



Department of Primary Industries

OUT15/18488

24 JUL 2015

Mr Hamish Aiken
Team Leader
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Dear Mr Aiken

**United and Wambo Open Cut coal Mine Project (SSD15_7142)
Request for input into Secretary's Environmental Assessment Requirements**

I refer to your email dated 2 July 2015 to the Department of Primary Industries in respect to the above matter.

Comment by Agriculture NSW

Agriculture NSW has reviewed the Preliminary Environmental Assessment for the proposed United and Wambo Open Cut Coal Mine Project and note that the proponent already has committed to the preparation of the required Agricultural Impact Statement. Specific guidance on satisfying the requirements for the AIS should be taken from the associated Department of Primary Industries, Agricultural Impact Statement Technical Notes which are available at:

<http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment>

For further details or information please call Rob Williamson, on telephone 02 6391 3166 or by email robert.williamson@dpi.nsw.gov.au

Comment by DPI Water

DPI Water has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the following comments below, and further detail in **Attachment A**.

It is recommended that the EIS be required to include:

- Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.
- Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).

- The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance.
- A detailed assessment against the NSW Aquifer Interference Policy (2012) using DPI Water's assessment framework.
- Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, wetlands, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Full technical details and data of all surface and groundwater modelling, and an independent peer review of the groundwater model.
- Proposed surface and groundwater monitoring activities and methodologies.
- Proposed management and disposal of produced or incidental water
- Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.
- Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.
- Consideration of relevant policies and guidelines.
- Assessment of whether the activity may have a significant impact on water resources, with reference to the Commonwealth Department of Environment Significant Impact Guidelines.
- If the activity may have a significant impact on water resources, then provision of information in accordance with the Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals, including completion of the information requirements checklist.
- A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

Note that non alluvial groundwater is regulated under the WA 1912 but upon commencement of the Northern Fractured and Porous Rock Groundwater Sources WSP, all groundwater would be regulated under the *Water Management Act 2000*.

For further information please contact Kerry Lee, Water Regulation Officer on (02) 4904 2666 or at kerry.lee@dpi.nsw.gov.au.

Yours sincerely



Kristian Holz
Director Policy, Legislation and Innovation

Attachment A

United and Wambo Open Cut Coal Mine Project (SSD 15-7142) Request for Input into Secretary's Environment Assessment Requirements Comment by the DPI Water

The following detailed assessment requirements are provided to assist in adequately addressing the assessment requirements for this proposal.

For further information visit the DPI Water website, www.water.nsw.gov.au

Key Relevant Legislative Instruments

This section provides a basic summary to aid proponents in the development of an Environmental Impact Statement (EIS), and should not be considered a complete list or comprehensive summary of relevant legislative instruments that may apply to the regulation of water resources for a project.

The EIS should take into account the objects and regulatory requirements of the *Water Act 1912* (WA 1912) and *Water Management Act 2000* (WMA 2000), and associated regulations and instruments, as applicable.

Water Management Act 2000 (WMA 2000)

Key points:

- Volumetric licensing in areas covered by water sharing plans
- Works within 40m of waterfront land
- SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the *Environmental Planning & Assessment Act 1979* (EP&A Act).
- No exemptions for volumetric licensing apply as a result of the EP&A Act.
- Basic landholder rights, including harvestable rights dams
- Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the *Water Act 1912*
- Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the WMA 2000

Water Act 1912 (WA 1912)

Key points:

- Volumetric licensing in areas where no water sharing plan applies
- Monitoring bores
- Aquifer interference activities that are not regulated as a water supply work under the WMA 2000.
- Flood management works
- No exemptions apply to licences or permits under the WA 1912 as a result of the EP&A Act.
- Regulation of water bore driller licensing.

Water Management (General) Regulation 2011

Key points:

- Provides various exemptions for volumetric licensing and activity approvals
- Provides further detail on requirements for dealings and applications.

Water Sharing Plans – these are considered regulations under the WMA 2000

Access Licence Dealing Principles Order 2004

Harvestable Rights Orders

Water Sharing Plans

It is important that the proponent understands and describes the ground and surface water sharing plans, water sources, and management zones that apply to the project. The relevant water sharing plans can be determined spatially at www.ourwater.nsw.gov.au. Multiple water sharing plans may apply and these must all be described.

The *Water Act 1912* applies to all water sources not yet covered by a commenced water sharing plan.

The EIS is required to:

- Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan 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 (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.
- Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.
- Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including:
 - Sufficient market depth to acquire the necessary entitlements for each water source.
 - Ability to carry out a “dealing” to transfer the water to relevant location under the rules of the WSP.
 - Daily and long-term access rules.
 - Account management and carryover provisions.
- Provide a detailed and consolidated site water balance.
- Further detail on licensing requirements is provided below.

Relevant Policies and Guidelines

The EIS should take into account the following policies (as applicable):

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals (IESC, 2014)
- Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments - impacts on water resources (Australian Govt. 2014)
- NSW State Rivers and Estuary Policy (1993)
- NSW Wetlands Policy (2010)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)

- Groundwater Monitoring and Modelling Plans - Information for prospective mining and petroleum exploration activities (NOW, 2014)
- NSW Code of Practice for Coal Seam Gas Well Integrity (DTIRIS 2012)
- NSW Code of Practice for Coal Seam Gas Fracture Stimulation (DTIRIS 2012)

DPI Water policies can be accessed at the following links:

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

<http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx>

An assessment framework for the NSW Aquifer Interference Policy can be found online at:

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

Licensing Considerations

The EIS is required to provide:

- Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).
- Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.
- Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc.).
- Information 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, etc).
- Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.
- Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages
- Details on the location, purpose, size and capacity of any new proposed dams/storages.
- Applicability of any exemptions under the *Water Management (General) Regulation 2011* to the project.

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

The Harvestable Right gives landholders the right to capture and use for any purpose 10% of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.

For more information on Harvestable Right dams, including a calculator, visit:

<http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff>

Dam Safety

Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.

See www.damsafety.nsw.gov.au for further information.

Surface Water Assessment

The predictive assessment of the impact of the proposed project on surface water sources should include the following:

- Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.
- Identification of all surface water sources as described by the relevant water sharing plan.
- Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.
- Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.
- Assessment of predicted impacts on the following:
 - flow of surface water (including floodwater), sediment movement, channel stability, and hydraulic regime,
 - water quality,
 - flood regime,
 - dependent ecosystems,
 - existing surface water users, and
 - planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

Groundwater Assessment

To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including:

- The known or predicted highest groundwater table at the site.
- Works likely to intercept, connect with or infiltrate the groundwater sources.
- Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.
- A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).
- Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.

