

Hera Resources Pty Ltd

Federation Project

Environmental Impact Statement

Chapter 1

Introduction

1. Introduction

1.1 Background

The Federation Project (the Project) is a proposed underground metalliferous mine development located in central-western NSW, approximately 15 kilometres (km) south of the Nymagee township and 10 km south of Hera Resources Pty Limited's (Hera Resources') Hera Mine (refer **Figure 1-1**). Hera Resources is a wholly owned subsidiary of Aurelia Metals Limited (Aurelia). Nymagee is a small, rural township with approximately 20 residences, located approximately 80 km south east of Cobar. Refer to the Location Plan at **Figure 1-1**.

High grade lead, zinc and gold mineralisation was discovered at the Federation deposit in April 2019. Subsequent surface drilling programs have delineated a substantial gold-lead-zinc-copper-silver mineral deposit. Hera Resources is evaluating the development of a satellite underground mine at the Federation Site that leverages established infrastructure at the Hera Mine to minimise environmental impacts and allow for the continuation of mining operations in the Nymagee area.

Mining at Hera Mine is currently approved for operations until December 2025. Mining of the Federation deposit will allow for a transition of mining operations from Hera Mine to Federation, as ore from the Federation deposit replaces ore from the Hera Mine.

1.2 Overview of Existing and Approved Operations

1.2.1 Hera Mine

Hera Resources currently operates the Hera Mine located south of the township of Nymagee and approximately 80 km south east from Cobar, NSW. Hera Mine commenced operations in 2012 under the former *Environmental Planning and Assessment Act 1979* (EP&A Act) Part 3A approval PA10_0191. The project approval has recently been modified for the sixth time, which provided for the continuation of operations at Hera Mine until December 2025.

Operations at Hera Mine involve the extraction of waste rock and metalliferous ore using underground open stope mining methods and underground load and haul operations. The on-site processing plant is approved to process up to 505,000 tonnes per annum (tpa) of ore to produce gold and silver doré (unrefined bars) and a zinc/lead concentrate. Tailings which are produced from the processing plant undergo a cyanide detoxification process prior to placement into an onsite tailings storage facility (TSF). The zinc/lead concentrate is transported via public road to the Hermidale Rail Siding located approximately 75 km to the north. The gold and silver doré is transported to Dubbo airport where it is then flown to Perth Mint.

There is a mine accommodation village, including accommodation facilities, ablution facilities, a water treatment facility, communal facilities and a communal car park. The accommodation village was approved under Cobar Shire Council (CSC) development consent 2012/LD-00004 (2012), with and extension approved under development consent 2021/LD-00010 (2021).

1.2.2 Exploration Decline Program

In August 2021 Department Planning Industry and Environment Resource Regulator (DPIE-RR) approved the development of an exploration decline at Federation (referred to as the Exploration Decline Program) under Part 5 of the EP&A Act and section 23A(4) of the *Mining Act 1992*. The Exploration Decline Program involves the development of a box cut, portal and an exploration decline. A surface infrastructure area will be established to support exploration decline activities.

Extraction of one or more bulk samples together totaling no more than 20,000 tonnes (t) will be undertaken and transported to Hera Mine via Burthong Road for processing at the existing processing plant. Waste rock would be stored within the surface infrastructure area for future use in rehabilitation, transferred to Hera Mine via Burthong Road or returned underground via the exploration decline. A 14.8 km surface pipeline to transfer water from the exploration decline to Hera Mine will also be established.

1.2.3 Peak Gold Mine

Peak Gold Mines Pty Ltd, a wholly owned subsidiary of Aurelia, operates the Peak Gold Mine (PGM), which includes the New Cobar Complex located 3km to the south-east of Cobar and the Peak Complex located 10 km south east of Cobar (refer **Figure 1-1**). PGM has operated since mining commenced at the Peak deposit in 1991 and operates under development approvals issued by CSC. The PGM processing plant comprises a range of mills, flotation cell banks and other associated equipment. The plant has recently been upgraded to replace the flotation circuit and installation of segregated concentrates storage area. Tailings are managed within the Peak Complex and are placed in the PGM TSF. As part of the Project it is proposed to transport up to 200 kilo-tonnes (kt) per annum (p.a.) of ore to PGM for processing up to Year 5 of operations, being approximately 10% of the total ore from the Federation deposit. Processing of ore and management of tailings from the Federation deposit will occur under PGM's existing approvals.

