Resource Assessments
Contact: Margaret Kirton
Phone: (02) 9228 6289
Email: Margaret.Kirton@planning.nsw.gov.au

Mr Ed O'Neil
Gunlake Quarry Pty Ltd
PO Box 209
MARULAN NSW 2579

Dear Ed O'Neil

State Significant Development - Secretary's Environmental Assessment Requirements
Gunlake Quarry Extension Project (SSD 7090)

I refer to the Secretary's requirements issued for the Gunlake Quarry Extension Project on 3 July 2015. The NSW Department of Planning and Environment has consulted with concerned residents in the area and determined that it is appropriate that your Environmental Impact Statement (EIS) for the Gunlake Quarry Extension Project considers an additional Traffic & Transport issue. Therefore, please find attached revised Secretary's requirements.

These requirements are based on the information you have provided to date, and have been prepared in consultation with the relevant government agencies and the community. The agencies' comments are attached for your information (see Attachment 2).

Please note that the Department may alter these requirements again at any time, and that you must consult further with the Department if you do not lodge a development application and EIS for the project within the next two years.

You should establish whether the proposal requires a separate approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as soon as possible. If such an approval is required, please notify the Department immediately, as the Commonwealth approval process is likely to be integrated with the NSW approval process (under the bilateral agreement), and supplementary requirements will need to be issued.

Please contact the Department at least two weeks before you plan to submit the development application and EIS for the project. This will enable the Department to:

- confirm the applicable fee (see Division 1AA, Part 15 of the *Environmental Planning and Assessment Regulation 2000*); and
- determine the required number of copies of the EIS (hard copy and digital).

It is important for you to recognise that the Department will review the EIS for the project carefully before putting it on public exhibition. If it fails to adequately address these requirements, then you will be required to submit an amended EIS.

If you have any enquiries about these requirements, please contact Margaret Kirton at the details listed above.

Yours sincerely

Howard Reed 13-10-15

Howard Reed
Director
Resource Assessments
as the Secretary's delegate

Secretary's Environmental Assessment Requirements

State Significant Development

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

Application Number	SSD 7090
Proposal	The proposed Gunlake Quarry Extension Project, which involves: • producing up to 2 million tonnes per annum of saleable quarry products; • increasing truck movements to an average of 440 movements per day; • extending the quarry pit footprint to approximately 63 hectares; • conducting primary crushing operations 24 hours per day; • extending overburden emplacement areas; and • blasting up to twice weekly.
Location	715 Brayton Road, Marulan; Lot 13 DP1123374
Applicant	Gunlake Pty Ltd
Date of Issue	13 October 2015
General Requirements	The Environmental Impact Statement (EIS) for the development must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000.* In particular, the EIS must include: • a full description of the development, including: – the need for the development; – the resource to be extracted, including the amount, type and composition, having regard to DRE's and EPA's requirements (see Attachment 2); – the site layout and extraction plan, including cross-sectional plans; – the production process and processing activities, including the in-flow and out-flow of materials and points of discharge to the environment; – surface infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate – approvals process); – a waste (overburden, rejects, tailings, etc.) management strategy, having regard to EPA's requirements (see Attachment 2); – a water management strategy, having regard to EPA's and DPI's requirements (see Attachment 2); – a rehabilitation strategy to apply during, and after completion of, extraction operations, and proposed final use of site; and – the likely interactions between the development and any other existing, approved or proposed extractive industry development in the vicinity of the site (including the adjacent Petersons Quarry); • a list of any approvals that must be obtained before the development may commence; • an assessment of the likely impacts of the development on the environment, focussing on the specific issues identified below, including: – a description of the existing environment likely to be affected by the development, using sufficient baseline data; – an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant laws, environmental planning instruments, guidelines, policies, plans and industry codes of practice; – a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of:

	○ whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented; ○ the likely effectiveness of these measures; and ○ whether contingency plans would be necessary to manage any residual risks; and – a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved; • a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; • consideration of the development against all relevant environmental planning instruments (including Part 3 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007)*; and • the reasons why the development should be approved having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development. While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development. In addition to the matters set out in Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*, the development application must be accompanied by a signed report from a suitably qualified expert that includes an accurate estimate of the: • capital investment value (as defined in Clause 3 of the *Environmental Planning and Assessment Regulation 2000*) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived; and • jobs that would be created during each stage of the development.
Key Issues	The EIS must address the following specific matters: • **Land Resources** – including a detailed assessment of: - potential impacts on soils and land capability (including potential erosion and land contamination); - potential impacts on landforms (topography), paying particular attention to the long term geotechnical stability of any new landforms (such as overburden dumps);and - the compatibility of the development with other land uses in the vicinity of the development in accordance with the requirements in Clause 12 of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.* • **Traffic & Transport** – including: • identification and description of all reasonable options to reduce transport of quarry products on local roads, including extension of the bypass road or use of either existing rail infrastructure at the Lynwood Quarry or new rail infrastructure, and a detailed assessment of any such option which is potentially feasible; • accurate predictions of the road traffic generated by the construction and operation of the development, including cumulative traffic levels associated with Johnniefelds Quarry to the east and Lynwood Quarry to the South, and a description of the types and maximum numbers of vehicles likely to be used for transportation of quarry products, the public roads in the Goulburn Mulwaree LGA likely to be so used and the times during which those roads would be so used; • a detailed assessment of potential traffic impacts on the capacity, condition, safety and efficiency of the local and State road network (as identified above), having regard to the requirements of the Goulburn Mulwaree Council and RMS (see Attachment 2); and • a detailed description of the measures or works (including concept plans) that would be used and/or implemented to upgrade, maintain

and improve the capacity, efficiency and safety of the road network used by the development.

- **Blasting & Vibration** – including:
  - proposed hours, frequency, methods and impacts; and
  - an assessment of the likely blasting impacts of the development on people, buildings, animals, infrastructure and significant natural features having regard to the relevant ANZECC guidelines.
- **Air Quality** – including a quantitative assessment of potential:
  - construction and operational impacts, with a particular focus on dust emissions including $PM_{2.5}$ and PM_{10};
  - dust generation from blasting and processing, as well as diesel emissions and dust generated from the transportation of quarry products;
  - reasonable and feasible mitigation measures to minimise dust and diesel emissions; and
  - monitoring and management measures, in particular, real-time air quality monitoring.
- **Noise** – including a quantitative assessment of potential:
  - construction, operational and off-site transport noise impacts in accordance with the *Interim Construction Noise Guideline*, *NSW Industrial Noise Policy* and the *NSW Road Noise Policy* respectively;
  - reasonable and feasible mitigation measures to minimise noise emissions; and
  - monitoring and management measures, in particular real-time and attended noise monitoring.
- **Water** – including:
  - detailed assessment of potential impacts on the quality and quantity of existing surface and ground water resources, including impacts on the regional water supply, having regard to the requirements of DPI (see Attachment 2);
  - a detailed site water balance and an assessment of any volumetric water licensing requirements, 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 against receiving water quality and flow objectives;
  - identification of any licensing requirements or other approvals under the *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);
  - an assessment of potential risks to surface and groundwater from construction and operation, demonstrating clear consideration of the principle of achieving a neutral or beneficial effect on water quality in the Sydney Drinking Water Catchment, consistent with SEPP (Sydney Drinking Water Catchment) 2011; The EIS must include a framework for the avoidance, mitigation, management and monitoring of water quality impacts during construction and operation.
  - 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, having regard to the requirements of DPI (see Attachment 2); and
  - a detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts.
- **Biodiversity** – including:
  - an assessment of the likely biodiversity impacts, having regard to OEH's and DPI's requirements (see Attachment 2); and
  - an offset strategy (depending on the outcomes of the assessment of biodiversity impacts) to ensure the development maintains and

	improves the biodiversity values of the region in the medium to long term; - an assessment of potential downstream impacts on water quality and aquatic habitats in Chapman's Creek; • **Heritage** – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to OEH's requirements (see Attachment 2); • **Visual** – including an assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to the creation of any new landforms (noise bunds, etc.); • **Greenhouse Gases** – including an assessment of the likely greenhouse gas emissions of the development, dealing with the EPA's requirements (see Attachment 2); • **Hazards** – including an assessment of the likely risks to public safety, paying particular attention to potential bushfire risks and the transport, handling and use of any dangerous goods; • **Social & Economic** – including: - an assessment of potential impacts on local and regional communities including impacts on social amenity; - a detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the development, including any infrastructure improvements, or contributions and/or voluntary planning agreement or similar mechanism; and - a detailed assessment of the costs and benefits of the development as a whole, and whether it would result in a net benefit for the NSW community. • **Rehabilitation** – including the proposed rehabilitation strategy for the site having regard to the key principles in the *Strategic Framework for Mine Closure*, including: - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and - the potential for integrating this strategy with any other rehabilitation and/or offset strategies in the region.
Consultation	During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, Aboriginal stakeholders, community groups and affected landowners. In particular, you must consult with the: • 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 and Crown Lands division); • Roads and Maritime Services; • NSW Rural Fire Service; • South East Local Land Services; • Goulburn Mulwaree Council; and • community groups, including but not limited to Red Hills Road Residence and Surrounding Areas Committee. The EIS must: • describe the consultation process used and demonstrate that effective consultation has occurred; • describe the issues raised by public authorities, service providers, community groups and landowners;

	• identify where the design of the development has been amended in response to issues raised; and • otherwise demonstrate that issues raised have been appropriately addressed in the assessment.

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

Air	
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA)
	Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion into the 'Approved Methods for the Modelling and Assessments of Air Pollutants in NSW, Australia'
	National Greenhouse Accounts Factors (Commonwealth)
Noise	
	NSW Industrial Noise Policy and associated Application Notes (EPA)
	Interim Construction Noise Guideline (DECC 2009)
	NSW Road Noise Policy (EPA)
Water	
Water Sharing Plans	Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources Water Sharing Plan 2011
Groundwater	NSW State Groundwater Policy Framework Document (NOW)
	NSW State Groundwater Quality Protection Policy (NOW)
	NSW State Groundwater Quantity Management Policy (NOW)
	NSW Aquifer Interference Policy 2012 (NOW)
	Office of Water Guidelines for Controlled Activities (2012)
	Groundwater Monitoring and Modelling Plans – Information for prospective mining and petroleum exploration activities (NOW)
	Australian Groundwater Modelling Guidelines 2012 (Commonwealth)
	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Guidelines for the Assessment & Management of Groundwater Contamination (EPA)
Surface Water	NSW Government Water Quality and River Flow Objectives (EPA)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)
	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)
	NSW Water Conservation Strategy (2000)
	State Water Management Outcomes Plan
	NSW State Rivers and Estuary Policy (1993)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (EPA)
	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control (EPA)
	Storing and Handling Liquids: Environmental Protection – Participants Manual (DECC)
	Environmental Compliance Report: Liquid Chemical Storage, Handling and Spill Management – Part B Review of Best Practice and Regulation (DEC).
	Environmental Guidelines: Use of Effluent by Irrigation (EPA)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	NSW Guidelines for Controlled Activities on Waterfront Land (NOW)

Land	
	Soil and Landscape Issues in Environmental Impact Assessment (NOW)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	Agricultural Issues for Extractive Industries (NSW Trade and Investment)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Traffic	
	Guide to Traffic Generating Development (RMS)
	Road Design Guide (RMS) & relevant Austroads Standards
Biodiversity	
	Framework for Biodiversity Assessment (OEH)
	NSW Biodiversity Offsets Policy for Major Projects (OEH)
	Guidelines for Threatened Species Assessment (DP&E)
	NSW State Groundwater Dependent Ecosystem Policy (NOW)
	Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW)
	State Environmental Planning Policy No. 44 – Koala Habitat Protection
Heritage	
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DP&E)
	Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH)
	NSW Heritage Manual (OEH)
	Statements of Heritage Impact (OEH)
	Goulburn Mulwaree Local Environmental Plan 2009 (Heritage)
Public Safety	
	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
Waste	
	Waste Classification Guidelines (EPA)
Rehabilitation	
	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)
	Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)
	Strategic Framework for Mine Closure (ANZMEC-MCA)
Environmental Planning Instruments - General	
	State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
	State Environmental Planning Policy (State and Regional Development) 2011
	State Environmental Planning Policy (Infrastructure) 2007
	Goulburn Mulwaree Local Environmental Plan 2009

ATTACHMENT 2

Agency Correspondence

Trade & Investment
Resources & Energy

9th June 2015

Jacqui McLeod
Team Leader – Resource Assessments
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Emailed
Your Reference: DGR ID No. (SSD 7090)
Our Reference: OUT15/13956

Dear Ms McLeod,

Re: Request for Secretary's Environmental Assessment Requirements Proposal – Gunlake Quarry Expansion Project (SSD 7090)

Thank you for the opportunity to provide advice on the subject proposal.

