



# APPENDIX A

SEARS AND GOVERNMENT  
AGENCY REQUIREMENTS



Stakeholder	Environmental requirement	EIS reference/section
DPIE	Refer to Table 1.2 of the EIS	
EPA Mitchell Bennett Head Strategic Programs Unit – Hunter	<p>Impacts related to the following environmental issues need to be assessed, quantified and reported on:</p> <ul style="list-style-type: none"> <li>▪ Air Quality;</li> <li>▪ Noise and Vibration;</li> <li>▪ Water Quality and Management;</li> <li>▪ Waste Management; and</li> <li>▪ Dangerous Goods, Chemical Storage and Bunding.</li> </ul> <p>The Environmental Impact Statement (EIS) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned.</p>	Chapters 8, 10, 11, 19 and 20
	<p>The currently holds Environmental Protection Licence (EPL 10132) under s48 <i>Protection of the Environment Operations Act 1997</i>.</p> <p>Should project approval be granted, the proponent will need to make a separate application to EPA for a variation to the existing Environment Protection Licence No. 10131 or lodge a new application for an Environment Protection Licence. Additional information on licensing is available through EPA's Guide to Licensing document.</p>	Section 6.5.1
	<p>The objectives of the proposal should be clearly stated and refer to:</p> <ul style="list-style-type: none"> <li>▪ the size and type of the operation;</li> <li>▪ the nature of the processes and the products, by-products and wastes produced;</li> <li>▪ the types and quantities of any chemicals to be used and stored onsite;</li> <li>▪ proposed operational hours, including any heavy vehicle movements;</li> <li>▪ proposed maximum and average annual production rates that will occur at the premises; and</li> <li>▪ proposed staging and timing of the proposal.</li> </ul>	Chapters 4, 19 and 20
	<p>The EIS will need to fully identify all the processes and activities intended for the site over the life of the development. This will include details of:</p> <ul style="list-style-type: none"> <li>▪ the location of the proposed facility and details of the surrounding environment;</li> <li>▪ the proposed layout of the site, including a site plan prepared by a registered surveyor clearly showing the boundaries of the proposed premises that will be subject to an Environment Protection Licence (EPL) and the proposed locations of discharge and monitoring points (including groundwater monitoring points);</li> <li>▪ appropriate land use zoning;</li> <li>▪ maps/diagrams showing topography, the location of residences and properties likely to be affected and other industrial developments, conservation areas, wetlands, etc. in the locality that may be affected by the facility;</li> <li>▪ all equipment proposed for use at the site;</li> <li>▪ all chemicals, including fuel, used on the site and proposed methods for their transportation, storage, use and emergency management; and</li> <li>▪ methods to mitigate any expected environmental impacts of the development.</li> </ul>	Chapters 2, 4, 20 and 23

Stakeholder	Environmental requirement	EIS reference/section
	<p>The EIS must include an air quality impact assessment (AQIA) in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW, including, as a minimum the following components:</p> <p><b>Assessment Objective</b></p> <ul style="list-style-type: none"> <li>demonstrate the proposed project will incorporate and apply best management practice emission controls; and</li> <li>demonstrate that the project will not cause violation of the project adopted air quality impact assessment criteria at any residential dwelling or other sensitive receptor.</li> </ul> <p><b>Assessment Criteria</b></p> <ul style="list-style-type: none"> <li>define applicable assessment criteria for the proposed development referencing the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW, including appendices and updates</li> <li>demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the Protection of the Environment Operations (POEO) Act (1997) and the POEO (Clean Air) Regulation (2010).</li> </ul> <p><b>Existing Environment</b></p> <ul style="list-style-type: none"> <li>provide a detailed description of the existing environment within the assessment domain, including: <ul style="list-style-type: none"> <li>a) geophysical form and land-uses;</li> <li>b) location of all sensitive receptors;</li> <li>c) existing air quality; and</li> <li>d) local and regional prevailing meteorology.</li> </ul> </li> <li>justify all data used in the assessment, specifically including analysis of inter-annual trends (preferably five consecutive years of data), availability of monitoring data, and local topographical features.</li> <li>meteorological modelling must be verified against monitored data. Verification should involve comparative analysis of wind speed, wind direction and temperature, at a minimum.</li> <li>a review of all existing, recently approved and planned developments likely to contribute to cumulative air quality impacts must be completed</li> </ul> <p><b>Emissions Inventory</b></p> <ul style="list-style-type: none"> <li>provide a detailed description of the project and identify the key stages with regards to the potential for air emissions and impacts on the surrounding environment.</li> <li>identify all sources of air emissions, including mechanically generated combustion and transport related emissions likely to be associated with the proposed development.</li> <li>estimate emissions of TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, (tonnes per year), at a minimum, for all identified sources during each key development stage. The emissions inventory should: <ul style="list-style-type: none"> <li>a) utilise USEPA (1995) (and updates) emission estimation techniques, direct measurement or other method approved in writing by EPA;</li> <li>b) calculate uncontrolled emissions (with no particulate matter controls in place); and</li> </ul> </li> </ul>	Chapter 11, Appendix F

