

### **Description of the Proposed Action (the subject of this Referral)**

The Project will provide for an extension of the current open cut mining operations at the Glendell Mine to the north of existing approved mining operations and north of the minor Proposed Glendell Modification. The Project will also include works associated with the extension including but not limited to:

- rehabilitation of areas disturbed by mining activities, including overburden emplacement areas;
- realignment of a section of Hebden Road;
- relocation of the Ravensworth Homestead to a new site;
- diversion of Yorks Creek;
- construction/use of Mine Infrastructure Area (MIA) facilities and associated related infrastructure;
- construction/use of a new Heavy Vehicle Access Road; and
- construction/use of related ancillary infrastructure.

Overburden removed as part of the mining operations will be emplaced in-pit to the south of the mined area as mining progresses to the north. Overburden emplacement would also occur on existing Glendell emplacement areas and areas disturbed as part of the approved Ravensworth East operations. The final landform in emplacement areas will be developed using natural landform techniques and will be progressively rehabilitated over the life of the Project.

Water and tailings management associated with the Project will be integrated with the Mount Owen Complex water management system (WMS) and the Greater Ravensworth Area Water and Tailings Scheme (GRAWTS).

The Project would also use existing infrastructure associated with the previously approved mining activities at the Glendell Mine and the broader Mount Owen Complex including but not limited to the existing coal handling and preparation plant (CHPP) and associated coal handling and transport infrastructure. However, the Proposed Action does not include the continued operation of existing or approved infrastructure which is the subject of all relevant State and Commonwealth approvals (as discussed further below).

Run-of-mine (ROM) coal would be transported from the Glendell Pit Extension to the approved Mount Owen CHPP by haul truck, consistent with current practices. The Project is not proposed to result in any increase to the currently approved 17 Mtpa ROM coal throughput annual limit at the Mount Owen CHPP however the Project will extend the life of the Mount Owen CHPP and associated coal handling and transport infrastructure by an additional 8 years beyond that currently contemplated by the Mount Owen Continued Operations Project Modification 2 (currently under assessment by the NSW Department of Planning), and 14 years from the date currently approved under the Mount Owen Continued Operations Project development consent. **Figure 3** shows the key Project features.

As a result of mining progressing to the north, the Project will require the realignment of a section of Hebden Road and the diversion of Yorks Creek. Indicative alignments for Hebden Road and Yorks Creek are shown in **Figure 3**. The pit extension will also mine through the current Glendell MIA. The Project will therefore require replacement MIA capacity through the construction of a new MIA, and utilisation of the Mount Owen MIA. The Project will also mine through the site of the Ravensworth Homestead and the Project also includes its relocation to a new site. The relocation of the Ravensworth Homestead to a new site does not form part of the Proposed Action.

**Table 1.1** provides a summary of key Project components.

**Table 1.1 Project Summary**

Project Component	Summary of the Project
Extension of Glendell Mine	Extension of the mining operations at the Glendell Mine within the Mount Owen Complex to recover an additional approximately 135 Mt ROM coal.
Mining Method	Truck and Excavator/Shovel.
Annual Production	Glendell Mine (Glendell Pit Extension) - up to 10 Mtpa ROM coal. No change to approved mining areas or production rates at Bayswater North Pit and North Pit forming part of the Mount Owen Complex.
Mine Life	Glendell Mine – to 2044 (Glendell Pit currently approved to 2024).
Coal Processing and Transport	Mount Owen CHPP - up to 17 Mtpa (no change to approved capacity) Extension of operating life of Mount Owen CHPP and associated coal handling infrastructure to 2045 <sup>1</sup> .
General Mine Infrastructure	Demolition of Glendell MIA. Construction and operation of new MIA. Utilisation of Mount Owen MIA. Continued use of the Mount Owen CHPP and associated coal transport infrastructure.
Other Infrastructure Changes	Realignment of an approximately 5 km section of Hebden Road. Relocation of local telecommunications and electricity infrastructure.
Other Project Activities	Relocation of Ravensworth Homestead to a new site.
Mount Owen CHPP Rejects (coarse and fine)	Ongoing fine tailings emplacement within West Pit and other tailings facilities approved at neighbouring mining operations as part of the GRAWTS. Potential use of Bayswater North Pit and cells in North Pit as a tailings storage facility. Coarse rejects co-disposed with overburden at Mount Owen Complex (including overburden associated with the proposed Glendell Pit Extension).
Operational Workforce	Overall workforce at the Mount Owen Complex will remain similar to current workforce numbers of approximately 1,220 Full Time Equivalent (FTE) positions during concurrent operations. This will reduce following cessation of mining operations at the Mount Owen Mine (circa 2036-7). Glendell Mine workforce numbers will progressively increase over the duration of the Project from approximately 300 FTE to approximately 600 FTE positions in the latter stages of the Project. The increasing workforce at Glendell coincides with a decline and then stop in the workforce at the Mount Owen Mine. An ongoing workforce will be retained for the Mount Owen CHPP and other support roles.
Hours of Operation	No change – 24 hours per day, 7 days per week.

The Proposed Action is those aspects of the Project (including but not limited to those matters listed in **Table 1.2** below) that are necessary for the extraction of the additional coal in the Glendell Pit Extension other than the minor extension to the Glendell Pit proposed as part of the Proposed Glendell Modification.

**Table 1.2** provides a summary of those aspects of the Project that constitute the Proposed Action.

<sup>1</sup> Coal extracted to the end of 2044 will require an extended approval timeframe for coal processing facilities.