This is a response from NSW Trade & Investment – Division of Resources & Energy (DRE), incorporating advice from its Agriculture and Fisheries Branches. Specific Fisheries or Forests issues arising may be provided in separate correspondence.

The building and construction industries in NSW require ongoing replacement of supplies as sources are exhausted. The expansion of existing quarries, subject to environmental assessment, helps to ensure a continued supply of material for a range of building and construction uses in NSW. The resource in the subject area represents a regionally important source of hard rock aggregate and manufactured sand for the Greater Sydney area.

Mineral Resources Issues
Hard rock aggregate and manufactured sand are not prescribed minerals under the Mining Act, 1992. Therefore, DRE has no statutory role in authorising or regulating the extraction of this commodity, apart from its role under the *Work Health & Safety Act 2011* and associated regulations and the *Mine Health and Safety Act 2004* and associated regulations, for ensuring the safe operation of mines and quarries.

All environmental reports (EISs or similar) accompanying Development Applications for extractive industry lodged under the Environmental Planning & Assessment Act 1979 should include a resource assessment (as detailed in Attachment A) which:

- Documents the size and quality of the resource and demonstrates that both have been adequately assessed; and
- Documents the methods used to assess the resource and its suitability for the intended applications.

Applications to modify, expand, extend or intensify an existing consent that has already been adequately reported using the above protocol in publicly available documents, may

restrict detailed documentation to the additional resources to be used, if accompanied by a summary of past resource assessments and of past production.

DRE collects data on the quantity and value of construction materials produced annually throughout the State. Forms are sent to all operating quarries at the end of each financial year for this purpose. The statistical data thus collected is of great value to Government and industry in planning and resource management, particularly as a basis for analysing trends in production and for estimating future demand for particular commodities or in particular regions. In order to assist in the collection of construction material production data, the proponent should be required to provide annual production data for the subject site to DRE as a condition of any new or amended development consent.

Queries regarding the above information, and future requests for advice in relation to this matter, should be directed to the DRE – Geological Survey of New South Wales Land Use team at landuse.minerals@trade.nsw.gov.au

Agricultural Issues for Extractive Industries (Quarries)

The relevant agricultural issues to consider when preparing and also when assessing extractive industry proposals are set out in the Departments' Guideline: *Agricultural issues for Extractive Industries* available on our website; http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment. The guideline also documents recommended project design and mitigatory responses.

The guideline is part of a series designed to help consent authorities identify potential agricultural impacts, and assess whether such proposals can avoid conflict with existing agricultural developments; and protect valuable food and fibre production resources. The guidelines can similarly help consultants and proponents and are available from the Department of Primary Industries land use planning web portal: http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment .

Fisheries Issues
General issues are summarised in Attachment B.

Yours sincerely

Cressida Gilmore
Team Leader Land Use

Encl. Attachments "A to B"

NSW GOVERNMENT | Resources & Energy

ATTACHMENT A

NSW TRADE & INVESTMENT
RESOURCES & ENERGY DIVISION

ENVIRONMENTAL and WORK HEALTH & SAFETY ASSESSMENT REQUIREMENTS FOR CONSTRUCTION MATERIAL QUARRY PROPOSALS

It is in the best interests of both the proponent and the community to fully assess the resources which are to be extracted. This means that a thorough geological assessment should be undertaken to determine the nature, quality and extent of the resource. Failure to undertake such an assessment could lead to operational problems and possibly even failure of the proposal.

The following issues need to be addressed when preparing an environmental assessment (EA) or environmental impact statement (EIS) for a proposed construction materials (extractive materials) quarry:

Resource Assessment

1. A summary of the regional and local geology including information on the stratigraphic unit or units within which the resource is located.

2. The amount of material to be extracted and the method or methods used to determine the size of the resource (e.g. drilling, trenching, geophysical methods). Plans and cross-sections summarising this data, at a standard scale, showing location of drillholes and/or trenches, and the area proposed for extraction, should be included in the EA or EIS. Relevant supporting documentation such as drill logs should be included or appended. Major resource proposals should be subject to extensive drilling programs to identify the nature and extent of the resource.

3. Characteristics of the material or materials to be produced:
   a) For structural clay/shale extraction proposals, ceramic properties such as plasticity, drying characteristics (e.g. dry green strength, linear drying shrinkage), and firing characteristics (e.g. shrinkage, water absorption, fired colour) should be described.
   b) For sand extraction proposals, properties such as composition, grainsize, grading, clay content and contaminants should be indicated. The inclusion of indicative grading curves for all anticipated products as well as the overall deposit is recommended.
   c) For hard rock aggregate proposals, information should be provided on properties such as grainsize and mineralogy, nature and extent of weathering or alteration, and amount and type of deleterious minerals, if any.

d) For other proposals, properties relevant to the range of intended uses for the particular material should be indicated.

Details of tests carried out to determine the characteristics of the material should be included or appended. Such tests should be undertaken by NATA registered testing laboratories.

4. An assessment of the quality of the material and its suitability for the anticipated range of applications should be given.

5. The amount of material anticipated to be produced annually should be indicated. If the proposal includes a staged extraction sequence, details of the staging sequence needs to be provided. The intended life of the operation should be indicated.

6. If the proposal is an extension to an existing operation, details of history and past production should be provided.

7. An assessment of alternative sources to the proposal and the availability of these sources. The impact of not proceeding with the proposal should be addressed.

8. Justification for the proposal in terms of the local and, if appropriate, the regional context.

9. Information on the location and size of markets to be supplied from the site.

10. Route(s) used to transport quarry products to market.

11. Disposal of waste products and the location and size of stockpiles.

12. Assessment of noise, vibration, dust and visual impacts, and proposed measures to minimise these impacts.

13. Proposed rehabilitation procedures during, and after completion of, extraction operations, and proposed final use of site.

14. Assessment of the ecological sustainability of the proposal.

Health and Safety Issues

In relation to the health & safety of mining and quarrying operations, the following issues should be addressed:

1. All operations are to comply with the following Acts & Regulations
    a. *Work Health & Safety Act 2011*
    b. Work *Health & Safety Regulations 2011*
    c. *Mine Health & Safety Act 2004*
    d. *Mine Health & Safety Regulations 2007*

2. The mine holder must nominate the mine operator in writing on the prescribed form to the Chief Inspector as required by the *Mine Health & Safety Act 2004* Section 22 prior to the commencement of extraction.

3. The operator of the mine must appoint a production manager as required by the *Mine Health & Safety Regulation 2007* Clause 16 and the operator must notify the Chief Inspector of the appointment in writing as required by the *Mine Health & Safety Regulation 2007* Clause 18 prior to the commencement of extraction.

4. Any blasting operations carried out by the mine operator must comply with the *Explosives Act 2003* and the *Explosives Regulations 2005*.

Mineral Ownership

The *Mining Act 1992* applies to those commodities prescribed by the regulations of the Act (Schedule 2, Mining Regulation 2003). Most construction materials are not prescribed minerals under the *Mining Act 1992*. In general terms, this means these materials are owned by the Crown where they occur on Crown land and by the landowner in the case of freehold land. A Mining Title is not required for their extraction although a Crown Lands licence is required where they occur on Crown land.

Construction materials such as s*and (other than marine aggregate), loam, river gravel, and coarse aggregate materials such as basalt, sandstone, and granite* are not prescribed minerals under the *Mining Act 1992*. Therefore, Trade & Investment NSW has no statutory responsibility for authorising or regulating the extraction of these commodities, apart from its role under the *Mine Health and Safety Act 2004* with respect to the safe operation of mines and quarries. However, the Department is the principal government authority responsible for assessing the State's resources of construction materials and for advising State and local government on their planning and management.

Some commodities, notably *structural clay (ie clay for brick, tile and pipe manufacture), dimension stone (except for sandstone), quartzite, kaolin, limestone and marine aggregate* are prescribed minerals under the *Mining Act 1992*. Minerals which are prescribed as minerals under the terms of the Mining Act may, in some cases belong either to the Crown or to the landowner, depending on a number of factors including the date on which the mineral was proclaimed and the date of alienation of the land. The proponent needs to determine whether the material is privately owned or Crown mineral (publicly owned). If it is privately owned, then either a notification under Section 8 of the Mining Act 1992 or, alternatively, a mining lease or mineral claim would be required. If it is a Crown mineral, an application for a mining lease or mineral claim will have to be lodged.

If you are unsure whether a mining title is required for your proposal you should contact NSW Trade & Investment, Resources & Energy Division.

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ATTACHMENT B

Primary Industries Division - Aquatic Habitat Protection Requirements

Matters to be Addressed

Definitions
The definitions given below are relevant to these requirements:

Fish means any part of marine, estuarine or freshwater fish or other aquatic animal life at any stage of their life history (whether alive or dead). This includes aquatic molluscs, crustaceans, echinoderms, worms, aquatic insect larvae and other macroinvertebrates .

Marine vegetation means any species of plant that at any time in its life must inhabit water (other than fresh water).

Waters refers to all waters including tidal waters as well as flowing streams, irregularly flowing streams, gullies, rivers, lakes, coastal lagoons, wetlands and other forms of natural or man made water bodies on both private and public land.

