

Planning Secretary's Environmental Assessment Requirements

Section 5.16 of the *Environmental Planning and Assessment Act 1979*

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| Application Number | SSI-33143123 |
| Project Name | <p>Dendrobium Mine Extension Project, which includes:</p> <ul style="list-style-type: none"> · extending the Dendrobium Coal Mine into a new underground mining area (Area 5); · continued use of existing mine infrastructure, with minor upgrades and extensions, until 2041; · extraction of run-of-mine (ROM) coal from the new mining area (Area 5) by longwall mining methods, at a rate of up to 5.2 million tonnes per annum (Mtpa), until 2035; · use of existing infrastructure to deliver coal to the surface, process ROM coal and deliver product coal to Port Kembla; · transportation of up to 1.1 Mtpa of coal wash by road to the West Cliff Colliery Stage 3 and/or Stage 4 Coal Wash Emplacement or to external customers for engineering purposes; and · development of ancillary mine infrastructure including mine ventilation and gas management and abatement infrastructure, water management infrastructure and other minor infrastructure, plant, equipment and activities. |
| Location | Cordeaux Road, Kembla Heights, approximately 8 kilometres from Wollongong |
| Applicant | Illawarra Coal Holdings Pty Ltd |
| Date of Issue | 23/12/2021 |
| General Requirements | <p>The Environmental Impact Statement (EIS) must meet the minimum form and content requirements as prescribed by Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> (EP&A Regulation) and must have regard to the <i>State Significant Infrastructure Guidelines</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none"> · a stand-alone executive summary; · a full description of the development, including: <ul style="list-style-type: none"> - historical mining operations at the mine and in the surrounding region; - details of the resource to be extracted and justification for the proposed mine design, having regard to the advice of Regional NSW – Mining, Exploration and Geosciences (see Attachment 2); - the mine layout and likely staging or sequencing of the development, including construction, exploration, operation and rehabilitation; - coal production rates (ROM and product) and a life of mine production schedule; - forecast production tonnages split into market segment, including export/domestic and thermal/metallurgical coal markets; - coal processing and transportation arrangements; - surface infrastructure and facilities; - workforce requirements during all phases of the development (on a full-time |

equivalent basis);

- a waste management strategy;
- a water management strategy;
- a rehabilitation strategy;
- the likely interactions between the development and any other historical, existing, approved or proposed mining or infrastructure projects in the vicinity of the site;
- strategic context for the development in regard to supply of coal for steelmaking or other purposes;
- the statutory context for the development including any approvals that must be obtained before the development may commence;
- consideration of alternatives;
- an assessment of the likely impacts of the development on the environment focusing on the specific issues identified below, including:
 - a description of the existing environment likely to be affected by the development, using sufficient baseline data;
 - an assessment of the likely impacts of all stages of the development, including appropriate worst-case scenarios, consideration of any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice and with consideration to advice provided by agencies in Attachment 2;
 - a description of the measures that would be implemented to avoid, mitigate and/or offset the likely impacts of the development, and an assessment of:
 - o whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented;
 - o the likely effectiveness of these measures, including performance measures where relevant;
 - o whether contingency plans would be necessary to manage any residual risks; and
 - o a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved;
- a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS;
- an evaluation of the project as a whole having regard to:
 - relevant matters for consideration under the *Environmental Planning and Assessment Act 1979*, including the principles of Ecologically Sustainable development and the objects of the Act;
 - the suitability of the site with respect to potential land use conflicts with