**Table 1.2 Summary of the Proposed Action**

Project Components	Summary of the Proposed Action
Work Area	<p>The Project Work Area, where development will be undertaken, will occupy approximately 1,510 hectares (ha), including a mixture of new disturbance, re-disturbance and work within previously disturbed areas and areas approved for future disturbance*.</p> <p>The Project will also extend the life of the MIA at Mount Owen and utilise the North Pit as a water storage for mining operations and potentially tailings in cells. Consistent with current approved operations, the Bayswater North Pit will also be used as a water storage and potentially as a tailings storage and course rejects emplacement facility following cessation of mining in the pit. No additional mining or disturbance of areas not already approved for disturbance is required as a result of this utilisation of the Mount Owen infrastructure and former mining area. The utilisation of these areas at Mount Owen does not form part of the Proposed Action or the Referral Area.</p>
Biodiversity Impact Assessment Area	<p>Within the Work Area, the Proposed Action will impact on approximately 1,090 ha of vegetation (woodland, grassland and partly rehabilitated areas) that is either outside the approved disturbance areas under existing approvals or is in various stages of rehabilitation following past disturbance comprising approximately:</p> <ul style="list-style-type: none"> <li>• 860 ha of new disturbance outside existing approved disturbance areas; and</li> <li>• 230 ha of re-disturbance of approved disturbance areas which have been previously disturbed and rehabilitation (revegetation) has commenced in accordance with rehabilitation commitments under existing approvals.</li> </ul>
Mine Rehabilitation	<p>Rehabilitation of areas disturbed by the proposed mining activities, including overburden emplacement areas.</p>
Resource Extraction	<p>Mining of all seams down to and including the Hebden Seam (Glendell Mine currently approved to mine down to a depth of approximately 200 m).</p>
Management of Overburden (Glendell Pit Extension)	<p>Emplacement of overburden in the following areas:</p> <ul style="list-style-type: none"> <li>• in-pit and on existing emplacement areas at Glendell Mine.</li> <li>• on areas previously disturbed as part of the former Ravensworth East Mine.</li> <li>• out-of-pit to assist final landform and drainage.</li> </ul>
Final Landform	<p>Final landform at Glendell and Ravensworth East up to approximately 200 mAHD (approximately 40 m higher than existing approved operations).</p> <p>No increase in number of final voids relative to approved operations</p> <p>Incorporation of fluvial geomorphic landform design principles in the final landform design to enhance stability, provide more natural landforms, and to provide improved surface water drainage and water quality characteristics.</p> <p>Modification of parts of the current Mount Owen Complex landform and drainage to provide integration with the final landform developed as part of the Proposed Action.</p> <p>Note: The incorporation of fluvial geomorphic characteristics will only apply to new areas of landform developed within the Work Area as part of the Proposed Action to avoid additional re-disturbance of rehabilitated areas.</p>
Water Management	<p>Full integration with Mount Owen Complex WMS, including ongoing integration with GRAWTS.</p> <p>Additional water management infrastructure such as sediment control structures and dams, clean and dirty water diversion drains, pipelines and the use of voids for water storage.</p>

Project Components	Summary of the Proposed Action
Other Major Associated Works	<p>Construction of the following:</p> <ul style="list-style-type: none"> <li>• replacement Mine Infrastructure Area</li> <li>• heavy Vehicle Access Road</li> <li>• realignment of a section of Hebden Road</li> <li>• diversion of Yorks Creek</li> <li>• associated supporting infrastructure.</li> </ul>

\*Approximately 400 ha of land within the Work Area located within existing approved disturbance areas remain part of the active mining operations or may be impacted by future approved mining activities. As these areas have previously been approved for disturbance, these will not be assessed as disturbance associated with the Proposed Action.

### Description of Areas covered by the Referral

For the purposes of this Referral, the term “Referral Area” is used to define the outer limits of the area containing all the components of the Proposed Action. The Referral Area is approximately 2,915 ha and is shown on **Figure 4**.

The total Work Area associated with the Proposed Action is approximately 1,510 ha. The Work Area comprises all areas which will be directly impacted by the Proposed Action.

The Referral’s consideration of direct impacts on fauna and flora (other than impacts associated with water dependant ecosystems) applies only to those areas of the Work Area which are:

- not currently approved to be disturbed under existing approvals (Additional Disturbance Area); and
- previously approved disturbed areas that have been partly revegetated in accordance with existing approved mine rehabilitation commitments (Re-disturbance Area).

This area is identified as the Biodiversity Impact Assessment Area in the Referral and this Report and is approximately 1,090 ha.

Approximately 400 ha of the Work Area comprises part of the approved active mining operations or may be impacted by future approved mining activities. These 400 ha will not be assessed as disturbance for the Project for the purposes of biodiversity impacts as these areas are either currently disturbed by approved activities or will be disturbed in the future by currently approved operations.

The above areas are shown on **Figure 4**. **Table 1.3** summarises the various areas within the Referral Area.

**Table 1.3 Summary of the various areas within the Referral Area**

Name of Area	Approximate Size (Hectares)
Referral Area	2,915
Work Area	1,510
Biodiversity Impact Assessment Area - comprising: Additional Disturbance Area Re-disturbance Area	1,090 (860) (230)

The Referral’s consideration of impacts associated with potential impacts on water resources relates to impacts associated with the Glendell Pit Extension (including areas of the pit extension located within existing approved disturbance areas) and changes associated with aspects of the Project which are not already approved by the current operations. These additional impacts considered include potential changes to terrain associated with the Project.