1. General Requirements

- Area which may be affected either directly or indirectly by the development or activity should be identified and shown on an appropriately scaled map (1:25000) and aerial photographs.
- All waterbodies and waterways within the proposed area of development are to be identified.
- Description and maps of aquatic vegetation, snags, gravel beds and any other protected, threatened or dominant habitats should be presented. Description should include area, density and species composition.
- A survey of fish species should be carried out and results included. Existing data should be used only if collected less than 5 years previously.
- Identification of recognised recreational and commercial fishing grounds, aquaculture farms and/or other waterways users.
- Details of the location of all component parts of the proposal, including any auxiliary infrastructure, timetable for construction of the proposal with details of various phases of construction
- Aspects of the management of the proposal, both during construction and after completion, which relate to impact minimisation and site rehabilitation eg Environment Management Plans, Rehabilitation Plans, Compensatory offsets
- For each freshwater body identified on the plan, the plan should include, either by annotation or by an accompanying table, hydrological and stream morphology information such as: flow characteristics, including any seasonal variations, bed substrate, and bed width
- For each marine or estuarine area identified on the plan, the plan should include, either by annotation or by an accompanying table, hydrological and stream morphology information such as: tidal characteristics, bed substrate, and depth contours

DREDGING AND RECLAMATION ACTIVITIES

- Purpose of works
- Type(s) and distribution of marine vegetation in the vicinity of the proposed works
- Method of dredging to be used

- Timing and Duration of works
- Dimension of area of works including levels and volume of material to be extracted or placed as fill
- Nature of sediment to be dredged, including Acid Sulphate Soil, contaminated soils etc
- Method of marking area subject to works
- Environmental safeguards to be used during and after works
- Measures for minimising harm to fish habitat under the proposal
- Spoil type and source location for reclamation activities
- Method of disposal of dredge material
- Location and duration of spoil stockpiling, if planned

ACTIVITIES THAT DAMAGE MARINE VEGETATION

- Type of marine vegetation to be harmed
- Map and density distribution of marine vegetation
- Reasons for harming marine vegetation
- Methods of harming marine vegetation
- Construction details
- Duration of works/activities
- Measures for minimising harm to marine vegetation under the proposal and details of compensatory habitat development to replace lost vegetation.
- Method and location of transplanting activities or disposal of marine vegetation

ACTIVITIES THAT BLOCK FISH PASSAGE

- Type of activity eg works in a stream that change flow or morphological characteristics of the stream, including culvert and causeway construction, sediment and erosion control measures, stormwater diversion structures.
- Length of time fish passage is to be restricted, whether permanent or temporary
- Timing of proposed restriction. Should be timed to avoid interfering with migratory movements of fish.
- Remediation or compensatory works to offset any impacts

THREATENED SPECIES

- Threatened aquatic species assessment (Section 5c, EP&A Act 1979). This must be addressed even if there are no Threatened Species present on the site.
- Seven Part Test

FISHING AND AQUACULTURE

- Outline and document commercial, recreational and indigenous fishing activities that may be affected by the activity, including regular commercial fishing grounds, popular recreational fishing sites, recognised indigenous harvesting sites.
- Will the activity interfere with or cause an impact on the continuing operation and viability of nearby aquaculture or mariculture ventures.

2. Initial Assessment

A list of threatened species, endangered populations and endangered ecological communities must be provided. In determining these species, consideration must be given to the habitat types present within the study area, recent records of threatened species in the locality and the known distributions of these species.

In describing the locality in the vicinity of the proposal, discussion must be provided in regard to the previous land and water uses and the effect of these on the proposed site. Relevant historical events may include land clearing, agricultural activities, water

abstraction/diversion, dredging, de-snagging, reclamation, siltation, commercial and recreational activities.

A description of habitat including such components as stream morphology, in-stream and riparian vegetation, water quality and flow characteristics, bed morphology, vegetation (both aquatic and adjacent terrestrial), water quality and tide/flow characteristics must be given. The condition of the habitat within the area must be described and discussed, including the presence and prevalence of introduced species. A description of the habitat requirements of threatened species likely to occur in the study area must be provided.

In defining the proposal area, discussion must be provided in regard to possible indirect effects of the proposal on species/habitats in the area surrounding the subject site: for example, through altered hydrological regimes, soil erosion or pollution. The study area must extend downstream and/or upstream as far as is necessary to take all potential impacts into account.

Please Note: Persons undertaking aquatic surveys may be required to hold or obtain appropriate permits or licences under relevant legislation. For example:

Fisheries Management Act 1994
- Permit to take fish or marine vegetation for research or other authorised purposes (Section 37)
- Licence to harm threatened (aquatic) species, and/or damage the habitat of a threatened species (Section 220ZW).

Animal Research Act 1985:
- Animal Research Authority to undertake fauna surveys.

It is recommend that, prior to any field survey activities taking place, those persons proposing to undertake those activities give consideration to their obligation to obtain appropriate permits or licences which may be required in the specific context of the proposed survey activities.

3. Assessment of Likely Impacts

The EIS must:
- describe and discuss significant habitat areas within the study area;
- outline the habitat requirements of threatened species likely to occur in the study area;
- indicate the location, nature and extent of habitat removal or modification which may result from the proposed action;
- discuss the potential impact of the modification or removal of habitat;
- identify and discuss any potential for the proposal to introduce barriers to the movement of fish species; and
- describe and discuss any other potential impacts of the proposal on fish species or their habitat.

For all species likely to have their lifecycle patterns disrupted by the proposal to the extent that individuals will cease to occupy any location within the subject site, the EIS must describe and discuss other locally occurring populations of such species. The relative significance of this location for these species in the general locality must be discussed in terms of the extent, security and viability of remaining habitat in the locality.

4. Ameliorative Measures

The EIS must consider how the proposal has been or may be modified and managed to conserve fisheries habitat on the subject site and in the study area.

In discussing alternatives to the proposal, and the measures proposed to mitigate any effects of the proposal, consideration must be given to developing long term management strategies to protect areas within the study area which are of particular importance for fish species. This may include proposals to restore or improve habitat.

Any proposed pre-construction monitoring plans or on-going monitoring of the effectiveness of the mitigation measures must be outlined in detail, including the objectives of the monitoring program, method of monitoring, reporting framework, duration and frequency.

In the event of a request for concurrence or consultation of the Director of Industry & Investment NSW, one (1) copy of the EIS should be provided to Industry & Investment NSW in order for the request to be processed.

It should be noted that Industry & Investment NSW has no regulatory or statutory role to review draft EISs unless they are accompanied by or are requested as part of a licence application under Part 7A of the FM Act. However, Industry & Investment NSW is available to provide advice to consent and determining authorities regarding Fisheries' opinion as to whether the requirements have been met if requested, pending the availability of resources and other statutory priorities.

Useful Information
To help you in the preparation of an EIS, the publication "*Guidelines for the Assessment of Aquatic Ecology in EIA*" (Draft 1998) produced by the Department for Urban Affairs and Planning may prove useful in outlining appropriate procedures and methodologies for conducting aquatic surveys.

Should you require any further information on these requirements please contact the Aquatic Habitat Protection Office at Port Stephens on 4916 3931.

NSW EPA

The Director-General
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001
Attention: Jacqui McLeod

Notice Number	1531250
File Number	EF14/9902
Date	15-Jun-2015

Dear Ms McLeod

Re: Gunlake Quarry Extension Project (SSD 7090)
Request for Input into Environmental Assessment Requirements

I refer to your email and attachments of 2 June 2015, regarding a proposal by Gunlake Quarries Pty Ltd to modify its approved quarrying operations at Brayton Road, Marulan (SSD 7090). Your email requested the Environment Protection Authority (EPA) provide any Environmental Assessment Requirements which the we believe should be addressed in the Environmental Impact Statement (EIS) to be prepared for the proposed modification.

The EPA has considered the details of the proposal as provided by the proponent and has identified the information it requires in order to properly assess the environmental impacts of the proposal in **Attachment A** to this letter. In summary, the EPA's key information requirements for the proposal include an adequate assessment of:

1. Air quality, particularly dust management; and
2. Noise impacts.

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

The proponent should be made aware that any commitments made in the EIS may be formalised as approval conditions and EPA licence conditions.

The EPA notes the Department of Planning and Environment's advice that this proposed modification is considered State Significant Development and is being assessed under Part 4 of the *Environmental Planning and Assessment Act* 1979.

Finally, the EPA requests that one (1) hard and one (1) electronic copy of the EIS is provided for review and assessment. These should be lodged at the EPA's South East Region office, PO Box 622, Queanbeyan NSW 2620, queanbeyan@epa.nsw.gov.au.

I trust this information is of assistance. Should you have any queries or wish to discuss the EPA's response, please contact Michael Heinze on Ph: 6229 7002.

Yours sincerely

.....

Julian Thompson

Unit Head

South East - Queanbeyan

(by Delegation)

ATTACHMENT A: EIS REQUIREMENTS FOR
Gunlake Quarry – Expansion Proposal - SSD 7090

How to use these requirements

These EPA requirements have been structured in accordance with the Department of Planning & Environment EIS Guidelines. It is suggested that the EIS follow the same structure:

A. Executive summary
B. The proposal
C. The location
D. Identification and prioritisation of issues
E. The environmental issues
F. List of approvals and licences
G. Compilation of mitigation measures
H. Justification for the proposal

A. Executive summary

The executive summary should include a brief discussion of the extent to which the proposal achieves identified environmental outcomes.

B. The proposal

1. Objectives of the proposal

- The objectives of the proposal should be clearly stated and refer to:
  a. the size and type of the operation, the nature of the processes and the products, by-products and wastes produced,
  b. a life cycle approach to the production, use or disposal of products,
  c. the anticipated level of performance in meeting required environmental standards and cleaner production principles,
  d. the staging and timing of the proposal and any plans for future expansion, and
  e. the proposal's relationship to any other industry or facility.

2. Description of the proposal

General

- Outline the production process including:
  a. the environmental "mass balance" for the process – quantify in-flow and out-flow of materials, any points of discharge to the environment and their respective destinations (stormwater, atmosphere, recycling, landfill, etc.), and
  b. any life-cycle strategies for the products.

- Outline cleaner production actions, including:
  a. measures to minimise waste (typically through addressing source reduction),
  b. proposals for use or recycling of by-products,
  c. proposed disposal methods for solid and liquid waste,
  d. air management systems including all potential sources of air emissions, proposals to re-use or treat emissions, emission levels relative to relevant standards in regulations, discharge points,
  e. water management system including all potential sources of water pollution, proposals for re-use, treatment, etc., emission levels of any wastewater discharged, discharge points, summary of options explored to avoid a discharge, reduce its frequency or reduce its impacts, and rationale for selection of option to discharge, and
  f. soil contamination treatment and prevention systems.

- Outline construction works including:
  a. actions to address any existing soil contamination,
  b. any earthworks or site clearing; re-use and disposal of cleared material (including use of spoil on-site),
  c. construction timetable and staging; hours of construction; proposed construction methods, and
  d. environment protection measures, including noise mitigation measures, dust control measures and erosion and sediment control measures.

Air

- Identify all sources of air emissions from the development.

  Note: emissions can be classed as either:
  - point (e.g. emissions from stack or vent) or
  - fugitive (from wind erosion, leakages or spillages, associated with loading or unloading, conveyors, storage facilities, plant and yard operation, vehicle movements (dust from road, exhausts, loss from load), land clearing and construction works).

- Provide details of the project that are essential for predicting and assessing air impacts including:
  a. the quantities and physio-chemical parameters (e.g. concentration, moisture content, bulk density, particle sizes etc.) of materials to be used, transported, produced or stored,
  b. an outline of procedures for handling, transport, production and storage, and
  c. the management of solid, liquid and gaseous waste streams with potential for significant air impacts.