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| | <p>existing and future surrounding land uses;</p> <ul style="list-style-type: none"> - the strategic need and justification for the project, including the relative importance of its role in supplying coal to BlueScope Steel, including in the context of medium to long term changes in steel production moving to “green steel” operations; - feasible alternatives to the development (and its key components), including the consequences of not carrying out the development; and - the biophysical, economic and social costs and benefits of the development; <ul style="list-style-type: none"> · a signed statement from the author of the EIS, certifying that the information contained within the document is neither false nor misleading. <p>Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the infrastructure.</p> <p>Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include:</p> <ul style="list-style-type: none"> · adequate baseline data · consideration of the potential cumulative impacts due to other developments in the vicinity (completed, underway or proposed); and · measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment. <p>The EIS must also be accompanied by:</p> <ul style="list-style-type: none"> · a report from a qualified quantity surveyor providing a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV and include certification that the information provided is accurate at the date of preparation; and · an estimate of jobs that will be created during the construction and operational phases of the proposed infrastructure. |
| <p>Key issues</p> | <p>The EIS must address the following specific matters:</p> <p>1. Justification and Alternatives – including:</p> <ul style="list-style-type: none"> - detailed consideration of how the issues raised by the Independent Planning Commission of NSW in its determination of the previous Dendrobium Mine Extension Project (SSD-8194), have been taken into account by the development, including consideration of the extent to which the development addresses the issues raised; - detailed consideration of how the residual issues raised by key agencies, including WaterNSW, Biodiversity and Conservation Sciences Directorate (BCD) within the Department, the Independent Advisory Panel for Underground Mining (IAPUM) and the Independent Expert Scientific Committee (IESC) regarding the previous Dendrobium Mine Extension Project, have been taken into account by the development; - a comprehensive assessment of alternatives, including alternative mine design (including panel dimensions and layout), mining methods (including minimal subsidence options such as bord and pillar/ partial extraction) and |

coal supply (including supply from other coal operations in the Southern coalfields);

- The consideration of alternatives must be supported by an assessment comparing the social, economic and environmental impacts of each feasible alternative, a risk evaluation of options and justification for why each alternative has not been adopted; and
- a strategic justification for the development, demonstrating:
 - o the need for the development;
 - o how the development has been designed to avoid or minimise, to the greatest extent practicable, impacts on:
 - § significant water resources,
 - § threatened species and biodiversity, and
 - § greenhouse gas emissions.
 - o how the development is consistent with the principles of Ecologically Sustainable Development and the objects of the *Environmental Planning and Assessment Act 1979*.

2. Subsidence – including:

- a review of the local and regional geological setting, including identification and characterisation of geological structures and lineaments within the proposed mining area;
- a detailed geotechnical assessment supporting the mine design and mining method, having regard to the advice of Regional NSW – Mining, Exploration and Geoscience (see Attachment 2);
- a detailed review of the status of historical mine workings in the vicinity of the proposed development;
- an assessment of the likely conventional and non-conventional subsidence effects and subsidence impacts of the development;
- a scientifically robust assessment of predicted height of fracturing above longwall panels and the vertical distance separating the fracture zone from the surface cracking zone, including consideration and assessment of alternative mine design options to maximise the vertical distance separating the height of connective fracturing with the surface cracking zone and minimise surface water losses;
- assessment of the potential consequences of subsidence-related effects and impacts on the natural and built environment, paying particular attention to those features that are considered to have significant ecological, economic, social, cultural or environmental value, taking into consideration connective fracturing above the longwall panels and recorded regional and historical subsidence;
- proposed remediation of predicted residual subsidence impacts
- details of the proposed subsidence monitoring network capable of detecting vertical, horizontal and far-field subsidence movements; and
- an independent peer review of the subsidence and height of fracturing assessment/s prepared for the development.

3. Water – including:

- an assessment of the likely impacts of the development on the quantity and quality of surface and groundwater resources, having regard to the NSW Aquifer Interference Policy and the advice of DPIE Water, WaterNSW and the Environment Protection Authority (EPA) (see Attachment 2). The assessment is to be supported by groundwater modelling and uncertainty analysis generally consistent with the Australian Groundwater Modelling Guidelines;
- an assessment of the likely impacts of the development on aquifers, watercourses, swamps, riparian land, groundwater dependent ecosystems, water supply infrastructure and systems including Cordeaux Dam and Avon Dam, basic landholder rights and other water users. The significance of water-related features must be considered individually for the purpose of impact assessment;
- an assessment of all water take for the life of the project and post-closure, including water taken directly and indirectly and itemised to quantify the contributions from each water source;
- an assessment on whether the development can be operated to achieve a neutral or beneficial effect on water quality in the Sydney Drinking Water Catchment, consistent with the provisions of *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2021*;
- an assessment of post-mining groundwater recovery and the potential long-term impacts on water quality and quantity of post-closure groundwater discharges, including the proposed method for managing post-closure groundwater discharges. If sealing of mine entries is proposed as a management strategy, the EIS must present:
 - o evidence to support the feasibility and likely success of this strategy in mitigating ongoing water losses; and
 - o detailed assessment of the long-term effects, impacts and consequences of mine sealing on neighbouring mines, the environment, water quantity and quality in the catchment and public safety;
- a detailed site water balance, including a description of site water demands, water disposal methods (including the location, volume and frequency of any water discharges and management of discharge water quality), water supply and transfer infrastructure and water storage structures, including:
 - o an assessment of the reliability of water supply, including consideration of climate change; and
 - o demonstration that water can be obtained from an appropriately authorised supply in accordance with the operating rules of any relevant Water Sharing Plans (WSP) or any alternative mechanisms agreed following consultation with the relevant NSW government agencies/ statutory authorities;
- identification of an adequate and secure water supply for the life of the project and any licensing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*, including a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant water sharing plan or water source embargo, or any alternative mechanisms agreed following consultation with

