



Appendix L

Statement of heritage impact



New Cobar Complex Project State Significant Development (SSD-10419)

Statement of Heritage Impact

Prepared for Peak Gold Mines Pty Ltd
December 2020

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New Cobar Complex Project State Significant Development (SSD-10419)

Statement of Heritage Impact

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Executive Summary

ES1 Overview

Peak Gold Mines Pty Ltd (PGM) owns and operates the Peak Gold Mines south-east of Cobar. The PGM operation comprises the New Cobar Complex located 3 kilometres (km) to the south-east of Cobar town centre and the Peak Complex located 10 km south-east of the town centre. The New Cobar Complex Project State Significant Development (SSD) (the Project) is an amalgamation of underground mining at New Cobar, Chesney and Jubilee deposits and development of new underground workings of Great Cobar and Gladstone deposits.

EMM Consulting (EMM) has been engaged by PGM to prepare and submit an environmental impact statement (EIS) to support an SSD application for the New Cobar Complex Project under the provisions of clause 8(1) and clause 5 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The Peak Complex, which is not part of this SSD application will continue to operate under local government (CSC) approvals, as there is no proposed change to this arrangement.

This Statement of Heritage Impact (SoHI) has been prepared to address the relevant Secretary's Environmental Assessment Requirements (SEARs) from the Department of Planning, Industry and Environment (DPIE) for the SSD EIS (received February 2020). The SoHI assesses the potential historic heritage (cultural and archaeological) impacts of the proposed development and provides information to be used in the EIS to support the SSD application for the Project.

ES2 Site description

PGM has identified the Gladstone and Great Cobar deposits as targets for further mining to extend the life of operations at the New Cobar Complex. The Great Cobar deposit was historically exploited by surface and shallow underground mining between 1870 and 1919, but no mining of that deposit has been undertaken since that time. PGM has obtained conditional approval for development of an exploration decline to target deeper resources within the Great Cobar deposit for ore evaluation.

The New Cobar Complex Expansion EIS project area is the area of mining disturbance within CML 6, south of the Barrier Highway and east of Kidman Way, with a 10 m buffer around proposed underground workings.

However, all works associated with mining the Great Cobar and Gladstone deposits will be located underground or in an existing, operational mining complex (the New Cobar Complex) except for a short (no more than 400 meters (m)) power line from an existing 22 kilovolt (kV) line servicing PGM. The power line corridor was therefore targeted for an archaeological survey on 1 July 2020.

ES3 Impact assessment

There are two listed heritage items within the project area. The closest listed heritage item is Towser's Huts (Cobar LEP I24) located 800 m from the power line corridor location, to the south of Nyngan Road, within ML 1483. The huts are fenced off and protected and will not be impacted by the installation of the power poles. Cobar Pastoral and Mining Technology Museum 1910 (Cobar LEP I8) is situated on the main street of Cobar, overlooking the Great Cobar open cut. It is approximately 950 m to the north-west of the power line corridor and will not be impacted by the installation of the power poles.

The power line corridor is located in an area previously known as Cornish Town (also Cornishtown). This was one of several residential areas to the south of Cobar that was removed in the 1960s. At this stage, the pole installation method and associated infrastructure have not been determined; therefore, impacts to Cornish Town have not been identified. Historical research has identified the potential for archaeological sensitivity within the survey area

as it is possible that there may be evidence relating to Cornish Town. If archaeological resources related to this phase of the region's historical development exist, they are likely to reach the threshold of local significance at a minimum.

As no known historical heritage items are present within the power line corridor, the area in which excavation for the power poles is required is limited and minimal, and an unexpected finds protocol will be implemented, it is expected that the proposed works are unlikely to result in a significant impact to historical heritage values.

ES4 Management and mitigation measures

The following management measures are proposed:

1. Parts of the project area are assessed as having intangible value for the local community. As such, consideration should be given to preparing an oral history of Cornish Town. Descriptions and memories of people who once lived there would enhance knowledge of the history and development of Cobar.
 - It is recommended that the oral history be collected in conjunction with cultural mapping of the landscape of and around Cornish Town.
 - The oral history should be recorded professionally to create an archival record.
 - Cultural mapping would include detailed archival research, a concentrated field survey focused on the extent of Cornish Town using oral history and relevant technologies such as drone photography.
 - All this information should be collated into an assessment of the site.
2. Signage at the Fort Bourke Hill lookout could be updated, interpreting the history of Cobar and its landmarks, in consultation with Aboriginal and non-Aboriginal stakeholders, including the Great Cobar Heritage Centre.
3. PGM will continue vibration monitoring of the Great Cobar Heritage Centre (Cobar Pastoral and Mining Technology Museum 1910) for impacts from blasting. If damage is detected and determined to be as a result of blasting, the type of remediation that is undertaken will be dependent on:
 - the nature of the damage;
 - the scale of the damage;
 - the impact on the historical heritage values of the site; and
 - expert advice regarding practical and historically sympathetic remediation measures.

Therefore, remediation measures, if needed, will be assessed on a case-by-case basis in light of these considerations in order to ensure that performance measures are met and that there are no negative outcomes to historical heritage values.

4. If impacts to archaeological sites or relics have been identified in the future, they will be avoided if possible. Where impacts cannot be avoided, an appropriate archaeological assessment methodology, including research design, will be developed in order to guide physical archaeological test excavations, and included in the Heritage Management Plan. This SoHI will be updated to include the results of any test excavations undertaken.

5. As there are no significant heritage items within the project area that will be impacted by the construction of the power line, works can proceed with caution – ie with an expectation that heritage items may be encountered. The construction locations should be observed prior to, and during construction for the presence of potential heritage items. If unexpected finds such as objects and fabric that may indicate relics, particularly relating to Cornish Town, are encountered during construction works the following protocol will be followed:
- work will immediately but temporarily cease, and the site supervisor or appropriate responsible person will be informed;
 - if possible, the location of the power pole will be moved to avoid the item; and
 - if the location of the pole cannot be changed:
 - an archaeologist will be contacted to assess the find, where relevant, and determine if it is clearly a relic or has moderate to high potential to be a relic (this may require additional research);
 - if the find is determined to be a relic and the location of the pole cannot be changed to avoid the item, a s146 (of the Heritage Act) is to be forwarded to the Heritage Council who will be consulted on the appropriate management measure; and
 - if the find is assessed and is not a relic, work inside the area that was made a no-go area can re-commence.
6. In the event that known or suspected human skeletal remains are encountered within the project area, the following procedure must be followed:
- work will immediately cease, and the site supervisor or appropriate responsible person will be informed;
 - the immediate vicinity will be secured to protect the find and the find will be immediately reported to the work supervisor who will immediately advise the site supervisor or other nominated senior staff member;
 - the environmental manager or other nominated senior staff member will notify the police and the State coroner on the same day of the find (as required for all human remains discoveries);
 - the environmental manager or other nominated senior staff member will contact Heritage NSW for advice on identification of the skeletal material as Aboriginal and if so, management of the material;
 - if it is determined that the skeletal material is ancestral Aboriginal remains, the Aboriginal community will be contacted, and consultative arrangements will be made to discuss ongoing care of the remains;
 - the site will be recorded in accordance with the *National Parks and Wildlife Act 1974* (NPWS Act) and Heritage NSW guidelines;
 - if the remains are historical and not of Aboriginal origin, the Heritage Division of OEHS will be notified for further instruction; and
 - works will not recommence until written approval is received.

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1 Introduction

1.1 Overview

Peak Gold Mines Pty Ltd (PGM), a wholly owned and operated subsidiary of Aurelia Metals Limited (Aurelia), owns and operates the Peak Gold Mines operation south-east of Cobar, far western New South Wales (NSW) (see Figure 1.1).

The PGM operation comprises the New Cobar Complex located 3 kilometres (km) to the south-east of Cobar town centre and the Peak Complex located 10 km south-east of the town centre. Both complexes are located adjacent to Kidman Way, which connects Cobar to Hillston and Griffith to the south.

PGM has been operational since modern mining commenced at the Peak Complex in 1991 and all current mining operates under development approvals issued by Cobar Shire Council (CSC).

The New Cobar Complex Project State Significant Development (SSD) (the Project) is an amalgamation of underground mining at New Cobar, Chesney and Jubilee deposits and development of new underground workings of the Great Cobar and Gladstone deposits to create the New Cobar Complex Project.

PGM is also seeking to consolidate all existing development approvals applicable to the New Cobar Complex into a single modern consent issued by the Department of Planning, Industry and Environment (DPIE). Approval will be sought for project elements accessed from, and undertaken within, the existing New Cobar Complex located within consolidated mining lease (CML) 6, mining purposes lease (MPL) 854 and mining leases (ML) ML 1483 and ML 1805 (see Figure 1.2).

1.1.1 Background

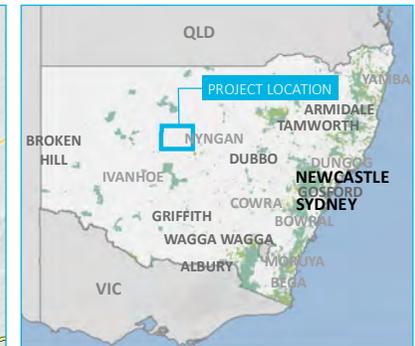
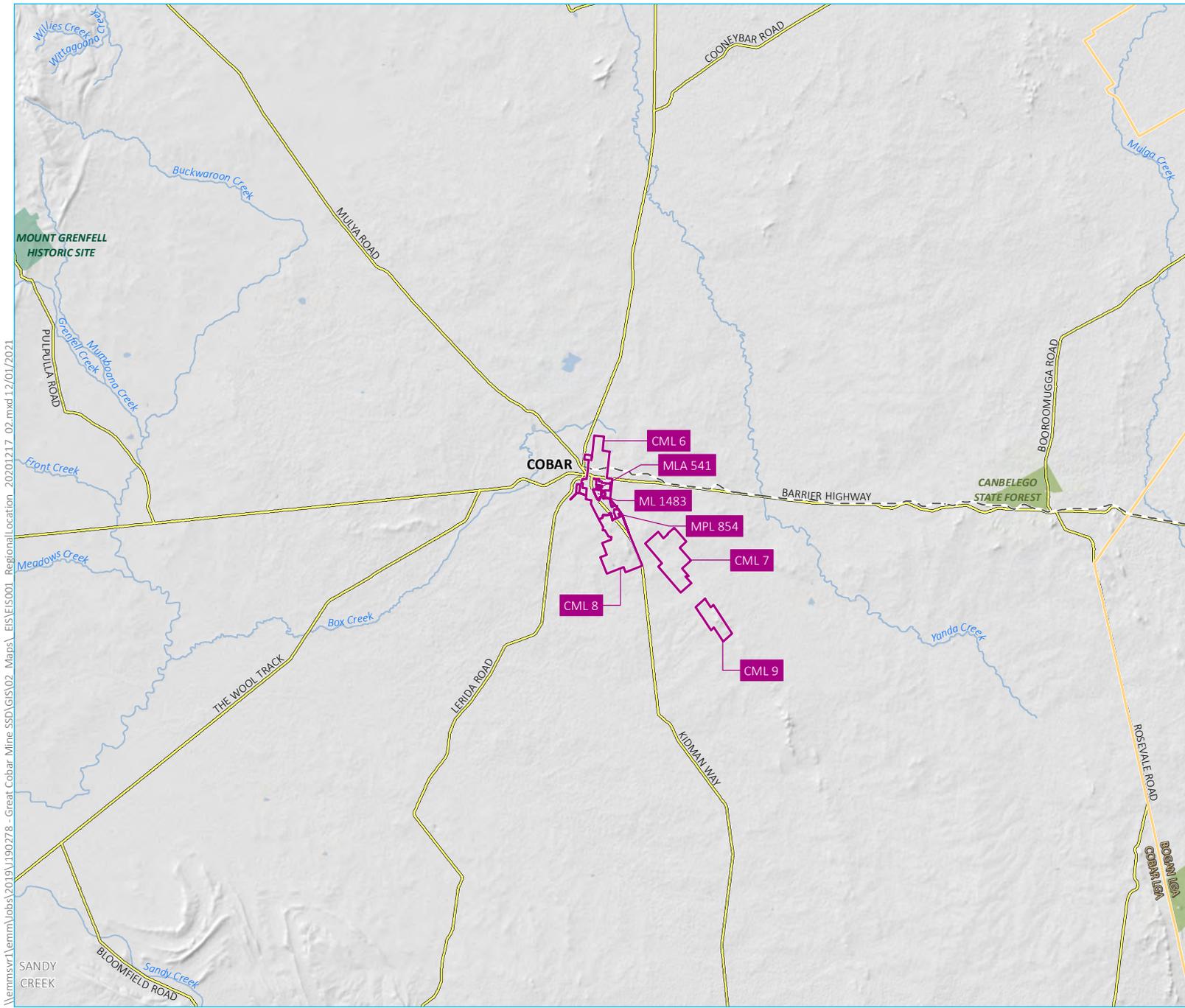
PGM has been operational since mining commenced at the Peak deposit in 1991 producing gold, copper, lead, zinc and silver. Mining at the New Cobar Complex commenced with the open cut in 2000, then transitioned to underground mining in 2004.

The current CSC development approvals at Peak Complex and New Cobar Complex allow for the operations to continue indefinitely and process up to 800,000 tonnes per annum (tpa) of ore. Ore processing, tailings storage and concentrate handling is undertaken at the Peak Complex with ore from the New Cobar Complex trucked by public road to processing facilities at the Peak Complex. Both the processing plant and the tailings storage facility (TSF) are located at the Peak Complex, and activities at those facilities are outside the scope of this Project.

PGM has identified the Gladstone and Great Cobar deposits as targets for further mining to extend the life of operations at the New Cobar Complex. The Great Cobar deposit was historically exploited by surface and shallow underground mining between 1870 and 1919, but no mining of that deposit has been undertaken since that time.

PGM has obtained conditional approval for development of an exploration decline to facilitate exploration activities within the Great Cobar deposit. The objectives of the exploration activities are to:

- further define the mineral resource through underground drilling from an exploration decline; and
- taking of a bulk sample to provide further samples for metallurgical, geotechnical and associated test work.



