

Director General's Environmental Assessment Requirements

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

State Significant Development

Application Number	SSD - 5144
Development	The Mandalong Mine Southern Extension Project which includes: • extending underground mining operations within and beyond the existing approved development consent boundaries to extract up to 6 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal for 21 years; • deliver up to 6 Mtpa of ROM coal to the mine's Cooranbong Entry Site and/or the Delta Entry Site; • utilising, and upgrading where required, the existing infrastructure at the Mandalong mine surface facilities site; • transferring water between the Newstan and Awaba Collieries and the Mandalong minewater management system; and • continuing to operate 24 hours per day, seven days per week.
Location	Surface facilities located at Kerry Anderson Drive, Mandalong, in the Lake Macquarie LGA. Underground mining areas proposed in both Lake Macquarie and Wyong LGAs.
Applicant	Centennial Coal Company
Date of Issue	20 March 2012
General Requirements	The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>. In addition, the EIS must include a: • detailed description of the development, including: – need for the proposed development; – justification for the proposed mine plan, including efficiency of coal resource recovery, mine safety, and environmental protection; – likely staging of the development - including construction, operational stage/s and rehabilitation; – likely interactions between the development and existing, approved and proposed mining operations in the vicinity of the site; – plans of any proposed building works; • consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments; • risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment; • detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: – a description of the existing environment, <u>using sufficient baseline data</u>; – an assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; and – a description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage any significant risks to the environment; and • consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS.

Key Issues	The EIS must address the following specific issues: • Subsidence – including a detailed quantitative and qualitative assessment of the potential conventional and non-conventional subsidence impacts of the development that includes: - the identification of the natural and built features (both surface and sub-surface), including Wyong Council's Buttonderry Waste Management Facility and high voltage power transmission line and towers (particularly angle tension towers), within the area that could be affected by subsidence, and an assessment of the respective values of these features using any relevant statutory or policy documents; - accurate predictions of the potential subsidence effects and impacts of the development, including a robust sensitivity analysis of these predictions; - a detailed assessment of the potential environmental consequences of these effects and impacts on both the natural and built environment, paying particular attention to those features that are considered to have significant economic, social, cultural or environmental values; and - a detailed description of the measures that would be implemented to avoid, minimise, remediate and/or offset subsidence impacts and environmental consequences (including adaptive management and proposed performance measures); • Land Resources – including an Agricultural Impact Statement and a detailed assessment of the potential impacts on: - soils (including any acid sulfate soils) and land capability (including land contamination); - landforms and topography, including cliffs, rock formations, steep slopes, etc; and - land use, including agricultural, forestry, conservation and recreational use, with particular reference to State conservation areas and State forests – including impacts on forestry resources and forestry activities and consideration of appropriate compensation in relation to forestry production; • Water Resources – including: - detailed assessment of potential impacts on the quality and quantity of existing surface and ground water resources, including: - o detailed modelling of potential groundwater impacts; and - o impacts on riparian, ecological, geo-morphological and hydrological values of watercourses, including environmental flows; - a detailed assessment of potential impacts of the project on: - o the quantity and quality or regional water supplies, and in particular the supply of water to the Gosford-Wyong Water Supply Scheme; - o regional water supply infrastructure; and - o impacts on affected licensed water users and basic landholder rights; - a detailed site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures; - an assessment of proposed water discharge quantities quality/ies against receiving water quality and, if relevant, flow objectives; - identification of any licensing requirements or other approvals under the <i>Water Act 1912</i> and/or <i>Water Management Act 2000</i>; - demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP); - a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP or water source embargo; - a detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts;
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- a detailed flood impact assessment, taking into consideration:
 - o predicted subsidence effects and identification of impacts on local and regional flood regimes; and
 - o resultant impacts on agricultural land use, transport, services, habitability, public safety and other environmental consequences, including any measures proposed to mitigate potential flood impacts;
- **Biodiversity** – including:
 - measures taken to avoid, reduce or mitigate impacts on biodiversity;
 - accurate estimates of proposed vegetation clearing;
 - a detailed assessment of potential impacts of the development on any:
 - o terrestrial or aquatic threatened species or populations and their habitats, endangered ecological communities and groundwater dependent ecosystems, including the Porters Creek SEPP 14 wetlands; and
 - o regionally significant remnant vegetation, or vegetation corridors;
 - impacts on Jiliby State Conservation Area – including impacts on the conservation and recreational values and landowner consent issues; and
 - a comprehensive offset strategy to ensure the development maintains or improves the terrestrial and aquatic biodiversity values of the region in the medium to long term;
- **Heritage** – including an assessment of impacts on Aboriginal cultural heritage and Historic heritage, including:
 - an Aboriginal cultural heritage assessment (including both cultural and archaeological significance) which must:
 - o demonstrate effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting mitigation options and measures;
 - o outline any proposed impact mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures); and
 - a Historic heritage assessment (including archaeology) which must:
 - o include a statement of heritage impact (including significance assessment) for any State significant or locally significant historic heritage items; and,
 - o outline any proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures);
- **Air Quality** – including a quantitative assessment of potential:
 - construction and operational impacts, with a particular focus on dust emissions including PM_{2.5} and PM₁₀ emissions;
 - reasonable and feasible mitigation measures to minimise dust emissions, including evidence that there are no such measures available other than those proposed; and
 - monitoring and management measures, in particular real-time air quality monitoring;
- **Greenhouse Gases** – including:
 - a quantitative assessment of potential Scope 1, 2 and 3 greenhouse gas emissions;
 - a qualitative assessment of the potential impacts of these emissions on the environment; and
 - an assessment of reasonable and feasible measures to minimise greenhouse gas emissions and ensure energy efficiency;
- **Noise** – including a quantitative assessment of potential:
 - construction, operational and off-site transport noise impacts;
 - reasonable and feasible mitigation measures, including evidence that there are no such measures available other than those proposed; and
 - monitoring and management measures, in particular real-time and attended noise monitoring;
- **Traffic & Transport** – including:
 - a detailed assessment of potential impacts of the development on the

	capacity, safety and efficiency of the local and regional road network, with particular regard to the condition of the existing road network; and - a description of the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network in the surrounding area over the life of the project; • Visual – including: - a detailed assessment of the potential visual impacts of the project on private landowners in the surrounding area as well as from key vantage points in the public domain; and - a detailed description of the measures that would be implemented to minimise the visual impacts of the project; • Waste – including: - accurate estimates of the quantity and nature of the potential waste streams of the development; and - a description of measures that would be implemented to minimise production of waste on site, and ensure that that waste produced is appropriately managed; • Hazards – paying particular attention to public safety, including bushfires and flooding; • Social & Economic – including an assessment of the: - potential direct and indirect economic benefits of the project for local and regional communities and the State; - potential impacts on local and regional communities, including: - o increased demand for local and regional infrastructure and services (such as housing, childcare, health, education and emergency services); and - o impacts on social amenity; - a detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the project, including any infrastructure improvements or contributions and/or voluntary planning agreement or similar mechanism; and - a detailed assessment of the costs and benefits of the development as a whole, and whether it would result in a net benefit for the NSW community; and • Rehabilitation – including the proposed rehabilitation strategy for the site, having regard to the key principles in the Strategic Framework for Mine Closure, including: - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and - the potential for integrating this strategy with any other rehabilitation and/or offset strategies in the region.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>. These documents should be included as part of the EIS rather than as separate documents.
Consultation	During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with the: • Commonwealth Department of Sustainability, Environment, Water, Population and Communities; • Office of Environment and Heritage (including the Heritage Branch); • Environment Protection Authority; • Division of Resources and Energy within the Department of Trade and Investment, Regional Infrastructure and Services; • Department of Primary Industries (including the NSW Office of Water, NSW Forestry, Agriculture and Fisheries sections, Catchments and Lands (Crown Lands Division));

	• Transport for NSW (including the Centre for Transport Planning, and Roads and Maritime Services); • Mine Subsidence Board; • NSW Health; • TransGrid; • Hunter Central Rivers Catchment Management Authority; • Gosford – Wyong Councils Water Authority; • Wyong Shire Council; and • Lake Macquarie City Council. The EIS must: • describe the consultation process used and demonstrate that effective consultation has occurred; • describe the issues raised by public authorities, service providers, community groups and landowners; • identify where the design of the development has been amended in response to issues raised; and • otherwise demonstrate that issues raised have been appropriately addressed in the assessment.
Further consultation after 2 years	If you do not lodge a DA and an EIS for the development within 2 years of the issue date of these DGRs, you must consult further with the Director-General in relation to the requirements for lodgement.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, Attachment 1 contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this development.

ATTACHMENT 1

Technical and Policy Guidelines

The following guidelines may assist in the preparation of the Environmental Impact Statement. This list is not exhaustive and not all of these guidelines may be relevant to your proposal.

