



CENTRAL COST SANDS
QUARRY- REVISED STATEMENT
OF COMMITMENTS

10 ENVIRONMENTAL MANAGEMENT & STATEMENT OF COMMITMENTS

The following forms the basis for a revised statement of commitments by Hanson Construction Materials Ltd regarding mitigations and control measures for the Major Project Application proposal 08_0173.

10.1 Prior to Commencement of Extraction

All relevant licenses and approvals will be obtained. The proponent will prepare a formal Extraction Management Plan to set out the processes of mining and to deal with ongoing operational matters and conditions of consent. The extent of the approved extraction area and surrounding bunding shall be clearly and permanently marked with survey posts by a licensed surveyor. Noise attenuation berms are to be provided prior to the commencement of the operation (as identified in Section 8.7 of this Environmental Assessment). Prior to any demolition or works being undertaken on the site, an accredited asbestos consultant will be engaged to conduct a formal asbestos site audit to: determine to the precise location/extend of asbestos in accordance with *Australian Standard 4964 – 'Method For the Qualitative Identification of Asbestos in Bulk Samples'*. And, where appropriate prepare a Hazardous Substances Management Plan (HSMP).

10.2 Extraction Operations

- All nearby residents will be provided with the contact details of a site management and relevant procedures for contact in the event of complaints. Only 1 x Excavator, 1 x Loader, 1 x Haul Truck and 1 x Water Cart may operate in the proposed extension area once the 5m high earth bund is constructed.
- One dozer can operate once the proposed extension area ground level reaches a depth of 5m below the existing ground level. We note that if the dozer operates in the proposed extension area, only the water cart may operate at the same time.
- The excavation/loosening of resource will be by ripping only (i.e. no blasting). The total excavation depth of approximately 63 metres Below Ground Level (BGL) is considered to be likely to be able to be ripped based on the rock type, strength testing results, visual observations and current extraction methods within the quarry's existing extraction pit. The extraction from the quarry extension will occur down to a maximum level of 63 metres below natural ground level.

10.3 Ecology

- Sediment and erosion control processes to be put in place, in accordance with the Sediment and Erosion Control Plan (Attachment 23), to assist in prevent Lantana camara (Lantana) seed dispersal. Pre-clearing inspections will be undertaken by an ecologist in wooded areas including during the removal of hollow bearing trees. Should the removal of hollow-bearing trees be required, then appropriate tree removal guidelines and certification should be implemented using a qualified ecologist onsite. This may involve the supervision of clearing and habitat augmentation.

- Retention of hollow-bearing trees with respect to the southern access (proposed easement), where practical, to provide continued habitat for fauna species.
- Where possible, the drainage line running east-west along the southern boundary of the proposed Quarry Extension Area will be protected from direct and indirect disturbance. Where any disturbance is required to occur it is recommended that an ecologist be present during works to ensure that and potential habitat for Redcrowned Toadlet (*Pseudophryne australis*) are relocated to appropriate adjoining suitable habitat.

10.4 Aboriginal Heritage

- During the course of proposed construction work, if suspected Indigenous cultural heritage material is encountered, work will cease in that vicinity immediately and the Office of Environment & Heritage (OEH, formerly DECCW) and a representative of the local Aboriginal Community (DLALC and GTLAC) will be immediately notified. Works will only recommence when an appropriate and approved management strategy has been agreed to by relevant stakeholders.
- In the event that skeletal remains are uncovered whilst operations are underway, work is to stop in the vicinity immediately, the NSW Coroner's Office and NSW Police will be contacted. If the remains are deemed to be of Aboriginal origin, a representative of the local Aboriginal Community (DLALC, and GTLAC) and the OEH are also to be contacted

10.5 European Heritage

If, during the course of clearing work unidentified 'relics' as defined by the NSW Heritage Act 1977 are uncovered, works will cease in that vicinity immediately and an appropriately qualified and experienced archaeologist is called out to assess the find. Works must not recommence until an appropriate and approved management strategy is instigated. The Proponent must notify the Heritage Council of the discovery in accordance with Section 146 of the Heritage Act.

10.6 Visual Impacts

The following visual impact mitigation measures are recommended:

- To the maximum extent possible, existing hedge-row plantings are to be maintained along the northern, southern and eastern portions of the proposed Quarry Extension Area.
- The earth bunding established prior to extraction will be planted with suitable species to protect visual amenity (and prevent erosion). An appropriately qualified landscape consultant will select species that are suited to the locality and consistent with hedgerows planted in other nearby locations.
- As an interim measure, fencing (of appropriate height and materials) will be established along the northern property boundary (adjacent to Keighley Road) to ensure that visual amenity is maintained for nearby residences during the demolition process and the construction of required earth bunds/planting.