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>c) calculate controlled emissions (with proposed particulate matter controls in place).</li> <li>▪ the emissions inventory must be explicitly coupled with the project description.</li> <li>▪ provide a detailed summary and justification of all parameters adopted within all emission estimation calculations, including site specific measurements, proponent recommended values or published literature.</li> <li>▪ document, including quantification and justification, all air quality emission control techniques/practices proposed for implementation during the project. As a minimum, consideration must be given to source control techniques, emission control through planning and reactive/predictive management techniques.</li> </ul> <p><b>Best Practice Determination</b></p> <ul style="list-style-type: none"> <li>▪ based on the TSP, PM<sub>10</sub> and PM<sub>2.5</sub> emissions inventories calculated for the proposed development.</li> <li>▪ demonstrate that the proposed control techniques/practices are consistent with best management practice.</li> <li>▪ detail all sources possible sources of air pollution and activities/processes with the potential to cause air pollutants, including odours and fugitive dust emissions; and</li> <li>▪ describe in detail the measures proposed to mitigate the impacts and quantify the extent to which the mitigation measures are likely to be effective in achieving the relevant environmental outcomes.</li> </ul> <p><b>Dispersion Modelling and Interpretation of Results</b></p> <ul style="list-style-type: none"> <li>▪ atmospheric dispersion modelling should be undertaken in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW, including appendices and updates.</li> <li>▪ modelling must implement fit for purpose modelling techniques that: <ul style="list-style-type: none"> <li>a) have regard for the most up to date and scientifically accepted dispersion modelling techniques;</li> <li>b) contextualise all assumptions based on current scientific understanding and available data; and</li> <li>c) include a thorough validation of adopted methods and model performance.</li> </ul> </li> <li>▪ Use an appropriate atmospheric dispersion model to predict, at a minimum, incremental ground level concentrations/levels of the following: <ul style="list-style-type: none"> <li>a) 24-hour and annual average PM<sub>10</sub> concentrations;</li> <li>b) 24-hour and annual average PM<sub>2.5</sub> concentrations; and</li> <li>c) 1-hour and annual average NO<sub>2</sub> concentrations. NO<sub>2</sub> concentrations should be assessed using a well justified approach for the transformation of NO<sub>x</sub> to NO<sub>2</sub>.</li> </ul> </li> <li>▪ ground level concentrations of pollutants should be presented for surrounding privately-owned properties, quarry-owned properties and other sensitive receptors (as applicable).</li> <li>▪ undertake a cumulative assessment of predicted impacts. The contribution of all identified existing and recently approved developments should be accounted for in the cumulative assessment.</li> <li>▪ cumulative 24-hour PM<sub>10</sub> and PM<sub>2.5</sub> concentrations must be assessed in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW, including appendices and updates, and/or a suitably justified probabilistic methodology.</li> </ul>	