- KEY**
- Mining lease boundary
 - Rail line
 - Major road
 - Named watercourse
 - Waterbody
 - Local government area
 - NPWS reserve
 - State forest

Regional location of the Peak Gold Mine

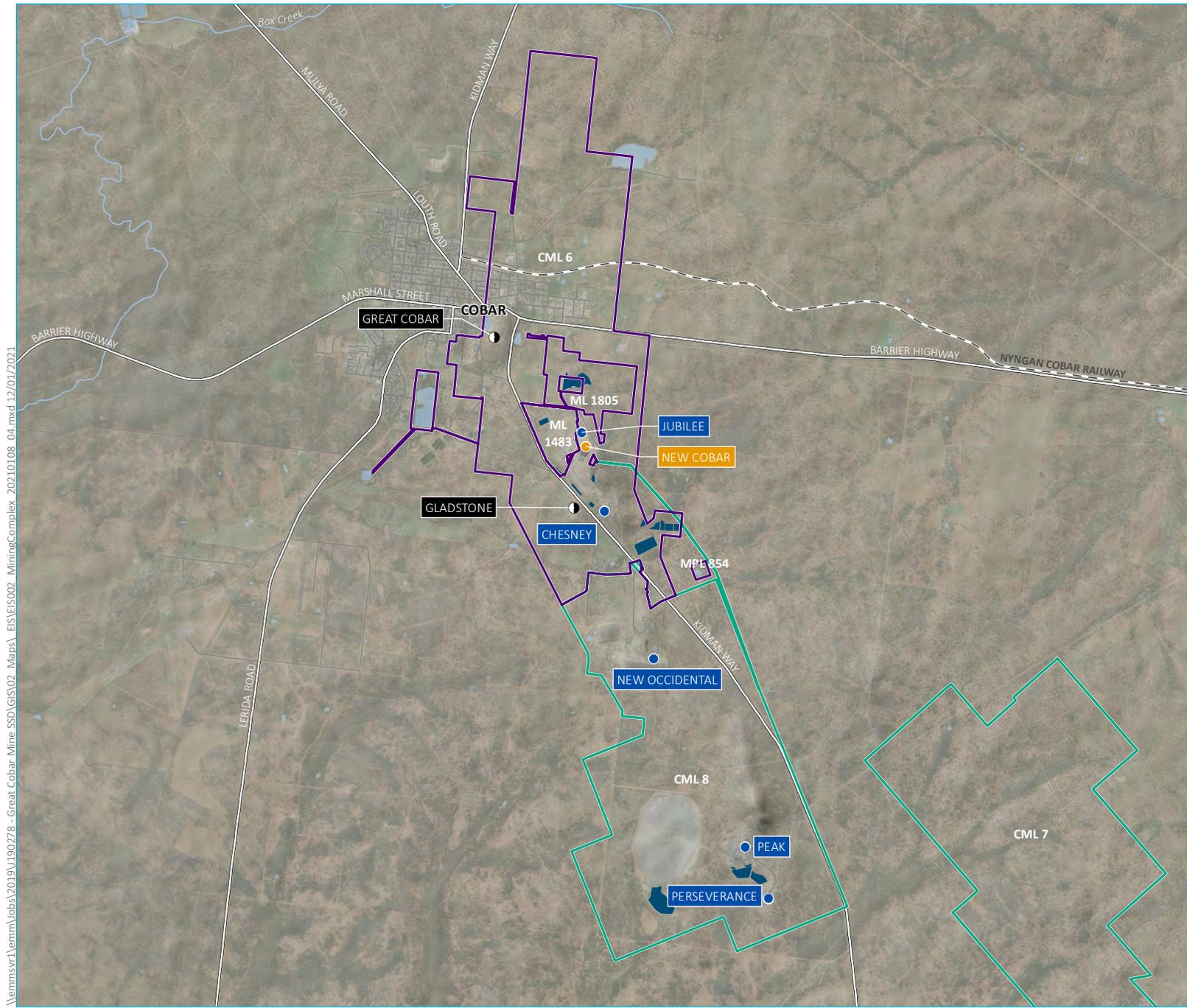
Peak Gold Mines
New Cobar Complex Project
Statement of heritage impact
Figure 1.1



\\lemmsvr1\emmm\jobs\2019\190278 - Great Cobar Mine SSD\GIS\02 Maps\ EIS\EIS001 Regional Location_2020\12\17\01\2021

Source: EMM (2020); DFSI (2017); GA (2011); DPE (2019)





- KEY**
- Completed working
 - Current working
 - Future working
 - - Rail line
 - == Major road
 - Minor road
 - Named watercourse
 - Waterbody
 - Mine water management storage
 - Mining lease boundaries
 - ▭ New Cobar Complex
 - ▭ Peak Complex

Mining leases and mining complexes

Peak Gold Mines
 New Cobar Complex Project
 Statement of heritage impact
 Figure 1.2



\\lemmsvr1\emmm\jobs\190278 - Great Cobar Mine SSD\GIS\02 Maps\ EIS\EIS002 MiningComplex 20210108 04.mxd 12/01/2021

Source: EMM (2020); DFSI (2017); GA (2011); DPE (2019)



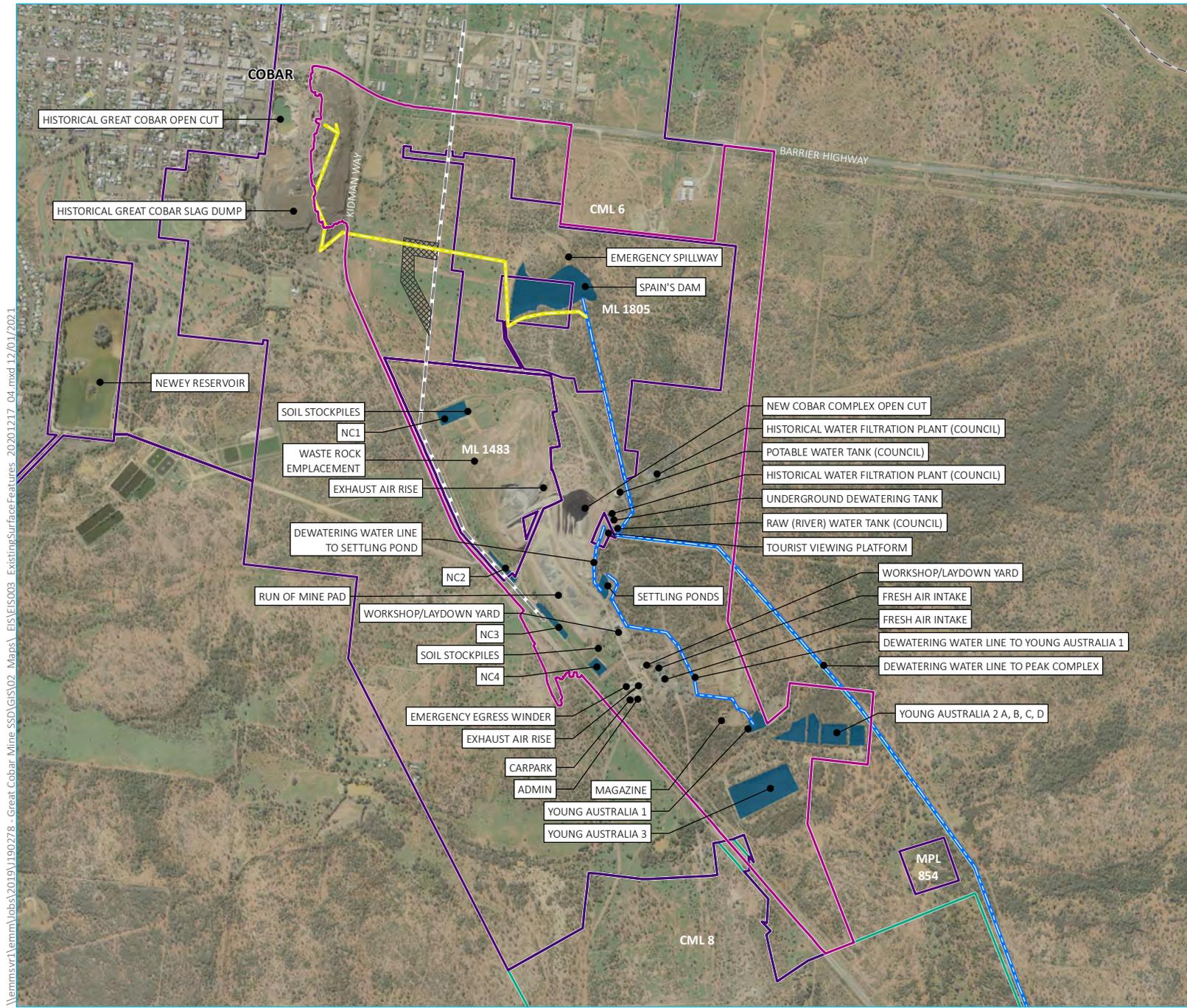
1.1.2 Project overview

All surface works associated with the Project will be located underground or in the existing, operational mining New Cobar Complex except for a short (no more than 400 meters (m)) power line from an existing 22 kilovolt (kV) line servicing PGM to a compact substation within the fresh air intake footprint.

PGM proposes to use the decline, infrastructure and intake and exhaust ventilation elements developed for the Great Cobar exploration decline (approved, but not yet constructed) to facilitate project development. Surface ventilation fans are not required during the development of exploration activities, however as they will be necessary during operation of mining, construction of a new power line and compact substation, to be located adjacent to the fresh air intake is required. The power line will continue to the exhaust air rise where a ventilation fan will be installed at a depth of approximately 100 m or greater below ground level (bgl). An emergency egress winder headframe and winder house will be installed at the fresh air intake for the purpose of mine rescue in the event of an incident below ground preventing evacuation by conventional means. No additional new surface infrastructure is proposed.

The existing surface infrastructure and facilities at the New Cobar Complex currently support underground mining of the New Cobar, Chesney and Jubilee deposits, and will continue to be used for this Project (Figure 1.3 and Figure 1.4). Access to all underground workings in the complex is from a portal and decline at the base of the New Cobar Complex open cut. SSD approval will be sought for the following Project elements accessed from, and undertaken within, the existing New Cobar Complex:

- Underground mining of the New Cobar Complex including, but not limited to, New Cobar, Jubilee and Chesney (existing development approval issued by CSC).
- Underground mining of the New Cobar Complex including Great Cobar and Gladstone (not yet approved).
- Groundwater dewatering of the relevant historic and proposed underground workings via the historic Great Cobar Shaft (existing development approval issued by CSC).
- Increase of the number of ore haulage trucks between the New Cobar Complex and Peak Complex from 25 loaded trips per day (50 movements in and out) to 50 loaded trips (100 movements in and out) per day (daylight hours only) averaged over a calendar year. The increase of daily truck movements will provide flexibility to PGM if there are unforeseen production disruptions (eg bad weather).
- Crushing and screening of ore within the existing New Cobar Complex ROM pad (existing approval by CSC).
- Transportation of ore to the Peak Complex via Kidman Way for processing, using road registered heavy vehicles (existing approval by CSC).
- Harvesting of waste rock and:
 - immediately deploying the material underground for use in stope backfilling operations (waste rock will remain underground and will not be transported to the surface as a preference); and
 - transportation of non-acid forming material to the surface and storage within the existing waste rock emplacement (WRE) prior to use across the complexes for construction / rehabilitation tasks (eg tailings dam lifts).
- Deposition of potentially acid forming waste rock brought to the surface and stored within the WRE where at end of mine life it would be capped, or progressively returned underground for disposal.
- Continuation of all other approved activities within the New Cobar Complex.



- KEY**
- Project area
 - Pipeline route
 - Great Cobar dewatering pipeline
 - Existing 22 kV powerline
 - Rail line
 - Proposed power line corridor
 - Mine water management storage
 - Mining lease boundaries
 - New Cobar Complex
 - Peak Complex

\\lemmsvr1\emmm\jobs\2019\190278 - Great Cobar Mine SSD\GIS\02 Maps\ EIS\EIS003 ExistingSurfaceFeatures 2020.12.17 04.mxd 12/01/2021

Source: EMM (2020); DFSI (2017); GA (2011); DPE (2019)

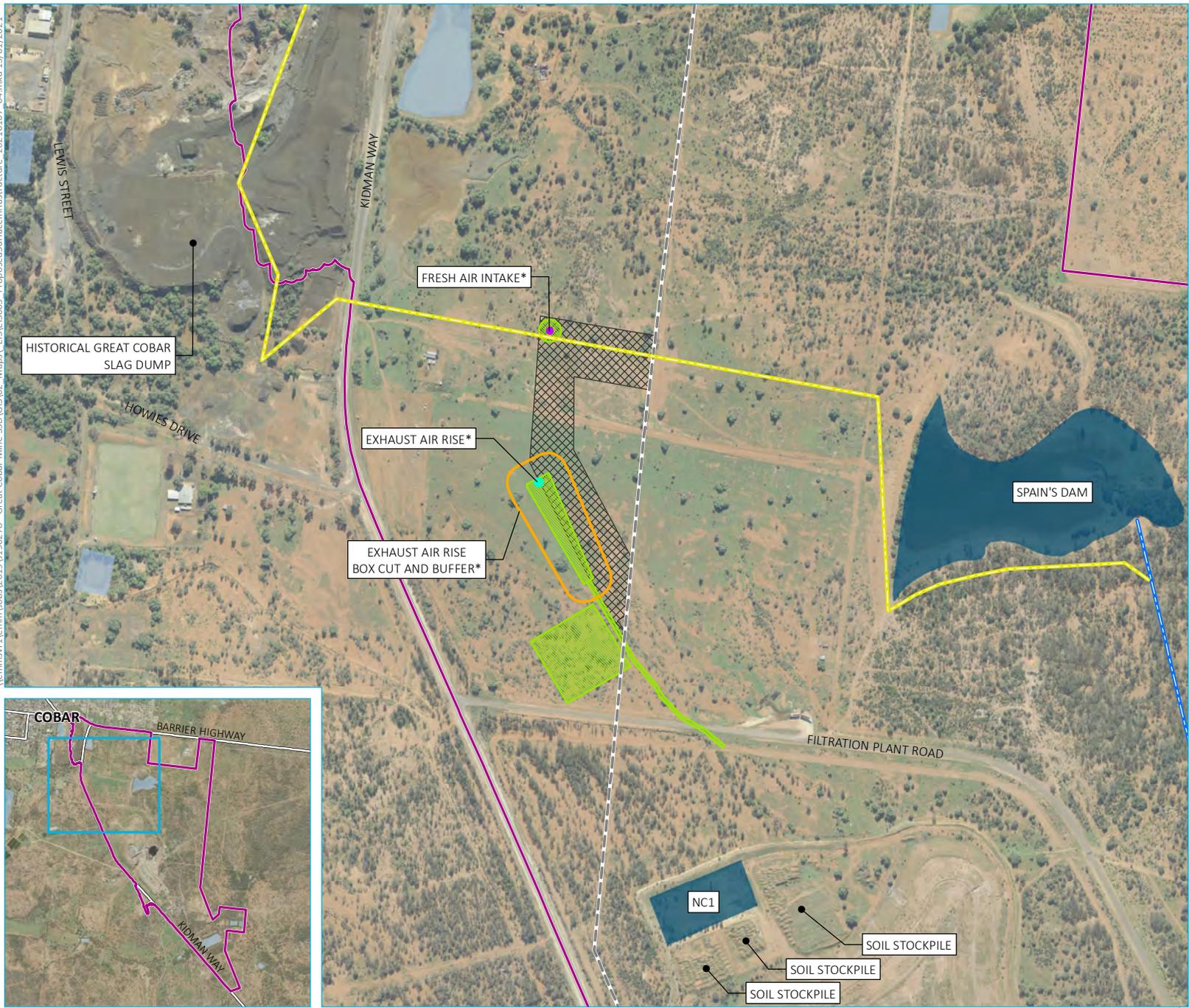


Existing surface features

Peak Gold Mines
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 Figure 1.3



\\emmsvr1\emmm\Jobs\2019\190278 - Great Cobar Mine SSD\GIS\02 - Maps\...EIS\ES005 - ProposedSurfaceInfrastructure_20210107_04.mxd 15/01/2021

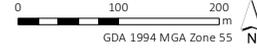


- KEY**
- Project area
 - Major road
 - Existing indicative pipeline route
 - Existing Great Cobar dewatering pipeline
 - Existing 22 kV powerline
 - Exhaust air rise*
 - Exhaust air rise buffer*
 - Fresh air intake*
 - Proposed power line corridor
 - Waterbody
 - Mine water management storage
 - Approved area of disturbance*
- *Approved under existing REF approvals, but not yet constructed.

