

APPENDIX 1

Director-General's Requirements



**Planning &
Infrastructure**

**Development Assessment Systems and Approvals
Mining Projects**

Contact: Jessie Giblett
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Mr Darryl Thiedeke
Aus-10 Rhyolite Pty Ltd
PO Box 6770
SILVERWATER NSW 1811

Our Ref: 11/06656

Dear Mr Theideke

**Tinda Creek Quarry Project (SSD-4978)
Amended Director-General's Requirements**

I refer to your letter dated 20 June 2013 seeking amendments to the Director General's requirements (DGRs) for the above project, which the Department issued on 20 May 2013.

I have reviewed the information supporting this request, and agreed to make a minor amendment to the DGRs. This amendment is included in the revised DGRs (see Attachment 1).

Yours sincerely

David Kitto
Director, Mining Projects
As Delegate of the Director-General

Amended Director General's Environmental Assessment Requirements

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

State Significant Development

Application Number	SSD 4978
Development	<p>The Tinda Creek Sand Quarry Expansion, which includes:</p> <ul style="list-style-type: none"> expanding the extraction area to produce up to 400,000 tonnes of sand product per year for up to 30 years; transporting the product from the quarry via road; and rehabilitating the site.
Location	Tinda Creek, via Putty Road, Mellong, in the Hawkesbury LGA
Applicant	Aus-10 Rhyolite Pty Ltd
Date of Issue	12 December 2012
General Requirements	<p>The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In addition, the EIS must include a:</p> <ul style="list-style-type: none"> detailed description of the development, including: <ul style="list-style-type: none"> need for the proposed development; justification for the proposed quarry plan, including efficiency of resource recovery, mine safety, and environmental protection; likely staging of the development - including construction, operational stage/s and rehabilitation; plans of any proposed building works; consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments; risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment; detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: <ul style="list-style-type: none"> a description of the existing environment, <u>using sufficient baseline data</u>; an assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; and a description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage any significant risks to the environment; and consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS. <p>The EIS must be accompanied by a report from a qualified quantity surveyor providing:</p> <ul style="list-style-type: none"> a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>) of the proposal, including details of all the assumptions and components from which the CIV calculation is derived; a close estimate of the jobs that will be created by the development during the construction and operational phases of the development; and certification that the information provided is accurate at the date of preparation.

Key issues

The EIS must address the following specific issues:

- **Land Resources** – including a detailed assessment of the potential impacts on:
 - soils and land capability (including salinisation and contamination);
 - landforms and topography, including cliffs, rock formations, steep slopes, etc; and
 - land use, including agricultural, forestry, conservation and recreational use;
- **Biodiversity** – including:
 - measures taken to avoid, reduce or mitigate impacts on biodiversity;
 - accurate estimates of proposed vegetation clearing;
 - a detailed assessment of potential impacts of the development on:
 - terrestrial or aquatic threatened species or populations and their habitats, endangered ecological communities and groundwater dependent ecosystems; and
 - regionally significant remnant vegetation, or vegetation corridors;
 - the Wollemi National Park and the Yengo National Park, including potential edge effects and impacts on the conservation and recreational values of these National Parks; and
 - a comprehensive offset strategy to ensure the development maintains or improves the terrestrial and aquatic biodiversity values of the region in the medium to long term;
- **Water Resources** – including:
 - detailed assessment of potential impacts on the quality and quantity of existing surface and ground water resources in accordance with the *NSW Aquifer Interference Policy*, including:
 - detailed modelling of potential groundwater impacts including identification of any highly productive groundwater (as defined by the *Aquifer Interference Policy*) or groundwater dependent ecosystems;
 - impacts on affected licensed water users and basic landholder rights; and
 - impacts on riparian, ecological, geomorphological and hydrological values of watercourses, including environmental flows;
 - a detailed site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures;
 - an assessment of proposed water discharge quantities and quality/ies against receiving water quality and flow objectives;
 - identification of any licensing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*;
 - demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP);
 - a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP or water source embargo; and
 - a detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts;
- **Heritage** – including:
 - an Aboriginal cultural heritage assessment (including both cultural and archaeological significance) which must:
 - demonstrate effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting mitigation options and measures;
 - outline any proposed impact mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures); and
 - a Historic heritage assessment (including archaeology) which must:
 - include a statement of heritage impact (including significance

assessment) for any State significant or locally significant historic heritage items; and

- o outline any proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures);

- **Traffic & Transport** – including:

- accurate predictions of the road traffic generated by the construction and operation of the project;
- an assessment of potential traffic impacts on the safety and efficiency of the road network; and
- a detailed description of the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road networks in the surrounding area over the life of the project;

- **Waste** – including:

- accurate estimates of the quantity and nature of the potential waste streams of the development, including leachate and acid-generating potential;
- a leachate disposal strategy; and
- a description of measures that would be implemented to minimise production of other waste, and ensure that that waste is appropriately managed;

- **Air Quality** – including an assessment of potential:

- construction and operational impacts, with a particular focus on processing and dust emissions, as well as diesel emissions;
- reasonable and feasible mitigation measures to minimise processing, dust, diesel emissions, including evidence that there are no such measures available other than those proposed; and
- monitoring and management measures, in particular real-time air quality monitoring;

- **Greenhouse Gases** – including:

- a quantitative assessment of potential Scope 1, 2 and 3 greenhouse gas emissions;
- a qualitative assessment of the potential impacts of these emissions on the environment; and
- an assessment of reasonable and feasible measures to minimise greenhouse gas emissions and ensure energy efficiency;

- **Noise** – including a quantitative assessment of potential:

- construction, operational and off-site transport noise impacts;
- reasonable and feasible mitigation measures, including evidence that there are no such measures available other than those proposed; and
- monitoring and management measures, in particular real-time, attended noise monitoring and predictive meteorological forecasting;

- **Visual** – including:

- a detailed assessment of the:
 - o changing landforms on the site during the various stages of the project; and
 - o potential visual impacts of the project on private landowners in the surrounding area as well as key vantage points in the public domain, including lighting impacts; and
- a detailed description of the measures that would be implemented to minimise the visual impacts of the project;

- **Hazards** – including bushfires;

- **Social & Economic** – including an assessment of the:

- potential direct and indirect economic benefits of the project for local and regional communities and the State;
- potential impacts on local and regional communities, including:
 - o increased demand for local and regional infrastructure and services (such as housing, childcare, health, education and emergency services); and
 - o impacts on social amenity;
- a detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the project,

	<p>including any infrastructure improvements or contributions and/or voluntary planning agreement or similar mechanism; and</p> <ul style="list-style-type: none"> - a detailed assessment of the costs and benefits of the development as a whole, and whether it would result in a net benefit for the NSW community; • Rehabilitation – including the proposed rehabilitation strategy for the site, having regard to the key principles in the Strategic Framework for Mine Closure, including: <ul style="list-style-type: none"> - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and - the potential for integrating this strategy with any other rehabilitation and/or offset strategies in the region.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i> . These documents should be included as part of the EIS rather than as separate documents.
Consultation	<p>During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>In particular you must consult with the:</p> <ul style="list-style-type: none"> • Commonwealth Department of Sustainability, Environment, Water, Population and Communities; • Office of Environment and Heritage (including the Heritage Branch); • Environment Protection Authority; • Division of Resources and Energy within the Department of Trade and Investment, Regional Infrastructure and Services; • Department of Primary Industries (including the NSW Office of Water, NSW Forestry, Agriculture and Fisheries sections, Catchments and Lands (Crown Lands Division)); • Transport for NSW (including the Centre for Transport Planning, Roads and Maritime Services); • Transgrid; • Hawkesbury Nepean Catchment Management Authority; • Hawkesbury Council; and <p>The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>
Further consultation after 2 years	If you do not lodge a DA and an EIS for the development within 2 years of the issue date of these DGRs, you must consult further with the Director-General in relation to the requirements for lodgement.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, Attachment 1 contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this development.

