



**ASSESSMENT REPORT
PROPOSED MODIFICATION
TO DEVELOPMENT CONSENTS AT THE
MOUNT OWEN AND RAVENSWORTH EAST COAL MINES**

1. SUMMARY

Xstrata Coal Australia Pty Ltd, through its subsidiaries Hunter Valley Coal Corporation (HVCC) and Ravensworth Operations, is seeking to modify the development consents for the Mount Owen and Ravensworth East Mines to allow:

- tailings from the Mount Owen Mine to be pumped via pipeline into voids within the previously approved Ravensworth East Mine mining area; and
- establishment and operation of a ROM coal receival facility and associated works within the Ravensworth East Mine mining area to enable coal from Ravensworth East Mine to be transferred via the existing Mt Owen Mine coal preparation and rail transport system.

These mines operate under previously approved Ministerial consents, and the proposal requires modifications to these consents under Section 96 (1A) of the Environmental Planning & Assessment (EP&A) Act 1979.

The Department has assessed the Statement of Environmental Effects (SEE) and submissions on the proposal, and recommends that the Minister approve the proposed modifications subject to conditions.

2. CURRENT SITUATION

The Mount Owen and Ravensworth East mines share a common boundary, and are located about 26 km north-west of Singleton (see Figure 1) within the Singleton Local Government Area.

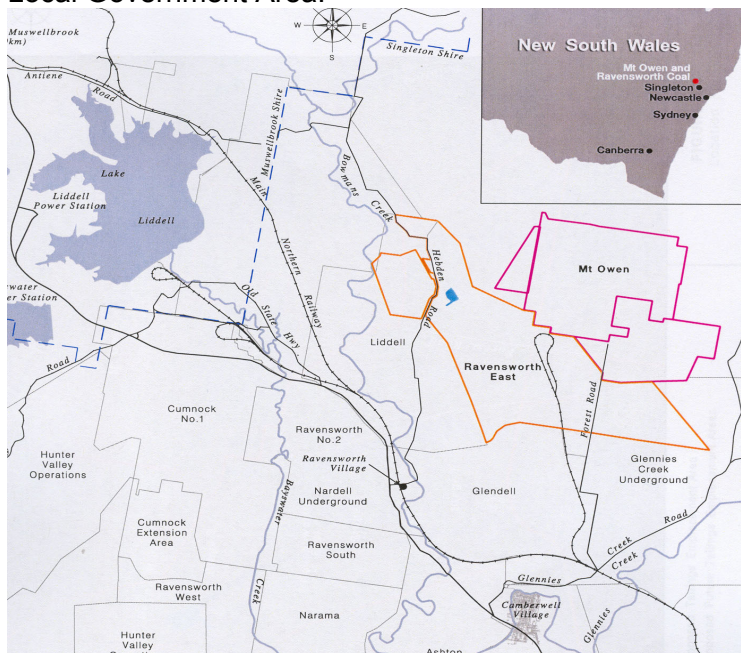


Figure 1: Regional Context

Ministerial Approvals

The Minister approved the:

- Development Application (DA) for the Mount Owen Mine, following a Commission of Inquiry, on 22 July 1994, which has been subsequently modified on 27 July 1996, 27 September 1999, 7 July 2000 and 16 May 2003;
- DA for the Ravensworth East Mine on 2 July 2000, which has been subsequently modified on 24 July 2000 and 16 May 2003.

Mount Owen Mine

The HVCC currently has approval to extract and process 8 million tonnes of ROM coal a year from the Mount Owen Mine. This coal is extracted from an open cut coal pit, transported to the Mount Owen CHPP for processing, and then railed to Newcastle for export. Overburden is placed both in and out of the coal pit, tailings are pumped via pipeline to the northern voids of the old Swamp Creek mine (Stage 1, 2 & 3 tailings dams), and decant water from these tailings dams is pumped back to the mine for reuse in the Mount Owen CHPP.

The Stage 1 tailings dam is now full and Stage 2 only has limited capacity, approval was obtained in the May 2003 consent for the emplacement of tailings in the stage 3 tailings emplacement.

