Mining and Energy Division

Review of Environmental Assessment

Mangoola Mine

Modification 6– Extraction Rate Increase

06_0014 (Mod 6)

Submission

Construction Forestry Mining and Energy Union (Mining and Energy Division)

Northern District Branch

June 2013

On 5 April 2013 Xstrata Mangoola Pty Ltd applied to the Minister, Department of Planning seeking approval increase maximum rate of extraction from 10.5 Mtpa ROM coal to 13.5 Mtpa ROM coal.

The Director General made the Environmental Assessment publicly available on the 29 May 2013 at the DP & I Information Centre Sydney, Muswellbrook Shire Council and Nature Conservation Council.

The Union is pleased to take the opportunity to comment on the Mangoola Modification Project and related activities Environmental Assessment.

The Mining and Energy Division is a Division of the CFMEU under the Federal Workplace Relations Act 1996, with over 120,000 members, one of the largest in Australia. The Division covers several industries including the coal industry, coal ports, metalliferous mining industries, electrical power generation, oil and gas and the Nation's small coking industry.

The Northern District Branch of the CFMEU Mining and Energy Division, being the branch that on behalf of the organisation which is making the submission is the principal Union representing coal miners in the Northern District coalfields of New South Wales. The Mangoola facility is located approximately 20 kilometres west of Muswellbrook and is wholly within the State's Northern District coalfields.

The Union is familiar with the Mangoola facility site and has engaged the services of an Environmental Consultant with extensive experience in local government and environmental assessments on coal mining related projects.

After reviewing all the material and taking advice, the Union supports this application to increase the maximum rate of extraction at the Mangoola Mine as proposed.

Project Overview

The proponent has identified opportunities to improve efficiency and resource utilisation and is seeking this modification to increase mining intensity. The key modification sought is an increase in the maximum rate of extraction from 10.5 Mtpa ROM coal to 13.5 Mtpa ROM coal. Associated with this change are the following key aspects:

- Increase in equipment numbers to support increased mining intensity (though the operation will remain a truck and shovel/excavator operation);
- Increase in employee numbers to support additional equipment and operational needs and requirements. Up to 150 additional employees, employed over the next few years to meet peak operational capacity and continue to maintain a safe and efficient operation.

- Amendment to blasting conditions to increase frequency of blasting from five blasts per week to six blasts per week and removing the condition relating to maximum instantaneous charge (MIC);
- Re-define one temporary ROM stockpile to a permanent (life-of-mine) ROM stockpile;
- Utilisation of suitable mined waste rock for on-site gravel production. UP to 50 000 tonnes per annum of gravel may be crushed for use on-site; and
- Discharge of saline water to the Hunter River under the rules and regulations of the Hunter River Salinity Trading Scheme (HRSTS).

The proposed modification will be undertaken within the existing approved project disturbance boundary, and achieved through efficiencies already realised at the CHPP, and relatively minor alterations to site infrastructure with expected minimal environmental consequences beyond the current approval. No increase or extension to the approved project disturbance boundary is sought.

Stakeholder

A stakeholder engagement strategy is implemented for current operations at Mangoola Coal.

Xstrata Mangoola undertook a program of stakeholder engagement with the community which included engagement with relevant government agencies, Muswellbrook Shire Council, the community consultative committee (CCC), as well as meetings with near neighbours and a community information session with the wider community.

An integral part of the stakeholder engagement process for the proposed modification was the identification of the interactions between Mangoola Coal and stakeholders. In addition to consultation with neighbouring and local communities undertaken by Mangoola Coal, a social impact and opportunities assessment (SIOA) was undertaken by consultants Coakes Consulting. A key objective was to identify potential social impacts of the proposed modification on neighbouring and local communities, and assess and develop strategies to address these matters for both the proposed modification and also for Mangoola Coal's operations generally. Consultation with the local community, service providers and key regional stakeholders was a primary component of the SIOA program.

During the preparation of the modification EA, stakeholders were provided with opportunities to discuss and provide feedback on the proposed modification through face-to-face meetings, the distribution of community fact sheets, community information sessions, and presentations at CCC meetings. Xstrata Mangoola has also provided information on its website regarding the proposed modification. The EA has taken into account matters raised by stakeholders during this consultation and addressed the areas of concern where relevant to the proposed modification.