Many of these documents can be found on the following websites:

<http://www.planning.nsw.gov.au>

<http://www.bookshop.nsw.gov.au>

<http://www.publications.gov.au>

Policies, Guidelines & Plans

Risk Assessment

AS/NZS 4360:2004 Risk Management (Standards Australia)

HB 203: 203:2006 Environmental Risk Management – Principles & Process (Standards Australia)

Biodiversity

Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (DECCW 2009)

Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DECC 2004)

BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW 2008)

The Threatened Species Assessment Guideline – The Assessment of Significance (DECC 2007)

NSW State Groundwater Dependent Ecosystem Policy (DLWC)

Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)

State Environmental Planning Policy No. 44 – Koala Habitat Protection

Water Resources

National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)

National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)

National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)

National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)

Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)

State Water Management Outcomes Plan

Surface Water

NSW Government Water Quality and River Flow Objectives (DECC)

Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)

Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (DECC).

Managing Urban Stormwater: Treatment Techniques (DECC)

Managing Urban Stormwater: Source Control (DECC)

Floodplain Development Manual (DIPNR)

Floodplain Risk Management Guideline (DECC)

A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)

Technical Guidelines: Bunding & Spill Management (DECC)

Environmental Guidelines: Use of Effluent by Irrigation (DECC)

<i>Groundwater</i>	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Draft NSW Aquifer Interference Policy – Stage 1(NSW Govt, 2012)
	NSW State Groundwater Policy Framework Document (DLWC, 1997)
	NSW State Groundwater Quality Protection Policy (DLWC, 1998)
	NSW State Groundwater Quantity Management Policy (DLWC, 1998)
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	Guidelines for the Assessment & Management of Groundwater Contamination (DECC, 2007)
Air Quality	
	Protection of the Environment Operations (Clean Air) Regulation 2002
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
Noise & Blasting	
	NSW Industrial Noise Policy (DECC)
	Environmental Noise Management – Assessing Vibration: a technical guide (DEC)
	NSW Road Noise Policy (DECCW)
	Interim Guidelines for the Assessment of Noise From Rail Infrastructure Projects (DECC)
	Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZECC)
Land Resources	
	Agricultural Impact Assessment Guidelines 2012 (DP&I)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	State Environmental Planning Policy No. 55 –Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Traffic & Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Heritage	
<i>Aboriginal</i>	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC 2005)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
<i>Historic</i>	NSW Heritage Manual (NSW Heritage Office)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
Greenhouse Gases	
	National Greenhouse Accounts Factors (Australian Department of Climate Change (DCC))
	Guidelines for Energy Savings Action Plans (DEUS)
Waste	
	Waste Classification Guidelines (DECC)
Hazards	
	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
	Hazardous and Offensive Development Application Guidelines - Applying SEPP 33
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis

Rehabilitation	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia) Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia) Strategic Framework for Mine Closure (ANZMEC-MCA)
Socio-Economic	Draft Economic Evaluation in Environmental Impact Assessment (DoP) Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate)



Heritage Council

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Job ID No: A755412
File number: 11/11775
Your ref: SSD 5144

Colin Phillips
Senior Planner- Mining Projects
Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001



Attention: Carl Dumpleton

Dear Mr Phillips

RE: Request for Input into Director General's Requirements (DGRs) for Mandalong Mine – South Extension Project (SSD 5144).

I refer to your letter dated 20 February (received by this Branch on 21 February), seeking that the Branch's key issues that need to be addressed in the relevant documentation Environmental Impact Assessment (EIS) for the above mentioned development proposal.

It is advised that the EIS should address the following issues:

- The heritage significance of the site and any impacts the development may have upon this significance should be assessed. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance. It should also include a consideration of wider heritage impacts in the area surrounding the site;
- The Heritage Council maintains the State Heritage Inventory which lists some items protected under the *Heritage Act, 1977* (e.g. listed on the NSW State Heritage Register) and other statutory instruments. This register can be accessed through the Heritage Office home page on the internet (<http://www.heritage.nsw.gov.au>);

It should be noted that the legal standing of items listed on the State Heritage Register can also be provided by applying for a section 167 Certificate through the Heritage Branch home page;

You should consult lists maintained by the the Office of Environment & Heritage, the National Trust of Australia (NSW), the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999* and the local council in order to identify any identified items of heritage significance in the area affected by the proposal. Please be aware, however, that these lists are constantly evolving and that items with potential heritage significance may not yet be listed;

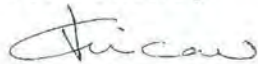
- Non-Aboriginal heritage items within the area affected by the proposal should be identified by field survey. This should include any buildings, works, relics (including

relics underwater), gardens, landscapes, views, trees or places of non-Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the NSW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience. The Branch's website http://www.heritage.nsw.gov.au/13_subnav_07.cfm can provide lists of suitable consultants;

- The proposal should have regard to any impacts on places, items or relics of significance to Aboriginal people. Where it is likely that the project will impact on Aboriginal heritage, adequate community consultation should take place regarding the assessment of significance, likely impacts and management/mitigation measures. For guidelines regarding the assessment of Aboriginal sites, please contact the Office of Environment & Heritage;
- Where possible refer to archaeological zoning plans or archaeological management plans held by Local Councils.

The Heritage Branch would be happy to review any further documentation that may address any likely heritage impacts. If you have any further enquiries regarding this matter, please contact Katrina Stankowski on (02) 9873 8569.

Yours sincerely



05/03/2012

Vincent Sicari

Manager

Conservation Team

Heritage Branch, Environment and Heritage, Policy and Programs Group

Office of Environment & Heritage



Our reference: DOC12/7065 LIC07/225-06 LIC08/1648-03
Karen Gallagher 02 49478058
Mining and Industry Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Colin Phillips



Dear Mr Phillips

**REQUEST FOR KEY ISSUES AND ASSESSMENT REQUIREMENTS
STATE SIGNIFICANT DEVELOPMENT –
PROPOSED NEWSTAN COLLIERY – EXTENSION OF MINING (SSD 5142)
PROPOSED MANDALONG MINE – SOUTH EXTENSION PROJECT (SSD 5144)
PROPOSED CENTENNIAL NORTHERN SERVICES – COAL LOGISTICS PROJECT (SSD 5145)**

Reference is made to your letter dated 20 February 2012 inviting the Environment Protection Authority ("the EPA") to provide its assessment requirements to be included in the Director-General's Requirements ("DGRs") for the preparation of Environmental Impact Statement's ("EIS") in respect of the above proposed developments.

The EPA has reviewed the details of the projects provided in the briefing papers prepared by Centennial Coal Pty Ltd, dated February 2012. The EPA has identified the information it requires to be covered in the EIS. In summary the EPA considers that the key environmental aspects of this proposal are:

- impacts on water quality;
- chemicals and hazardous materials;
- impacts on aboriginal cultural heritage;
- impacts on air quality,
- impacts on biodiversity,
- impacts on noise amenity.

The proponent should ensure that the EIS is sufficiently comprehensive and detailed to allow the EPA to determine the extent of the impacts of the proposal. In particular, the requirements of Section 45 of the *Protection of the Environment Operations Act 1997* ("POEO Act") must be addressed.

The EPA has identified the information it requires to assess the proposal in Attachment A. In carrying out the assessment the applicant should refer to the relevant guidelines in Attachment B and also any industry codes of practice and best environmental management practice guidelines.

The EPA requests 2 hard and 4 electronic (CD) copies of the EIS for assessment are delivered to the EPA's Regional Manager – Hunter at PO Box 488G, Newcastle 2300. The electronic copies should be provided in sections, or parts of each section, of not greater than 10 megabytes per section.

The proponent should be aware that any commitments made in the EIS may be formalised as licence or approval conditions. Consequently, pollution control or conservation measures should not be proposed if they are impractical, unrealistic or beyond the financial viability of the development. It is important that all conclusions are supported by adequate data.

If you require any further information regarding this matter please contact Karen Gallagher on (02) 4908 6822.

Yours sincerely



5 MAR 2012

MARK HARTWELL
Head Regional Operations Unit – Hunter
Environment Protection Authority

Encl: "Attachment A – Recommended Director General's Requirements for the
- Proposed Newstan Colliery – Extension of Mining
- Mandalong Mine – South Extension Project
- Centennial Northern Service
"Attachment B – Guidance Material"

Attachment A

NSW Environment Protection Authority Recommended Director General's Requirements (DGRs) For Newstan Colliery – Extension of Mining Mandalong Mine – South Extension Project Centennial Northern Services- Coal Logistics Project

Environmental impacts of the project

1. Impacts related to the following environmental issues need to be assessed, quantified and reported on:
 - Water and Soils
 - Acid sulphate soils
 - Contaminated sites
 - Flooding and coastal erosion
 - Soils - general
 - Water quality and discharges
 - Chemicals and Hazardous materials
 - Aboriginal cultural heritage
 - Air Issues
 - air quality
 - greenhouse gas
 - Biodiversity
 - Noise and vibration
 - Waste including:
 - General waste – any proposal

Environmental Impact Statements (EIS's) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant legislative requirements and guidelines mentioned. A list of guidelines is provided in **Attachment B** to assist the proponent.