Noise and vibration

- Identify all noise sources from the development (including both construction and operation phases).

- Detail all potentially noisy activities including ancillary activities such as transport of goods and raw materials.

- Specify the times of operation for all phases of the development and for all noise producing activities.

- For projects with a significant potential traffic noise impact provide details of road alignment (include gradients, road surface, topography, bridges, culverts, etc.) and land use along the proposed road and measurement locations – diagrams should be to a scale sufficient to delineate individual residential blocks.

Water

- Provide details of the project that are essential for predicting and assessing impacts to waters, including:
  a. the quantity and physio-chemical properties of all potential water pollutants and the risks they pose to the environment and human health, including the risks they pose to Water Quality Objectives in the ambient waters (as defined on www.environment.nsw.gov.au/ieo/index, using technical criteria derived from the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, ANZECC 2000),
  b. the management of discharges with potential for water impacts, and
  c. drainage works and associated infrastructure; land-forming and excavations; working capacity of structures; and water resource requirements of the proposal.

- Outline site layout, demonstrating efforts to avoid proximity to water resources and showing potential areas of modification of contours, drainage, etc.

- Outline how total water cycle considerations are to be addressed showing total water balances for the development (with the objective of minimising demands and impacts on water resources). Include 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.

Waste and chemicals

- Provide details of the quantity and type of both liquid waste and non-liquid waste generated, handled, processed or disposed of at the premises. Waste must be classified according to the *Waste Classification Guidelines* (NSW EPA, 2014).

- Provide details of liquid waste and solid waste management at the facility, including:
  a. the transportation, assessment and handling of waste arriving at or generated at the site,
  b. any stockpiling of wastes or recovered materials at the site,
  c. any waste processing related to the facility, including reuse, recycling, reprocessing (including composting) or treatment both on- and off-site,
  d. the method for disposing of all wastes or recovered materials at the facility,
  e. the emissions arising from the handling, storage, processing and reprocessing of waste at the facility, and
  f. the proposed controls for managing the environmental impacts of these activities.

- Provide details of spoil disposal with particular attention to:
  a. the quantity of spoil material likely to be generated,
  b. proposed strategies for the handling, stockpiling, reuse/recycling and disposal of spoil,
  c. the need to maximise reuse of spoil material in the construction industry,
  d. identification of the history of spoil material and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material, and
  e. designation of transportation routes for transport of spoil.

- Provide details of procedures for the assessment, handling, storage, transport and disposal of all hazardous and dangerous materials used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.

- Provide details of the type and quantity of any chemical substances to be used or stored and describe arrangements for their safe use and storage.

- Reference should be made to the *Waste Classification Guidelines* (NSW EPA, 2014).

3. Rehabilitation

- Outline considerations for rehabilitation of the site, maintenance of site layout, and proposed plans for the final condition of the site (ensuring its suitability for future uses).

C. The location

1. General

- Provide an overview of the affected environment to place the proposal in its local and regional environmental context including:
  a. meteorological data (e.g. rainfall, temperature and evaporation, wind speed and direction),
  b. topography (landform element, slope type, gradient and length),
  c. surrounding land uses (potential synergies and conflicts),
  d. geomorphology (rates of landform change and current erosion and deposition processes),
  soil types and properties (including erodibility; engineering and structural properties; dispersibility; permeability; presence of acid sulfate soils and potential acid sulfate soils),
  e. ecological information (water system habitat, vegetation, fauna), and
  f. availability of services and the accessibility of the site for passenger and freight transport.

2. Air

- Describe the topography and surrounding land uses. Provide details of the exact locations of dwellings, schools and hospitals. Where appropriate provide a perspective view of the study area such as the terrain file used in dispersion models.

- Provide and analyse site representative data on following meteorological parameters:
  a. temperature and humidity,
  b. rainfall, evaporation and cloud cover,
  c. wind speed and direction,
  d. atmospheric stability class, and
  e. katabatic air drainage.

3. Noise and vibration

- Identify any noise sensitive locations likely to be affected by activities at the site, such as residential properties, schools, churches, and hospitals. Typically the location of any noise sensitive locations in relation to the site should be included on a map of the locality.

- Identify the land use zoning of the site and the immediate vicinity and the potentially affected areas.

4. Water

- Describe the catchment including proximity of the development to any waterways and provide an assessment of their sensitivity/significance from a public health, ecological and/or economic perspective. The Water Quality and River Flow Objectives on the website: www.environment.nsw.gov.au/ieo should be used to identify the agreed environmental values and human uses for any affected waterways. This will help with the description of the local and regional area.

5. Soil Contamination Issues

- Provide details of site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination, for example if the site was previously a landfill site or if irrigation of effluent has occurred.

D. Identification and prioritisation of issues / scoping of impact assessment

- Provide an overview of the methodology used to identify and prioritise issues. The methodology should take into account:
  a. relevant NSW government guidelines,
  b. industry guidelines,
  c. EIS's for similar projects,
  d. relevant research and reference material,
  e. relevant preliminary studies or reports for the proposal, and
  f. consultation with stakeholders.

- Provide a summary of the outcomes of the process including:
  a. all issues identified including local, regional and global impacts (e.g. increased/ decreased greenhouse emissions),
  b. key issues which will require a full analysis (including comprehensive baseline assessment),
  c. issues not needing full analysis though they may be addressed in the mitigation strategy, and
  d. justification for the level of analysis proposed (the capacity of the proposal to give rise to high concentrations of pollution compared with the ambient environment or environmental outcomes is an important factor in setting the level of assessment).

E. The environmental issues

1. General

- The potential impacts identified in the scoping study need to be assessed to determine their significance, particularly in terms of achieving environmental outcomes, and minimising environmental pollution.

- Identify gaps in information and data relevant to significant impacts of the proposal and any actions proposed to fill those information gaps so as to enable development of appropriate management and mitigation measures. This is in accordance with ESD requirements.

  Note: The level of detail should match the level of importance of the issue in decision making which is dependent on the environmental risk.

Describe baseline conditions

- Provide a description of existing environmental conditions for any potential impacts.

Assess impacts

- For any potential impacts relevant for the assessment of the proposal provide a detailed analysis of the impacts of the proposal on the environment including the cumulative impact of the proposal on the receiving environment especially where there are sensitive receivers.

- Describe the methodology used and assumptions made in undertaking this analysis (including any modelling or monitoring undertaken) and indicate the level of confidence in the predicted outcomes and the resilience of the environment to cope with the predicted impacts.

- The analysis should also make linkages between different areas of assessment where necessary to enable a full assessment of environmental impacts e.g assessment of impacts on air quality will often need to draw on the analysis of traffic, health, social, soil and/or ecological systems impacts, etc.

- The assessment needs to consider impacts at all phases of the project cycle including: exploration (if relevant or significant), construction, routine operation, start-up operations, upset operations and decommissioning if relevant.

- The level of assessment should be commensurate with the risk to the environment.

Describe management and mitigation measures

- Describe any mitigation measures and management options proposed to prevent, control, abate or mitigate identified environmental impacts associated with the proposal and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

- Proponents are expected to implement a 'reasonable level of performance' to minimise environmental impacts. The proponent must indicate how the proposal meets reasonable levels of performance. For example, reference technology based criteria if available, or identify good practice for this type of activity or development. A 'reasonable level of performance' involves adopting and implementing technology and management practices to achieve certain pollutant emissions levels in economically viable operations. Technology-based criteria evolve gradually over time as technologies and practices change.

- Use environmental impacts as key criteria in selecting between alternative sites, designs and technologies, and to avoid options having the highest environmental impacts.

- Outline any proposed approach (such as an Environmental Management Plan) that will demonstrate how commitments made in the EIS will be implemented. Areas that should be described include:
  a. operational procedures to manage environmental impacts,
  b. monitoring procedures,
  c. training programs,
  d. community consultation,
  e. complaint mechanisms including site contacts,
  f. strategies to use monitoring information to improve performance, and
  g. strategies to achieve acceptable environmental impacts and to respond in event of exceedences.

2. Air

Describe baseline conditions

- Provide a description of existing air quality and meteorology, using existing information and site representative ambient monitoring data. This description should include the following parameters
  a. dust deposition, and
  b. particulates, PM10.

Assess impacts

- Identify all pollutants of concern and estimate emissions by quantity (and size for particles), source and discharge point.

- Estimate the resulting ground level concentrations of all pollutants. Where necessary (e.g. potentially significant impacts and complex terrain effects), use an appropriate dispersion model to estimate ambient pollutant concentrations. Discuss choice of model and parameters with the EPA.

- Describe the effects and significance of pollutant concentration on the environment, human health, amenity and regional ambient air quality standards or goals.

- Describe the contribution that the development will make to regional and global pollution, particularly in sensitive locations.

- Reference should be made to:
  a. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*; NSW DEC, August 2005, and
  b. *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, NSW DEC, January 2007

  Copies of the above documents can be obtained from www.epa.nsw.gov.au/air/appmethods

Describe management and mitigation measures

- Outline specifications of pollution control equipment (including manufacturer's performance guarantees where available) and management protocols for both point and fugitive emissions. Where possible, this should include cleaner production processes.

3. Noise and vibration

Describe baseline conditions

- Determine the existing background (LA90) and ambient (LAeq) noise levels in accordance with the NSW Industrial Noise Policy (EPA, 2001).

- Determine the existing road traffic noise levels in accordance with the NSW Road Noise Policy, where road traffic noise impacts may occur.

- The noise impact assessment report should provide details of all monitoring of existing ambient noise levels including:
  c. details of equipment used for the measurements,
  d. a brief description of where the equipment was positioned,
  e. a statement justifying the choice of monitoring site, including the procedure used to choose the site, having regards to the definition of 'noise sensitive locations(s)' and 'most affected locations(s)' described in Section 3.1.2 of the *NSW Industrial Noise Policy*,
  f. details of the exact location of the monitoring site and a description of land uses in surrounding areas,
  g. a description of the dominant and background noise sources at the site,
  h. day, evening and night assessment background levels for each day of the monitoring period,
  i. the final Rating Background Level (RBL) value,
  j. graphs of the measured noise levels for each day should be provided,
  k. a record of periods of affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data and a statement indicating the need for any re-monitoring under Step 1 in Section B1.3 of the *NSW Industrial Noise Policy*, and
  l. determination of LAeq noise levels from existing industry.

Assess impacts

- Determine the project specific noise levels for the site. For each identified potentially affected receiver, this should include:
  a. determination of the intrusive criterion for each identified potentially affected receiver,
  b. selection and justification of the appropriate amenity category for each identified potentially affected receiver,
  c. determination of the amenity criterion for each receiver, and
  d. determination of the appropriate sleep disturbance limit.

- Maximum noise levels during night-time period (10pm-7am) should be assessed to analyse possible effects on sleep. Where LA1(1min) noise levels from the site are less than 15 dB above the background LA90 noise level, sleep disturbance impacts are unlikely. Where this is not the case, further analysis is required. Additional guidance is provided in the NSW *Road Noise Policy*.