ATTACHMENT 1 Technical and Policy Guidelines

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

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

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

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

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

Policies, Guidelines & Plans

Risk Assessment	
	AS/NZS 4360:2004 Risk Management (Standards Australia)
	HB 203: 203:2006 Environmental Risk Management – Principles & Process (Standards Australia)
Land Resources	
	Agricultural Impact Assessment Guidelines 2012 (DP&I)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Biodiversity	
	Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (DECCW 2009)
	Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DECC 2004)
	Threatened Species Assessment Guidelines: the Assessment of Significance (DECC 2007)
	Guidelines for Threatened Species Assessment (DoP 2005)
	BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW 2008)
	NSW State Groundwater Dependent Ecosystem Policy (DLWC)
	Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)
	Policy & Guidelines - Fish Friendly Waterway Crossings (NSW Fisheries)
	State Environmental Planning Policy No. 44 – Koala Habitat Protection
Water Resources	
	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
<i>Surface Water</i>	Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)
	State Water Management Outcomes Plan
	Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012
	Water Sharing Plan for the NSW Murray-Darling Basin Fractured Rock Groundwater Sources 2012
	NSW Government Water Quality and River Flow Objectives (DECC)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries.

	Managing Urban Stormwater: Treatment Techniques (DECC)
	Managing Urban Stormwater: Source Control (DECC)
	Floodplain Development Manual (DIPNR)
	Floodplain Risk Management Guideline (DECC)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	Technical Guidelines: Bunding & Spill Management (DECC)
	Environmental Guidelines: Use of Effluent by Irrigation (DECC)
<i>Groundwater</i>	NSW Aquifer Interference Policy (DPI, 2012)
	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	NSW State Groundwater Policy Framework Document (DLWC, 1997)
	NSW State Groundwater Quality Protection Policy (DLWC, 1998)
	NSW State Groundwater Quantity Management Policy (DLWC, 1998)
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	Guidelines for the Assessment & Management of Groundwater Contamination (DECC, 2007)
	Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012
	Water Sharing Plan for the NSW Murray-Darling Basin Fractured Rock Groundwater Sources 2012
Air Quality	
	Protection of the Environment Operations (Clean Air) Regulation 2002
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
Noise & Blasting	
	NSW Industrial Noise Policy (DECC)
	Environmental Noise Management – Assessing Vibration: a technical guide (DEC)
	NSW Road Noise Policy (DECCW)
	Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZECC)
Traffic & Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Heritage	
<i>Aboriginal</i>	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC 2005)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
<i>Historic</i>	NSW Heritage Manual (NSW Heritage Office)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
Greenhouse Gases	
	National Greenhouse Accounts Factors (Australian Department of Climate Change (DCC))
	Guidelines for Energy Savings Action Plans (DEUS)
Waste	
	Waste Classification Guidelines (DECC)
Hazards	
	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
	Hazardous and Offensive Development Application Guidelines - Applying SEPP 33
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis

Rehabilitation

Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)

Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)

Strategic Framework for Mine Closure (ANZMEC-MCA)

Socio-Economic

Draft Economic Evaluation in Environmental Impact Assessment (DoP)

Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate)

ATTACHMENT 2
Agency Input into Key Assessment Issues

Your Reference:
Our Reference:
Contact:
Telephone

SSD-4978
SYD12/01428
Pahee Sellathurai
8849 2219



Transport
Roads & Maritime
Services

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

Attention: Caitlin Elliott

**EXPANSION OF TINDA CREEK SAND QUARRY
REQUEST FOR INPUT INTO DIRECTOR-GENERAL'S REQUIREMENTS**

Dear Sir/Madam

I refer to your email on 20 November 2012 requesting Roads and Maritime Services (RMS) to provide input into the preparation of the Director-General's Requirements for an Environmental Impact Statement for the development.

RMS would like the following issues to be addressed in the Environmental Impact Statement for the development:

1. Identification of road infrastructure on Putty Road to improve and formalise access to the facility.
2. Details of service vehicle movements, type and cartage volumes (including vehicle type and likely arrival and departure times).
3. Examine crashes along Putty Road in the vicinity of the site.
4. Consideration of appropriate measures to improve access to and from the facility.
5. Demonstrate how silt and other debris will be managed so that there will be no negative impact on the roadway or adverse outcomes to motorists safety.
6. Examine sight distances at the proposed access point on Putty Road
7. Design vehicle swept path to and from the proposed facility.

Further enquiries on this matter can be directed to Pahee Sellathurai on 8849 2219.

Yours faithfully

A handwritten signature in black ink, appearing to read 'O. Hodgson'.

Owen Hodgson
Senior Land Use Planner
Transport Planning, Sydney Region

3 December 2012

Roads & Maritime Services



Office of
Environment
& Heritage

Your reference: SSD-4978
Our reference: DOC12/49632
Contact: Thomas Williams (02) 9995 6861

Ms Caitlin Elliott
Mining and Industry Projects
NSW Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Ms Elliott

I refer to your email correspondence of 20 November 2012 inviting input from the Office of Environment and Heritage (OEH) to drafting of Director-General's Requirements (DGRs) for an Environmental Impact Assessment of a proposal to expand operations of the Tinda Creek Sand Quarry (SSD-4978).

Biodiversity

It is noted that recent DGRs issued by NSW Department of Planning and Infrastructure (DoP&I) for similar proposals have identified a number of specific issues regarding 'biodiversity'. OEH requests that the following specific issue be listed under 'biodiversity':

'adequate surveys of terrestrial and aquatic threatened species, populations, ecological communities and their habitats'

The 'preliminary environmental assessment of proposed Tinda Creek sand quarry extraction' prepared by Umwelt (Australia) Pty Ltd (November 2012) states that portions of all lots will be investigated for their potential as onsite biodiversity offset areas. Please find, at Attachment A, information to inform biodiversity assessment for the purpose of establishing biodiversity offsets.

In recognition of the landscape setting of the proposal, the value of landscapes within the site should be considered in terms of their contribution to connectivity with the surrounding Greater Blue Mountains World Heritage Area. The identification of biodiversity corridors across tenures and especially the benefits of connectivity between protected areas are expressed well by the World Conservation Monitoring Centre of the United Nations Environment Program:

"Ensuring that landscape connections remain and are protected, can ensure the exchange of genetic material, and also ensure adequate feeding areas, breeding grounds and allow for migration. Therefore the idea of establishing and protecting ecological corridors, buffer zones and other connections between protected areas is crucial in allowing animals, plants and ecological processes to move from one habitat to another."