1.3 Federation Project

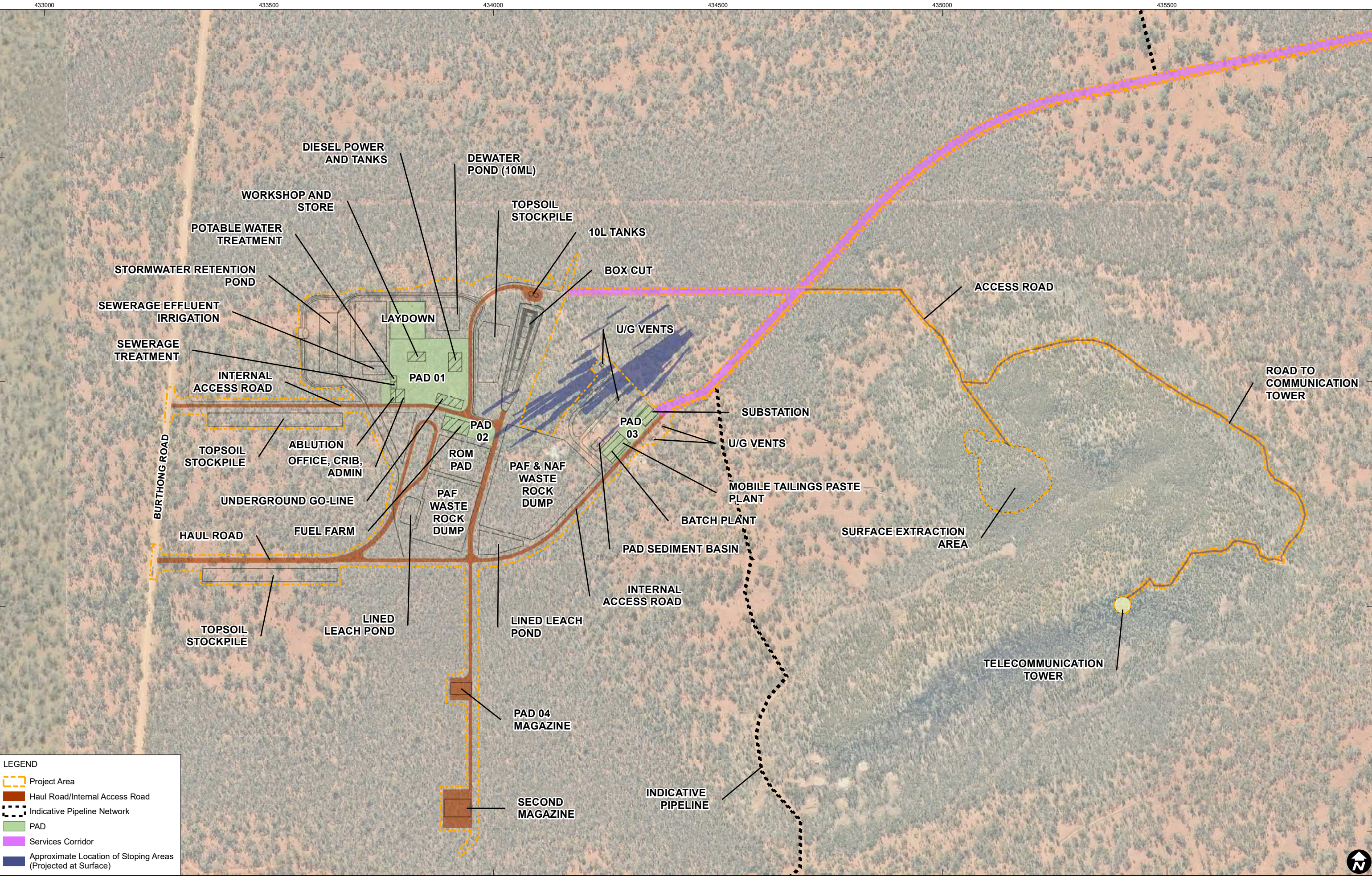
1.3.1 Overview

The Project comprises underground mining activities and surface infrastructure at the Federation Site, amendments at Hera Mine to facilitate processing of ore from the Federation Site, and a Services Corridor connecting the Federation Site with Hera Mine. The activities and infrastructure for which approval is being sought are described in **Section 4**, with the Project area (comprising the Federation Site, Services Corridor and activities at Hera Mine), existing Hera Mine infrastructure and proposed Project Boundary (incorporating the Project area and Hera Mine) shown in **Figure 1-2**.