Licensing requirements

1. Centennial Coal Company Limited currently holds Environment Protection Licence (EPL) 395 for Newstan Colliery, EPL 443 for Awaba Colliery and EPL 365 for Mandalong Colliery. The EIA's for these three proposals should address the requirements of Section 45 of the *Protection of the Environment Operations Act 1997* (POEO Act) by determining the extent of any impacts, and provide sufficient information to enable EPA to determine if any variation of the current EPL would be required.
2. Should project approval be granted, the proponent may need to make a separate application to EPA for a variation of the EPL. Additional information is available through the *OEH Guide to Licensing* document (www.environment.nsw.gov.au/licensing/licenceguide.htm).

SPECIFIC ISSUES

Water and soils

Acid sulphate soils

1. The potential impacts of the development on acid sulfate soils must be assessed in accordance with the relevant guidelines in the *Acid Sulphate Soils Manual* (Stone *et al.* 1998) and the *Acid Sulphate Soils Laboratory Methods Guidelines* (Ahern *et al.* 2004).
2. Describe mitigation and management options that will be used to prevent, control, abate or minimise potential impacts from the disturbance of acid sulfate soils associated with the project and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

Contaminated sites assessment and remediation

1. The EIS should include an assessment of the contaminated site that is conducted in accordance with the guidelines made or approved under section 105 of the *Contaminated Land Management Act 1997*, for example: *Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 2000), *Guidelines for the NSW Site Auditor Scheme - 2nd edition* (DEC, 2006), *Sampling Design Guidelines* (EPA, 1995), *National Environment Protection (Assessment of Site Contamination) Measure 1999* (or update).
2. The EIS should provide the details on how the site contamination will be remediated and/or managed so that the site is, or can be, made suitable for the proposed use.
3. All reports should be prepared in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 2000).
4. The EIS should specify whether or not a site auditor, accredited under the *Contaminated Land Management Act 1997*, has been or will be engaged to issue a site audit statement to certify on the suitability of the current or proposed uses.

Flooding and coastal erosion

The EIS should include an assessment of the following referring to the relevant guidelines in Attachment 2:

1. Whether the proposal is consistent with any floodplain risk management plans.
2. Whether the proposal is compatible with the flood hazard of the land.
3. Whether the proposal will significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties.
4. Whether the proposal will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
5. Whether the proposal incorporates appropriate measures to manage risk to life from flood.
6. Whether the proposal is likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Soil issues - general

The EIS should include:

1. An assessment of potential impacts on soil and land resources should be undertaken, being guided by *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:
 - a. Soil erosion and sediment transport - in accordance with *Managing urban stormwater: soils and construction*, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008).
 - b. Mass movement (landslides) – in accordance with *Landslide risk management* guidelines presented in Australian Geomechanics Society (2007).
 - c. Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets which includes *Site Investigations for Urban Salinity* (DLWC, 2002).
2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

Water

Describe Proposal

1. Describe the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.
2. Demonstrate that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.
3. Where relevant include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

Background Conditions

4. Describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal.

Proponents are generally only expected to source available data and information. However, proponents of relatively large and/or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could also include, for example:

- water chemistry
- a description of receiving water processes, circulation and mixing characteristics and hydrodynamic regimes
- lake or estuary flushing characteristics
- sensitive ecosystems or species conservation values
- specific human uses (e.g. fishing, proximity to recreation areas)
- a description of any impacts from existing industry or activities on water quality
- a description of the condition of the local catchment e.g. erosion, soils, vegetation cover, etc.
- an outline of baseline groundwater information, including, for example, depth to

watertable, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment

- historic river flow data

5. State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (<http://www.environment.nsw.gov.au/ieo/index.htm>). Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.
6. State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality (http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality).
7. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.

Impact Assessment

8. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment.
 - Depending on the nature, scale and/or risk of the proposal, this could include specific requirements to consider impacts on, for example:
 - water circulation, current patterns, water chemistry and other appropriate characteristics such as clarity, temperature, nutrient and toxicants
 - changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, and groundwater)
 - disturbance of acid sulphate soils and potential acid sulphate soils
 - stream bank stability and impacts on macro invertebrates
 - Depending on the nature, scale and/or risk of the proposal, modelling, monitoring, or both, may need to be undertaken to assess the potential impact of discharges on the receiving environment. If modelling is required to assess the potential impact of any discharge(s), this could include, for example:
 - a range of scenarios that encompass any variations in discharge quality and quantity as well as the relevant range of environmental conditions of the receiving waters. The scenarios could describe a set of worst-case conditions and typical conditions to ensure that both acute and chronic impacts are assessed
 - assumptions used in the modelling, including identification and discussion of the limitations and assumptions to ensure full consideration of all factors, including uncertainty in predictions.
9. Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to:
 - protect the Water Quality Objectives for receiving waters where they are currently being achieved; and
 - contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.
10. Where a discharge is proposed that includes a mixing zone, the proposal should demonstrate how wastewater discharged to waterways will ensure the ANZECC (2000) water quality criteria for relevant

chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge, and that any impacts in the initial mixing zone are demonstrated to be reversible.

11. Assess impacts on groundwater and groundwater dependent ecosystems.
12. Describe how stormwater will be managed both during and after construction.

Monitoring

13. Describe how predicted impacts will be monitored and assessed over time.
 - For relatively large and/or high risk developments, proponents should develop a water quality and aquatic ecosystem monitoring program to monitor the responses for each component or process that affects the Water Quality Objectives that includes, for example:
 - adequate data for evaluating compliance with water quality standards and/or Water Quality Objectives
 - measurement of pollutants identified or expected to be present in any discharge
 - Water quality monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutant in NSW* (2004) (<http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf>).

Waste, chemicals and hazardous materials

General waste – any proposal

The EIS should:

1. Include a detailed plan for in-situ classification of waste material, including the sampling locations and sampling regime that will be employed to classify the waste, particularly with regards to the identification of contamination hotspots.
2. Identify, characterise and classify all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste.
Note: All waste must be classified in accordance with the EPA's *Waste Classification Guidelines*.
3. Identify, characterise and classify all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.
Note: All waste must be classified in accordance with the EPA's *Classification Guidelines*.
4. Include a commitment to retaining all sampling and classification results for the life of the project to demonstrate compliance with the EPA's *Waste Classification Guidelines*.
5. Provide details of how waste will be handled and managed onsite to minimise pollution, including:
 - a) Stockpile location and management
 - Labelling of stockpiles for identification, ensuring that all waste is clearly identified and stockpiled separately from other types of material (especially the separation of any contaminated and non-contaminated waste).

- Proposed height limits for all waste to reduce the potential for dust and odour.
- Procedures for minimising the movement of waste around the site and double handling.
- Measures to minimise leaching from stockpiles into the surrounding environment, such as sediment fencing, geofabric liners etc.

b) Erosion, sediment and leachate control including measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site during works. The EIS should show the location of each measure to be implemented. The Proponent should consider measures such as:

- Sediment traps
- Diversion banks
- Sediment fences
- Bunds (earth, hay, mulch)
- Geofabric liners
- Other control measures as appropriate

The Proponent should also provide details of:

- how leachate from stockpiled waste material will be kept separate from stormwater runoff;
- treatment of leachate through a wastewater treatment plant (if applicable); and
- any proposed transport and disposal of leachate off-site.

6. Provide details of how the waste will be handled and managed during transport to a lawful facility. If the waste possesses hazardous characteristics, the Proponent must provide details of how the waste will be treated or immobilised to render it suitable for transport and disposal.
7. Include details of all procedures and protocols to be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.
8. Include a statement demonstrating that the Proponent is aware of the EPA's requirements with respect to notification and tracking of waste.
9. Include a statement demonstrating that the Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by the EPA from time to time.
10. Outline contingency plans for any event that affects operations at the site that may result in environmental harm, including: excessive stockpiling of waste, volume of leachate generated exceeds the storage capacity available on-site etc.

Chemicals and Hazardous Materials

The EIS should detail the handling, storage and management of all chemicals, in particular dangerous goods, at the premises in accordance with the relevant Australian Standards or codes.

Aboriginal cultural heritage

The EPA recommends that the following key issues be addressed by the proponent in preparing the EA.

Existing Aboriginal cultural heritage values

The EPA notes the existence of numerous registered Aboriginal sites in the regional locality. It is recommended that the proponent consider any potential impacts of the proposal on these known sites, the sensitivity and significance of these sites to the traditional Aboriginal knowledge holders and any relationship that may exist between these sites and any Aboriginal cultural heritage values of the project area.