Adjoining National Parks of The Greater Blue Mountains

The subject works are adjacent to both Yengo National Park and Wollemi National Park. Of primary concern to OEH with regard to the proposal is the avoidance of impacts upon the natural and cultural values of these National Parks. The DGRs should highlight the landscape setting of the proposal, as the site adjoins these National Parks that are part of The Greater Blue Mountains, inscribed on the World Heritage List in the year 2000 and also one of 15 World Heritage places included in the National Heritage List in 2007.

The 'preliminary environmental assessment of proposed Tinda Creek sand quarry extraction' prepared by Umwelt (Australia) Pty Ltd (November 2012) provides a map at Figure 1.2 that identifies 'resource domains' with insufficient distance between the proposed works and Yengo National Park. Cleared areas have a significant impact beyond the area of clearance to adjoining undisturbed vegetation. The *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (June 2010) are available to address this issue and to provide other general guidance:

<http://www.environment.nsw.gov.au/protectedareas/developmentadjoiningdecc.htm>

Water Resources

It is noted that recent DGRs issued by DoP&I for similar proposals have identified a number of specific issues regarding 'Water Resources'. The DGRs for this proposal should frame these specific issues regarding Water Resources in the context of the need to have no detrimental impact upon the adjoining National Parks. This is especially significant given their World Heritage status and the high potential for pollutants to flow from the site into National Park.

The EIS must locate operations to eliminate impacts to significant natural surface features such as streams connected to the surrounding National Parks. Due to the topography and related stream flows between the site and National Park there is high potential for stream pollution on the site to flow into watercourses within National Park. There needs to be stringent controls put in place to capture sediments and other pollutants within the site.

With any predictive modelling to be undertaken to inform the EIS it must be recognised there are limitations on the accuracy of predictions. The EIS should provide information on the modelling accuracy across the different landscapes within the project area.

Aboriginal Cultural Heritage

OEH recommends that Aboriginal archaeological and cultural heritage assessment be undertaken for the project. A Heritage Impact Assessment (HIA) should address and document the information requirements set out in the draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005), involving surveys and consultation with the Aboriginal community. It should demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts for Aboriginal objects, developing options and making final recommendations regarding the protection and management of objects.

The HIA should include field surveys to locate sites currently registered on the AHIMS database and to identify and record previously unknown sites within the study area. The results of field survey should be combined with cultural information provided by the local Aboriginal community to allow a complete and adequate assessment of significance.

The EIS should also identify the nature and extent of impacts on ACH values across the project area and describe the actions that will be taken to avoid, minimise, and mitigate impacts or to compensate for unavoidable impacts. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

If you have any queries regarding this matter please contact Thomas Williams on 9995 6861.

Yours sincerely

LOU EWINS
Manager, Planning and Aboriginal Heritage
Regional Operations, Metropolitan
Office of Environment and Heritage

Attachment A

Biodiversity Assessment

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

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

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

1. Where a BioBanking statement is being sought under Part 7A of the *Threatened Species Conservation Act 1995* (TSC Act), the assessment must be undertaken by an accredited BioBanking assessor (as specified under Section 142B(1)(c) of the TSC Act 1995) and done in accordance with the [BioBanking Assessment Method and Credit Calculator Operational Manual](#) (DECCW, 2008). To qualify for a BioBanking statement a proposal must meet the improve or maintain standard.
 - 1a. The EIS should reflect all requirements of the BioBanking statement including the number of credits required and any DG approved variations to impact on Red Flags.
 2. Where the BioBanking Assessment Method is being used to assess impacts of a proposal and to determine required offsets, and a BioBanking statement is not being obtained, the EIS should contain a detailed biodiversity assessment and all components of the assessment must be undertaken in accordance with the [BioBanking Assessment Method and Credit Calculator Operational Manual](#) (DECCW, 2008).
 - 2a. The EIS should:
 - be informed by the outcomes of the proposed BioBanking assessment offset package;
 - set out the ecosystem and species credits required by the BioBanking Assessment Method and how these ecosystem and/or species credits will be secured and obtained;
 - if the ecosystem or species credits cannot be obtained, provides appropriate alternative options to offset expected impacts, note that an appropriate alternative option may be developed in consultation with OEH officers and in accordance with OEH policy;
 - demonstrate how all options have been explored to avoid red flag areas;
 - include all relevant BioBanking files (e.g. *.xml output files), data sheets and documentation (including maps, aerial photographs, GIS shape files, other remote sensing imagery etc.) to ensure OEH can conduct an appropriate review of the assessment.
3. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking statement has not been sought) this package should:
 - a. Meet OEH's *Principles for the use of biodiversity offsets in NSW*, which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm.
 - b. Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.
 - c. Include an appropriate management plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.

4. Where relevant, likely impacts (both direct and indirect) on any adjoining and/or nearby OEH estate reserved under the *National Parks and Wildlife Act 1974* should be considered. Refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECC, 2010).
5. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify and assess any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

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

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

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

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

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

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

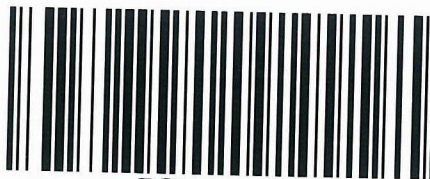
Determining the list of potential threatened species for the site must be done in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004) and the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005). The OEH Threatened Species website <http://www.environment.nsw.gov.au/threatenedspecies/> and the *Atlas of NSW Wildlife* database must be the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases (available on OEH website at <http://www.environment.nsw.gov.au/biobanking/biobankingtspd.htm> and <http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm>, respectively) and other data sources (e.g. PlantNET, Online Zoological Collections of Australian Museums (<http://www.ozcam.org/>), previous or nearby surveys etc.) may also be used to compile the list.

3. The EIS should contain the following information as a minimum:
 - a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).
 - b. Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area.
 - c. Description of survey methods used, including timing, location and weather conditions.
 - d. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EIS.
 - e. Identification of national and State listed threatened biota known or likely to occur in the study area and their conservation status.
 - f. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor.
 - g. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed.
 - h. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below).
4. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:
 - a. the factors identified in s.5A of the EP&A Act, and
 - b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance* (DECCW, 2007) which is available at:
<http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf>
5. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking statement has not been sought) this package should:
 - a. Meet OEH's *Principles for the use of biodiversity offsets in NSW*, which are available at:
www.environment.nsw.gov.au/biocertification/offsets.htm.
 - b. Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.
 - c. Include an appropriate management plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.
6. Where appropriate, likely impacts (both direct and indirect) on the adjoining OEH estate reserved under the *National Parks and Wildlife Act 1974* should be considered. Refer to the Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECC, 2010).

7. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Hawkesbury City Council

Your Ref: SSD-4978
Our Ref: Tinda Creek



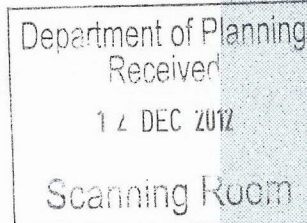
PCU012858

10 December 2012



366 George Street
(PO Box 146)
Windsor NSW 2756
Phone: 02 4560 4444
Facsimile: 02 4587 7740
DX: 8601 Windsor

NSW Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001



Attention: Caitlin Elliott, Mining & Industry Projects

Dear Ms Elliott

Tinda Creek Sand Quarry (SSD-4978) Request for Input into Director-General's Requirements (DGRs)

Thank you for the opportunity to provide input into the DGRs for the abovementioned project. As you may be aware the current operation is subject to an existing development consent that was amended by the Land and Environment Court in August 2009. In relation to the current proposal the following comments are provided:

General Comments

The information included in your letter and the proposed investigations suggested in the "Preliminary Environmental Assessment of Proposed Tinda Creek Sand Quarry Expansion" prepared by Umwelt, dated November 2012 (The Umwelt proposal), are generally supported by Council.

The Title for these properties is limited, in relation to natural resources, to a depth of 15.24 metres from the natural surface. Should the existing or expanded quarry operations exceed this depth the owners consent from the Crown and associated licence would be required.

Water Management

The Umwelt Proposal briefly mentions the management of surface and groundwater. The expanded quarry operations are likely to draw more groundwater than the existing operation and in this regard the "detailed groundwater model" should rigorously investigate and model the entire surface and groundwater impacts that the proposed operation will have on the surrounding landscape and creek system.

The modelling should also comprehensively deal with the redirection of surface water as well as modelling the impacts during and upon final rehabilitation of the site. These impacts include evaporation from the site during operation and from any water bodies that may form part of the final rehabilitated site.

The EIS should also detail the process for monitoring the water and groundwater impacts and pollution of waters. This should also detail the mitigation measures, timing and responsibility for the implementation of actions required should the monitoring find that the limits of groundwater use or pollution have, or may be, exceeded.

DGRs comments/m

Where people make the difference.

All communications to be addressed to the General Manager
P.O. Box 146, Windsor NSW 2756
Website: www.hawkesbury.nsw.gov.au
E-mail: council@hawkesbury.nsw.gov.au
Hours: Monday to Friday 8.30am - 5.00pm

Flora and Fauna

The proposed expanded operation will result in a significant amount of vegetation being removed. The flora and fauna studies/reports should assess the impacts of each individual "Domain" operation as well as the cumulative impacts of the expanded operations. The reports should also propose mitigation measures that deal with the incremental impacts during the expansion, cumulative impacts of the whole operation and the final rehabilitation of the site.

Site Rehabilitation

The EIS should comprehensively address progressive and final site rehabilitation issues. As the quarry is proposed to operate in different "domains" the EIS should contain detailed plans, methodology, responsibility and timing for the progressive rehabilitation of the site as the quarry operations cease in each "domain".

The disposal or incorporation into rehabilitation works of the silt fines (a by-product of the sand mining) should be detailed in the EIS as these silt fines can be difficult to shift and compact into a stable landscape. Similarly the EIS should also include details of topsoil retention and importation to the site, pond profiles and surface areas, methods of undertaking the rehabilitation works, timing of each stage of the works and maintenance periods of those works until the site is fully stabilised.

The rehabilitation plans should also include indicative volumes of topsoils, etc, required for the works and also detailed species lists and method of seed collection of local species to be used for the rehabilitation planting within each "domain".

Site Access

The existing quarry has a suitable site access for the volume of traffic entering and leaving the site. The EIS should investigate the need for an upgrade to this access, including the need for deceleration and turning lanes on Putty Road.

Council appreciates the opportunity to provide comments at this early stage and would also like to provide additional input at the time of assessment of this proposal. Should you have any queries regarding this matter please contact the undersigned.

Yours faithfully



Matthew Owens
Director City Planning

Direct Line: (02) 4560 4540



ENVIRONMENT PROTECTION AUTHORITY

Your reference: SSD-4978
Our reference: DOC12/48496
Our contact: David Gathercole, 9995 6823

Ms Caitlin Elliott
Mining & Industry Projects
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Ms Elliot

**Re: Tinda Creek Sand Quarry Expansion (SSD-4978) –
Request for input into Director General Requirements**

I refer to your request for the Environment Protection Authority's (EPA) requirements for the Environmental Impact Assessment (EIS) for the proposed Tinda Creek Sand Quarry Expansion received by the EPA on 20 November 2012.

The EPA has considered the submitted Preliminary Environmental Assessment and has identified the information it requires to assess the proposal (see **Attachment 1**). The proponent should ensure that the Director-General's Requirements (DGRs) for the EIS are sufficiently comprehensive to enable the EPA to determine the extent of the impact(s) of the proposal.

In summary, the EPA's key information requirements for the proposal include an adequate assessment of:

1. Air quality issues (including dust management)
2. Noise and vibration
3. Waste management
4. Surface water, groundwater and soil management (during both construction and operational phases)

Based upon the information provided to the EPA, the applicant will require a licence variation to allow the proposed expansion of the quarry. The applicant will need to submit a separate application to the EPA to obtain this licence variation. General information on licence variation requirements can be obtained from EPA's Environment Line on 131555 or on the EPA website at <http://www.environment.nsw.gov.au/epa>

The EPA will undertake a detailed review of the EIS during the exhibition period and make a submission. The EPA cannot exclude the possibility that issues might be identified, in any detailed review, that are additional to the issues raised in these preliminary comments.

The EPA requests the provision of three (3) copies of the EIS be provided for review during the exhibition period. These documents should be lodged with the Manager Sydney Industry, Environment Protection Authority, PO Box 668, Parramatta, NSW, 2124.

If you have any queries regarding this matter please contact David Gathercole on 9995 6823.

Yours sincerely



10/12/12

GREG SHEEHY
Manager Sydney Industry
Environment Protection Authority

ATTACHMENT 1

EPA's Recommended Environmental Assessment Requirements Proposed Tinda Creek Quarry Expansion

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

- Air Quality Issues
 - Dust - particulate emissions (PM₁₀ and PM_{2.5})
- Greenhouse gas emissions
- Noise and vibration
- Waste management
- Surface Water, Ground Water and Soils
 - General Surface Water
 - General Ground Water and Aquifer Issues
 - General soil issues

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

Air issues

Air quality

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

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

6. Include air dispersion modelling where there is a risk of adverse air quality impacts, or where there is sufficient uncertainty to warrant a rigorous numerical impact assessment. Air dispersion modelling must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005) <http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf>.
7. 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)*.
8. Detail emission control techniques/practices that will be employed by the proposal.

Greenhouse gas emissions

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

before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning).

