ASSESSMENT REPORT

Snapper Mineral Sands Mine
Modification 5 - Production Increase
(06_0168 MOD 5)

1. BACKGROUND

Cristal Mining Australia Limited (Cristal) owns and operates the Snapper Mineral Sands Mine located approximately 40 kilometres (km) west of Pooncarie and 170 km south of Broken Hill in far western New South Wales (see Figure 1).

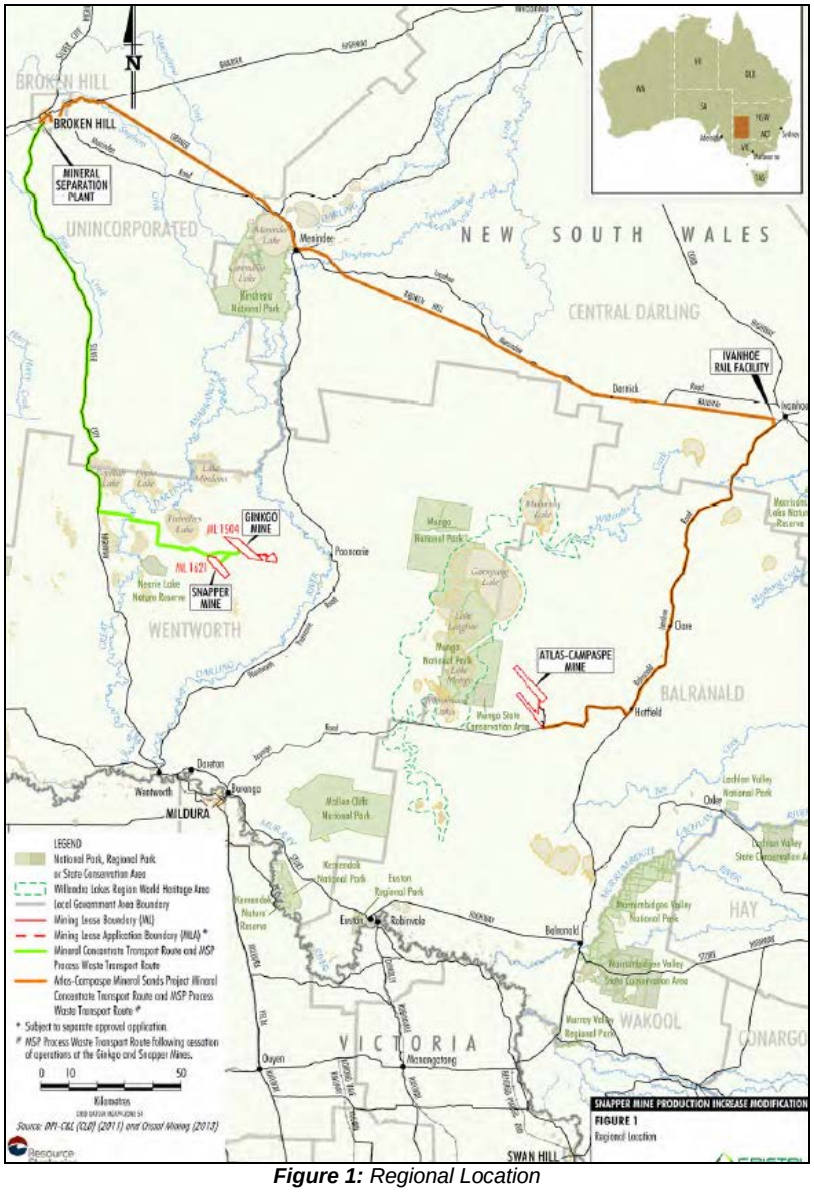

Figure 1: *Regional Location*

Cristal also owns and operates the nearby Ginkgo Mine (approximately 10 km northeast of Snapper) and the Broken Hill Mineral Separation Plant (MSP) which processes the mineral sands concentrate from both the Snapper and Ginkgo mines.

The Snapper mine was granted project approval on 28 August 2007 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The approval allows Cristal to extract 9.2 million tonnes per annum (Mtpa) of mineral sands ore to produce a maximum of 621,000 tonnes per annum of mineral concentrate until 2026.

The Snapper mine commenced operations in late 2010 and has been modified on 5 occasions. The first modification related to modifying the offset area, the second was to allow road transport of ore to the Ginkgo mine for processing, and the final three modifications allowed some minor increases to the extraction, production and transportation rates of the mine.

A summary of the key components of the existing mining operations is provided in Table 1 below.

2. PROPOSED MODIFICATION

On 1 August 2014, Cristal lodged an application and supporting Environmental Assessment (EA) to modify the project approval for the Snapper Mineral Sands Project under Section 75W of the EP&A Act (see Appendix B).

In summary, the proposed modification involves:

- increasing the extraction rate of ore from 9.2 Mtpa to 14 Mtpa;
- changing the sequence of mining (3 options);
- installing an overburden slurry pipeline;
- increasing the total haulage rate of mineral concentrate from the Snapper and Ginkgo mines to the Broken Hill MSP from 780,000 to 975,000 tpa; and
- changing the trucking fleet from 80% AB-triples to 100% AB-triples to facilitate the increase in production.

Importantly, there would be no change to:

- the disturbance boundary of the mine;
- the total volume of ore extracted;
- the overall life of the mine; or
- the number of trucks hauling concentrate to the Broken Hill MSP.

A summary of the approved operations and the proposed modification is provided in Table 1. The key components and general site layout arrangements of the three mining options are shown in Figures 2 to 5.

Table 1: *Summary of Approved Project and Proposed Modification*

Project Component	Approved Snapper Mine	Proposed Modification
Tenement	ML 1621	No change
Life of mine	Approved until July 2026.	No change
Mining	122 Mt over life of mine	No change
Production rate	9.2 Mtpa of ore	Increased to 14 Mtpa of ore
Mining Methods	Single-pass dredge mining for first 6 years (4km), the double-pass mining for remainder of project Secondary (dry) mining using conventional mobile equipment for ore located above groundwater table	One of the following options would be adopted: *Option 1 (approved/existing)* – initial single pass mining followed by double – pass (anti-clockwise) using dredge methods supplemented by dry mining *Option 2* - initial single pass mining followed by double-pass mining (clockwise) using dredge methods supplemented by dry mining *Option 3* – single pass mining using dredge methods supplemented with an additional dredge and dry mining.