Proposed surface infrastructure

Peak Gold Mines
New Cobar Complex Project
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Figure 1.4

Source: EMM (2020); DFSI (2017); DPE (2019); ELA (2018)



Processing will remain at the existing approved rate of up to 800,000 tpa, with production of ore from the Great Cobar and Gladstone deposits making up for the future decrease in production from other workings across PGM.

Additionally, there are remaining resources in the New Cobar, Jubilee and Chesney deposits that are mineral rich, but which are currently not economical to mine in isolation. Keeping the New Cobar Complex operational and gaining access to Great Cobar and Gladstone deposits will lead to increases in economies of scale and maximise opportunities to mine these resources and keep PGM operational until 2035.

1.2 Purpose of this report

EMM Consulting (EMM) has been engaged by PGM to prepare and submit an environmental impact statement (EIS) to support an SSD application for the New Cobar Complex Project under the provisions of clause 8(1) and clause 5 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The Peak Complex, which is not part of this SSD application will continue to operate under local government (CSC) approvals, as there is no proposed change to this arrangement.

PGM requested Secretary’s Environmental Assessment Requirements (SEARs) from the Department of Planning, Industry and Environment (DPIE) for the SSD EIS in December 2019; these were received in February 2020. The SEARs included a requirement to assess potential historic heritage risks associated with the construction and operation of the Project. This Statement of Heritage Impact (SoHI) has been prepared to address the relevant SEARs, provide information to be used in the EIS and support the SSD application for the Project. The historical heritage related matters and EMM responses are tabulated below (Table 1.1).

Table 1.1 Heritage related SEARs and EMM responses

Item no.	Authority comments	EMM responses
1	Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development,	Refer to sections 6 and 7 of this report. Refer to the Aboriginal Cultural Heritage Assessment (ACHA) included as (EMM 2020a) of the EIS for assessment of Aboriginal heritage impacts.
2	including consultation with Aboriginal stakeholders in accordance with <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (OEH 2010).	Refer to ACHA (EMM 2020a)
Standard Environmental Assessment Requirements		
9	The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:	Refer to Section 7 of this report.
a.	outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the <i>NSW Heritage Manual</i> (1996);	Refer to Section 8 of this report.
b.	be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council’s Excavation Director criteria);	Refer to Sections 1.7 and 1.8 of this report.
c.	include a statement of heritage impact for all heritage items (including significance assessment);	Refer to Sections 6 and 7 of this report.

Table 1.1 Heritage related SEARs and EMM responses

Item no.	Authority comments	EMM responses
d.	consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant); and	Refer to Section 7 of this report.
e.	where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.	Refer to Section 8 of this report.

1.3 Project summary

Specific details of the project are presented in Table 1.2 in the context of existing PGM approvals. For a full, detailed project description, please see Chapter 2 of the New Cobar Complex EIS.

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
Tenement	<p>Development approved to occur within the Development Application areas, including CML 6, CML 8, ML 1483, ML 1805 and MPL 854.</p> <p>Mining of the following deposits using underground mining methods, with each deposit accessed via the New Cobar Complex open cut:</p> <ul style="list-style-type: none"> • New Cobar deposit; • Chesney deposit; and • Jubilee deposit. <p>Minerals processing occurs at the Peak Complex within CML 8 and also includes CML 7 and CML 9.</p>	<p>No change to mine lease area.</p> <p>Mining of the following deposits using underground mining methods, with each deposit accessed via the New Cobar open cut:</p> <ul style="list-style-type: none"> • New Cobar deposit; • Chesney deposit; • Jubilee deposit; • Gladstone deposit; and • Great Cobar deposit. <p>Processing of materials from the New Cobar Complex will continue at the Peak Complex within CML8 under existing approvals and is therefore outside the scope for this project.</p>

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
Approvals	<p>Cobar Shire Council Development Consent</p> <ul style="list-style-type: none"> • New Cobar South Open Cut - LDA 98/99:08 • New Cobar Open Cut - LDA 99/00:22 • New Cobar Underground – 2004/LDA 00003 <p>PGM has received approval from CSC and the Resources Regulator (reference number MAAG0006783, approved in May 2020) to construct an exploration decline, ventilation shafts and associated infrastructure to facilitate exploration activities within the Great Cobar deposit. This is detailed in the Mine Operations Plan (MoP) for 2019-2022.</p> <p>Other Authorisations and Licences</p> <ul style="list-style-type: none"> • EPL -3596 (EPA) • Licence to Manufacture Explosives (New Cobar) - XMNKF200002 (SafeWork NSW) • Dangerous Goods Notification - New Cobar: 35/035154 (SafeWork NSW). • Water Supply Works Approval reference 85WA753861 (Natural Resources Access Regulator) 	<p>PGM is seeking to consolidate all existing development consents applicable to the New Cobar Complex including existing mining, proposed underground mining of the Great Cobar and Gladstone deposits and existing surface infrastructure within a single consent issued by DPIE.</p> <p>Once approved, relevant CSC development consents for the New Cobar Complex will be surrendered.</p> <p>The project will use infrastructure that has been approved but not yet constructed as a result of the exploration decline and associated infrastructure.</p> <p>Other approvals related to the Peak Complex, will be unaffected.</p>
Mining method	<p>Underground stope mining operations commence above a centrally positioned crown pillar and stopes will be extracted from the bottom-up. Bench stopes are backfilled progressively using waste from development and rock from the WRE. Upon completion of each stoping level, voids are backfilled. In some instances, mining against rock fill is required. In these instances, a rock and cement slurry is placed in the stope to provide additional stability.</p> <p>PGM undertake detailed geotechnical assessments of all stopes during the detailed stope design stage prior to mining.</p>	<p>Expansion of underground stope mining operations will access new deposits at Great Cobar and Gladstone, as well as continued mining of New Cobar, Chesney and Jubilee deposits. The mining method will not change.</p> <p>There is no recorded history of significant subsidence or geotechnical failure associated with the current, modern mining operations at the Peak and New Cobar complexes.</p>
Blasting	<p>Blasting will be used for the development of the underground workings and is proposed to occur under independent firing conditions (in the preliminary phases).</p> <p>Delays will be used to adjust sequencing and prevent any interaction or vibration enhancement from adjacent blastholes.</p> <p>The approximate number of blasts will be three per 24-hour period, 20 per 7-day period.</p> <p>Explosives are stored in the existing magazine at New Cobar Complex.</p>	<p>No change to blasting method.</p>
Life of mine	<p>Presently, the council approvals have no end date. Current mine plans envisage mining at New Cobar Complex to continue until 2023 under current market assumptions.</p>	<p>The project will extend the life of mine by 12 years to 2035 under current market assumptions.</p>
Production	<p>Approved for the mining and processing of 800,000 tpa of ore to produce lead, zinc, copper, gold and silver from</p>	<p>The project will produce ore within the mining and processing limit of 800,000 tpa for the Peak and New</p>

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
	both the Peak and New Cobar complexes. Processing occurs at the Peak Complex.	Cobar complexes. Ore will be transported to the existing processing plant at the Peak Complex. The ore will be processed at the Peak Complex processing plant, and tailings will be disposed of at the TSF at the Peak Complex under existing approvals. Processing of ore will only take place at the Peak Complex, therefore is outside the scope of this project.
Mining extent	The New Cobar Complex comprises a surface disturbance area of approximately 425 hectares. The New Cobar open cut pit extends to a depth of approximately 100 mbgl. Development of underground working at Chesney, Jubilee and New Cobar deposits extends from a portal at the base of the New Cobar open cut pit.	Development of New Cobar Complex Project will be in stages. The Great Cobar and Gladstone deposits will be accessed via a decline extending from the existing New Cobar Complex underground workings. The proposed underground working depths are approximately 150–800 mbgl for Great Cobar and 350-500 mbgl for Gladstone. The Great Cobar deposit will be accessed by the approved exploration decline off the existing Jubilee workings at approximately 500 mbgl, and the Gladstone deposit will be accessed by a decline off the existing New Cobar underground workings at approximately 350 mbgl.
Tailings storage	All ore is processed at the Peak Complex, with tailings placed within the TSF.	No change.
Site access	Access to the New Cobar and Peak complexes is via Kidman Way.	No change
Ore transportation	Ore is transported from the New Cobar Complex along 5 km of public road (Kidman Way) in road registered trucks at the rate of 25 trucks (50 truck movements) per day, seven days a week.	Ore will continue to be transported from the New Cobar Complex but at a maximum rate of 100 truck movements per day (in and out of site) (daylight hours only), seven days a week averaged over a calendar year. This is an increase in truck movements from a current maximum rate of 50 truck movements per day. The increase of daily truck movements will provide flexibility to PGM if there are unforeseen production disruptions such as poor weather or machinery breakdowns.
Waste rock management	Waste rock generated from underground workings is used preferentially as backfill in previously mined underground stopes. Some waste rock material may be brought to the surface and stored within the existing WRE at the New Cobar Complex until it's required for use in construction or rehabilitation across the Peak and New Cobar complexes.	No change
Soil management	Application of soil resources management strategies/objectives in accordance with the existing Mining Operation Plan 2019-2022 (MOP 2019-2022) (PGM 2019) and Water Management Plan (PGM 2020)).	No change.

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
Mine ventilation	<p>There are two existing exhaust air rises at the New Cobar Complex – one at the Jubilee workings and one at the Chesney workings. Fresh air is drawn down the portal at the base of the New Cobar Complex open cut and also via two fresh air intakes located near the Chesney ventilation fan.</p> <p>The infrastructure developed as part of the Great Cobar exploration decline will include an exhaust air rise and a fresh air intake.</p>	<p>No new ventilation shafts will be required; the ventilation shafts installed as part of the exploration decline will be required for ongoing mining operations and will remain in place. A new ventilation fan will be required to maintain a safe volume of air flow in the underground workings.</p>
Surface infrastructure	<p>All existing New Cobar Complex surface infrastructure operates under existing CSC approvals.</p>	<p>The project will require the construction of a short (no more than 400 m long) power line spur between an existing 22 kV line and ventilation shaft (approved, but not yet constructed as part of the Great Cobar exploration decline approvals). This power line will connect to a pad-mounted compact substation to supply power for an emergency egress winder at the fresh air intake shaft and a ventilation fan to be installed at the exhaust air rise.</p> <p>No additional surface infrastructure will be required.</p>

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
Water supply sources and infrastructure	<p>The water requirements for the Peak Complex and the New Cobar Complex (combined) are approximately 580 ML/year. The source of this water is typically, comprised of approximately 212 ML/year from dewatering underground workings at the New Cobar Complex and approximately 368 ML/year of town water from Burrendong Dam.</p> <p>PGM is licenced to take up to 1,186ML/year from Burrendong Dam, however approximately 50% of this water is lost through seepage, evaporation and other methods before arriving at the New Cobar Complex.</p> <p>Following approval for the dewatering of the Great Cobar shaft in 2019, up to 400 ML/year can be extracted to replace the town water currently being used. This is as part of a move for PGM’s operations to be more self-reliant and sustainable in times of drought. The water from the Great Cobar shaft will be used to make up any shortfall in site demand that cannot be made up by dewatering of underground workings. It will also reduce PGM’s reliance on the town water supply during times of drought.</p>	No change
Site water management infrastructure	<p>A water management system is in place at the New Cobar Complex and is operated and managed in accordance with PGM’s current water management plan (WMP). Dewatering water that is used in the New Cobar Complex underground workings is pumped to the New Cobar Complex settling pond for re-use. The water from these settling ponds is preferentially pumped back underground for reuse, or to the Peak Complex for use in the processing circuit. While it is PGM’s preference to use water from dewatered mine workings for processing, this may not always be possible due to poor water quality and additional treatment requirements.</p> <p>Dewatering water excess to site requirements is pumped to Spain’s Dam or Young Australia Dams for evaporation or storage for future reuse.</p>	No change
Power supply	<p>Electricity to the site is via a 22 kilovolt (kV) electricity transmission line (ETL) to the Peak Complex substation.</p>	<p>No change to power supply, but an additional power line spur will be required for the ventilation fan to be installed in the exhaust air rise and the emergency egress winder.</p>
Hours of operation	<p>Underground and above ground activities, 24-hour operations, seven days a week.</p>	No change
Employment	<p>The 2019/2020 workforce at PGM (including both the Peak and New Cobar complexes) totalled 404 full time equivalents (FTE).</p>	<p>Annual labour estimates for New Cobar Complex, being mining and underground maintenance staff range from 57 FTE in 2020/21 to a peak of 272 FTE in 2026/27. These however are not new employees; during the same period, as mining at the Peak Complex ramps down, staff will relocate to New Cobar Complex as their primary location of employment activity. PGM will continue to maintain operational control across the complexes.</p>

Table 1.2 Detailed overview of the project

Development component	Approved New Cobar Complex operations	New Cobar Complex Project SSD
Mining fleet	<p>The existing/approved indicative mobile equipment fleet used for underground ore extraction, transport and waste rock handling includes:</p> <ul style="list-style-type: none"> • articulated dump trucks; • cabletec; • compactors; • dozers; • drill rigs. • excavators; • graders; • haul trucks (50t); • jumbos; • LHD Loading dump trucks; • loaders; • rollers; • scrapers; • service truck; • underground development drill; • underground diamond drill rigs; • waste rock dump trucks; and • water trucks. 	No change
Rehabilitation and mine closure	Current rehabilitation requirements as per MOP	Mine closure concepts and management measures will continue to be developed via the MOP 2019-2022, which outlines specific soil handling, rehabilitation and post mining landform objectives, in consultation with relevant regulatory authorities. The MOP will be updated and extended as required.

1.4 Assessment requirements and guidelines

This SoHI has been prepared in accordance with the relevant government assessment requirements, guidelines and policies. The report and field survey were undertaken using the principles of *The Australian International Council on Monuments and Sites, Charter for Places of Cultural Significance* (also known as the *Burra Charter*, Australia ICOMOS 2013) and the NSW *Heritage Manual* (Heritage Office 1996 with regular additions).

The *Burra Charter* defines the concept of cultural significance as “aesthetic, historic, scientific, social or spiritual value for past, present or future generations” (Australia ICOMOS 2013, Article 1.2). It identifies that conservation of an item of cultural significance should be guided by the item’s level of significance.

The *Heritage Manual* comprises the following guidance documents:

- *Statements of Heritage Impact Guidelines* (Heritage Office 2006);
- *Investigating Heritage Significance* (Heritage Office 2004);

- *Assessing Heritage Significance* (Heritage Office 2001); and
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (Heritage Branch Department of Planning 2009).

Preparation of this report in accordance with these documents satisfies the requirements of the SEARs.