the relevant NSW government agencies/ statutory authorities;

- a detailed description of the proposed water management system (including sewerage), beneficial water re-use program, water monitoring program and other measures to mitigate surface water and groundwater impacts;
- an assessment of the potential flooding impacts of the development;
- a description of proposed surface and groundwater monitoring activities and methodologies;
- An assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts;
- a description of the reasonable and feasible mitigation and management measures proposed to prevent pollution of waters and to avoid or mitigate impacts to the quality or quantity of surface and groundwater resources, including assessment of the predicted effectiveness and cost of the mitigation measures; and
- an independent peer review of the groundwater model and the assessment of groundwater impacts prepared for the development.

4. Biodiversity – including:

- an assessment of the likely biodiversity impacts of the development in accordance with the Biodiversity Assessment Method (BAM) and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must have regard to the advice of the BCD (see Attachment 2) and include a strategy to offset any residual impacts of the development, including how required offsets would be achieved;
- the BDAR must demonstrate how impacts to biodiversity values have been avoided and detail measures to mitigate and manage impacts from the development in accordance with the BAM;
- the BDAR must include consideration of the increased risk of bushfire impacts on individual swamps that are predicted to be impacted by the development, and at the landscape scale;
- where remediation of impacted swamps and streams is proposed, the BDAR must include evidence to support the likely effectiveness of proposed remediation measures; and
- an assessment of the likely impacts of the development on aquatic ecology, including aquatic biodiversity and key fish habitats.

5. Heritage – including:

- an assessment of the likely impacts of the development on Aboriginal cultural heritage values having regard to the advice of Heritage NSW (see Attachment 2), including consultation with Aboriginal stakeholders in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (OEH, 2010);
- an assessment of the likely impacts of the development on the historic heritage significance of the site and adjacent areas, including a Statement of Heritage Impact (SOHI) prepared by a suitably qualified heritage consultant in accordance with the guidelines in the NSW Heritage Manual.

6. Noise – including:

- an assessment of the likely construction, operational and traffic noise impacts of the development, in accordance with the *Interim Construction Noise Guideline*, *NSW Noise Policy for Industry* (EPA) and *NSW Road Noise Policy*, and having regard to the *Voluntary Land Acquisition and Mitigation Policy*.

7. Air – including:

- an assessment of the likely air quality impacts of the development in accordance with the *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW*.

8. Greenhouse Gas – including:

- an assessment of the likely greenhouse gas emissions of the development;
- analysis of how the development's greenhouse gas emissions would affect State and national greenhouse gas emission reduction targets;
- a review of available best practice greenhouse gas emissions reduction measures available to the development;
- details of proposed greenhouse gas emissions avoidance, mitigation and/or offset measures; and
- an independent peer review of the greenhouse gas emission estimates and emission reduction measures, particularly targeting fugitive emissions from the development.

9. Land – including:

- an assessment of the compatibility of the development with other land uses in the vicinity of the development consistent with the requirements of Clause 12 of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

10. Transport – including:

- an assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the surrounding transport network, and any required upgrades or operational measures to minimise transport impacts;
- details of how the development would interact with the Maldon to Dombarton rail corridor and an assessment of the risks to rail assets and the future operational capacity of the corridor from mining operations, undertaken in consultation with the asset owners.