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>cumulative annual average PM<sub>10</sub>, PM<sub>2.5</sub>, and NO<sub>2</sub> should be assessed using a sufficiently justified background concentration(s);</li> <li>results of dispersion modelling should be presented as follows: <ul style="list-style-type: none"> <li>a) isopleth plots showing the geographic extent of maximum pollutant concentrations (incremental and cumulative);</li> <li>b) tables presenting the maximum predicted pollutant concentrations (increment and cumulative) and the frequency of any predicted exceedances at each surrounding privately-owned properties, quarry-owned properties and other sensitive receptors (as applicable); and</li> <li>c) time series and frequency distribution plots of pollutant concentrations at each private receptor location at which an exceedance is predicted to occur. Where no exceedances are predicted, the analysis must be performed for the most impacted off site sensitive receptor.</li> </ul> </li> </ul> <p><b>Air Quality Emission Control Measures</b></p> <ul style="list-style-type: none"> <li>provide a detailed discussion of all proposed air quality emission control measures, including details of a reactive/predictive management system. The information provided must include: <ul style="list-style-type: none"> <li>a) explicit linkage of proposed emission controls to the site specific best practice determination assessment timeframe for implementation of all identified emission controls;</li> <li>b) key performance indicators for emission controls;</li> <li>c) monitoring methods (location, frequency, duration);</li> <li>d) response mechanisms;</li> <li>e) responsibilities for demonstrating and reporting achievement of KPIs;</li> <li>f) record keeping and complaints response register; and</li> <li>g) compliance reporting.</li> </ul> </li> </ul>	
	<p>The following matters should be addressed in relation to noise and vibration impacts associated with the proposal. This includes identification of the hours of operations, assessment of all activities where proposed, and impacts on sensitive receivers associated with the proposed hours of operation. The following matters should be addressed as part of the EIS.</p> <p><b>General</b></p> <ul style="list-style-type: none"> <li>construction noise associated with the proposed development should be assessed using the Interim Construction Noise Guideline (DECC, 2009).</li> <li>vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the Assessing Vibration: A Technical Guideline (DEC, 2006).</li> </ul> <p><b>Industry</b></p> <ul style="list-style-type: none"> <li>operational noise from all industrial activities (including private haul roads) to be undertaken on the premises should be assessed using the EPA's "A Guide to the Noise Policy for Industry". (EPA October 2017).</li> </ul> <p><b>Road</b></p>	Chapter 10, Appendix G

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the NSW Road Noise Policy (DECCW, 2011).</li> <li>noise from new or upgraded public roads should be assessed using the NSW Road Noise Policy (DECCW, 2011).</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>detail monitoring that will be conducted to assess the impacts of the proposal.</li> </ul>	
	<p><b>Describe Proposal</b></p> <ul style="list-style-type: none"> <li>describe the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.</li> <li>demonstrate that all practical options to avoid discharges have been implemented and environmental impact minimised where discharge is necessary.</li> <li>where relevant include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.</li> </ul> <p><b>Background Conditions</b></p> <ul style="list-style-type: none"> <li>describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal. Issues to be discussed should include but are not limited to: <ul style="list-style-type: none"> <li>a) a description of any impacts from existing industry or activities on water quality</li> <li>b) a description of the condition of the local catchment e.g. erosion, soils, vegetation cover, etc.</li> <li>c) an outline of baseline groundwater information, including, for example, depth to water table, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment</li> </ul> </li> <li>state the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (<a href="http://www.environment.nsw.gov.au/ieo/index.htm">http://www.environment.nsw.gov.au/ieo/index.htm</a>).</li> <li>where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.</li> <li>state the indicators and associated trigger values or criteria for the identified environmental values. This information should be based on the ANZECC (2000) Guidelines for Fresh and Marine Water Quality as a minimum.</li> <li>state any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.</li> </ul> <p><b>Impact Assessment</b></p> <ul style="list-style-type: none"> <li>describe the nature and degree of impact that any proposed discharges will have on the receiving environment, both surface water and groundwater.</li> <li>detail contractual and other arrangements that will be put in place to prevent pollution from haul roads and unsealed roads, particularly rights of carriageways not owned by the proponent.</li> <li>assess impacts against the relevant ambient water quality outcomes.</li> </ul>	<p>Chapters 8 and 17, Appendix D and L</p>