Noise and Vibration

A noise and vibration assessment was prepared for the Modification by EEM. This assessment was also peer reviewed by Dr Rob Bullen of Wilkinson Murray. Elements of the proposed modification with the potential to result in a change in noise and vibration compared with the current operations comprise:

- Increased maximum rate of ROM coal extraction, including required plant and equipment;
- Increase in peak workforce numbers;
- Crushing and stockpiling of gravel; and
- Changes to blasting conditions in PA 06_0014.

Operational Noise

Noise modelling was undertaken to predict operational noise levels at all residential receptors for each of the mining stages.

There is an overall reduction in the number of receptors in the noise acquisition zone due to the proposal. However one additional receptor (83), already within the acquisition zone for current operations due to significant impacts from blasting (overpressure and vibration) and dust, is now predicted to experience noise levels above 40 dB(A). The identified properties within the acquisition zone are relatively close to the approved project disturbance boundary.

The proposed modification would result in a substantial decrease in receptors within the noise management zone from 53 to 17. Note that one additional receptor, 154, was identified in the noise management zone, which although was not shown in earlier environmental assessments, is in practice within the management zone for current operations. Further, receptor 132A was known as 132 in previous assessments and an additional dwelling on the same property has been identified as 132 B in this EA, both of these dwellings are within the noise management zone under the proposed modification.

Sleep Disturbance

The highest maximum noise levels expected at surrounding residential receptors would likely result from haul trucks. The noise and vibration assessment indicates that predicted noise levels from the haul trucks during prevailing weather conditions is within the EPA's conservative sleep disturbance criterion for most residential receptors. The exception is receptors 25 and 24 which are within the management and acquisition zone, respectively as a result of predicted noise levels from the current operations. No additional residential receptors were predicted to exceed sleep disturbance criteria for the proposed modification.

Road Traffic

The proposed modification would result in an increase in employee and contractor workforce traffic movements. The peak movements will occur during the morning traffic peak (6am-7am) with an additional 139 vehicles generated by the proposed modification during this period.

Road traffic noise levels were assessed at six residential receptors within an offset of 250 m from Wybong Road. Four of the six receptors within the 250m offset are within the noise management zone for predicted road traffic noise impacts under the current operations.

Additional traffic volumes under the proposed modification will increase noise levels at properties within 250 m of Wybong Road by a maximum of 2.9 dB(A). This increase is above the Road Noise Policy (OEH 2011) allowable increase threshold of 2 dB where existing traffic noise is already above the relevant criteria. An offset of 220 m from Wybong Road was predicted to be the distance where noise levels comply with the relevant criteria. Within this 220m offset there is one additional residential receptor 251 that was predicted to exceed the road traffic noise criteria under the proposed modification. Residential receptor 251 is within the noise management zone due to predicted operational noise levels under both the current and proposed modification.

There is no change predicted to road traffic noise impacts under the proposed modification for the private properties on Bengalla Lind Road within the management zone for current operations.

Blasting

The proposed modification is expected to result in an increase in the frequency of blasting, due to the faster rate of extraction. The results of the blasting assessment demonstrated that the impact assessment criteria for air blast overpressure and ground vibration specified I Schedule 3, Condition 12 of PA 06_--14 can be met while using a MIC of greater than 1 500 kg at distances stipulated.

The blast assessment showed that the MIC limit may no longer be warranted to achieve the prescribed blast criteria. The MIC limit currently restricts Xstrata Mangoola's flexibility in adapting blast designs in certain conditions where larger blasts can be properly managed. Allowing for larger blasts may also be more appropriate than smaller, but more frequent blasts, when unfavourable weather conditions are predicted.

Therefore the proposed modification seeks the following amendments to Schedule 3 of PA 06_0014:

- Condition 13, Table 4 – increase the peak particle velocity criteria for the 500 kV pylon suspension towers from 50 mm/s to 100 mm/s (as per the agreement with TransGrid);
- Condition 16(b) – increase the frequency of blasting from five blasts per week (averaged over 12 months) under the current operations to six blasts per week (averaged over 12 months);
- Condition 16(c) - remove this condition, which restricts blasting to one blast per week (averaged over 12 months) with a MIC of greater than 1 500 kg; and
- Condition 16 (d) – remove this condition, which restricts blasting to one blast per day with a MIC of greater than 1 500 kg.

There is no change to predicted vibration and overpressure impacts for blasting under the proposed modification for receptors. The blasting criteria can be achieved at all other private receptors by limiting MIC values.

It is noted that the EPA intent to revise blasting conditions in the EPL to require compliance with criteria to be achieved at monitoring locations rather than at sensitive receptors.