- The predicted impacts of any final landform on the groundwater regime.
- The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.
- An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.
- An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).
- Measures proposed to protect groundwater quality, both in the short and long term.
- Measures for preventing groundwater pollution so that remediation is not required.
- Protective measures for any groundwater dependent ecosystems (GDEs).
- Proposed methods of the disposal of waste water and approval from the relevant authority.
- The results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- Any proposed monitoring programs, including water levels and quality data.
- Reporting procedures for any monitoring program including mechanism for transfer of information.
- An assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal.
- Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- Description of the remedial measures or contingency plans proposed.
- Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Groundwater Dependent Ecosystems

The EIS must consider the potential impacts on any Groundwater Dependent Ecosystems (GDEs) at the site and in the vicinity of the site and:

- Identify any potential impacts on GDEs as a result of the proposal including:
 - the effect of the proposal on the recharge to groundwater systems;
 - the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and
 - the effect on the function of GDEs (habitat, groundwater levels, connectivity).
- Provide safeguard measures for any GDEs.

Watercourses, Wetlands and Riparian Land

The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including:

- Scaled plans showing the location of:
 - wetlands/swamps, watercourses and top of bank;
 - riparian corridor widths to be established along the creeks;
 - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed);
 - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and
 - proposed location of any asset protection zones.
- Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.
- A detailed description of all potential impacts on the watercourses/riparian land.
- A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.
- A description of the design features and measures to be incorporated to mitigate potential impacts.
- Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.

Drill Pad, Well and Access Road Construction

- Any construction activity within 40m of a watercourse, should be designed by a suitably qualified person, consistent with the *NSW Guidelines for Controlled Activities on Waterfront Land* (July 2012).
- Construction of all wells must be undertaken in accordance with the *Minimum Construction Requirements for Water Bores in Australia* (3rd edition 2012) by a driller holding a bore drillers' licence valid in New South Wales.
- The length of time that a core hole is maintained as an open hole should be minimised.
- Construction, suspension and abandonment of wells for petroleum projects should be carried out in accordance with the *NSW Code of Practice for Coal Seam Gas Well Integrity* (DTIRIS 2012).

Landform rehabilitation (including final void management)

Where significant modification to landform is proposed, the EIS must include:

- Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;
- A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;
- Outline of proposed construction and restoration of topography and surface drainage features if affected by the project;
- Detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void (where relevant) on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent;
- An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and
- The measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.

Consultation and general enquiries

General licensing enquiries can be made to Advisory Services: water.enquiries@dpi.nsw.gov.au, 1800 353 104.

Assessment or state significant development enquiries, or requests for review or consultation should be directed to the Strategic Stakeholder Liaison Unit, water.referrals@dpi.nsw.gov.au.

A consultation guideline and further information is available online at:
www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment

End Attachment A



OUT15/18019

Hamish Aiken
Team Leader
Resource Assessment
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Email: hamish.aiken@planning.nsw.gov.au

Dear Mr Aiken

**United Open Cut Coal Project
United Collieries and Wambo Coal JV**

I refer to your email dated 2 July 2015 regarding United Collieries Pty Ltd request for Secretary's Environment Assessment Requirements (SEARs) for its United and Wambo Open Cut Coal Project. NSW Department of Industry, Skills and Regional Development, Division of Resources & Energy (DRE) understands that the development is a State Significant Development under Part 4 of the *Environmental Planning and Assessment Act 1979*.

DRE has reviewed the *United and Wambo Open Cut Coal Mine Project Preliminary Environmental Assessment* dated June 2015 and provides the following comments which are directed at specific areas of DRE's responsibility for this proposal:

PROJECT DESCRIPTION

To ensure that the project and its environmental interactions can be understood and assessed by DRE, the Environmental Impact Statement (EIS) should provide a comprehensive description of all aspects (including the mineral extraction and mining purposes) of the project. In terms of text, plans or charts, it must also clearly show the proposed extent and sequence of the development.

RESOURCE AND RESERVE STATEMENT

The EIS is to include a resource/reserve statement that has been prepared in accordance with the current version of the Joint Ore Reserve Committee Code (JORC code) and the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves prepared by the Guidelines Review Committee on behalf of the Coalfields Geology Council of New South Wales and the Queensland Resources Council.

LIFE OF MINE PRODUCTION SCHEDULE

The EIS must include a life of mine production schedule for each year of operation of the mine and for the life of the project. The production schedule is to include:

- details of run-of-mine coal and waste rock tonnage planned to be extracted, and an estimate of the saleable product produced;
- an estimate of which market segment that product tonnes would be sold into e.g. export/domestic thermal/metallurgical coal etc.

DRE understands that an estimate of product tonnes split into a particular market segment may be difficult to estimate at a particular point in time and is dependent on market conditions as the life of the mine progresses, however DRE requires the proponent to provide its best estimate of their market mix at the initial stages of the project.

In terms of text, plans or charts, the EIS must clearly show the proposed extent and sequence of the development and;

MINING TITLE

As coal is a prescribed under the *Mining Act 1992*, the proponent is required to hold an appropriate mining title(s) from DRE in order to mine the mineral.

For proposed mining purposes activities which are to be carried out in connection with and in the immediate vicinity of a mining lease, the proponent is required to hold an appropriate authority.

The proponent must demonstrate that the proposal has an appropriate authority over the project area to satisfy the requirements of section 380AA of the *Mining Act 1992*.

The EIS for the project should clearly identify existing coal titles, coal title applications and the proposed mining lease area(s) for the project site and areas surrounding the project area and address the environmental impacts and management measures for the mining and mining purpose activities as licensed under the *Mining Act 1992*.

Where a proposal includes Crown Land the proponent is required to comply with the *Commonwealth Native Title Act 1993* and undertake the right to negotiate process for the Crown Lands within the current exploration licence area(s) if proof of extinguishment cannot be determined.

DESCRIPTION OF EXISTING ENVIRONMENT, IDENTIFICATION OF IMPACTS AND CONSTRAINTS

All areas affected by the proposal should be shown in the context of the natural and built environments. This should be in sufficient detail to enable an understanding of the scale of impacts and gauge the effectiveness of proposed control measures.

The EIS should state the interaction between the proposed mining activities and the existing environment and include a comprehensive description of the following activities and their impacts:

- Mine layout and scheduling, including maximising opportunities for progressive final rehabilitation. The final rehabilitation schedule should be mapped against key production milestones (i.e. ROM tonnes) of the mine layout sequence before being translated to indicative timeframes throughout the mine life. The mine plan should maximise opportunities for progressive rehabilitation.
- Mineral processing and handling, washery rejects handling and disposal management activities
- Infrastructure facilities and storage requirements
- Surface and groundwater usage and management
- Mine closure including rehabilitation and decommissioning activities, including those of existing infrastructure (eg United Collieries mining infrastructure area) as the mine progresses
- Which mining entity (Glencore, Peabody or other operator) would have responsibility for Mining Operation Plan (MOP) development and rehabilitation obligations that arise from the project?

Impacts associated with the operational and post closure stages of the project must also be identified in detail and control management strategies outlined. The identification and description of impacts must draw out those aspects of the site that may present barriers or limitations to effective rehabilitation and which may limit the mine closure potential of the land. The following are the key issues to be addressed in the EIS that are likely to have a bearing on rehabilitation and mine closure.