The Federation Site infrastructure and activities are shown in **Figure 1-3**.

Total ore production from the Federation Site is approximately 6.95 million tonnes (Mt) over the life of the mine. Maximum annual production is planned at 750 kilo-tonnes per annum (ktpa), which will occur during years six to nine of mine operations. Access to the underground mine will be via a portal developed through the base of a box cut located northwest of the proposed Federation stoping footprint, as projected at surface (refer **Figure 1-3**). The decline will be developed to gain access to all

production levels. Mining at the Federation Site will be by underground open stope mining methods and underground load and haul operations.



LEGEND

- Project Area
- Haul Road/Internal Access Road
- Indicative Pipeline Network
- PAD
- Services Corridor
- Approximate Location of Stopping Areas (Projected at Surface)

0 250 500 m

Scale: 1:7,500 at A4
Coordinate system: GDA 1994 MGA Zone 55

Date drawn: 20-Jan-2022
Project number: 660.30090.00000

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Surface infrastructure which has been established as part of the Exploration Decline Program (refer Section 1.2.2) will be utilised for the Project, upgraded as necessary to support mining rather than exploration activities.

Waste rock generated at the Federation Site will be stored in one of two dedicated waste rock stockpile areas. Geochemical testing of the waste rock (refer Section 8.2) concluded that all waste rock, other than waste rock from the box cut, will be managed as potentially acid forming (PAF) material. PAF waste rock will be stored on a contained surface draining to a lined leachate pond and used as backfill underground during or post mine life.

Water will primarily be supplied from dewatering of the underground workings. As part of the mine development, a new borefield will be established for the supply of water from production bores. A package potable water treatment plant will be established at the Federation Site once the bores have been developed to treat the water for use at site.

Ore will be transported via Burthong Road to Hera Mine for processing at a new 750 ktpa processing plant. Approximately 60% of tailings produced from the processing of Federation ore will be returned to the Federation Site for use as backfill for the stopes. The balance of the tailings will be placed into the TSF at Hera Mine. The approved TSF at Hera Mine currently has sufficient capacity to store tailings generated from the Project. There will be a need to raise the embankment height through staged wall lifts by approximately 4 m up to 329 m AHD (i.e. up to the currently approved TSF capacity) to achieve the available capacity.

The new processing plant will produce separate zinc, copper and lead concentrates. These will be transported to Hermidale Siding using a similar truck sizing as currently used for transport of concentrate from Hera Mine. Concentrate will be railed to the Port of Newcastle for export.

The accommodation village located at Hera Mine has been approved for expansion to accommodate the Project construction and operational workforce. The construction workforce for the Project will be approximately 100 personnel, and the operational workforce will be approximately 200 - 250 personnel.

It is anticipated that Project activities will commence early to mid-2023, after obtaining all necessary approvals.

A solar farm will be established at the Hera Mine to supplement energy requirements and reduce carbon emissions for the Project. The solar farm will be established to supplement power provided by the existing gas fired power plant on site via a new transmission line.