Impacts of the project on Aboriginal cultural heritage values

Standard requirements:

1. The EIS must address and document the information requirements set out in the draft *'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation'* (Department of Environment and Conservation, 2005). This document is available from DP&I upon request.
2. The EIS must include surveys by suitably qualified archaeological consultants in consultation with all of the local Aboriginal knowledge holders.
3. The EIS should identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area and clearly articulate strategies proposed to avoid/minimise these impacts. If impacts are proposed as part of the final development, clear justification for such impacts should be provided.
4. The EIS must assess and document the archaeological and Aboriginal significance of the site's Aboriginal cultural heritage values.
5. Describe the actions that will be taken to avoid or mitigate impacts of the project on Aboriginal cultural heritage values. This must include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented. Any proposed methodology for Aboriginal cultural heritage investigation should reflect best practice standards recommended by the EPA in the *'Code of Practice for Archaeological Investigations of Objects in New South Wales (2010)'*. This Code of Practice is available online at:
<http://www.environment.nsw.gov.au/licences/archinvestigations.htm>
6. The EIS must provide documentary evidence to demonstrate that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing protection and mitigation options and making final recommendations. The EPA supports broad-based Aboriginal community consultation and as a guide the EPA's *'Aboriginal cultural heritage consultation requirements for proponents 2010'* provides a useful model to follow. This requirement is available on the EPA's website at:
<http://www.environment.nsw.gov.au/licences/consultation.htm>
7. If impacts on Aboriginal cultural heritage values are proposed as part of the final development, an assessment of the proposed impacts in the context of *'inter generational equity'* and cumulative impact must be undertaken. This assessment must examine both cultural and archaeological perspectives equally at both the local and regional levels, with consideration given to the site level and broader landscape level.

Note: If the EIS is relying on past surveys it is critical to confirm that the surveys are consistent with the requirements of the above State Significant Development guidelines. Further, whilst there may be no requirement for obtaining an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) for projects approved under the State Significant Development

requirements of the *Environmental Planning and Assessment Act 1979*, there are other sections of the NPW Act which remain valid. This includes the requirement to obtain a Care Agreement for salvaged objects (Section 85) and reporting to the EPA on the status of new or impacted Aboriginal sites (Section 89A).

Notes:

1. An Aboriginal Site Impact Recording Form (<http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm>) must be completed and submitted to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through archaeological investigations required or permitted through these environmental assessment requirements.
2. Under section 89A of the *National Parks and Wildlife Act 1974*, it is an offence for a person not to notify the EPA of the location of any Aboriginal object the person becomes aware of, not already recorded on the Aboriginal Heritage Information Management System (AHIMS). An AHIMS Site Recording Form should be completed and submitted to the AHIMS Registrar (<http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm>), for each Aboriginal site found during investigations.

Air issues

Air quality

The EIS should include a detailed air quality impact assessment (AQIA). The AQIA should:

1. Assess the risk associated with potential discharges of fugitive and point source emissions for all stages of the proposal. Assessment of risk relates to environmental harm, risk to human health and amenity.
2. Justify the level of assessment undertaken on the basis of risk factors, including but not limited to:
 - a. proposal location;
 - b. characteristics of the receiving environment; and
 - c. type and quantity of pollutants emitted.
3. Describe the receiving environment in detail. The proposal must be contextualised within the receiving environment (local, regional and inter-regional as appropriate). The description must include but need not be limited to:
 - a. meteorology and climate;
 - b. topography;
 - c. surrounding land-use; receptors; and
 - d. ambient air quality.
4. Include a detailed description of the proposal. All processes that could result in air emissions must be identified and described. Sufficient detail to accurately communicate the characteristics and quantity of all emissions must be provided.
5. Include a consideration of 'worst case' emission scenarios and impacts at proposed emission limits.
6. Account for cumulative impacts associated with existing emission sources as well as any currently approved developments linked to the receiving environment.
7. Include air dispersion modelling where there is a risk of adverse air quality impacts, or where there is sufficient uncertainty to warrant a rigorous numerical impact assessment. Air dispersion modelling

must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005) <http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf>.

8. Demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment Operations (Clean Air) Regulation 2010*.
9. Provide an assessment of the project in terms of the priorities and targets adopted under the NSW State Plan 2010 and its implementation plan 'Action for Air'.
10. Detail emission control techniques/practices that will be employed by the proposal.

Greenhouse gas emissions

1. The EIS should include a comprehensive assessment of, and report on, the project's predicted greenhouse gas emissions (tCO₂e). Emissions should be reported broken down by:
 - a) direct emissions (scope 1 as defined by the Greenhouse Gas Protocol – see reference below),
 - b) indirect emissions from electricity (scope 2), and
 - c) upstream and downstream emissions (scope 3)

before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning).
2. The EIS should include an estimate of the greenhouse emissions intensity (per unit of production). Emissions intensity should be compared with best practice if possible.
3. The emissions should be estimated using an appropriate methodology, in accordance with NSW, Australian and international guidelines (see below).
4. The proponent should also evaluate and report on the feasibility of measures to reduce greenhouse gas emissions associated with the project. This could include a consideration of energy efficiency opportunities or undertaking an energy use audit for the site.

Guidance Material

- The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute <http://www.ghgprotocol.org/standards/corporate-standard>
- National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release), <http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx>
- National Greenhouse and Energy Reporting System, Technical Guidelines (latest release) <http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx>
- National Carbon Accounting Toolbox <http://www.climatechange.gov.au/government/initiatives/ncat.aspx>
- Australian Greenhouse Emissions Information System (AGEIS) <http://ageis.climatechange.gov.au/>

BIODIVERSITY

Biodiversity impacts can be assessed using **either** the BioBanking Assessment Methodology (scenario 1) or a detailed biodiversity assessment (scenario 2). The requirements for each of these approaches are detailed below.

The BioBanking Assessment Methodology can be used **either** to obtain a BioBanking statement, or to assess impacts of a proposal and to determine required offsets without obtaining a statement. In the latter instances, if the required credits are not available for offsetting, appropriate alternative options may be developed in consultation with EPA officers and in accordance with EPA policy.

Scenario 1 - Where a proposal is assessed using the BioBanking Assessment Methodology (BBAM):

1. Where a BioBanking Statement is being sought under Part 7A of the *Threatened Species Conservation Act 1995* (TSC Act), the assessment must be undertaken by an accredited BioBanking assessor (as specified under Section 142B (1)(c) of the TSC Act 1995) and done in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (OEH, 2008). To qualify for a BioBanking Statement a proposal must meet the improve or maintain standard.
- 1a. The EIS should include a specific Statement of Commitments that reflects all requirements of the BioBanking Statement including the number of credits required and any DG approved variations to impact on Red Flags.
2. Where the BioBanking Assessment Methodology is being used to assess impacts of a proposal and to determine required offsets, and a BioBanking Statement is not being obtained, the EIS should contain a detailed biodiversity assessment and all components of the assessment must be undertaken in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (OEH, 2008).
- 2a. The EIS should include a specific Statement of Commitments which:
 - is informed by the outcomes of the proposed BioBanking assessment offset package;
 - sets out the ecosystem and species credits required by the BioBanking Assessment Methodology and how these ecosystem and/or species credits will be secured and obtained;
 - if the ecosystem or species credits cannot be obtained, provides appropriate alternative options to offset expected impacts, noting that an appropriate alternative option may be developed in consultation with EPA officers and in accordance with EPA policy;
 - demonstrates how all options have been explored to avoid red flag areas;
 - includes all relevant 'BioBanking files (e.g. *.xml output files), data sheets and documentation (including maps, aerial photographs, GIS shape files, other remote sensing imagery etc.) to ensure the EPA can conduct an appropriate review of the assessment.
3. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby NSW estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered. Please refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (OEH, 2010).
4. With regard to the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify and assess any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Scenario 2 - Where a proposal is assessed outside the BioBanking Assessment Methodology:

1. The EIS should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the matters included in the following sections.
2. A field survey of the site should be conducted and documented in accordance with relevant guidelines, including:
 - the *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna - Amphibians* (OEH, 2009)
 - *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (OEH, 2004), and
 - Threatened species survey and assessment guideline information on www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm.

If a proposed survey methodology is likely to vary significantly from the above methods, the proponent should discuss the proposed methodology with EPA prior to undertaking the EIS, to determine whether the EPA considers that it is appropriate.

Recent (less than five years old) surveys and assessments may be used. However, previous surveys should not be used if they have:

- been undertaken in seasons, weather conditions or following extensive disturbance events when the subject species are unlikely to be detected or present, or
- utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate for detecting the target subject species,

unless these differences can be clearly demonstrated to have had an insignificant impact upon the outcomes of the surveys. If a previous survey is used, any additional species listed under the TSC Act since the previous survey took place, must be surveyed for.

Determining the list of potential threatened species for the site must be done in accordance with:

- *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (OEH, 2004); and
- *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).

The EPA Threatened Species website <http://www.environment.nsw.gov.au/threatenedspecies/> and the *Atlas of NSW Wildlife* database must be the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases (available on EPA website at:

<http://www.environment.nsw.gov.au/biobanking/biobankingtspd.htm>; and

<http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm>, respectively.

Other data sources (e.g. PlantNET, Online Zoological Collections of Australian Museums (<http://www.ozcam.org/>), previous or nearby surveys etc.) may also be used to compile the list.

3. The EIS should contain the following information as a minimum:
 - a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).
 - b. Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area.
 - c. Description of survey methodologies used, including timing, location and weather conditions.
 - d. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EIS.
 - e. Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status.