- An evaluation of current rehabilitation techniques and performance against meeting existing rehabilitation objectives and completion criteria
- An assessment and life of mine management strategy of the potential for geochemical constraints to rehabilitation (e.g. acid rock drainage, spontaneous combustion etc.), particularly associated with the management of overburden/interburden and reject material. Based on this assessment, the EIS is to document the processes that will be implemented throughout the mine life to identify and appropriately manage geochemical risks that may affect the ability to achieve sustainable rehabilitation outcomes.
- A life of mine tailings management strategy, which is to detail measures to be implemented to avoid the exposure of tailings material as well as promote geotechnical stability of the rehabilitated landform. In addition to the management of proposed tailings facilities, specific attention is to be given to the management of existing tailings facilities including the North East Tailings Dam to enable capping and further emplacement development.
- Existing and surrounding landforms (showing contours and slopes) and how similar characteristics can be incorporated into the post-mining final landform design. This should include an evaluation of how the key geomorphological characteristics evident in stable landforms within the natural landscape can be adapted to the materials and other constraints associated with the site.

- Where a void is proposed to remain as part of the final landform, the assessment is to provide details in regards to the following:
 - a constraints and opportunities analysis of final void options, including backfilling, to justify that the proposed design is the most feasible and environmentally sustainable option to minimise the sterilisation of land post-mining
 - a preliminary geotechnical assessment to identify the likely long term stability risks associated with the proposed remaining highwall(s) and lowwall(s) along with associated measures that will be required to minimise potential risks to public safety
 - outcomes of the surface and groundwater assessments in relation to the likely final water level in the void. This should include an assessment of the potential for fill and spill along with measures required be implemented to minimise associated impacts to the environment and downstream water users
- Surface water flow and flooding regimes and how these will be impacted and mitigated by the project both during and after mining has ceased. This is to include an evaluation of potential impacts from the final void on both surface and groundwater quality and flow regimes. An assessment of the biological resources associated with the proposed disturbance area and how they can be practically salvaged for utilisation in rehabilitation (i.e. topsoil, seed banks, tree hollows and logs, native seed etc.). This should include an evaluation of how topsoil/subsoil of suitable quality can be direct-returned for use in rehabilitation.
- The flora, fauna and ecological attributes of the disturbed area should be recorded and placed in a regional context.
- An evaluation of current land capability class and associated condition. The EIS should characterise soils across the proposed area of surface disturbance and assess their value and identify opportunities and constraints for use in rehabilitation.
- Where an agricultural land use is proposed, the EIS should:
 - Demonstrate how Agricultural Suitability Class in the rehabilitated landscape would be returned to the existing Class/es or better.
 - Where the intended land use is likely to be grazing, the existing capacity in terms of Dry Sheep Equivalent or similar must be calculated and a timeframe from vegetation establishment be given for the return to agricultural production to at least the existing stock capacity.
 - Provide information on how soil would be developed in order to achieve the proposed stock capacity.
- Where an ecological land use is proposed, the EIS should demonstrate that the revegetation strategy (e.g. seed mix, habitat features, corridor width etc.) has been developed in consideration of the target vegetation community(s).

REHABILITATION AND MINE CLOSURE

DRE's role focuses on ensuring that land mined in NSW is effectively rehabilitated and returned to beneficial post mining land uses. This is undertaken by requiring mine operators to have strategies in place to ensure the rehabilitation of all mined land, and strategies for an orderly transition from a mining land use to an agreed stable and beneficial post mining use. At the EIS stage, the strategies may be conceptual in nature. Each of the following aspects of rehabilitation planning should be addressed in the strategy:

Post Mining Land Use – the proponent must identify and assess post mining land use options and provide a statement of the preferred post mining land use outcome in the EIS. This should include a discussion of how the final land use(s) are aligned with relevant local and regional strategic land use objectives as well as the benefits of the post mining land to the surrounding environment, a subsequent landowner, the local community and the state of NSW.

Rehabilitation Objectives and Domains – a set of project rehabilitation objectives and completion criteria must be included that clearly define the environmental outcomes required to achieve the final land use for each domain. The completion criteria must be specific, measurable, achievable, realistic and time-bound.

If necessary, objective criteria may be presented as ranges rather than finite indicator levels. Subjective criteria may also apply where a gap in technical knowledge is experienced. Further refinement of these criteria will be undertaken and included in the Rehabilitation Management Plan (RMP).

Final Landform Design – a drawing at an appropriate scale with final landform contours should be provided. This drawing should identify the following attributes of the final landform: vegetation types; habitat features; contaminated areas; final voids; drainage infrastructure; access and internal roads; fencing design; and other remaining infrastructure such as sheds, dams, bores and pipelines.

Scope of Rehabilitation and Decommissioning Activities – The EIS is to include a detailed description of the scope of decommissioning and rehabilitation activities required to meet the nominated closure objectives and completion criteria for each domain. The scope of these activities must be developed in consideration of the existing environment, identification of impacts and constraints as listed above.

Monitoring and Research – Outline the proposed monitoring programs that will be implemented to assess how rehabilitation is trending towards the nominated land use objectives and completion criteria. This should include details of the process for triggering intervention and adaptive management measures to address potential adverse results as well as continuously improve rehabilitation practices.

In addition, an outline of proposed rehabilitation research programs and trials, including objectives, are to be included in the EIS. This should include details of how

the outcomes of research are considered as part of the ongoing review and improvement of rehabilitation practices.

Post-closure maintenance: Describe how post-rehabilitation areas will be actively managed and maintained in accordance with the intended land use(s) in order to demonstrate progress towards meeting the closure objectives and completion criteria in a timely manner.

Should you have any enquires regarding this matter please contact Julie Moloney, Principal Adviser, Industry Coordination on (02) 4931 6549.

Yours sincerely



Adrian Delany
A/Director Industry Coordination

17.7.15



Your reference: SSD 15_7142
Our reference: DOC15/266019, EF15/11088
Contact: Michael Howat (02) 4908 6819
Electronic correspondence to: hunter.region@epa.nsw.gov.au

Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Hamish Aiken

Dear Mr Aiken

**REQUEST FOR INPUT INTO SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS
UNITED AND WAMBO OPEN CUT COAL MINE PROJECT (SSD 15_7142)**

Reference is made to your email to the Environment Protection Authority (EPA), dated 2 July 2015, requesting the EPA's requirements for the preparation of an Environmental Impact Statement (EIS) for the proposed open cut coal mine joint venture between United Collieries Pty Limited and Wambo Coal Pty Limited, application reference SSD 15_7142. The proposal is detailed in the report titled "*United and Wambo Open Cut Coal Mine Project – Preliminary Environmental Assessment, June 2015*" (PEA), prepared by Umwelt (Australia) Pty Limited on behalf of United Collieries Pty Limited.

The EPA understands that the application is for the proposed development and operation of an open cut coal mine incorporating the current 'Wambo open cut' coal mine as well as an additional 'United open cut' mine area. The EPA notes that the proposal comprises:

- Operation of open cut mining operations incorporating the existing Wambo Open Cut, subject to modification, and the proposed United Open Cut;
- Approval for up to 10 million tonnes per annum of run-of-mine coal production with a life of mine of 21 years;
- Utilisation of the existing Wambo open cut mine CHPP and rail loading facilities;
- Realignment of approximately 2 km section of the Golden Highway; and
- Relocation of existing 66 kV and 330 kV transmission lines.