10.7 Acoustics/Noise

The 5 metre high earth bund will be constructed around the proposed extension area boundary (as shown in Figure 42). This bund will be a permanent fixture and will remain for the duration of

quarry operations. All residents who will be potentially impacted by the short term construction of the required bund will need be informed in writing of the nature of works to be carried out, the expected noise levels and duration, as well as contact details for the site representative responsible for the construction works.

The construction of the bund is predicted to create noise levels above 43dBA but below 75dBA at the residences identified in the NIA as A to G. According to the INP it is recommended that:

- Standard hours Monday to Friday 7am to 6pm, Saturday 8am to 1pm, and no work Sundays or public Holidays be adopted.
- Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level.
- The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

Hanson proposes to incorporate the above measures in a Construction Noise Management Plan (CNMP) for the noise bund as part of the modified Statement of Commitments. The CNMP will be drafted in consultation with the affected residences.

All mobile plant onsite be fitted with broadband 'quacker' type reversing alarms.

10.8 Air Quality

The extraction management plan will provide for appropriate dust suppression, including:

- Employing watering at a rate of 2 litres/m²/application to all internal haul roads.
- Periodic water application to other exposed areas;
- Minimising exposed area to the maximum extent possible; and
- Progressive rehabilitation / stabilisation of available areas of disturbance.

Ongoing monitoring will be undertaken for dust deposition at a minimum of three (3) locations to provide further indication of likely compliance with project air quality goals. Monitoring will be conducted in accordance with *Australian Standard 3580.10.1-2003 "Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method"*.

Stage 6 - The area identified as Stage 6 is significantly further away from receptors A to P. As such the impacts of air emissions from the quarry operations associated with the pit extraction activities would be reduced for these residences. In regards to receptors Q to T, the extraction of Stage 6 is likely to vary the outcomes of the AQIA for two reasons:

1. The processing plant will be relocated a further 200m to the west of its current location.
2. The extraction activities are only temporarily at ground level and will be by large below the current surface level.

Notwithstanding this the proponent suggests that the impacts of Stages 1 & 6 could be assessed as part of the Project's Air Quality Management Plan. The Plan would have to demonstrate compliance with the Project's Air Emissions criteria to the satisfaction of the Director General prior to Stage 6 commencing.

10.9 Energy Use and Greenhouse Gas Emissions

The project will install appropriately sized, high efficiency motors will be used on pumps & equipment. Variable speed drives (VSD's) will be provided on electric motors in order to ensure energy savings and to deal with the results of varying loads on equipment.

Timer switches will be provided for relevant electrical appliances across the site and sensor lights installed to reduce energy use. The fuel economy of vehicles will be considered when sourcing new vehicles for the operation. Idling time for vehicles shall be minimised by ensuring that vehicles are turned off during breaks in their use.

Regular servicing of vehicles will be undertaken, including maintaining optimum tyre pressures, to optimise fuel economy for vehicles. Driver training will be undertaken to ensure that vehicles are operated at maximum efficiently.

Appropriate day-to-day management of quarrying activities will ensure that double handling of materials is minimised.

Use of alternative fuels (such as biodiesel) and fuel additives will be investigated for the Major Project Application proposal.

10.10 Geotechnical

Soil Excavation - Soil overburden may be excavated without structural supports with a permanent batter slope of 1 (vertical): 2 (horizontal). Alternatively an appropriately designed retaining structure will be used.

Fill Placement – Fill is to be placed as part of the proposed site remediation. As it is understood that final uses shall not include construction of structures on the fill the following placement specifications are appropriate:

- Engineered fill will be placed in layers of a maximum of 300 mm loose thickness and compacted (as specified within the geotechnical assessment completed by Marten's Consulting Engineers and included as Attachment 20). For sandy materials, a minimum ID of 75 % should be achieved, which can be reduced to 70 % in landscaped areas. For clayey soils (e.g. including weathered sandstone), engineered fill should be compacted to 95% SMDD.
- Where final uses may include the erection of structures an engineered fill solution will be designed prior to commencement of filling operations.
- Final fill batters will not exceed 1V:2H.
- Final surface will be free-draining to prevent excessive ingress of water.
- Should groundwater ingress through rock be observed then a subsoil drainage system may be required prior to placement of fill.

- Specific geotechnical advice is to be obtained prior to the commencement of filling operations in each rehabilitation area.

Noise Bund- The proponent will submit geotechnical design by a suitably qualified geotechnical engineer of the proposed noise earth mound to the Department of Planning & Infrastructure for approval prior to commencement of construction.

Rock Excavation - Based on slope stability modelling within the geotechnical assessment (Attachment 20) excavation batter slopes should not exceed 2V:1H. Batter slopes will be cut in maximum 15 m deep increments with 5 m wide benches between each increment. Benches will be graded to ensure stormwater; seepage and groundwater drain off the bench towards the desired location. If batter slopes show signs of failure then excavations will stop immediately and a geotechnical engineer will be consulted to determine appropriate action. The excavation/loosening of resource will be by ripping only (i.e. no blasting). The total excavation depth of approximately 190m AHD is considered to be likely to be able to be ripped based on the rock type, strength testing results, visual observations and current extraction methods within the quarry's existing extraction pit.