Project Component	Approved Snapper Mine	Proposed Modification
		No change to dry mining operations
Mineral concentration	Concentration undertaken in primary gravity concentration unit. HMC produced is then treated at either the Snapper or Ginkgo mines or the MSP. Maximum annual mineral concentrate production rate of 621,000 tpa	No change
Hours of operation	24 hours per day, 7 days per week	No change
Transport to MSP	RMS-approved vehicles (AB triple or double road trains) used to transport concentrate/HMC to the MSP and MSP process waste back to the mines 780,000 tpa of mineral concentrate from Ginkgo and Snapper mines to be transported to MSP	There would be an increase to mineral concentrate transport rate from the Ginkgo and Snapper mines to 975,000 tpa No change to: • the haulage route; • the type of the haulage trucks (i.e. double road trains and AB triples); • vehicle movements (i.e. 37 trips per day); and • existing maintenance arrangements for the haulage route.
Overburden management	Conveyor system and/or haul trucks transport overburden to mine void or overburden emplacement areas	Installation of overburden slurry pipeline
Sand residue and coarse reject management	Placed in the sand residue dam or in the active mining area.	No change
MSP Process waste management	MSP process waste is transported to Ginkgo and Snapper mines for disposal	No change
Water supply	Water supplied via water supply bores and recycled in site where practicable	No change
Surface development area	Total disturbance area of approximately 1,711 hectares (ha)	No change
Rehabilitation and final landform	Progressive rehabilitation undertaken as mining advances	No change to progressive rehabilitation Location of final dredge pond and final void would change depending on final mining sequence
Biodiversity Offsets	Offset area of 5,470 ha	No change
Access	Via the 64 km haulage route (Highway Access Road) to the Silver City Highway	No change
Employment	Operational workforce of approximately 110 employees	No change