The EPA has considered the proposal given the information provided in the PEA and has identified the information it requires to assess the proposal. The EPA's recommended Secretary's Environmental Assessment Requirements (SEARs) are provided in **Attachment 1**.

Some of the key issues identified by the EPA based on the information in the PEA that will need to be addressed in the EIS are:

- Licensing matters - The PEA notes the project proposes to consolidate the existing 'Wambo Open Cut' licence (currently Environment Protection Licence 529) with the proposed United Open Cut. The PEA further states that the Wambo underground operations are not subject to this application.

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Email: hunter.region@epa.nsw.gov.au
117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax: (02) 4908 6810
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www.epa.nsw.gov.au

The EIS will need to address any licensing matters that may arise such as the existing EPL 529 which includes Wambo underground operations, as well as addressing any sharing/transfer of materials, equipment or other matters between the proposed project licensed premises and the Wambo underground operations.

While the PEA states *"the project will be managed by United collieries on behalf of the joint venture, and operated by a wholly owned subsidiary of Glencore Coal Pty Ltd"*, the EIS will need to detail which entity will be the licensee for the project if approved.

- Tailings storage and disposal - The EPA has concerns around the proposed tailings storage and disposal operations. Conceptual Mine Plan Figures 3.2 – 3.6 in the PEA only show a tailings dam in the 'final landform' (Figure 3.6), and it does not appear to be identified during the operational life (Figures 3.2 – 3.5). These figures do identify an area marked as 'spoil' however it is not clear in the PEA if this is the proposed tailings disposal areas.

The EPA further notes that Table 3.1 states that coarse rejects are to be transported by truck to the open cut overburden areas for emplacement and covering by overburden material, and that coarse rejects will continue to be co-disposed within overburden areas.

The EPA has concerns around the proposed disposal of tailings within overburden emplacement areas. Due to the composition and concentration levels of various parameters within tailings, such as metals, the EPA supports the use of a designated tailings dam designed in accordance with appropriate disposal standards / guidelines.

Further clarification of tailings treatment, storage and disposal for the life of operations needs to be included in the EIS.

- Blasting modelling and assessment – Section 7.4 of the PEA identifies that nitrous oxides (NO_x) are to be considered in the air quality impact assessment component of the EIS. Nitrous oxides are a key pollutant of concern in relation to mine blasting operations, and can cause significant impacts to human health. The EPA acknowledges that the EIS proposes to address potential air quality pollutants, including NO_x, and takes this opportunity to specifically note the importance of thorough assessment of cumulative NO_x assessment, including dispersal modelling using local meteorological data. This is discussed further in Attachment 1.
- Surface water and groundwater impacts – In relation to surface and groundwater management Table 3.1 of the PEA states *"Construction of mine water management controls. Use of the United underground mining voids for water storage"*. The EIS must include an assessment of the potential impacts to groundwater systems from the proposed storage of mine water in underground voids. The EPA strongly supports the use of surface water management structure and controls in place of underground storage where reasonable.

In carrying out the assessment, the proponent should refer to the relevant guidelines listed in **Attachment 2** and any relevant industry codes of practice and best practice management guidelines.

The proponent should ensure that the EIS is sufficiently comprehensive to enable the EPA to determine the extent of the impacts of the proposal.

The proponent should also be aware that any commitments made in the EIS may be formalised as approval and subsequently environment protection licence conditions. Pollution control 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.

Please note that this response does not cover flooding, biodiversity or aboriginal cultural heritage issues, which are the responsibility of the Office of Environment and Heritage.

The EPA requests a copy of the EIS be provided to our referral mailbox hunter.region@epa.nsw.gov.au or if the file size is too large to email an electronic copy be sent to the Regional Manager - Hunter, Environment Protection Authority, PO Box 488G NEWCASTLE NSW 2300.

If you require any further information regarding this matter please contact Michael Howat on 4908 6819.

Yours sincerely



ROSS BRYLYNSKY
A/Head Regional Operations Unit – Hunter
Environment Protection Authority

15-7-2015

Encl: **ATTACHMENT 1** – EPA's proposed SEARs – United and Wambo Open Cut Coal Mine Project SSD 15_1742
ATTACHMENT 2 – Guidance Material

ATTACHMENT 1

**EPA's Recommended Secretary's Environmental Assessment Requirements (SEARs)
United and Wambo Open Cut Coal Mine Project – SSD 15_1742**

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1. Environmental impacts of the project

Impacts related to the following environmental issues need to be assessed, quantified and reported on:

- Air Issues
- Noise and vibration
- Waste including hazardous materials and radiation
- Water and soils

The EIS should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is provided at **Attachment 2**.

2. General

1. The Proposal

The objectives of the proposal should be clearly stated and refer to:

- the size and type of the operation;
- The nature of the processes and the products, by-products and wastes produced;
- The use or disposal of products;
- the anticipated level of performance in meeting required environmental standards and cleaner production principles;
- the staging and timing of the proposal; and
- the proposal's relationship to any other industry or facility.

2. The Premises

The EIS will need to fully identify all of the processes and activities intended for the site over the life of the development. This will include details of:

- The location of the proposed facility and details of the surrounding environment;
- The proposed layout of the site;
- Appropriate land use zoning;
- Ownership details of any residence and/or land likely to be affected by the proposed facility;
- Maps/diagrams showing the location of residences and properties likely to be affected and other industrial developments, conservation areas, wetlands, etc. in the locality that may be affected;
- All equipment proposed for use at the site;
- Chemicals, including fuel, used on the site and proposed methods for their transportation, storage, use and emergency management;
- Waste generation and disposal;
- Methods to mitigate any expected environmental impacts of the development;
- Site rehabilitation following termination of the development

3. Licensing requirements

Should project approval be granted, the proponent will need to make a separate application to the EPA in relation to the various potential licensing matters associated with the project, including modifications to the existing Wambo Coal Mine licence (EPL 529) and subsequent impacts to separation of Wambo Open Cut and Wambo Underground operations as referred to in the Preliminary Environmental Assessment for the project. As well as any implications associated with the inclusion of the proposed United Open cut operations on existing or new licenses. Additional information is available through EPA's *Guide to Licensing* document:

<http://www.epa.nsw.gov.au/licensing/licenceguide.htm>

General information on licence requirements can also be obtained from EPA's Environment Line on 131 555 during office hours, or can be found at the EPA web site at: <http://www.epa.nsw.gov.au/licensing/>

SPECIFIC ISSUES

4. Air issues

4.1 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;
 - d. location of all sensitive receptors; and
 - e. 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. Identification and location information of all fixed and mobile sources of dust/air emissions from the development, including from rehabilitation and potential blast fume gases, needs to be provided. The location of all emission sources should be clearly marked on a plan for key years of the mine development. The EIS needs to identify all pollutants of concern and estimate emissions by quantity (and size for particles), source(s) and discharge point(s).

