



Dubbo Project Modification 1

Project Layout and Processing Changes

State Significant Development Modification Assessment
(SSD 5251 MOD 1)

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1 Introduction

The Dubbo Project (the project) is a rare earth and metals mine and processing facility located adjacent to the locality of Toongi, approximately 25 kilometres (km) south of Dubbo in the Dubbo local government area (see **Figure 1**).

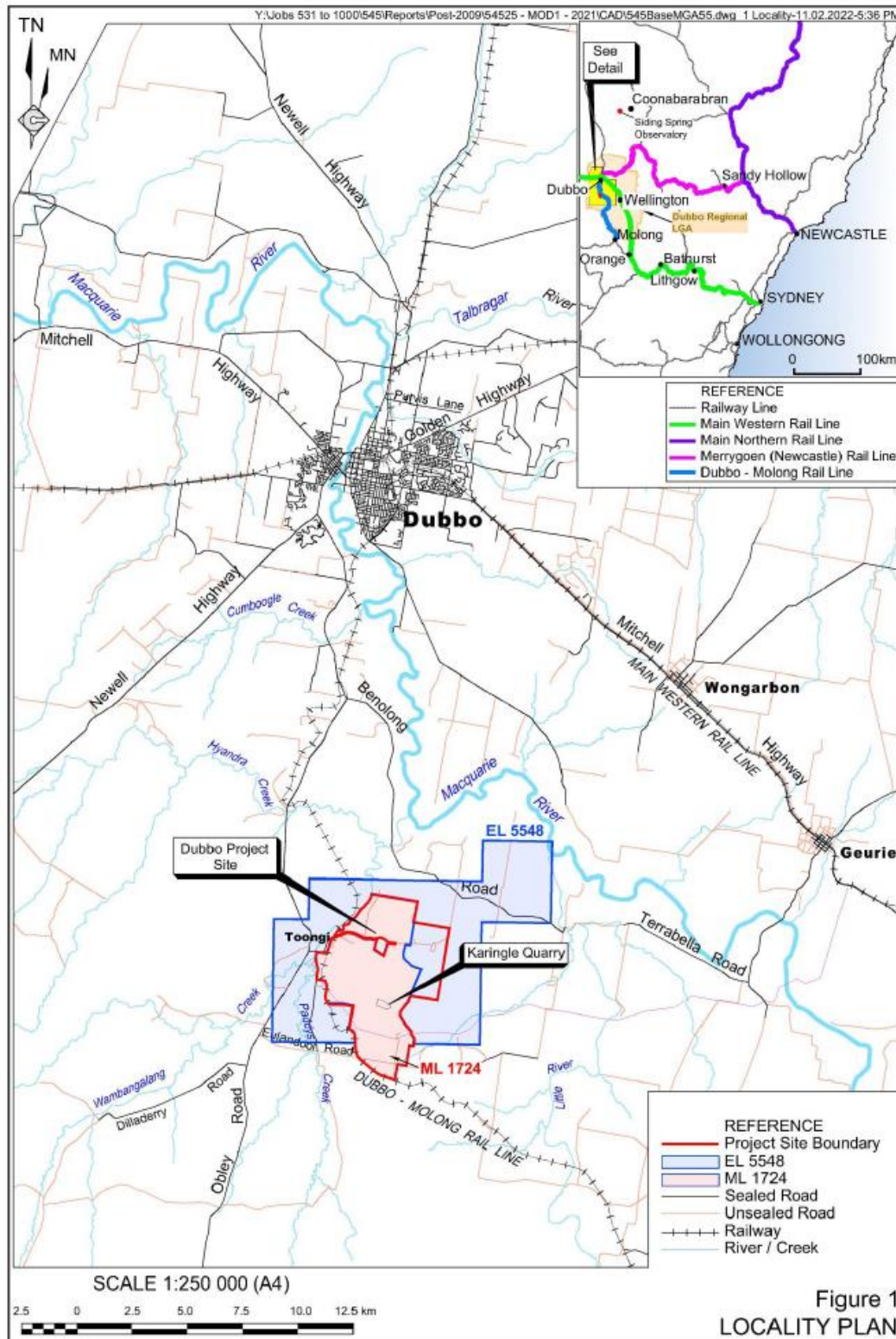


Figure 1 | Dubbo Project Regional Location (Source: MOD 1 Modification Report, RW Corkery)

The mine is owned by Australian Strategic Materials (Holdings) Ltd (ASM), a subsidiary of Australian Materials Ltd. While mining has not yet commenced, early works including the construction of a site office and site entrance were completed in mid-2022.

1.1 Current Approval

The development consent for the mine was granted by the Planning Assessment Commission (now the Independent Planning Commission of NSW) on 28 May 2015, and allows for:

- extracting ore at a rate of up to 1 million tonnes per annum (Mtpa) by open cut methods until December 2037;
- processing ore on site to produce rare metals and rare earth concentrate for transport to Port Botany or Newcastle;
- storing and disposing of processing waste in specially designed onsite storage facilities including solid and liquid residual storage facilities and salt encapsulation cells;
- constructing and operating ancillary infrastructure, including a processing facility, 30-kilometre gas supply pipeline to Dubbo, 7.5 km water supply pipeline to the Macquarie River and a rail siding with container laydown and storage area adjacent to the proposed upgraded Dubbo – Molong railway line (railway line); and
- progressively rehabilitating the site.

The approved mine layout is shown in **Figure 2**.

Apart from receiver ID R50 (Lot 312 DP595631), most of the sensitive receivers surrounding the project, including residential and recreational receivers, are project-related because they are either owned or controlled by ASM under agreement for sale. Receiver R50 retains the right to request acquisition under the conditions of consent.

The project provides access to a large deposit of rare metals such as zirconium, niobium and hafnium, and rare earth elements such as dysprosium, praseodymium and neodymium. The *NSW Critical Minerals and High-Tech Metals Strategy (2021)* (Critical Minerals Strategy) notes that the manufacture of magnets containing neodymium and praseodymium underpin the development of rare earth elements. These magnets are used in wind turbines and electric motors, with demand expected to grow at 9 per cent annually until 2038.

ASM has developed a 'mine to metals' strategy to extract and refine metal oxides and raw feed into high-purity rare earth and critical metals for global supply to various manufacturers in clean energy, aerospace, electronics and communications industries.

The project supports the NSW Government's vision to become a major long term global supplier and processor of critical minerals and high-tech metals under the Critical Minerals Strategy.