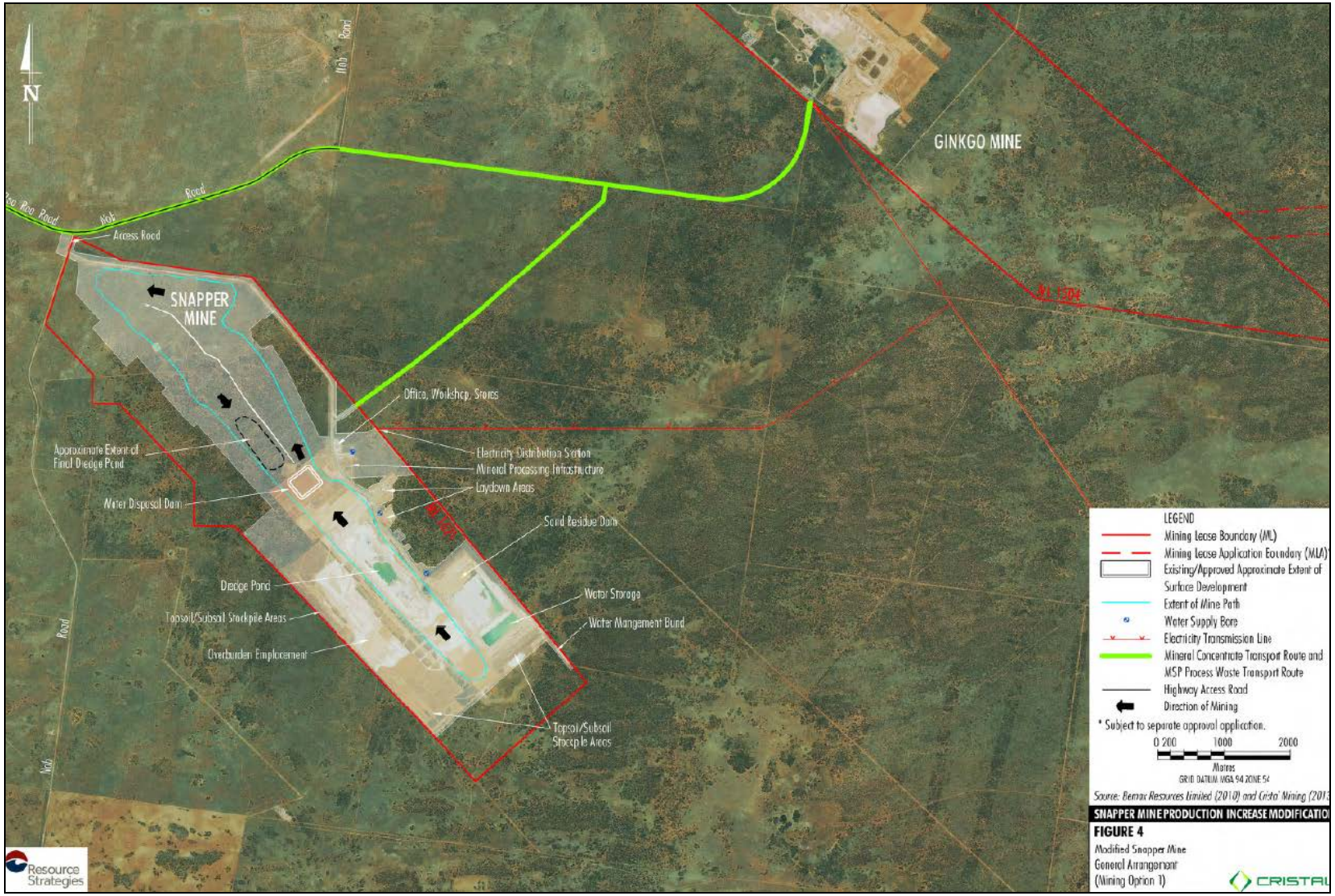

Figure 2: *General Layout – Mining Option 1(Existing)*

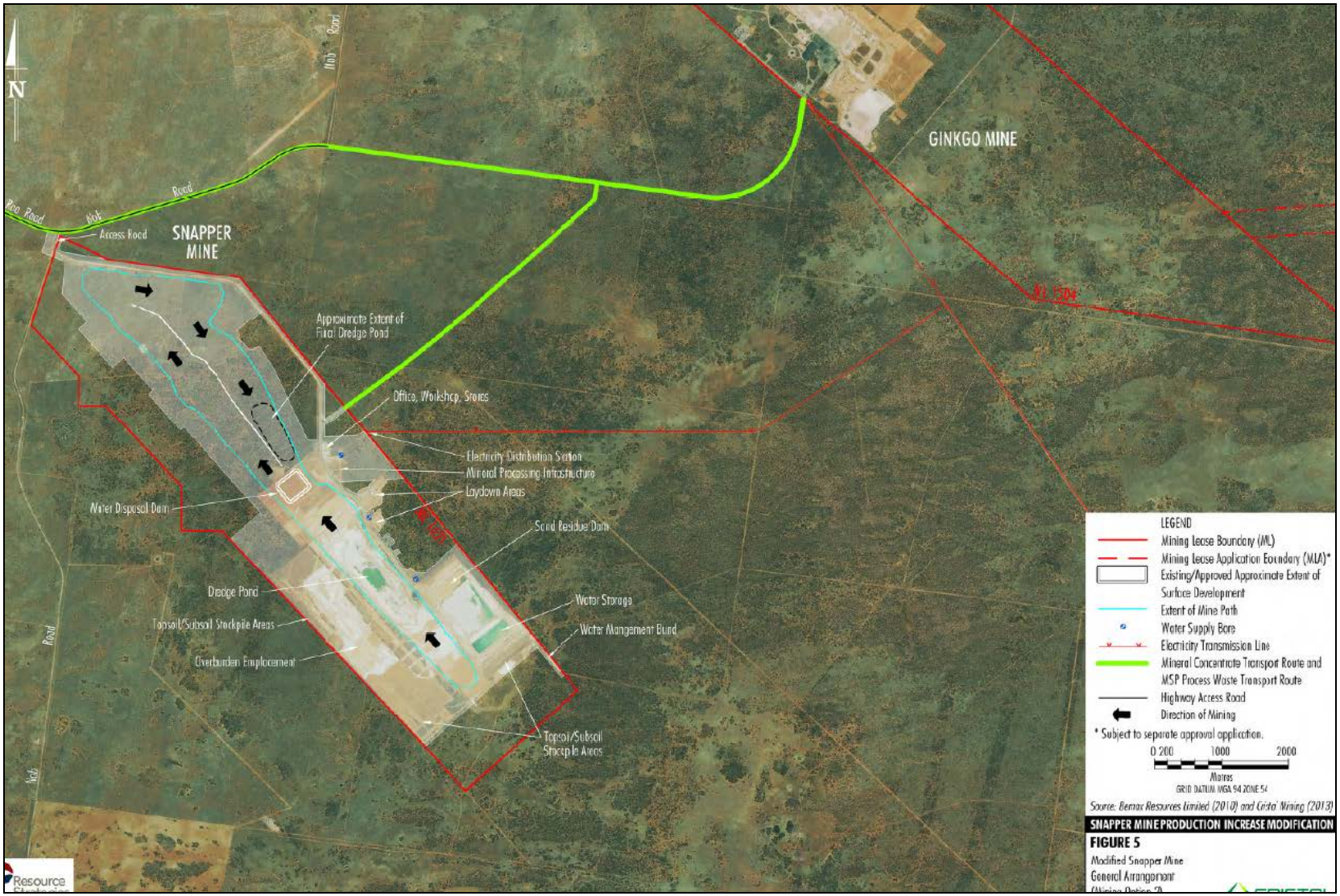

Figure 3: *General Layout – Mining Option 2*

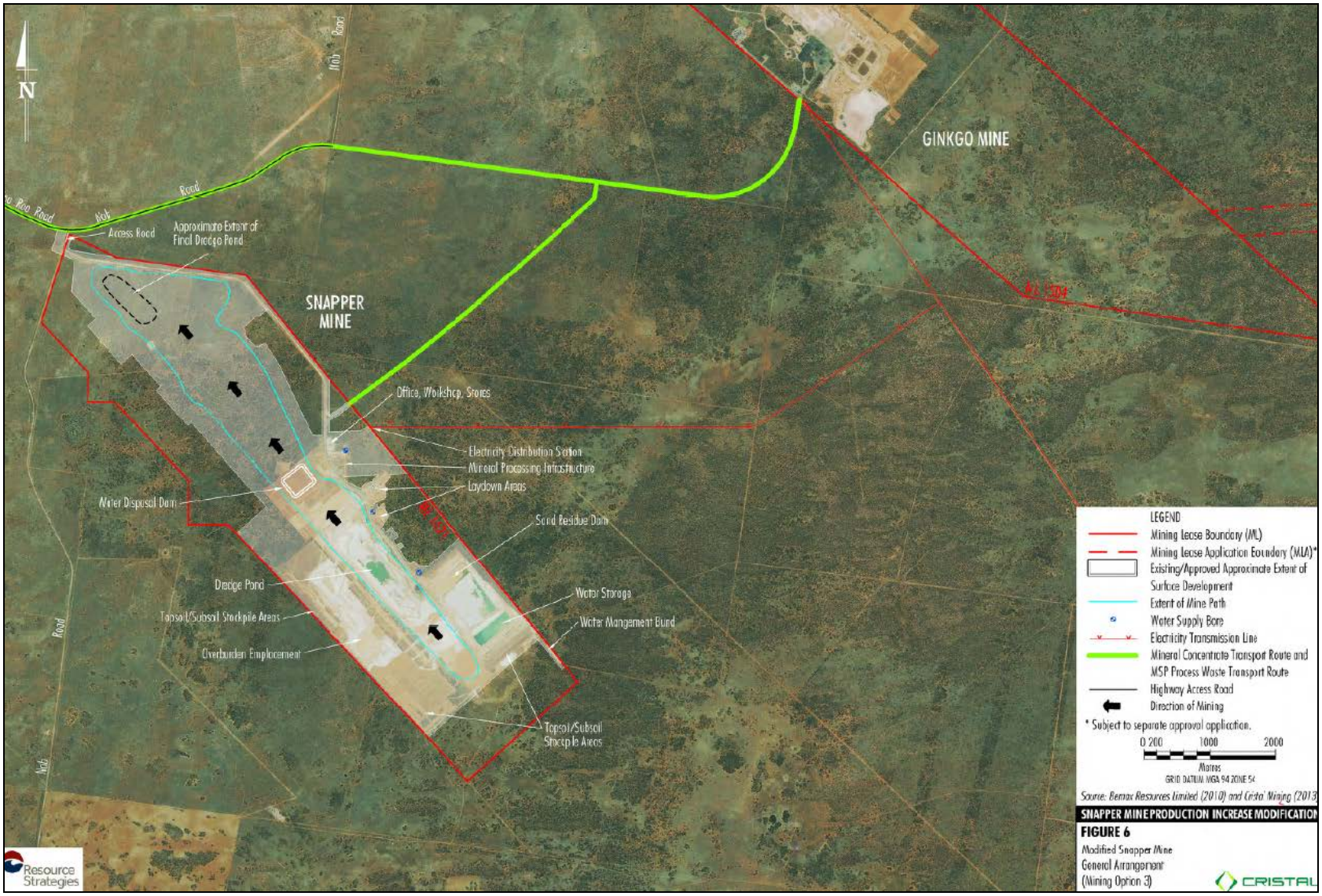

Figure 4: *General Layout – Mining Option 3.*

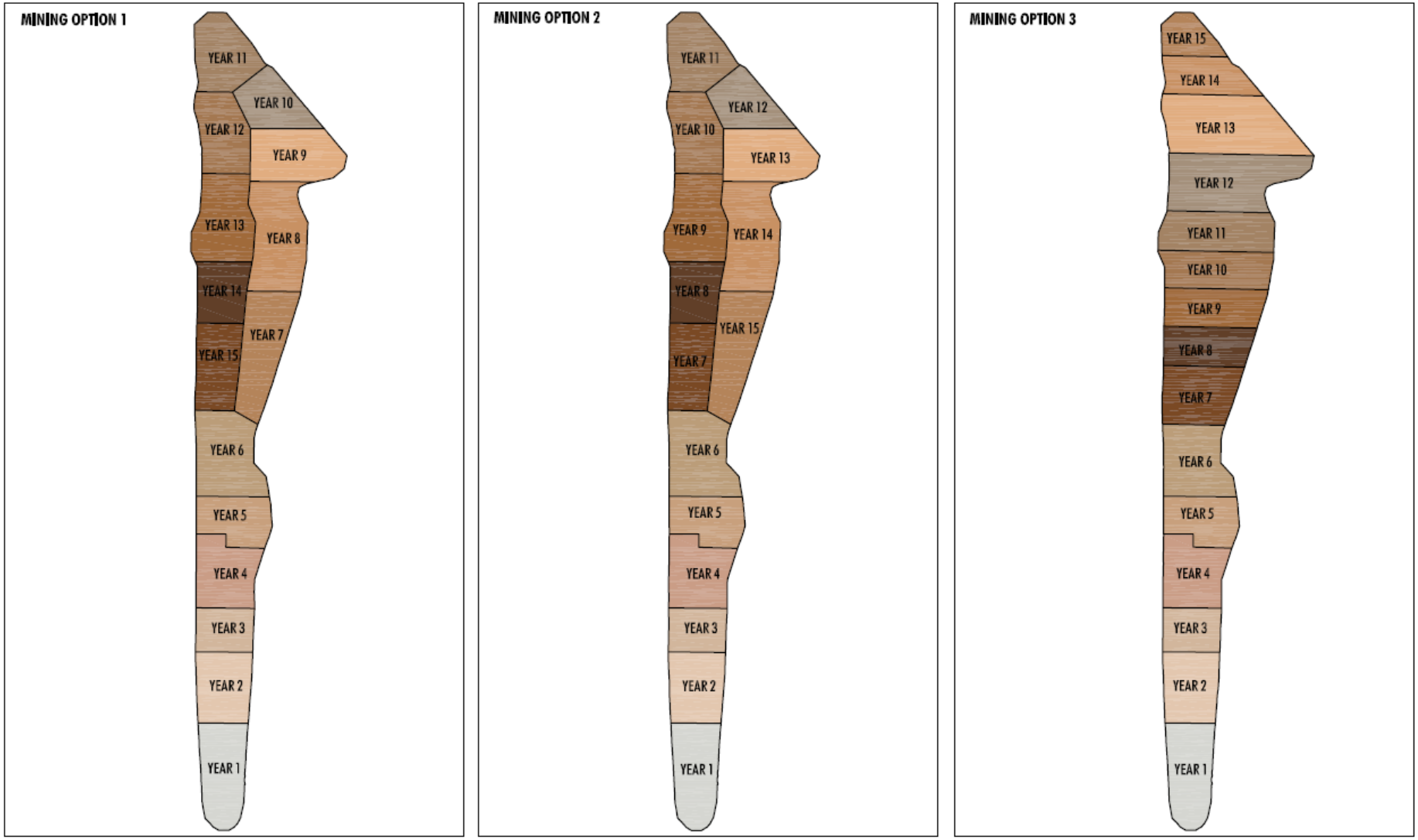

Figure 5: *Mining options*

3. STATUTORY CONTEXT

3.1 Section 75W

Under Schedule 6A of the EP&A Act and Clause 8J(8)(c) of the *Environmental Planning and Assessment Regulation 2000,* Section 75W of the EP&A Act (although repealed) continues to apply to any modification of a development consent which was granted by the Minister under Part 3A of the EP&A Act. As the Snapper Mineral Sands Mine approval (06_0168) was granted under Part 3A of the EP&A Act, the proposed modification is to be determined under Section 75W.

The Department is satisfied that the proposed modification should be characterised as a modification to the approved project as the modification would:

- not change the approved life of the mine, total ore extracted, or the maximum number of trucks transporting concentrate;
- be located within the approved project application area; and
- rely on existing infrastructure at the Snapper and Ginkgo mine sites.

Given these considerations, the Department is satisfied that the modification is within the scope of Section 75W, and may be determined accordingly.

3.2 Approval Authority

Under Section 75W of the Act, the Minister for Planning is the approval authority for the modification application. However, under the Minister's delegation of 14 September 2011, the Planning Assessment Commission (PAC) must determine the application as Wentworth Shire Council has objected to the modification.

3.4 Environmental Planning Instruments

The Department has considered the proposal against the relevant environmental planning instruments (see Appendix A). Based on this consideration, the Department is satisfied that the proposed modification is consistent with the aims and provisions of these instruments.

4. CONSULTATION

After accepting Cristal's application and associated EA (see Appendix B) for the proposed modification, the Department exhibited the documents from 14 August until the 27 August 2014.

The Department made the EA publicly available:

- on its website,
- at the Department's Information Centre;
- at the offices of Wentworth Shire Council; and
- at the offices of the Nature Conservation Council.

The exhibition was advertised in the Broken Hill Barrier Truth and the Mildura Sunraysia Daily, and relevant State government authorities and Wentworth Shire Council were notified of the exhibition by email.

The Department received a total of 6 submissions, all from public authorities. No community or special interest group submissions were received.

A full copy of all agency submissions is attached in Appendix C.

On 18 September 2014, Cristal submitted a detailed Response to Submissions (RTS) to the issues raised in submissions (see Appendix D), which was made publicly available on the Department's website.

With the exception of Wentworth Shire Council, none of the public authorities objected to the modification. However, most of the authorities raised concerns and/or made recommendations in relation to a range of matters relevant to their respective administrative and regulatory responsibilities.