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>▪ Demonstrate how the proposal will be designed and operated to:               <ol style="list-style-type: none"> <li>a) protect the Water Quality Objectives for receiving waters where they are currently being achieved; and</li> <li>b) contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.</li> </ol> </li> <li>▪ propose water quality limits for any discharge(s), including surface and dredge pond water movement to any groundwater qualifiers.</li> <li>▪ assess impacts on groundwater and groundwater dependent ecosystems.</li> <li>▪ describe how stormwater and dredge pond water will be managed during construction, operation and at the end of the sand extraction at the site.</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>▪ describe how any potential impacts will be monitored and assessed over time.</li> </ul>	
	<p>The EIS should include:</p> <ul style="list-style-type: none"> <li>▪ an assessment of potential impacts on soil and land resources should be undertaken, being guided by Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000).</li> <li>▪ the nature and extent of any significant impacts should be identified. Particular attention should be given to:               <ol style="list-style-type: none"> <li>a) soil erosion and sediment transport - in accordance with Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008).</li> <li>b) Mass movement (landslides) – in accordance with Landslide risk management guidelines presented in Australian Geomechanics Society (2007).</li> <li>c) Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets which includes Site Investigations for Urban Salinity (DLWC, 2002).</li> </ol> </li> <li>▪ A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</li> </ul>	Chapters 14, 17 and 23
	<p>The EIS should:</p> <ul style="list-style-type: none"> <li>▪ include a detailed plan for in-situ classification of waste material, including the sampling locations and sampling regime that will be employed to classify the waste, particularly with regards to the identification of contamination hotspots.</li> <li>▪ identify, quantify, characterise and classify all waste that currently exists at the site. Identify the intended end use, for example reuse or disposal, and the end use location(s) for the waste. Also, specify the mechanism under which waste will be reused or disposed, such as a Resource Recovery Exemption. Note: All waste must be classified in accordance with EPA's Classification Guidelines.</li> </ul>	Chapters 6, 19 and 23

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>▪ identify, characterise and classify all waste that will be generated onsite, including the proposed quantities of the waste. Note: All waste must be classified in accordance with EPA's Waste Classification Guidelines.</li> <li>▪ identify, characterise and classify all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.</li> <li>▪ include a commitment to retaining all sampling and classification results for the life of the project to demonstrate compliance with EPA's Waste Classification Guidelines.</li> <li>▪ provide details of how waste will be handled and managed onsite to minimise pollution, including: <ul style="list-style-type: none"> <li>a) stockpile location and management <ul style="list-style-type: none"> <li>i. labelling of stockpiles for identification, ensuring that all waste is clearly identified and stockpiled separately from other types of material (especially the separation of any contaminated and non-contaminated waste).</li> <li>ii. proposed height limits for all waste to reduce the potential for dust and odour.</li> <li>iii. procedures for minimising the movement of waste around the site and double handling.</li> <li>iv. measures to minimise leaching from stockpiles into the surrounding environment, such as sediment fencing, impervious and geofabric liners etc.</li> </ul> </li> <li>b) erosion, sediment and leachate control including measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site during works. The EIS should show the location of each measure to be implemented. The Proponent should consider measures such as: <ul style="list-style-type: none"> <li>i. sediment traps</li> <li>ii. diversion banks</li> <li>iii. sediment fences</li> <li>iv. bunds (earth, hay, mulch)</li> <li>v. geofabric liners</li> <li>vi. other control measures as appropriate</li> </ul> </li> </ul> </li> </ul> <p>The Proponent should also provide details of:</p> <ul style="list-style-type: none"> <li>a) how leachate from stockpiled waste material will be kept separate from stormwater runoff;</li> <li>b) treatment of leachate through a wastewater treatment plant (if applicable); and</li> <li>c) any proposed transport and disposal of leachate off-site.</li> </ul> <ul style="list-style-type: none"> <li>▪ provide details of how the waste will be handled and managed during transport to a lawful facility. If the waste possesses hazardous characteristics, the Proponent must provide details of how the waste will be treated or immobilised to render it suitable for transport and disposal.</li> </ul>	

