EMGA Mitchell McLennan

Ground Floor, Suite 01, 20 Chandos Street
St Leonards, NSW, 2065
PO Box 21
St Leonards, NSW, 1590

T +61 2 9493 9500
F +61 2 9493 9599
E info@emgamm.com

www.emgamm.com

10 August 2012

Colin Phillips
Senior Planner
Department of Planning and Infrastructure
22-33 Bridge Street
Sydney NSW 2000

Re: Chain Valley Colliery Modification 1 to MP10_0161 - Response to Submissions

Dear Colin,

We refer to an application by the Proponent, LakeCoal Pty Limited (LakeCoal), dated 16 March 2012, for the modification to Project Approval MP10_0161 under Section 75W of the *Environment Planning and Assessment Act 1979* (EP&A Act). The proposed modification comprises the revision of the miniwall panel layout in the approved Domains 1 and 2 mining areas and an increase to the maximum extraction width for all miniwalls beyond Miniwall 2. All other components of the Project, as approved under MP10_0161, will remain unchanged.

The Chain Valley Colliery Modification 1 Environmental Assessment (EA) (EMM, 2012) supporting the modification application was publically exhibited from 18 July to 1 August 2012.

Following public exhibition of the EA a total of seven submissions were received. These comprised submissions from:

- Wyong Shire Council;
- Lake Macquarie City Council (LMCC);
- Construction Forestry Mining and Energy Union (Mining and Energy Division) Northern District Branch;
- NSW Environmental Protection Authority (EPA);
- NSW Office of Environment and Heritage (OEH) – Conservation and Regulation, North East;
- NSW Department of Primary Industries (DPI) and;
- NSW Department of Trade & Investment, Regional Infrastructure & Services, Division of Resources and Energy (DRE).

It is noted that no submissions from the community were received.

Table 1 of this letter responds to matters raised in the submissions. The submissions and responses will both be considered by the Minister for Planning and Infrastructure in determining the application to modify the approved Project.

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
Wyong Shire Council	Council is of the understanding that the proposed modification would not have any impact on subsidence, surface facilities or existing infrastructure within the Wyong Local Government Area.	Noted.
Lake Macquarie City Council	Based on its review of the EA LMCC notes that the benthic fauna may be impacted by subsidence and essentially provides a baseline study for current benthic fauna communities. LMCC considers that the mitigation strategies proposed are inadequate in the case that impact occurs. The mitigation strategy should provide methods of addressing any loss through either on-site or off-site remediation strategies. It notes that LMCC would be seeking a commitment to remediation in addition to the proposed monitoring program.	As described in Section 1.3 of the EA, the miniwall method is the referred mining method at the Colliery due to the geotechnical, safety and subsidence management considerations, primarily a consequence of mining activities being undertaken below Lake Macquarie. LakeCoal is seeking approval for a minor revision to the approved mine plan to revise the miniwall panel layout in the approved Domains 1 and 2 mining areas and increase the maximum extraction width for all miniwalls beyond Miniwall 2. The modified mine plan is predicted to result in an increased maximum vertical subsidence of 58mm beyond the approved maximum vertical subsidence of 360mm. As detailed in Section 3.2.3 of the EA, monitoring has demonstrated that current levels of subsidence are well within modelled predictions. Detailed bathymetric surveys undertaken in March 2012 showed approximately 100mm of subsidence following the completion of mining of Miniwall 1 and partial extraction of Miniwall 2. It is noted that mining of Miniwall 2 is now completed. As noted in Section 5.3.5 of the EA, depending on its magnitude and area, subsidence has the potential to impact on benthic marine communities. Appendix B of the EA contains a detailed benthic communities impact assessment, prepared by JSA Environmental. As stated in Section 5.3.1 of the EA, at DP&I's request, the study not only assessed the potential incremental impact on benthic communities arising as a consequence of the proposed modification, but also the potential impacts on benthic communities arising from the total predicted maximum subsidence from the Project as amended. Appendix C of the EA contains a Benthic Communities Management Plan (BCMP) prepared in accordance with Schedule 3 Condition 6 of Project Approval (10_0161). In summary, the BCMP was prepared to provide for the management of the potential impacts and/or