The **Environment Protection Authority** (EPA) did not raise any concerns, but made a number of recommendations in regard to overburden emplacement and waste management.

The **Division of Resources and Energy** (DRE), within the Department of Trade and Investment, did not object to the proposed modification, but requested additional information regarding the final landform. Cristal provided further information in the RTS to address DRE's request.

The **Office of Environment and Heritage** (OEH) recommended a number of conditions be imposed, including a requirement to notify OEH should clearing of vegetation be proposed outside late summer/autumn, and ensuring that an adequate depth of cover is placed over the slurried overburden to minimise any potential salinity impacts on vegetation planted during rehabilitation.

The **Roads and Maritime Services** (RMS) did not object to the proposed modification, but recommended that the proposed Road Safety Audit include a geometric and pavement condition assessment of the intersection of the haul route and the Silver City Highway. RMS also recommended that Cristal be required to pay any costs associated with upgrading the intersection. The Department has incorporated these recommendations in the conditions.

The **NSW Office of Water** (NOW) did not object to the modification and considered that the groundwater impacts are within the acceptable impacts as defined by the *NSW Aquifer Interference Policy 2012.* NOW recommended that the Rehabilitation Management Plan be revised due to the potential changed location of the final dredge pond. The Department notes that the current approval does not include a requirement to prepare a Rehabilitation Management Plan as at the time this was addressed through the Mining Operations Plan under the Mining Lease for the site. However, Department has recommended that Cristal be required to prepare such a Rehabilitation Management Plan for both the Ginkgo and Snapper mines.

Wentworth Shire Council (Council) objected to the proposed modification raising concerns similar to those it raised in regard to the recent Crayfish modification at the Gingko mine. These concerns relate primarily to concerns about the planning process, and the road maintenance provisions under the Gingko consent. In particular, Council is concerned about:

- the number of modifications to the Snapper and Ginkgo projects;
- the need to integrate all Cristal mining operations in the region into a consolidated state significant development approval;
- the lack of detailed assessment for the 3 proposed mining sequences and a failure to identify the preferred option;
- failure to comply with the Road Maintenance Agreement and associated construction certificates issued by Council for the haulage route under the Ginkgo consent; and
- the need to pay road maintenance contributions for local roads used by mine-related vehicles.

The Department considers that the road and traffic issues listed above relate to the Ginkgo Modification 9 (Crayfish Extension), and do not specifically relate to the proposed Snapper modification. This is because the road maintenance provisions for the haulage route and ancillary local roads are incorporated in the Gingko consent, and the proposed Snapper modification would not have any material impacts on the local road network as it would not result in any changes to the current truck movements on the haulage route or the number of employees working at the mine.