Retaining Structures - Any retaining structures to be constructed as part of site works will be backfilled with suitable free-draining materials and include suitable drainage measures, such as a geotextile enclosed 100 mm agricultural pipe, to redirect water that may collect behind the retaining walls.

Contingency Plan - In the event that the proposal works cause an adverse impact on overall site stability or on neighbouring properties, works will cease immediately. The nature of the impact shall be documented and the reason(s) for the adverse impact investigated.

10.11 Contamination

Prior to any works occurring on the site, the recommendations of the Stage 2 Contamination Scoping Report (Attachment 19) will be implemented and the testing regime completed. All recommendations from any subsequent report and the required works will be undertaken to ensure that all potential contamination issues are appropriately managed.

10.12 Hydrogeological

Hanson proposes to prepare a groundwater management plan that includes:

- a) Installation of monitoring bores to assess any impacts on existing groundwater licence holders and high priority GDEs.
- b) Establishment of groundwater level triggers and proposed make good provisions for impacted license holders.
- c) Studies on the high priority GDEs to identify their reliance and long term monitoring of their condition.

d) A process for validating the numerical groundwater model and amending as required.

Hanson will secure sufficient water access licenses to account for any increase in groundwater take as a result of the lateral expansion of the quarry.

Hanson will commit to ongoing consultation and liaison with the NSW Office of Water to resolve issues relating to the existing groundwater and surface water take of the current operations and how best to regularise existing take under WSPs. Hanson will also provide further information about surface water harvesting on site, and the constructed storages in consultation with NOW. Hanson will endeavour to secure sufficient water access licenses to account for any net surface water take in excess of the Harvestable Right for the site.

10.13 Surface Water Hydrology

As part of the extraction management plan, the current water cycle management be formalised to provide a well-structured and effective means of treating process water prior to its discharge to downstream receiving environments.

Water Quantity Treatment – the existing rip rap at the discharge point will be maintained as to prevent erosion and scour of tributaries of Mooney Mooney Creek.

Water Quality Treatment – A sedimentation basin will be incorporated into the water management plan to allow fines (to a size of 75 µm) to settle out prior to discharge. See the formal Surface Water Hydrology Assessment and Management report (Attachment 22) for further, more specific details.

Based on the Surface Water Hydrology Assessment and Management report, and the Constructed Wetlands Manual, a sedimentation basin with a surface area of 1335m² (approximately 21.1m wide x 63.3m long) and depth of 2.0m is required to capture fines to a size of 75µm. This can be accommodated within the existing make up dam.

To enhance the removal of colloidal clays and other sub 75µm material, the construction of a macrophyte zone at the outlet of the dam is proposed. The macrophyte zone is to extend 50m from the outlet pipes as shown on the attached plans in the Surface Water Hydrology Assessment and Management report. The macrophyte zone is to be regraded to provide a water depth of approximately 500mm and have an area of approximately 2500m².

10.14 Sediment & Erosion Control

All recommendations from the completed erosion & sediment control plan to be employed, including:

Sediment Basin Maintenance- The following procedures will take place to ensure the proper operation and maintenance of the sediment basin:

- The basin will be inspected weekly and following a rain events of greater than 20mm.

- The accumulated sediment depth will be checked to ensure remaining storage capacity is adequate for storm water and sediment deposition.
- Sediment shall be removed and the basin restored to its original dimensions when the sediment has accumulated to ½ the design depth of the basin. The removed sediment shall be deposited on the site outside of concentrated flow paths, be allowed to dewater and then be used in site rehabilitation works.

Jute Matting/Vegetation Maintenance- The recommended area of Jute Matting/vegetation should be inspected monthly or following heavy rainfall. Vegetation should be replaced as required.

Contingency- If NSW EPA Environment Protection License conditions are not met with the revised Sediment & Erosion Control Plan measures then sediment and erosion control management at the site is to be reviewed and changes are to be made to ensure license conditions are met.

10.15 Waste

All wastes from the site are to be managed in accordance with the completed Waste Management Plan (Attachment 25). All hazardous wastes (including asbestos) to be handled and disposed of in the appropriate manner, in accordance with all relevant requirements.

Prior to any demolition or works being undertaken on the site, an accredited asbestos consultant will be engaged to conduct a formal asbestos site audit to:

- Determine to the precise location/extend of asbestos in accordance with Australian Standard 4964 – ‘Method For the Qualitative Identification of Asbestos in Bulk Samples’. And, where appropriate; and
- Prepare a Hazardous Substances Management Plan (HSMP).