Rail Noise

Despite the proposed increase in the maximum rate of production, the approved maximum number of daily trains will not increase under the proposed modification. The noise impacts of the maximum daily trains have been previously assessed and approved for the current operations. Therefore, there will be no additional impact that requires further assessment of rail traffic noise.

The proposed modification commits to feasible and reasonable noise management measures as well as a number of operational response measures.

Air Quality and Greenhouse Gas

An air quality and greenhouse gas assessment was prepared for the modification by Todoroski Air Sciences. Elements of the proposed modification with potential to result in a change in dust and greenhouse gas emissions compared with the current operations include:

- Increased maximum rate of ROM coal extraction, including required plant and equipment, minor changes to ROM coal stockpile areas and increased rate of rehabilitation; and
- Crushing and stockpiling of gravel.

Predicted Incremental Impacts

The incremental impacts of the proposed modification have been assessed for each of the mine plan years (2, 5 and 10). Incremental impacts are predicted emissions from the proposed modification operating isolation, and exclude background dust concentrations. Dust generating sources from the proposed modification include increased exposure of pit areas, greater intensity of truck haulage along internal haul roads, and gravel crushing activities.

In Year 2 of the mining operations, mining will occur within the Northern Pit progressively in a south-easterly direction towards the mine infrastructure area. The overburden emplacement area is well established and behind the general progression of the pit. Modelling results for Year 2 show that the air quality criteria is expected to be met at all receptors for TSP deposited dust, $PM_{2.5}$ and PM_{10}.

In Year 5, the Main and Southern Pits are established with mining progressing in a south-west direction around Anvil Hill and in a north-west direction. Modelling results for Year 5 show that the air quality criteria is expected to be met at all residential receptors for TSP, deposited dust and $PM_{2.5}$ concentrations. Exceedances of the PM_{10} maximum 24-hour average concentrations are predicted at one receptor (56) for less than five times in a year, and therefore do not exceed DP & I's land acquisition criteria.

In Year 10, there will be one active pit in the south-western area, with the majority of the land within the approved project disturbance boundary rehabilitated. Modelling results for Year 10 show that the air quality criteria is expected to be met at all residential receptors for TSP, deposited dust, and $PM_{2.5}$ concentrations. Exceedances of the PM_{10} maximum 24-hour average concentrations are predicted at two receptors (56 and 83). Both are expected to experience exceedances more than five times in a year.

Incremental impacts are predicted at residential receptors 56 and 83 which are predicted to experience exceedances of the PM_{10} maximum 24-hour average concentrations more than five times a year during Year 10 of operations under the proposed modification. Both of these receptors are already afforded acquisition rights for predicted exceedance of air quality land acquisition criteria under previous modifications. Therefore, no additional receptors will be afforded land acquisition rights for air quality impacts as a result of the proposed modification.

Predicted Cumulative Impacts

The total impacts of the proposed modification were assessed again for each of the mine plan years. The total impacts of the proposed modification are the predicted emissions from the proposed modification, including the predicted emissions from nearby mining sources (i.e. Bengalla Coal Mine, Mt Arthur Coal Mine and the Mount Pleasant Project) and annual average background dust levels from non-mine sources.

Modelling results for a Year 2 show that the relevant air quality criteria are expected to be met at all residential receptors for TSP and deposited dust. An exceedance of the PM_{10} annual average concentration is predicted for one receptor (275).

Modelling results for Year 5 show that the relevant air quality criteria are expected to be met at all residential receptors for deposited dust. Exceedances of the PM_{10} annual average concentrations are predicted at seven residential receptors (230, 231, 233, 237, 238, 242 and 275). Exceedance of the annual average TSP concentrations is predicted at one receptor (275). It is noted that receptors 233 and 237 have been acquired by Mt Arthur Coal Mine and receptors 242 and 275 have rights to acquisition upon request from Mt Arthur Coal Mine for air impacts.

Modelling results for Year 10 show that the relevant air quality criteria are expected to be met at all residential receptors for deposited dust. Exceedances of the PM_{10} annual average concentrations are

predicted at nine residential receptors (182, 230, 231, 233, 237, 238, 241C, 242 and 275). Exceedances of the annual average TSP concentrations are also predicted at two residential receptors (242 and 275). As noted, receptors 233 and 237 have been acquired by Mt Arthur Coal Mine and receptors 242 and 275 have rights to acquisition upon request from Mt Arthur Coal Mine for air impacts.