1.5 Project boundary and definitions

The New Cobar Complex Project SSD project area is the area of mining disturbance within CML 6, south of the Barrier Highway and east of Kidman Way, with a 10 m buffer around proposed underground workings.

The project area is shown on Figure 1.3. The area of proposed new surface disturbance area is shown on Figure 1.4.

1.6 Assessment objectives

The objectives of this SoHI are:

- identify and describe the historical heritage values that will be affected by the Project based on a review of heritage listings (local, state and national) and background literature;
- to investigate the potential for items of historical heritage value, including relics, to exist within the development footprint;
- undertake a field survey to identify historical heritage values in the project area;
- assess potential impacts to historical heritage items in accordance with the relevant guidelines; and
- develop management measures to avoid or minimise impacts to historical heritage.

1.7 Assessment methods

1.7.1 Research

The facilities used in research for this SoHI were as follows:

- Land and Property Information (LPI);
- National Library of Australia Trove Online;
- historical aerial photographs (Land Insight & Resources);
- Great Cobar Heritage Centre; and
- State Library (Mitchell Wing).

In addition to the archival research that was conducted for this report, local knowledge from staff at the Great Cobar Heritage Centre contributed to this assessment.

1.7.2 Field assessment

A field survey was undertaken as part of the preparation of this assessment. EMM archaeologists Georgia Burnett and Pamela Chauvel conducted a site inspection of the project area on 1 July 2020 with Aboriginal stakeholders, Rebecca Dowling and Tyrone Griffiths.

The site inspection focused specifically on the location of the power line corridor within the project area, as this is the only new surface infrastructure proposed as part of the Project.

Data from the field assessment was captured utilising a Survey123 application developed by EMM for use with ArcGIS (Esri© software) and used to create digital mapping for this report.

1.8 Authorship and acknowledgements

This report was written by Pamela Chauvel (Consultant Archaeologist, BA Archaeology) who also inspected the project area, and was reviewed by Pamela Kottaras (National Technical Lead – Historical Heritage, BA (Hons) Archaeology).

EMM would like to thank registered Aboriginal stakeholders Rebecca Dowling and Tyrone Griffiths for their knowledge-sharing and fieldwork assistance.

EMM would also like to thank Kay Stingemore, curator of the Great Cobar Heritage Centre for sharing her knowledge of local history and for the historical photographs used in this document.

2 Legislation

2.1 Introduction

In NSW heritage items and relics, that is archaeological sites assessed to be of local or State significance, are protected by two main pieces of legislation: the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the NSW *Heritage Act 1977*. An additional layer of protection is added in certain circumstances by the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

2.2 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act provides a legal framework to protect and manage nationally and internationally important heritage places as well as flora, fauna, ecological communities and water resources, which are defined as Matters of National Environmental Significance (MNES) under the EPBC Act. The EPBC Act identifies nine MNES, including world heritage properties and places listed on the National Heritage Register.

The EPBC Act establishes the National Heritage List (NHL), Commonwealth Heritage List (CHL) and the Register of the National Estate. The Register of the National Estate (RNE) is a non-statutory register.

Under the EPBC Act an action that may have a significant impact on a MNES is deemed to be a 'controlled action' and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may potentially have a significant impact on a MNES is to be referred to DoEE for determination as to whether or not it is a controlled action. If deemed a controlled action the Project is assessed under the EPBC Act for approval.

The Project will not impact any world heritage properties or places listed on the National Heritage Register, and the EPBC Act is not discussed further.

2.3 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the framework for cultural heritage values, amongst other controls, to be assessed in planning and the development consent process. Environmental impacts are one of the considerations directed by the EP&A Act prior to development, this includes impacts on cultural heritage items and places which includes items of built heritage as well as archaeological sites and deposits (relics).

Local governments prepare planning instruments, such as local environmental plans (LEPs) and Development Control Plans (DCP) in accordance with the EP&A Act. These planning instruments provide a framework for development that is not categorised as a Major Project or is being assessment under the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP 2007).

Most LEPs are prepared to a standard template, which includes environmental heritage in Schedule 5 (the heritage schedule). Where an item is included in the heritage schedule, development applications must include an assessment of impacts to the item. Where a Project is being assessed as SSD, approval by the relevant council is not required but the items require assessment and management if they are affected by a proposal.

The proposed development is being assessed as a SSD project under Part 5, Division 5.1, of the EP&A Act, and is subject to project-specific environmental assessment and reporting requirements, defined by the SEARs. Where a project is being assessed as SSD, approval by the relevant council is not required but the items require assessment and management if they are affected by a proposal. Heritage items listed on the Cobar LEP have been considered in this assessment.

2.4 Heritage Act 1977

The *Heritage Act* is the keystone statutory instrument protecting non-indigenous heritage in NSW. Under the *Heritage Act*, 'items of environmental heritage' includes 'places, buildings, works, relics, moveable objects and precincts' (Heritage Act Section 4) identified as significant.

Items that have been formally nominated and approved by the Minister for Heritage are on the State Heritage Register (SHR; part 3A) and are managed under the Act. Changes to SRH items is managed through the approvals process defined in the Heritage Act either through an exemption notification or a s60 approval.

Section 170 of the *Heritage Act* sets out the obligations of state government authorities' obligations to items and places of heritage value in their ownership or under their management. Under s170 state government authorities, they must keep a heritage and conservation register of these items. Items on the s170 register may also be listed on other registers. Demolition, change to fabric, and change of ownership require notification to the Heritage Council of NSW.

Part 6 of the *Heritage Act* provides protection for 'relics', regardless of their listing status. It applies to all land in NSW that is not included in the SHR. Section 4(1) of the *Heritage Act* (as amended 2009) defines a 'relic' as follows:

A "relic" means any deposit, artefact, object or material evidence that:

- a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- b) is of State or local heritage significance.

Section 139 (1) of the *Heritage Act* states that:

A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.

A project that is being assessed under Part 4 or Part 5 (excluding State Significant Infrastructure (SSI) and SSD) would require approval or an endorsed exception or exemption, under the Heritage Act, to 'disturb or excavate any land knowing or having reasonable cause to suspect' that relics exist in that land (Heritage Act s139 [1]).

Approval under the Heritage Act is not applicable for projects assessed as SSI and SSD, however, where unanticipated relics are discovered, notification to the Heritage Council is regulated under Section 146 of the Heritage Act.

Section 146 Notification of discovery of relic:

A person who is aware or believes that he or she has discovered or located a relic (in any circumstances, and whether or not the person has been issued with a permit) must:

- a) within a reasonable time after he or she first becomes aware or believes that he or she has discovered or located that relic, notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and
- b) within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require.

The *Heritage Act* identifies the category of 'works', which refers to infrastructure construction, and is viewed as separate to that of archaeological 'relics' under the Heritage Act. 'Works' may be buried, and are therefore archaeological in nature, but exposing a 'work' does not trigger reporting obligations under the Heritage Act unless it is of demonstrable significance. Other than section 146, the Heritage Act does not apply to this SSD Project.

2.5 State Significant Development

Under the provisions of clause 8(1) and clause 5 to Schedule 1 of *SEPP (SRD) 2011* mining development with a capital investment value of more than \$30 million is declared State Significant Development (SSD). SSD requires the approval of the Minister for Planning (or delegate – eg Independent Planning Commission (IPC) or DPIE).

Before the Minister can approve an SSD project, an environmental impact statement (EIS) must be prepared and made available for public exhibition. Following public exhibition, the applicant is required to respond to issues raised in submissions received by DPIE during the exhibition period. The New Cobar Complex Project will have a capital investment value of more than \$30 million. Accordingly, PGM seeks approval for the development as SSD.

2.6 Identifying listed heritage items

Statutory and non-statutory registers were reviewed as listing on statutory registers provides a basis under which the item or place is protected, and change is managed through project approval. Statutory listings provide legal protection for heritage items under the legislation outlined above. Statutory registers reviewed as a part of this assessment include:

- NHL - the register is made under the EPBC Act;
- CHL - the register is made under the EPBC Act;
- SHR - this register is made under Part 3A of the Heritage Act. Items on the SHR undergo a rigorous assessment process and must reach a high significance threshold to be included. Inclusion on the SHR is directed by the Minister for Heritage;
- s170 register - this register is made under Section 170 of the Heritage Act. It is a register of heritage items that are owned or managed by state government authorities. Items on the s170 register may also be listed on other registers. Demolition, change to fabric and change of ownership require notification to the Heritage Council of NSW;
- schedule 5 of the Cobar LEP. The EP&A Act sets the provisions for the making of LEPs; and
- State Heritage Inventory (SHI), which was cross-checked with Schedule 5 of the Cobar LEP and the s170 register. The SHI is not a single statutory register, but a central collection of state listed statutory heritage items maintained by the Heritage Division.

Non-statutory listing is an acknowledgment of a site's or place's importance to sections of the community. Listings on such registers do not place legal requirements on development but should, nevertheless influence the future of such listed items. Non-statutory registers reviewed as a part of this assessment include:

- National Trust of Australia, NSW (NT) - the NT is made up of autonomous state chapters. Each chapter is a community-based and non-government organisation, with a mandate to conserve and promote Australia's natural and cultural heritage. Classification by NT is a strong acknowledgment of heritage significance and while statutory constraints are not applicable, classification offers protection through visibility and community action; and
- RNE - the RNE is an archived list of heritage items that were protected under the now repealed *Commonwealth Heritage Commission Act 1975*, which was replaced by the EPBC Act. While many items were transferred from the RNE to the NHL or CHL, those that were not remain on the RNE as an indication of their heritage value.

3 Existing environment

3.1 Landscape overview

The New Cobar Complex Project is located 3 km south-east of Cobar town centre, 550 km north-west of Sydney (Figure 1.1). It is situated within the Darling catchment of the Barwon-Darling and far western catchments of water management area and is part of the Murray-Darling Basin.

The project area is part of the Canbelego Downs subregion, an undulating plateau with low ridges and stony rises, underlain by metasedimentary and sedimentary rocks, such as chert and slate. Topography on the older rocks around Cobar comprises residual hills, low rounded ridges, and stony slopes formed on softer, more weathered shales, phyllites and cherts, with only occasional features such as Mt Boppy standing as much as 100 m above the plain (NPWS 2003).

The regional topography consists of a generally flat to undulating plateau that is broken by several ridgelines and scattered peaks. The mine is situated to the west of a 2 km north-northwest trending ridgeline that rises approximately 50 m above the surrounding countryside. The existing New Cobar open cut lies immediately west of Fort Bourke Hill, the highest point along the ridgeline.

3.2 Heritage listings

An extensive search of national, State and local heritage registers was conducted on 13 July 2020. There are two locally listed heritage sites within the project area, and a further 19 items within 1 km. There are no other heritage listed sites in the project area, but there is one item listed on the CHL (The Cobar Post Office) and one on the SHR within 1 km of the project area. There are six S170 items in Cobar; however, all are over 1 km from the nearest new surface disturbance.

Table 3.1 provides a summary of heritage items within the project area and within 1 km of the project area. Registered heritage items in the vicinity of the project area are shown on Figure 3.1. Note that Marshall Street is also the Barrier Highway in Cobar.

Table 3.1 Register search for heritage items in and near the project area

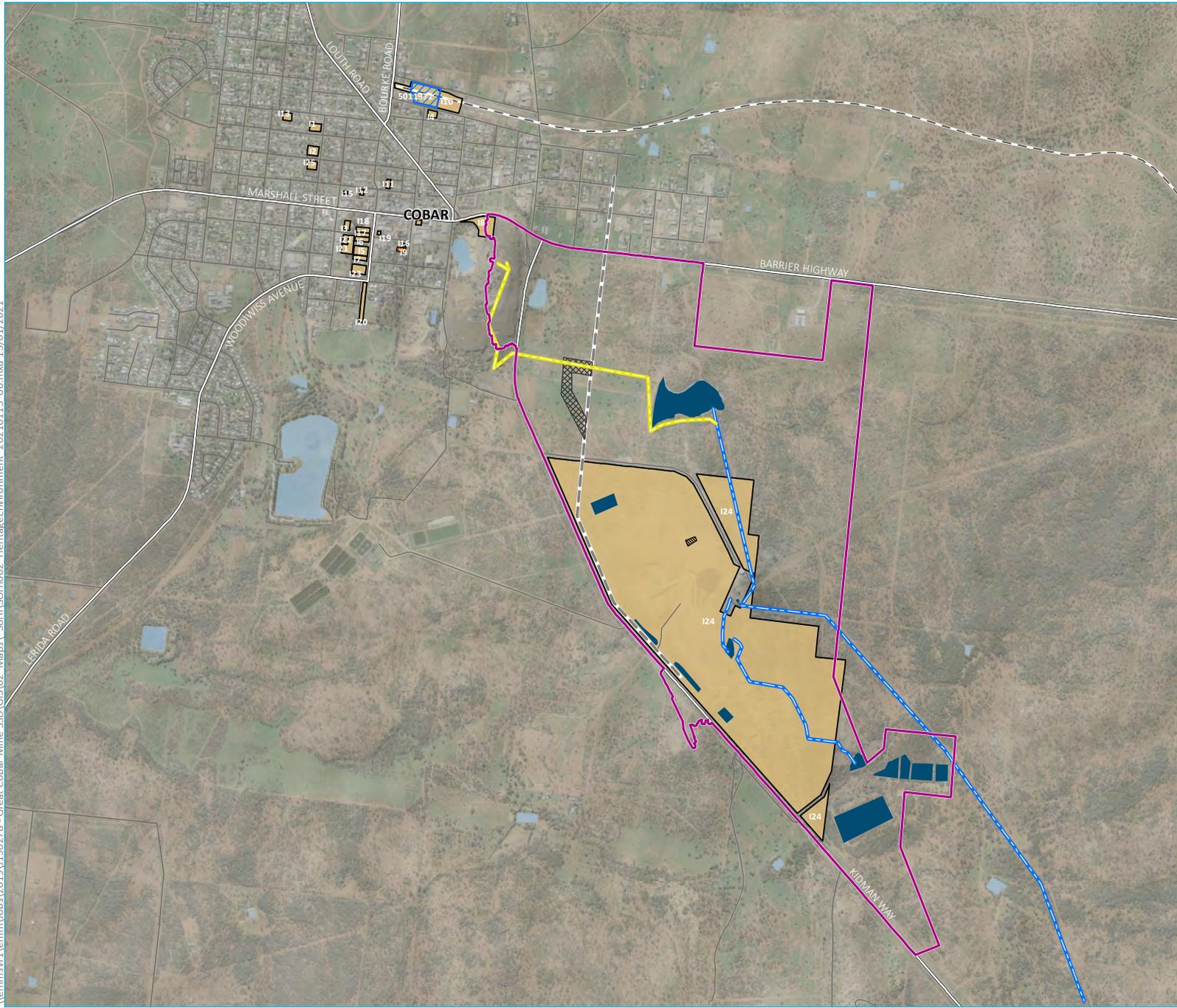
Register	Name	Item ID	Address	Distance to nearest new surface disturbance	
Within the project area					
Cobar LEP (2012)	Cobar Pastoral and Mining Technology Museum 1910	I8	Nyngan Road (Barrier Highway), Cobar	950 m	
	Towser’s Huts	I24	Fort Bourke Hill, off Kidman Way, Chesney Gold Mine	810 m	
Within 1km of project area					
Register	Name	Item ID	Address	Distance to project area	Distance to nearest new surface disturbance
Cobar LEP (2012)	Hotel Corner, cnr Linsley and Marshall Street, Great Western Hotel 1895	I14	Marshall Street (Barrier Highway), Cobar	350 m west	1.15 km
	Municipal Council Chambers (former)	I16	43 Linsley St, Cobar	450 m west	1.15 km
	Professional offices (former Tattersalls then Course House Hotel)	I19	Barton Street	570 m west	1.25 km
	CSIRO, Soil Research Division (former School of Arts)	I11	13 Becker Street	540 m west	1.35 km
	Dwelling house (former St. Margaret’s Presbyterian Manse)	I12	28 Becker Street	670 m west	1.35 km
	Masonic Hall	I15	16 Bourke Street	780 m west	1.45 km
	St. Lawrence O’Toole Roman Catholic Church	I22	Prince Street	750 m west	1.35 km
	Sisters of Mercy Convent and classrooms 1884	I21	Prince Street	740 m west	1.35 km
	Police Station and barracks	I18	Barton Street	650 m west	1.35 km
	Police Station, lock up and cells (former)	I17	Barton Street	650 m west	1.35 km
	Church of England	I5	Barton Street	650 m west	1.35 km
	Cobar Courthouse	I6	Barton Street	650 m west	1.35 km
	Cobar Fire Station	I7	Barton Street	650 m west	1.35 km
	St. Margaret’s Uniting Church	I23	Barton Street	650 m west	1.35 km
	School Masters Residence	I20	10 Blakey Street	650 m west	1.35 km
	Bulk Store (Former Wright Heaton & Co Ltd)	I4	Linsley Street (North)	610 m north west	1.60 km
	Brick cottage	I2	11 Murray Street	980 m north west	1.85 km
	“Woodleigh”	I25	13 Murray Street	960 m north west	1.85 km