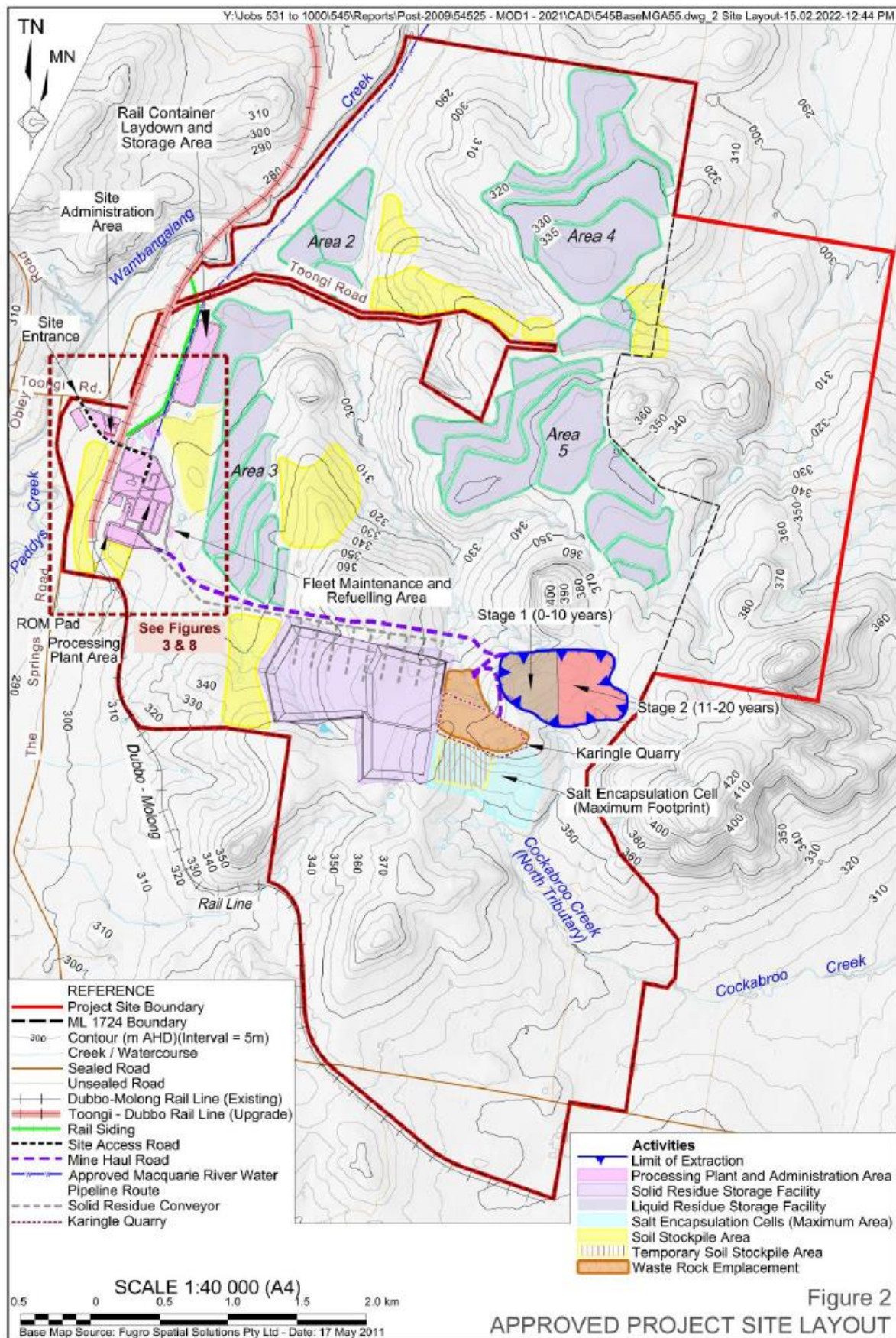


Figure 2 | Approved Mine Layout (Source: MOD 1 Modification Report, RW Corkery)

2 Proposed modification

ASM has identified opportunities to optimise the design of the project to maximise operational efficiencies at the mine. The proposed key changes include adjustments to the site layout to accommodate additional plant and the relocation of infrastructure areas.

The proposed modification requires additional disturbance areas. The approved disturbance areas have been reconfigured to achieve an overall net reduction in biodiversity impacts. The approved open cut and waste rock emplacement footprint and disturbance areas would not change.

The proposed modification would not change the mining methods or annual extraction rate and is summarised in **Table 1** below and depicted in **Figures 3, 4 and 5**. The proposal is described in detail in the Modification Report (see **Appendix A1**). The key modification elements include:

- **Processing plant upgrades:** to provide for further value adding of rare earth oxide products including a chlor-alkali plant to produce chemical products for processing (hydrochloric acid and sodium hydroxide).
- **Relocation of rail infrastructure:** to facilitate more efficient unloading and loading of containers
- **Waste management upgrades:** including a brine concentrator to maximise water recovery, with consequent changes to the footprint of the solid and liquid residue storage facilities and the salt encapsulation cells

Table 1 | Comparison of Proposed Modification and Approved Project

Component	Approved Project	Proposed Modification
Project life	<ul style="list-style-type: none"> • Mining operations to Dec 2037 	<ul style="list-style-type: none"> • Mining operations to Dec 2045
Open cut extent	<ul style="list-style-type: none"> • Single open cut 	<ul style="list-style-type: none"> • No change
Processing rate	<ul style="list-style-type: none"> • Up to 1 million tonnes per annum (Mtpa) of ore 	<ul style="list-style-type: none"> • No change
Operations, Processing Plant and Layout	<ul style="list-style-type: none"> • Haulage of ore and stockpiling at Run-of-Mine (ROM) pad • Crushing and grinding circuit, roasting circuit, sulphuric acid production • Rail siding and laydown/ storage area on western side of the rail line • Soil stockpile areas 	<ul style="list-style-type: none"> • Relocation of the railway laydown storage area to the eastern side of the rail line • Brine concentrator and a chlor-alkali plant for production of hydrochloric acid and sodium hydroxide • Conveyor between the processing plant/ administration area and the salt encapsulation cells • Changes to location of soil stockpile areas
Linear Infrastructure	<ul style="list-style-type: none"> • Water supply pipeline on the western side of the rail line • 132kV Electricity Transmission Line, approximately 30 km in length, between a substation south of Geurie and the project • Natural gas pipeline within the rail corridor between Central West pipeline in Dubbo and the project • Refurbishment and upgrade of a 27 km 	<ul style="list-style-type: none"> • Relocation of the water supply pipeline to the eastern side of rail line including a northern pipeline extension to link with an approved water supply bore and realignment within the project footprint