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>include details of all procedures and protocols to be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.</li> <li>include a statement demonstrating that the Proponent is aware of EPA's requirements with respect to notification and tracking of waste.</li> <li>include a statement demonstrating that the Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by EPA from time to time.</li> <li>outline contingency plans for any event that affects operations at the site that may result in environmental harm, including: excessive stockpiling of waste, volume of leachate generated exceeds the storage capacity available on-site etc.</li> <li>assess Environment Protection Licensing requirements for all potential waste activities associated with the proposal.</li> </ul>	
	<ul style="list-style-type: none"> <li>the EIS must outline all details regarding the transport, handling, storage and use of dangerous goods, chemicals and products, including fuel, both on site and with ancillary activities and describe the measures proposed to minimise the potential for leakage or the migration of pollutants into the soil/waters or from the site.</li> <li>the EIS should identify any fuel or chemical storage areas proposed for the site.</li> <li>the EIS should consider compliance with the following legislation, standards and guidelines where relevant: <ul style="list-style-type: none"> <li>a) Australian Standard AS1692:1989 Tanks for Flammable and combustible liquids;</li> <li>b) The DECC's "Bunding and Spill Management" Technical Guideline (November 1997)</li> <li>c) Australian Standard AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids</li> <li>d) Australia Standard AS 4452-1997: The Storage and Handling of Toxic Substances;</li> <li>e) Australian/New Zealand Standard AS/NZS 4452:1997: The Storage and Handling of Mixed Classes of Dangerous Goods in Packages and Intermediate Bulk Containers; and</li> <li>f) Road and Rail Transport (Dangerous Goods) Act 1997</li> </ul> </li> </ul>	Chapter 20
	<p>The EIS should include a detailed assessment of any noise, air quality, weather, water or waste monitoring required during the remediation of the site to ensure that the works achieve a satisfactory level of environmental performance. The evaluation should include a detailed description of the monitoring locations, sample analysis methods and the level of reporting proposed.</p>	Chapter 23
DPIE Biodiversity and Conservation Division (formerly OEH)	<ul style="list-style-type: none"> <li>Biodiversity impacts related to the proposed development (SSD 9490) are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the Biodiversity Conservation Act 2016 (s6.12), Biodiversity Conservation Regulation 2017 (s6.8) and Biodiversity Assessment Method.</li> <li>the BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the Biodiversity Assessment Method.</li> </ul>	Chapter 9 and Appendix E
Nicole Davis	<ul style="list-style-type: none"> <li>the BDAR must include details of the measures proposed to address the offset obligation as follows;</li> </ul>	

Stakeholder	Environmental requirement	EIS reference/section
Acting Senior Team Leader – Planning Hunter Central Coast Branch Conservation & Regional Delivery Division	<ul style="list-style-type: none"> <li>a) the total number and classes of biodiversity credits required to be retired for the development/project;</li> <li>b) the number and classes of like-for-like biodiversity credits proposed to be retired;</li> <li>c) the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules;</li> <li>d) any proposal to fund a biodiversity conservation action;</li> <li>e) any proposal to conduct ecological rehabilitation (if a mining project);</li> <li>f) any proposal to make a payment to the Biodiversity Conservation Fund.</li> <li>▪ if seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits.</li> <li>▪ The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.1 O of the <i>Biodiversity Conservation Act 2016</i>.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ the Environmental Impact Assessment (EIS) must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional branch officers;</li> <li>▪ 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 ACHAR; and</li> <li>▪ impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.</li> </ul>	Chapter 15 and Appendix K
	<ul style="list-style-type: none"> <li>▪ the EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: <ul style="list-style-type: none"> <li>a) outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),</li> <li>b) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),</li> <li>c) include a statement of heritage impact for all heritage items (including significance assessment),</li> <li>d) consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and</li> </ul> </li> </ul>	Chapter 18

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>e) where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ the EIS must map the following features relevant to water and soils including: <ul style="list-style-type: none"> <li>a) Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map);</li> <li>b) Rivers, streams, wetlands, estuaries (as described in s4.2 of the Biodiversity Assessment Method);</li> <li>c) wetlands as described in s4.2 of the Biodiversity Assessment Method;</li> <li>d) groundwater;</li> <li>e) groundwater dependent ecosystems; and</li> <li>f) proposed intake and discharge locations.</li> </ul> </li> <li>▪ the EIS must describe background conditions for any water resource likely to be affected by the development, including: <ul style="list-style-type: none"> <li>a) existing surface and groundwater.</li> <li>b) hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.</li> <li>c) Water Quality Objectives (as endorsed by the NSW Government <a href="http://www.environment.nsw.gov.au/ieo/index.htm">http://www.environment.nsw.gov.au/ieo/index.htm</a>) including groundwater as appropriate that represent the community's uses and values for the receiving waters</li> <li>d) indicators and trigger values/criteria for the environmental values identified 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.</li> </ul> </li> <li>▪ the EIS must assess the impacts of the development on water quality, including: <ul style="list-style-type: none"> <li>a) the nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction; and</li> <li>b) identification of proposed monitoring of water quality.</li> </ul> </li> <li>▪ the EIS must assess the impact of the development on hydrology, including: <ul style="list-style-type: none"> <li>a) water balance including quantity, quality and source;</li> <li>b) effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas;</li> <li>c) effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems;</li> <li>d) impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches).</li> </ul> </li> </ul>	<p>Chapters 8, 14, 17 and 23</p> <p>Appendix D, J and L</p>