Table 3.1 Register search for heritage items in and near the project area

Register	Name	Item ID	Address		Distance to nearest new surface disturbance
<i>Within the project area</i>					
	Dwelling house	I13	Brough Street	720 m west	2 km
State Heritage Register	Cobar Railway Station and Yard	01114 [LEP I10]	Nyngan-Cobar Railway, Cobar	710 m northwest	1.7 km
Commonwealth Heritage List	Cobar Post Office	106178 [LEP I 9]	47 Linsley St, Cobar	480 m west	1.15 km

* Cobar Railway Station and Yard (I10), and Cobar Post Office (I9) are also listed on the Cobar LEP (2012).

\\lemmsvr1\emm\jobs\2019\190278 - Great Cobar Mine SSD\GIS\02 Maps\SOH\SOH002 HeritageEnvironment 20210115 06.mxd 15/01/2021



- KEY**
- Project area
 - Great Cobar dewatering pipeline
 - Pipeline route
 - Existing 22 kV powerline
 - Proposed power line corridor
 - Rail line
 - Major road
 - Minor road
 - Waterbody
 - Mine water management storage
- Heritage items**
- Item - General*
 - State Heritage Act
 - Commonwealth heritage item
 - Indicative location of Towser's Huts
- * Items are linked to lot number and spatial extent shown on this figure may be significantly greater than the heritage item itself

Existing heritage environment

Peak Gold Mines
 New Cobar Complex Project
 Statement of heritage impact
 Figure 3.1



Source: EMM (2020); PGM (2020); CHL (2015); DFSI (2017); DPE (2017); GA (2011); DPE (2019)



4 Historical summary

4.1 Historical themes

The Australian and NSW heritage systems employ a series of historical themes to guide the understanding of history and historical investigation in the nation and State (NSW Heritage Office 2001). As part of any historical heritage assessment, it is important to review the historical themes when undertaking research on an area or place to provide proper context. The State and national themes are complementary to enable the historian to present a unified understanding of how an area fits into Australian history. The historical themes are also an important guide when assessing an item’s heritage significance. They provide information on how an item may be historically significant at the local, State or national level.

Finally, historical themes help to develop interpretation and management strategies for items of heritage significance. A full list of these themes can be found on the Heritage Division website (NSW Heritage Office 2001). Historical themes in the project area were identified based on the historical background (as described below) and the results of the project area inspection (section 5). The Australian and NSW historical themes used in this report that are relevant to the project area are listed in Table 4.1.

Table 4.1 Historical themes

Australian theme	NSW theme
3. Building settlements, towns and cities	Towns, suburbs and villages: activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages.
8. Developing Australian’s cultural life	Domestic life: activities associated with creating, maintaining, living in and working around houses and institutions.

4.2 Historical overview

Cobar is well known for its mining history, a history which extends from Aboriginal people mining pigments of ochre, kaolin and blue and green copper minerals at ‘Kubbur’, an Aboriginal water hole and quarry; through to early exploration and prospecting, to the establishment of mines throughout the district.

4.2.1 Early Aboriginal history

The project area falls within the Aboriginal language group boundary of the Wongaibon people. The local Ngiyampaa tribe are dryland people who traditionally inhabited the Central West area of NSW bordered by the Lachlan, Darling-Barwon and Bogan Rivers. Mount Grenfell Historic Site, an important meeting place with ceremonial significance is located 55 km north-west of Cobar. Rock art at the site contains ochre and white kaolin paintings of human and animal figures, and hand stencils (NSW NPWS 2020).

One story told by an Aboriginal man, Dave Harris at Murrin Bridge in 1970 connects the name Cobar to the local Aboriginal word for red ochre (Hercus and Sutton 1986):

You've heard of Cobar, out there, township Cobar? Old blackfellow sitting down there at the burba [an initiation ceremony]. He's making paint for corroboree. He's painting himself for a corroboree. Whitefellow came riding: 'What are you making, Daddy?'

'I'm making paint for corroboree.'

Whitefellow said to him: 'Where did you get that? Show me!'

He showed him the gubar, the red ochre. That's how they named Cobar. The old Blackfellow showed him where it was, and it was copper worth thousands of pounds.

More detailed information about the Aboriginal history of the local area can be found in the ACHA, included as EMM 2020a.

4.2.2 European occupation

Exploration of the area west of the Blue Mountains began after 1817, with major expeditions by Oxley, Sturt and Mitchell. By 1830, squatters had begun to occupy large areas of the west. The Cobar Peneplain was promoted as productive sheep and cattle grazing country. Pastoralists ringbarked trees and cleared woodlands in order to create more grazing land. Prior to European settlement, forests in the bioregion were open woodlands with a grassy understory (NSW DPIE 2016). This is reflected in an account from the late nineteenth century, where the landscape is described as more vegetated than it is today:

When approaching to within about four miles of Cobar the ground becomes more gravelly. Large pieces of quartz could be seen on either side of the road...The surrounding country was undulatory, well grassed, nicely timbered, and supplied with fine green bush and herbs of many descriptions (*Town and Country Journal* 12 June 1872).

“Squatting” was a method of pastoral landholding that occurred from the 1820s, whereby sheep and cattle farming was established on Crown Land outside the limits of location; in effect, pastoralists occupied land before it was released by the colonial government. The limits of location in NSW were defined by Governor Darling in 1826 and were restricted to nineteen counties within which settlers were permitted to take up land within a semicircular line roughly 400 km from the centre of Sydney (SLM 2017).

Governor Thomas Brisbane (from 1821-1825) instituted the “ticket of occupancy” to give graziers already occupying land some security (Starr and Nicholas 1978, pp.9-10). This new system of pastoral ‘licences’ allowed squatters to occupy lands outside the settled districts provided they did so for pastoral purposes. The squatters paid an annual fee to the Crown. The NSW Surveyor-General’s pastoral holdings map (1886) shows the pastoral holding that encompassed the Project area as ‘Meryula’ (shown as Western Division #205 in Plate 4.1).

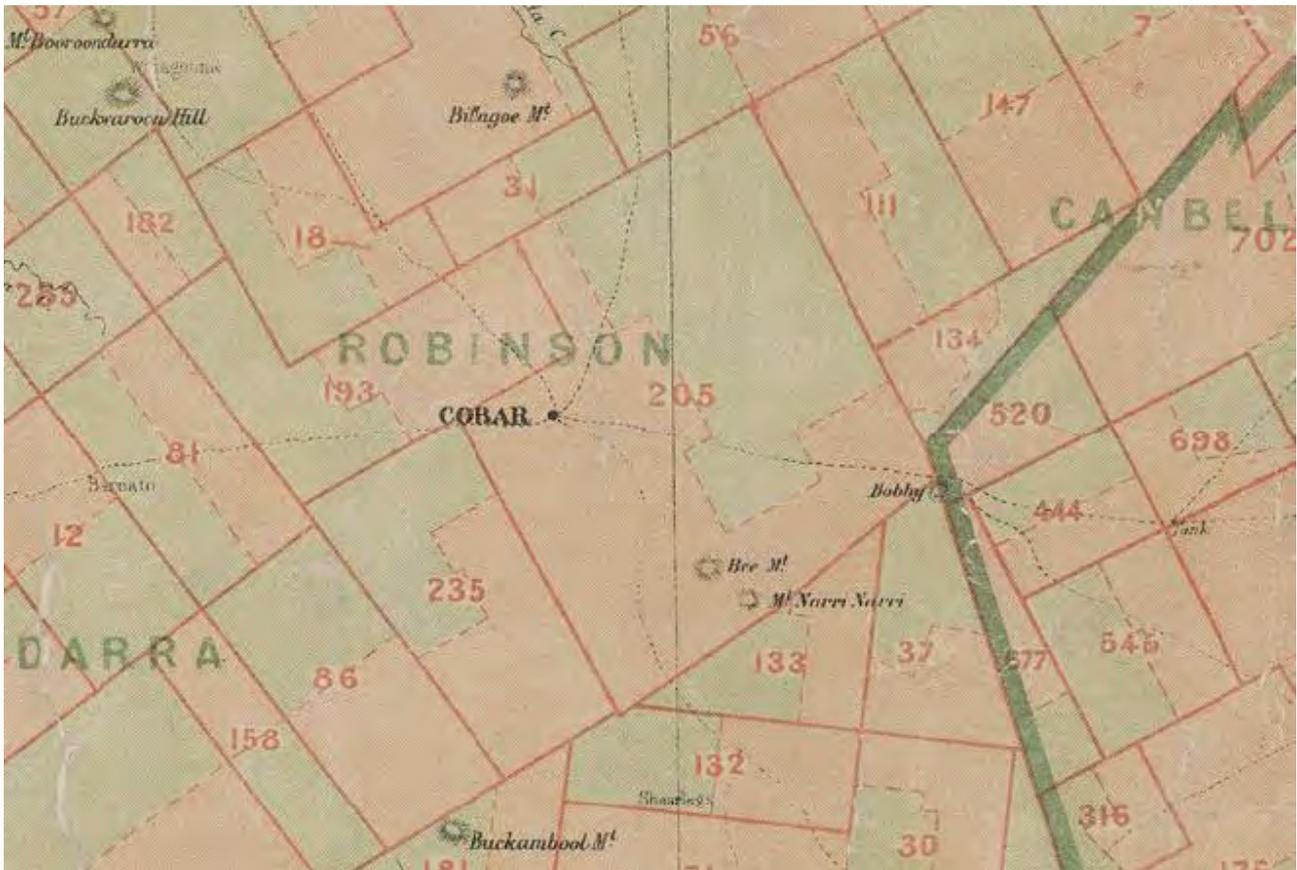


Plate 4.1 Detail from the Squatters Map (NSW Surveyor-General 1886).

4.2.3 History of mining in Cobar

The Cobar mining field has seen four major stages of mining activity:

- 1870–1921: copper and later gold mining dominated by the Great Cobar mine;
- 1930–1952: gold mining focussed on the New Occidental and Chesney gold mines;
- 1961–1985: major base-metal mining following discoveries at CSA and Elura (now Endeavor) mines; and
- 1985 to present: resurgence in gold and continued base-metal mining, with new discoveries following systematic exploration at Peak and New Cobar (McQueen 2016).

In 1869, Charles Campbell, Thomas Hartman and George Gibb - three contract well sinkers, were led to the Kubbur waterhole by their Aboriginal guides, known as Frank and Boney. The waterhole was 8 feet by 10 feet (2.5-3 m) with small logs laid across the mouth and covered in bark (Burgess 2006 p.58). The exact location of the Kubbur waterhole is disputed. It is described as being located on the north-south ridge behind the Great Cobar Heritage Centre (former offices of the Great Cobar Mine), but also where the Great Western Hotel now stands.

Campbell, Hartman and Gibb noticed the green and blue staining at the waterhole and took rock samples to be studied. One story regarding the early identification of Cobar's copper deposits was that it was Sidwell Kruge (née Woolcock), from Cornwall who identified that the rock contained copper (Burgess 2006 p.59). Mrs Kruge was a Balgal, which was the traditional name for women who worked in the Cornish mines; their job was to carry, wash

and sort copper ore. Mrs Kruge was presented with a gold and diamond brooch for her discovery (Symonds 2005). A monument commemorating the discovery is located in the grounds of the Great Cobar Heritage Centre.

In partnership with the local postmaster and part time financier Joseph Becker, Campbell, Hartman and Gibb took up a mineral conditional purchase of 40 acres (16 hectares (ha)) in 1870 (McQueen 2016). Becker secured an additional 10 acres (4 ha) to the north and south of the initial selection, but it was the central lease that produce the richest lode and became known as the Cobar Copper Mine. In 1870, the Cobar Copper Mining Company was formed, and the lease of the Cobar Copper Mine was transferred to the company (State Heritage Inventory #1350020).

In 1876, the South Cobar Mining Company and the Cobar Copper Mining Company merged to form the Great Cobar Copper Mine and by the 1880s, the Great Cobar Copper Mine had 14 smelters and a 64 m chimney stack, although little above ground evidence remains. High grade ore was transported to Bourke and then by steamer down the river to the Port Adelaide Smelting Works.

In the early days of mining at Cobar, the mining method was "hammer and tap" which involved chiselling out the hard sulphide ores to make the holes for explosives. Large teams of men worked in dark, cramped and wet conditions. In the early 1900s the introduction of pneumatic drills for machine mining was introduced and from the 1960s mining became more highly mechanised with the advent of mobile drilling, loading and hauling machines.

Problems such as low copper prices, shortage of firewood and high transport costs caused operations to cease in 1889 and many families left town (McQueen 2016, p.2). Residents and miners had been lobbying the NSW government to expand the railway line, and it finally reached Cobar in 1892. The following year, a group of entrepreneurs leased the mine and took advantage of the new railway connection to bring coke to Cobar from the coal deposits near Singleton to operate the new water jacket blast furnaces. These furnaces greatly increased copper production from ore.

However, after WWI, demand for copper fell and the Great Cobar Mine closed in 1919 on cessation of War Office contracts. Associated mines including the Chesney mine were also closed (McQueen 2016). The relics of the Great Cobar Mine and associated buildings and infrastructure lie at the eastern end of Cobar and the former mine administration office building now houses the Great Cobar Heritage Centre.