Component	Approved Project	Proposed Modification
	section of the Dubbo – Molong Railway and associated infrastructure	
Transportation	<ul style="list-style-type: none"> Up to 150 truck movements (75 laden trucks) to or from the mine per day Dispatch of up to 3 trains per week or one loaded train per day Construction of 3 m high wall, 1 km long road noise barrier on land owned by Taronga Western Plains Zoo 	<ul style="list-style-type: none"> Rail transport to be brought forward to align with project commencement Implementation of noise mitigation measures, in consultation with the zoo, to achieve a reduction of road noise equivalent to that provided by a road noise barrier.
Waste Rock Management	<ul style="list-style-type: none"> Single waste rock emplacement 	<ul style="list-style-type: none"> No change
Waste Residue Management	<ul style="list-style-type: none"> <u>Solid Residue Waste</u>: approximately 20 million cubic metres (Mm³) of filter cake conveyed to the solids storage facility over the life of the project <u>Liquid Residue Waste</u>: pumped to the liquids storage facility for evaporation. <u>Accumulated Salt</u>: approximately 6-7 Mt of salt waste excavated from the liquids storage facility and transported to one of six separate salt encapsulation cells 	<ul style="list-style-type: none"> <u>Solid Residue Waste</u>: approximately 22.3 Mm³ of slurry pumped to relocated solids storage facility for drying and consolidation over the life of the project – increase in area from 102 hectares (ha) to 172 ha. <u>Liquid Residue Waste</u>: significant decrease in liquids storage facility (413 ha down to 21 ha) due to use of brine concentrator <u>Accumulated Salt</u>: increase in area of cells from 35 ha to 63 ha due to brine concentrator and direct disposal
Water Supply and Management	<ul style="list-style-type: none"> Onsite water management system consisting of clean and dirty water diversion drains, and dirty water collection drainage Use of up to 4.05 GLpa of water from external sources 	<ul style="list-style-type: none"> Minor changes to surface water controls to accommodate modified site layout Use of up to 2 GLpa of water sourced from external sources Re-use of water from brine concentrator
Hours of Operation	<ul style="list-style-type: none"> <u>Mining</u>: 7 am–6 pm Mon to Fri, 8 am–5 pm Sat <u>Processing</u>: 24 hours a day, seven days a week <u>Construction</u>: 7 am – 6 pm, Mon to Fri; 8 am–1 pm Sat <u>Product Dispatch/ Receipt</u>: 6 am–10 pm Mon to Fri and 8 am–5 pm Sat 	<ul style="list-style-type: none"> <u>Mining</u>: No change <u>Processing</u>: No change <u>Construction</u> (linear infrastructure): No change <u>Other construction activities</u>: 24 hours, 7 days per week, to accommodate large concrete pours and complex construction operations Product Dispatch/ Receipt: No change
Workforce	<ul style="list-style-type: none"> Construction workforce of up to 400 personnel Operational workforce of up to 250 personnel 	<ul style="list-style-type: none"> Construction workforce of up to 1,000 personnel with an average of 625 personnel Operational workforce of up to 274 personnel
Disturbance Area	<ul style="list-style-type: none"> Overall area of 786.16 ha 	<ul style="list-style-type: none"> Overall area of 780.75 ha – slight reduction of 5.4 ha

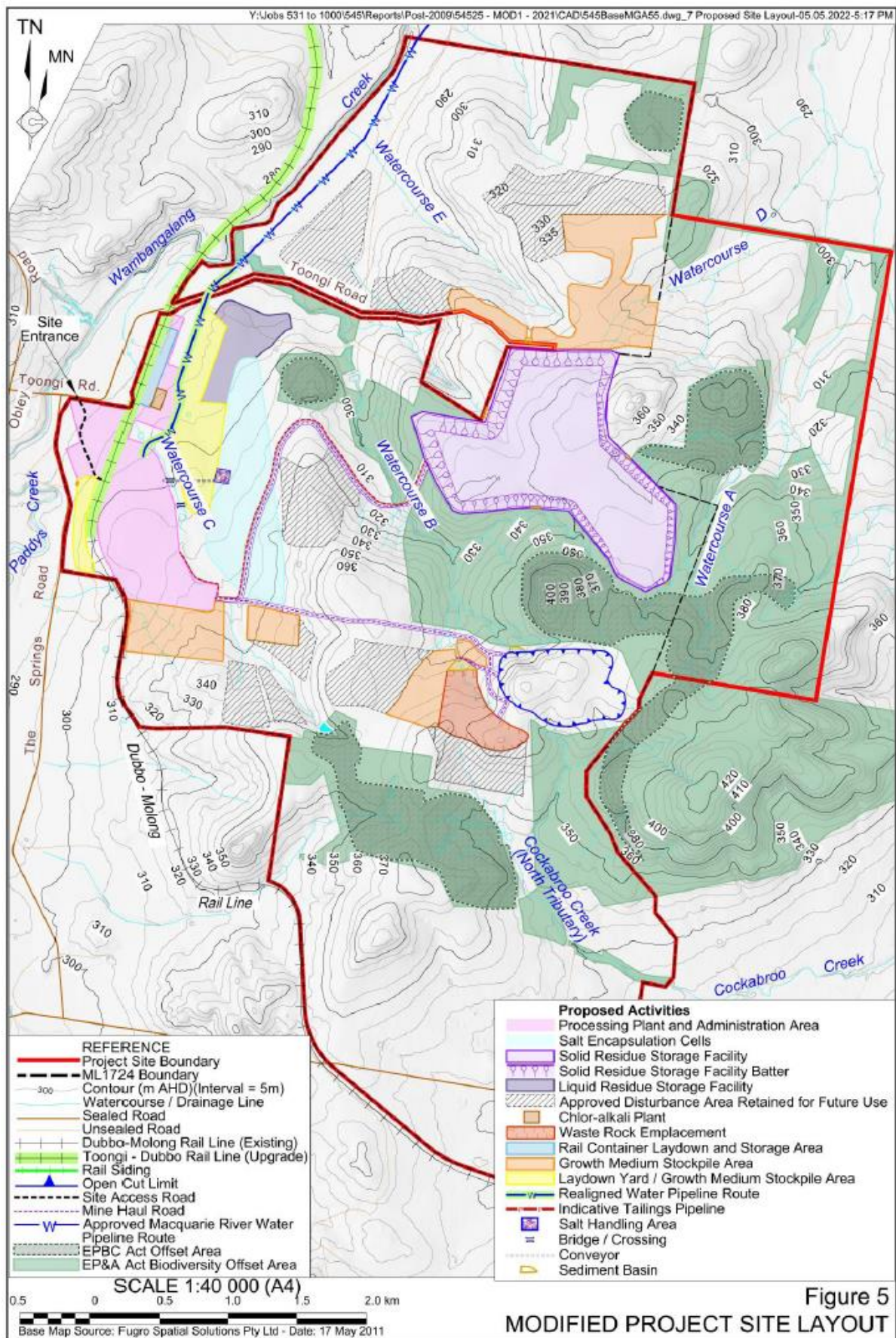


Figure 3 | Proposed Site Layout (Source: MOD 1 Submissions Report, RW Corkery)