- Determine expected noise level and noise character (e.g. tonality, impulsiveness, vibration, etc.) likely to be generated from noise sources during:
  a. site establishment,
  b. construction,
  c. operational phases,
  d. transport including traffic noise generated by the proposal, and
  e. other services.
  Note: The noise impact assessment report should include noise source data for each source in 1/1 or 1/3 octave band frequencies including methods for references used to determine noise source levels. Noise source levels and characteristics can be sourced from direct measurement of similar activities or from literature (if full references are provided).

- Determine the noise levels likely to be received at the most sensitive locations (these may vary for different activities at each phase of the development). Potential impacts should be determined for any identified significant adverse meteorological conditions. Predicted noise levels under calm conditions may also aid in quantifying the extent of impact where this is not the most adverse condition.

- The noise impact assessment report should include:
  a. a plan showing the assumed location of each noise source for each prediction scenario,
  b. a list of the number and type of noise sources used in each prediction scenario to simulate all potential significant operating conditions on the site,

c. any assumptions made in the predictions in terms of source heights, directivity effects, shielding from topography, buildings or barriers, etc.,
d. methods used to predict noise impacts including identification of any noise models used. Where modelling approaches other than the use of the ENM or SoundPlan computer models are adopted, the approach should be appropriately justified and validated,
e. an assessment of appropriate weather conditions for the noise predictions including reference to any weather data used to justify the assumed conditions,
f. the predicted noise impacts from each noise source as well as the combined noise level for each prediction scenario under any identified significant adverse weather conditions as well as calm conditions where appropriate,
g. for developments where a significant level of noise impact is likely to occur, noise contours for the key prediction scenarios should be derived, and
h. an assessment of the need to include modification factors as detailed in Section 4 of the NSW *Industrial Noise Policy*.

- Discuss the findings from the predictive modelling and, where relevant noise criteria have not been met, recommend additional mitigation measures.

- The noise impact assessment report should include details of any mitigation proposed including the attenuation that will be achieved and the revised noise impact predictions following mitigation.

- Where relevant noise/vibration criteria cannot be met after application of all feasible and cost effective mitigation measures the residual level of noise impact needs to be quantified by identifying:
  a. locations where the noise level exceeds the criteria and extent of exceedence,
  b. numbers of people (or areas) affected,
  c. times when criteria will be exceeded,
  d. likely impact on activities (speech, sleep, relaxation, listening, etc.),
  e. change on ambient conditions, and
  f. the result of any community consultation or negotiated agreement.

- For the assessment of existing and future traffic noise, details of data for the road should be included such as assumed traffic volume; percentage heavy vehicles by time of day; and details of the calculation process. These details should be consistent with any traffic study carried out in the EIS.

- Where blasting is intended an assessment in accordance with the *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* (ANZECC, 1990) should be undertaken. The following details of the blast design should be included in the noise assessment:
  a. bench height, burden spacing, spacing burden ratio,
  b. blast hole diameter, inclination and spacing, and
  c. type of explosive, maximum instantaneous charge, initiation, blast block size, blast frequency.

Describe management and mitigation measures

- Determine the most appropriate noise mitigation measures and expected noise reduction including both noise controls and management of impacts for both construction and operational noise. This will include selecting quiet equipment and construction methods, noise barriers or acoustic screens, location of stockpiles, temporary offices, compounds and vehicle routes, scheduling of activities, etc.

- For traffic noise impacts, provide a description of the ameliorative measures considered (if required), reasons for inclusion or exclusion, and procedures for calculation of noise levels including ameliorative measures. Also include, where necessary, a discussion of any potential problems associated with the proposed ameliorative measures, such as overshadowing effects from barriers. Appropriate ameliorative measures may include:
  a. use of alternative transportation modes, alternative routes, or other methods of avoiding the new road usage,

b. control of traffic (e.g.: limiting times of access or speed limitations),
c. resurfacing of the road using a quiet surface,
d. use of (additional) noise barriers or bunds,
e. treatment of the façade to reduce internal noise levels buildings where the night-time criteria is a major concern,
f. more stringent limits for noise emission from vehicles (i.e. using specially designed 'quite' trucks and/or trucks to use air bag suspension,
g. driver education,
h. appropriate truck routes,
i. limit usage of exhaust breaks,
j. use of premium muffles on trucks,
k. reducing speed limits for trucks,
l. ongoing community liaison and monitoring of complaints, and
m. phasing in the increased road use.

4. Water

Describe baseline conditions

- Describe existing surface and groundwater quality – an assessment needs to be undertaken for any water resource likely to be affected by the proposal and for all conditions (e.g. a wet weather sampling program is needed if runoff events may cause impacts).
  Note: Methods of sampling and analysis need to conform to an accepted standard (e.g. Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DECCW 2004) *or be approved and analyses undertaken by accredited laboratories).*

- Provide site drainage details and surface runoff yield.

- State the ambient Water Quality and River Flow Objectives for the receiving waters. These refer to the community's agreed environmental values and human uses endorsed by the Government as goals for the ambient waters. These environmental values are published on the website: www.environment.nsw.gov.au/ieo/index. The EIS should state the environmental values listed for the catchment and waterway type relevant to your proposal. NB: A consolidated and approved list of environmental values are not available for groundwater resources. Where groundwater may be affected the EIS should identify appropriate groundwater environmental values and justify the choice.

- 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* www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1) (Note that, as at 2004, the NSW Water Quality Objectives booklets and website contain technical criteria derived from the 1992 version of the ANZECC Guidelines. The Water Quality Objectives remain as Government Policy, reflecting the community's environmental values and long-term goals, but the technical criteria are replaced by the more recent ANZECC 2000 Guidelines). NB: While specific guidelines for groundwater are not available, the ANCECC 2000 Guidelines endorse the application of the trigger values and decision trees as a tool to assess risk to environmental values in groundwater.

- State any locally specific objectives, criteria or targets, which have been endorsed by the government e.g. the Healthy Rivers Commission Inquiries (www.nrc.nsw.gov.au) or the NSW Salinity Strategy (DLWC, 2000) (www.environment.nsw.gov.au/salinity/government/nswstrategy).

- Where site specific studies are proposed to revise the trigger values supporting the ambient Water Quality and River Flow Objectives, and the results are to be used for regulatory purposes (e.g. to assess whether a licensed discharge impacts on water quality objectives), then prior agreement from the EPA on the approach and study design must be obtained.

- Describe the state of the receiving waters and relate this to the relevant Water Quality and River Flow Objectives (i.e. are Water Quality and River Flow Objectives being achieved?). Proponents are generally only expected to source available data and information. However, proponents of large or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could include:
  a. lake or estuary flushing characteristics,
  b. specific human uses (e.g. exact location of drinking water offtake),
  c. sensitive ecosystems or species conservation values,
  d. a description of the condition of the local catchment e.g. erosion levels, soils, vegetation cover, etc.
  e. an outline of baseline groundwater information, including, but not restricted to, depth to water table, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment, and
  f. historic river flow data where available for the catchment.

Assess impacts

- No proposal should breach clause 120 of the *Protection of the Environment Operations Act* 1997 (i.e. pollution of waters is prohibited unless undertaken in accordance with relevant regulations).

- identify and estimate the quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.

- Include a rationale, along with relevant calculations, supporting the prediction of the discharges.

- Describe the effects and significance of any pollutant loads on the receiving environment. This should include impacts of residual discharges through modelling, monitoring or both, depending on the scale of the proposal. Determine changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, wetland hydrologic regimes and groundwater).

- Describe water quality impacts resulting from changes to hydrologic flow regimes (such as nutrient enrichment or turbidity resulting from changes in frequency and magnitude of stream flow).

- Identify any potential impacts on quality or quantity of groundwater describing their source.

- Identify potential impacts associated with geomorphological activities with potential to increase surface water and sediment runoff or to reduce surface runoff and sediment transport. Also consider possible impacts such as bed lowering, bank lowering, in-stream siltation, floodplain erosion and floodplain siltation.

- Containment of spills and leaks shall be in accordance with the technical guidelines section '*Bunding and Spill Management*' of the Authorised Officers Manual (EPA, 1995) (www.epa.nsw.gov.au/mao/bundingspill) and the most recent versions of the Australian Standards referred to in the Guidelines. Containment should be designed for no-discharge.

- The significance of the impacts listed above should be predicted. When doing this it is important to predict the ambient water quality and river flow outcomes associated with the proposal and to demonstrate whether these are acceptable in terms of achieving protection of the Water Quality and River Flow Objectives. In particular the following questions should be answered:
  a. will the proposal protect Water Quality and River Flow Objectives where they are currently achieved in the ambient waters; and
  b. will the proposal contribute towards the achievement of Water Quality and River Flow Objectives over time, where they are not currently achieved in the ambient waters.

- Reference should be made to

a. *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004)
b. *Guidelines for Fresh and Marine Water Quality* (ANZECC 2000).

Describe management and mitigation measures

- In accordance with Section 45(f1)(ii) of the *Protection of the Environment Operations Act 1997*, outline and detail all practical measures that could be undertaken as part of the proposal to restore and maintain the identified Water Quality and River Flow Objectives.

- Outline stormwater management to control pollutants at the source and contain them within the site. Also describe measures for maintaining and monitoring any stormwater controls.

- Outline erosion and sediment control measures directed at minimising disturbance of land, minimising water flow through the site and filtering, trapping or detaining sediment. Also include measures to maintain and monitor controls as well as rehabilitation strategies.

- Describe waste water treatment measures that are appropriate to the type and volume of waste water and are based on a hierarchy of avoiding generation of waste water; capturing all contaminated water (including stormwater) on the site; reusing/recycling waste water; and treating any unavoidable discharge from the site to meet specified water quality requirements.

- Outline pollution control measures relating to storage of materials, possibility of accidental spills (e.g. preparation of contingency plans), appropriate disposal methods, and generation of leachate.

- Describe hydrological impact mitigation measures including:
  a. site selection (avoiding sites prone to flooding and waterlogging, actively eroding or affected by deposition),
  b. minimising runoff,
  c. minimising reductions or modifications to flow regimes, and
  d. avoiding modifications to groundwater.

- Describe groundwater impact mitigation measures including:
  a. site selection,
  b. retention of native vegetation and revegetation,
  c. artificial recharge,
  d. providing surface storages with impervious linings, and
  e. monitoring program.

- Describe geomorphological impact mitigation measures including:
  a. site selection,
  b. erosion and sediment controls,
  c. minimising in-stream works,
  d. treating existing accelerated erosion and deposition, and
  e. monitoring program.

- Any proposed monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW* (DECCW 2004).

5. Soils and contamination

Describe baseline conditions

- Provide any details (in addition to those provided in the location description - Section C) that are needed to describe the existing situation in terms of soil types and properties and soil contamination.

Assess impacts

- Identify any likely impacts resulting from the construction or operation of the proposal, including the likelihood of:
  a. disturbing any existing contaminated soil,
  b. contamination of soil by operation of the activity,
  c. subsidence or instability,
  d. soil erosion, and
  e. disturbing acid sulfate or potential acid sulfate soils.

