



16<sup>th</sup> November 2021

Mr Brad James  
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By email to: [bradley.james@ipcn.nsw.gov.au](mailto:bradley.james@ipcn.nsw.gov.au)

Dear Mr James,

***Re: Kariong Sand and Soil Supplies SSD8660 - Clarification on Operations of Concrete Crusher and Material Transfer Arrangements***

Thankyou for your email dated 11<sup>th</sup> November 2021 setting out two questions that the Independent Planning Commission is seeking clarification on to assist in the assessment of the Kariong Sand and Soil Supplies development.

Please see Attachment 1 for a response to these questions, including relevant references to the environmental assessment documentation where these matters have been considered.

Should you need anything further, do not hesitate to contact me.

Yours sincerely,

**Dr Mark Jackson** B.Sc. (Hons), PhD, Grad. Cert. Mgmt., Exec. Masters Public Admin. (USYD)

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**Attachments:**

1. Kariong Sand and Soil Supplies – Clarification Response

## Attachment 1: Kariong Sand and Soil Supplies – Clarification Response

- 1. The proposed concrete crusher material transfer arrangements in the processing area (i.e. how it is handled and transferred from storage to conveyor and vice versa)**

The concrete material transfer arrangements in the Processing Area are described generally in Figure 3.3 of the updated Waste Management Plan as per the Request for Information following submission of the Response to Submissions Report (dated 03/03/21).

To clarify the concrete material handling and recycling arrangements, the following operational description is provided:

### *Waste receipt, inspection and storage:*

1. Trucks delivering separate concrete, bricks or tiles will be inspected on the weighbridge to confirm the material does not contain non-compliant material via video camera;
2. Trucks are directed to the Tip and Spread Building where loads are tipped into a dedicated three-sided bay – a roof mounted misting system is in operation to suppress dust if present;
3. Materials are spread via front-end loader to 100mm deep to inspect for contaminants, which may be removed or the load is rejected and reloaded into the truck for off-site disposal at a licensed facility;
4. Materials are then transferred into a dedicated Waste Storage Bay behind the Tip and Spread Building with a front-end loader.

### *Materials handling during concrete crushing and processing:*

1. As concrete (including bricks and tiles) will need further size reduction to manufacturer a range of aggregate and civil construction products, these materials will be processed in the Concrete Crusher Building;
2. To do this, a front-end loader will transport pre-moistened concrete (including bricks and tiles) and will place these materials into a hopper bin or chute which directs the materials onto a transfer conveyor;
3. The conveyor is enclosed and contains misters along the conveyor line to keep the materials moist as they are transferred into the Concrete Crusher Building, where the materials are deposited into the grinding mechanism of the concrete crusher – here additional misters are located on the ceiling of the Concrete Crusher Building to ensure that any dust that may be created during the crushing process is suppressed;
4. The processed aggregate then passes out of the Concrete Crusher Building into an enclosed conveyor with further misters to keep the material moist;
5. The aggregate is then discharged into one of two three-sided concrete block bunkers which are roofed and have a flexible rubber curtain at the front to store the moistened aggregate. The bays will also have an internal misting

system should it be required to keep the surface of the aggregate moist to avoid any dust being created during storage.

*Transfer of aggregate to the Aggregate Storage Bays (for testing, storage and sale)*

1. The aggregate in the three-sided concrete block bunkers will then be ‘scooped’ up via a front-end loader that will do this by pushing into the rubber curtain, which will part with the entry of the front-end loader bucket;
2. Aggregate will then be moved and deposited into three-sided concrete block storage bays at the front of the site, where it will be sampled, tested and confirmed to comply with the *Recovered Aggregate Resource Recovery Order 2014* prior to sale;
3. If required, the surface of the aggregates in the storage area will be kept moist using bay mounted sprinklers to avoid dust being generated;
4. Aggregate will be moistened further if needed prior to loading into trucks and sale to avoid dust generation;
5. Aggregate will then be scooped via the bucket of a front-end loader into the body of a truck trailer (whilst minimising drop heights and potential for dust);
6. The body of the trailer will then be tarped to fully enclose the product in the trailer. The truck will then manoeuvre through the site, over the weighbridge then will exit the site;
7. The materials handling and process controls systems designed for this aspect of the recycling operations has been designed to avoid dust generation and noise impacts in line with environmental best practice;
8. These materials handling, process controls and environmental management procedures will be documented in the Operational Environmental Management Plan.

**2. If there are any measures proposed to minimise dust and noise impacts during this transfer process**

Multiple measures are proposed to minimise dust and noise impacts during this ‘transfer process’ in the materials Processing Area. The measures proposed involve a number of site design, engineering controls and additional process controls. These measures are documented in the Air Quality Impact Assessment, the Noise and Vibration Impact Assessment and summarised in the Compilation of Mitigation Measures section of the Environmental Impact Statement (dated 05/08/20).