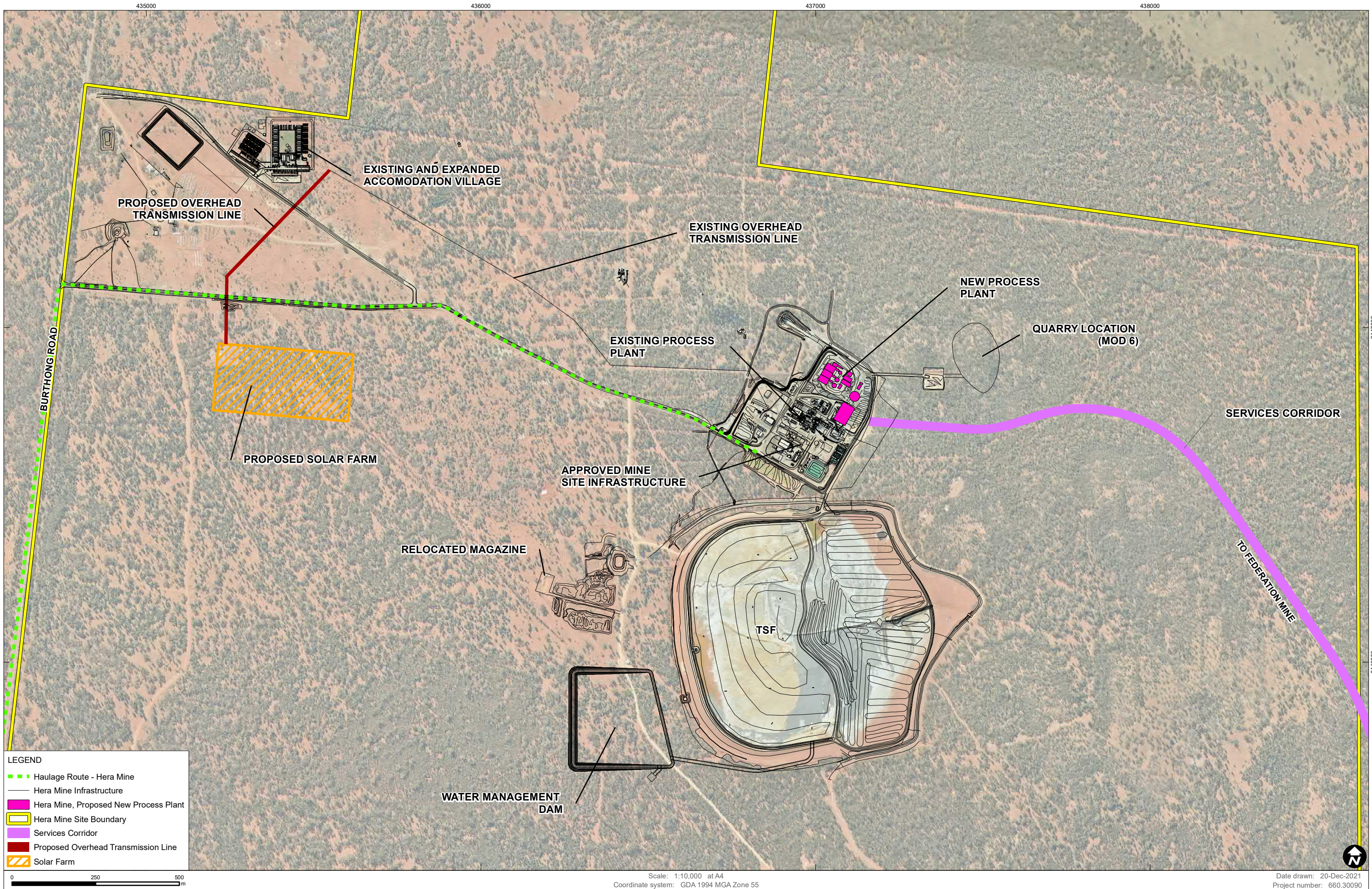
The proposed amendments to Hera Mine as part of the Project are identified in **Figure 1-4**.

A Services Corridor is proposed to link Hera Mine with the Federation Site, inclusive of:

- Powerline
- Water pipeline
- Access track
- Tailings pipeline and return water line (potentially).

The nominated width of the Services Corridor is 23m with an approximate length of 14.3km. Clearing of existing vegetation will be required for the installation of the proposed services infrastructure. The

access track will be used for maintenance and inspection requirements. It will not be used for haulage of ore and tailings.



1.3.2 Project Objectives

The Project has the following objectives:

- Extraction of approximately 6.95 million tonnes per annum (mtpa) over a period of 12 – 14 years;
- Optimisation of the extraction of ore to maximise recovery of zinc, copper, lead, silver, and gold;
- Transition mining from the Hera Mine to the Project operations and as a consequence generate ongoing workforce opportunities in the region;
- Operate the Project in an environmentally and socially sustainable manner including the minimisation of any impacts through the implementation of effective mitigation strategies, and offset of residual impacts; and
- Continue to contribute to the local, regional, and state economies.

1.3.3 Project Design

The Project has been designed to minimise potential impacts through a number of specific design and operational measures. Where impacts could not be avoided, mitigation measures have been identified which are documented in **Section 8**. Residual impacts to biodiversity will be offset.

The utilisation of existing infrastructure at the Hera Mine has minimised the impact footprint at the Federation Site. The use of the approved accommodation village and location of the new process plant within the approved footprint of the existing Hera Mine minimises the need for additional land disturbance. Through maintaining processing of ore at Hera Mine, this negates the need for additional infrastructure at the Federation Site and a separate TSF. The approved TSF at the Hera Mine will be utilised to store tailings generated from processing of ore from the Federation Site. All existing controls and infrastructure associated with TSF management will remain in place.

The mine design at the Federation Site was developed to avoid and minimise any potential subsidence and subsequent associated impacts.