- f. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor.
 - g. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed.
 - h. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below).
 - i. Provision of specific Statement of Commitments relating to biodiversity.
4. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:
 - a. the factors identified in s.5A of the EP&A Act, and
 - b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance* (OEH, 2007) which is available at: <http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf>
 5. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking Statement has not been sought) this package should:
 - a) Meet EPA's *Principles for the use of biodiversity offsets in NSW*, which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm.
 - b) Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.
 - c) Include an appropriate Management Plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.
 6. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby NSW estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered. Refer to the *Guidelines for developments adjoining land and water managed by the Office of Environment and Heritage 2010*.
 7. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Noise and vibration

1. In relation to noise, the following matters should be addressed (where relevant) as part of the EIS.

General

2. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). <http://www.environment.nsw.gov.au/noise/constructnoise.htm>
3. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). <http://www.environment.nsw.gov.au/noise/vibrationguide.htm>

4. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZECC, 1990). <http://www.environment.nsw.gov.au/noise/blasting.htm>

Industry

5. Operational noise from all industrial activities (including private haul roads and private railway lines) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Industrial Noise Policy* (EPA, 2000) and *Industrial Noise Policy Application Notes*. <http://www.environment.nsw.gov.au/noise/industrial.htm>

Road

6. Noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). <http://www.environment.nsw.gov.au/noise/traffic.htm>
7. Noise from new or upgraded public roads should be assessed using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). <http://www.environment.nsw.gov.au/noise/traffic.htm>

Railway

8. Noise from increased rail traffic on the NSW Rail Network resulting from rail traffic generating development (e.g. an extractive industry) should be assessed using the environmental assessment requirements for rail traffic-generating developments available at <http://www.environment.nsw.gov.au/noise/railnoise.htm>

Attachment B – Guidance Material

Title	Web address
<u>Relevant Legislation</u>	
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> <i>Contaminated Land Management Act 1997</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmentally Hazardous Chemicals Act 1985</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+140+1997+cd+0+N
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+14+1985+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Threatened Species Conservation Act 1995</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
<u>Aboriginal Cultural Heritage</u>	
Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)	Available from DoPI.
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/consultation.htm
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/archinvestigations.htm
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm
<u>Air Issues</u>	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+642+2002+cd+0+N
Greenhouse Gas	
The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute	http://www.ghgprotocol.org/standards/corporate-standard
National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release),	http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx
National Greenhouse and Energy Reporting System, Technical Guidelines (latest release)	http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx

Title	Web address
National Carbon Accounting Toolbox	http://www.climatechange.gov.au/government/initiatives/ncat.aspx
Australian Greenhouse Emissions Information System (AGEIS)	http://ageis.climatechange.gov.au/
<u>Noise and Vibration</u>	
Interim Construction Noise Guideline (DECC, 2009)	http://www.environment.nsw.gov.au/noise/constructnoise.htm
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.environment.nsw.gov.au/noise/vibrationguide.htm
Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC, 1990)	http://www.environment.nsw.gov.au/noise/blasting.htm
NSW Industrial Noise Policy (EPA 2000)	http://www.environment.nsw.gov.au/noise/industrial.htm
Industrial Noise Policy Application Notes	http://www.environment.nsw.gov.au/noise/applicnotesindustnoise.htm
Environmental Criteria for Road Traffic Noise (EPA, 1999)	http://www.environment.nsw.gov.au/noise/traffic.htm
Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC, 2007)	http://www.environment.nsw.gov.au/noise/railinfranoise.htm
Environmental assessment requirements for rail traffic-generating developments	http://www.environment.nsw.gov.au/noise/railnoise.htm

Waste, Chemicals and Hazardous Materials and Radiation

Waste

Waste Classification Guidelines (DECC, 2008)	http://www.environment.nsw.gov.au/waste/envguidlns/index.htm
DECCW Resource recovery exemption	http://www.environment.nsw.gov.au/waste/RRecoveryExemptions.htm
POEO (Waste) Regulations 2005	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+497+2005+cd+0+N

Water and Soils

Acid sulphate soils

Acid Sulphate Soils Planning Maps	http://canri.nsw.gov.au/download/
Acid Sulphate Soils Manual (Stone <i>et al.</i> 1998)	Manual available for purchase from: http://www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DoP's Guidelines Register at: Chapter 1 Acid Sulphate Soils Planning Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulphate Soils Assessment Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf

Title	Web address
Acid Sulphate Soils Laboratory Methods Guidelines (Ahern <i>et al.</i> 2004)	http://www.derm.qld.gov.au/land/ass/pdfs/lmg.pdf This replaces Chapter 4 of the Acid Sulphate Soils Manual above.
Contaminated Sites Assessment and Remediation	
Managing land contamination: Planning Guidelines – SEPP 55 Remediation of Land	http://www.planning.nsw.gov.au/DevelopmentAssessments/RegisterofDevelopmentAssessmentGuidelines/tabid/207/language/en-US/Default.aspx
Guidelines for Consultants Reporting on Contaminated Sites (EPA, 2000)	http://www.environment.nsw.gov.au/resources/clm/97104consultantsglides.pdf
Guidelines for the NSW Site Auditor Scheme - 2nd edition (DEC, 2006)	http://www.environment.nsw.gov.au/resources/clm/auditorglines06121.pdf
Sampling Design Guidelines (EPA, 1995)	Available by request from the EPA's Environment Line
National Environment Protection (Assessment of Site Contamination) Measure 1999 (or update)	http://www.ephc.gov.au/taxonomy/term/44
Flooding and Coastal Erosion	
Floodplain development manual	http://www.dnr.nsw.gov.au/floodplains/manual.shtml
Soils – general	
Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000)	http://www.dnr.nsw.gov.au/care/soil/soil_pubs/pdfs/tech_rep_34_new.pdf
Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008)	Vol 1 - Available for purchase at http://www.landcom.com.au/whats-new/publications-reports/the-blue-book.aspx Vol 2 - http://www.environment.nsw.gov.au/stormwater/publications.htm
Landslide risk management guidelines	http://www.australiangeomechanics.org/resources/downloads/
Site Investigations for Urban Salinity (DLWC, 2002)	http://www.environment.nsw.gov.au/resources/salinity/booklet3siteinvestationsforurbansalinity.pdf
Local Government Salinity Initiative Booklets	http://www.environment.nsw.gov.au/salinity/solutions/urban.htm
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/leo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf
Biodiversity	
BioBanking Assessment Methodology (OEH, 2008)	http://www.environment.nsw.gov.au/resources/biobanking/08385bbasessmethod.pdf
BioBanking Assessment Methodology and Credit Calculator Operational Manual	http://www.environment.nsw.gov.au/biobanking/operationalmanual.htm

Title	Web address
(OEH, 2008) Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians (OEH, 2009)	http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf
Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft (OEH, 2004) Guidelines for Threatened Species Assessment (Department of Planning, July 2005)	http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf Draft available from DPI
OEH Threatened Species website	http://www.environment.nsw.gov.au/threatenedspecies/
Atlas of NSW Wildlife	http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp
BioBanking Threatened Species Database	http://www.environment.nsw.gov.au/biobanking/biobankingtsdpd.htm
Vegetation Types databases	http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
PlantNET	http://plantnet.rbgsyd.nsw.gov.au/
Online Zoological Collections of Australian Museums	http://www.ozcam.org/
Threatened Species Assessment Guideline - The Assessment of Significance (OEH, 2007)	http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf
Principles for the use of biodiversity offsets in NSW	http://www.environment.nsw.gov.au/biocertification/offsets.htm

NSW Environment Protection Authority (EPA)



PCU032248

Mining and Industry Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Contact Dr Jodie Dabovic
Phone 02 4904 2571
Fax 02 4904 2503
Email jodie.dabovic@water.nsw.gov.au

Our ref ER21803
Your ref SSD-5144

Attention: Carl Dumpleton

Dear Mr Dumpleton

**Mandalong Mine Southern Extension (SSD-5144)
Request for Input into Environmental Assessment Requirements**

I refer to your email of 20 February 2012 requesting input into the environmental assessment requirements for the preparation of the Environmental Impact Statement (EIS) for the Centennial Mandalong Mine Southern Extension proposal.

The NSW Office of Water (Office of Water) has reviewed the Briefing Paper and provides the following key issues to be addressed in the EIS including an expanded list of assessment requirements detailed in **Attachment A**.

Key issues to be addressed in the EIS for the proposal include:

- Adequate and secure water supply is available for all activities for the life of the mine.
- Compliance with the rules in any relevant Water Sharing Plan (WSP) and legislation.
- Baseline monitoring (minimum of fortnightly data sampling for at least 2 years prior to mine operations) of all surface water and groundwater sources and dependent ecosystems within and adjacent to the mining operation area for calibration of models and development of trigger criteria.
- Predictive assessments of potential impacts to surface water and groundwater sources, basic landholder's rights to water, adjacent licensed water users and dependent ecosystems and monitoring to enable comparison with ongoing monitoring.
- Mitigation strategies to address impacts on surface water and groundwater sources and dependent ecosystems for the operational and post mining phases of the proposal and final landform.

