

PNX Metals Limited

Fountain Head Gold Project

**Environmental Impact Statement
Executive Summary**

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Table of Contents

Executive Summary	4
1.1 Proposed Development	4
2. Existing Environment	7
2.1 Physical Environment.....	7
2.2 Biological Environment.....	8
2.3 Socio-economic.....	8
2.4 Cultural Heritage	8
3. Stakeholder Engagement	9
4. Assessment of Project Impacts and Benefits	9
5. Environment and Social Management System	11

Tables

Table 1.1 – Project Phases and Activity	7
Table 4.1 – Environmental Factors and Objectives	10
Table 4.2 – Potential Key Impacts Assessed in the EIS.....	10

Figures

Figure 1.1 – Project Location	5
Figure 1.2 – Project Layout	6

Executive Summary

1.1 Proposed Development

PNX Metals Limited ('PNX' or the 'Proponent') (ABN: 67 127 446 271) is proposing to develop the Fountain Head Gold Project (the 'Project' or 'Fountain Head'). The Project is located 170 km south of Darwin, approximately 50 km from the towns of Adelaide River and Pine Creek. The Project area consists of four mineral leases (MLs), acquired by PNX in 2018 (MLN4, MLN1020, MLN1034 and ML31124) located on Ban Ban Springs pastoral station PL111 (Figure 1.1). The Fountain Head mine has operated previously, with mining ceasing most recently in August 2008. Fountain Head has been under care and maintenance since then, and the existing open pit has filled over time with ground water inflows, surface water runoff and rainfall. PNX proposes to recommence mining of the Fountain Head pit with an expansion of the current void using conventional drill and blast mining techniques. The expansion will involve a cutback of the existing open pit void, along with an extension to the existing void in a northward direction. Gold will be extracted from the ore via a leaching circuit that includes carbon-in-pulp (CIP) to produce gold doré. The Project life is approximately 3.5 years.

Dewatering of the Fountain Head void is required to enable mining to recommence. Not all water is required to be removed before mining can recommence and subsequently a staged approach to dewatering is proposed. Dewatering of the current pit will need to be strictly scheduled and managed so that dewatering occurs sufficiently in advance of mining so that no production delays result. In order to begin dewatering prior to mining, the proposed dewatering activity of the existing open pit is subject to a separate approvals process. PNX submitted a revised care and maintenance mining management plan (MMP) – the Fountain Head Tally Ho Mining Management Plan Amendment to the Department of Industry, Tourism and Trade (DITT) addressing the dewatering activity, which was subsequently approved on 19 March 2021.

The Project (NOI) was submitted to the NT EPA on 20 December 2019 to determine the level of assessment required under the *Environmental Assessment Act 1982* (EA Act). The Project was determined to require assessment under the *EA Act* at the level of Environmental Impact Statement (EIS). In October 2020, PNX announced a change in the processing method from heap leach to carbon in pulp (CIP) processing. It was determined by ERIAS in consultation with the NT EPA that the Project change does not alter the environmental significance of the Project, and thereby the proposal can continue to be assessed under the existing Terms of Reference (ToR). Project phases and activities are shown in Table 1.1 and the Project layout is provided in Figure 1.2.

PROJECT LOCATION

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FIGURE 1.1



SCALE: 1:1,200,000 @ A4

0 5 10 20 KM

GDA2020 MGA Zone 52

- Populated place
- Site
- Major gold deposit
- Major base metal deposit
- +— Railway
- Roads
- Watercourse