11. Hazards and Bushfire – including:

- an assessment of the likely risks to public safety, paying particular attention to potential subsidence risks, bushfire risks, and the handling and use of any dangerous goods;
- an assessment of bushfire risk, including consideration of the impacts of climate change and predicted subsidence-related hydrological changes within the local landscape; and
- consideration of *State Environmental Planning Policy 33 – Hazardous and*

Offensive Development with clear justification to support any conclusion that SEPP 33 does not apply.

12. Visual – including:

- An assessment of the likely visual impacts of the development from key public and private vantage points, and methods to minimise the lighting impacts of the development.

13. Waste – including:

- identification, quantification and classification of the waste streams likely to be generated (including tailings and course rejects) during construction and operation, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste; and
- details of proposed methods of storage and management of chemicals, including consideration of any infrastructure required to prevent spills and leaks.

14. Rehabilitation and Final Landform – including:

- a Rehabilitation Strategy addressing:
 - o final land-use options and preferred final land use;
 - o final landform including the conceptual final landform design;
 - o how the rehabilitation of the project will relate to the rehabilitation strategies of neighbouring mines;
 - o management of potential post-mining groundwater discharges; and
 - o inclusion of rehabilitation objectives and completion criteria to achieve the nominated post-mining land use for each mining domain.

The Rehabilitation Strategy is to have regard to the advice of the Resources Regulator (see Attachment 2); and

- identification and discussion of opportunities to improve rehabilitation and environmental outcomes for existing disturbed areas within the project site, and barriers or limitations to effective rehabilitation.

15. Social

- Provide a Social Impact Assessment prepared in accordance with the *Social Impact Assessment Guideline*.

16. Economic – including:

- the likely economic impacts of the development, paying particular attention to:
 - o the significance of the resource;
 - o the costs and benefits of the development identifying if it would result in a net benefit to NSW, including consideration of fluctuations in commodity markets and exchange rates, and costs of residual Scope 1 and 2 greenhouse gas emissions appropriately apportioned to NSW; and
 - o the demand for the provision of local infrastructure and services;
 - o the upstream/ downstream inter-relationship of the development for coal

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| | <p>supply in the Illawarra region including BlueScope, the Port Kembla coal-loader, and other coal operations in the Southern coalfields; and</p> <ul style="list-style-type: none"> - the need for a voluntary planning agreement; in relation to infrastructure, services, and community benefits and to address residual social impacts. |
| Plans and Documents | <p>The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents.</p> <p>In addition, the EIS must include high quality files of maps and figures of the subject site and proposal.</p> |
| Engagement | <p>During the preparation of the EIS and subsequent assessment process, you must consult with the Dendrobium Community Consultative Committee (CCC) in accordance with the <i>Community Consultative Committee Guidelines: State Significant Projects</i>.</p> <p>You must also consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups including the Aboriginal community and affected landowners.</p> <p>The EIS must detail the engagement undertaken and demonstrate how it was consistent with the <i>Undertaking Engagement Guide: Guidance for State Significant Projects</i>. The EIS must detail how issues raised and feedback provided have been considered and responded to in the project.</p> |
| Expiry Date | <p>If you do not lodge an EIS for the infrastructure within 2 years of the issue date of these SEARs, your SEARs will expire. If an extension to these SEARs will be required, please consult with the Planning Secretary 3 months prior to the expiry date</p> |
| References | <p>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 proposal.</p> |

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

Please also refer to the Department's Policies and Guidelines including strategic plans and guidelines at: <https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines>