Surface infrastructure at the Federation Site will utilise infrastructure established for the Exploration Decline Program (upgraded as required to support mining rather than exploration) which reduces the need for additional infrastructure and associated disturbance. Haulage of ore and tailings between Federation Site and Hera Mine along Burthong Road removes the impact on land and biodiversity that would occur if an internal haul road was established on private land. Access tracks to the communication tower and surface extraction area along with water pipelines were placed in areas where there was existing land clearance and disturbance where feasible. Proposed Project infrastructure, including pipeline routes and the Services Corridor were located to avoid sites of known Aboriginal heritage.

1.4 Purpose of this Document

This Environmental Impact Statement (EIS) has been developed with the purpose of informing DPIE, government authorities, communities, and other stakeholders about the Project. The EIS documents the potential social, economic, and environmental impacts and benefits of the Project, and the measures that will be implemented to minimise, mitigate, manage and monitor potential impacts or

enhance benefits. It addresses the specific requirements provided in the Secretary's Environmental Assessment Requirements (SEARs), as outlined below.

1.5 Secretary Environmental Assessment Requirements

A request for SEARs was made by Hera Resources in July 2021. The SEARS and accompanying additional agency inputs were issued by DPIE on the 17 August 2021.

The SEARS, and where the requirements of the SEARs have been addressed in this EIS, are provided in **Appendix A**.

1.6 Document Structure

This EIS has been developed with reference to the DPIE's State Significant Development guidelines – preparing an Environmental Impact Statement (July 2021). The EIS structure is as follows:

- Introduction;
- Strategic Context;
- Existing Operations;
- Project Description;
- Rehabilitation;
- Statutory Context;
- Engagement;
- Impact Assessment;
- Management Measures and Summary of Commitments; and
- Justification and Conclusion.

1.7 Approvals Approach

SLR Consulting (SLR) have been appointed by Hera Resources to prepare and submit an EIS to support a state significant development (SSD) application for development consent under section 4.12 of the EP&A Act. It has been prepared to the form and content requirements set out in Clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), as well as clause 8(1) and clause 5 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

It is intended that the current development consent held by Hera Resources (PA10_0191) will be surrendered in accordance with section 4.63 of the EP&A Act and replaced with the planning consent for the Project. Operations at Hera Mine which are to continue as part of the Project will be authorised by the issued SSD consent.

The Project will also require additional approvals to allow for the lawful operation of the Project, which are outlined in **Section 6**.

1.8 The Applicant

Hera Resources is the proponent for the Project with the relevant details provided in **Table 1-1**. Hera Resources is a wholly owned subsidiary of Aurelia.

Table 1-1 Proponent Details

Requirement	Detail
Proponent	Hera Resources Pty Limited
Postal Address	GPO Box 7 Brisbane QLD 4001
ACN	138 992 999
Contact	Jonathon Thompson
Contact details	Email: jonathon.thompson@aureliametals.com.au Mobile: 0488 065 144

1.9 The Study Team

This EIS has been prepared by SLR on behalf of Hera Resources to support the SSD application for the Project. The EIS Study team are provided in **Table 1-2**. The EIS has been supported by a number of technical environmental assessments which are summarised in

Table 1-3, along with the organisation that prepared the assessment.

Table 1-2 EIS Study Team

Role	Name
EIS Peer Review	Dan Thompson (SLR)
EIS Principal Author	Renae Gifford (SLR)
EIS Author	Kiera Plumridge (SLR)
GIS	Ashleigh Pritchard (SLR)

Table 1-3 Technical Team

Technical Assessment	Organisation
Biodiversity	AREA Environmental and Heritage Consultants Pty Ltd
Indigenous Heritage	AREA Environmental and Heritage Consultants Pty Ltd
Soils and Land Capability	Sustainable Soil Management Pty Ltd
Geochemistry	Terrenus Earth Sciences Pty Ltd
Subsidence	Beck Engineering Pty Ltd
Preliminary Hazard Analysis	SLR Pty Ltd
Traffic and Transport	The Transport Planning Partnership
Air Quality	ERM
Acoustics and Vibration	Muller Acoustic Consultants

Technical Assessment	Organisation
Surface Water	GHD Pty Ltd
Groundwater	GHD Pty Ltd
Human Health Risk Assessment	EnRisk Pty Ltd
Rehabilitation	SLR Pty Ltd
Economics	Gillespie Economics Pty Ltd
Social	Element Environment Pty Ltd