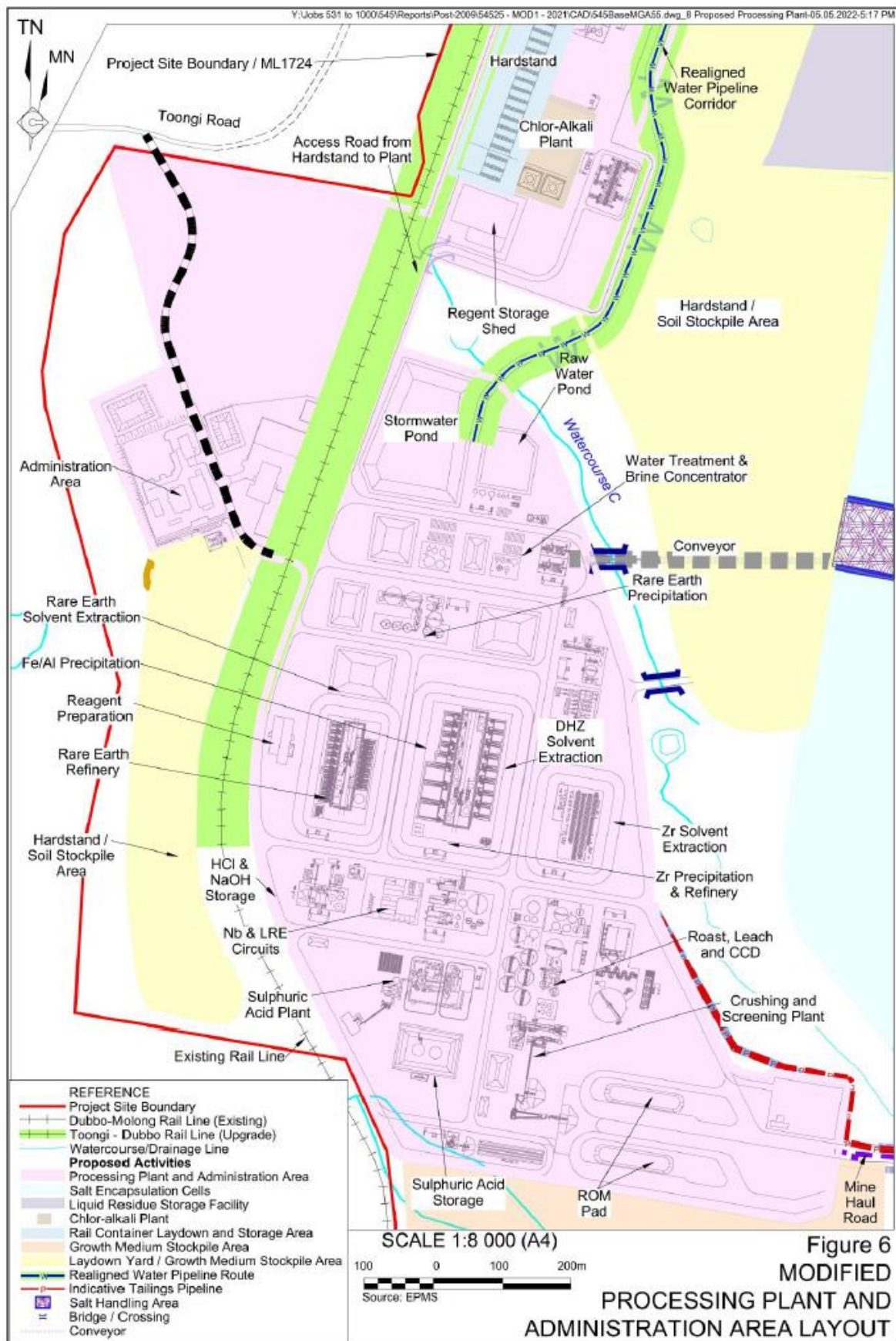


Figure 4 | Proposed Processing Plant and Administration Area Layout (Source: MOD 1 Modification Report, RW Corkery)