Accordingly, the Department has undertaken a detailed assessment of transport issues as part of the Crayfish assessment, which has been referred concurrently with this application to the PAC for determination. The Department has also mirrored relevant road maintenance conditions for the Crayfish modification in its recommended conditions for the Snapper modification to provide a consistent approach to these matters across both mines.

The Department acknowledges that there have been a number of modifications to both mines. However, each of these applications has been assessed on their merits, and Council has not objected to any of these modifications apart from the recent Crayfish modification.

The Department also acknowledges that there may be some merit in integrating Cristal's operations in a single state significant development approval. However, unless an application to this effect is submitted, the Department is not in a position to require Cristal to do so. Notwithstanding, the changes recommended by the Department to both the Ginkgo and Snapper conditions in the modification applications currently being considered by the PAC would significantly improve and simplify the regulatory arrangements across both mines.

5. ASSESSMENT

In its assessment of the merits of the modification application, the Department has considered:

- the environmental assessment (EA) for the project;
- submissions from government agencies, including Council;
- Cristal's RTS;
- the existing project approval;
- the provisions of relevant EPIs, policies and guidelines; and
- relevant provisions of the EP&A Act.

The following is a summary of the findings of this assessment.

5.1 Traffic and Transport

Existing situation

The main arterial road in the vicinity of the Snapper mine is the Silver City Highway which is a north-south sealed road connecting Wentworth and Broken Hill (see Figure 6). The other key north-south arterial road is the State Road 68 (known as Wentworth-Pooncarie Road) located to the east of Snapper mine that connects Wentworth, Pooncarie and Menindee. Both these roads are State roads and managed by RMS.

Local, unsealed roads provide east-west connections between these two arterial roads and include Roo Roo Road, Nob Road and Polia Road. Wentworth Shire Council is the road authority for these local roads.

Under the existing development consent, Cristal transports mineral concentrate to the MSP in Broken Hill and process waste from the MSP back to the mine via the approved haulage route.

Between the mine and the intersection with the Silver City Highway, the haulage route comprises 64 km of private and public unsealed roads, including sections of Roo Roo Road, Nob Road. Employees currently use the haulage route as well as the surrounding local road network when travelling to and from the mine site. The majority of employees reside in Broken Hill or Mildura with a smaller proportion residing in Wentworth and Pooncarie.

Traffic and transport at the Ginkgo Mine is currently managed in accordance with the following plans that apply to the Ginkgo, Snapper and MSP operations:

- Transport Management Plan;
- Transport of Hazardous Materials Plan; and
- Traffic Code of Conduct.

Traffic Generation

Under the existing project approval, the mine transports mineral concentrate to the MSP in RMS approved vehicles (AB-triple or double road trains) via the approved haulage route. The mine (together with the Gingko mine) is currently able to transport a total of 780,000 tpa of mineral concentrate to the MSP which equates to 37 trips per day (or 74 movements).

The MSP is also currently approved to transport 300,000 tpa of MSP process waste back to the Snapper and Ginkgo mines for disposal. The MSP process waste is transported in the empty vehicles returning to the Snapper and Ginkgo mines.

The proposed modification is seeking an increase in the amount of mineral concentrate allowed to be transported to the MSP from the Snapper and Ginkgo mines from 780,000 tpa to 975,000 tpa.

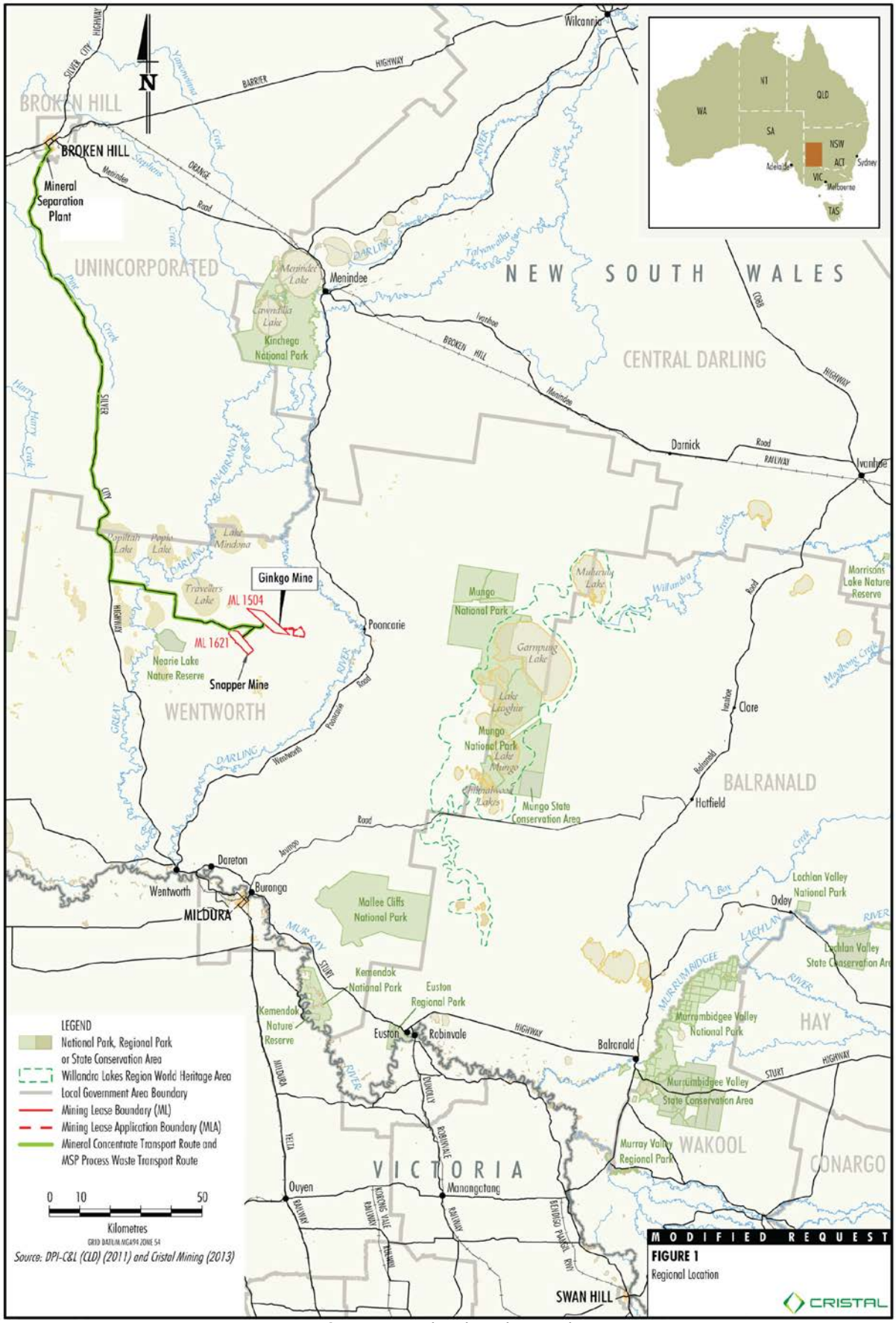

Figure 6: *Regional road network*

To accommodate this increase, Cristal proposes to increase the capacity of the existing vehicle fleet by utilising larger capacity vehicles rather than increase the number of vehicle movements. Currently, Cristal's transport fleet comprises 80% AB-triple vehicles and 20% double road trains, and Cristal is proposing to use 100% AB-triple vehicles. This would allow 975,000 tpa of mineral concentrate to be transported without having to increase the approved 37 truck trips a day. In practice, the proposed changes would result in 7 of the existing heavy vehicle trips being AB-triples instead of double road trains.