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

Guidance Material

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

Noise and vibration

1. In relation to noise and vibration, the following matters should be addressed as part of the EIS.

General

2. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (EPA, 2009).
<http://www.environment.nsw.gov.au/noise/constructnoise.htm>
3. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (EPA, 2006). <http://www.environment.nsw.gov.au/noise/vibrationguide.htm>
4. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990).
<http://www.environment.nsw.gov.au/noise/blasting.htm>

Industry

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

Road

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

Waste

The EIS should include:

1. Details of the quantity and type of liquid and/or non-liquid waste(s) generated, handled, processed or disposed of at the premises. Waste must be classified according to the EPA's *Waste Classification Guidelines 2008*.
2. Details of liquid waste and non-liquid waste management at the facility, including:
 - the transportation, assessment and handling of waste arriving at or generated at the site;
 - any stockpiling of wastes or recovered materials at the site;
 - any waste processing related to the facility, including reuse, recycling, reprocessing or treatment both on- and off-site;

- the method for disposing of all wastes or recovered materials at the facility;
 - the emissions arising from the handling, storage, processing and reprocessing of waste at the facility;
 - the proposed controls for managing the environmental impacts of these activities.
3. Details of procedures for the assessment, handling, storage, transport and disposal of all **hazardous waste** used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.
 4. Details of the quantity, type and specifications for all **output products** proposed to be produced from the facility. The description should include the physical, chemical and biological characteristics (including contaminant concentrations) of those output products as well as relevant accredited standards against which the products would comply. In documenting or describing the composition of output products and/or wastes generated from the proposed facility reference should be made to the relevant EPA *resource recovery exemption* (<http://www.environment.nsw.gov.au/waste/RRecoveryExemptions.htm>) or the *Waste Classification Guidelines 2008* (<http://www.environment.nsw.gov.au/waste/envguidlns/index.htm>).
 5. Details of intended (or potential) end uses for output products from the facility and the relevant product standards which would be used to assess those products against.
 6. Details of the type and quantity of any chemical substances (including hydrocarbon (oils and fuels), explosives etc.) to be used or stored and describe arrangements for their safe use and storage.

General waste

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 *Waste 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 EIS should show the location of each measure to be implemented. The Proponent should consider measures such as:

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

The Proponent should also provide details of:

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

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

Water and soils

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.

Issues relating to the description of the receiving waters could also include, for example:

- o water chemistry
- o a description of receiving water processes, circulation and mixing characteristics and hydrodynamic regimes
- o lake or estuary flushing characteristics
- o sensitive ecosystems or species conservation values
- o specific human uses (e.g. fishing, proximity to recreation areas)
- o a description of any impacts from existing industry or activities on water quality
- o a description of the condition of the local catchment e.g. erosion, soils, vegetation cover, etc.
- o 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
- o historic river flow data

5. State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (<http://www.environment.nsw.gov.au/ieo/index.htm>). Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.
6. State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) *Guidelines for Fresh and Marine Water Quality* ([http://www.mincos.gov.au/publications/australian and new zealand guidelines for fresh and marine water quality](http://www.mincos.gov.au/publications/australian%20and%20new%20zealand%20guidelines%20for%20fresh%20and%20marine%20water%20quality)).
7. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.

Impact Assessment

8. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment. This could include the consideration of impacts on, for example:
- water circulation, current patterns, water chemistry and other appropriate characteristics such as clarity, temperature, nutrient and toxicants
 - changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, and groundwater)
 - disturbance of acid sulphate soils and potential acid sulfate soils
 - stream bank stability and impacts on macro invertebrates

Modelling, monitoring, or both, may need to be undertaken to assess the potential impact of discharges on the receiving environment. Modelling could include, for example:

- a range of scenarios that encompass any variations in discharge quality and quantity as well as the relevant range of environmental conditions of the receiving waters. The scenarios could describe a set of worst-case conditions and typical conditions to ensure that both acute and chronic impacts are assessed
 - assumptions used in the modelling, including identification and discussion of the limitations and assumptions to ensure full consideration of all factors, including uncertainty in predictions.
9. Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to:
- protect the Water Quality Objectives for receiving waters where they are currently being achieved; and
 - contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.
10. Where a discharge is proposed that includes a mixing zone, the proposal should demonstrate how wastewater discharged to waterways will ensure the ANZECC (2000) water quality criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge, and that any impacts in the initial mixing zone are demonstrated to be reversible.
11. Assess impacts on groundwater and groundwater dependent ecosystems.
12. Describe how stormwater will be managed both during and after construction.

Monitoring

13. Describe how predicted impacts will be monitored and assessed over time. Proponents should develop a water quality and aquatic ecosystem monitoring program to monitor the responses for each component or process that affects the Water Quality Objectives that includes, for example:
- adequate data for evaluating compliance with water quality standards and/or Water Quality Objectives
 - measurement of pollutants identified or expected to be present in any discharge

Water quality monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutant in NSW* (2004) (<http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf>).

General soil issues

The EIS should include:

1. An assessment of potential impacts on soil and land resources should be undertaken, being guided by *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:
 - a. Soil erosion and sediment transport - in accordance with *Managing urban stormwater: soils and construction*, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (EPA 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.

ATTACHMENT 2

Guidance Material

Title	Web address
<u>Relevant Legislation</u>	
<i>Environmentally Hazardous Chemicals Act 1985</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+14+1985+cd+0+N
<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
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<u>Licensing</u>	
EPA Guide to Licensing	www.environment.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.environment.nsw.gov.au/resources/air/ammodelling05361.pdf
<i>POEO (Clean Air) Regulation 2010</i>	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/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx

Title**Web address**

National Carbon Accounting Toolbox
 Australian Greenhouse Emissions
 Information System (AGEIS)

<http://www.climatechange.gov.au/government/initiatives/ncat.aspx>
<http://ageis.climatechange.gov.au/>

Noise

Interim Construction Noise Guideline
 (EPA, 2009)

<http://www.environment.nsw.gov.au/noise/constructnoise.htm>

Industrial Noise Policy Application Notes

<http://www.environment.nsw.gov.au/noise/traffic.htm>

Environmental Criteria for Road Traffic
 Noise (EPA, 1999)

<http://www.environment.nsw.gov.au/noise/traffic.htm>

Waste, Chemicals and Hazardous Materials and Radiation**Waste**

Environmental Guidelines: Solid Waste
 Landfills (EPA, 1996)

<http://www.environment.nsw.gov.au/resources/waste/envguidlns/solidlandfill.pdf>

Draft Environmental Guidelines -
 Industrial Waste Landfilling (April 1998)

<http://www.environment.nsw.gov.au/resources/waste/envguidlns/industrialfill.pdf>

Waste Classification Guidelines (EPA,
 2008)

<http://www.environment.nsw.gov.au/waste/envguidlns/index.htm>

EPA Resource recovery exemption

<http://www.environment.nsw.gov.au/waste/RRRecoveryExemptions.htm>

Water and Soils

Sampling Design Guidelines (EPA, 1995) Available by request from EPA's Environment Line

National Environment Protection
 (Assessment of Site Contamination)
 Measure 1999 (or update)

<http://www.ephc.gov.au/taxonomy/term/44>

Soils – general

Soil and Landscape Issues in
 Environmental Impact Assessment
 (DLWC 2000)

http://www.dnr.nsw.gov.au/care/soil/soil_pubs/pdfs/tech_rep_34_new.pdf

Managing urban stormwater: soils and
 construction, vol. 1 (Landcom 2004) and
 vol. 2 (A. Installation of services; B
 Waste landfills; C. Unsealed roads; D.
 Main Roads; E. Mines and quarries)

Vol 1 - Available for purchase at
<http://www.landcom.com.au/whats-new/publications-reports/the-blue-book.aspx>

(EPA 2008)

Vol 2 -
<http://www.environment.nsw.gov.au/stormwater/publications.htm>

Title	Web address
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/leo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf



Department of Primary Industries

OUT12/31845

- 7 DEC 2012

Ms Caitlin Elliott
Mining & Industry Projects
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Caitlin.Elliott@planning.nsw.gov.au

Dear Ms Elliott,

Tinda Creek Sand Quarry Expansion (SSD-4978) Request for input into Director-General Requirements

I refer to your email of 20 November 2012 to the Department of Primary Industries in respect to the above matter.