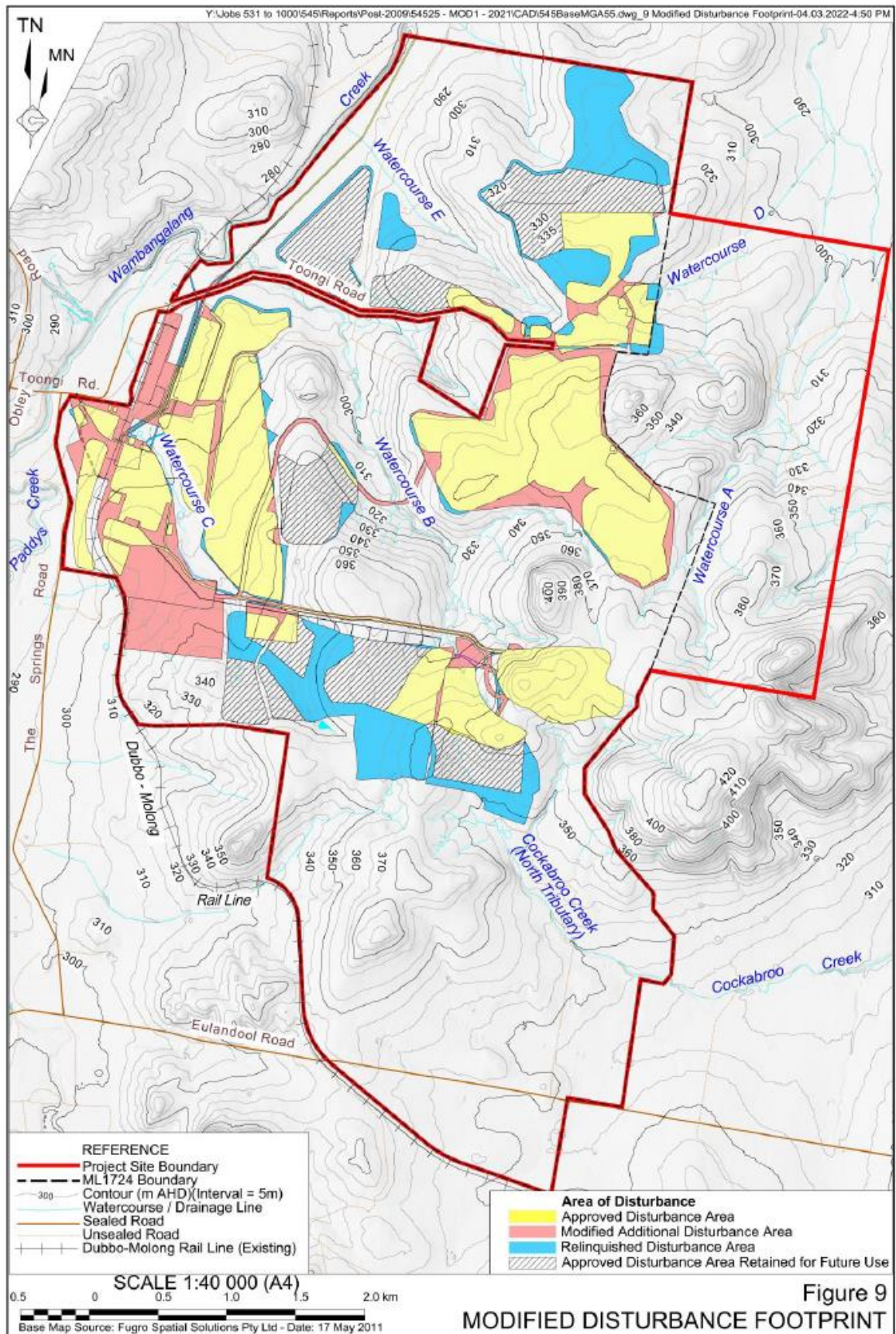


Figure 5 | Proposed Disturbance Footprint (Source: MOD 1 Modification Report, RW Corkery)

3 Statutory context

3.1 Scope of modification

The modification application and Modification Report were lodged under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Department has reviewed the scope of the modification application and considers that:

- there would be no change to the approved mining methods and annual extraction rate;
- the impacts of the development as modified would be similar to the impacts of the approved project; and
- the development would remain substantially the same development as originally approved.

Therefore, the Department is satisfied that the proposed modification is within the scope of section 4.55(2) of the EP&A Act and does not constitute a new development application. Accordingly, the Department considers that the application should be assessed and determined under section 4.55(2) of the EP&A Act rather than requiring a new development application to be lodged

3.2 Consent authority

The Minister for Planning (Minister) is the consent authority for the modification application under Section 4.5(a) of the EP&A Act. However, under the Minister's delegation of the 9 March 2022, the Director, Resource Assessments, may determine the application. This is because ASM has not made any reportable political donations, there were less than 15 unique submissions objecting to the modification, and Dubbo Regional Council (Council) did not object to the proposed modification.

3.3 Mandatory matters for consideration

The Department has considered relevant required matters in accordance with section 4.15(1) of the EP&A Act including the objects of the Act, applicable environmental planning instruments, the likely impacts of the modification application, site suitability and the public interest. The Department has also considered the reasons for the granting of the original application in its assessment of the project and is satisfied that the proposed modification does not affect the decision that was previously made

3.4 Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles for all decision making under the act. They must be considered by the consent authority when determining a development application under the act. The Department has assessed the modified project against the objects found in Section 1.3 of the EP&A Act.

4 Engagement

4.1 Department's engagement

The Department publicly exhibited the Modification Report application on the Department's website from Wednesday 30 March 2022 until Tuesday 19 April 2022.

The exhibition of the modification application was advertised in the *Dubbo Daily Liberal* and previous submitters were notified and invited to make a submission. The modification application was referred to Dubbo Regional Council and relevant State government agencies for advice.

The Department received advice from 7 agencies and from Council and Siding Springs Observatory.

In response to the exhibition, the Department received a total of 5 submissions including 1 from a special interest group (comment) and 4 from members of the general public (1 in support, 1 objection and 2 comments).

A summary of submissions is provided below. Full copies of these submissions are provided in **Appendix A2**.

ASM provided a Submissions Report responding to the issues raised in submissions. ASM's responses are provided in **Appendix A3**.

4.2 Key Issues – Special Interest Group and Community

The public submission in support of the proposed modification noted the long-term employment opportunities and flow on benefits to other industries in the region.

The one public submission in objection raised concerns regarding the proposed extended construction hours and consequent noise impacts.

The two public submissions providing comments raised concerns regarding the relocation of the gas pipeline, timing of construction works, road safety, noise and spray drift. Further clarification of the proposed relocation of the gas pipeline is provided in the Submissions Report, which states that while an alternative gas pipeline route is being explored, a separate application would be required and is not part of the proposed modification.

Community group, Dubbo Environment Group Inc., noted that rare earths are required for the progress of the renewable energy sector, which it supports. It also provided comments on the project and highlighted several areas of concern regarding biodiversity, agriculture, water resources and water supply, rehabilitation, transportation, project life, greenhouse gas emissions, noise, disturbance footprint, Aboriginal heritage, and radiation.

4.3 Summary of Agency Advice

The **Environment Protection Authority** (EPA) requested that the proposed 'chlor-alkali plant' and 'brine concentrator' be included in the 'processing plant and design validation' required by conditions 21 and 22 of Schedule 3 of the consent and included in the consent definition of 'Ore processing facility'.

The EPA provided comments on the proposed extended construction hours and road noise barrier and advised that a variation of the environment protection licence (EPL 20702) would be required, including the addition of 'Chemical Production' to the scheduled activities under the EPL.

The **Resources Regulator** noted that ASM is required to undertake a risk-based approach to achieving the required rehabilitation outcomes and must comply with rehabilitation requirements under the relevant mining authorisations.

The Department's **Biodiversity Conservation and Science Directorate** (BCS) noted that the proposed modification would result in a reduction of impacts to native vegetation communities and an increase to areas classified as cleared, grazed or cropped. BCS confirmed that the proposed modification is unlikely to impact biodiversity values beyond what is already approved and considered that a biodiversity development assessment report (BDAR), and changes to the existing Biodiversity Offset Area is not required.

Heritage NSW noted that no additional Aboriginal heritage sites would be located in close proximity to the disturbance areas proposed. As such, no additional sites would warrant careful management to avoid impacts.

Transport for NSW (TfNSW) initially requested a new Traffic Impact Assessment and clarification of several aspects related to the rail corridor, including proposed excavation works, stormwater management, evidence of consultation with the Rail Infrastructure Manager and landowner's consent. ASM provided additional information in its Submissions Report to address TfNSW comments. In its response, TfNSW advised it did not consider there would be any significant additional impact on the State road network and provided recommendations and conditions regarding the upgrade and use of the Dubbo – Molong railway line.

The **Department's Hazards Team** requested additional information in relation to the operation of the proposed chlor-alkali processing plant including clarification of the closest receivers and storage on site. ASM provided this in its Submissions Report. The Department's Hazards team subsequently advised that while a preliminary hazard analysis has not been prepared, it considered that the proposal is unlikely to result in off-site impact.