Whilst the number of haulage vehicles is not proposed to increase, there would be one additional delivery vehicle to the site per day to accommodate the increased production level. The deliveries are associated with consumables to the site such as diesel, spare parts and accommodation camp supplies. The Department considers that the additional delivery per day to the Snapper mine would have a negligible impact on the existing road network.

In regards to light vehicles accessing the site, as the proposed modification is not proposing to increase the employee numbers, there are not predicted to be any additional light vehicle movements compared to the already approved traffic volumes.

Road Safety and Maintenance

In regards to road safety, the Department notes that there would be no change to the types of vehicles transporting concentrate to Broken Hill, and that AB-triples are already approved by the RMS for use on the haulage route. Consequently, the Department considers that the proposed modification is unlikely to result in any additional road safety issues.

Nonetheless, Cristal has committed to commissioning a Road Safety Audit of the haulage route between the mine and Silver City Highway. The Department supports this commitment and has recommended that the audit include an assessment of the geometry and condition of the intersection of the haulage route with the Silver City Highway in accordance with RMS's recommendations. Once the audit has been completed and submitted to the Secretary, Cristal would be required to implement the key recommendations of the audit to the satisfaction of the relevant road authority (i.e. either Council or the RMS) to ensure the road complies with relevant road safety requirements.

In 2005, Cristal constructed and commissioned the haulage route to the Silver City Highway, and has been maintaining both the public and private sections of the road since that time. The Department considers that this obligation should continue and has recommended a condition accordingly.

To ensure a consistent approach to the maintenance of the haulage route, the Department has also recommended similar obligations in the conditions proposed for the Crayfish modification.

With the implementation of the recommended conditions, the Department is satisfied that the proposed modification to the transport arrangements for the Snapper mine would not result in any material impacts on the safety and performance of the local and regional road network. The Department is also satisfied that there would be no additional impost on Council (or its rate payers) for maintenance of the local road network.

5.2 Water Resources

Introduction

A number of hydrogeological assessments have been previously undertaken for the Snapper and Ginkgo mines. The EA includes a specialist hydrogeological review undertaken by GEO-ENG in July 2014. Both the Department and NOW are satisfied that the hydrogeological review provides an adequate basis for the assessment of impacts of the proposed modification.

Water resources at the Snapper are currently managed in accordance with the approved Water Management Plan for the mine, and all groundwater extracted on the site is part of *the Western Murray Porous Rock Water Source*, which is defined in the Water Sharing Plan for the *NSW Murray Darling Basin Porous Rock Groundwater Sources 2011* under the *Water Management Act 2000*.

Water Supply and Licensing

Mining at Snapper primarily uses a re-circulating water system, where more than 90% of the water used to pump ore from the mining face is allowed to infiltrate back into the dredge pond/shallow groundwater aquifer from the deposited sand residue dams.

Water for the mining operations is provided by groundwater bores located at the mine at up to 270 litres per second (L/s). The water is extracted from the Lower Onley Formation (lower aquifer), which is isolated beneath the shallow aquifer on the site.

Cristal currently holds 21,442 units (each unit is equivalent to one ML) of the *Western Murray Porous Rock Water Source*, and has an approved extraction rate of 270L/s (or 8,515 ML/yr). In 2013, the Snapper mine used an average of 130L/s of water, and the proposed modification would not increase water demand on the site significantly (i.e. the extraction rate would remain well below the approved maximum rate).

Consequently, the Department is satisfied that Cristal's existing licence allocations would be more than adequate to cater for the marginal increase in water demand associated with the proposed modification.

Impacts on Water Resources

The hydrogeological review assessed each of the proposed 3 mining options as well as the proposed overburden slurry pipeline.

The review indicates that due to the proposed change in mining operations, the proposed modification is likely to result in some minor changes to the predicted groundwater drawdown effects in both the lower (Lower Olney Formation) and upper (Loxton Parilla Sands) aquifers. However, the assessment indicates there would not be any measurable impacts on groundwater users or groundwater dependent ecosystems in the vicinity of the site. This is because the groundwater in the area is saline, and the nearest bore (Greenvale Well) is 16 km northeast of the site.

The findings of the hydrogeological review have been accepted by NOW, which has confirmed that the impacts of the proposed modification are within the Level 1 "Minimal Impact Considerations" under the *NSW Aquifer Interference Policy 2012*.

Cristal currently manages surface water on site in accordance with an approved Water Management Plan, which requires diversion of clean water around the disturbance footprint of the mine, and capture, storage and re-use of runoff from disturbed areas.

Overall, the Department is satisfied that the existing conditions of approval adequately provide for the management and mitigation of potential water impacts. However, Cristal would be required to review and update the relevant management plans, including the Water Management Plan, to address any necessary changes resulting from the proposed modification.

5.3 Rehabilitation

The existing rehabilitation strategy for the Snapper mine would primarily remain unchanged with the exception of:

- the location of the final void associated with the final dredge pond (see Figure 7); and
- the management of overburden should the slurry pipeline be utilised.

Option 1 below reflects the currently approved staging and would not result in any changes to the approved operations.

Should Option 2 proceed, the final dredge pond would be located immediately to the northeast of the approved location. The final dredge pond for option 3 would be located in the northern extent of the mine path. The location for the final depression for the water disposal dam would remain the same for all of the options.

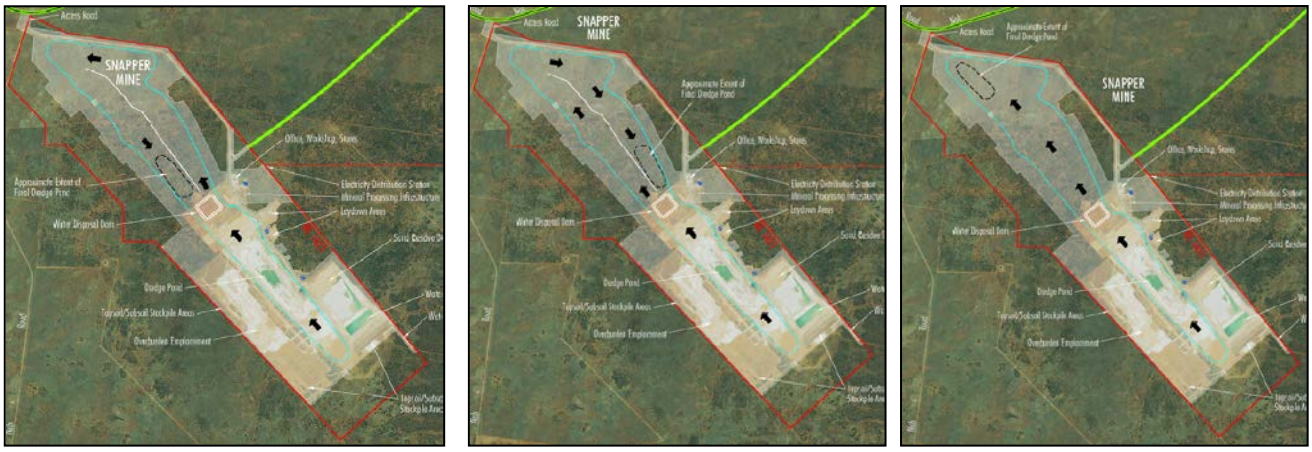

Figure 7: *Mining options 1 (existing), 2 and 3*

The proposed overburden slurry pipeline (if adopted) would most likely be used in combination with the existing/approved truck and shovel methods of transporting overburden to the area behind the advancing dredge pond (see Figure 8 below).

