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James McDonough

Team Leader Energy Resource Assessment james.mcdonough@dpie.nsw.gov.au

**Dear James** 

#### Request for advice – Dalswinton Sand and Gravel Quarry – Muswellbrook LGA

I refer to your Major Projects Portal request on 22 December 2021 in which the Planning and Assessment Division (P&A) of the Department of Planning and Environment (the Department) requested Biodiversity and Conservation Division's (BCD) advice in relation to the Environmental Impact Statement (EIS) for the Dalswinton Sand and Gravel Quarry, located at 511 Dalswinton Road, Dalswinton (Lot 72 DP 1199484).

BCD has reviewed the EIS, including relevant appendices, in relation to the impacts on biodiversity and flood risk assessment.

BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Jayme Lennon, Senior Conservation Planning Officer, on 9585 6935 or via email at huntercentralcoast@environment.nsw.gov.au

Yours sincerely

STEVEN CRICK Senior Team Leader Planning Hunter Central Coast Branch Biodiversity and Conservation Division 11 February 2022

Enclosure: Attachments A and B

## **BCD's recommendations**

## **Dalswinton Sand and Gravel Quarry**

- 1. The BDAR should provide further information to justify the inconsistency of PCT 1071 with the two associated TECs. This could be achieved through addressing each of the points in the NSW Scientific Committee final determinations under Part 3, Schedule 1 of the BC Act.
- 2. The BDAR should include evidence of consultation with a species expert and a response from BCD for each species determined to be a vagrant in the IBRA subregion pursuant to 4.4.2 of the BAM 2020 Operational Manual Stage 1.
- 3. The BDAR should include evidence to support the exclusion of species due to degraded habitat.
- 4. The assessment of prescribed impacts should include information on the dependency of the threatened entities on the human-made structures, artificial habitat and waterbodies and the impacts on these entities with the proposed expansion.
- 5. The BDAR's figures should be updated to meet the minimum requirements of BAM 2020.
- 6. Tables should be updated to meet the minimum requirements of BAM 2020.
- 7. All shapefiles and field data sheets must be provided in accordance with Table 24 of the BDAR.
- 8. The inconsistent water management documents should be reviewed and the EIS updated to show consistent water management methods and dam locations.
- 9. Flood evacuation and equipment protection protocols will need to be developed for the site. These should form part of the risk management manual for the site and be updated and reviewed on a regular basis.
- 10. Stockpiles should not be located in areas impacted by high velocity or in floodways. The area of exposed disturbance should be minimised by development of a progressive rehabilitation plan.
- 11. The proponent is requested to provide Upper Hunter Shire Council with digital copies of the flood report and flood model files in accordance with agreements made.

## **BCD's detailed comments**

## **Dalswinton Sand and Gravel Quarry**

## **Biodiversity**

1. The consideration of the consistency of Plant Community Type 1071 with Threatened Ecological Communities is inadequate.

Table 4 of the Biodiversity Development Assessment Report (BDAR) discusses the Threatened Ecological Community (TEC) status of Plant Community Type (PCT) 1071 Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion. This PCT is potentially consistent with two TECs under the *Biodiversity Conservation Act 2016* (the BC Act); Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions and Sydney Freshwater Wetlands in the Sydney Basin Bioregion.

The vegetation community identified as PCT 1071 within the subject site is identified in the BDAR as inconsistent with the NSW Scientific Committee final determination of the Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions due to its elevation. BCD notes that the final determination for this TEC states that "Freshwater Wetlands on Coastal Floodplains generally occur below 20 m elevation in the NSW North Coast, Sydney Basin and South East Corner bioregions." This is not definitive however, and further evidence should be provided to justify the inconsistency.

The BDAR has not assessed the consistency of PCT 1071 with the Sydney Freshwater Wetlands in the Sydney Basin Bioregion.

#### Recommendation 1

The BDAR should provide further information to justify the inconsistency of PCT 1071 with the two associated TECs. This could be achieved through addressing each of the points in the NSW Scientific Committee final determinations under Part 3, Schedule 1 of the BC Act.

### 2. The exclusion of species determined to be vagrants should be supported by evidence.

Several species have been identified as vagrants in the Biodiversity Assessment Method Calculator (BAM-C) including trailing woodruff (*Asperula asthenes*), tall knotweed (*Persicaria elatior*), *Maundia triglochinoides* and *Zannichellia palustris*. BCD notes that for species to be determined as vagrants, the BDAR must include evidence of consultation with a species expert and a response from BCD pursuant to 4.4.2 of the BAM 2020 Operational Manual – Stage 1. This evidence has not been provided in the BDAR.

#### Recommendation 2

The BDAR should include evidence of consultation with a species expert and a response from BCD for each species determined to be a vagrant in the IBRA subregion pursuant to 4.4.2 of the *BAM 2020 Operational Manual – Stage 1*.

# 3. The exclusion of species based on habitat degradation should be supported by evidence.

BCD notes that Table 4 of the BDAR indicates that PCT 1071 is in moderate condition, however no BAM plots were completed in this PCT and it was given a Benchmark Vegetation Integrity score of 100.

