AMENDMENT MAY 2013

ENVIRONMENTAL IMPACT ASSESSMENT
MARY'S MOUNT BLUE METAL QUARRY

SECTION 5
CONCLUSION & JUSTIFICATION OF IDENTIFIED IMPACTS IN AMENDMENT DOCUMENT

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The following section of the report outlines an updated set of commitments and an updated conclusion and justification of the identified impacts outlined in this amendment to the Environmental Impact Assessment.

Gunnedah Quarry Products Commitments

Gunnedah Quarry Products has committed to carry out the proposal in accordance with the systems, plans and mitigation measures identified through the environmental impact assessment dated 13th December 2012 and this amendment dated 17th May 2013. They will obtain and maintain all permits, licences and approvals required throughout the life of the project.

Construction and operation will be limited by

- Extraction of material will not exceed 120,000bcm or 360,000 tonnes per annum
- Haulage will be restricted to Barker Road – Goolhi Road to Kamilaroi Highway at Emerald Hill and Goolhi Road to Quia Road to Oxley Highway at Gunnedah – estimated 50:50 split.
- The quarry will be progressively rehabilitated as each area within the quarry footprint is completed, (refer staging diagrams in section 2 for approximate year of operation).
- Construction will take place between 7am to 6pm (summer) or 5pm (winter) Monday to Friday and 8am to 3pm on Saturdays
- Rehabilitation benches will be restricted to 10 metres in height
- Management protocol and monitoring outlined in the Koala Plan of Management will be adopted
- Drill and Blast operations will not exceed 7 Blast per year and nearby sensitive receivers will be notified of blast scheduling

Gunnedah Quarry Products will appoint a community liaison representative as the point of contact for any enquiries or complaints.

Conclusion and justification of identified impacts

The approach taken in the planning of the project has been multi-disciplinary involving consultation with the local land holders, various local, state and federal government agencies and specialist consultants in the preparation of safeguards to minimise the potential environmental, social and economic impacts of the proposed quarry expansion. During the assessment of this environmental impact assessment requests for additional information were raised by state government agencies which resulted in further in-depth studies in relation to flora and fauna, noise generation, surface water and traffic impact. There was also a change of mind regarding the sale of the land to the proponent by the current owners, and reduction in anticipated markets reducing the annual production volumes which resulted in a redesign of the proposed quarry. New information outlined in the additional studies and land ownership changes have resulted in the proposed amendments to the quarry expansion and environmental impact assessment outlined in this document. The project has been assessed against the principles of sustainable development and it is concluded that the Mary's Mount Blue Metal Quarry meets the objectives of these principles.

The proposed expansion of the quarry has been driven purely by market demand, demand for the material has increased, with further increases predicted for 2013/2014. The quarry has endeavoured to meet these local demands in a manner which meets the environmental and agricultural objectives of the site.

The impacts to the natural environment are summarised below;

<u>Land Resources</u>

Impacts on soils within the site would be temporary and manageable given the procedures intended to stockpile, revegetate and ameliorate (if necessary) all topsoils.

Water Resource

Following rain events most water within the quarry operations footprint is absorbed into the soil/rock, with little to no water runoff at the quarry site. Thus the impacts on the local water quality are expected to be low. Following expansion of the quarry and creation of a final void it is likely that there is potential for increased runoff due to the density of the bedrock. The proposed quarry design allows water runoff to fall to a drain along the base of the northern quarry highwall, this drain has a very shallow grade to allow for maximum water absorption and aquifer recharge through the bedrock. Runoff from this drain will be directed under the proposed pit entry haul route via a culvert and into a sedimentation pond before flowing along a series of existing and proposed contour banks to an existing dam which will be re-built to a larger capacity of 8ML to cater for increased runoff of the quarry. This dam is located on the northern boundary of the property. All runoff from the quarry site will be contained and managed on the "Burleith" property.

Flora and Fauna

Disturbance to flora and fauna on the site would be limited to the 17.63 hectare project site. Impacts to the semi-evergreen vine thicket and Koala habitat will be significant in the short term resulting in a direct loss of habitat. The quarry has been redesign to minimise impacts and avoid much of the semi-evergreen vine thicket on the site, and works have been staged to allow the establishment of compensatory planting to establish prior to vegetation removal.