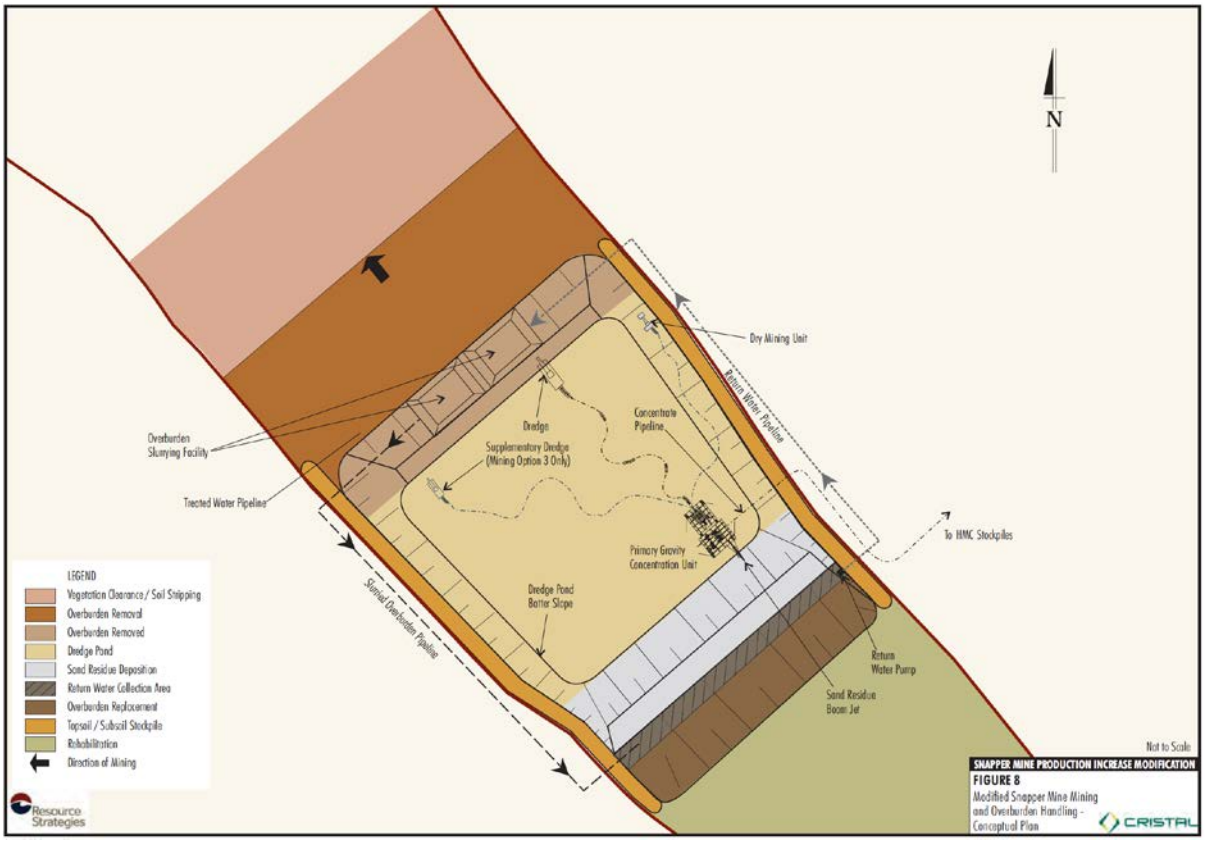

Figure 8: *Conceptual Mining Method*

The introduction of the slurry pipeline system to transport overburden creates the potential for saline water to migrate upwards via capillary action to the lower sections of dry overburden layers that would be emplaced over the top of the slurried overburden.

To manage this, Cristal is proposing to ensure that the slurried overburden is dried out before placement of non-slurried overburden over the top. With these measures in place, capillary rise of saline water is expected to be minimal, and Cristal would cover slurried material with at least 3m of non-slurried material to reduce any risks of salinity effects on revegetation.

Both OEH and the EPA support the approach of providing at least 3m of overburden over the slurried overburden to reduce the potential impacts of salinity on the final landform and rehabilitation.

Both agencies have recommended that areas subject to slurried overburden emplacement are covered with:

- 1m of non-slurried overburden on the initial slurried sand storage dam; and
- 3m of non-slurried overburden for all other areas.

The Department supports this recommendation and has included it as a condition of approval.

In terms of the various options that may be adopted for the sequence of mining, the Department is satisfied that it would not result in any material differences in the potential environmental impacts of the approved operations, the rehabilitation of the mine, or the final landform. Cristal would continue to progressively rehabilitate the site as mining advances with the disturbance area re-vegetated with native vegetation consistent with surrounding species.

Similarly, consistent with the approved project, the final void would be partially backfilled with overburden material. The only change would be the final location of the void. However, from a future land use planning perspective, the Department does not believe that there is any reason not to provide for the requested flexibility in the project approval. Further, DRE has advised that it has no objections to the proposed changes to the final landform and rehabilitation of the site.

However, to ensure that the proper planning occurs on the site, the Department has updated the project approval to strengthen the requirements in regard to the rehabilitation of the site, and to mirror the obligations recommended for the recent Crayfish modification to the nearby Ginkgo mine. In particular, the Department has recommended that Cristal be required to:

- adhere to rehabilitation objectives, including a requirement to minimise the size and depth of the final void;
- prepare and implement a Rehabilitation Management Plan for the mine to detail how the rehabilitation objectives would be achieved; and
- progressively rehabilitate the site as mining progresses.

Cristal would also be required to prepare a detailed Mining Operations Plan, and lodge a substantial rehabilitation bond with DRE under the *Mining Act 1992.*

5.4 Other Impacts

Other impacts are not predicted to be significant, and the Department is satisfied that they can be controlled, mitigated or managed through appropriate conditions of approval. These impacts are addressed in Table 2 below.

Table 2: *Other Impacts*

Aspect	Issue/Consideration	Management/Mitigation
Noise	• The nearest residence (Manila homestead) is located 4 km north of the site. • The estimated noise levels would comply with the relevant criteria at this residence in both calm and adverse meteorological conditions. • The cumulative noise impacts associated with both Snapper and Ginkgo mines would also comply with the relevant criteria at the nearest sensitive receivers. • Road traffic noise levels are not expected to increase as a result of this modification. • No additional noise monitoring locations are considered to be necessary.	• The Department is satisfied that the noise mitigation and management measures currently in place would continue to ensure that impacts are acceptable.