Describe management and mitigation measures

- Describe and assess the effectiveness or adequacy of any soil management and mitigation measures during construction and operation of the proposal including:
  a. erosion and sediment control measures
  b. proposals for site remediation – see *Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998)
  c. proposals for the management of these soils – see *Assessing and Managing Acid Sulfate Soils*, Environment Protection Authority, 1995 (note that this is the only methodology accepted by the EPA).

6. Waste and chemicals

Describe baseline conditions

- Describe any existing waste or chemicals operations related to the proposal.

Assess impacts

- Assess the adequacy of proposed measures to minimise natural resource consumption and minimise impacts from the handling, transporting, storage, processing and reprocessing of waste and/or chemicals.

- Reference should be made to the *Waste Classification Guidelines* (EPA, 2014). A copy can be obtained from www.epa.nsw.gov.au/waste.

Describe management and mitigation measures

- Outline measures to minimise the consumption of natural resources.

- Outline measures to avoid the generation of waste and promote the re-use and recycling and reprocessing of any waste.

- Outline measures to support any approved regional or industry waste plans.

7. Cumulative impacts

- Identify the extent that the receiving environment is already stressed by existing development and background levels of emissions to which this proposal will contribute.

- Assess the impact of the proposal against the long term air, noise and water quality objectives for the area or region.

- Identify infrastructure requirements flowing from the proposal (e.g. water and sewerage services, transport infrastructure upgrades)

- Assess likely impacts from such additional infrastructure and measures reasonably available to the proponent to contain such requirements or mitigate their impacts (e.g. travel demand management strategies)

F. List of approvals and licences

- Identify all approvals and licences required under environment protection legislation including details of all scheduled activities, types of ancillary activities and types of discharges (to air, land, water).

G. Compilation of mitigation measures

- Outline how the proposal and its environmental protection measures would be implemented and managed in an integrated manner so as to demonstrate that the proposal is capable of complying with statutory obligations under EPA licences or approvals (e.g. outline of an environmental management plan).

- The mitigation strategy should include the environmental management and cleaner production principles which would be followed when planning, designing, establishing and operating the proposal. It should include two sections, one setting out the program for managing the proposal and the other outlining the monitoring program with a feedback loop to the management program.

H. Justification for the Proposal

- Reasons should be included which justify undertaking the proposal in the manner proposed, having regard to the potential environmental impacts.

ATTACHMENT B: GUIDANCE MATERIAL

Title	Web address
Relevant Legislation	
Contaminated Land Management Act 1997	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+140+1997+cd+0+N
Environmentally Hazardous Chemicals Act 1985	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+14+1985+cd+0+N
Environmental Planning and Assessment Act 1979	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
Protection of the Environment Operations Act 1997	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
Water Management Act 2000	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
Licensing	
Guide to Licensing	www.epa.nsw.gov.au/licensing/licenceguide.htm
Air Issues	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.epa.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+cd+0+N
Noise and Vibration	
Interim Construction Noise Guideline (DECC, 2009)	http://www.epa.nsw.gov.au/noise/constructnoise.htm
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.epa.nsw.gov.au/noise/vibrationguide.htm
Industrial Noise Policy Application Notes	http://www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm
Road Traffic Noise Policy (EPA, 2011)	http://www.epa.nsw.gov.au/resources/noise/traffic
Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC, 2007)	http://www.epa.nsw.gov.au/noise/railinfranoise.htm
Environmental assessment requirements for rail traffic-generating developments	http://www.epa.nsw.gov.au/noise/railnoise.htm

Waste, Chemicals and Hazardous Materials and Radiation	
Waste	
Environmental Guidelines: Solid Waste Landfills (EPA, 1996)	http://www.epa.nsw.gov.au/resources/waste/envguidlns/solidlandfill.pdf
Draft Environmental Guidelines - Industrial Waste Landfilling (April 1998)	http://www.epa.nsw.gov.au/resources/waste/envguidlns/industrialfill.pdf
Waste Classification Guidelines (EPA, 2014)	http://www.epa.nsw.gov.au/wasteregulation/classify-guidelines.htm
Resource recovery exemption	http://www.epa.nsw.gov.au/waste/RRecoveryExemptions.htm
Chemicals subject to Chemical Control Orders	
Chemical Control Orders (regulated through the EHC Act)	http://www.epa.nsw.gov.au/pesticides/CCOs.htm
National Protocol - Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries
National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries

Water and Soils	
Acid sulphate soils	
Coastal acid sulfate soils guidance material	http://www.environment.nsw.gov.au/acidsulfatesoil/
Acid Sulfate Soils Planning Maps	http://www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm
Contaminated Sites Assessment and Remediation	
Managing land contamination: Planning Guidelines – SEPP 55 Remediation of Land	http://www.planning.nsw.gov.au/assessingdev/pdf/gu_contam.pdf
Guidelines for Consultants Reporting on Contaminated Sites (EPA, 2000)	http://www.epa.nsw.gov.au/resources/clm/20110650consultantsglines.pdf
Guidelines for the NSW Site Auditor Scheme - 2nd edition (DEC, 2006)	http://www.epa.nsw.gov.au/resources/clm/auditorglines06121.pdf
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.scew.gov.au/nepms/assessment-site-contamination

Soils – general	
Managing land and soil	http://www.environment.nsw.gov.au/soils/landandsoil.htm
Managing urban stormwater for the protection of soils	http://www.environment.nsw.gov.au/stormwater/publications.htm
Landslide risk management guidelines	http://www.australiangeomechanics.org/resources/downloads/
Site Investigations for Urban Salinity (DLWC, 2002)	http://www.environment.nsw.gov.au/resources/salinity/booklet3siteinvestigationsforurbansalinity.pdf
Local Government Salinity Initiative Booklets	http://www.environment.nsw.gov.au/salinity/solutions/urban.htm
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	Contact the EPA on 131555
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

NSW GOVERNMENT | Office of Environment & Heritage

Your reference SSD 7090
Our reference: DOC15/218953
Contact: Suzie Lamb
Ph. 02 62297117

Jacqui McLeod
Team Leader - Resource Assessments
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Ms McLeod

RE: SEARs for Gunlake Quarry Extension Project (SSD 7090)

Thank you for your email dated 2 June 2015 seeking our input for the Department of Planning and Environment Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Statement for the Gunlake Quarry Extension Project (SSD 7090). OEH notes that the project will be assessed as a State Significant Development (SSD) under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

OEH has reviewed the supporting documentation and provides environmental assessment requirements for the proposed development in Attachments A and B and guidance material in Attachment C.

Please note that the NSW Biodiversity Offsets Policy for Major Projects is now being implemented and applies to this project: www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf. This policy provides a standard method for assessing impacts of major projects on biodiversity and determining offsetting arrangements, underpinned by the Framework for Biodiversity Assessment (FBA) www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf. The FBA must be used by a proponent to assess impacts on biodiversity associated with this development. In addition to the FBA, Attachment B details matters for further consideration, beyond the FBA assessment.

In relation to Aboriginal Cultural Heritage we note that that section 8.6 of the supporting information (dated 21 May 2015) already outlines the proposed assessment process for Aboriginal heritage matters. OEH supports this process.

If you have any questions regarding this matter please contact Suzie Lamb on (02) 6229 7117 or at susan.lamb@environment.nsw.gov.au.

Yours sincerely

Allison Treweek 16/6/15

ALLISON TREWEEK
Senior Team Leader Planning
Regional Operations
Office of Environment and Heritage

ATTACHMENT A - Environmental Assessment Requirements
ATTACHMENT B - Project specific Environmental Assessment Requirements
ATTACHMENT C - Guidance Material

Attachment A – Standard Environmental Assessment Requirements

Biodiversity
1. Biodiversity impacts related to the proposed project are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the *Threatened Species Conservation Act 1995*.
Aboriginal cultural heritage
2. The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the project and document these in the EIS. This must include a surface survey conducted by a qualified archaeologist and may require test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.
3. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.
4. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.
Water and soils
5. The EIS must map the following features relevant to water and soils including: a. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the Framework for Biodiversity Assessment). b. Groundwater. c. Groundwater dependent ecosystems. d. Proposed intake and discharge locations.
6. The EIS must describe background conditions for any water resource likely to be affected by the project including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.
7. The EIS must assess the impacts of the project on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how Water Quality Objectives are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should

include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.

b. Identification of proposed monitoring of water quality.

8. The EIS must assess the impact of the proposed project on hydrology, including:
   a. Water balance including quantity, quality and source.
   b. Effects to downstream rivers, waters and floodplain areas.
   c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems and stygofauna .
   d. Impacts to natural processes and functions within rivers, wetlands, and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches).
   e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.
   f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.
   g. Identification of proposed monitoring of hydrological attributes.

Flooding

9. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:
   a. Flood prone land
   b. Flood planning area, the area below the flood planning level.
   c. Hydraulic categorisation (floodways and flood storage areas).

10. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.

11. Modelling in the EIS must consider and document:
   a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
   b. Impacts of the proposed project on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
   c. Relevant provisions of the NSW Floodplain Development Manual 2005.

12. The EIS must assess the impacts on the projecton flood behaviour, including:
   a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.
   b. Consistency with Council floodplain risk management plans.
   c. Compatibility with the flood hazard of the land.
   d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
   e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.

f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

g. Any impacts the proposed project may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.

h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.

i. Emergency management, evacuation and access, and contingency measures for the proposed project considering the full range or flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.

j. Any impacts the proposed project may have on the social and economic costs to the community as consequence of flooding.

Attachment B – Project specific Environmental Assessment Requirements

Biodiversity

1. Impacts on the following species, populations and ecological communities will require further consideration and provision of the information specified in s9.2 of the Framework for Biodiversity Assessment:
   - White box yellow box Blakely's red gum woodland "Box gum woodland" - endangered ecological community
   - Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions - endangered ecological community
   - Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions - endangered ecological community
   - Regent Honeyeater
   - Acacia bynoeana – Bynoe's Wattle
   - Eucalyptus macarthurii - Paddys River Box, Camden Woollybutt
   - Hakea dohertyi - Kowmung Hakea
   - Pomaderris cotoneaster - Cotoneaster Pomaderris
   - Solanum amourense

Aboriginal cultural heritage

1. The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the project and document these in the EIS. This must include a surface survey undertaken by a qualified archaeologist. The result of the surface survey is to inform the need for targeted test excavation in areas with potential for subsurface Aboriginal deposits to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record.

   The results of surface surveys and test excavations are to be documented in the EIS. The identification of cultural heritage values should be guided by the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011) and consultation with OEH regional officers.

2. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.

3. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must:
   a. demonstrate attempts to avoid impact upon Aboriginal cultural heritage values and identify any conservation outcomes;

b. where impacts are unavoidable, outline measures proposed to mitigate impacts; c. outline procedures to be followed if Aboriginal objects are found at any stage of the life of the project to formulate appropriate measures to manage unforseen impacts; and d. outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.
4. Any Aboriginal objects recorded as part of the assessment must be documented and notified to OEH. Copies of the relevant Archaeological Report and Aboriginal Cultural Heritage Assessment Report must also be forwarded to OEH.