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
		environmental consequences of the proposed second workings on benthic communities. The benthic communities impact assessment and BCMP included baseline sampling at 12 sites including those previously impacted by subsidence, sites with potential to be impacted in the future and control sites in Lake Macquarie. Sampling was undertaken across two water depth intervals. The two water depth intervals, 4-5m and 5-6m, representing the general Lake depths where subsidence is proposed and under which mining activities have been, will be or are proposed to occur. Surveys showed that benthic communities are found at both depth ranges, with 867 animals found between 4-5m and 844 found between 5-6m. It is considered that the proposed mining would not impact on this trend. Although the control sites were observed to support more abundant communities of benthic invertebrates (649) than the impacted (523) or reference sites (539), neither the control or reference sites have been undermined. As reported in Section 5.3.3 of the EA, a number of statistical methods were used to analyse the data, including BIOENV analysis, to provide the most statistically robust assessment of comparison between impacted, reference and control sites and environmental data. BIOENV analysis matches environmental variables against biotic data which have been measured at the same sites to determine the extent to which the physio-chemical data is related to the observed biological patterns. The BIOENV results indicated that the community assemblages at the sites are influenced by variations in depth, dissolved oxygen levels, turbidity and sediment composition. The benthic communities impact assessment concluded that benthic communities are influenced by natural environmental fluctuations in water quality, benthic substrate and water natural depths. However, there is no conclusive link between subsidence and benthic invertebrate abundance and diversity. Notwithstanding, a monitoring program is proposed to ensure any potential impacts to the benthic communities due to the Project are detected

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
		and statistically assessed. The OEH submission notes that the recent and proposed ongoing bathymetric surveys appear to be adequate to identify and quantify new areas of subsidence. It also notes that the recent and proposed water quality, sediment and benthic invertebrate surveys/assessments appear sound and that these are a requirement of the BCMP. Schedule 3, Condition 2 of the Project Approval (10_0161): Environmental Performance Measures requires that the Project causes only minor environmental consequences to benthic communities, including minor changes to species composition and/or distribution. The aforementioned monitoring program will verify the requirement that the Project causes only minor environmental consequences to benthic communities and proposes mitigation measures which would be implemented should surveys determine otherwise. As detailed in Section 5.3.6 of the EA, the options for mitigation measures to manage subsidence on the lake floor are largely limited to changes to mine design. If impacts due to subsidence are assessed as moderate or major, additional sampling and analysis will be undertaken to validate the results obtained, including an assessment/review by an independent third party. If it is positively verified that any moderate or major impacts that have arisen are a consequence of subsidence, the mine plan will be modified for future panels in order to maintain compliance with the Project Approval (10_0161). Potential methods of on or off-site remediation such as emplacement of additional sediment or aquaculture based introductions of benthic species are considered likely to cause greater impacts to local benthic invertebrate communities than impacts potentially caused by increases in depth. Benthic communities are sensitive to a variety of seasonal and natural variables influencing the assemblage. The potential for increased total suspended solids and smothering during

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
		emplacement of substrate or disturbance to natural community vectors via the introduction of species is considered unsuitable as a mitigation measure. The BCMP provides a prescriptive and quantifiable method for determining effects of subsidence rather than natural lake dynamics and is considered suitable to inform mitigation in the form of mine planning changes. Therefore, it is considered that the mitigation strategies currently proposed, are adequate for the Project, as modified.
Construction Forestry Mining and Energy Union (Mining and Energy Division) Northern District Branch	Based on the assessment of environmental and socio-economic considerations which has been multidisciplinary and involved consultation with the DP&I and other relevant stakeholders, the Chain Valley Modification to Domains 1 and 2 Continuation Project is anticipated to pose negligible additional environmental impacts beyond those approved under MP10_0161. The modification is a minor alteration to the approved Colliery operations which will result in improved operational efficiencies for extraction of the coal resource. The Union considers that on balance, the Project is consistent with the currently approved MP10_0161 and objectives of the EP&A Act, and therefore supports the proponent's application.	Noted.
NSW Environmental Protection Authority	Based on its review of the EA and supporting appendices the EPA has no comment on the proposal and does not believe that it would require any variation to the existing Environmental Protection Licence (No.1770) issued under the *Protection of the Environment Operations Act 1997* for the activities at the premises.	Noted.