The **Department of Regional NSW – Mining, Exploration and Geoscience** (MEG) noted the rationale for the proposed modification and raised no issues.

Dubbo Regional Council (Council) raised no objections and provided comments on the proposed modification. Council noted that the increased onsite water recovery and production of chemicals onsite is beneficial, and that the storage and disposal of salt brine in encapsulation cells and proposed extension of construction hours would be regulated by the EPA.

The Siding Springs Observatory (SSO) did not raise any concerns and noted that while the project is within the 200 km limit specified in the *Dark Sky Guidelines*, it considered that lighting impacts from the proposed modification, particularly during the construction phase, would be unlikely to affect observing conditions.

5 Assessment

The Department has assessed the modification application and supporting information in accordance with the relevant requirements of the EP&A Act, including the matters for consideration, as set out in section 4.15(2) of the EP&A Act.

The Department has assessed the full range of potential impacts of the proposed modification. Key issues relate to traffic and transport is discussed in **Section 5.1** and consideration of other issues is discussed in **Section 5.2**.

5.1 Traffic and Transportation

Transport Options

The development consent permits up to 75 truck movements to or from the mine per day (or up to 16 trucks per hour) and the dispatch of up to 3 trains per week or one loaded train per day. Further, within three years of commencement of the development, ASM is required to undertake a transport options feasibility review to investigate reasonable and feasible options to maximise the use of rail.

ASM has completed the required transport options review, originally presented in the EIS for the project as Option A (rail to Toongi and supplementary road), Option B (rail to Dubbo and road to Toongi) and Option C (road only). ASM has chosen Option A as its preference.

Option A involves the use of rail for transporting reagents directly to the project site, or for selected reagents, to the Fletcher International Exports Terminal north of Dubbo and then by road to the project site. Other materials including smaller quantities of reagents (including limestone) and fuels would be transported to the project site by road.

Option A would require a section of about 27 km of the Dubbo - Molong Rail Line to be upgraded to a Class 1 rail line, which would allow a maximum gross weight of 92 tonnes per wagon. The additional heavy vehicle traffic would be accommodated on the public road network with upgrades to sections of Obley Road and Toongi Road (combined to about 22 km in length).

TfNSW initially requested a further traffic impact assessment, clarification of several aspects of the potential impacts on the state classified road network due to the proposal and additional information regarding the Dubbo – Molong Rail line. ASM provided a response to the TfNSW comments in its Submissions Report. TfNSW subsequently advised that it did not consider there to be significant incremental impacts on the State Road network and provided recommendations and conditions regarding the upgrade and use of the Dubbo – Molong railway line.

While some community submissions raised concerns over the potential rail and road impacts, the proposed modification would not change the previously assessed and approved transport options. Instead, the proposal confirms the implementation of transport Option A, which would involve the least use of public roads for transporting reagents and other materials when compared against the other options assessed in the EIS. As such, the proposed modification would not change the approved road and rail transportation movements or hours of transportation.

Once fully operational, the project would utilise rail as its primary transport option, reducing the need for ongoing road transport on public roads. The Department considers that the use of rail as the project's

primary transport option would provide significant safety improvements to the surrounding road network and road users.

Construction Workforce Traffic

The modification did however estimate that the construction workforce would increase significantly from an average of 300-400 full-time equivalent (FTE) employees up to an average of 625 and an estimated peak of 1,000 FTE employees. The additional workforce would only represent an increase in light vehicle movements during the construction phase of the development.

ASM acknowledges the substantial increase in the construction workforce and has committed to transporting employees to the site via a combination of bus and carpool systems. Given the commitments in the Modification Report to manage traffic impacts, the Department has included a condition to limit vehicle movements transporting the construction workforce to and from the site to no more than 400 per day, which was the basis of the traffic impact assessment in the original EIS, as well as specific monitoring requirements to report on the use of shuttle buses and car pooling and related updates to the traffic management plan conditions.

While the proposed modification would increase the operational workforce from 250, to about 274 FTE employees, the small increase is not expected to significantly increase traffic impacts for the duration of operations at the site.

The potential road noise impacts of the proposed modification are discussed in **Table 2** below.

5.2 Other issues

The Department considers that other issues associated with the proposed modification, such as air quality and greenhouse gas (GHG) emissions, noise and visual impacts, impacts to water resources, biodiversity, rehabilitation, heritage, hazards and social and economic impacts would not significantly increase from the approved project. The Department has summarised its assessment of these matters in **Table 2**.

Table 2 | Other Issues

Issue	Findings	Recommendations
Air Quality	<ul style="list-style-type: none">An air quality impact assessment was undertaken for the proposed modification by Northstar for both construction and operational stages.Northstar predicts that up to eight nearby sensitive receptors may experience minor exceedances of the annual average PM_{2.5} criteria of 8 ug/m³ during both construction and operation of the project. However, it further notes that background particulate matter concentration is already high (approximately 95% or 7.6 ug/m³) of the criterion, without the project contribution. The assumed background concentration is based on monitoring undertaken at Wagga Wagga for the year 2015.The Department notes that this was during drier conditions and that in subsequent years the criterion was exceeded consistently across many monitoring stations in NSW due to	<ul style="list-style-type: none">Air quality criteria updated to include limits for PM_{2.5}

Issue	Findings	Recommendations
	<p>these conditions. With the return of higher rainfall, the Wagga Wagga monitoring station has recorded 6.3 and 5.3 ug/m³ in the last 2 calendar years (2021 and 2022).</p> <ul style="list-style-type: none"> • The incremental increase in annual average PM_{2.5} for these 8 receivers ranged from 0.5 to 1.3 ug/m³ – noting that the highest predicted increment is at receiver R50 which has acquisition rights. • When applying the more recent representative background PM_{2.5} concentrations (ie. from 2021 and 2022), the annual average PM_{2.5} criteria would not be exceeded. • Maximum 24-hour average PM_{2.5} concentrations are predicted to meet the criteria at all receptor locations. • Predicted emissions for PM₁₀, NO₂, SO₂, odour, radon and chlorine were also considered and would not result in any exceedances of the relevant criteria. • Nonetheless, ASM has committed to the implementation of particulate matter controls and mitigation measures, which would be carried out in accordance with the Air Quality and Greenhouse Gas Management Plan (AQMP) required for the project. • Importantly, prior to commissioning the ore processing facility, ASM is already required to prepare a revised air quality impact assessment based on the final design of the processing plant and a validation report to compare the actual emissions with the predictions and criteria, in consultation with the EPA. • The EPA did not raise any concerns in relation to air quality and greenhouse gas impacts. • The Department considers that the air quality impacts of the proposed modification can be managed under existing and updated conditions of consent. • The Department has updated the limits for annual emissions in the conditions to align with contemporary air quality standards, and included contemporary air quality criteria and operating conditions. • The Department has removed the TSP and deposited dust limits from the consent on the basis that dust deposition monitors (with data collected monthly) provide limited opportunity for proactive or reactive management and real time monitoring for particulate matter would be sufficient to manage both health and nuisance dust risks. 	
GHG emissions	<ul style="list-style-type: none"> • The proposed modification provides additional information in relation to greenhouse gas from the processing plant's neutralisation processes. These emissions were not accounted for in the assessment provided with the original EIS. • The ore processing emissions are estimated to account for about 70% of the total Scope 1 emissions for the project. 	<ul style="list-style-type: none"> • Greenhouse gas conditions added