Note: emissions can be classed as either:

- a. point (e.g. emissions from stack or vent), or
 - b. fugitive (from wind erosion, leakages or spillages associated with loading or unloading, crushing/screening, conveyors, storage facilities, plant and yard operation, vehicle movements [dust from road, exhausts, loss from load], land clearing and construction works).
6. Include a consideration of 'worst case' emission scenarios and impacts at proposed emission limits.
 7. Account for cumulative impacts associated with existing emission sources as well as any currently approved developments linked to the receiving environment.

Dispersion Modelling and Interpretation of Results

8. Atmospheric dispersion modelling should be undertaken in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005)
<http://www.epa.nsw.gov.au/resources/air/ammodelling05361.pdf>.
9. Modelling must implement fit for purpose modelling techniques that:
 - a. have regard for the most up to date and scientifically accepted dispersion modelling techniques;

- b. contextualise all assumptions based on current scientific understanding and available data; and
 - c. include a thorough validation of adopted methods and model performance.
10. Use an appropriate atmospheric dispersion model to predict, at a minimum, incremental ground level concentrations/levels of the following:
 - a. 24-hour and annual average PM10 concentrations;
 - b. 24-hour and annual average PM2.5 concentrations; and
 - c. 1-hour and annual average NO2 concentrations. NO2 concentrations should be assessed using a well justified approach for the transformation of NOx to NO2.
 11. Ground level concentrations of pollutants should be presented for surrounding privately-owned properties, mine-owned properties and other sensitive receptors (as applicable).
 12. Undertake a cumulative assessment of predicted impacts. The contribution of all identified existing and recently approved developments should be accounted for in the cumulative assessment.
 13. Cumulative 24-hour PM10 and PM2.5 concentrations must be assessed in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* and/or a suitably justified probabilistic methodology.
 14. Cumulative annual average PM10, PM2.5, and NO2 should be assessed using a sufficiently justified background concentration(s);
 15. Results of dispersion modelling should be presented as follows:
 - a. isopleth plots showing the geographic extent of maximum pollutant concentrations (incremental and cumulative);
 - b. tables presenting the maximum predicted pollutant concentrations (increment and cumulative) and the frequency of any predicted exceedances at each surrounding privately-owned properties, mine-owned properties and other sensitive receptors (as applicable); and
 - c. time series and frequency distribution plots of pollutant concentrations at each private receptor location at which an exceedance is predicted to occur. Where no exceedances are predicted, the analysis must be performed for the most impacted off site sensitive receptor.
 16. Demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations (POEO) Act (1997)* and the *POEO (Clean Air) Regulation (2010)*.
 17. Detail emission control techniques/practices that will be employed by the proposal and demonstrate that these are best management practice, by applying the procedure outlined in *Coal Mine Particulate Matter Control Best Practice - Site-specific determination guideline* (November 2011).
<http://www.epa.nsw.gov.au/resources/air/20110813coalmineparticulate.pdf>
 18. Justify all data used in the assessment, specifically including analysis of inter-annual trends (preferably five consecutive years of data), availability of monitoring data, and local topographical features.
 19. Meteorological modelling must be verified against monitored data. Verification should involve comparative analysis of wind speed, wind direction and temperature, at a minimum (additional guidance is included in TRC, 2011).
 20. A review of all existing, recently approved and planned developments likely to contribute to cumulative air quality impacts must be completed.

21. 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.
22. Provide an assessment on the potential impact of blast fume and document actions to be taken to prevent the impact of blast fume.

4.2 Greenhouse gas

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/climate-change/greenhouse-gas-measurement-and-reporting/company-emissions-measurement/technical>
- Australian Greenhouse Emissions Information System (AGEIS) <http://ageis.climatechange.gov.au/>

5. Noise and vibration

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

General

2. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). <http://www.epa.nsw.gov.au/resources/noise/09265cng.pdf>
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.epa.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 (ANZEC, 1990).
<http://www.epa.nsw.gov.au/resources/noise/ANZECBlasting.pdf>

Industry

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.epa.nsw.gov.au/noise/industrial.htm>

Road

5. 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.epa.nsw.gov.au/resources/noise/roadnoise.pdf>
6. Noise from new or upgraded public roads should be assessed using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). <http://www.epa.nsw.gov.au/resources/noise/roadnoise.pdf>

Railway

7. Noise from new or upgraded railways (other than railways on private premises) should be assessed using the *Rail Infrastructure Noise Guideline* (EPA, 2013).
<http://www.epa.nsw.gov.au/resources/noise/20130018eparng.pdf>
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.epa.nsw.gov.au/noise/railnoise.htm>

6. Waste, chemicals and hazardous materials and radiation

The proposal is likely to result in the generation of the following waste materials:

- Waste rock (overburden);
- Coal wash rejects (course and fine);
- Special waste (tyres);
- Liquid waste (wastewater, liquid hydrocarbons, waste oil);
- Hazardous waste (coolant pods, batteries and containers with hazardous liquid residue);
- General solid non-putrescible waste (steel, timber pallets, pipeline, aluminium, paper, cardboard, glass, wood, concrete, conveyor belts);
- General solid putrescible waste (food waste); and
- Vegetation waste (minor amount during maintenance of surface landscaping).

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 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 *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 *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 EA 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 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 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.

7. Water and soils

7.1 Soil

The EIS should include:

1. An assessment of potential impacts on soil and land resources should be undertaken. 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 (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.
3. Where required, add any specific assessment requirements relevant to the project.

7.2 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.
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.environment.gov.au/resource/australian-and-new-zealand-guidelines-fresh-and-marine-water-quality-volume-1-guidelines>

7. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.
8. Include a water balance for mining operations for mine operations at 5 yearly intervals, 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.

Impact Assessment

9. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment.
10. 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.
11. 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.
12. Assess impacts on groundwater and groundwater dependent ecosystems.
13. Describe how stormwater will be managed both during and after construction.
14. Describe in detail any water storage ponds, or basins, proposed to be constructed during the whole mine operational life. Provide location of the proposed storage(s), estimated volume capacities and expected water quality.
15. Describe under exactly what circumstances, if any, these storages would be discharged or allowed to overtop, and what the receiving environment for any discharges would be.

Monitoring

16. Describe how predicted impacts will be monitored and assessed over time. Including a Trigger Action Response Plan, or similar response management plan, that will be implemented in response to any adverse impacts identified from the activity. This plan is to identify appropriate trigger values for the site and provide appropriate response actions to be implemented if adverse impacts are identified through the monitoring program.
17. 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.epa.nsw.gov.au/resources/legislation/approvedmethods-water.pdf>

Hunter River Salinity Trading Scheme (HRSTS)

1. If a wastewater discharge is proposed it must be justified and it must be demonstrated that controlled discharges can be managed in compliance with the requirements of the HRSTS.
2. If a discharge under the HRSTS is found to be necessary and the discharge would be via a tributary of the Hunter River, the EIS must include a tributary impact assessment that addresses the following:

- Impacts on downstream landholders:
 - A list of downstream landholder/tenants including a record of permanent or seasonal activities;
 - A description and list of all crossings, culverts and other in-stream structures.
 - Physical and biological impacts:
 - existing flow and stream characteristics, including current bank and bed profiles, potential flow volumes at key points of inflection within the stream course, stability of stream banks and beds and an assessment of soil types.
 - Assessment of likely impacts of proposed discharge including impacts on flow characteristics, potential for erosion of banks, bed or damage to riparian vegetation.
 - Proposed measures to:
 - minimise the impacts of discharge on downstream landholders, including a discharge notification procedure;
 - reduce potential erosion hazards at vulnerable points in the stream banks, protect and maintain riparian vegetation and bank stability, and provisions for energy dissipation of discharge waters where necessary.
3. In cases where more than one mine discharges to a tributary, the EIS must also address the collective impacts of discharge to that tributary.