Air quality impacts from the proposed modification are predicted to result in no additional receptors within Mangoola Coal's acquisition zone compared to current operations.

Modelling of dust emissions from rail transport of coal would not have adverse air quality impacts under the proposed modification. Blast fume modelling predicted that no impacts would occur during permitted blasting hours, and that existing blast management measures are adequate to control potential air quality impacts.

The proposed modification may result in an increase in annual average greenhouse gas emissions should the proposed maximum extraction rate be sustained. However, under this scenario there will be a reduction in total emissions over the mine life period of 12% from the original project approved in 2007 and 9% from the current operations. The proposed modification will contribute approximately 0.023% of Australia's and 0.125% of NSW's annual emissions.

A range of air quality management measures are implemented under current operations, which incorporate best practices for the control of dust emissions from coal mines.

Traffic and Transport

A traffic and transport assessment was prepared for the modification by consultants Hyder Consulting Pty Ltd. The following aspects of the proposed modification were assessed in relation to traffic and transport impacts:

- Increase in employee and contractor workforce numbers; and
- Cumulative road traffic impacts with surrounding developments.

The increase in employees under the proposed modification will increase traffic movements on the surrounding road network used by Mangoola Coal related traffic. The potential for impacts to the performance and capacity of affected roads would be greatest during the period when Mangoola Coal's workforce travel to and from the mine.

The traffic and transport impact assessment for the proposed modification found that predicted peak traffic volumes are within the design criteria for affected roads and will not materially affect the performance and capacities of the surrounding road network during peak periods. This is in part due to the recently upgraded New England Highway/Thomas Mitchell Drive intersection and planned upgrades

at the Denman Road/Thomas Mitchell Drive intersection, which are both required by Mt Arthur Coal's project approval due to current and predicted traffic congestion at these intersections.

The increase in road traffic movements is not expected to significantly impact road safety within the surrounding road network. The proposed modification will not result in an increase to the maximum daily trains approved under the current operations.

Surface Water

A surface water assessment was prepared by consultants WRM Water and Environment for the modification, which was also peer reviewed by Gilbert and Associates.

The proposed modification will result in changes to the overall water balance and potential impacts on surface water, due to:

- More rapid development of the site water management system in response to the increased rate of land disturbance;
- A potentially higher demand for water for coal processing and handling at the CHPP (though the total volume used over the life of the project will not increase, as the total mineable resource is unchanged);
- Ability to discharge saline water to the Hunter River under the rules and regulations of the HRSTS, if required, during extended wet periods; and
- Minor changes to the layout of the overburden dumps, resulting in modifications to the layout and sizing of sediment dams and the associated drains.

The changes to the mine layout are relatively minor, and the footprint of the catchment disturbance will be largely unchanged from current operations.

The proposed modification includes discharges of saline water to the Hunter River under the rules and regulations of the HRSTS which aims to control salinity concentrations in the Hunter River, and meet prescribed water quality standards by allocating 'credits' to users of the River including primary producers and mining operators. The ability to discharge to the Hunter River under the HRSTS would provide additional flexibility to Mangoola Coal's water management system, particularly during periods of prolonged or extreme rainfall, and would assist in reducing the risk of spills/uncontrolled discharges from on-site water storages.

No changes to in-stream habitat, channel stability or water quality are predicted as a result of the proposed modification. The discharges would utilise Mangoola Coal's existing Hunter River Pipeline and Hunter River Pump Station Infrastructure.

Visual and Lighting

A visual and lighting assessment was prepared for the modification by consultants EMM. The elements of the proposed modification which may have potential visual and lighting impacts include the following:

- Increased maximum rate of extraction from 10.5 Mtpa to 13.5 Mtpa ROM coal, including a change in the total plant and equipment used in the recovery of coal;
- Minor alterations to ROM coal stockpile areas for the remainder of the mine life;
- Crushing of gravel on-site at a rate of up to 50 000 tpa; and
- Minor changes to the final landform (consistent with the approved conceptual final landform).