Issue	Findings	Recommendations
	<ul style="list-style-type: none"> By including the ore processing operations in the original greenhouse gas emission calculation for the project and factoring in the 70% portion attributed to ore processing emissions, the approved project's Scope 1 emissions would increase from about 140 Kt CO₂-e/year to about 467 Kt CO₂-e/year. In comparison, the proposed modification would result in Scope 1 emissions of around 324 Kt CO₂-e/year, which is around 31% less than the approved project when factoring in the additional emissions to account for ore processing. In total, the proposed modification would generate about 637 Kt CO₂-e/year of greenhouse gas emissions, an overall increase of about 8% compared to the approved project. Overall, the proposed modification would have contributed about 0.24% of the NSW total greenhouse gas emissions in 2019. ASM has committed to exploring options to further reduce greenhouse gas emissions for the project, including options to offset its carbon emissions through the Australian Government's Emissions Reduction Fund, with its intention to continue to work towards a net zero carbon footprint by 2050. The Department has included conditions requiring ASM to implement best practice management to minimise greenhouse gas emissions and improve energy efficiency. 	
Noise	<ul style="list-style-type: none"> A noise impact assessment was undertaken for the proposed modification by Muller Acoustic Consulting for both construction and operational stages. The proposed modification seeks to extend construction activities for non-linear infrastructure to 24-hours per day, seven days per week. Linear construction activities located outside the project boundary would remain unchanged. Community submissions raised concerns that the increased hours for construction activities would have the potential to increase noise impacts at surrounding residences. The noise assessment concludes that noise associated with construction of non-linear infrastructure would not exceed the relevant criteria and ASM has committed to limit out of standard hours construction activities to ensure compliance with the operational noise limits The original EIS for the project predicted that construction noise would meet project criteria of 35 dBA with attenuation. The proposed modification would require construction of additional infrastructure and plant and ASM commits to applying all reasonable and feasible noise mitigation measures to reduce construction noise emissions as far as possible to achieve the updated project criteria of 40 dBA. The modification retains the existing operational noise mitigation measures under the existing consent, as well as 	<ul style="list-style-type: none"> Update references to <i>Noise Policy for Industry (NPfI)</i>. Updates to hours of operation and noise criteria in line with the NPfI daytime criterion. Conditions updated to allow alternative noise mitigation measures to achieve reduction in road noise near the Zoo.

Issue	Findings	Recommendations
	<p>additional measures including partial enclosure of the crushing and ore handling circuit and screening adjacent to the western side of the primary crusher and ore handling circuit. After applying relevant noise mitigation measures, noise emissions are not predicted to exceed the operational noise criteria at privately owned receivers.</p> <ul style="list-style-type: none"> • The EPA did not raise any concerns in relation to noise but noted that the proposed extended construction hours would require a variation of the EPL. • Noting that the proposed modification seeks to amend the requirement to construct a road noise barrier on land owned by Taronga Western Plains Zoo, the EPA commented that the proposed alternative road noise mitigation methods could be considered subject to further consultation with the EPA and the Zoo. • Given the findings of the noise assessment, the proposed modification is not predicted to significantly increase noise levels above the existing noise limits in the development consent at any sensitive receivers. • The existing conditions require ASM to review and update the Noise Management Plan to reflect any approved modification, in consultation with applicable authorities. 	
Visual & Lighting	<ul style="list-style-type: none"> • The proposed modification would result in the relocation of several components of key infrastructure. • The proposed modification would result in an increase in the height of the solids residue storage facility by about 8.5 m, however it would be relocated to a lower area within the project footprint, and therefore views would be less visible to receivers outside the project area. • The closest residential receiver (R50) is located approximately 225 m from the toe of the approved storage facility. The proposed modification would replace the liquid residue facility with the solid storage facility in this area and would be about 28.5 m higher overall. As a result, R50 is predicted to experience a substantial increase in visual impacts. • However, existing conditions provide R50 with voluntary acquisition rights and ASM has advised it has recently attempted to consult with the property owner. • Other nearby residences would have varying intermittent views of the project, including some key aspects of the changes associated with the proposed modification. However, none are considered to have any additional material visual impact compared to the approved project, due to various moderating factors including shielding, intervening topography, and extended sight distances. • ASM completed a lighting assessment in consultation with the Siding Springs Observatory (SSO) and demonstrated that 	<ul style="list-style-type: none"> • No changes to conditions

Issue	Findings	Recommendations
	<p>lighting associated with the proposed modification would not increase the total lumens emitted to the sky.</p> <ul style="list-style-type: none"> SSO provided comments on the proposal noting that while the project is located within the 200 km limit specified in the NSW Dark Sky Planning Guidelines, it would be unlikely to affect observing conditions above the SSO. ASM has reiterated its original commitments for the approved project to maintain or improve existing screening vegetation and to minimise any upward spill of light and arrange lighting. Existing conditions require ASM to implement additional visual impact mitigation measures upon request from any impacted privately owned residence. Apart from residential receiver R50 who is subject to acquisition rights, the Department considers that the visual impacts of the proposed modification to be minor and that existing conditions remain adequate to manage visual and lighting impacts. 	
Water Resources	<ul style="list-style-type: none"> The approved project would require about 4.05 GL/year of water a year for processing. The proposed modification would almost halve the project's water use bringing it to about 2GL/year, mainly through the use of the proposed brine concentrator. ASM hold sufficient water allocation under the relevant Water Sharing Plans and external water sources to account for the water take required for the project. The Department considers that the proposed modification would provide considerable improvement to overall water efficiency and a substantial reduction in water use for the project's operations. The Department considers the existing conditions are adequate to manage impacts to Water Resources. 	<ul style="list-style-type: none"> No changes to conditions
Disturbance Footprint & Biodiversity	<ul style="list-style-type: none"> The proposed modification would result in a net reduction of about 5.41 ha to the total disturbance area. The proposed modification would result in a net reduction of impacts to native vegetation communities of 10.7 ha. BCS confirmed that the proposed modification would be unlikely to increase the impacts on biodiversity values compared to the approved project. 	<ul style="list-style-type: none"> No changes to conditions
Rehabilitation	<ul style="list-style-type: none"> The proposed modification would not significantly change the rehabilitation objectives, methods or management and monitoring commitments, and would remain generally consistent with the approved conceptual final landform. However, as a result of changes to the location of some of the infrastructure, the conceptual final landform has changed to where areas would be rehabilitated to either biodiversity or agricultural land use outcomes. 	<ul style="list-style-type: none"> Changes to the rehabilitation conditions, to address recent statutory changes to the <i>Mining Act 1992</i> and final landform changes