In summary, the following mitigation measures are proposed to minimise noise and dust in relation to handling of concrete (including brick and tiles) and its recycling in the Processing Area:

*Noise mitigation measures:*

1. Positioning of the crusher operation as far away from receivers as possible to minimise noise impacts;

2. 5m noise wall along the eastern boundary for noise suppression. Note that the wall drops to 2m towards the north-east corner of the site, though the effective noise wall height is 5m along the entire eastern boundary;
3. Crusher to be installed fully within a heavy duty building lined with 35 dB rated sound insulation for enhanced noise control;
4. Crusher to be installed behind a 3m high concrete block noise wall on the western side of the Wood Shredding Building;
5. Additional noise walls to be installed to mitigate noise travelling in a northerly direction comprising a 3m high concrete block wall as part of the landscape storage bays. Additional noise mitigation to the east is provided by the 3m high concrete block bay walls of the Waste Storage Bays;
6. Noise walls to be in place before commencement of operations (draft Consent Condition B22);
7. Front-end loaders and trucks to be fitted with non-tonal reversing alarms (squawkers) to minimise noise emissions from the Processing Area;
8. Using the newest and most innovative machinery and equipment to minimise noise;
9. The crusher will be used intermittently and is to be shut down when not in use;
10. Regular compliance checks on noise emissions from all plant and machinery;
11. Limiting operating hours for processing to 8am to 5pm Monday to Friday.

*Additional monitoring and reporting measures in relation to noise:*

1. Continuous noise monitoring to assess and monitor compliance with conditions of consent;
2. Operational Noise and Vibration Management Plan to be prepared prior to commencement of operations (draft Condition and Consent B23);
3. Scaled up of operations subject to verification that noise emissions are compliant and within predictions of the EIS (draft Conditions of Consent A7 and A8);
4. Stage 1 operations: on commencement of operations, a post commissioning noise monitoring report is to be provided to the Department of Planning, Industry and Environment (within 3 months of commencing operations) as per draft Condition of Consent B25;
5. Prior to commencing Stage 2 (increasing operations to 150,000 tpa), a noise modelling verification report is to be prepared (draft Condition of Consent B26) followed by a post commissioning noise monitoring report (draft Condition of Consent B25);
6. Prior to commencing Stage 3 (increasing operations to 200,000 tpa), a noise modelling verification report is to be prepared (draft Condition of Consent B26) followed by a post commissioning noise monitoring report (draft Condition of Consent B25).

*Dust mitigation measures:*

1. Tip and Spread Building has roof-mounted misting to suppress any dust produced when concrete is tipped into the three-sided bay for inspection;

2. Concrete that is transferred into the Waste Storage Bays is further moistened when required with bay mounted sprinklers to keep the material moist;
3. Layout of site operations has placed machinery and potential dust generating activities at maximum distance from receptors, located on the far south-west corner of the site;
4. Concrete to be pre-moistened prior to loading into the hopper (associated with the Concrete Crushing Building) to avoid dust being generated;
5. Concrete is then transferred into an enclosed conveyor with further misting to avoid dust generation in the transfer process;
6. Concrete crusher is located in a fully enclosed building to contain dust – a roof mounted misting system will further suppress dust produced in the crushing process;
7. Aggregates produced from the crushing process are discharged via enclosed conveyor with misting, which discharges the aggregate into one of two three sided and roofed concrete block storage bays (with additional misting within the bay);
8. The storage bays are provided with a rubber curtain to provide a contained environment when aggregates are discharged into the bay. Aggregates are kept moist to avoid dust being generated when these materials are transferred via front-end loader to the Aggregate Storage Bays;
9. Aggregate Storage Bays are further provided with sprinklers to keep surfaces moist to avoid dust generation;
10. Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
11. Ensure vehicles entering and leaving sites are covered / tarped to prevent escape of materials during transport;
12. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
13. Paved surfaces to be regularly swept;
14. Record all inspections of haul routes and any subsequent action in a site log book;
15. Vehicle restrictions that limit the speed of vehicles on the road (<30 km/hr);
16. Heavily trafficked areas to be paved;
17. Areas within the Processing Area to receive periodic surface watering to minimise dust;
18. Modification of activities in windy conditions;
19. Continuous air quality monitoring;
20. Misting system to be computer controlled with remote telemetry (off-site monitoring) to enable effective management of operations on a 24/7 basis.

*Additional monitoring and reporting measures in relation to dust:*

1. Continuous ambient air monitoring for the premises including total suspended particles (dust) and PM<sub>10</sub>;

2. Meteorological weather station to be installed and maintained on the premises;
3. Preparation and implementation of an Operational Air Quality Management Plan prior to operations commencing (draft Condition of Consent B8) including a Trigger Action Response Plan (TARP) for all dust generating activities on the site including: key performance indicators; monitoring methods; location, frequency and duration of monitoring; contingency measures; record keeping; complaints register; response procedures; and compliance monitoring.
4. Scale up of operations subject to verification that air emissions are compliant and within predictions of the EIS (draft Conditions of Consent A7 and A8);
5. Stage 1 operations: on commencement of operations, a post commissioning air quality monitoring report is to be provided to the Department of Planning, Industry and Environment (within 3 months of commencing operations) (draft Condition of Consent B10);
6. Prior to commencing Stage 2 (increasing operations to 150,000 tpa), an air quality modelling verification report is to be prepared (draft Condition of Consent B11) followed by a post commissioning air quality monitoring report (draft Condition of Consent B10);
7. Prior to commencing Stage 3 (increasing operations to 200,000 tpa), an air quality modelling verification report is to be prepared (draft Condition of Consent B11) followed by a post commissioning air quality monitoring report (draft Condition of Consent B10).