HVCC proposes to establish the tailings disposal areas within the approved Ravensworth East Mining area in the Tailings Pit voids, west of and adjacent to the Mount Owen rail loop (refer to Figure 2). If this option is approved, the Applicant proposes that the Stage 3 area will be maintained for contingency tailings provisions until tailings emplacement can be established within the Mount Owen Mine area in approximately 2010.

Ravensworth East Mine

Ravensworth Operations currently has approval to extract and process 4 million tonnes of product coal a year at the Ravensworth East Mine. This coal is extracted from an open cut coal pit, transported across Hebden Road to the Ravensworth East Coal Crushing Plant for processing and transported via conveyor to the Liddell and Bayswater power stations. Overburden is placed to the west of the mining area. At present, extraction rates average 2 to 2.5 million tonnes of ROM coal.

While the original proposal was mainly geared towards extracting and processing coal for domestic use, the EIS for the proposal indicated that if export quality coal was ever mined, it would be trucked to the Mount Owen CHPP for processing on existing haul roads. Approval for this was granted in the May 2003 modification.

3. PROPOSED DEVELOPMENT

Modification to ROM Coal Recieveal System

This proposal involves constructing a ROM coal handling facility (shown in red on Figure 2), to be known as the HVCC ROM Coal Facility, located on an existing overburden dump, in the eastern portion of the Ravensworth East mining lease (ML 1475) and adjacent to voids planned for tailings disposal. There will be provision for a ROM coal stockpile at this location, with an initial capacity of 50 000 tonnes.

The proposed HVCC ROM Coal Facility includes a ROM coal dumping station (with a nominal capacity of 1000 tonnes/hour), a ROM coal sizing system (with a nominal capacity of 1000 tonnes/hour) and a conveyor from the sizing station to an additional

2000 tonne surge bin. The additional surge bin will be constructed adjacent to the existing Mt Owen surge bin.

It is proposed to operate the facility 7 days per week and 24 hours per day. The initial maximum throughput of Ravensworth East coal via this facility is envisaged to be 1.5 to 2 Mtpa.



Figure 2: Photo Showing the Mount Owen and Ravensworth East Mines & the Existing and Proposed Tailings Dams.

Tailings

Two box cuts are being developed at Ravensworth East as part of currently approved mining operations. The creation of the two box cuts at Ravensworth East, following the extraction of the coal, will result in two voids.

This proposal involves utilising these voids, known as the Tailings Pits, for emplacement of tailings from the Mt Owen CHPP. This will provide capacity for the emplacement of approximately 16 Mm³ of tailings, which equates to 8-10 years of tailings emplacement life, after which tailings will be emplaced into the final voids of Ravensworth East and in-pit at Mt Owen.

Tailings from the processing of ROM coal at Mt Owen will be emplaced into the voids at Ravensworth East via a pipeline running adjacent to the product stockpile and Mt Owen rail loop from the Mt Owen CHPP. A water return pipeline will also be installed

along the same alignment, enabling the recycling of excess water back through the Mt Owen water management system. Both pipelines will be contained within the Mt Owen Mine water management system.

The Tailings Pits will be capped with inert material and rehabilitated following completion of tailings emplacement in accordance with the approved Mine Operating Plan.

4. STATUTORY PLANNING FRAMEWORK

Environmental Planning & Assessment Act 1979

Permissibility

The site is zoned 1(a) Rural under the *Singleton Local Environmental Plan 1996*. The proposed modification is permissible with consent in this zone.

Section 96(1A)

Under Section 96(1A) of the EP&A Act, a consent authority may modify a development consent if it is satisfied that the:

- (a) Proposed modification is of minimal environmental impact, and*
- (b) Development to which the consent as modified relates is substantially the same development for which consent was originally granted and before that consent as originally granted was modified (if at all) under this section.*

The Department has assessed the proposal in detail (see Section 6 below), and is satisfied that the proposed modification is of minimal environmental impact, and that the consents, as modified, would relate to substantially the same development for which consent was originally granted.

Consent Authority

The Minister was the consent authority for the original development applications, and is consequently the consent authority for these applications.