4.2.4 Cobar's mining heritage

i Great Cobar Heritage Centre

Built in 1910 as administration offices for the Great Cobar Copper Mine, the two-storey brick building reflects late Victorian and Federation architectural style. The building is situated on Nyngan Road (commonly known as the Barrier Highway) the main street of Cobar, overlooking the town. The building is listed on the Cobar LEP (2012) as the *Cobar Pastoral and Mining Technology Museum 1910* (I8).

After the Great Cobar Mine closed down its operations in 1920, the building has had a number of uses: in the 1950s as 'Bannister's Flats', rented out by Elizabeth 'Bessie' Bannister; as accommodation for workers during construction of the Cornish Scottish Australian (CSA) Mine, and since 1968 as a museum.

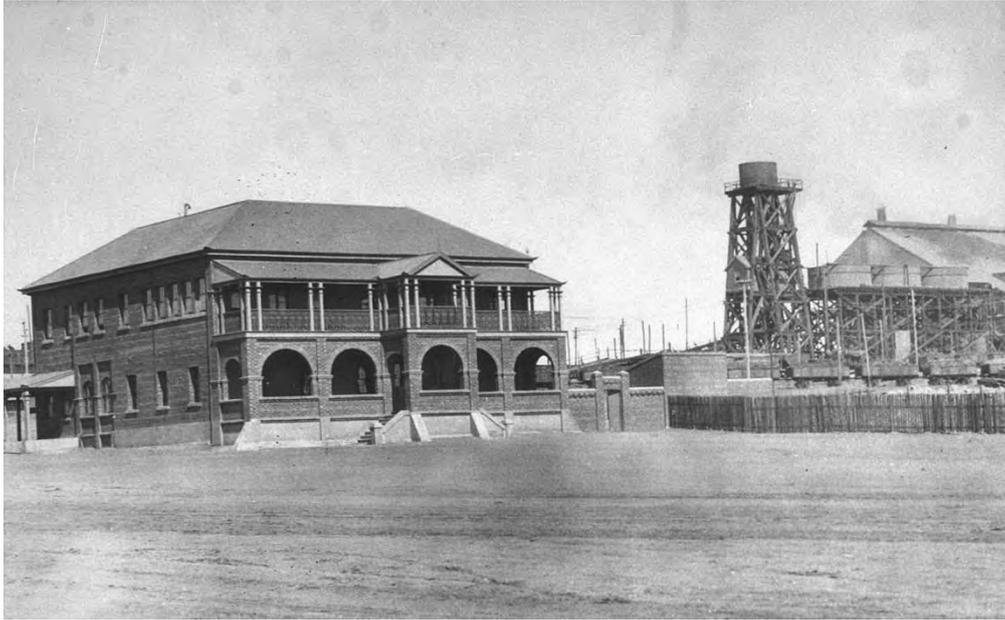


Plate 4.2 **Administrative office, Great Cobar Copper Mine c.1910 (source: SLNSW At Work and Play – 05528).**

ii **Towser's Huts**

Towser's Huts (Cobar LEP I24) are a group of dry-stone walled buildings on the northern slope of Fort Bourke Hill off Kidman Way, to the north of the New Cobar open cut and within the project area. The site was originally a mining tenement (Portion 265) that was leased by an Italian immigrant, Antonio Tozzi from 1890s-1916 (SHI 1350078). The area adjacent to his lease was occupied by the Fort Bourke Mine of Cobar Gold Mines Ltd.

It is probable that Tozzi (the name 'Towser' could be an anglicisation) built the stone huts over a period of years from 1890. Tozzi lived on the site and rented the buildings to mine workers. Tozzi's choice of dry-stone construction was unusual as bricks were produced locally in Cobar from the 1870s, and at the time, miner's houses in the area were typically timber framed cottages with a skillion verandah and kitchen. Boughen speculates that, as an Italian, Tozzi could have been choosing to build in a style and material that were familiar to him (Boughen 1986, p.75).

The huts consist of between one and six rooms, some of which have half-round chimneys. The smallest structure with rounded walls housed two pit-type toilets. Building material comprises stone sourced from the site. The huts are now roofless, and the walls stand between 0.50 m and 1.5 m high. Other features of the site are a well, drain and silt-tank.

iii **Wrightville, Dapville and Cornish Town**

The town of Cobar is large and scattered, as mining towns generally are, composed chiefly of huts and cottages, which lie about in all directions and cover an extensive area of ground...The population numbers about 2,500 and consists principally of miners and their families. The houses have been erected in such a manner that the town is divided into three portions, with the mine and its appurtenances in the centre, and these three portions are called the Government Township, the Private Township (or that upon the land taken up by or belonging to the company working the mine), and Cornish Town. Most of the houses are in the private township, and there the places of business are centred; in the Government Township...there are very few houses indeed; but Cornish Town is pretty thickly populated (*Sydney Mail and New South Wales Advertiser* 1881, p.534)

The description of Cobar that appeared in the newspapers in the 1880s describes the population of Cobar at that time as around 2,500, divided into three areas: the government town as surveyed and proclaimed in 1876, the private town on land owned by the mine around the Great Cobar Mine to the north-west of the government town, and Cornish Town, to the south. The County Robinson parish map shows the location of two additional towns further to the south along what is now the Kidman Way, Dapville and south of that, Wrightville. Cornish Town is not shown on the parish map (it was not a gazetted town) although the land belonging to H.J. Cornish is outlined in red (Plate 4.3).

Wrightville was proclaimed a village in 1895. Four years later the Wrightville Progress Association applied for, and was granted, separation from Cobar municipality (Burgess 2006, p.204). The main business centre was on Hunter Street and the town had its own school and three hotels. It had its own cricket team and a concrete wicket laid in 1897 (Collins 2003, p17). Dapville was proclaimed a village a year later, however both villages no longer exist. Dapville was dissolved in 1921 after the population declined by 90% following the closure of the mine, houses and buildings were removed. Wrightville was considered an eyesore and bulldozed in the late 1960s (K Stingemore pers. comm., 1 July 2020).

The power line corridor location in an area previously known as Cornish Town (also Cornishtown). This was one of several residential areas to the south of Cobar that have been demolished. However, unlike Dapville and Wrightville, which were gazetted towns and can be seen on the parish maps (Plate 4.2), Cornish Town is not shown on maps. Cornish Town is visible in aerial photograph from 1963 (Plate 4.4) although the original town may have been much larger.

Cornish Town was also bulldozed in the 1960s and only traces of the original town remain. Cornish Town is said to have assumed the name due to the predominantly Cornish community who were early miners in the district (Burgess 2006, p.91). However, the town came to be closely associated with “Papa” Cornish who owned the Criterion Hotel (c.1878) on the corner of the Old Bourke and Nyngan roads, east of the mine hill (on the eastern side of what is now the Kidman Way) (Clelland 2000, p.56). The Criterion (Plate 4.5) came to be “synonymous with Cornishtown and Henry Cornish” who was actually born in London (Clelland 2000, p.55). Cornish held the licence for the Criterion until it closed in 1921. In addition, Cornish subdivided the adjacent land north and east of the Criterion.

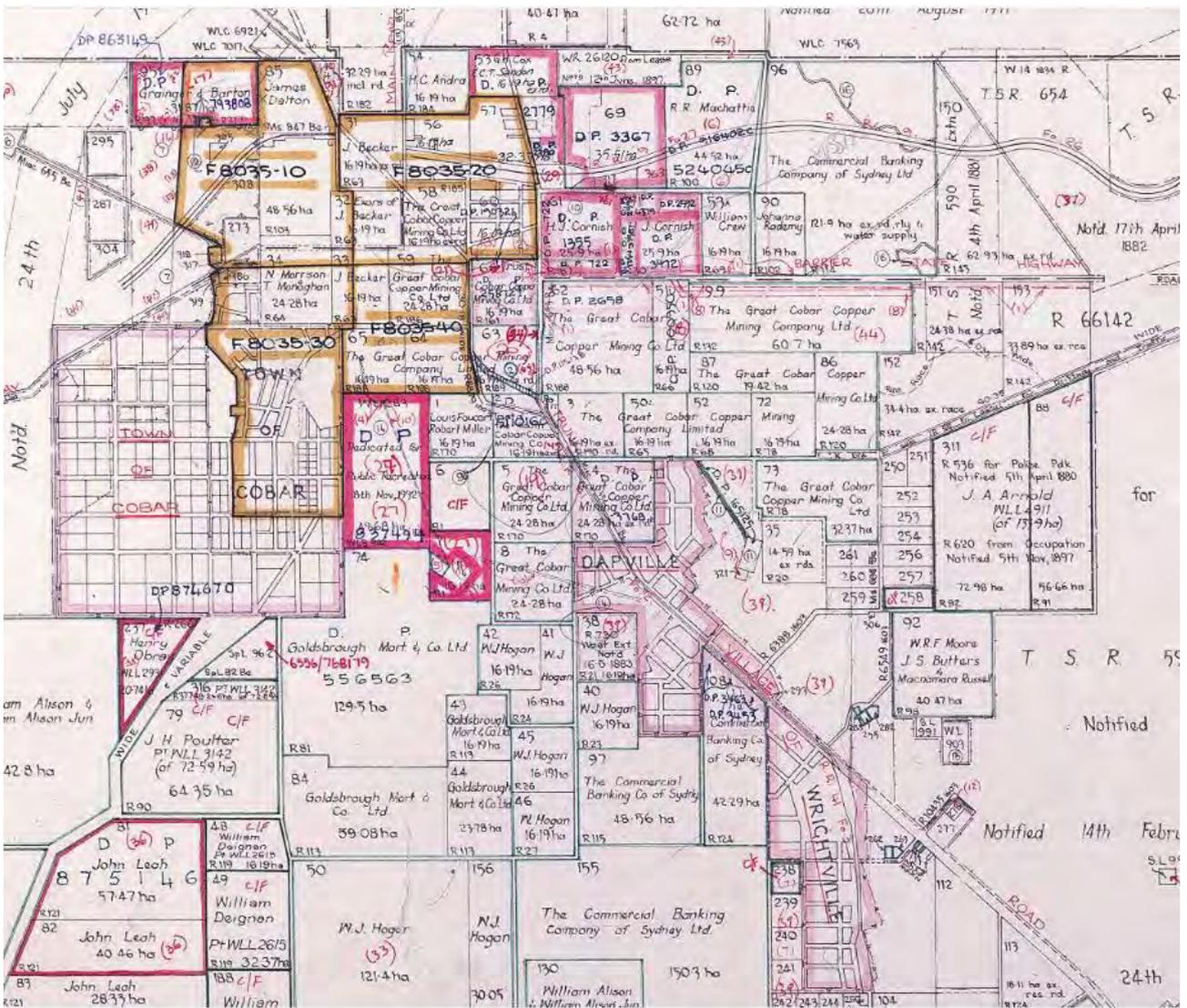


Plate 4.3 Parish map (detail) County Robinson.



Plate 4.4 Historical aerial photograph, 1963 (Source: Land Insight & Resources).

A historical aerial photograph taken in 1963 shows the main road of Cornish Town fronted by houses to the north and south. It is marked by the blue box in Plate 4.4 (The red outline in the figure indicates the search area for Land Insight & Resources).



Plate 4.5 Photograph of Criterion Hotel, c.1890, unknown photographer (Source: collection of the Great Cobar Heritage Centre). Note the coaching lamp with a ladder resting against it to light the lamp.

The presence of Chinese market gardens at Cornish Town in the early twentieth century is recorded in a newspaper report on a murdered body found at the “Chinamen’s garden situated in Cornishtown...outside the hut occupied by the Celestials” (*Western Herald* 1911, p.2). Celestial was a term used to refer to Chinese people that originated from China’s name for itself as the ‘Celestial Empire’.

Photographs of the houses at Cornish Town and the surrounding yard structures show them to have been constructed from corrugated iron and whatever material was available (Plate 4.7). The yards are marked with paling fences and trees line the main street (Plate 4.7). In the 1960s, when the houses were demolished, there was no electricity or running water in Cornish Town. An indication of the poor condition of the houses of Cornish Town was reported in October 1912, when the Council Inspector requested that occupants repair their houses and, in some cases, condemned their houses. In response, residents of Cornish Town and East Cobar presented a petition to the Cobar Council (*Cobar Herald* 1912, p.2) stating that they were not in a position to repair their houses or find alternatives to rent. It was decided at the meeting to stand the notices served on the residents in abeyance.



Plate 4.6 Cornish Town Cobar 1929 looking west, south-west. (Source: collection of the Great Cobar Heritage Centre).



Plate 4.7 Cornish Town c.1950s. View south-west across the village. The Catholic church is on the horizon beyond the slag dump. (Source: collection of the Great Cobar Heritage Centre).



Plate 4.8 Cornish Town c.1950s. View north, north-west (Source: collection of the Great Cobar Heritage Centre).

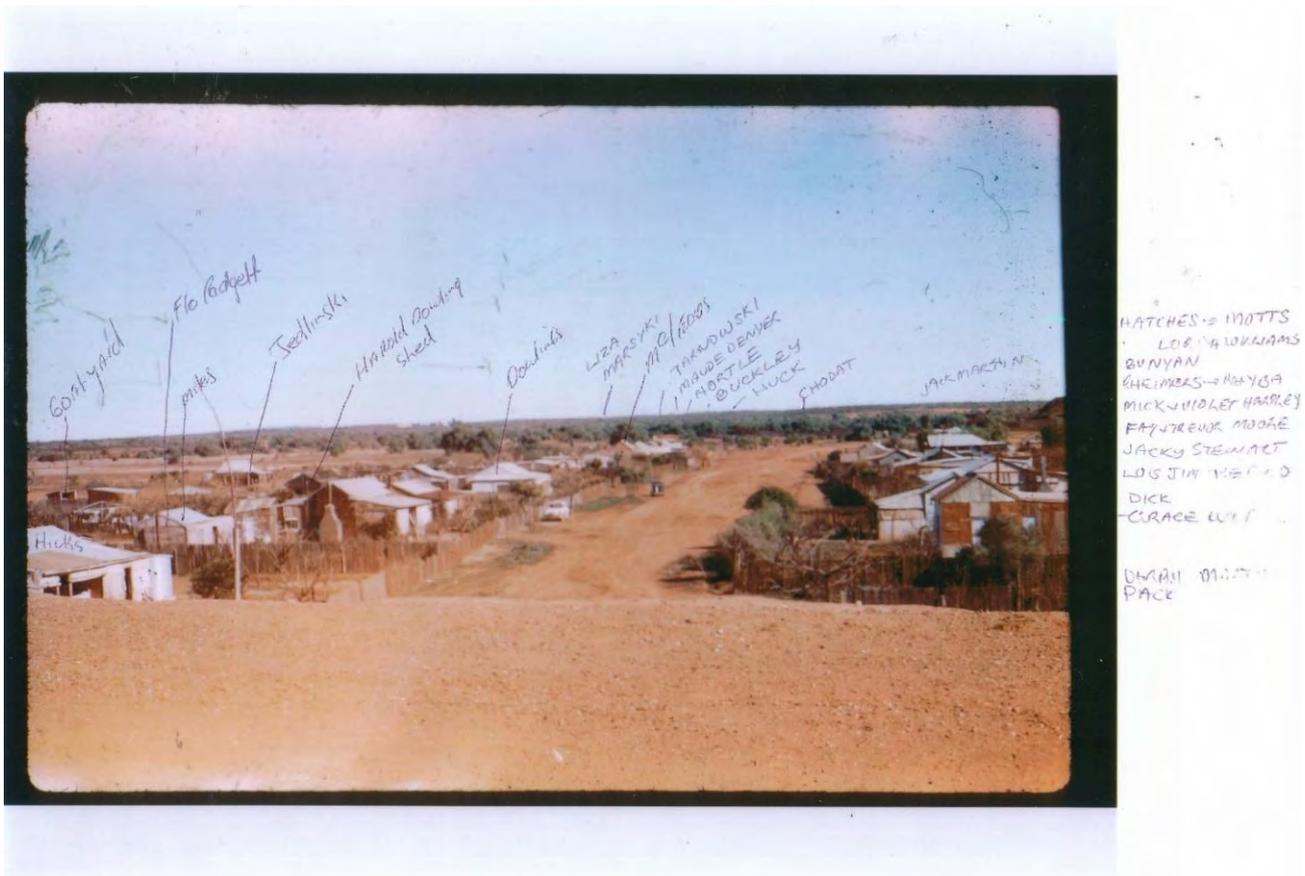


Plate 4.9 Cornish Town, annotated with residents' names c.1960. Taken from the bank of Spain's Tank (Spain's Dam), which is bordered by the bund to the east of the project area.