8 Monitoring Programs

The EIS should include a detailed assessment of any noise, air quality, water quality or waste monitoring required during the construction/development phase and on-going operation of the site to ensure that the development achieves a satisfactory level of environmental performance. The evaluation should include a detailed description of the monitoring locations, sample analysis methods and the level of reporting proposed.

ATTACHMENT 2

Guidance Material

Title	Web address
<u>Relevant Legislation</u>	

Title	Web address
<i>Environmental Planning and Assessment Act 1979</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+156+1997+cd+0+N
<u>Licensing</u>	
Guide to Licensing	http://www.epa.nsw.gov.au/licensing/licenceguide.htm
<u>Air Issues</u>	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.epa.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+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/climate-change/greenhouse-gas-measurement-and-reporting/company-emissions-measurement/technical
Australian Greenhouse Emissions Information System (AGEIS)	http://ageis.climatechange.gov.au/
<u>Noise and Vibration</u>	
Interim Construction Noise Guideline (DECC, 2009)	http://www.epa.nsw.gov.au/resources/noise/09265cng.pdf
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.epa.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.epa.nsw.gov.au/resources/noise/ANZECBlasting.pdf
Industrial Noise Policy Application Notes	http://www.epa.nsw.gov.au/noise/industrial.htm
Environmental Criteria for Road Traffic Noise (EPA, 1999)	http://www.epa.nsw.gov.au/resources/noise/roadnoise.pdf
Rail Infrastructure Noise Guideline (EPA, 2013)	http://www.epa.nsw.gov.au/resources/noise/20130018eparng.pdf
Environmental assessment requirements for rail traffic-generating developments	http://www.epa.nsw.gov.au/noise/railnoise.htm

Title	Web address
<u>Waste, Chemicals and Hazardous Materials and Radiation</u>	
Waste	
Waste Classification Guidelines (DECC, 2008)	http://www.epa.nsw.gov.au/waste/classification.htm
Resource recovery exemption	http://www.epa.nsw.gov.au/waste/RRecoveryExemptions.htm
<u>Water and Soils</u>	
Soils	
Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (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/booklet3siteinvestigationsforurbansalinity.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/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.environment.gov.au/resource/australian-and-new-zealand-guidelines-fresh-and-marine-water-quality-volume-1-guidelines
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.epa.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

16 July 2015

Mr Hamish Aiken
Team Leader
Resource Assessments – Planning Services
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Mr Aiken

Secretary's Environmental Assessment Requirements - United and Wambo Open Cut Coal Mine Project SSD 15_7142

I refer to the Preliminary Environmental Assessment for Secretary's Environmental Assessment Requirements (SEARs) exhibited on the NSW Department of Planning & Infrastructure web site in relation to the United and Wambo Open Cut Coal Mine Project, SSD 15_7142.

It is recommended that the SEARs include the requirement of a human health risk assessment that considers the potential adverse effects from human exposure to project related environmental hazards. The assessment should be conducted in accordance with the enHealth document *Environmental Health Risk Assessment: Guidelines for assessing human health risk from environmental hazards (2012)* and be submitted as part of the Environmental Impact Statement.

The assessment should include, but not be limited to:

- Assessment of the risks with human exposure to acute and cumulative impact of noise
- Air Quality (particulates and cumulative impact of particulates) and
- The risk of contamination of drinking water including ground water, surface water and rain water tanks.

It is recommended that the proponent seeks additional specialist advice in relation to ensuring robust community engagement and consultation processes. The assessment should address additional issues identified during community consultation.

When assessing health risks, both incremental changes in exposure from existing background pollutant levels and the cumulative impacts of specific and existing pollutant levels should be addressed at the location of receptors. Exposure should be addressed at the location of the most affected receptors and also for other sensitive receptors such as childcare centres and aged care facilities.

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Email HNELHD-PHENquiries@hnehealth.nsw.gov.au
www.hnehealth.nsw.gov.au/hnep

If you require any further information please feel free to contact Carolyn Herlihy, Environmental Health Officer on (02) 4924 6477.

Yours Sincerely

A handwritten signature in black ink, appearing to be 'Craig Dalton', with a long horizontal stroke extending to the right.

Dr Craig Dalton
Acting Service Director – Health Protection
Hunter New England Population Health



Office of
Environment
& Heritage

Your reference: SSD 7142
Our reference: DOC15/245858-1
Contact: Robert Gibson, 4927 3154

Dr Hamish Aiken
Team Leader, Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Dr Aiken

RE: OEH INPUT INTO SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT STATEMENT FOR THE UNITED AND WAMBO OPEN CUT COAL MINE PROJECT, WARKWORTH (SSD 7142)

I refer to your email dated 2 July 2015 inviting the Office of Environment and Heritage (OEH) to provide input into the Secretary's Environmental Assessment Requirements (SEARs) for the proposed United and Wambo Open Cut Coal Mine Project. This project is located about one kilometre west of the township of Warkworth in the Singleton local government area.

OEH understands that United Collieries Pty Ltd propose to integrate the existing open cut operations at Wambo Open Cut with a proposed new open cut mine at United Open Cut under a modified mine plan. The project will involve extraction of an additional 149 Mt of ROM coal over approximately 21 years and proposes a number of changes to the layout of existing mining and public infrastructure including relocation of a two kilometres section of the Golden Highway and a section of 330kV powerlines. OEH understands that the proposal is a State Significant Development under the *Environmental Planning and Assessment Act 1979*.

OEH has reviewed the United and Wambo Open Cut Coal Mine Project Preliminary Environmental Assessment (PEA) and has prepared Standard SEARs which are presented in **Attachment A**. Due to the high number of known Aboriginal sites within the locality and concerns regarding impacts to floodplain management for this project, 'Project Specific SEARs' for: Aboriginal cultural heritage; water and soil; and flooding have been provided in **Attachment B**.