Relevant Planning Instruments & Policies

The following planning instruments policies are relevant to the proposal:

- *Hunter Regional Environmental Plan 1989;*
- *Singleton Local Environmental Plan 1996; and*
- *Singleton Erosion & Sediment Control Plan.*

The Applicant has assessed the proposal against the relevant provisions in these planning instruments and policies in Section 4.3 of the SEE, and the Department is satisfied with the general conclusion of this assessment: the proposal is generally consistent with the relevant aims, objectives, and requirements of these instruments and policies.

5. CONSULTATION

The Department is not required to notify or exhibit the proposed modifications.

Nevertheless, the Department sent copies of the SEE supporting the proposal to the Department Environment Conservation (DEC), Department of Mineral Resources (DMR), Singleton Shire Council (SSC), and all the members on the Mount Owen and Ravensworth East Community Consultative Committees, seeking comments on the proposed modifications to consents.

No objections to the proposed modifications were received by the Department.

6. CONSIDERATION OF KEY ISSUES

The Department has assessed the SEE supporting the proposal, submissions on the SEE, and a range of additional information provided by the Applicant. The proposal does not have significantly greater impacts than those identified in the assessment of the previous modifications and consent, however the key issues relating to this project have been identified below;

Surface water

Tailings will be pumped from the Mt Owen CHPP to the emplacement areas at Ravensworth East. Decant water from the emplacement areas will be returned to the Mt Owen CHPP for re-use via a return pipeline. This process is consistent with current water management practice. As the proposed activities are located entirely within the existing Mt Owen and Ravensworth East mining areas, all clean water runoff from the surrounding area is diverted around the disturbed area and directed back into either Swamp Creek or Yorks Creek via existing water management structures. The emplacement of tailings within the Ravensworth East voids will gradually fill these voids over a period of 8 to 10 years and assist in re-creating the final landform to an elevation consistent with surrounding natural surface.

The Department concurs that there will be a negligible increase in surface water impacts as a result of the proposed modifications.

Ground water

Mackie Environmental Research (2003) conducted a groundwater assessment for the Mt Owen Operations EIS. The assessment included the emplacement of tailings into the Ravensworth East voids and a summary of the relevant aspects of this assessment to the current modification process is outlined below. The pits where the tailings are proposed to be emplaced are currently approved box cuts as part of the Ravensworth East operations.

The Ravensworth East box cuts are relatively shallow and will only penetrate the hard rock water table by about 15 to 25 metres. Groundwater seepage will occur at a low rate for a very short time, until the regional levels fall as a consequence of the ongoing mining at Mt Owen. Thereafter there will be no groundwater seepage into these pits.

A hydraulic gradient is already developed toward the current Mt Owen pit and consequently, the maintenance of this pressure-dewatering gradient will ensure that any residual leakage from the shallow pits will be captured in the mine water system. Capping and subsequent rehabilitation of the pits will ensure that leakage is minimal in the long term.

The Department is in agreement with the Applicant's statement that there will be not be a significant impact on groundwater from this development. However the Department is of the opinion that the Applicant should revise its groundwater monitoring program to monitor the potential groundwater impacts of this proposal.

Erosion and Sediment Control

The ROM receival facility and associated works are located within an area already disturbed by overburden dumping and subject to comprehensive soil and water management. Standard erosion and sediment control practices will be adopted during construction of the facility to minimise erosion and sediment generation. Tailings disposal is located within existing voids, with no potential for erosion and sediment generation outside of these void areas as a result of the emplaced tailings material.

Long term sediment control structures will be installed as part of the receival facility construction, including a concrete wash down sump complete with submersible sump pump will be provided for collection of coal spillage and clean up water. The sump will be designed with access for a loader to remove the coal. All runoff from the ROM coal facility and the tailings emplacement area will be maintained on site and treated as dirty water in accordance with the existing dirty water management system.

The Department concurs with the Applicant's assessment that there will be no impact on surface water from the proposed development.

Noise

The proposed modification has the potential to contribute to increase the noise impacts of the Mt Owen Mine.

Tailings emplacement is a relatively quiet process as it simply involves the slurry being pumped to the emplacement area.

Comprehensive noise modelling has been conducted as part of the Mt Owen Operations EIS 2003 for a range of meteorological conditions. Advitech Pty Limited has analysed the noise modelling data for a number of representative residential receivers under differing meteorological conditions, including neutral, 3 m/s wind from the northwest, and combination of temperature inversion conditions (3 degrees) with a light wind (2 m/s) from the NW.