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>e) changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.</li> <li>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.</li> <li>g) identification of proposed monitoring of hydrological attributes.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ the EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including: <ul style="list-style-type: none"> <li>a) flood prone land;</li> <li>b) flood planning area, the area below the flood planning level;</li> <li>c) hydraulic categorisation (floodways and flood storage areas).</li> </ul> </li> <li>▪ 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.</li> <li>▪ the EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios: <ul style="list-style-type: none"> <li>a) current flood behaviour for a range of design events as identified in 11 above. This includes the 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.</li> </ul> </li> <li>▪ modelling in the EIS must consider and document: <ul style="list-style-type: none"> <li>a) the impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.</li> <li>b) impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.</li> <li>c) relevant provisions of the NSW Floodplain Development Manual 2005.</li> </ul> </li> <li>▪ the EIS must assess the impacts on the proposed development on flood behaviour, including: <ul style="list-style-type: none"> <li>a) whether there will be detrimental increases in the potential flood affection of other properties, assets and infrastructure.</li> <li>b) consistency with Council floodplain risk management plans.</li> <li>c) compatibility with the flood hazard of the land.</li> <li>d) compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.</li> <li>e) whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.</li> <li>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.</li> </ul> </li> </ul>	Chapter 17 and Appendix L

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>g) any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.</li> <li>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.</li> <li>i) emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.</li> <li>j) any impacts the development may have on the social and economic costs to the community as consequence of flooding.</li> </ul>	
NSW Department of Industry	<ul style="list-style-type: none"> <li>▪ the identification of an adequate and secure water supply for the life of the project. This includes confirmation that water can be sourced from an appropriately authorised and reliable supply. This is also to include an assessment of the current market depth where water entitlement is required to be purchased.</li> <li>▪ a detailed and consolidated site water balance.</li> </ul>	Chapter 8 and 17, Appendix D and L
Allison Collaros A/Manager – Assessment Advice	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ proposed surface and groundwater monitoring activities and methodologies.</li> <li>▪ consideration of relevant legislation, policies and guidelines, including the NSW Aquifer Interference Policy (2012), the Guidelines for Controlled Activities on Waterfront Land (2018) and the relevant Water Sharing Plans (available at <a href="https://www.industry.nsw.gov.au/water">https://www.industry.nsw.gov.au/water</a>).</li> </ul>	
Wayne Conners, Senior Water Regulation Officer	<ul style="list-style-type: none"> <li>▪ Crown land - including any Crown roads, reserves and tenures - impacted by the proposal must be clearly identified and accurately described in the EIS.</li> <li>▪ a Crown Land conveyancing search should be undertaken. Information on the department's conveyancing and information search services can be found here: <a href="https://www.industry.nsw.gov.au/lands/what-we-do/searches">https://www.industry.nsw.gov.au/lands/what-we-do/searches</a></li> <li>▪ written consent is required from DoI Crown Lands, as landowner. The EIS should provide evidence of consent, or details on the proposed process to obtain this consent. It is recommended that the proponent contact the department directly to discuss the landowner consent application process. The department's landowner's consent application form can be found here: <a href="https://www.industry.nsw.gov.au/__data/assets/pdf_file/0003/144345/Landowners-consentapplication-form.pdf">https://www.industry.nsw.gov.au/__data/assets/pdf_file/0003/144345/Landowners-consentapplication-form.pdf</a></li> </ul>	Table 5.2, Section 6.5.2
DPIE – Division of Resources & Geoscience	The building and construction industries in NSW require the ongoing replacement of supplies as current sources are exhausted. The continued sustainable development of existing and new quarries will facilitate the ongoing supply of construction materials to support affordable housing and infrastructure development for the growth of NSW. The resource in the subject area represents a regionally source of construction sand for the region.	Resource assessment to be provided to DPIE separately to this EIS.