This project occurs within an identified project area of the Upper Hunter Strategic Assessment (UHSA). As such, the Biodiversity Certification Assessment Methodology is the permitted assessment approach for biodiversity rather than the BioBanking Assessment Methodology required under the Framework for Biodiversity Assessment. The UHSA covers impacts to NSW threatened species under the *Threatened Species Conservation Act 1995* and matters of national environmental significance under the (Australian Government) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Given that the UHSA has yet to go on public exhibition and has not yet been finalised the project will be assessed as a 'Path 1' project under the Upper Hunter Strategic Assessment Interim Policy (October 2012). To comply with those requirements the proponent will need to ensure that the biodiversity assessment is fully consistent with requirements of the Biodiversity Certification Assessment Methodology and the UHSA. This includes appropriate consideration of 'High Risk' listed threatened species and communities, such as the EPBC Act listed Central Hunter eucalypt forest and woodland complex Critically Endangered Ecological Community and identifying the development footprint within the assessment area. The UHSA would reduce

the offset requirements for clearing derived native grasslands and provide a cap for total offset requirements and provide an option for meeting offset requirements by paying into an offsets fund. Details of the UHSA have yet to be finalised and for a 'Path 1' project, such as this, and supplementary SEARs would likely be provided once further details of the UHSA are finalised.

No matters for further consideration have been identified of NSW listed threatened biodiversity, however, the proponent is reminded that because the UHSA has yet to be endorsed that matters of national environmental significance will need to be considered by a separate assessment pathway, and thus they need to consider referring the project for consideration by the (Australian Government) Department of the Environment. Guidance documents to assist with this process are provided in **Attachment C**.

In regards to Aboriginal cultural heritage, please note that OEH only considers consultation with the Aboriginal community to be current and valid if it is continuously maintained every six months. That is, there are no gaps greater than six months in documented consultation between the proponent and the Registered Aboriginal Parties. In addition, OEH only considers Aboriginal cultural heritage assessments to be valid if undertaken within the last four years (dated from October 2010). That is, since the *National Parks and Wildlife Act 1974* was amended with respect to Aboriginal cultural heritage reporting and assessment.

If you have any further questions in relation to this matter, please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154.

Yours sincerely



24 JUL 2015

RICHARD BATH

Senior Team Leader Planning, Hunter Central Coast Region

Regional Operations

Enclosures:

Attachment A – Standard Environmental Assessment Requirements

Attachment B – Project Specific Requirements

Attachment C – Guidance Material

Attachment A – Standard Environmental Assessment Requirements

Biodiversity 1. This project is covered by the Upper Hunter Strategic Assessment therefore biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Biodiversity Certification Assessment Methodology, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the <i>Threatened Species Conservation Act 1995</i>. 2. Matters of National Environmental Significance under the (Australian Government) <i>Environment Protection and Biodiversity Conservation Act 1999</i> will need to be considered as a separate assessment. The proponent will need to consider referring this project to the Department of the Environment for possible determination as a 'controlled action'. That is unless the proponent wishes the project to be assessed under the NSW Biodiversity Offsets Policy for Major Projects and the Framework for Biodiversity Assessment.
Aboriginal cultural heritage 3. The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers. 4. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS. 5. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.
Historic heritage 6. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to <i>State and local heritage</i> including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment),

- d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and
- e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

Water and soils

7. The EIS must map the following features relevant to water and soils including:
 - a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).
 - b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the [Framework for Biodiversity Assessment](#)).
 - c. Groundwater.
 - d. Groundwater dependent ecosystems.
 - e. Proposed intake and discharge locations.
8. The EIS must describe background conditions for any water resource likely to be affected by the development, including:
 - a. Existing surface and groundwater.
 - b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.
 - c. Water Quality Objectives (as endorsed by the NSW Government www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters.
 - d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the [ANZECC \(2000\) Guidelines for Fresh and Marine Water Quality](#) and/or local objectives, criteria or targets endorsed by the NSW Government.
9. The EIS must assess the impacts of the development on water quality, including:
 - a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.
 - b. Identification of proposed monitoring of water quality.
10. The EIS must assess the impact of the development on hydrology, including:
 - a. Water balance including quantity, quality and source.
 - b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.
 - c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.
 - d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches).

- e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.
- f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.
- g. Identification of proposed monitoring of hydrological attributes.

Flooding

11. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:
 - a. Flood prone land
 - b. Flood planning area, the area below the flood planning level.
 - c. Hydraulic categorisation (floodways and flood storage areas).
12. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.
13. The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:
 - a. Current flood behaviour for a range of design events as identified in 8) above. The 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.
14. Modelling in the EIS must consider and document:
 - a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
 - b. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
 - c. Relevant provisions of the NSW Floodplain Development Manual 2005.
15. The EIS must assess the impacts on the proposed development on flood behaviour, including:
 - a. Whether there will be detrimental increases in the potential flood affection of other properties, assets and infrastructure.
 - b. Consistency with Council floodplain risk management plans.
 - c. Compatibility with the flood hazard of the land.
 - d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
 - e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
 - f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
 - g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.
 - h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.

- i. Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.
- j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

Attachment B – Project Specific Requirements

1. Aboriginal cultural heritage

- A. The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.
- B. The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the [development/project] to formulate appropriate measures to manage unforeseen impacts.
- C. The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.

2. Water and soils

- E. The description of existing water quality/hydrology in the EIS must be based on suitable data (meaning data collection may be required) and must include:
 - a. Water chemistry.
 - b. A description of receiving water processes, circulation and mixing characteristics and hydrodynamic regimes.
 - c. Lake or estuary flushing characteristics.
 - d. Sensitive ecosystems or species conservation values.
 - e. Specific human uses and values (e.g. fishing, proximity to recreation areas).
 - f. A description of any impacts from existing industry or activities on water quality.
 - g. A description of the condition of the local catchment e.g. erosion, soils, vegetation cover.
 - h. 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.
 - i. Historic river flow data.
- F. The assessment of the development on water quality and hydrology in the EIS must include:
 - a. Water circulation, current patterns, water chemistry and other appropriate characteristics such as clarity, temperature, nutrient and toxicants, and potential for erosion.

- b. Changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, and groundwater).
 - c. Disturbance of acid sulphate soils and potential acid sulfate soils.
 - d. Stream bank stability and impacts on macro invertebrates.
 - e. Water quality and hydrology modelling and/or monitoring, where necessary.
- G. The proposed monitoring of water quality must be undertaken in accordance with the [Approved Methods for the Sampling and Analysis of Water Pollutant in NSW 2004](#). The EIS must include a water quality and aquatic ecosystem monitoring program that includes:
- a. Adequate data for evaluating maintenance, or progress towards achieving, the relevant Water Quality Objectives.
 - b. measurement of pollutants identified or expected to be present.

3. Flooding

- H. The works must ensure that there are no adverse flooding impacts on private properties, or properties owned by others, for the full range of design floods, up to and including the Probable Maximum Flood (PMF).
- I. The EIS must address hydrological and hydraulic impacts for both the construction and operational phases of the development. This includes the construction and modification of services and infrastructure, including the realignment of the Golden Highway.
- J. The EIS must quantify the existing / pre-developed flood extents for current tributaries upstream and downstream of the site. The EIS must also quantify the proposed/post developed flood extents for these tributaries, with specific information regarding the tributaries proposed to be realigned.