Issue Date: 26.05.2021

Map ID: 01238D_ES_GIS001_v0-a

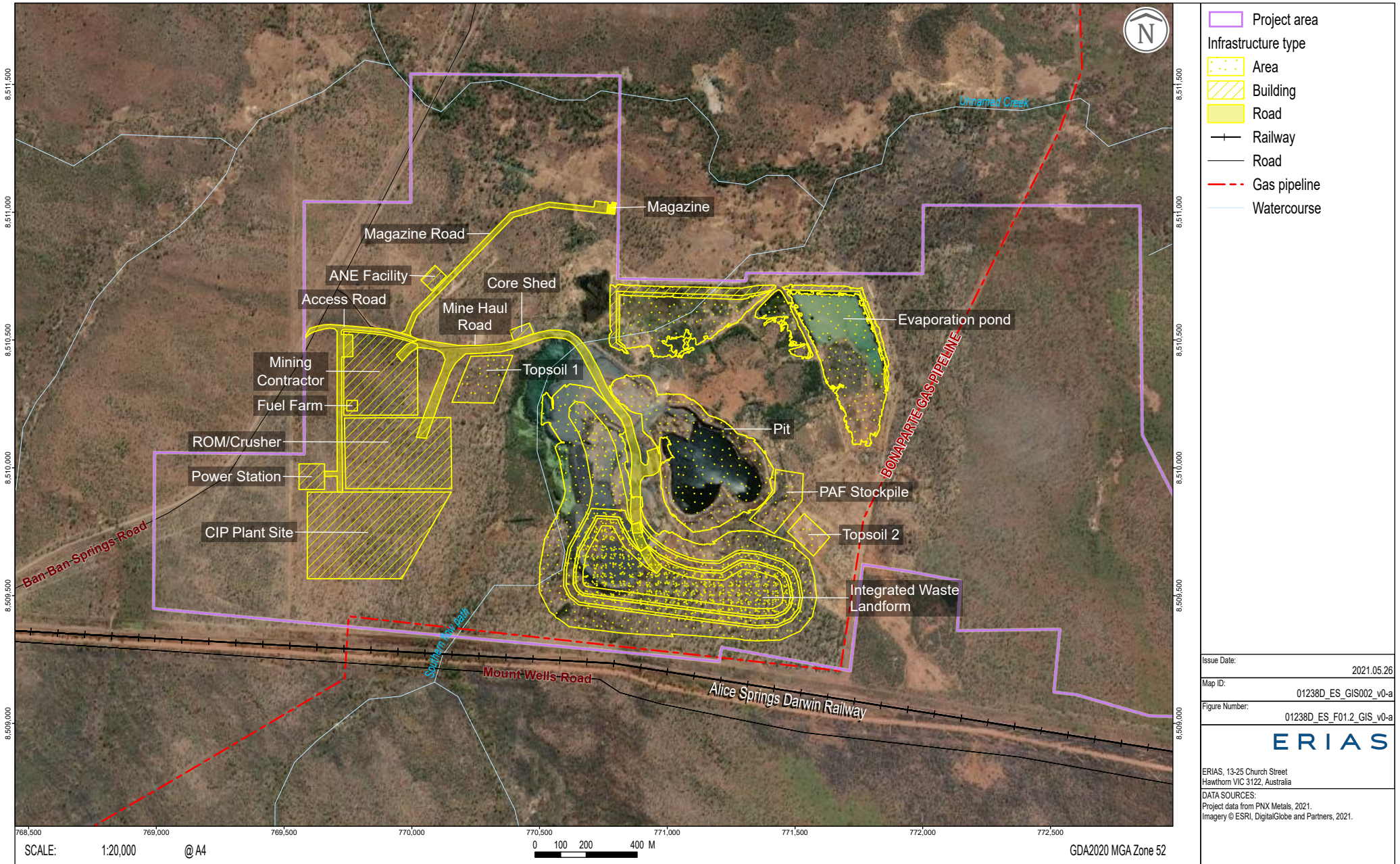
Figure Number: 01238D_ES_F01.1_GIS_v0-a

DATA SOURCE:
 Project data from PNX Metals, 2021.
 Base data from NT Government, 2021 & GEODATA 250K, 2006.
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FOUNTAIN HEAD GOLD PROJECT LAYOUT

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FIGURE 1.2



Issue Date: 2021.05.26

Map ID: 01238D_ES_GIS002_v0-a

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DATA SOURCES:
Project data from PNX Metals, 2021.
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Table 1.1 – Project Phases and Activity

Project Phase	Activity	Approval Process
Phase 1 – Dewatering	<ul style="list-style-type: none"> • Dewatering of existing open pit • Remediation and extension of existing water storage dam (evaporation pond) walls 	Mining Management Plan Amendment
Phase 2 – Construction and Mining	<ul style="list-style-type: none"> • Expansion of existing open pit • Construction and progressive rehabilitation of the integrated waste landform (IWL) • Establishment of potentially acid-forming (PAF) waste rock stockpile (WRS) adjacent to the pit • Construction of crushing facilities and gold processing plant (CIP) • Construction of supporting infrastructure, i.e., workshops, power station, roads, offices • Ore and overburden excavation and handling • Loading and hauling of waste rock and ore • Operation of CIP plant and supporting infrastructure • Ongoing dewatering of the pit and evaporation pond • Final rehabilitation of the IWL • Placement of PAF waste rock into mined out pit • Removal of evaporation pond and reshape* • Removal of infrastructure, e.g., process plant, and reshaping and rehabilitation of disturbed areas • Implementation of closure monitoring program • Maintenance as required i.e., weeds, erosion control 	EIS

Note: * If not retained by the landholder.