Spain's Tank was constructed by Mr Spain c.1900. (Source: collection of the Great Cobar Heritage Centre, Cobar, CSC, n.d.) and was more akin to a dam than a tank. The name 'tank' suggests that it was a waterhole before it was modified.



Plate 4.10 Cornish Town 2014. View north-west from the bank of Spain's Tank (Spain's Dam). The slag dump with the "Cobar" sign is in the distance with the museum building roof just visible. Photograph by John Collins. (Source: collection of the Great Cobar Heritage Centre).



Plate 4.11 Cornish Town 2014 looking west from Spain's Tank (Spain's Dam) with the slag dump and Cobar sign in the distance. Photograph by John Collins. (Source: collection of the Great Cobar Heritage Centre).

5 Site inspection

5.1 Overview

EMM archaeologist Georgia Burnett and Pamela Chauvel conducted an archaeological survey of the project area on 1 July 2020. This combined Aboriginal and historical heritage survey included the participation of Aboriginal stakeholders, Rebecca Dowling and Tyrone Griffiths. Transects were walked across the area of proposed surface works for the power line corridor (the survey area) to identify concentrations of Aboriginal and non-Aboriginal artefacts and identify any archaeological relics. Key sites within the project area were also visited in order to gain a greater overall understanding of the heritage context.

The landscape of the survey area is flat, with compacted stony red soil and occasional low trees. Due to recent rains, much of the survey area was covered in low vegetation (Plate 5.1) and Big Salty and Little Salty dams (Plate 5.2) to the north-west of the project area were full at the time of the project area inspection.



Plate 5.1 Cornish Town main street. View west.

5.2 Cornish Town

The location of the survey area is within an area previously known as Cornish Town (refer to Section 4.2.4ii). Tyrone Griffith, who participated in the site inspection lived at Cornish Town with his family in the 1960s. Tyrone, who was about eight when his family and the rest of the inhabitants of Cornish Town had to leave their houses before the town was demolished, remembers that Aboriginal and non-Aboriginal families lived there. There was no running water or electricity, and people would help each other out in collecting water. Tyrone identified the location of his family's house on the edge of the project area beside the existing power line (Plate 5.3). For Tyrone, even though the structures were gone and only fragments of the evidence of his family and neighbour's daily lives were left, the landscape was active and imbued with past significance (see Pragnell and Mate 2012, p.326).

The main street of Cornish Town is clearly discernible today (Plate 5.1 and Plate 5.4). A modern fence line now runs along its length. During the survey, a toy marble was identified embedded in the dirt of the main street. Other artefacts representative of childhood included bike handlebars.

Dense ground-cover vegetation, particularly to the south of the main street, obscured much of the surface archaeology and it is probable that more archaeological features are present beneath the vegetation. Some of the remnant features that could be identified include: a semi-circle of bricks, laid without mortar, possibly as a base for a water tank (Plate 5.5); a fence post (Plate 5.6) and three concrete slabs (Plate 5.7). The locations of these features and others are shown in Figure 5.1.

The houses and yard structures as shown in historical photographs of Cornish Town (see Section 4.2.4ii) were makeshift; often resting on brick stumps and constructed from scrap iron, canvas, and whatever material was at hand. Consequently, when the houses were demolished in the 1960s, very little was left behind. Slight earth mounds with higher concentrations of artefact fragments or building material are discernible within the project area, but as the building material is generally not in situ, it was not possible to tell if this was the original location of a structure or merely where the bulldozer had pushed it.

While bricks were manufactured at Cobar from about the 1870s (Boughen 1986, p.75), the bricks identified during the survey were machine made. One brick, stamped with "South Yarra" (Plate 5.8), was made by the South Yarra Fire Brick Company, in operation from 1944-1980 (University of Melbourne Archives 2002).

Tyrone recalls that when he lived at Cornish Town in the 1960s, structures to the south of his house had already been demolished. For example, remnants of a well including corrugated iron and wire were piled beside a tree near a concrete slab (Plate 5.9).

Scatters of historical material were identified across the project area. Material identified include fragments of ceramic, glass, metal scrap and objects (Plate 5.10). These objects ranged from wrought iron nails and black glass dating to the nineteenth century, through to late twentieth century asbestos. The dispersed and fragmented nature of the distribution of the artefacts meant that it was difficult to identify specific historical sites.

In addition to the remnants of Cornish Town, it is possible that there is evidence of early mining, including what seems to be a mine shaft, reused as a rubbish dump (Plate 5.11).

In conclusion, the site survey did not provide a definitive catalogue of all possible remnant structures but rather, established a representative sample of the features and artefacts that remain. While the archaeological evidence within the project area is fragmented and dispersed, in conjunction with historical photographs and oral history a more complete record of the history of Cornish Town and the lives of its inhabitants can be created.



Plate 5.2 'Little Salty' lake to the north-west of the project area. View north.



Plate 5.3 Remains of Tyrone Griffith's house: iron and chicken wire and the remains of an iron bedstead in the foreground. View east.



Plate 5.4 Mound beside Cornish Town main road. View east towards the bund wall of the Spain's Dam.



Plate 5.5 Semi-circle of bricks with no mortar. Possibly part of a stand for a water tank. View north towards the main street (beside the present-day fence line).



Plate 5.6 Fence post. View east.



Plate 5.7 Three concrete slabs (the third is obscured by vegetation). Remains of a possible water tank to the left in the background (Plate 5.7). View east.



Plate 5.8 Upended bricks, joined with concrete mortar. Inscribed “... F B Co / SOUTH YARRA”



Plate 5.9 Possible demolished water tank. Debris of corrugated iron and wire beside a concrete slab. View south-east.



Plate 5.10 Examples of ceramic and glass artefacts found in the project area.

Clockwise from top in Plate 5.10: black glass bottle base; moulded rockinghamware; two fragments of purple transfer print earthenware with a ribbon design; fragment of a stoneware pot; fragment of a brown transfer print plate with a leaf; and two ceramic base fragments with makers stamp “[P]ATEN[T... / REPR.../ [UN]BREA[KABLE]/BAKIN[G]” AND “...A.BAILEY/...ALLOA/[S]COTLAND”.



Plate 5.11 Previous earthworks used as a rubbish dump. View east. Artefacts included nineteenth century glass and ceramic fragments.

5.3 Fort Bourke Hill lookout

Fort Bourke Hill lookout on Fort Bourke Hill to the south of the project area, overlooks the New Cobar open cut, and entrance to the underground mine. The mineral deposits at New Cobar have been mined intermittently over many years. Modern mining by open cut methods began in 2000 and continued until 2004, when underground mining commenced (Cobar Shire Council 2020).

Signage at the viewing platform provides information about the surrounding landscape and the mining history of Cobar. Historic mine workings in the upper levels of the modern open cut are visible on the north face of the pit. Fort Bourke Hill and the views from the lookout are part of the cultural landscape of Cobar, as an example of an evolved and continuing cultural landscape (Australia ICOMOS 2020).



Plate 5.12 New Cobar open cut pit (modern) with historical mine workings visible at upper levels. View north-west.

5.4 Towser's Huts

All that remains of Towser's Huts, five or six in total, are the stone walls up to 1.5 m high, a well, drain and silt tank. The huts are an unusual design, in particular their semi-circular fireplaces. The huts comprise of between one to six rooms. One structure with rounded wall contained two pit-type toilets (Boughen 1986).

The huts are situated within the PGM lease (CML6). They are not accessible to the public and are protected by fencing.



Plate 5.13 Towser's Huts. (a) View west. (b) Detail of a semi-circular wall.

5.5 Chesney Mine

Chesney Mine (commenced c.1887) was the first successful gold mine at Cobar (NSW DPI 2007). It has been mined intermittently ever since. In 1943 the Chesney Mine began production of copper/gold ore in response to the Commonwealth Government's request to increase copper production for the (WWII) war effort and remained in operation until 1952 when poor metal prices and increased operational costs caused it to close. The Chesney ore-body was brought into production in 2009. It is reached via the New Cobar underground workings by a 700 m long decline (Cobar Shire Council 2020).

Surface remains include concrete footings and the ruins of concrete and brick structures associated with the different phases of use at the mine site (Plate 5.14, Plate 5.15).



Plate 5.14 Chesney mine site. View east.



Plate 5.15 Details of features. Chesney mine site. View west.



- KEY**
- Project area
 - Investigated area
 - Approved area of disturbance*
 - Survey location
 - Indicative location of Cornish Town
 - Great Cobar dewatering pipeline
 - Existing 22kV powerline
 - Proposed powerline corridor
 - Waterbody
 - Mine water management storage

*Approved under existing REF approvals, but not yet constructed.

\\lemmsvr1\ermm\jobs\2019\1190278 - Great Cobar Mine SSD\GIS\02_Maps_Soph\SOH\001_SurveyResults_20210115_06.mxd 15/01/2021

Source: EMM (2020); DSM (2020); DSM (2017); REP (2019)

Results of historical heritage survey

Peak Gold Mines
 New Cobar Complex Project
 Statement of heritage impact
 Figure 5.1



6 Assessment of significance

6.1 Defining heritage significance

In NSW the assessment of heritage significance is based on the Burra Charter (Australia ICOMOS 2013) and further expanded upon in the *Heritage Manual's Assessing Heritage Significance* (Heritage Office 2001). It lists seven criteria to identify and assess heritage values that apply when considering if an item is of State or local heritage significance as set out in Table 6.1.

Table 6.1 NSW heritage assessment criteria

Criterion	Explanation
a)	<i>An item is important in the course or pattern of NSW's (or the local area's) cultural or natural history (Historical Significance).</i>
b)	<i>An item has strong or special association with the life or works of a person, or group of persons of importance in NSW's (or the local area's) cultural or natural history (Associative Significance).</i>
c)	<i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area) (Aesthetic Significance).</i>
d)	<i>An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons (Social Significance).</i>
e)	<i>An item has the potential to yield information that will contribute to an understanding of NSW's (or the local area's) cultural or natural history (Research Significance).</i>
f)	<i>An item possesses uncommon, rare or endangered aspects of NSW's (or the local area's) cultural or natural history (Rarity).</i>
g)	<i>An item is important in demonstrating the principle characteristics of a class of NSW's (or the local area's) cultural or natural places or environments (Representativeness).</i>

6.2 Assessing significance of the project area

Heritage is intrinsically linked with identity and defines a sense of place (Akagawa & Smith 2009, p.7). In their study of the goldmining towns of the Upper Burnett in Queensland, Pragnell and Mate (2012) observed that while physically, these mining towns survive only as archaeological remnants, they also hold significance in their intangible heritage values, such as stories in the landscape and movement between places. These intangible values “contribute to the shared and continued attachment” of the community to the area’s mining history (Pragnell & Mate 2012, p.318).

While there is a tendency to memorialise the physical heritage of mining through collecting and displaying machinery and the material culture of mining (such as stampers, mine wheels etc), this focuses attention on the investment of capital by mine owners rather than on the daily lives and labour of the workers and their families, because “working class heritage is not contained in the monumental but in the quotidian; in repetitive labour, the multiple journeys, the repeated stories” (Pragnell & Mate 2012 p.320). As such, it is the intangible aspects of a place, the complex networks of remembered relationships between people and the landscape that are also important, but often easily overlooked. Community life is an intrinsically spatial experience, mapped in its shared labours and neighbourly interactions (Casella 2012, p.298).

Table 6.2 assesses the heritage significance of Cornish Town against the NSW heritage assessment criteria.

Assessments of significance for the two heritage listed items within the project area are provided in Table 6.3 (Towser’s Huts) and Table 6.4 (Cobar Pastoral and Mining Technology Museum). As impacts to these heritage items are not anticipated, they have not been re-assessed. The statements of heritage significance are presented as per their heritage listings on the State Heritage Inventory (SHI).

6.3 Statement of significance – Cornish Town

Cornish Town is associated with early mining in the Cobar region and the development of Cobar. It is representative of the many small towns that grew up around mining centres and other unofficial towns such as Lobs Hole in the Snowy Mountains or Happy Valley at La Perouse, that are now abandoned and are disappearing. The site has local heritage significance for its archaeological, historical and oral history research potential. It has social significance for its intangible heritage value in the stories, memories and connections of people who lived there.

The archaeological resources relating to Cornish Town are considered to be relics in line with this assessment of significance.

Table 6.2 Cornish Town – assessment against the criteria

Criterion	Assessment	Level of significance
a) Historical	Cornish Town has historical significance as the site of a mining town still remembered by people today. Significance as an unofficial town that grew without input from an official council and planning laws. The population of the town included indigenous, and non-indigenous families of different ethnic origins.	Local
b) Associative	Cornish Town has associative significance for its connection with the Cornish miners who worked in the Cobar mines from the mid nineteenth century. It is also closely associated with H.J. Cornish who owned the Criterion Hotel at the turn of the century. Cornish Town is still remembered today by people who lived or visited it prior to its demolition in the late 1960s. As such it has intangible heritage value for its memories and associations.	Local
c) Aesthetic	Not applicable	
d) Social	Cornish Town has social significance for people who lived at or still remember the town prior to its demolition in the late 1960s. As such it has intangible heritage value for its memories and associations.	Local
e) Research	The site has research significance for historical archaeology combining information gathered from archival maps and photographs, archaeological evidence and oral history. As an unofficial settlement it has research potential in how a community organised space and made decisions about land allocation and how they created a sense of community.	Local
f) Rarity	Probably quite rare.	Local
g) Representativeness	Cornish Town is representative of the satellite towns that grew up around mining centres in the nineteenth and early twentieth centuries.	Local

6.4 Statement of significance –Towser’s Huts

The site is evidence of the construction of huts on a mining tenement (Portion 265) leased by an Italian immigrant, Antonio Tozzi, for residential use c.1890s-1916. The site is evidence of Italian vernacular building techniques and is a rare example of its type. The site is valued by the Cobar community as evidence of its social history, in particular of that related to Italian immigration (SHI).