Issue	Findings	Recommendations
	<ul style="list-style-type: none"> Additional surface infrastructure would be decommissioned, and the waste rock emplacement area would be used to shape the final landform across the site to be consistent with surrounding topography. The Resources Regulator did not raise any concerns with the proposed modification. The Department considers that the proposed modification represents minor and acceptable changes to rehabilitation activities, which would continue to be regulated under the relevant mining authorisation. 	
Heritage	<ul style="list-style-type: none"> The modification report relied on the previous Aboriginal cultural heritage assessment for the original project, which would result in unavoidable impacts to 14 Aboriginal heritage sites and the careful management and protection of 12 sites located within close proximity to the project. The proposed modification would avoid disturbance to one Aboriginal heritage site (PH-IF1), which would have otherwise been impacted. Heritage NSW noted the outcomes of the proposed modification and did not raise any concerns. The existing conditions require ASM to operate in accordance with an approved Heritage Management Plan, which includes a protocol for managing unexpected finds for Aboriginal objects, the monitoring, management and protection of Aboriginal sites within the project footprint (but outside the disturbance area) and ongoing consultation with relevant Aboriginal stakeholders. The Department considers the existing conditions are adequate to manage impacts to Aboriginal heritage. 	<ul style="list-style-type: none"> No changes to conditions
Hazards / incl. radiation	<ul style="list-style-type: none"> The proposed modification would not increase the range or quantities of dangerous goods transported to, stored or used for the project. The proposed chlor-alkali plant would produce reagents on-site, reducing any potential hazards associated with the transport of reagents such as hydrochloric acid and sodium hydroxide. The proposed chlor-alkali plant is located more than 1,100 m away from the closest sensitive receiver (Toongi Hall) and about 1,180 m away from the closest residential sensitive receiver. The Department's hazards team advised it considered the proposed modification is unlikely to result in off-site impact and recommended updating relevant existing conditions. The Department considers that the proposed modification would not increase the risk to public safety or the consequences and likelihood of a hazardous event on site or during materials transport. 	<ul style="list-style-type: none"> No changes to conditions

Issue	Findings	Recommendations
Social	<ul style="list-style-type: none"> While there would be a temporary increase in the construction workforce, the project would be located near the large regional town of Dubbo, with ASM advising it expects the majority (85-90%) of the workforce to be sourced from Dubbo and the local region. Council did not raise any concerns about the increase in construction workforce and impacts on accommodation or services. The increase of an additional 24 FTE positions for the operational workforce is not a significant increase compared to the approved project. 	<ul style="list-style-type: none"> No changes to conditions
Economic	<ul style="list-style-type: none"> The proposed modification would support the range of economic benefits provided by the project including: <ul style="list-style-type: none"> positive economic flow-on effects in the region. approximately \$131 million per year in taxes, royalties, rates and other contributions. improved efficiencies in the recovery of a State significant resource, with minimal additional environmental impacts. 	

6 Evaluation

The Department has assessed the modification application and supporting information in accordance with the relevant requirements of the EP&A Act.

The Department recognises that the proposal would provide substantial benefits, including an optimised project site layout with improved processing efficiencies including increased water recovery for beneficial re-use onsite. The proposal would also result in an overall net reduction in biodiversity impacts.

The Department considers that these benefits could be achieved with minimal environmental impacts subject to appropriate management and mitigation methods. The Department has recommended contemporary and updated conditions to this effect.

The proposed modification would continue to support the NSW Government's vision to become a major long term global supplier and processor of critical minerals and high-tech metals under the *NSW Critical Minerals and High-Tech Metals Strategy (2021)*.

Overall, the Department considers that the proposed modification represents a logical opportunity for improved efficiencies at an existing mining and ore processing operation and would enhance the production of important critical minerals and high-tech metals resources.

On this basis, the Department considers that the proposed modification's benefits outweigh its costs, is in the public interest and should be approved, subject to strict conditions of consent.

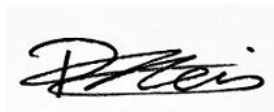
The Department has drafted a recommended instrument of modification (see **Appendix B**) and consolidated version of the development consent, as modified (see **Appendix C**).

7 Determination

It is recommended that the Director, Resource Assessments, as delegate of the Minister for Planning:

- **considers** the findings and recommendations of this report;
- **determines** that the application (SSD 5251 – MOD 1) falls within the scope of section 4.55(2) of the EP&A Act;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant approval the modification application;
- **modify** the consent for the Dubbo Project (SSD 5251); and
- **signs** the attached approval of the modification (**Appendix B**).

Recommended by:



2 March 2023

Philip Nevill

Senior Environmental Assessment Officer
Resource Assessments

The recommendation is **Adopted / Not adopted** by:



2 March 2023

Stephen O'Donoghue

Director
Resource Assessments
as delegate of the Minister for Planning

Appendices

Appendix A – List of Key Documents

A1 – Modification Report: refer to the “Modification Report” folder on the Department’s website at:
<https://www.planningportal.nsw.gov.au/major-projects/projects/mod-1-project-layout-and-processing-changes>

A2 – Submissions: refer to the “Submissions” tab on the Department’s website at:
<https://www.planningportal.nsw.gov.au/major-projects/projects/mod-1-project-layout-and-processing-changes>

A3 – Agency Advice: refer to the “Agency Advice” folder on the Department’s website at:
<https://www.planningportal.nsw.gov.au/major-projects/projects/mod-1-project-layout-and-processing-changes>

A4 – Additional Information: refer to the “Additional Information” folder on the Department’s website at:
<https://www.planningportal.nsw.gov.au/major-projects/projects/mod-1-project-layout-and-processing-changes>

Appendix B – Notice of Modification

Refer to “Determination” folder on the Department’s website at
[MOD 1 – Project Layout and Processing Changes | Major Projects - Department of Planning and Environment \(nsw.gov.au\)](#)

Appendix C – Consolidated Consent

Refer to “Consolidated Consent” folder on the Department’s website at
[MOD 1 – Project Layout and Processing Changes | Major Projects - Department of Planning and Environment \(nsw.gov.au\)](#)