| General | |
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| | State Significant Infrastructure Guidelines (DPIE, 2021) |
| | Cumulative Impact Assessment for State Significant Projects (DPIE, 2021) |
| | Undertaking Engagement for State Significant Projects (DPIE, 2021) |
| Water | |
| Water Sharing Plans | Relevant water sharing plans |
| General | NSW Water Strategy (DPIE August 2021) |
| Groundwater | NSW State Groundwater Policy Framework Document (NOW) |
| | NSW State Groundwater Quality Protection Policy (NOW) |
| | NSW State Groundwater Quantity Management Policy (NOW) |
| | NSW Aquifer Interference Policy 2012 (NOW) |
| | Australian Groundwater Modelling Guidelines (National Water Commission 2012) |
| | National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC) |
| | Guidelines for the Assessment & Management of Groundwater Contamination (EPA) |
| | Draft Greater Sydney Water Strategy (DPIE 2021) |
| | NSW State Rivers and Estuary Policy (NOW) |
| | NSW Government Water Quality and River Flow Objectives (EPA) |
| Surface Water | Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA) |
| | <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018)</i> |
| | 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) |
| | Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA) |
| | Managing Urban Stormwater: Soils & Construction (Landcom) Volume 1 and Volume 2 (A: Installation of services; C: Unsealed roads; D: Main Roads; E: Mines and Quarries) (DECC) |
| | Managing Urban Stormwater: Treatment Techniques (EPA) |
| | Managing Urban Stormwater: Source Control (EPA) |
| | Technical Guidelines: Bunding & Spill Management (EPA) |
| | Environmental Guidelines: Use of Effluent by Irrigation (EPA) |
| Flooding | A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH) |
| | NSW Guidelines for Controlled Activities (NOW) |
| Flooding | Floodplain Development Manual (OEH) |

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| | Floodplain Risk Management Guideline (OEH) |
| Biodiversity | |
| | Biodiversity Assessment Method (DPIE 2020) |
| | Guidance to assist a decisionmaker to determine a serious and irreversible impact (DPIE 2019) |
| | Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (Fisheries NSW) |
| | Guidelines for developments adjoining Department of Environment, Climate Change and Water (DECCW, 2010) |
| | NSW State Groundwater Dependent Ecosystem Policy (NOW) |
| | Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW) |
| Heritage | |
| | The Burra Charter (The Australia ICOMOS charter for places of cultural significance) |
| | Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010) |
| | Code of Practice for Archaeological Investigations of Objects in NSW (DECCW 2010) |
| | Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) |
| | NSW Heritage Manual (OEH) |
| | Statements of Heritage Impact (OEH) |
| Noise and Blasting | |
| | NSW Noise Policy for Industry (EPA) |
| | Interim Construction Noise Guideline (EPA) |
| | NSW Road Noise Policy (EPA) |
| | Assessing Vibration: a Technical Guideline (EPA) |
| | Voluntary Land Acquisition and Mitigation Policy (DP&E) |
| | Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC, 1990) |
| Air | |
| | Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW (EPA) |
| | Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA) |
| | Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline (EPA) |
| | Voluntary Land Acquisition and Mitigation Policy (DP&E) |
| | National Greenhouse Accounts Factors (Commonwealth) |
| | NSW Climate Change Policy Framework |
| | Net Zero Plan Stage 1: 2020-2030 (DPIE) |
| Transport | |
| | Guide to Traffic Generating Development (RTA) |
| | Road Design Guide (RMS) & relevant Austroads Standards |
| Social | |
| | Social Impact Assessment Guidelines for State Significant Projects (2021) |
| Economic | |

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| | Guidelines for the economic assessment of mining and coal seam gas proposals (2015) |
| Public Safety | |
| | Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 |
| | Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis Planning for Bush Fire Protection (2019) |
| Resource | |
| | Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 (JORC) |
| Waste | |
| | Waste Classification Guidelines (EPA) |
| Rehabilitation | |
| | Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Australian Government 2016) |
| | Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Australian Government 2016) |
| | Strategic Framework for Mine Closure (ANZMEC-MCA 2000) |
| | Guidelines on Tailings Dams – Planning, Design, Construction, Operation And Closure – Revision 1 (ANCOLD, July 2019) |
| | Integrated Mine Closure: Good Practice Guide (ICMM 2019) |
| Environmental Planning Instruments (for consideration) | |
| | <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i> |
| | <i>State Environmental Planning Policy (State and Regional Development) 2011</i> |
| | <i>State Environmental Planning Policy (Infrastructure) 2007</i> |
| | <i>State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011</i> |
| | <i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development</i> |
| | <i>State and Environmental Planning Policy 55- Remediation of Land</i> |
| | <i>Wollongong Local Environmental Plan 2009</i> |
| | <i>Wingecarribee Local Environmental Plan 2010</i> |
| | <i>Wollondilly Local Environmental Plan 2011</i> |

ATTACHMENT 2

Agency Advice on SEARs