Comment by NSW Office of Water

The NSW Office of Water (Office of Water) advises the following key issues, and the further detailed assessment requirements in Attachment A:

- an assessment of potential impacts of the proposal on watercourses, riparian areas, wetlands, groundwater and groundwater dependent ecosystems
- adequate mitigating and monitoring requirements to address impacts.

For further information please contact Janne Grose, Planning and Assessment Coordinator (Penrith office) on 4729 8262 or at: Janne.Grose@water.nsw.gov.au.

Comment by Crown Lands

Crown Lands advise there is a Crown road on the southern boundary of the subject property. Should the proponents wish to utilise this road they will need to either purchase the land (following closure of the road) or enter into some other arrangement under the *Crown Lands Act 1989*. Contact in this regard can be made with the Crown Lands Roads Business Centre (Newcastle) on 1300 052 637.

For further information please contact Stephen Fenn, Acting Senior Area Manager (Parramatta office) on 8236 7113 or at: stephen.fenn@lands.nsw.gov.au.

Comment by Fisheries NSW

Fisheries NSW advise:

- Table 4.1 and Section 5.1 of the Preliminary Environmental Assessment rightly refer to the Threatened Species Conservation and (Commonwealth) Environment Protection and Biodiversity Conservation acts, but make no mention or assessment of potential impacts on threatened species listed under Part 7A of the *Fisheries Management Act 1994* (FM Act). It is acknowledged that the waterways

NSW Department of Primary Industries
Level 6, 201 Elizabeth Street, Sydney NSW 2000
PO Box K220, Haymarket NSW 1240

Tel: 02 8289 3999 Fax: 02 9286 3208 www.dpi.nsw.gov.au ABN: 72 189 919 072

surrounding the existing quarry are first and second order intermittent drainages and provide little or no habitat for most fin-fish, however the definition of fish under s.5 of the FM Act also includes other aquatic animal life at any stage of their life history (e.g. dragonflies and freshwater snails). The environmental assessment must include an assessment of the habitat in each of the adjacent drainages and an assessment of impacts on threatened species under the FM Act.

- the proponent is referred to our threatened species assessment guidelines available at: <http://www.dpi.nsw.gov.au/fisheries/species-protection/info-sheet>.

For further information please contact Marcel Green, Senior Environmental Assessments Officer (Wollstonecraft office) on 8437 4933 or at: marcel.green@dpi.nsw.gov.au.

Future referrals

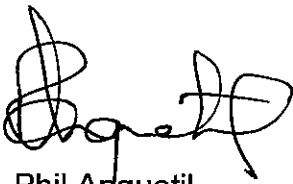
In addition to the standard referral to the Department of Primary Industries as a whole, the NSW Office of Water also requests one (1) hard copy and one (1) CD copy of the Environmental Impact Statement and any other accompanying documentation when it is placed on public exhibition. Referral of this documentation can be made direct to the Office of Water contact officer listed above.

As a reminder, the referral to the Department of Primary Industries as a whole should be made to:

- for electronic referrals: landuse.enquiries@industry.nsw.gov.au
- for hard copy referrals (printed documents, CD's etc):

Land Use Planning Coordinating Officer
Department of Primary Industries
Locked Bag 21
Orange NSW 2800

Yours sincerely



Phil Arquetil
Executive Director, Business Services

Attachment A

Tinda Creek Sand Quarry Expansion (SSD-4978) Request for Input into Director-General Requirements for Environmental Assessment Comment by NSW Office of Water

Relevant Legislation

The Environmental Impact Statement (EIS) should take into account the objects and regulatory requirements of the *Water Act 1912* and *Water Management Act 2000* (WMA 2000), as applicable. Proposals and management plans should be consistent with the Objects (s.3) and Water Management Principles (s.5) of the WMA.

Water Sharing Plans (WSP)

The proposal is located within the area covered by the *Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources* and the *Water Sharing Plan for the Greater Metropolitan Region Groundwater sources*. The EIS is required to:

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

Relevant Policies

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

- NSW State Rivers and Estuary Policy (1993);
- NSW Wetlands Management Policy (1996);
- NSW State Groundwater Policy Framework Document (1997);
- NSW State Groundwater Quality Protection Policy (1998);
- NSW State Groundwater Dependent Ecosystems Policy (2002);
- Aquifer Interference Policy (2012); and
- NSW Office of Water Guidelines for Controlled Activities (2012)

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

The EIS needs to demonstrate the proposal is consistent with the spirit and principles of these policy documents.

Licensing Considerations

The EIS is required to provide:

- details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction and all water supply works to take water.
- 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 and an approval obtained from the Office of Water

prior to their installation. All predicted groundwater take must be accounted for through adequate licensing.

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

Section 2.1.3 of the Preliminary Environmental Assessment (PEA) notes groundwater bore licence 20BL167512 permits extraction up to 5 ML of groundwater per year and groundwater bore licence 10BL159132 permits extraction up to 10 ML per year. It should be noted that 20BL167512 has been cancelled and is not a current licence and 10BL159132 is a lapsed licence.

Surface Water and Groundwater Assessment

The EIS needs to provide adequate details to assess the potential impacts of the project on surface water resources and surrounding waterbodies. If the proposal includes water management structures/dams, the EIS needs to provide details on the following:

- any existing structure/s (date of construction, location, purpose, size and capacity, the legal status/approval for existing structure/s).
- any proposal to change the purpose of existing structure/s.
- if any remedial work is required to maintain the integrity of the existing structure/s.
- the purpose, location and design specifications for any proposed structure/s.
- size and storage capacity of the structure/s.
- calculation of the Maximum Harvestable Right Dam Capacity (MHRDC).
- if the structure/s is affected by flood flows.
- any proposal for shared use, rights and entitlement of the structure/s.
- if the proposed development has the potential to bisect the structure/s.

The Hawkesbury – Nepean Groundwater vulnerability map shows the site is located in an area of moderately high groundwater vulnerability. The PEA indicates the proposal has the potential to affect local aquifers through drawdown effects (see section 5.7.2, page 15).

The EIS needs to provide adequate details to assess the potential impacts of the project on all groundwater resources including:

- the predicted highest groundwater table at the site.
- any 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.
- a description of the flow directions and rates and physical and chemical characteristics of the groundwater source.
- 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 the quality of the groundwater for the local groundwater catchment.
- an assessment of groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).
- how the proposed development will not potentially diminish the current quality of groundwater, 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.

Section 3.14 of the PEA notes that virgin excavated natural material (VENM) and excavated natural material are to be used in the rehabilitation of the site to backfill the extracted area (page 6). It is important that a compatible form of VENM is used to avoid potential impacts on groundwater (such as leaching and groundwater contamination) and groundwater dependent ecosystems. The EIS should address this issue.