Table 6.3 Towser’s Huts – assessment against the criteria

Criterion	Assessment	Level of significance
a) Historical	The site is evidence of the construction of huts on a mining tenement (Portion 265) leased for residential use c.1890s-1916.	Local
b) Associative	The huts are associated with an Italian immigrant, Antonio Tozzi, who built the stone structures at this site.	Local
c) Aesthetic	The site is evidence of vernacular building techniques, thought to be of Italian origin, applied to Australian conditions and using local materials.	Local
d) Social	The site is valued by the Cobar community as evidence of its diverse social history.	Local
e) Research	Preliminary investigations have not identified any attributes that might confirm whether the site meets this criterion.	Local
f) Rarity	The huts built by Antonio Tozzi are rare examples of dry-stone wall building techniques and Italian settlement in Cobar.	Local
g) Representativeness	Preliminary investigations have not identified any attributes that might confirm whether the site meets this criterion.	Local

6.5 Statement of significance –Cobar Pastoral and Mining Technology Museum, 1910

The Great Cobar Heritage Centre and Cobar Miners Heritage Park demonstrates the history of mining in the area from the late-nineteenth century. It is associated with the former miners of the area. The former mine office retains many original architectural details and most importantly its scale and form remain intact. On its prominent site, the building is a landmark at the eastern end of the town of Cobar and is a good example of architecture of the Federation era. The group represents a settlement pattern and lifestyle associated with mining that was once common in rural NSW. The Cobar Mining Field in its continuity of use as a mine from the 1870s reflects the span of technologies used and developed within the industry. There is the potential to yield more information from the group.

Table 6.4 Cobar Pastoral and Mining Technology Museum– assessment against the criteria

Criterion	Assessment	Level of significance
a) Historical	This group demonstrates the history of the establishment and development of Cobar, a rural town that originated from a copper mining settlement	Local
b) Associative	The group is associated with the Great Cobar Ltd as well as the miners and the first settlers in the area.	Local
c) Aesthetic	The group indicates a level of technical achievement in the prospecting, discovery and later mining of various mineral deposits. The group also reflects of span of technologies used to in the mining industry from its earliest origins in the late 19th century. The former mine office retains many original architectural details typical of the Federation era. Most importantly, its scale and form remain intact. On its prominent site, the building is a landmark at the eastern end of the town of Cobar.	Local
d) Social	The site is valued by the Cobar community as evidence of its rich history related to mining.	Local
e) Research	The group has the potential to yield considerable information from further archaeological and documentary research.	Local

Table 6.4 Cobar Pastoral and Mining Technology Museum– assessment against the criteria

Criterion	Assessment	Level of significance
f) Rarity	The group reflects the history of mining and a mining community since the late 19th century. The architectural, archaeological, and cultural landscape that survives are rare examples of one the largest 19th century mines in the State.	Local
g) Representativeness	The former mine office building is important in demonstrating the principal characteristics of Federation architecture with some modest Classical detailing.	Local

7 Heritage impact assessment

7.1 Background to assessing impacts

The assessment of a project's impacts to the heritage significance of a place or an item is to understand change; if it is beneficial to the place or item; and how changes can be managed to best retain significance. The historical landscape in Australia, be it rural or urban, is by social agreement, a significant aspect of our identity. That agreement is codified in legislation, the intent of which is to encourage the conservation of cultural heritage by incorporating it into development where feasible. In many situations avoiding impacts is impossible, but the aim is to reduce those impacts by either project re-design or managing the loss of information through methods that reduce and/or record significance before it is removed.

The framework around assessing significance and therefore suitable levels of impact is to understand how the place or item came to be, how important it was (and may be still) in the development of the local area or the State (the colony at the time) and providing guidance on its management. This is what this report aims to do.

7.1.1 Inter-generational equity

Aboriginal cultural heritage management is based on the principle of inter-generational equity, the intent of which is to ensure present generations consider future generations when making management decisions about culture. This principle is possibly the most relevant part of the notion of ecologically sustainable development (ESD) when considering Aboriginal cultural heritage management.

The same philosophy is applied to historical heritage management and is covered under the ICOMOS *Burra Charter*:

Article 1.2 Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present and future generations (Australia ICOMOS 2013, p.2).

The *Burra Charter* continues:

Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records, [sic] that are important expressions of Australian identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious.

These places of cultural significance must be conserved for present and future generations in accordance with the principle of inter-generational equity.

The *Burra Charter* advocates a cautious approach to change: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained (Australia ICOMOS 2013, p.1).

This assessment of historical heritage impact was prepared with the notion of intergenerational equity as a guiding principle.

How history is presented can create a sense of inclusion or exclusion (Akagawa & Smith 2009, p.7). The mining history of Cobar is well known, but the histories of the towns of Wrightville, Dapville and Cornish Town where workers and their families lived, are less well known and under researched. The locals who have a living memory of these towns are getting older, and urgency is required if their stories are to be recorded. Examples of research projects where the material remnants of dwellings and possessions were used as a starting point for discussions

around daily routines and community life include Casella (2012) and Pragnell and Mate (2012), who journeyed through the mining towns with locals and descendants, and as they did so specific points in the landscape become mnemonics for remembering and cultural mapping (Pragnell & Mate 2012, p.325).

7.2 The proposed activity and potential impacts

This SoHI assesses the impacts of surface disturbance from the installation of a power line as well as other potential impacts from Project activities such as subsidence and blasting.

7.2.1 Surface disturbance

Surface works include use of existing mine areas and construction of a power line within the project area. The power line corridor will be 20 m wide and up to 400 m long and will extend westward from an existing 22 kV power line to a compact transformer and switch room located within the previously cleared and fenced area surrounding the boxcut hosting the exhaust outlet (Figure 1.4). The power line will then proceed northward towards the fresh air intake hosting the emergency egress winder.

There are two listed heritage items within the project area. The closest listed heritage item is Towser's Huts (Cobar LEP I24) located 800 m from the power line corridor location, to the south of Nyngan Road South, within ML 1483. The huts are fenced off and protected and will not be impacted by the proposed surface disturbance. Cobar Pastoral and Mining Technology Museum 1910 (Cobar LEP I8) is situated on the main street of Cobar, overlooking the town. It is approximately 950 m to the north-west of the power line corridor and will not be impacted by the proposed surface disturbance. A dilapidation assessment was conducted on the Cobar Pastoral and Mining Technology Museum in October 2019.

At this stage, the power pole installation method and associated infrastructure have not been determined; therefore, impacts to Cornish Town have not been identified. Historical research has identified the potential for archaeological sensitivity within the survey area as it is possible that there may be evidence relating to Cornish Town. If archaeological resources related to this phase of the region's historical development exist, they are likely to reach the threshold of local significance at a minimum. Therefore, if after the vegetation is removed, evidence of relics, such as part of a structure for example, are identified, then suitable management, such as avoidance, should be undertaken before impacts could proceed. An historical heritage management plan (HHMP) prepared for this Project will need to include detailed management measures for this activity, including the identification of impacts and how to avoid harm.

As no known historical heritage items are present within the proposed area of surface disturbance, the area in which excavation for the power poles is required is limited and minimal and an unexpected finds protocol will be implemented. The proposed works are unlikely to result in a significant impact to historical heritage values.

7.2.2 Blasting and vibration

Potential blasting impacts from the proposed future underground mining operations on the surrounding community have been assessed by EMM 2020b.

All current and proposed operational blast activities at the New Cobar Complex are conducted underground. Hence, there is a potential impact related to ground vibration as a result of blasting. Blast ground vibration monitoring data relevant to the New Cobar underground mining operations was supplied to EMM by PGM. This data included blast ID information, maximum instantaneous charge (MIC) (the maximum amount of explosive to be used per blast) and measured ground vibration levels at a number of monitoring locations. Blast monitoring results between April 2019 and March 2020 were used to develop predictive site laws for ground vibration for this assessment.

Within the project area, it is anticipated that the risk to Cornish Town archaeological site from blasting is negligible as the site contains no above ground structures of heritage significance. However, blasting has the potential to impact built structures including the Cobar Pastoral and Mining Technology Museum 1910 (Cobar LEP I8) and the standing walls (relics) of Towser's Huts (Cobar LEP I24).

The MIC used for some blasting activities will be reduced in order to comply with ground vibration criteria. As the blast ground vibration criterion for residential receivers (ie 5 mm/s peak particle velocity (PPV)) is lower than the criterion for structural damage to buildings (10 mm/s PPV), the EMM noise and vibration impact assessment (EMM 2020b) concluded that, no impacts from blasting on non-residential receivers (ie structural damage to heritage buildings) is anticipated from the Project if the limiting MICs provided for the nearest residential receivers are followed.

In accordance with the commitments made in the review of environmental factors (REF) for the Great Cobar Exploration Decline (Corkery 2020), PGM have commenced vibration monitoring of Cobar Pastoral and Mining Technology Museum 1910 (Cobar LEP I8) and have conducted a dilapidation assessment of the building. Further, PGM will continue to implement mitigation measures currently in place at the New Cobar Complex to reduce the potential impact of ground vibration as a result of blasting. Towser's Huts are located close to proposed underground stopes at the Jubilee workings, however, are unlikely to be further affected by vibration as any settlement is likely to have already occurred during the construction of the New Cobar open cut located 200 m south.

7.2.3 Subsidence

Proposed underground mining as part of the Project will use stope mining methods. Unlike longwall mining where a void is created and the overlying rock cracks and tilt into the void (goaf), during stope mining the open space created by the extraction of ore and minerals, known as a stope, is backfilled with waste rock and therefore the potential for subsidence to occur is considerably lower.

Beck Engineering (BE) undertook a geotechnical and subsidence assessment (Beck Engineering 2020) on behalf of EMM for the Project. BE predicted that surface subsidence during the life of the mine will be negligible due to the small footprint of underground mining, the depth below the surface and the relatively strong rock mass. BE's forecasts for vertical and total displacement (ie subsidence) are less than 15 millimetres (mm) and are considered negligible. Therefore, there are no anticipated impact of subsidence on historical heritage in the project area.

8 Management measures

8.1 Heritage management objectives

The overriding objective in managing heritage significance is the avoidance of impacts. Avoidance removes the need for mitigation or amelioration and is in keeping with the philosophy of the *Burra Charter 2013* (Australia ICOMOS 2013).

In all cases where significant heritage values may be affected by a project, it is prudent to take a precautionary approach.

The Burra Charter (Australia ICOMOS 2013) advocates a cautious approach whereby as much as necessary is done to care for the item and make it useable, but otherwise change it as little as possible so that its cultural significance is retained. With these principles in mind, the following management measures are proposed.

8.2 Management measures

The following management measures are proposed:

1. Parts of the project area are assessed as having intangible value for the local community. As such, consideration should be given to preparing an oral history of Cornish Town. Descriptions and memories of people who once lived there would enhance knowledge of the history and development of Cobar. It is recommended that:
 - the oral history be collected in conjunction with cultural mapping of the landscape of and around Cornish Town;
 - the oral history should be recorded professionally to create an archival record;
 - cultural mapping would include detailed archival research, a concentrated field survey focused on the extent of Cornish Town using oral history and relevant technologies such as drone photography; and
 - all this information should be collated into an assessment of the site.
2. Signage at the Fort Bourke Hill lookout could be updated, interpreting the history of Cobar and its landmarks, in consultation with Aboriginal and local stakeholders, including the Great Cobar Heritage Centre.
3. PGM will continue vibration monitoring of the Great Cobar Heritage Centre (Cobar Pastoral and Mining Technology Museum 1910) for impacts from blasting. If damage is detected and determined to be as a result of blasting, the type of remediation that is undertaken will be dependent on:
 - the nature of the damage;
 - the scale of the damage;
 - the impact on the historical heritage values of the site; and
 - expert advice regarding practical and historically sympathetic remediation measures.

4. Therefore, remediation measures, if needed, will be assessed on a case-by-case basis in the light of these considerations in order to ensure that performance measures are met and that there are no negative outcomes to historical heritage values. If impacts to archaeological sites or relics have been identified in the future, they will be avoided if possible. Where impacts cannot be avoided, an appropriate archaeological assessment methodology, including research design, will be developed in order to guide physical archaeological test excavations, and included in the Heritage Management Plan. This SoHI will be updated to include the results of any test excavations undertaken.
5. As no significant heritage items have been identified within the project area that will be impacted by the construction of the power line, works can proceed with caution – ie with an expectation that heritage items may be encountered. The construction locations should be observed prior to, and during construction for the presence of potential heritage items. If unexpected finds, such as objects and fabric that may indicate relics, particularly relating to Cornish Town, are encountered during construction works, the following protocol will be followed:
 - work will immediately but temporarily cease, and the site supervisor or appropriate responsible person will be informed;
 - if possible, the location of the power pole will be moved to avoid the item; and
 - if the location of the pole cannot be changed:
 - an archaeologist will be contacted to assess the find, where relevant, and determine if it is clearly a relic or has moderate to high potential to be a relic (this may require additional research);
 - if the find is determined to be a relic and the location of the pole cannot be changed to avoid the item, a s146 (of the Heritage Act) is to be forwarded to the Heritage Council who will be consulted on the appropriate management measure; and
 - if the find is assessed and is not a relic, work inside the area that was made a no-go area can re-commence.
6. In the event that known or suspected human skeletal remains are encountered within the project area, the following procedure must be followed:
 - work will immediately cease, and the site supervisor or appropriate responsible person will be informed;
 - the immediate vicinity will be secured to protect the find and the find will be immediately reported to the work supervisor who will immediately advise the site supervisor or other nominated senior staff member;
 - the environmental manager or other nominated senior staff member will notify the police and the State coroner on the same day of the find (as required for all human remains discoveries);
 - the environmental manager or other nominated senior staff member will contact OEHL for advice on identification of the skeletal material as Aboriginal and if so, management of the material;
 - if it is determined that the skeletal material is ancestral Aboriginal remains, the Aboriginal community will be contacted, and consultative arrangements will be made to discuss ongoing care of the remains;

- the site will be recorded in accordance with the NPW Act and OEH guidelines;
- if the remains are historical and not of Aboriginal origin, the Heritage Division of OEH will be notified for further instruction; and
- works will not recommence until written approval is received.

Table 8.1 provides a summary management measures related to heritage sites within the project area.

Table 8.1 Management measures for heritage sites within the project area

Site ID	Site name	Site type	Significance	Impact type	Project modifications	Management or mitigation options
I8	Cobar Pastoral and Mining Technology Museum 1910	Built heritage, items of moveable heritage and environs	Local	None - avoidance	Limits to blasting MICs in accordance with the NVIA.	Vibration monitoring by PGM to continue in conjunction with visual monitoring (dilapidation report already completed).
I24	Towser's Huts	Archaeological site	Local	None - avoidance	None required	None required.
GC01	Cornish Town	Archaeological site	Local	Undetermined	Avoidance as per agreed HHMP.	Management plan in place prior to installation of power line.

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