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
NSW Office of Environment and Heritage– Conservation and Regulation, North East	Based on its review of the EA and supporting appendices OEH provided the following comments:	
	Aboriginal cultural heritage assessment - OEH acknowledged that the Aboriginal cultural heritage assessment was undertaken in accordance with OEH's assessment guidelines; supports the Heritage Management Plan currently being prepared for the project; and has no additional concerns with the Aboriginal cultural heritage assessment for the proposed modification to the existing consent.	Noted.
	Subsidence impacts and lake ecology – OEH notes that the recent and proposed ongoing bathymetric surveys appear to be adequate to identify and quantify new areas of subsidence. It also notes that the recent and proposed water quality, sediment and benthic invertebrate surveys/assessments appear sound and that these are a requirement of the BCMP. OEH looks forward to reviewing the survey reports resulting from subsequent seasonal sampling.	Noted.
	OEH remains concerned about any changes in depth in the lake from mine subsidence that reduce light levels reaching sediment surface and thereby affect benthic microalgal primary production. OEH recommends that the proponent discusses different subsidence scenarios with Lake Macquarie City Council and considers Council's modelling of water clarity in the lake from different development scenarios. Accordingly, the following amended conditions of approval were recommended:	In its letter dated March 28 2012, EMM/LakeCoal invited OEH to attend a presentation on the initial benthic communities assessment findings and the draft BCMP. OEH respectively declined the invitation. As detailed in Section 4.2 of the EA, the draft structure, methodology and data collected for the BCMP was provided to OEH, along with LMCC and Department of Primary Industries – Fisheries (DPI Fisheries), on 11 April 2012 with an invitation to provide feedback. No comment was received from OEH. Section 5 of the BCMP, *Modelling to Monitor Potential Impacts*, outlined a monitoring campaign to determine the environmental dynamics that are affecting the communities. Due to the nature of seasonality, water quality and natural fluctuations in the lake, the

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
	The BCMP must include modelled estimates of: • potential change to light levels reaching the sediment and benthic productivity as a function of subsidence (including the effect of greater than expected subsidence, ie 2 metres); • changes in water clarity; and • future increase in lake levels of a function of climate change. Reports based on the BCMP must be submitted to OEH for review before Miniwall 2 is completed. The results of OEH's assessment must be used to inform the design of subsequent miniwall design in Domains 1 and 2 to ensure that benthic community function in the mine plan area is not adversely impacted.	monitoring program has been designed to determine whether environmental aspects such as light penetration or depth changes over time (potentially an impact of subsidence) are influencing the communities rather than natural estuarine processes. Due to the highly variable nature of the lake and benthic communities, it is not considered that enough data will be available to accurately model influences on these communities until, in particular, effects of seasonality are fully understood. LakeCoal would work with LMCC in providing data to support its modelling works and integrate any specifications into the monitoring program that would increase a whole of lake approach to understanding the relationship between water quality and benthic communities. It is not considered feasible to undertake full modelling until after at least year 2 of monitoring at which time the outcomes of the modelling would be taken into account during mine planning. LakeCoal does not consider it appropriate or that there is any scientific basis for adjusting the mine design until a full understanding of baseline and impacted condition can be established, especially given that the monitoring undertaken to date has shown that benthic communities exist at various depths, including within subsidence affected areas, and that no conclusive link between subsidence and benthic invertebrate abundance and diversity was found. As per Section 6 of the BCMP, monitoring program results will be reported seasonally within an annual report. The benthic monitoring results and subsequent data analysis will be reviewed annually to confirm compliance with Condition 2, Schedule 3 of the project approval. The monitoring results and analysis will also be included in the Annual Environmental Management Report (AEMR). The AEMR or any subsequent documentation will include a summary of monitoring results during the previous year, and comparison against predictions in the EA. As detailed in Section 3.2.3 of the EA, monitoring has demonstrated that current levels of subsidence are well within modelled predictions. Detailed bathymetric surveys undertaken in March 2012 showed approximately 100mm of subsidence following the completion of