Watercourses and Riparian Land

The 1:25 000 topographic map (Six Brothers) which is relevant to the site shows first and second order watercourses occur on the site. The development should comply with the Office of Water Guidelines for Controlled Activities.

It is recommended the EIS provide details on any watercourses and riparian corridors potentially affected by the proposal either on the site, or downstream of the proposal, including:

- scaled plans showing the location of:
 - top of bank.
 - riparian setbacks (measured from top of bank) to be protected and enhanced.
 - remnant riparian vegetation surrounding the watercourses (identify any areas to be protected and any native riparian vegetation proposed to be removed).
 - the site boundary, the footprint of the proposal in relation to the watercourses and riparian area.
- photographs of the watercourses looking in an upstream and downstream direction and a map showing the point from which the photos were taken.
- a detailed description of all potential environmental impacts in terms of channel stability, riparian areas, sediment movement, water quality and hydraulic regime.
- a description of the design features and measures to be incorporated into the proposal to mitigate long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian corridor widths.

The project needs to demonstrate the proposal will not significantly modify natural flow conditions (stream velocity, frequency of flow etc) and water quality entering the downstream watercourse/wetland. Flow leaving the site needs to replicate natural conditions to mitigate adverse impacts on the downstream environment.

If the proposal is approved, it is recommended a detailed drainage plan is prepared to minimise disruptions to natural flow conditions and control the quality of water runoff. It is also recommended monitoring is undertaken to monitor potential impacts on watercourses and wetlands. Monitoring should be undertaken prior to the expansion of the quarry to provide baseline information and during operation.

It is noted that Tinda Creek has been diverted around the eastern and northern boundaries of the existing quarry. If the proposal is approved, it is recommended a detailed Rehabilitation Plan is prepared for the site which details the rehabilitation of any watercourses and riparian corridors disturbed by the existing quarry or potentially affected by the expansion. The rehabilitation of watercourses and riparian corridors should mimic natural systems.

Riparian land should be revegetated with native plant species endemic to the local vegetation community at a density that would occur naturally.

Wetlands

The Six Brothers 1:25 000 topographic map shows Gibba Swamp is located immediately downstream of the site, to the west of the Putty Road, in the Wollemi National Park. The topographic map shows another swamp is located on Lot 3 upstream of the existing quarry. It is of concern the proposed expansion appears to remove the swamp on Lot 3.

The EIS needs to include:

- a scaled map showing the location of any wetlands/swamps potentially affected by the proposal.
- and the footprint of the development in relation to the wetlands.
- a series of photos of the wetlands/swamps and a map showing the point from which the photos were taken.

The EIS needs to assess the potential impacts of the proposal on any wetlands/swamps located on the site and downstream of the site, including modification to the wetlands hydrologic regime; groundwater recharge; loss/degradation of habitat and potential impact on flora and fauna species that depend on the wetlands; and provide adequate safeguard measures to protect and minimise impacts on the wetlands, including buffer setbacks around the wetlands.

It is important that the proposal does not adversely impact and degrade the downstream environment, particularly as the Wollemi National Park is located immediately downstream.

Groundwater Dependent Ecosystems

The EIS should provide details on the presence and distribution of Groundwater Dependent Ecosystems (GDEs) in the vicinity of the site and:

- demonstrate that the proposed development would maintain natural patterns of groundwater flow and not disrupt groundwater levels that are critical to GDEs.
- 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.
 - the effect on the function of GDEs (habitat, groundwater levels, connectivity).
- provide safeguard measures for any GDEs.

GDEs are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater. GDEs represent a vital component of the natural environment and can vary in how they depend on groundwater, from having occasional or no apparent dependence through to being entirely dependent. GDEs occur across both the surface and subsurface landscapes ranging in area from a few metres to many kilometres. Surface and groundwaters are often interlinked and aquatic ecosystems may have a dependence on both.

End Attachment A

Department of the Environment

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

A delegate for the Commonwealth Minister for the Environment has determined the Expansion of Existing Sand Quarry Operation, Tinda Creek, NSW (EPBC 2013/7028), involving expansion of the existing Tinda Creek sand quarry, located in the Blue Mountains, NSW, approximately 45 km northwest of Wisemans Ferry, to be a controlled action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The action is likely to have a significant impact on the following matters of National Environmental Significance:

- World Heritage properties (s12 & 15A)
- National Heritage places (s15B & 15C)
- Listed threatened species and communities (s18 & 18A)

In particular, the action is likely to have a significant impact on the EPBC Act listed vulnerable Small-flowered Grevillea. The action is also likely to have a significant impact on the Greater Blue Mountains World Heritage Area, which is also a National Heritage Place.

Significant impacts are considered likely or possible for a specific species and heritage places protected by the EPBC Act including, but not limited to, those listed in [Appendix A](#).

In accordance with the one-off accredited assessment process for this project, the environmental assessment of the impacts of the controlled action must be assessed under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The assessment should include enough information about the action and its relevant impacts to allow the Minister for the Environment to make an informed decision on whether or not to approve the action under the EPBC Act.

The following assessment requirements concerning matters in the EPBC Act and schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* should be integrated into the assessment requirements of the EP&A Act.

General information

1. The background of the action, including:
 - a. the title of the action
 - b. the full name and postal address of the designated proponent
 - c. a clear outline of the objective of the action
 - d. the location of the action
 - e. the background to the development of the action
 - f. how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action
 - g. the current status of the action, and
 - h. the consequences of not proceeding with the action

Description of the controlled action

2. A description of the action, including:
 - a. all the components of the action
 - b. the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts
 - c. how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts
 - d. the timing and duration of the works to be undertaken, and
 - e. to the extent reasonably practicable, a description of any feasible alternatives to the controlled action that have been identified through the assessment, and their likely impact, including:
 - i. if relevant, the alternative of taking no action
 - ii. a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action, and
 - iii. sufficient detail to clarify why any alternative is preferred to another

Description of the existing environment

3. A description of the existing environment of the proposal location and the surrounding areas that may be affected by the action, including but not limited to:
 - a. surveys using accepted methodology for targeting listed threatened species, ecological communities and their respective habitat, including but not limited to OEH's *Survey and assessment guidelines (2009)*, available at: <http://www.environment.nsw.gov.au/threatenedspecies/surveymethodsfauna.htm> and the Department of the Environment's species-specific survey guidelines for nationally threatened species, available at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>
 - b. a description of the distribution and abundance of threatened species and ecological communities, as well as suitable habitat (including breeding, foraging, roosting habitat, habitat critical to the survival of threatened species) within the site and in surrounding areas that may be impacted by the proposal. Specifically, this must include but not be limited to *Grevillea parviflora*.
 - c. the regional distribution and abundance of suitable and potential habitat for threatened species and ecological communities surrounding the site

Description of the relevant impacts of the controlled action

4. An assessment of all relevant impacts¹ with reference to the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance (2009)* and species specific guidelines as relevant (available at: www.environment.gov.au/epbc/guidelines-policies.html) that the controlled action has, will have or is likely to have. Information must include:
 - a. a description of the relevant impacts of the action on matters of national environmental significance:
 - listed species and communities (including, but not limited to, *Grevillea parviflora*).
 - a World Heritage Place and a National Heritage Property

¹ The term "relevant impact" is defined in section 82 of the EPBC Act. Note that the action has been found to be likely to have a significant impact on listed species and communities, under sections 18 and 18A of the EPBC Act, and water resources, under sections 24D and 24E of the Act.