The proponent is establishing a bio-banking proposal to offset the local impact of semi-evergreen vine thicket removal on the site. A Koala Plan of Management has been developed for the site to set in place a series of management protocol to ensure the long term management of local Koala populations which reside on the site. The long term objective is to restore and improve flora and fauna diversity on the site and a series of management protocol, rehabilitation techniques and monitoring commitments outlined in this report will abate impacts on flora and fauna from the proposed development.

Aboriginal Heritage

There was one item of aboriginal heritage identified on the site. This Scar tree is located beyond the project limits and would not be directly impacted upon by Gunnedah Quarry Product's activities. This site will be protected throughout the project life and Gunnedah Quarry Products is committed to ensuring that any artefacts or sites which may be identified in the future on the site are appropriately protected and managed.

Traffic

The proposed development will impact on local traffic volumes and put additional wear and tear on the local and regional road networks. The traffic impact assessment has calculated this impact to result in a 6.4% increase to local traffic on haul routes. A draft Voluntary Planning Agreement (VPA) has been prepared between Gunnedah Shire Council and the proponent. This VPA outlines the work commitment by the proponent and the contribution proposed by the Gunnedah Quarry Products to be paid quarterly to Gunnedah Shire Council reflecting the cost of impacts of the development on the local road network. To mitigate the impacts of the operations on local road networks Gunnedah Quarry Products has committed;

- To upgrade 6.79km of the haul route from the quarry entry at 'Beulah' to the Goolhi Road Intersection.
- To upgrade and construct the intersection of Goolhi Road and Mary's Mount Road to meet RMS standards.
- To widen pavement and improve safety for a 150 meter stretch of Goolhi Road at Emerald Hill, as nominated in consultation with Gunnedah Shire Council, and
- To pay a maintenance levy per tonne which leaves the gate to Gunnedah Shire Council as outlined in the VPA.

This road upgrade commitment is estimated to be an investment of $2.5 million dollars made by the proponent.

Noise and Vibration

The impact of increased noise generated from the quarry and vibration generated from operations on sensitive receivers within 1.49 to 3.3 kilometres of the site is expected to be low to insignificant with no criterion exceeded. The impact on the "Burleith" residence which is within 100m of the quarry footprint exceeds the relevant criteria.

The impact of noise associated with hauling of the material may be have a moderate impact on 5 local receivers which are located 0.2 to 0.95 kilometres from the haul route. It is not expected that the noise at any of these receivers will exceed the EPA industrial noise guidelines acceptable level of 55dB.

Impacts of Burleith Residence

The proponent has entered a contractual agreement with the land holder of "Burleith" where the quarry is located. This contractual agreement is for the purchase of part of the "Burleith" property where the quarry is located and includes a clause that the "Burleith" owners will not object or complain about the quarry operations. This land holder resides in the "Burleith" residence.

The report outlines that the impacts of noise and blasting from the operations are in excess of human comfort criteria. Further advice from Neil Pennington of Spectrum Acoustics advises that blast vibration levels around 20mm/s, and noise exceeding 45dB(A)Leq(15mins) noted in the report are the worst case scenario and generally noise generation and blasting in areas further from the residence levels will be much lower. The vibration levels are well below the level of 50mm/s quoted in international standards where structural damage may occur. Pennington also advises that studies in the USA found vibration caused by thunder was 15mm/s and by slamming a door 25mm/s was recorded. The worst case predicted levels of vibration from blasting operations in stage 1.5/2.1 of the operations may result in minor cosmetic fracturing such as cracks in cornices at the "Burleith" residence.

The proposed blasting regime allows for up to 7 blasts per year. The impacts of blasting on this residence are greatest during stages 1.5 and 2.1 where works are in close proximity to the residence. These stages will occur over a time period of approximately 2 years. To mitigate discomfort to the residents of Burleith it is proposed that blasting only occurs with prior arrangement with the residents.

Air Quality

Air dispersion modelling for the site indicates that the predicted incremental glcs for PM10, PM2.5, TSP and dust deposition at all the residential receptors surrounding the project are below the impact assessment criteria except at the "Burleith" residence which is less than 100 metres from the proposed pit. The impacts at the "Burleith" residence for PM10 and dust deposition were predicted to be above the assessment criteria. Incremental TSP is predicted to be below the impact assessment criteria. The proposed quarry layout has been determined in consultation with the land owners, which are also the "Burleith" residents. These reports have been provided to the land owners and the proponent has a contractual agreement with the land owners that they won't make any objections or complaints regarding the impacts of the proposed quarry on their property.