Attachment C – Guidance material

Title	Web address
Relevant Legislation	
Commonwealth Environment Protection and Biodiversity Conservation Act 1999	www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
Environmental Planning and Assessment Act 1979	www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
Fisheries Management Act 1994	www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
Marine Parks Act 1997	www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
National Parks and Wildlife Act 1974	www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
Protection of the Environment Operations Act 1997	www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
Threatened Species Conservation Act 1995	www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
Water Management Act 2000	www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
Wilderness Act 1987	www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
Biodiversity	
NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf
Framework for Biodiversity Assessment (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf
OEH Threatened Species Website	www.environment.nsw.gov.au/threatenedspecies/
NSW BioNet (Atlas of NSW Wildlife)	www.bionet.nsw.gov.au/
Fisheries NSW policies and guidelines	www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation
List of national parks	www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	www.environment.nsw.gov.au/resources/protectedareas/080290devadjoindecc.pdf
OEH Spatial Data Online Access	http://mapdata.environment.nsw.gov.au/geonetwork/srv/en/main.home
Heritage	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
Statements of Heritage Impact 2002 (HO & DUAP)	www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf

Title	Web address
NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N')	www.environment.nsw.gov.au/Heritage/publications/index.htm#M-O
Aboriginal Cultural Heritage	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf
Water and Soils	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas'	www.nratlas.nsw.gov.au/
Acid Sulfate Soils Manual (Stone et al. 1998)	Manual available for purchase from: www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DPI's Guidelines Register at: Chapter 1 Acid Sulfate Soils Planning Guidelines: www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulfate Soils Assessment Guidelines: www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding	
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
NSW Climate Impact Profile	NSW Climate Impact Profile
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
Water	
Water Quality Objectives	www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1

Title	Web address
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

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Ms Jacqui McLeod
Team Leader - Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms McLeod

Gunlake Quarry Project (SSD 7090)
Request for Input into Secretary's Requirements

I refer to your email received 2 June 2015 seeking WaterNSW's inputs into the Secretary's requirements for the expansion of the Gunlake Quarry. WaterNSW appreciates the opportunity and offers the following comments for consideration.

The subject land is located in the Warragamba catchment which forms part of Sydney's water supply. Chapmans Creek runs through the site and along the north eastern boundary and flows via Jaorimin Creek into the Wollondilly River which is located approximately 5km to the north.

The proximity of the proposed development to Chapmans Creek and the Wollondilly River and any impacts on water quality and quantity from the proposed project are of concern to WaterNSW. The EIS will need to demonstrate that the proposed measures to capture and treat water impacted by the proposal will have no impact on water quality within the Wollondilly River. To address the above issues WaterNSW recommends the following be included in the Secretary's requirements.

- As agreed with via correspondence from the Department (Ref qb 174202 dated 5 August 2011) the following be included as a standard Secretary's Requirement in the Drinking Water Catchment:

  "The EIS must assess potential risks to surface and groundwater quality during construction and operation, demonstrating clear consideration of the principle of achieving a neutral or beneficial effect on water quality in the drinking water catchment, consistent with the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011. The EIS must include a framework for the avoidance, mitigation, management and monitoring of water quality impacts during construction and operation"
- The detailed description of the project should include those aspects of the project which have the potential to impact on the quality and quantity of surface and ground waters at and adjacent to the project. This should include:
  - the location, management and storage of all hazardous materials
  - the location of road crossings, unsealed roads and their proximity to watercourses
  - the location of and description of all water quality management measures
  - the location of and description of all water monitoring points (surface and ground waters).

- The detailed assessment of the project on environment should consider the design, construction, operational and decommissioning phases and have regard for operation during periods of wet weather and also include:
    - details of measured and predicted quarry performance with respect to water quality management since its commencement including details of any incidents.
    - details of how impacts associated with the diversion, storage or relocation of any watercourses will be managed and mitigated
    - protection of the existing erosion control works on the site or alternative measures to ensure that the existing erosion control works are not affected by the proposal
    - details of measures proposed to be adopted to offset impacts associated with construction activities e.g. earthworks, vegetation clearing, track construction
    - impact of the expansion on the existing effluent management system, given that the current on-site wastewater management system is designed for 25 people
- The surface water and groundwater assessment should also address the following matters:
    - pre-development and post development run off volumes and pollutant loads from the site
    - details of the measures to manage site water associated with processing quarry materials, general stormwater runoff and any human activities likely to affect water quality at the site, and how neutral or beneficial effect on water quality (NorBE) principles will be assessed and applied
    - assessment of the impacts of the development on receiving water quality and volume, both surface and groundwater
    - details of the structural stability, integrity, ongoing maintenance and monitoring of all site water management measures including dams over the life of the project
    - details of proposed monitoring of groundwater levels, surface water flows, groundwater and surface water quality, along with information as to how the proposed monitoring will be used to monitor and, if necessary, mitigate impacts on surface water and groundwater resources.
- Consider the principles outlined in the 'Managing Urban Stormwater – Soils and Construction – Mines and Quarries' Manual prepared by the Department of Environment and Climate Change (2008).
- Provide concept plans/protocols/procedures for the following:
    - Environmental Management Plan
    - Soil and Water Management Plan – including triggers, actions, responses
    - Procedures for managing spills
    - Details of the practices proposed to ensure materials transported to and from the site do not spill or otherwise cause soil or water pollution
    - Rehabilitation Plan
    - Vegetation clearing protocols.

It is requested that WaterNSW be included as a stakeholder for the proposal. If a Planning Focus meeting is held WaterNSW would like to be invited. Further, WaterNSW would appreciate being notified when the Department has issued the Secretary's requirements.

If you wish to discuss this matter further please contact Jim Caddey on 4824 3401.

Malcolm Hughes

MALCOLM HUGHES
Senior Manager Planning and Environment

17/6/15

NSW GOVERNMENT | Department of Primary Industries

OUT15/14887

Ms Jacqui McLeod
Team Leader – Resource Assessments
Department of Planning & Environment
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Jacqui.mcleod@planning.nsw.gov.au

21 SEP 2015

Dear Ms McLeod

Gunlake Quarry Extension Project and (SSD 7090)
Request for input into Secretary's Environmental Assessment Requirements

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

Comment by Fisheries NSW

Fisheries NSW is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, Fisheries NSW ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999)*. In addition, Fisheries NSW is responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture and marine protected areas within NSW.

The potential impact of the development, especially downstream impacts upon water quality and aquatic habitats in Chapmans Creek, is of particular interest to this Department in relation to this proposal.

Environmental Assessment Requirements

Fisheries NSW advises that the Environmental Impact Statement (EIS) for the proposed development should include information on the following:

- Location of works (including site map and photos).
- Name of adjacent waterway(s).
- Description of works to be undertaken.
- Timing and duration of works.

- Description of any aquatic and riparian habitat at or adjacent to the development site. Particularly riparian vegetation, water depth, permanence water flow and water quality within the proposal site and downstream of Chapmans Creek.
- Analysis of any interactions of the proposed development with water quality and aquatic and riparian environments and predictions of any impacts upon those environments.
- Safeguards to mitigate any impacts upon water quality and aquatic and riparian environments in Chapmans Creek and downstream. This should include full details of proposed leachate management, erosion and sediment control, stormwater, road drainage and water quality management for the site.
- Details of ongoing monitoring programs to assess any impacts upon water quality and aquatic and riparian environments in Chapmans Creek and downstream.

Fisheries NSW Approvals

Please note that approvals or concurrence may be required from Fisheries NSW for the proposed development and works including:

- Dredging and reclamation. Any dredging or reclamation in a waterway (below the high bank) requires approval from Fisheries NSW. A permit is required under section 200 of the *Fisheries Management Act 1994* if the works are conducted by Shoalhaven City Council (or contractor) without specific approval from another NSW public authority (e.g. licence under the *Crown Lands Act 1989*). If the dredging/reclamation works are authorised by a public authority (e.g. NSW Office of Water), the public authority is required under section 199 of the *Fisheries Management Act 1994* to consult with Fisheries NSW and take into account any issues raised prior to approving the dredging/excavation and reclamation works in a waterway.

Fisheries NSW recommends the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. The Department also recommends inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.

The design and construction of any watercourse crossings on the site should be undertaken in accordance with the Department's *Policy and Guidelines for Fish Friendly Waterway Crossings* (2004) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (2004). These documents are available on our website www.dpi.nsw.gov.au, under 'Aquatic Habitats' and 'Publications'.

Please ensure a copy of the Secretary's Environmental Assessment Requirements and the subsequent EIS provided by the proponent for this development are provided to Fisheries NSW for review and further comment. Fisheries NSW also requests that a copy of this correspondence is provided to the applicant for their information.

For further detailed advice on Fisheries NSW aquatic habitat requirements, please refer the applicant to the *Department's Policy and Guidelines for Fish Habitat Conservation and Management (2013)* available on our website www.dpi.nsw.gov.au
For further information, please contact Jillian Reynolds, Regional Assessment Officer – South Coast, Aquatic Ecosystems on (02) 4428 3406 or at jillian.reynolds@dpi.nsw.gov.au.

Comment by NSW Office of Water
The NSW Office of Water (Office of Water) has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the following comments below, and further detail in Attachment A.

The key issues for the Office of Water for this project are:

- potential impacts on surface waters and groundwater,
- water demand and supply requirements.

The Office of Water notes that the proposed Quarry Extension seeks to increase the area of the quarry and the annual volume of extraction. This will further alter drainage patterns in the local landscape and increase water demand and consumption respectively.

The demand for additional water extraction and use proposed by the quarry extension may, for instance, require additional water entitlement to be sourced in accordance with the relevant water sharing plans for both surface and groundwater. The Office of Water advises that all water extracted from both ground and surface water sources and which is used for the quarry operation, needs to be appropriately authorised by a water access licence or a relevant exemption.

The supporting documentation provided indicates that both Groundwater and Surface Water Assessments will be undertaken to assess impacts on water resulting from the proposed Quarry Extension. This environmental assessment should provide sufficient details so that the Office of Water is able to determine if there are any licensing requirements under the *Water Management Act 2000*.

It is recommended that the EIS be required to include:

- The annual volume of surface and groundwater proposed to be extracted, used, intercepted, or otherwise taken by the activity (including through inflow and seepage, dewatering, dust suppression, processing, increased evaporation) from each surface and groundwater source as defined by the relevant water sharing plan.
- Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).
- The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance.
- A detailed assessment against the NSW Aquifer Interference Policy (2012) using the NSW Office of Water's assessment framework.

- Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Details of all surface water infrastructure and dams (including volume, purpose), and calculation of the Maximum Harvestable Right Dam Capacity for the property.
- Full technical details and data of all surface and groundwater modelling, and an independent peer review of the groundwater model.
- Proposed surface and groundwater monitoring activities and methodologies.
- Proposed management and disposal of produced or incidental water.
- Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.
- Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.
- Consideration of relevant policies and guidelines.
- A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

For further information please contact David Zerafa, Senior Water Regulation Officer (Nowra) on (02) 4428 9142 or at David.Zerafa@dpi.nsw.gov.au.