The proposed modification may result in a shorter mine life should the maximum extraction rate be realised and, therefore a shorter visual exposure period. At most of the viewpoints assessed this will result in a reduction in the likely visual and lighting impacts. There will be some potential increases to visual impacts for VP3 (rural/scenic land and alluvial flood plain), VP8 (flat alluvial floodplains, hills and remnant vegetation), VP9 (flat alluvial floodplains, hills and remnant vegetation), VP10 (vegetation hills, and rural residences) and VP 11 (open farmland, overburden emplacements and hills) and lighting impacts for VP3, VP8 and VP 9 as a result of the increased rate of extraction exposing viewpoints to view of open-cut mining activities sooner and additional mobile mine machinery that will be required to meet the increased extraction rate. These potential impacts are considered minor when compared to the benefits of a reduced mine life. The additional area to be rehabilitated at the maximum 240m RL will create some permanent alteration to the horizon as viewed from VP3, VP10, VP11 and VP12.

A number of visual and lighting impact management measures are currently employed by Mangoola Coal which is considered sufficient to minimise the potential minor increases to visual and lighting impacts associated with the proposed modification.

Ecology

The proposed modification does not increase the approved project disturbance boundary, and therefore no additional desktop review or site surveys were required to be undertaken.

The proposed modification will not alter the predictions of previous flora and fauna assessments for Mangoola Coal. The existing commitments and requirements of PA 06_0014 in relation to flora and fauna will continue to maintain and improve biodiversity conservation in the medium to long term.

Aboriginal Heritage

The proposed changes to the frequency of blasting will not affect any identified Aboriginal heritage items due to the implementation of the blast design parameters and techniques and air blast control measures.

The proposed modification does not involve any change in assessed impacts to Aboriginal heritage or any change to proposed offset areas. Ongoing management of the Aboriginal heritage items within the area

will be undertaken in accordance with Mangoola Coal's Aboriginal Cultural Heritage Management Plan for areas within the approved project disturbance boundary.

European Heritage

The proposed modification does not increase the approved project disturbance boundary, and therefore no additional desktop review or site surveys were undertaken.

Identified heritage sites will continue to be managed as per the conditions of PA 006_0014 and the measures proposed in previous assessments in relation to protection of heritage items.

The proposed modification will not alter the predictions of previous European heritage assessments for Mangoola Coal. The existing commitments and requirements of PA 006_0014 will continue to successfully manage European heritage items during mining operations.

Socio Economic

A benefit-cost analysis was undertaken to determine whether the proposed modification is acceptable from an economic efficiency perspective. The proposed modification will result in an estimated net production benefit of $92M Australia incremental to the current operations.

The regional economic impact analysis estimated that the proposed modification would result in an additional contribution to the regional economy and NSW from 2014 to 2022. Therefore the proposed modification will provide economic benefits to NSW and regional communities.

Mangoola Coal's current operations make significant economic contribution to local communities through employment, business expenditure, household expenditure and use of local services and facilities, employees' participation in community groups and activities, and suppliers' employment impact and business expenditure which are predicted to have positive social impacts.

The proponent indicates it will continue to monitor the impacts, both positive and negative, of its operations on the social environment, as part of the current operations Social Involvement Plan.

Justification

The proposed modification is primarily aimed at increasing mining intensity and incorporates efficiencies already realised in the operation of existing on-site coal handling and processing infrastructure. The proposed modification as proposed is considered to have the following benefits and outcomes:

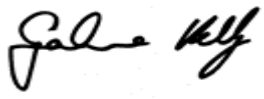
- Overall reduction in the number of properties at which criteria for noise is exceeded;
- Both direct and indirect increase in employment;
- Local, regional and state economic benefits;
- Reduced risk of uncontrolled discharge of saline water from site;
- Maximisation of resource recovery;
- Effective utilisation of existing site infrastructure;
- Reduction of gravel trucks on the road network;
- Maximises operational flexibility within the approved project disturbance boundary; and
- Minimal environmental consequences are expected beyond the current operations.

The proposed modification is strongly justified through the orderly and logical use of natural, physical and human resources and enhanced outcomes would result from greater investment, employment and mining efficiencies. The existing environmental management and mitigation measures implemented at Mangoola Coal will be supplemented by some additional measures as detailed within the modification EA. The benefits of the proposed modification largely outweigh its costs and it is considered to be in the public interest for it to be positively determined.

In Summation

Based on the assessment of potential environmental impacts which has been multi-disciplinary and involved consultation with the DP&I and other relevant stakeholders, the Mangoola Coal Mine Modification is anticipated to pose negligible additional environmental impacts beyond those already approved under PA 006_0014.

The Union considers this Project is consistent with currently approved Development Consent objectives of the EP&A Act, and therefore supports the proponent's application.



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DISTRICT SECRETARY