The impacts on the "Burleith" residence represented in the air quality assessment is the worst case scenario in stages 1.5 and 2.1 which has an anticipated program of 2 years, and impacts assume that drill and blast operations are executed. Air quality impacts on this receiver are expected to be lower in other stages of the project which are located further from the residence.

Impact on surrounding agriculture

A review of the productive arable land mapping by the Office of Environment and Heritage identifies the land within and immediately surrounding the site to have low productivity. The proposed development is not likely to impact on the surrounding, further afield prime agricultural activities, with some cumulatively impacts of dust generation and increased traffic during harvest anticipated. These cumulative impacts are not expected to be beyond the handling capacity of the surrounding environment.

Visibility

The proposed development will be visible for an estimated 9 kilometres in a western, south-western and northern

direction and it will be visible for up to 3.5 kilometres in a north-eastern direction. The amended quarry design has a significantly reduced visual impact as the pit size has reduced from 39 hectares to 14 hectares (17.63 hectare project area). The operations, now creating a void, means that visibility of day to day operations at lower levels will be limited. The impacts on the visual amenity of the area will be short term and the impact is reduced by the proposed staging of the works and rehabilitation.

Social and Economic Considerations

Section 4.13 of the report summarises the social and economic impacts of the proposed quarry expansion. The project would have a largely positive impact considering the increase in employment opportunities and the ready availability of material leading to increase capacity for civil and industrial development in the region.

This project is driven by the market demands for the blue metal products quarried at the Mary's Mount facility. Increasing demand over the past 12 months and predicted increased demand associated with ARTC expansion and Mine expansion in the Boggabri and Maules Creek area has resulted in strong demand for the material. This is the only quarry within a 100km radius which can supply the blue metal to these client's needs.

The increased availability of materials also drives the market price paid by consumers down, which can promote development in the area.

Consequences of the project not proceeding

The consequences of the project not proceeding include the following:

- Quarry would maintain current approval for 30,000 cubic metres per annum within the approved 2 hectare footprint.
- The opportunity for an expected 15 additional full time positions and 10 additional transport contractors would be foregone
- The disposable wages for the full-time and contract workforce which would be expected to be mostly spent in the Gunnedah area will be foregone
- The opportunity for diversified industry placing less pressure on reliance on one industry would be foregone.
- Potential for increased Blue Metal product prices to the local industry, due to transport/freight costs from further afield
- Loss of training opportunities for future employees.
- Foregoing PAYE taxes for the life of the quarry
- Foregoing additional road maintenance contribution to Gunnedah Shire Council
- Foregoing proposed local road construction and upgrades funded by the developer.
- Identified Environmental impacts would not eventuate

It is considered that the benefits of proceeding with the quarry outweigh the impacts on the environment which would result.

Conclusion

This environment impact assessment amendment prepared for the Mary's Mount Blue Metal Quarry has addressed the issues and concerns raised by the community and Government agencies. The project provides for quarrying of blue metal, on site processing of the material, sale and despatch of the blue metal products which would generate employment opportunities and boost local economies in the Gunnedah area. The development would impact positively on the economic base of the Gunnedah Shire. The proposed rehabilitation of the site would re-establish the habitat and biodiversity values of the site restoring the land to its previous agricultural capacity of light grazing.

In concluding this report should the application be approved the Mary's Mount Blue Metal Quarry would:

- Contribute to meeting the growing demands for blue metal, of the mining, transport and construction industries in the Gunnedah area
- Set in place a number of safeguards and mitigation measures to mitigate and abate identified environmental impacts to an acceptable level
- Satisfy the principles of ecologically sustainable development
- Restore the agricultural capacity of the site following closure of the quarry
- Provide new and enhanced Koala habitat and corridors
- Promote the re-vegetation of the White Box, Yellow Box, Blakely's Red Gum Endangered Ecological Community;
- Protect local occurrences of semi-evergreen vine thicket in the form of a bio-banking agreement
- Provide training and employment opportunities for residents in the Gunnedah and Mullaley area.
- Contribute to the diversification of industry within the Gunnedah Shire and promote continued economic growth in the shire and