Yours sincerely

Kristian Holz
Director Policy, Legislation and Innovation

Attachment A

Gunlake Quarry Extension Project (SSD 7090)
Request for Input into Secretary's Environment Assessment Requirements
Comment by the NSW Office of Water

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

For further information visit the NSW Office of Water website, www.water.nsw.gov.au

Key Relevant Legislative Instruments

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

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

Water Management Act 2000 (WMA 2000)
Key points:

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

Water Act 1912 (WA 1912)
Key points:

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

Water Management (General) Regulation 2011
Key points:

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

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

Access Licence Dealing Principles Order 2004

Harvestable Rights Orders

Water Sharing Plans

The proposal is located within the area covered by the:

- *Water Sharing Plan for the Greater Metropolitan Region Unregulated Water Sources 2011.* The quarry site is within the Lower Wollondilly Management Zone within the Upper Nepean & Upstream Warragamba Water Source.
- *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011.* The quarry site is within the Nepean Management Zone 1 within the Sydney Basin Nepean Groundwater Source.

The EIS is required to:

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

Relevant Policies and Guidelines

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

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- NSW State Rivers and Estuary Policy (1993)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)
- Groundwater Monitoring and Modelling Plans - Information for prospective mining and petroleum exploration activities (NOW, 2014)

Office of Water policies can be accessed at the following links:
http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx
http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx

An assessment framework for the NSW Aquifer Interference Policy can be found online at: http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/Aquifer-interference.

Licensing Considerations

The EIS is required to provide:

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

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

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

For more information on Harvestable Right dams, including a calculator, visit:
http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff

Dam Safety

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

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

Surface Water Assessment

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

- Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.
- Identification of all surface water sources as described by the relevant water sharing plan.

- Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.
- Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.
- Assessment of predicted impacts on the following:
    - flow of surface water, sediment movement, channel stability, and hydraulic regime,
    - water quality,
    - flood regime,
    - dependent ecosystems,
    - existing surface water users, and
    - planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

Groundwater Assessment

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

- The predicted highest groundwater table at the site.
- Works likely to intercept, connect with or infiltrate the groundwater sources.
- Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- Bore construction information is to be supplied to the Office of Water by submitting a "Form A" template. The Office of Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.
- A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).
- Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.
- The predicted impacts of any final landform on the groundwater regime.
- The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.
- An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.
- An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).
- Measures proposed to protect groundwater quality, both in the short and long term.
- Measures for preventing groundwater pollution so that remediation is not required.
- Protective measures for any groundwater dependent ecosystems (GDEs).
- Proposed methods of the disposal of waste water and approval from the relevant authority.
- The results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing

groundwater resource and any dependent groundwater environment or water users, including information on:

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

Groundwater Dependent Ecosystems

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

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

Watercourses, Wetlands and Riparian Land

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

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

Drill Pad, Well and Access Road Construction

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

For open cut projects:

Landform rehabilitation (including final void management)

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

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

End Attachment A

Our Ref: STH09/01940/09
Contact: Amanda Priestley
Your Ref: SSD 7090

Transport Roads & Maritime Services

9 July 2015

The Director
Resource Assessments
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Attn: Ms Jacqui McLeod, Team Leader – Resource Assessments

REQUEST FOR INPUT TO SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS – GUNLAKE QUARRY EXTENSION PROJECT (SSD 7090)

Dear Sir / Madam

Roads and Maritime Services (RMS) refers to your email of 2 July 2015 requesting RMS input to the Secretary's Environmental Assessment (EA) requirements for the abovementioned development proposal

Roads and Maritime Response

RMS has reviewed the referred information and requests that a Traffic Impact Assessment (TIA) be prepared to address the likely impacts of the proposal on the road network.

The TIA should take into account the key issues relevant to the scale of this proposal as set out in Table 2.1 of the Roads and Traffic Authority's current 'Guide to Traffic Generating Developments" and should include, but not be limited to, the following:

- The total impact of existing and proposed development traffic on the state road network with consideration for a 10 year horizon.
- The volume and distribution of traffic generated by the proposed development, including the maximum daily peak movements generated by periodic haulage campaigns.
- Intersection sight distances at key intersections along the primary haul route.
- Existing and proposed access conditions.
- Details of improvements for road intersections along the identified haulage route/s in accordance with Austroads Guidelines.
- Detail of staff, servicing and parking arrangements.
- Traffic Management for construction and operational phases of the development.

Roads & Maritime Services

Level 4, Southern Regional Office, 90 Crown Street, Wollongong NSW 2500 | PO Box 477 Wollongong East NSW 2520
T 02 4221 2460 | **F** 02 4221 2777 | **www.rmservices.nsw.gov.au** |

- Impact on public transport (public and school bus routes) and consideration for alternative transport modes such as cyclists and pedestrians.
- Impacts of road traffic noise and dust generation along the identified haulage route.
- Details of any proposed Road Maintenance Contributions Plan.
- Consideration for Clause 16 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* regarding;
    - Impact on school zones and residential areas
    - Truck Management Plan
    - Code of Conduct for Haulage Operators
    - Road Safety Assessment of key haulage routes

The current Austroads Guidelines, Australian Standards and RMS Supplements are to be adopted for any proposed works on the classified road network.

The Developer would be required to enter into a 'Works Authorisation Deed' (WAD) with Roads and Maritime for any works deemed necessary on the classified state road network. The developer would be responsible for all costs associated with the works and administration for the WAD.

Advice to the Consent Authority

Roads and Maritime highlights that in determining any application under Part 4 of the Environmental Planning and Assessment Act 1979 it is the Consent Authority's responsibility to consider the environmental impacts of any road works considered ancillary to the development. This includes any works which form part of the proposal and/or any works which are deemed necessary to include as requirements in the conditions of development consent.

Yours faithfully

Matt Adams
Acting Manager Land Use
Southern Region

GOULBURN MULWAREE COUNCIL

Civic Centre 184-194 Bourke Street Goulburn NSW
Telephone (02) 4823 4444 • Facsimile (02) 4823 4456 • www.goulburn.nsw.gov.au
Correspondence to: Goulburn Mulwaree Council Locked Bag 22 Goulburn NSW 2580

Contact: Louise Wakefield

12 June 2015

Jacqui McLeod
Team Leader – Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Jacqui

Subject: **Gunlake Quarry Extension Project (SSD 7090)**
Request for Input into Secretary's Environmental Assessment Requirements

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Thank you for your email of 2 June 2015 requesting input into Secretary's Requirements for the Gunlake Quarry Expansion Project.

Council has reviewed the preliminary report and provides the following comments in response:

1. Community consultation and engagement should be considered and a strategy detailing the consultation that is planned with stakeholders and surrounding residents both during the preparation of the application, and the construction and operational phases of the quarry.

2. The report mentions clearing of 11 ha of Box Gum Woodland EEC (6.5 ha woodland, 4.5 derived native grassland) and that the overburden emplacement is proposed to the southwest via a corridor through existing vegetation. Reference is also made to biodiversity offsets and adoption of design elements to avoid or minimise potential impacts on threatened flora and fauna species and communities.

   Council would expect the proponent should be required in the Secretary's requirements to set out clearly how biodiversity values are going to be managed during construction, operation and post-operation stages of the development (including rehabilitation) including addressing riparian regeneration/restoration. This should be in the form of a comprehensive assessment and environmental management and restoration plan where all impacts of the development are quantified (including the impacts of noise (blasting), dust, groundwater changes etc) and a detailed strategy for offsetting the clearing of 11ha of an EEC be clearly set out.

   The location of any offset area should be influenced by the relative connectivity of the area to other existing vegetation patches and the similarity of the offset area to the area proposed to be cleared. Depending on the biodiversity/habitat elements that are to be cleared/removed the replacement ratio may be quite high in terms of the offsetting required.

3. The assessment should consider that the proposed extension area is closer to the town of Marulan than the existing operations i.e. there is just over 2km (in a south-easterly direction) between the existing R5 zoned land at Marulan and the boundary of the extension. Noise impacts (particularly at night) need to be considered.

4. In reference to the social and economic impacts of the development, Council would like to see an assessment regarding the amenity impacts that such a significant increase in traffic movements will have on all residences along the proposed haulage routes. Noise and dust impacts and any proposed management and mitigation measures need to be clearly identified for the community. In addition, and further to point 1 above, Council sees an opportunity for community improvement/enhancement program funding above and beyond any development contributions.

   The potential employment opportunities should be detailed in the assessment and include the types and numbers of positions and how development can support the existing industry training program.

5. Council is not clear whether there is any surface water extraction proposed from the two waterways on the site. If so Council will need this to be thoroughly addressed from an 'environmental water' requirements perspective.

6. Lighting impacts need to be considered, particularly in the context of the cumulative impact of the development.

7. The site rehabilitation plan should be listed as a high priority assessment.

8. Given the long life of the quarry the feasibility of rail transport should be carefully considered.

9. Similarly it would be beneficial if the application could identify how the expansion is using environmentally friendly/green technology or could be adapted to use such technology in the future – i.e. what are its environmental impacts beyond the obvious noise, dust, roads etc (e.g. greenhouse gas emissions, life cycle costs).

10. Council notes the proponent's supporting documentation states a Traffic and Transport Impact Assessment will be carried out and further comment from Council can be provided following review of this information. At this stage, the current requirements for haulage routes in the Goulburn Mulwaree Development Control Plan 2009 are:

    - In rural areas - 7m wide sealed carriageways, plus 1m wide shoulders with 500mm seal
    - 80 km/h design standard
    - 8m wide culverts and bridges (i.e. from barrier to barrier)
    - Asphaltic concrete surface in village areas
    - Intersection upgrades, where appropriate

    It should be noted however, that as the proposal involves a large increase in the number of heavy vehicle movements (from 164 to 440) and the controls within Council's s94 Development Contributions Plan and Development Control Plan 2009 were not drafted in anticipation of such a large operation, Council is seeking:

- a culvert and bridge width of 9m,
- shoulder widths increased to 2m wide each, with 1m being sealed, and
- Centrelines and edge lines to be provided.

Intersection upgrades may include channelisation at Brayton/Ambrose Roads, and possibly the other intersection on Brayton Road.

Council's s94 Development Contributions Plan requires payment of a contribution in accordance with the formula given in the document. The 2015/16 rate is 0.462/tonne/km, although Council has reviewed the current plan and is preparing appropriate amendments that will impact on the contribution rate.

The Plan also requires pavement upgrading (refer b. of clause 11.1.1 below):

Section 94 contributions will not be used to fund direct works to comply with the DCP or development consent conditions that are required to bring roads up to a suitable standard to commence operations, such as:

a. *road widening*
b. *pavement upgrading (a pavement shall have a minimum remaining life of 10 years)*
c. *geometric improvements*
d. *drainage works*
e. *intersection improvements*

With regard the 10 year minimum remaining life, the roads (including the relatively new Ambrose Road) would require testing to ensure their capability of handling the increased heavy vehicle movements.

Council considers that as in this case, where the heavy vehicle movements are particularly large that the requirements of these documents should be regarded as a bare minimum.

Council would like to see what mechanism/s the proponents are going to rely on to record and validate their extraction rates and environmental impacts, and should the development be recommended for approval by the Department that the extraction rates are reported to NSW Trade and Investment.

Council is also seeking the plan of management for the development to include an 80km/h maximum speed limit on local roads for haulage vehicles.

Please contact me on (02) 48 234 480 if you require clarification on any of the points raised above. Council looks forward to working with the proponent and government agencies on this development.

Yours sincerely

Louise Wakefield
Director Planning & Development