2. Existing Environment

2.1 Physical Environment

Land types of the Pine Creek bioregion area are characterised as gently undulating terrain with scattered hills, low ridges of elevations between 90 and 100 mAHD and alluvial flats. The land consists of creek beds bordered by flood out country situated in the upper catchment of the Margaret River, which is a tributary of the Adelaide River. The Adelaide River flows through extensive coastal and marine floodplains east of Darwin into the Arafura Sea.

Surface water streams in the area of the Project include both intermittent streams, which have flowing water for all or most of the wet season but are dry during the drier months, and ephemeral streams such as tributaries to the Margaret River, which flow briefly following rainfall and are dry for most of the year. There are no perennial streams in the study area. The presence of water pools in the dry season is likely dependent on the previous wet season's rainfall and subsequent groundwater recharge.

2.2 Biological Environment

The biological environment of the Project area predominantly consists of open woodland on sandstone plains, and more marginally open woodland on alluvial floodplains and low sandstone hills. Vegetation communities in the Project area and surrounding areas include eucalypt tall open forests, woodlands, with smaller areas of monsoon rainforest patches, *Melaleuca* woodlands, riparian vegetation and tussock grasslands. Vegetation within the Project area is greatly disturbed from previous mining activities with minimal to no past rehabilitation effort, leaving remnant infrastructure, large areas of bare soils and moderate to high infestation of weeds, including the particularly invasive Gamba grass.

While no conservation significant species have been located in the Project area two flora species of conservation significance were identified by the EPBC Protected Matters Search or Territory Parks and Wildlife Conservation (TPWC) Flora Atlas as occurring or potentially occurring within a 20 km radius of the survey area. Records of three fauna species listed as endangered and three species listed as vulnerable under the *EPBC Act* were identified by the NT Fauna Atlas within a 20 km radius of the survey area. The NT Fauna Atlas also identified records of four species listed as vulnerable under the *TPWC Act*, but not listed under the *EPBC Act* potentially occurring across the same area.

Similarly, no sensitive aquatic species were observed, however three conservation significant species were found to have potential to occur within the study area.

2.3 Socio-economic

There are no population centres located immediately adjacent to the Project location. Hayes Creek is a small roadside settlement located approximately 10 km south of the. The main population centres in the broader Project area are Pine Creek, located approximately 50 km southeast of the Project location in Victoria Daly local government area (LGA), and Adelaide River located approximately 50 km to the northwest of the Project location in Coomalie LGA.

Major land uses of the Victoria Daly LGA are conservation, farming, intensive rural freehold blocks, horticulture and mining. The history of the NT's economic development has largely been driven by the resources sector, but also it also has a relatively large public sector and a significant defence force presence. The construction and mining industries have been the main drivers of economic growth in recent years. The largest industry (by employment) in the Victoria Daly LGA is mining, however cattle and farming have been identified as the primary land use.

2.4 Cultural Heritage

The Jawoyn people are the Traditional Owners of 50,000 km² of land and waters east of (and incorporating) Pine Creek. The Project is located on the traditional lands of the Warai and Wagiman peoples. There is no current active Native Title granted over the Project area.

An archaeological assessment recorded archaeological places and archaeological objects in the Project area, as defined under the *Heritage Act 2011*.

Based on the issue of an authority certificate of the Project area by the Aboriginal Areas Protection Authority (AAPA), there are no recorded sacred sites, however two are located approximately 2 km to the north of the Project area.

3. Stakeholder Engagement

PNX recognizes the importance of developing and maintaining relationships with Project stakeholders. Since prior to acquiring the Fountain Head exploration leases, stakeholder engagement was already occurring in the area however, primarily focussing on the Hayes Creek Project.

Engagement activities specific to the Fountain Head Gold Project began in July 2019 with the Australian Stock Exchange (ASX) Minerals Resources announcement, followed by Project scoping and the preparation of the NOI and has continued into the draft EIS preparation phase.