- b. a detailed assessment of the nature and extent of the likely short term and long term relevant impacts
 - c. a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible
 - d. analysis of the significance of the relevant impacts, and
 - e. any technical data and other information used or needed to make a detailed assessment of the relevant impacts
5. Where there is a potential habitat for *Grevillea parviflora*, surveys must be undertaken. These surveys must be timed appropriately and undertaken for a suitable period of time by a qualified person². A subsequent description of the relevant impacts on such EPBC Act listed species should include, inter alia, direct, indirect, cumulative and facilitative impacts on the:
- a. population of the species at the site
 - b. area of occupancy of the species
 - c. habitat critical to the survival of the species
 - d. breeding cycle of the population, and
 - e. availability or quality of habitat for the species
6. An assessment of all relevant impacts to the World and National listed values of the Greater Blue Mountains World Heritage Area (GBMWA). The assessment should include:
- a. a detailed description of the potential and likely hydrological change, including changes to water quality and quantity entering the heritage area, that may occur as a result of the proposed action. Direct and indirect impacts must be included. Cumulative and facilitative impacts should also be included. Water quality impacts of unplanned discharges should also be addressed.
 - b. a detailed description of flora and fauna that may be affected by identified changes and potential changes in hydrology, and
 - c. a detailed description of the impact of the proposed action on the wilderness quality (as determined by the National Wilderness Inventory) of the GBMWA.

Proposed safeguards and mitigation measures

7. A description of feasible mitigation measures, changes to the action or procedures, which have been proposed by the proponent or suggested in public submissions, and which are intended to prevent or minimise relevant impacts on matters of national environmental significance. Information must include:
- a. a description of the mitigation measures that will be undertaken to prevent or minimise the relevant impacts of the action. These mitigation measures should be justified and based on best available practices
 - b. an assessment of the expected or predicted effectiveness of the mitigation measures including the effect on abundance and condition of species, suitable habitat, ecological communities and heritage values
 - c. any statutory or policy basis for the mitigation measures
 - d. the cost of the mitigation measures
 - e. an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs (including any relevant thresholds for corrective actions) for the relevant impacts of the action. Include

² Where available, species-specific survey guidelines can be obtained on the department's *Species Profile and Threats Database*: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

the person or agency responsible for implementing these programs and the effectiveness of all mitigation measures, including any provisions for independent environmental auditing

- f. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program
- g. identification of mitigation measures proposed to be undertaken by State governments, local governments or the proponent, and
- h. any changes to the action which prevent or minimise relevant impacts on listed threatened species and communities

Offsets

8. Where impacts cannot be avoided or mitigated, an offset package to compensate for any predicted or potential residual significant impacts on matters of national environmental significance. Offsets should demonstrate consistency with the Commonwealth EPBC Act Environmental Offsets Policy (October 2012, or subsequent versions), available at: www.environment.gov.au/epbc/publications/environmental-offsets-policy.html. The Department's information requirements in relation to EPBC Act offset proposals is provided at Appendix B. Information must include:
 - a. the description of any offset package should include how the offset compensates for the residual impacts, when the offset will be delivered and how the offset will be managed
 - b. an assessment of the impact of the offsets on other matters of environmental, economic, or social significance, and
 - c. analysis of cost, both financial and other, related to offsets.

Other approvals and conditions

9. Any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. Information must include:
 - a. details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:
 - i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy, and
 - ii. how the scheme provides for the prevention, minimisation and management of any relevant impacts
 - b. a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the action
 - c. a statement identifying any additional approval that is required, and
 - d. a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action

Economic and social matters

10. A description of the short-term and long-term social and economic implications and/or impacts of the project.

Environmental record of person proposing to take the action

11. Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:
 - a. the proponent, and

- b. for an action for which a person has applied for a permit, the person making the application.

12. Details of the proponent's environmental policy and planning framework.

Information sources

13. For information given in an environment assessment, the draft must state:

- a. the source of the information
- b. how recent the information is
- c. how the reliability of the information was tested, and
- d. what uncertainties (if any) are in the information.

Consultation

14. Any consultation about the action, including:

- a. any consultation that has already taken place
- b. proposed consultation about relevant impacts of the action, and
- c. if there has been consultation about the proposed action — any documented response to, or result of, the consultation

15. Identification of affected parties, including a statement mentioning any communities that may be affected and a description of their views.

Appendix A

Threatened Fauna

- *Grevillea parviflora* subsp. *Parviflora* (Small-flower grevillea)

World Heritage properties

Greater Blue Mountains World Heritage Area (GBMWhA)

National Heritage places

Greater Blue Mountains World Heritage Area (GBMWhA)

Appendix B

Information requirements for EPBC Act offset proposals

- Details in relation to the proposed offsets package, including:
 - the location and size, in hectares, of any offset site(s)
 - maps clearly showing for each offset site:
 - the relevant ecological features
 - the landscape context, and
 - the cadastre boundary
 - the current tenure arrangements (including zoning and ownership) of any proposed offset sites
 - confirmed records of presence (or otherwise) of relevant protected matter(s) on the offset site(s), and
 - detailed information regarding the presence and quality of habitat for relevant protected matter(s) on the offset site. The quality of habitat should be assessed in a manner consistent with the approach outlined in the document titled *How to use the offset assessment guide* available at:
www.environment.gov.au/epbc/publications/environmental-offsets-policy.html.
- Provide information and justification regarding how the offsets package will deliver a conservation outcome that will maintain or improve the viability of the protected matter(s) consistent with the *EPBC Act environmental offsets policy* (October 2012) including:
 - management actions that will be undertaken that improve or maintain the quality of the proposed offset site(s) for the relevant protected matter(s). Management actions must be clearly described, planned and resourced as to justify any proposed improvements in quality for the protected matter(s) over time
 - the time over which management actions will deliver any proposed improvement or maintenance of habitat quality for the relevant protected matter(s)
 - the risk of damage, degradation or destruction to any proposed offset site(s) in the absence of any formal protection and/or management over a foreseeable time period (20 years). Such risk assessments may be based on:
 - presence of pending development applications, mining leases or other activities on or near the proposed offset site(s) that indicate development intent
 - average risk of loss for similar sites, and
 - presence and strength of formal protection mechanisms currently in place, and
 - the legal mechanism(s) that are proposed to protect offset site(s) into the future and avert any risk of damage, degradation or destruction
- Provide information regarding how the proposed offsets package is additional to what is already required, as determined by law or planning regulations, agreed to under other schemes or programs or required under an existing duty-of-care
- The overall cost of the proposed offsets package; including costs associated with, but not limited to:
 - acquisition and transfer of lands/property

- implementation of all related management actions, and
- monitoring, reporting and auditing of offset performance