Attachment C – Guidance material

Title	Web address
<u>Relevant Legislation</u>	
<i>Coastal Protection Act 1979</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Threatened Species Conservation Act 1995</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
<i>Water Management Act 2000</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
<u>Biodiversity</u>	
NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf
Framework for Biodiversity Assessment (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf
BioCertification Assessment Methodology (OEH, 2011)	www.environment.nsw.gov.au/resources/biocertification/110170biocertassessmentmeth.pdf
Fisheries NSW policies and guidelines	www.dpi.nsw.gov.au/fisheries/habitat/publications/policies.-guidelines-and-manuals/fish-habitat-conservation
List of national parks	www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, re-categorisation and road adjustment policy (OEH, 2012)	www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf
Do you need to obtain approval under the EPBC Act?	www.environment.gov.au/epbc/do-you-need-approval
<u>Heritage</u>	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
Statements of Heritage Impact 2002 (HO & DUAP)	www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf
NSW Heritage Manual (DUAP) 1996	www.environment.nsw.gov.au/Heritage/publications/index.htm#G-I
<u>Aboriginal Cultural Heritage</u>	

Title	Web address
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf
<u>Water and Soils</u>	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas'	www.nratlas.nsw.gov.au/
Acid Sulfate Soils Manual (Stone et al. 1998)	www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding and Coastal Erosion	
Reforms to coastal erosion management	www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	Guidelines for Preparing Coastal Zone Management Plans www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	NSW Climate Impact Profile
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
Water	
Water Quality Objectives	www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
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)	www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf



File: SF15/29490
Job ID No: DOC15/246470
Your Ref: SSD7142

Mr Hamish Aiken
Team Leader, Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mr Aiken

**RE: Request for Secretary's Environmental Assessment Requirements (SEARs) for
SSD 7142 – United and Wambo Open Cut Coal Mine Project**

I refer to your email dated 3 July 2015, requesting comments from the Heritage Council of NSW on the Secretary's Environmental Assessment Requirements (SEARs) for the preparation of the Environmental Impact Statement for the above major project.

As Delegate of the Heritage Council I recommend that the following be included in the SEARs:

1. The Applicant must undertake a highly detailed archaeological assessment which includes a consideration of Aboriginal and non-Aboriginal heritage. The archaeological assessment should consider the proposed below ground impacts on any potential archaeology, with consideration of any archaeological works that have already been undertaken on this site. The assessment should contain mitigation strategies to manage this potential archaeological resource.
2. A detailed Heritage Impact Statement (HIS) should be undertaken which documents and assesses the heritage significance of the site and its associated landscape, and any impacts the project may have upon this significance. This assessment should address the potential archaeological impacts of the project and any heritage impacts to the Wambo Homestead Complex. The HIS should include detailed mitigation measures to offset the impacts this project may have on the site's heritage values.

The Heritage Council would be happy to review any further documentation that may address any likely heritage impacts to State Heritage Register listed items, State significant items and any historical archaeology.

If you have any further enquiries regarding this matter, please contact Nina Pollock, Heritage Officer, at nina.pollock@environment.nsw.gov.au or (02) 9873 8520.

Yours sincerely

Rochelle Johnston
Manager, Conservation
Heritage Division
Office of Environment & Heritage
As Delegate of the NSW Heritage Council
15 July 2015

22 July 2015

SF2012/019030
CR2015/003017
DC

NSW Department of Planning & Environment
Resource Assessments
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Hamish Aiken

UNITED AND WAMBO OPEN CUT COAL MINE PROJECT, WARKWORTH– REQUEST FOR INPUT FOR SECRETARY’S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Dear Mr Aiken

I refer to your email dated 2 July 2015 requesting the provision of key issues which Roads and Maritime Services consider should form part of the Secretary’s Environmental Assessment Requirements (SEARs) for the subject proposal.

Transport for NSW and Roads and Maritime’s primary interests are in the road network, traffic and broader transport issues. In particular, the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport.

Roads and Maritime has reviewed the information provided, including the preliminary Environmental Assessment prepared by Umwelt dated June 2015, and would require the applicant to undertake a comprehensive Traffic Impact Study to identify the likely impacts and any subsequent traffic management requirements for the construction and operational phases of the project. The study shall be prepared in accordance with the RTA’s *Guide to Traffic Generating Developments* and is to include, but not be limited to, the following:

- Identification of the relevant vehicular traffic routes and intersections for access to/from the subject site.
- Current traffic counts for the above traffic routes and intersections
- The anticipated additional vehicular traffic generated (both light and heavy vehicles) from the construction and operational stages.
- Consideration of the traffic impacts on the existing intersections and the capacity of the local and classified road network to safely and efficiently cater for the vehicular traffic generated by the proposed development during the construction and operational stages. The study shall also give consideration to the cumulative traffic impacts of other proposed and approved developments in the area.

- Traffic analysis of any major / relevant intersections, using SIDRA or similar traffic model, including:
 - Current traffic counts and 10 year traffic growth projections, allowing a 2% background growth on the classified road network
 - With and without development scenarios considered
 - 95th percentile back of queue lengths
 - Delays and level of service on all legs for the relevant intersections
 - Use of SIDRA or similar traffic model
 - Electronic input/output data files for RMS review
- Any other impacts on the regional and state road network including consideration of pedestrian, cyclist and public transport facilities and provision for service vehicles.
- Details of any measures proposed to manage and / or mitigate impacts as a result of the proposal identified in traffic and transport study.

In regards to potential realignment of the Golden Highway, the EIS should also address, but not be limited to, the following issues;

- Design of The Golden Highway realignment should be in accordance with the Austroads Guide to Road Design and Roads and Maritime supplements. A concept design should be submitted to Roads and Maritime for review as part of the EIS process, which includes drainage.
- Appropriate clear zones are to be maintained to any structures, including any relocated utilities, and provided to Roads and Maritime for review. This includes overhead power lines as well as any physical structures on the ground, and must consider oversize and / or overmass vehicles.
- The stability of the open cut highwall adjacent to the proposed realigned highway needs to be assessed, particularly as it relates to sliding of the unsupported highwall on the mined coal seam.
- Pavement Design is to be based on 20 year design life based on current traffic volumes with a suitable growth rate.

It is recommended that the proponent discuss the project with Roads and Maritime prior to commencing the traffic and transport study and / or design work of the Golden Highway realignment.

If you require any further advice please contact Land Use Hunter on (02) 4924 0688.

Yours sincerely



Kellee McGilvray
Manager Land Use Assessment
Hunter Region

Hamish Aiken

Subject: SEARs Input Request - United and Wambo Open Cut Coal Mine Project

Hi Hamish,

The higher order issues for Singleton Council are as follows;

1. The extent of the southern extremity of the out of pit spoil emplacement area and its impact on private landowners to the south in terms of noise, air quality and visual impacts.
2. Visual and amenity impacts on the Golden Highway.
3. Quantification of the net cumulative impacts.
4. Commitments to fully investigate the future use of the resultant voids, final land forms and end land uses from an environmental and sustainability perspective.

All other issues identified in the Preliminary Environmental Assessment are appropriate.

Please contact me should you require further clarification.

Regards
Mark

Mark Ihlein
Director Planning and Sustainable Environment Group
Singleton Council