Stakeholder	Environmental requirement	EIS reference/section
Cressida Gilmore Manager – Land Use	<p>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.</p> <p>All environmental reports (EIS or similar) accompanying Development Applications for extractive industry lodged under the <i>Environmental Planning &amp; Assessment Act 1979</i> should include a resource assessment (as detailed in Attachment A) which:</p> <ul style="list-style-type: none"> <li>documents the size and quality of the resource and demonstrates that both have been adequately assessed; and</li> <li>documents the methods used to assess the resource and its suitability for the intended applications.</li> </ul> <p>The above information should be summarised in the EIS, with full documentation appended. If deemed commercial-in-confidence, the resource assessment summary included in the EIS should commit to providing the Division with full resource assessment documentation separately. 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.</p> <p>The Division collects data on the quantity 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 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. Production data may be published in aggregated form, however production data for individual operations is kept strictly confidential.</p> <p>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 the NSW Division of Resources and Geoscience as a condition of any new or amended development consent.</p> <p>The Division would appreciate the opportunity for early consultation in relation to the proposed location of any biodiversity offset areas (both on and off site) or any supplementary biodiversity measures to ensure there is no consequent reduction in access to prospective land for mineral exploration, or potential for sterilisation of mineral or extractive resources.</p> <p>During the preparation of the EIS, The Division recommends that the proponent consult NSW Department of Planning &amp; Environment's 'EIS Guideline - Extractive Industries – Quarries'.</p>	

Stakeholder	Environmental requirement	EIS reference/section
	<p>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:</p> <p><b>Resource Assessment</b></p> <ul style="list-style-type: none"> <li>▪ a summary of the regional and local geology including information on the stratigraphic unit or units within which the resource is located.</li> <li>▪ 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).</li> <li>▪ 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.</li> <li>▪ characteristics of the material or materials to be produced: <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>d) for other proposals, properties relevant to the range of intended uses for the particular material should be indicated.</li> <li>e) 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.</li> </ul> </li> <li>▪ an assessment of the quality of the material and its suitability for the anticipated range of applications should be given.</li> <li>▪ the amount of material anticipated to be produced annually should be indicated.</li> <li>▪ 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.</li> <li>▪ if the proposal is an extension to an existing operation, details of history and past production should be provided.</li> <li>▪ 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.</li> <li>▪ justification for the proposal in terms of the local and, if appropriate, the regional context.</li> <li>▪ information on the location and size of markets to be supplied from the site.</li> </ul>	

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>route(s) used to transport quarry products to market.</li> <li>disposal of waste products and the location and size of stockpiles.</li> <li>assessment of noise, vibration, dust and visual impacts, and proposed measures to minimise these impacts.</li> <li>proposed rehabilitation procedures during, and after completion of, extraction operations, and proposed final use of site.</li> <li>assessment of the ecological sustainability of the proposal.</li> </ul> <p><b>Health &amp; Safety Issues</b></p> <p>All mining operations are to comply with the following legislation:</p> <ul style="list-style-type: none"> <li><i>Work Health and Safety Act 2011</i></li> <li>Work Health and Safety Regulation 2017</li> <li><i>Work Health and Safety (Mine and Petroleum Sites) Act 2013</i></li> <li>Work Health and Safety (Mine and Petroleum Sites) Regulation 2014</li> <li><i>Explosives Act 2003</i></li> <li>Explosives Regulation 2013.</li> </ul> <p>The mine holder must appoint a mine operator and notify the Department in writing as required by clause 7 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 before commencing any mining operations.</p> <p>Other duties and notification and reporting requirements exist under the WHS laws and duty holders must ensure they understand and comply with these requirements.</p>	
RMS	Following a review of the proponent's PEA, Roads and Maritime recommends that the EIS refer to the following guidelines with regard to the traffic and transport impacts of the proposed development:	Chapter 12 and Appendix H
Peter Marler Manager Land Use Assessment Hunter Region	<ul style="list-style-type: none"> <li>Road and Related Facilities within the Department of Planning EIS Guidelines; and</li> <li>Section 2 Traffic Impact Studies of Roads and Maritime's Guide to Traffic Generating Developments 2002.</li> </ul> <p>Furthermore, a traffic and transport study shall be prepared in accordance with the Roads and Maritime's Guide to Traffic Generating Developments 2002 and is to include (but not be limited to) the following:</p> <ul style="list-style-type: none"> <li>assessment of all relevant vehicular traffic routes and intersections for access to / from the subject properties;</li> <li>current traffic counts for all of the traffic routes and intersections;</li> </ul>	