In comparing the predicted noise levels for current Mt Owen operations, with those of the modified ROM receival activities, the assessment determined that under all meteorological conditions the highest predicted noise level increase at the nearest receivers is 0.1 dB(A). Such a noise level increase would be imperceptible to the human ear. Consequently the operation of the ROM receival facility is expected to make a negligible contribution to future noise emission levels from the mining operations.

The Department concurs that there will be a negligible increase in noise at any privately-owned residence as a result of the modification.

Dust

The Applicant has stated that the proposed modifications will have minimal impact on dust emissions from the site. There will be no dust impacts as a result of the tailings emplacement activities as the tailings will be managed as wet material, and the tailings emplacement area will be maintained in a moist condition to minimise the potential for wind borne dust from the emplacement surface.

In addition, there will be minimal dust impacts from the operation of the ROM coal facility as there will be water sprays and side wings on the ROM dump station, the ROM coal stockpile will be watered as required and the conveyors will be enclosed.

The Applicant has stated that based on an analysis of current operations the ROM receival handling activities represent less than 7% of the potential dust emission levels from the mine and, in comparison to activities such as overburden handling, make a relatively low contribution to overall dust levels. On this basis, the Applicant has stated that the operation of ROM coal receival facility will have minimal dust impact on the surrounding private properties.

Current air quality controls will continue to be implemented during the operation of the ROM Coal Facility and the tailings emplacement area.

Safety (long term stability of tailings dams)

The Tailings Pits have been prescribed by the Dams Safety Committee and design of the tailings emplacement has been determined by the Committee to conform to requirements for a short term life (i.e. 10 years). Specific Committee requirements also include a Dam Safety Emergency Plan and Operation and Maintenance Manual, which will be put in place prior to commencement of tailings emplacement.

The Department concurs that these measures will ensure that the integrity of the dam structure and therefore dam safety is maintained.

Flora & Fauna

The proposed modification is located within areas that have been previously disturbed by mining and agricultural activities and therefore is not expected to have a significant impact on flora and fauna communities. The ROM coal facilities will be located on an existing overburden dump within the Ravensworth East mining area.

The tailings emplacement will be within mined voids also located within Ravensworth East. Both areas have been cleared and were assessed and managed in the appropriate manner as part of previous approvals.

The Department is of the view that as there will be no native vegetation clearing or impacts on flora or fauna, no specific flora and fauna management is required.

Aboriginal & European Heritage

The Applicant has stated that there will be no impacts on Aboriginal or European heritage. However, appropriate personnel involved in the construction of the ROM coal facility and associated works will be trained in archaeological awareness. Should further sites be found at any stage of the project, the Applicant will stop work immediately and the site will be assessed as required.

The Department considers that the modification does not pose any additional impact on the heritage or archeological resource beyond that assessed in previous applications for the Mount Owen and Ravensworth East coal mines.

Cumulative Impacts

As the proposed modification represents an extension of an existing consent there is potential for the cumulative impacts to be greater than those assessed in the original consent.

The Applicant has stated that the proposed modification will not significantly contribute to cumulative impacts arising from Mt Owen, Ravensworth East and surrounding mining operations. Predicted noise, dust and visual impacts are low and are expected to make a minimal contribution to cumulative impacts on surrounding properties.

Given that the proposed modifications are located within existing mining areas and the associated water management system, potential surface water and groundwater impacts are also minimal and can be adequately managed by continuation of existing soil and water management practices.

As the area to be occupied by the proposed modified activities is already extensively disturbed by mining activities, there is negligible potential for further contribution to cumulative ecology and archaeology impacts. The filling of the Tailings Pit voids and subsequent rehabilitation will make a positive contribution to the landscape value of the locality, whilst the operation of the ROM coal receival facility will maximise use of existing infrastructure and minimise energy use associated with coal transport.

The Department is satisfied that the Applicant has demonstrated that there are negligible cumulative impacts from this modification.