If you require further information please contact Dr Jodie Dabovic, Planning and Assessment Coordinator on (02) 4904 2571 at the Newcastle office.

Yours sincerely

Mark Mignanelli
Manager Major Projects, Mines and Assessment
27 March 2012



Mandalong Mine Southern Extension (SSD-5144)
NSW Office of Water Environmental Assessment Requirements

Legislation

Take into account the objects and regulatory requirements of the *Water Act 1912* and *Water Management Act 2000* (WMA 2000), as applicable.

Water Sharing Plans

The proposal is located within the plan area for the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* (WSPHUAWS).

Demonstrate how the proposal is consistent with the relevant rules in any relevant WSP including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection, water quality and surface-groundwater connectivity.

A description of the site water use (amount of water from each water source) and management including all sediment dams, clear water diversion structures and water use storages with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures) and calculation of the maximum harvestable right dam capacity.

Provide analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP.

<http://www.water.nsw.gov.au/Water-management/Water-sharing/default.aspx>

Policies

Take into account the following policies (as applicable):

- NSW State Rivers and Estuary Policy (1993);
- NSW State Groundwater Policy Framework Document (1997);
- NSW State Groundwater Quality Protection Policy (1998);
- NSW State Groundwater Dependent Ecosystems Policy (2002);
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000);
- Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (2000);
- Guidelines for the Assessment and Management of Groundwater Contamination (2007);
- Guidelines for Groundwater Protection in Australia (1995);
- Rehabilitation Manual for Australian Streams CRC Catchment Hydrology, 2000; and
- Office of Water Guidelines for Controlled Activities (2010/ 2011).

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx>

Licensing Considerations

Provide detail of all proposed surface water and groundwater extraction and all water supply works to take water. Information is required on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water (pumps, dams, diversions, cuttings and levees) and details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring.

Water allocation account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered.

Groundwater Assessment

To ensure the sustainable and integrated management of groundwater sources, a groundwater assessment within and adjacent to the mine area must include but is not limited to the following:

- Details of all groundwater sources and existing groundwater users within the area (including the environment) and details of any potential impacts on these users;
- Identification of potential Groundwater Dependent Ecosystems (GDEs);
- Baseline monitoring (minimum of fortnightly data sampling for at least 2 years prior to mine operations) for groundwater quantity and quality for all aquifers and GDEs;
- Description of aquifer hydraulic properties, chemical characteristics and connectivity (including to surface water sources);
- Assessment of GDEs for condition and water quantity and quality requirements for both terrestrial and aquatic systems (macroinvertebrate, macrophyte and stygofauna) and is to include diversity and abundance assessments;
- Details of the results of any models or predictive tools used to predict groundwater drawdown, inflows into the site and impacts on affected water sources and adjacent water users;
- Assessment of the potential effects of mining operations on the quality of groundwater both in the short and long term including any pollutants potentially infiltrating into the groundwater sources and proposed waste water disposal methods and approval from the relevant authority;
- Demonstration of how the groundwater extraction will be managed within defined limits, so that groundwater levels and quality which are critical for GDEs will not be disrupted and there is sufficient flow to sustain ecological processes and maintain biodiversity;
- Protective measures that will minimise any impacts on groundwater sources, users and GDEs; and
- Determination of critical thresholds for negligible impacts to groundwater sources and GDEs.

Surface Water Assessment

To ensure the sustainable and integrated management of surface water sources and protection of riparian areas and *waterfront land*, as defined in the WMA 2000, an assessment of surface water sources within and adjacent to the mine area must include but is not limited to the following:

- Details of all watercourses and existing surface water users within the area (including the environment) and details of any potential impacts on these users;
- Baseline monitoring (minimum of fortnightly data sampling for at least 2 years prior to mine operations) for surface water quantity and quality for all watercourses;
- Geomorphic assessment of water courses including details of stream order (using the Strahler System), river style and energy regimes both in channel and on any adjacent floodplains;
- Detailed description of all potential environmental impacts in terms of vegetation, sediment movement, channel stability, water quality and hydraulic regime;
- Description of the design features and measures to be incorporated into the proposal to guard against long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers;
- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects; and
- Determination of critical thresholds for negligible impacts to surface water sources and dependent ecosystems.

Water Management Plan (WMP)

The WMP is to include the following:

- Monitoring methodologies of all surface water and groundwater sources and dependent ecosystems within and adjacent to the mining operation area to enable verification of predictive modelling;
- Reporting procedures for any monitoring program including mechanism for transfer of information to the Office of Water;
- Site water balance for the proposal to confirm that water supplies for construction and operation of the mine and associated activities are sourced from an appropriately authorised and reliable supply in accordance with the rules of relevant WSP;
- Long term average extraction limits and available water determinations for the life of the mine and associated activities, then in to final landform and post mining hydrological configuration;
- Off site water transfers;
- Measures to minimise water use and maximise reuse of saline and contaminated waters.
- Develop a contingency plan based upon any potential exceedances in the identified threshold limits for potential impacts presented in the surface water and groundwater assessments (this includes surface water energy and water quality limits and thresholds, and any groundwater level triggers or a beneficial use category);
- A description of the remedial measures;
- A description of the adaptive management strategies which would be initiated if the predicted impacts detrimentally impacted or sterilised any surface water and ground water source as a consequence of the proposal;
- Any funding assurances covering the anticipated post development maintenance cost, for example, on-going groundwater monitoring for the nominated period and/or remediation.

End Attachment A
27 March 2011

9 March 2012

SF2012/004313

MJ

Mining and Industry Projects
Department of planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Carl Dumpleton

Dear Mr Dumpleton,

**WANGI ROAD (MR217): MANDALONG MINE SOUTHERN EXTENSION PROJECT (SSD 5144)
– DIRECTOR GENERAL REQUIREMENTS**

I refer to your letter dated 20 February 2012 requesting the provision of key issues which Roads and Maritime Services (RMS) believes should form part of the Director-Generals Environmental Assessment Requirements (DGR's) for the subject proposal.

RMS has reviewed the information provided and has noted a Traffic Impact Assessment (TIA) will be undertaken and included in the Environmental Impact Statement (EIS) prepared for the project. The TIA should identify any matters related to the project which will, or will have the potential to impact on the local and classified road network. RMS has no additional requirements to be included in the Director General's Requirements.

Comment: RMS has been advised that coal haulage is via rail or private haulage roads. The key issues with any traffic assessment will be employee and service vehicle traffic.

The Environmental Impact Statement should refer to the following guidelines with regard to the traffic and transport impacts of the proposed development:

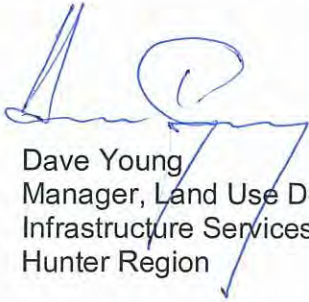
- Department of Planning EIS Guidelines
 - Road and Related Facilities
- RTA's *Guide to Traffic Generating Developments 2002*
 - Section 2 Traffic Impact Studies

Lake Macquarie City Council and Wyong Council should also be consulted regarding requirements.

Roads & Maritime Services

If you require any further advice please contact Dave Young on (02) 4924 0688.

Yours sincerely,

A handwritten signature in blue ink, appearing to be 'Dave Young', with a stylized flourish extending from the end of the signature.

Dave Young
Manager, Land Use Development
Infrastructure Services
Hunter Region

CC General Manager
Lake Macquarie City Council

CC General Manager
Wyong Council



Department of Primary Industries

OUT12/5251

Mr Carl Dumbleton
Mining and Industry Projects,
Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001

12 MAR 2012

Sent via: carl.dumbleton@planning.nsw.gov.au

Dear Mr Dumbleton

**Environmental Assessment Requirements
for proposed Mandalong Mine Southern Extension, Newstan Colliery Extension and
associated Coal Logistics Projects**

Thank you for the opportunity to advise on Director General Requirements for the preparation of an Environmental Assessment for the proposed Centennial Coal projects in Lake Macquarie.

The proposed extension of Newstan Colliery and the Northern Coal Services Coal Logistics projects do not affect agricultural lands.

As recognised in the briefing documents provided by Centennial coal the proposed extension of underground mining at Mandalong for a further 21 years has the potential to impact on agricultural lands.

Hence an Agricultural Impact Statement will need to be prepared in accord with the relevant Department of Planning & Infrastructure guidelines. This should focus on possible subsidence impacts to agricultural land use and related mitigation proposals.

For further advise on potential AIS requirements please contact Ms Liz Rogers telephone 026391 3642 or by email liz.rogers@dpi.nsw.gov.au.

Yours sincerely

Regina Fogarty
DIRECTOR OFFICE OF AGRICULTURAL SUSTAINABILITY & FOOD SECURITY



Date: 9 March 2012
Our ref: F2010/02008

Department of Planning & Infrastructure

Request for input into DGRs Centennial Coal Company Mandalong Mine Newstan Colliery Centennial Northern Services

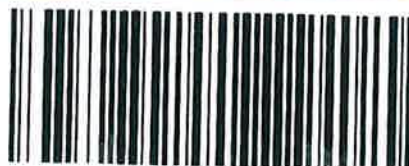
Centennial Mandelong (CM) has had ongoing liaison and discussion with Forests NSW in relation to the proposed extension and impact on Olney State Forest. Forests NSW is satisfied with the current dialogue and reporting process.