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>the anticipated additional vehicular traffic generated from both the construction and operational stages of the project;</li> <li>the distribution on the road network of the trips generated by the proposed development. It is requested that the predicted traffic flows are shown diagrammatically to a level of detail sufficient for easy interpretation;</li> <li>consideration of the traffic impacts on existing and proposed intersections, in particular, the intersections of Nelson Bay Road (MR108) / Cox's Lane (local road) and Nelson Bay Road / Seaside Boulevard (local road), and the capacity of the local and classified road network to safely and efficiently cater for the additional vehicular traffic generated by the proposed development during both the construction and operational stages. The traffic impact shall also include the cumulative traffic impact of other proposed or approved developments in the area;</li> <li>identify the necessary road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network for the development. In this regard, preliminary concept drawings shall be submitted with the EIS for any identified road infrastructure upgrades. However, it should be noted that any identified road infrastructure upgrades will need to be to the satisfaction of Roads and Maritime and Council.</li> <li>traffic analysis of any major / relevant intersections impacted, using SIDRA or similar traffic model, including: <ul style="list-style-type: none"> <li>a) current traffic counts and 10 year traffic growth projections;</li> <li>b) with and without development scenarios;</li> <li>c) 95th percentile back of queue lengths;</li> <li>d) delays and level of service on all legs for the relevant intersections; and</li> <li>e) electronic data for Roads and Maritime review (i.e. SIDRA 8 model).</li> <li>f) any other impacts on the regional and state road network including consideration of pedestrian, cyclist and public transport facilities and provision for service vehicles.</li> </ul> </li> </ul>	
RFS	The subject land is mapped bush fire prone land by Port Stephens Shire Council. The NSW RFS considers that the EIS for the continued operation of the sand quarry should address the following bush fire criteria:	Chapter 20 and Appendix M
Paul Creenaune Acting Team Leader – Development Assessment & Planning	<ul style="list-style-type: none"> <li>the aim and objectives of 'Planning for Bush Fire Protection 2006';</li> <li>identification of potential ignition sources during construction and operation of the development;</li> <li>storage of fuels and other hazardous materials (e.g., explosives for blasting);</li> <li>proposed bush fire protection measures for the development, including vegetation management and fire suppression capabilities;</li> <li>operational access for fire fighting appliances to the site; and</li> <li>emergency and evacuation planning.</li> </ul>	
Port Stephens Council	<ul style="list-style-type: none"> <li>The proponent must prepare a traffic impact assessment, identifying the impacts of any increase in truck movements on the road network as a result of the proposed development and associated mitigation measures; and</li> </ul>	Chapter 12 and Appendix H

Stakeholder	Environmental requirement	EIS reference/section
	<ul style="list-style-type: none"> <li>any production cap needs to be based on maximum annual tonnage extracted, not on a number of truck movements, which was previously the case.</li> </ul>	
	The proponent must demonstrate how site rehabilitation, remnant material and surface runoff will be managed within the site after completion of the proposed development.	Chapter 22 and 23
	<p>For the life of the project, the proponent shall pay Council \$0.04 per tonne of extractive material transported from the site on a quarterly basis, in accordance with the Port Stephens Council Development Contributions Plan for the maintenance of Coxs Lane, Fullerton Cove. Each payment shall be:</p> <ul style="list-style-type: none"> <li>based on weighbridge records of the quantity of extractive material transported from the site quarterly. These records are to be provided to Council within 14 days of the end of the relevant quarter;</li> <li>paid within 21 days of receipt of the invoice received from Council; and</li> <li>adjusted in line with the Consumer Price Index calculated from the date of approval and applied annually from the first day of operation.</li> </ul>	Section 6.7.3
	The preparation of an updated terrestrial assessment by Boral is supported as it will assist in addressing potential biodiversity issues or offsets.	Chapter 9 and Appendix E
	<ul style="list-style-type: none"> <li>the preparation of a groundwater assessment is supported, however it is noted that it largely focuses on the impacts during the mining period of the proposed development. Due consideration should be given to the impacts of filling, the resultant depression with VENM and the impacts on groundwater behaviour and quality.</li> <li>the proposed development and associated excavation is located adjacent to land within the Williamstown RAAF Base Contamination Broader Management Zone. Any potential groundwater impacts must be considered as part of the development, in line with the Environment Protection Authority's recommendations.</li> </ul>	Chapter 8 and Appendix D

