14,514
Smelter Production	13,656	14,014	14,938
Concentrate Balance	-861	-139	120

Bulk 'Precious Metals' Concentrate Market Overview

The proposed Mt Bonnie and Iron Blow precious metals concentrates can also be described as bulk concentrates due to the variety of different combinations of zinc, gold, silver, lead and copper. Typically a material is named on the basis of the element that clearly has the highest metal content. PNX precious metals concentrates contain zinc, lead, gold, and silver all at similarly high levels and therefore there is no differentiator, however the highest value portion of the concentrates is related to the precious metals. In addition, when there are high quantities of numerous elements, zinc or lead specific smelters, are unable to handle additional metals at high concentrations.

Due to the unique composition and variability of bulk concentrates there are a limited number of receivers that are able to process bulk materials. For both Mt Bonnie and Iron Blow material there are a number of smelters in the world that would be able to take this material. These smelters that can take bulk material are able to process a wide range of materials efficiently and they have a high tolerance for impurities.

In tight markets when there is a shortage of material and spot treatment charges are lower than benchmark treatment charges bulk material is easily saleable on good financial terms. In weak markets when there is an abundance of material available the marketing and terms may not be as favourable.

PROJECT EXECUTION AND SCHEDULE

A number of factors were considered when developing the most appropriate approach to execute the Project development. These factors included:

- PNX's current capabilities to execute projects
- PNX's current management systems to execute the project
- Complexity of the Project
- Life of mine
- Commercial structures
- Project funding model
- Project schedule
- Opportunities to reduce site construction personnel
- Availability of construction services

On this basis, it is considered that an EPCM style approach would be preferred with a single project engineering group responsible for managing the delivery of the Project (via individual package contractors contracted directly to PNX) which would be overseen by a small PNX Project Management team.

Based on the current approvals process, and assuming a 12 month DFS, a commitment to proceed with development of the project is likely by mid/late-2018. An estimated design, construction and commissioning period of 14–18 months would, subject to funding being obtained, have the Project in full operation by the end of 2019.

PROJECT RISKS AND OPPORTUNITIES

A Risk and Opportunities Assessment was conducted by a multi-disciplinary team including technical specialists and PNX management with the aim of capturing key risks and opportunities to be actioned in the DFS. The Assessment identified 23 risk and opportunity items. All identified risk items have been considered as part of the process of evaluating the alternatives available to the Company in developing the Project and in making the recommendations contained in the PFS. Risks and opportunities will be further examined and managed in the DFS stage of the Project.

The greatest opportunity identified was optimisation of equipment selection, which has the potential to reduce the overall capital costs by $2 million. The highest risk identified was improper Plant design due to inadequate mineral processing definition, with a risk value of approximately $3 million after mitigating factors were applied.

The risk and opportunities assessment provided a Process Plant capital range of between $56,500,000 and $63,301,400 (based on the all-risk treatments or mitigations having been addressed). The estimated Plant capital cost used in the PFS falls within this range.

Recommendations

The following recommendations were made by CSA on completion of the mining studies:

- Upgrade the Project to JORC 2012 status for the reporting of Ore Reserves and a total review of all Modifying Factors.
- Further optimise the Plant recoveries based on more detailed metallurgy and bulk test work taking into account of the various mineral domains and material types (now completed as part of this PFS).
- Undertake further geotechnical work at Mt Bonnie and Iron Blow. Geotechnical studies need to be at a DFS level to confirm and potentially upgrade the preliminary assessment.

Opportunities identified by PNX to expand and/or enhance the Project include:

- **Stockpiles** - The potential to process oxide stockpiles, and mineralisation at Mt Bonnie where approximately 200,000 tonnes in total of material exists. Grades (0.8-5.5 g/t gold and 20-440 g/t silver), and recoveries (average 75% for gold and 57% for silver) through cyanide leaching vary and require further investigation. This material available has not yet been fully assessed and nor has the cost of transporting and toll treating.
- **Exploration -** Expand exploration search near-mine and regionally for zinc, lead, copper, gold and silver sulphide materials suited to produce bulk concentrate, and for oxide toll treatable resources.
- **Metallurgy** - Variability testing of grade and material types and grade recovery to focus on optimisation of payable metals in both the zinc and precious metals concentrates.
- **Plant and Equipment** – Review opportunities for second hand plant and leasing arrangements for crusher circuits and mill. Assess fit for purpose plant appropriate for mine life. The current capex is based on reputable known suppliers; assess alternate overseas suppliers, offsite fabrication, and overseas fabrication on skids for delivery to site.