Environmental Monitoring and Management

Dust

Mt Owen operates a comprehensive dust monitoring system previously assessed and approved. As mentioned previously the proposed modification is expected to have little impact on dust, therefore it is the Department's position that adequate dust monitoring already exists.

Noise

Existing noise management practices for Mt Owen will be applied to the operations, where relevant. Noise monitoring is conducted six monthly at the nearest residences to the mine and in response to complaints. Monitoring is undertaken at a reference point close to the mine, and at a number of residences close to the mine. In addition to periodic monitoring, Mt Owen maintains a calibrated noise model of the operation in order to assess noise impacts. The results from noise monitoring are reported to the Mt Owen Community Consultative Committee and included in the Mt Owen AEMR.

Water

A previously approved surface water monitoring program for baseline and compliance purposes is in place at Mt Owen. Mt Owen currently monitors water quality in Swamp Creek, Bettys Creek and Yorks Creek for pH, electrical conductivity, and a range of additional analytes. Groundwater is also monitored monthly in the vicinity of the pit and in the vicinity of the tailings emplacement. Results are reported in the Annual Environmental Management Report (AEMR).

The Department believes that the Applicant should revise the existing groundwater management program in order to ensure adequate monitoring of any impacts occurring as a result of the emplacement of coal tailings in the new tailings pits.

Visibility of Proposed Modification

Tailings Disposal

There will be no visual impact from the disposal of tailings into the existing box cuts at Ravensworth East. There is no associated infrastructure required for the disposal facility and all disposals will take place either below the current landform or at the surface of the current landform. Therefore there will be no outstanding features associated with the emplacement area, visible from private and public viewing locations.

ROM Coal Receiving Facility

The proposed ROM coal facility is located in an area dominated by mining activities associated with the Ravensworth East and Mt Owen mines.

The proposed ROM coal receiving facility and associated conveyors will not be able to be viewed from any non-mine owned residence in the area. However, there are potential distant views from public places such as Hebden Road, Forrest Road, Glennies Creek Road and Falbrook Road. These views will be intermittent and distant and very minor due to the local topography, the local vegetation and its distant locality. In general, views of the infrastructure will be protected by the surrounding topography and vegetation.

7. SECTION 79C ASSESSMENT

Section 79C of the EP&A Act sets out the matters that a consent authority must take into consideration when it determines a proposal to modify a development consent under Section 96(1A).

The Department has assessed the proposal against these matters, and is satisfied that:

- The proposal is generally consistent with the provisions of the relevant planning instruments;
- The potential impacts of the proposal can either be mitigated or managed; and
- The proposal is generally in the public interest.

8. Proposed instrument of modification

The Department has prepared a notice of modification for both consents, and believes these modifications would ensure that the potential impacts of the proposal are kept to a minimum. The notice of modifications are tagged A & B.

The Applicant has reviewed and agreed to these proposed modifications.

9. CONCLUSION

The Department has assessed the proposal, the SEE, and the various submissions on the proposal.

It is considered that the proposed modification will result in minimal environment impact beyond that already approved for both the Mount Owen and Ravensworth East coal mines. In addition the mining operation as proposed in the amended applications will operate in accordance with the proposed developments as originally assessed with only the construction of an internal coal receiving facility and emplacement of tailings differing from the conceptual plans originally approved.

The Applicant advises that the modification will not significantly alter the amount or location of land disturbance as originally approved since the tailings are being emplaced in a void. Accordingly there is no predicted increase in potential flora, fauna or cultural heritage impacts. The key impacts for the proposal are potential seepage from the emplacement area. There may also be a future lessening of impacts as the modification negates the need for offsite washing of coal from the Ravensworth East Mine which may have occurred in the future. The Department

considers that these impacts are able to be mitigated with appropriate management techniques and monitoring programs.

Consequently, the Department believes the Minister should approve the proposed modifications with conditions.

10. RECOMMENDATION

It is RECOMMENDED that the Minister:

- (1) Consider the findings and recommendations of this report;
- (2) Determine that the proposed modifications are of minimal environmental impact;
- (3) Determine that the development consents, as modified, would relate to substantially the same development to which consent was originally granted;
- (4) Approve the proposed modifications under Section 96(1A) of the Act; and
- (5) Sign the attached Notice of Modifications (tagged A & B).

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