Forests NSW has issued an Occupation Permit for Exploration over Olney State forest to Centennial Mandelong for EL6317, MLS 0421, MLS0417 with Forests NSW current standard conditions for exploration on State forest. This permit holds currency until 30 June 2012. CM has complied with all conditions of the permit and has supplied Forests NSW with all reports and documentation required under the permit.

The exploration creates minimal surface disturbance and the underground mining will have little if any impact on the State forest.

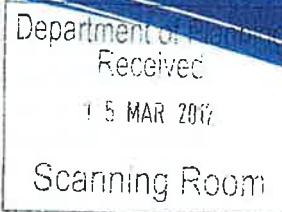
Jude Parr
Land Administration Officer
For Regional Manager
Central Region

12 March 2012



PCU031773

NSW DEPARTMENT OF PLANNING
PO Box 39
SYDNEY NSW 2001



Dear Sir/Madam

Subject: MISC/6/2012 - Information - Centennial Coal - Mining Projects
Lots 105, 108/110 & 212,213 & 216 DP 755207 & Lots 1/2 & 6/8 DP 816752
Awaba Colliery, 242 Wilton Road, AWABA NSW 2283

Please find the following advice regarding the request for input into Director-General's Requirements for the following projects:

- Newstan Colliery – Extension to Mining (SSD) 5142);
- Mandalong Mine - south Extension Project (SSD 5144);
- Centennial Northern Services – Coal Logistics Project (SSD 5145).

The supporting Environmental Assessment (EA) is to consider the following issues as relevant to the three proposed developments.

Awaba Waste Disposal Facility (SSD 5142)

The Environmental Assessment (EA) is to consider the impact of subsidence on the Awaba Waste Disposal Facility and associated infrastructure is to be taken into consideration.

Council Infrastructure (SSD 5142, SSD 5145, SSD 5144)

The EA is to consider the impact of subsidence on Lake Macquarie City Council infrastructure, inclusive of local roads, lands, buildings and infrastructure. Where this is likely to impacts upon Council and community infrastructure the supporting documentation is to consider ameliorative measures inclusive of monetary contribution to the maintenance, monitoring and lifecycle of existing and planned infrastructure.

Ecology (SSD 5142, SSD 5145, SSD 5144)

- Flora and fauna assessment should include an aquatic assessment in any potentially impacted creeks and waterways. This should include a habitat assessment, water quality, macro-invertebrate survey, and fish survey.
- Surface water assessment to consider the impacts of the entire proposal on water quality, flow regimes, and creek morphology.
- Consideration of riparian corridor widths should be included where land clearing occurs within the vicinity of waterways.

Our Ref: **MISC/6/2012**

- that the subsidence, groundwater and surface water assessments include detailed impact assessment and a long term monitoring program of subsidence, groundwater and surface water impacts to aquatic and terrestrial ecosystems. The impact assessment and monitoring program should pay particular attention to water sensitive ecosystems such as floodplain Endangered Ecological Communities, creek lines and wetlands that can be significantly impacted by alterations to hydrological flows from subsidence and changes to ground and surface water. A specialist in ecological impacts associated with subsidence and ground / surface water changes should complete the assessment. Impact predictions should be supported by scientific research in this area such as publications provided on the Australian Coal Associations Research Program website <http://www.acarp.com.au/reports.aspx?catId=1&subCatId=3>; and
- that the flora and fauna survey and associated impact assessment have regard for the following:
 - The Lake Macquarie Flora and Fauna Survey Guideline;
 - The Lake Macquarie *Tetratheca juncea* Management Plan;
 - The Lake Macquarie Native Vegetation and Corridors Mapping;
 - The Lake Macquarie City Council Guidelines for Vegetation Management Plans;
 - Councils preferred approach to amelioration and offsetting as outlined in the Lake Macquarie Council Planning Policy & Guideline for LEP Rezoning.

Planning (SSD 5142, SSD 5145, SSD 5144)

- Statutory Planning Considerations such as: Lifestyle 2020 which outlines strategic policies for the Lake Macquarie Council area, issues within Clauses 12 to 17 of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 are addressed, any draft Local Environmental Plans if exhibited.
- Subsidence assessment due to underground mining.
- Traffic assessment given that new facilities will be erected at the Awaba surface site and that existing facilities will continue to be used at the Newstan surface site.
- Noise assessment given 24 hr 7 day week operations.
- Air Quality assessment.
- Surface and ground water assessments.
- Visual assessment given that new infrastructure will be erected.
- Greenhouse gas emission assessment.
- Archaeological and European heritage assessment.

- Assessment of impacts onto existing urban areas such as Awaba village, Fassifern, Toronto, Rathmines, etc.
- Social and economic assessment.
- Community consultation with local community.
- Justification for proceeding with the project.
- Risk/hazard assessment of the project.
- Details of any EMPs that may be prepared for the project.
- Cumulative impacts of this project (i.e. Newstan Colliery – Extension of Mining) taking into consideration the associated projects of Mandalong Mine – South Extension and the Centennial Northern Services – Coal Logistics projects and any other mining projects within the surrounding locality.

Social Impact Assessment (SSD 5142, SSD 5145, SSD 5145)

- Identification of the social impact issues that will occur if the proposal is to proceed, including identifying who will be affected, the short and long term impacts, and inter-generational and intra-generational equity considerations;
- An assessment of the impacts including the level of importance of the impacts, the number of people who will likely be effected, the extent to which the interests of the community as a whole are enhanced or sustained, and the degree of change likely to arise as a result of the proposal, relevant to the existing circumstances;
- An evaluation as to whether the proposal will have overall social benefits or cost; and
- Any recommendations to mitigate the negative social impacts and enhance the positive social impacts should the proposal proceed.

The requirements for the Stakeholder and Community Consultation Programme are to include:

1. Identification of all of the key stakeholders and community groups/members who need to be consulted with in the development of the proposal and for the life of the project;
2. The consultation methods that will be utilised as part of this consultation programme;
3. Information as to how the issues/concerns that have been raised during the development of the proposal are addressed (ie. what changes have been made to the proposal as a result of any issues or concerns); and
4. Information as to how Centennial Northern Coal Services will respond to any issues or concerns that are raised during the life of the project.

Traffic Management (SSD 5142)

- Number of existing staff – the briefing paper indicates that the staffing level will be increased to 350 employees.
- Predicted impact on travel routes to and from site for employees including access to site.
- Employee parking area on-site - increase in size to accommodate additional staff and design of car park.
- Additional heavy vehicle routes other than on the haul road.
- Construction traffic routes for proposed additions to facilities.

Traffic Management (SSD 5144)

- Number of existing staff – the briefing paper indicates that the staffing level will be increased to 400 employees.
- Predicted impact on travel routes to and from site for employees including access to site.
- Employee parking area on-site - increase in size to accommodate additional staff and design of car park.
- Additional heavy vehicle routes other than on the haul road.
- Construction traffic routes for proposed additions to facilities.

Environmental Management (SSD 5142)

- An air quality assessment will be undertaken as part of the EIS to assess potential impact on nearby sensitive receptors to identify all likely dust generating sources (depositional dust, PM10, PM2.5 and Total Suspended Particulates).
- A plan is to be provided showing the location of existing and proposed air extraction infrastructure and the impacts of the infrastructure considered within odour and air quality modelling on sensitive receivers.
- Advice in the "Environmental compliance and performance report – Management of dust from coal mines" published by Department of Environment and Climate Change and Water in December 2010 advise managing dust from coal mines is important as it can impact local and regional air quality, adversely affect local amenity and pose a risk to public health.
- The applicant is to comply with the NSW Occupational and Health Guidelines and the National Environment Protection Measure for dust deposition.

- Noise impact is proposed to be addressed by the applicant by providing a noise impact assessment of the project. In this regard, the applicant is to satisfy the requirements of the NSW Office of Environment and Heritage Industrial Noise Policy.
- The impact on ground water resources, ground water dependent ecosystems and on downstream water qualities is one for consideration by other Departments including Sustainability.

Heritage (SSD 5142, SSD 5144)

- Assessment of all listed European heritage items and potential and provisional heritage items.
- Identification and assessment of all Aboriginal significant sites
- The Statement of Heritage Impact should include management recommendations for potential impacts of subsidence and extraction and other new work for items of European and Aboriginal heritage significance.
- Management and mitigation measures are to be prepared in accordance with the relevant policies, consultation requirements, assessment standards and methodologies.