Air Quality	• The proposed modification would not have a significant impact on local air quality as there would be no change to the mining methods used, with the introduction of the overburden slurry pipeline likely to marginally reduce dust emissions. • Updates to the estimated emissions based on contemporary emission factors and more recent air quality data indicate that the impacts of the mine would be less than those predicted in the original EA, and would comfortably comply with the EPA's air quality impact criteria for PM_{10}, Total Suspended Particulate and dust deposition. • In regard to the use of a greater proportion of AB-triple trucks, the assessment estimates there would be an increase in dust emissions from the haulage route of around 3%. Given that the nearest receiver is 1 km from the road, any change to dust emissions from the haulage route at receivers is unlikely to be measurable. • In regard to greenhouse gases, during some years emissions may increase. However, the overall total greenhouse gas emissions over the life of the mine would remain the same. • Cristal proposes to continue to implement a range of management measures to reduce air quality emissions, including: o regular watering of roads and exposed areas to reduce wheel-generated dust; o ensuring stockpiled material would be vegetated or kept in appropriate enclosures to prevent wind erosion; o participation in the Energy Efficiency Opportunities program to minimise greenhouse gas emissions; and o updating the existing Snapper Air Quality Management Plan to incorporate the proposed modification.	• The Department is satisfied that the proposed modification would not result in any measurable air quality impacts at any receivers. • In addition, the Department is satisfied that the existing conditions of approval adequately provide for the ongoing management and mitigation of potential air quality impacts.
Biodiversity	• There would be no additional surface disturbance or vegetation clearing associated with the proposed modification. • The existing Flora and Fauna Management Plan has a measure that requires Cristal to notify OEH if clearing was undertaken outside of the late summer/autumn period. • However, OEH recommended that the notification procedure be included as a specific condition of approval.	• The Department has recommended that conditions of approval regarding the Vegetation Clearance Protocol be updated to specifically require Cristal to notify OEH if clearing is proposed outside the preferred late summer/autumn period.
Economic	• An economic assessment was prepared for the Snapper mine in 2007 and concluded that the project would generate significant benefits for the regional economy. • The modification would result in an increase to the mine's existing contribution to the regional economy through: - additional capital investment of approximately $7 million - continued employment of 110 employees; - generating royalties to the State government; and - various flow-on benefits to the regional economy associated with the additional capital investment and direct and indirect outputs.	• The Department is satisfied that the modification would not result in any significant impacts in the wider community and would continue to be a major contributor to the regional economy.

6 RECOMMENDED CONDITIONS

The Department has recommended conditions of approval for the proposed modification (see Appendix E). These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- ensure standards and performance measures for acceptable environmental performance,
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The conditions recommended by government agencies and Council have been incorporated where appropriate. Cristal has reviewed and accepted the Department's recommended conditions.

The Department has also prepared a consolidated set of conditions for the PAC (see Appendix F).

7 CONCLUSION

The Department has assessed the EA, submissions made by government agencies and Wentworth Shire Council, and Cristal's response to these submissions, in accordance with the relevant requirements of the EP&A Act.

The Department considers the proposed modification for the increase in production as a reasonable and logical modification to the existing operations that supports the ongoing economic viability of the mine and all the associated employment and broader economic benefits for the region.

The Department is satisfied that these benefits can be realised without any significant increase in the environmental impacts of the mine. In this regard, the proposed modification would not result in any additional surface disturbance and would not increase the maximum number of vehicle movements on the haulage route.

To ensure Cristal continues to maintain the haulage route, the Department has recommended a condition that requires Cristal to undertake a road safety audit. Cristal would be required to implement any recommendations of the audit to the satisfaction of the relevant road authority. Cristal would also be required to continue maintaining the haulage route for the life of the project.

These conditions mirror those in the Department has recommended in regard to the Crayfish modification to ensure a consistent approach to road maintenance across both the Ginkgo and Snapper mines. The Department has also incorporated a range of contemporary conditions in regard to the rehabilitation of the site to ensure a consistent regulatory approach to rehabilitation across both mines.

On balance, the Department considers that the modification's benefits sufficiently outweigh its residual costs, and that it is in the public interest and should be approved, subject to stringent conditions.

8 RECOMMENDATION

It is RECOMMENDED that the Planning Assessment Commission as delegate of the Minister for Planning:

- **consider** the findings and recommendations of this report;
- **determine** that the proposed modification is within the scope of section 75W of the EP&A Act;
- **approve** the modification application, subject to conditions, under section 75W of the EP&A Act; and
- **sign** the attached notice of modification (Appendix E).

Mike Young 12.2.15
Manager
Mining Projects

13/2/15
David Kitto
Executive Director
Resource Assessments

APPENDIX A – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

SEPP No. 33 – Hazardous and Offensive Development
The Department is satisfied that the proposed operations would not be significantly different to the existing approved project in terms of mining operations and would not introduce new hazardous materials or change the transport route for the MSP process waste. Operations would continue to be undertaken in accordance the approved Transport of Hazardous Materials Plan. The Department is satisfied the modification is generally consistent with the aims, objectives and requirements of SEPP 33.

SEPP No. 55 – Remediation of Land
The proposed modification does not extend the disturbance footprint of the approved mine. The Department is satisfied that het proposed modification does not pose a significant risk of contamination and is generally consistent with the aims, objectives and provisions of SEPP 55.

SEPP (Infrastructure) 2007
SEPP (Infrastructure) 2007 requires the consent authority to notify relevant public authorities about projects that may affect public infrastructure or public land. The Department notified Wentworth Shire Council and the RMS given the use of public roads by the project.

RMS did not object to the project however provided a number of recommended conditions. Council objected to the proposed modification based on a number of issues, with the key issues regarding the maintenance of the local road network. The recommendations made by Council have been considered and incorporated into the revised project approval where appropriate, including obligations for Cristal to maintain the haulage route from the mine to the Silver City Highway. This satisfies the requirements of *SEPP (Infrastructure) 2007*.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007
Part 3 of the Mining SEPP lists a number of matters that a consent authority must consider before determining an application for approval for development for the purposes of mining including:

- compatibility of the proposal with other land uses;
- natural resource management and environmental management;
- resource recovery;
- transport; and
- rehabilitation.

The Department has considered all of these matters in its assessment report. Based on this assessment, the Department is satisfied that the proposal is able to be managed in a manner that is generally consistent with the aims, objectives and provisions of the Mining SEPP.

Wentworth Local Environmental Plan 2011
The project is located within the Wentworth LGA. The planning provisions are contained within the Wentworth LEP 2011. Under the LEP, the project is zoned RU1 – Primary Production with open cut mining permissible with consent. The Department is satisfied that the proposed modification is generally consistent with the aims and objectives of the LEP.

APPENDIX B – ENVIRONMENTAL ASSESSMENT

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6643

APPENDIX C – COPY OF SUBMISSIONS

APPENDIX D – RESPONSE TO SUBMISSIONS

APPENDIX E – NOTICE OF MODIFICATION

APPENDIX F – DRAFT CONSOLIDATED APPROVAL