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
		mining of Miniwall 1 and partial extraction of Miniwall 2. As noted above, mining of Miniwall 2 has been completed. Irrespective of this, it would've been unfeasible to provide any meaningful report based on the BCMP to OEH for review before Miniwall 2 was completed. The timing for provision of reports as outlined in Section 6 of the BCMP is considered appropriate. As reported in Chapter 3 and Table 5.3 of EA the proposed modification does not seek to increase the extraction rate, volume or method and no additional plant or stockpiling is required. Accordingly, the impacts on greenhouse gas emissions as a consequence of the modification will remain unchanged from those previously assessed and approved under MP10_0161. Accordingly, assessment of future increase in lake levels as a function of climate change is not within the scope of the EA prepared for the proposed modification. It is considered, however, that the current objectives and methods of assessment included within BCMP, which include consideration of depth increases due to subsidence, could be applied to increases in lake levels if appropriate.
	Threatened biodiversity assessment – OEH notes that the proponent has agreed to consider the angle of draw above each panel in the mine plan to ensure that the lake foreshore and seagrass communities will be protected. It also notes that the proposed development is considered unlikely to impact on threatened biodiversity covered by the *Threatened Species Conservation Act 1995*. However, in the event that the proposed development does adversely impact on threatened biodiversity, then OEH recommends the following condition: "The proponent must take remedial action in the event of any mine-subsidence related impact that is likely to significantly adversely affect the ecological viability of any endangered ecological communities within the approved project area. In	As detailed in Table 5.3 of the EA, the proposed modification does not involve any above ground surface disturbance and hence there will be no terrestrial biodiversity impacts which could be attributed to the modification. The return of mine water to the Lake will the same as for the current arrangements and will not lead to any changed impacts on the vegetation that receives discharge water from the Colliery. Consistent with the requirement of Schedule 3, Condition 2 of the Approval, a seagrass protection barrier has been implemented so that only negligible impacts to seagrass communities arise from the Project. A Seagrass Management Plan already exists for the Project, which will be updated in accordance with Schedule 3, Condition 6(g) of the Project Approval (MP10_0161) when the Extraction Plan is developed. The modification will not impact seagrass communities as the seagrass protection barrier will not be altered. As per Section 5.4 of the EA, the proposed modification will have a negligible impact on

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
	the event that any harm has occurred to any threatened species, population, or community, or their habitats; OEH recommends that the proponent implement adaptive management to prevent any further harm from occurring and that any harm caused is offset in accordance with the OEH's 'Principles for the use of biodiversity offsets in NSW' (DECC, 2011) or the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and Stage significant infrastructure (SSI) projects' (OEH, 2011."	terrestrial and aquatic biodiversity, including threatened biodiversity listed under the *Threatened Species Conservation Act 1995.*
Department of Primary Industries – NSW Office of Water (NOW) – Fisheries NSW	*Fisheries NSW* – Fisheries NSW has no objections to the proposal on the basis that it would be unlikely that the modifications and any increased subsidence would have a significant impact on the habitats on the lake bed, and that the existing protection barriers under the seagrass and lake edge appear sufficient to protect these areas from foreseeable impacts.	Noted.
	NOW – NOW advises that, should the proposal be approved, it should be subjected to the following conditions: 1. The applicant shall prepare a revised Water Management Plan (WMP) to the satisfaction of the NOW. The WMP for endorsement by the NOW shall include: • Details of site water balance, including source(s) of water from which supply shall be obtained, and entitlements under which any supply of water from a water source governed under the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* is obtained.	The comments from NOW are generally consistent with those provided during the exhibition of the EA for MP10_0161 in 2011, the responses for which were provided in the *Response to Submissions Report for the Chain Valley Colliery Domains 1 and 2 Continuation Project* (AECOM 2011). Further, through the instrument of approval for MP10_0161, relevant approval conditions were incorporated to ensure the comments from NOW were addressed. It is also noted that the proposed modification will result in no or negligible changes to the impact on the surface and groundwater systems which were assessed and approved under the Project Approval (MP10_0161) (refer Section 5.4 of the EA). Therefore, it is considered that comments are not focussed on the proposed modification, but on the Project as a whole. Notwithstanding, consideration to each of the points raised by NOW is given below. Schedule 3 Condition 28 of the Project Approval (MP10_0161) requires the preparation and implementation of a Water Management Plan for the project. The plan must include:

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
	• Demonstration of maximising the beneficial reuse of water intercepted and obtained from the underground mining operation, and any surface capture of water runoff from the internal catchment circuitry. • Demonstration that any harvesting of clean catchment runoff for beneficial use for the mine operation is obtained in compliance with the Harvestable Rights Orders under section 54 of the *Water Management Act 2000*. • A Groundwater Monitoring Plan, which provides justification to any monitoring arrangement within unconsolidated or porous rock aquifers. This shall include locations, target strata and/or aquifers, parameters, frequency and reporting of data and interpretation of results. • Surface water and groundwater response strategy, which defines and explains trigger levels, response actions and any mitigation and/or rehabilitation measures which shall be undertaken for the proposal. 2. The applicant shall provide to the Office of Water an annual reporting of water balance, monitoring results and any response actions defined in the revised WMP. 3. The applicant shall undertake investigations of alternate water supply options to the Wyong Water Supply Authority, to account for, and if necessary replace all existing and increased water supply from that Authority.	• a Site Water Balance; • an Erosion and Sediment Control Plan; • a Surface Water Management Plan; • a Groundwater Monitoring Program; and • a Surface Water and Groundwater Response Plan. The Water Management Plan is currently being prepared in accordance with the above condition by suitably qualified and experienced technical specialists whose appointments were approved by the Director-General. As part of the required consultation process, the draft Water Management Plan has been sent to the Department of Resources and Energy and the relevant contacts at NOW and Wyong Shire Council for comment prior to its finalisation and submission to the Director-General. In accordance with Schedule 3 Condition 29 of the Project Approval (MP10_0161) the site water balance includes details of: • sources and security of water supply; • water use on site; • water management on site; • any off-site water transfers; and • groundwater transfers from the underground operations to the surface. The condition also requires the investigation and implementation of all reasonable and feasible measures to minimise potable water use from the town water supply to reuse and recycle water. In addition to the requirements in the above condition regarding maximising the beneficial reuse of water, the Surface Water Management Plan, which is currently being prepared in accordance with Schedule 3 Condition 31 of the Project Approval (MP10_0161), requires

Table 1 Summary of submissions and responses

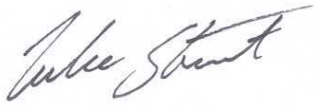
Submission by	Comment summary	Response
		that the Plan identify and assess practical measures to minimise potable water consumption, maximise recycled water use and improve the management of sewage and surface rainfall runoff for the Project. This includes quantifying the abatement potential of identified measures and their related costs and benefits. A Groundwater Monitoring Program is also currently being prepared in accordance with Schedule 3 Condition 32 of the Project Approval (MP10_0161). The Program will include: • detailed baseline data of all groundwater levels (including any alluvial and weathered rock aquifers), yield and quality in the region, and any privately-owned groundwater bores that may be affected by mining operations on site; • groundwater assessment criteria based upon analysis of baseline data for groundwater, surface water and ecology, including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor and/or validate the impacts of the project on any alluvial and coal seam aquifers, groundwater bores and groundwater dependent ecosystems. The Surface Water and Groundwater Response Plan is currently being prepared in accordance with Schedule 3 Condition 33 of the Project Approval (MP10_0160). The condition requires the Plan to describe what measures and/or procedures would be implemented to: • respond to any exceedances of the surface water, stream health, and groundwater assessment criteria; and • mitigate and/or offset any adverse impacts on any groundwater dependent ecosystems and riparian or lakeshore vegetation located within and adjacent to the site. In regard to NOW's second point, LakeCoal is committed to providing NOW with annual reporting of water balance, monitoring results and any response actions defined in the water management plan, all of which would be included in each AEMR.

Table 1 Summary of submissions and responses

Submission by	Comment summary	Response
		In regard to NOW's third point, this will also be covered in the Water Management Plan, as an identified requirement of the water balance (Schedule 3 Condition 29) is to "investigate and implement all reasonable and feasible measures to minimise potable water use from the town water supply to reuse and recycle water". As reported in Section 5.4 of the EA, the proposed modification will have no or negligible changes to the impact on the surface and groundwater systems which were assessed and approved under the Project Approval (MP10_0161). It is considered that the existing Project Approval conditions adequately accommodate NOW's recommended conditions of approval.
NSW Department of Trade & Investment, Regional Infrastructure & Services, Division of Resources and Energy (DRE)	Based on its review of the EA DRE notes that mining activities proposed are contained within mining leases held by the Proponent. DRE also notes that an approved SMP is in place with the latest approved variation dated January 2012 relating to MW1 to MW5. DRE requires the proponent to submit an SMP variation for MW6 to MW15, the SMP variation must be submitted and approved by the Director General of NSW Trade & Investment, Regional Infrastructure & Services prior to the commencement of mining.	LakeCoal is in the process of preparing the SMP variation for submission to the Director General, and will ensure that a variation to the SMP is approved prior to undertaking secondary extraction outside the area approved by the current SMP. It is noted that while the DRE submission refers to a requirement to submit an SMP variation for MW6 to MW15, as outlined in Section 3.3 of the EA, a maximum of eleven miniwalls are now proposed. Accordingly the SMP variation to be submitted will be generally consistent with the proposed workings as presented on Figure 3.2 of the EA.

Should you have any queries or require any additional information, please do not hesitate to contact LakeCoal's Environmental Coordinator, Chris Ellis, on 0429 774 246 or the undersigned.

Yours sincerely



Luke Stewart
Director
lstewart@emgamm.com