Creeks and Watercourses (SSD 5144)

1. Assessment of existing surface water resources (intermittent and ephemeral) including all aspects outlined in the preliminary assessment report and:
 - Existing creek conditions including surface gradient, substrate composition, flow rates and flow velocities
 - Depth of the coal seam in relation to the creek bed surfaces
 - Water quality indicators (salinity, turbidity, dissolved oxygen, pH)
2. Assessment of the impacts of the proposed mining on the affected creek beds including:
 - Potential to result in cracking of the creek beds
 - Potential to create or alter riffle and pool sequences
 - Potential to change the flooding regime including depth, flood risk, direction of flows and speed
 - Potential for interaction between surface water and ground water
3. Assessment of the impacts of the proposed mining on water quality that includes:
 - Consideration of dissolved oxygen, salinity, heavy metals and electrical conductivity given that alterations in these indicators have previously been associated with subsidence in creek lines.

- Increased rates of erosion and associated turbidity impacts
4. Assessment of the environmental impacts of waste water discharge including anticipated water volumes and flow velocities; the water quality of the discharge; and potential downstream effects.
 5. Assessment of the impacts of the proposed mining on those species that are dependent on the aquatic environment for either habitat or breeding and; listed under the NSW Threatened Species Act; and identified as at risk from long-wall mining (as per the Key Threatening Process determination cited previously) and that are listed as potentially occurring in the Lake Macquarie local government area. These include:
 - Giant Burrowing Frog (*Heliophorus australiacus*)
 - Stuttering Frog (*Mixophyes balbus*)
 - Littlejohn's Tree Frog (*Litoria littlejohni*)
 6. Description of any proposed remediation works and an assessment of the environmental impact of implementing these remediation activities. Further, scientific evidence to support the efficacy of any remediation strategy.

Should you require further information, please contact the undersigned on 4921 0197 or by e-mail on dlovell@lakemac.nsw.gov.au.

Yours faithfully



David Lovell
Senior Development Planner
Development Assessment and Compliance

1 March 2012

Mr C Dumpleton
Mining and Industry Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Carl.Dumpleton@planning.nsw.gov.au

Dear Mr Dumpleton

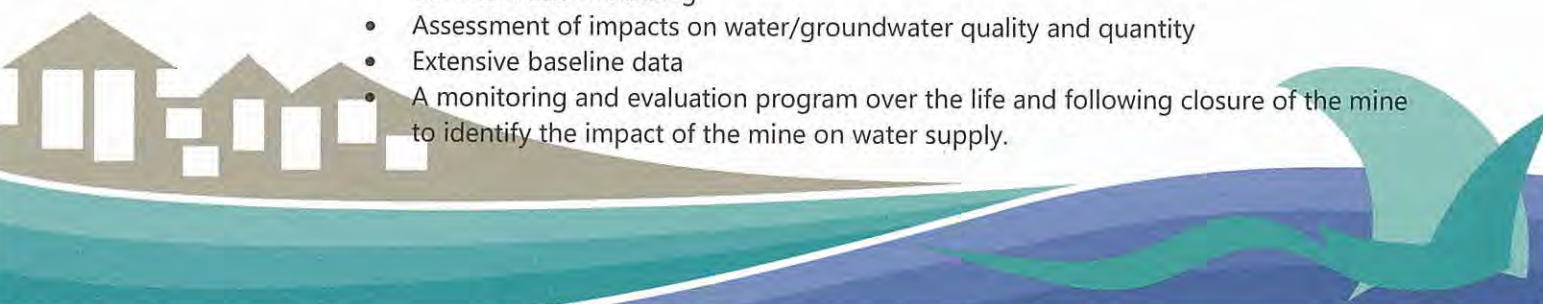
Mandalong Mine - Southern Extension Project (SSD-5144)
WYONG SHIRE COUNCIL INPUT INTO DIRECTOR-GENERAL'S REQUIREMENTS (DGRS)

Thank you for your e-mail dated 20 February 2012 and the request for Council input into the Director-General's Requirements.

Council has reviewed the Briefing Paper for the Mandalong Southern Extension Project within the current Mining Leases and EL6317 as it relates to the Wyong Local Government Area. Council's most significant concerns are in respect to the risk posed by any extractive industry causing subsidence beneath the Buttonderry Waste Management Facility, which is Council's only operating landfill facility.

The following comments are provided for your consideration and inclusion in the Director General Requirements:

- 1 The Buttonderry Waste Management Facility should be excluded from the project application area. The Buttonderry Waste Management Facility is located over Lots 59, 68 and 153 in DP 755271 and Lot 1 in DP 822126.
- 2 Having regard for subsidence, consideration must be given to the potential impacts to all natural features including stream banks and beds and riparian zones. A number of watercourses within the project application area feed into Porters Creek Wetland, which is identified as a State Significant wetland under State Environmental Planning policy No 14 – Coastal Wetlands.
- 3 The potential impact of subsidence on the built environment also needs to be considered. This includes residences/buildings, infrastructure and the Buttonderry Waste Management Facility.
- 4 The project application area appears to be located partially within the Wyong River Catchment and partially within the Porters Creek Catchment. As such, the proposal should address:
 - Ground water modelling
 - Surface water modelling
 - Assessment of impacts on water/groundwater quality and quantity
 - Extensive baseline data
 - A monitoring and evaluation program over the life and following closure of the mine to identify the impact of the mine on water supply.



Notwithstanding the above, it is Council's preference that the project application area is modified to exclude the Wyong River Catchment as this forms part of the Central Coast potable water supply.

- 5 The Flora and Fauna assessment should include assessment of the potential impacts on threatened species, their habitats, populations and ecological communities, including groundwater dependant ecosystems.
- 6 The potential impact on Aboriginal and non-Aboriginal heritage should be considered and appropriate consultation undertaken.
- 7 The social and economic assessment should include consideration of a community or environmental contribution/levy being paid per tonne of coal produced by the mine. This is consistent with other coal mining projects within the Wyong Local Government Area.
- 8 Consideration of the cumulative impacts of the proposed mine should be addressed given that the Department of Planning and Infrastructure has recently issued Director-General's Requirements for the proposed Wallarah 2 underground coal mine, which is proposed to be located to the south-west of the proposed Mandalong Southern Extension.
- 9 Consideration should be given to exploring ways in which the emission of Greenhouse Gases will be offset. The detailed Greenhouse Gas assessment should consider the following:
 - A description of the measures that would be implemented on site to ensure that the project is energy efficient.
 - A commitment to offset direct greenhouse gas emissions from mining operations, in keeping with the Land and Environment Court decision in Hunter Environment Lobby Inc v Minister for Planning [2011] NSWLEC 221.
 - Options to minimise greenhouse gas emissions through the capture and re-use of coal seam gas.
- 10 While not necessarily directly impacting the Wyong Local Government Area, the Environmental Impact Statement should also address the following key issues:
 - The treatment and disposal of mine water
 - Water resources required for the operation of the mine
 - The impact on rail and road networks
 - Waste management
 - Air Quality
 - Noise and blasting
 - Rehabilitation

If you have any questions in relation to the above information below please contact Jenny Webb on (02) 4350 5441.

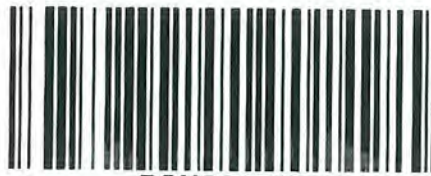
Yours faithfully,



Peter Fryar
Manager

Development Assessment

In reply please send to: Newcastle



PCU031593

Our reference: 6.80.08/L, 6.80.72/L

Your reference: SSD 5142/SSD 5144/SSD5145

Contact: Phil Alexander 02 49084350



PLANNING AND INFRASTRUCTURE
GPO BOX 39
SYDNEY NSW 2001

Attention: Colin Phillips

8 March 2012



Dear Sir

CENTENNIAL COAL- MINING PROJECTS
NEWSTAN EXTENSION, MANDALONG SOUTH &
CENTENNIAL NORTH SERVICES
REQUEST FOR INPUT

The Mine Subsidence Board has no objection to the proposed mining projects.

The applicant is to be advised that the locations of the projects are within Mine Subsidence Districts and as such, any new surface improvements or alterations to existing improvements will require the approval of the Mine Subsidence Board.

Yours faithfully

Phil Alexander
District Manager

NEWCASTLE

Ground Floor
NSW Government Offices
117 Bull Street
Newcastle West 2302
PO Box 488G Newcastle 2300
Telephone: (02) 4908 4300
Facsimile: (02) 4929 1032
DX 4322 Newcastle West

PICTON

100 Argyle Street
Picton 2571
PO Box 40 Picton 2571
Telephone: (02) 4677 1967
Facsimile: (02) 4677 2040
DX 26053 Picton

SINGLETON

The Central Business Centre
Unit 6, 1 Pitt Street
Singleton 2330
PO Box 524 Singleton 2330
Telephone: (02) 6572 4344
Facsimile: (02) 6572 4504

WYONG

Suite 3 Feldwin Court
30 Hely Street
Wyong 2259
PO Box 157 Wyong 2259
Telephone: (02) 4352 1646
Facsimile: (02) 4352 1757
DX 7317 Wyong

HEAD OFFICE

PO Box 488G
Newcastle 2300
Telephone: (02) 4908 4395
Facsimile: (02) 4929 1032



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24 Hour

Emergency Service
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