Information disclosure and consultation has been undertaken in accordance with the EA Act and the Environment Protection Act 2019 (EP Act) under a transitional arrangement with the NT EPA. The commencement of the EP Act will modify the timeframes and some public exhibition requirements in the assessment process that are specified in the Environmental Assessment Administrative Procedures (EAAP).

4. Assessment of Project Impacts and Benefits

Impacts and benefits are predicted to arise from Project activities, such as:

- Topsoil stripping and stockpiling.
- Land clearing.
- Construction of crushing facilities, CIP plant, power station, and associated infrastructure.
- Drilling of waste rock and ore.
- Overburden and ore excavation and handling.
- Loading and hauling of waste rock and ore.
- WRS expansion and tailings disposal within IWL.
- CIP processing, storage and mixing.
- Use of evaporators to dewater existing pit.
- Operation of diesel generators.
- Operation of diesel power station.
- Operation of machinery, equipment and vehicles with diesel fuel.
- Operation of gold processing plant, storage and mixing, electrowinning, operation of carbon regeneration kiln.
- Use of explosives with diesel content for blasting.
- Project employment and procurement.

- Project employment and training.
- Closure.

Based on the activities described above, potential Project impacts were identified, and a significance assessment of the relevant environmental factors and their associated objectives was undertaken. The key environmental factors and objectives identified for the Project are provided in Table 4.1.

Table 4.1 – Environmental Factors and Objectives

Theme	Key Environmental Factors	Objectives
Land	Terrestrial environmental quality	Maintain the quality of land and soils so that environmental values are protected
Water	Hydrological processes	Maintain the hydrological regimes of groundwater and surface water so that environmental values are protected
	Inland water environmental quality	Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected
	Aquatic ecosystems	Protect aquatic ecosystems to maintain the biological diversity of flora and fauna and the ecological functions they perform
People and communities	Social, economic and cultural surroundings	Protect the rich social, economic, cultural and heritage values of the Northern Territory

A summary of the potential key impacts assessed in the EIS is listed in Table 4.1.

Table 4.2 – Potential Key Impacts Assessed in the EIS

Environment
Deterioration of receiving air quality
Noise pollution
Deterioration of soil quality
Reduction of flora establishment as a result of erosion and soil compaction
Loss of flora and fauna individuals
Loss or disturbance of native vegetation and/or fauna habitat
Reduction in abundance of threatened flora species
Increased density and distribution of weeds
Contamination of aquatic ecosystems from runoff
Deterioration of groundwater quality and reduction in groundwater availability
Deterioration of surface water quality and altered surface water hydrological regime
Social and Cultural Heritage
Disturbance to other road users as a result of an increase in traffic

Economic benefits to the NT government
Stimulation of the regional and local economy
Increased employment and training opportunities for local communities
Disruption to operations of the Bonaparte Gas pipeline (BGP) and the Alice Springs Darwin railway line
Reduction in land suitability for pastoral activities

The impact assessment also included an assessment of cumulative impacts and Project major hazards.

5. Environment and Social Management System

PNX uses an integrated Environment and Social Management System (EMS) to ensure a consistent approach to management of environmental risks. The EMS is comprised of a series of management system standards which are supported by a suite of discipline-specific Environmental Management Plans (EMPs), which will incorporate the commitments, objectives and targets outlined in the EIS.

PNX's Environmental Policy will guide the development of environmental management systems (EMS), processes, plans and procedures for the Fountain Head Gold Project. It also establishes the principles and goals for environmental performance against which the effectiveness of the EMS will be evaluated.

The framework described above is intended to be used for developing the Mining Management Plan (MMP), from which detailed management plans will be developed beyond the EIS. The management plans will support implementation of Project commitments and will define the monitoring requirements to assess mitigation performance and efficiency to obtain authorisation under the *Mining Management Act*.

Specialist contractors will undertake activities on behalf of PNX and will be contractually obligated to implement and comply with the Project's MMP. The MMP and monitoring procedures will be subject to periodic review and evaluation to identify any deficiencies. The MMP will address the outcomes of commitments made in this EIS, design refinements as Project development progresses and any changes in regulatory requirements.

Compliance with applicable standards, and the effectiveness of the Project's design controls and commitments, will be monitored and assessed against measurable performance indicators. Performance will be reported according to applicable requirements.