The asbestos waste consultant will be appropriately experienced and accredited with suitable licensing from WorkCover NSW. All works will be undertaken by a suitably qualified consultant.

The following conditions would be adopted to ensure the demolition associated with the proposed development is carried out having regard to relevant legislation and does not unreasonably impact on the amenity of the locality or environment.

Demolition Conditions-Asbestos

(a) Demolition of buildings where asbestos is determined to be present should only occur 7am – 5pm Monday to Saturdays, and must not occur on Sundays or Public Holidays, to ensure that the persons carrying out the work have access to WorkCover professionals if required.

(b) All asbestos removal shall be undertaken in accordance with the occupational hygienists report submitted with the development application and in compliance with the requirements of WorkCover’s ‘Your Guide to Working with Asbestos’ and Council’s Asbestos Policy.

(c) Written notice must be provided to Gosford Council five (5) working days (excluding public holidays) prior to commencement of any works.

Written notice is to include the following details:

Date the demolition will commence

Name, address, contact details (including after hours) and licence number of the demolisher and asbestos removalist (if different)

Work must not commence prior to the nominated demolition date.

Note: it is the responsibility of the persons undertaking demolition work to obtain the relevant WorkCover licences and permits.

(d) The applicant is to notify all owners and occupiers of premises on either side, opposite and at the rear of the development site five (5) working days prior to demolition. Such notification is to be clearly written on A4 size paper stating the date the demolition will commence and is to be placed in the letterbox of every property (including every residential flat or unit, if any). The demolition must not commence prior to the date and time stated in the notification.

(e) A demolition or asbestos removal contractor licensed under the Occupational Health and Safety Regulation 2001 must undertake removal of more than 10m² of bonded asbestos (or otherwise specified by WorkCover or relevant legislation).

Removal of friable asbestos material must only be undertaken by a contractor that holds a current AS1 Friable Asbestos Removal Licence.

(f) Demolition sites that involve the removal of asbestos must display a standard commercially manufactured sign containing the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' measuring not less than 400mm x 300mm is to be erected in a prominent visible position on the site to the satisfaction of Council's officers. The sign is to be erected prior to demolition work commencing and is to remain in place until such time as all asbestos has been removed from the site to an approved waste facility. This ensures compliance with Clause 259(2)c of the Occupational Health and Safety Regulation 2001.

10.16 Social & Economic

The operator of the quarry will continue to keep neighbours informed of the proposed works, including a regular newsletter to advise of any construction works, particularly those relating to demolition of existing buildings, construction of the earth bund or other works near to the boundary of the new extraction area. Prior to any works commencing, all adjoining neighbours will be provided with the contact details of the quarry management who will act as the initial point of contact for any complaints.

Hanson will provide contact details to Council staff in the event that any complaints are made directly to Council.

10.17 Rehabilitation

The proponent is proposes incorporating the measures identified in Section 8.1.4, 8.1.5, 9 and 10 into ongoing site management plans as part of the project approval. In addition to contributing to soil structure and stabilising the battered slopes, native plants are attracting a diverse array of flora and fauna.

Selection criteria for plant species included minimal maintenance self-sustaining, locally indigenous to the area and low water requirement. The site should be rehabilitated back to an agricultural grazing final landform to enable the opportunity to use the land for agricultural investment once extraction ceases. This can be achieved via the following recommendations:

- Topsoil stockpiling is not recommended as seed bank and genetic diversity will be lost over the 35 year mining lease life;
- Topsoil used for rehabilitation of the site should be sourced from a commercial wholesaler with the intent to grow mainly native grasses and legumes;
- Topsoil preparation outlined in Section 9.1.1 of the EA, should be followed to assist in the success of the rehabilitation of plants on site;
- It is recommended that revegetation takes place via direct seeding and the spreading of vegetation mulch containing seed;
- Planting should include coloniser and soil stabilizing grass species that will establish quickly;
- Watering of seedlings should be continued as required until all plants are established;
- Seeding should take place at the beginning of summer when rain periods are more likely to take place;
- If woody vegetation is desired, then use of locally occurring species is recommended. Their placement should enhance habitat connectivity and visual impact; and
- Monitoring for a period of 5 years should be undertaken to ensure success of revegetation, stability of soils, whether weed invasion is apparent, that the landscape is retaining water and nutrients and is free draining

10.18 Lot 118

Upon the abandonment or completion of operations the Holder of ML6309 (Hanson) will:

- fill in or protect any excavation or shaft opened up or used by the Holder as the Minister may direct;
- rehabilitate or complete the rehabilitation of the Land within such time as the Minister may allow; and
- leave the Premises in a clean and tidy condition clear and free from rubbish and debris to the satisfaction of the Minister.

The Proponent will consult with Crown Lands regarding the acquisition or rehabilitation of the land.