Field assessments are required as evidence to support the exclusion of species credit species from survey based on degraded habitat pursuant to 5.2.3 of the BAM 2020.

### Recommendation 3

The BDAR should include evidence to support the exclusion of species due to degraded habitat.

#### 4. The assessment of prescribed impacts requires further information.

The BDAR identifies several human-made structures and artificial habitat, inclusive of sheds, concrete pipes, culverts, a large tailings dam and artificial freshwater wetland. Section 6.3.1 of the BDAR identifies the blue-billed duck (*Oxyura australis*), the green and golden bell frog (*Litoria aurea*) and the southern myotis (*Myotis macropus*) as threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts. The BDAR should provide further information on how these species use or could use human-made structures or non-native vegetation as habitat. The large tailings dam and artificial wetland should also be assessed as water bodies under Section 6.1.4 of BAM 2020.

#### Recommendation 4

The assessment of prescribed impacts should include information on the dependency of the threatened entities on the human-made structures, artificial habitat and waterbodies and the impacts on these entities with the proposed expansion.

#### 5. Maps are missing key information

Table 24 of the BAM details minimum information requirements for figures in a BDAR. Information missing from the BDAR includes:

- The Location map (Figure 3) should include:
  - Landscape features identified in BAM subsection 3.1.3
  - Native vegetation mapping in accordance with 3.1.3 (13)
- The threatened ecological communities map (Figure 8) should include:
  - Central Hunter Valley eucalypt forest and woodland (Critically Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999*)

#### Recommendation 5

The BDAR's figures should be updated to meet the minimum requirements of BAM 2020.

#### 6. Tables are missing key information

Table 24 of the BAM details minimum information requirements for tables in a BDAR. Missing information includes:

- The presence of hollow bearing trees within each vegetation zone should be included in Table 11:
  - Landscape features identified in BAM subsection 3.1.3
  - Native vegetation mapping in accordance with 3.1.3 (13)
- The Ecosystem credit species table (Table 12) should include the sensitivity to gain class for each species.

#### Recommendation 6

Tables should be updated to meet the minimum requirements of BAM 2020.

#### 7. Shapefiles and data have not been provided

Table 24 of the BAM details minimum information requirements for a BDAR. This includes shapefiles and plot field data. The shapefiles, jpeg images and field data sheets detailing the prevailing conditions, date, time and equipment used have not been provided to BCD for review.

#### Recommendation 7

All shapefiles and field data sheets must be provided in accordance with Table 24 of the BDAR.

## Flooding and flood risk

#### 8. The provided documents are inconsistent with respect to water management

The EIS Figure 13 and the Water Management Plan Appendix 0 show the northern dam to be removed and a smaller tailings dam to be built to the south. The Surface Water management plan, Appendix V prepared by Umwelt dated Nov 2020 in figure 3.3 indicates that water management will remain very similar to the existing facilities and the Northern dam will be retained as the main storage and treatment facility.

#### Recommendation 8

The inconsistent water management documents should be reviewed and the EIS updated to show consistent water management methods and dam locations.

#### 9. Evacuation of the site has not been addressed.

The flood modelling carried out by RHDV has been prepared to ARR2016 rainfall data with use of council approved models and current methodology. The modelling is considered acceptable and demonstrates no significant off-site impacts during operation or post rehabilitation of the site. It is noted that the site is affected by flooding for floods of 10-year

recurrence and larger. Very little land is available on the site above the 1% (approximately 1 in 100-year flood) level. Access to the site is also cut prior to the 1% flood level being reached.

The extent of the probable maximum flood (PMF) flood has not been provided; however it is likely that in a PMF flood, extremely hazardous conditions will be present on site. The flood study recommends that equipment and fuel be stored above the 1% flood level. Noting the flood affectation of the site, the proponent should demonstrate where equipment and fuel will be stored.

The quarry location does not have a Bureau of Meteorology flood warning system in place although warnings are provided in upstream populated areas of the Hunter River. The location of the site relative to the Goulburn river junction may mean that flooding on site can occur in the absence of official flood warnings for Muswellbrook or Denman. Triggers should be developed to determine when and where equipment will need to be relocated. Safe evacuation routes for personnel must be developed that allow for site egress prior to access routes being blocked by flood waters.

No detailed documents are included in Appendix W – Risk Management. This document should be amended to include flood risk management.

#### **Recommendation 9**

Flood evacuation and equipment protection protocols will need to be developed for the site. These should form part of the risk management manual for the site and be updated and reviewed on a regular basis.

# 10. Flooding poses a risk of excessive sediment loads to Hunter River due to increased stockpiles and land disturbance

The proposal includes a doubling of stockpiled material. The total area of disturbance and area to be disturbed at any one time are also increased. For small flood events and usual rainfall events sediment runoff from the site will be contained within the site stormwater management systems.

For events greater than the 1 in 10-year event, where flooding of the site occurs, it can be expected that sediment will be mobilised to the Hunter river. Stockpiled topsoils and seed bank material is also likely to be lost at this time. The water management plan indicates a total disturbance area of 89 Ha with both existing and new areas being worked simultaneously. Progressive rehabilitation is noted in the document however it is unclear how this can be achieved consistently with the progress of quarrying operations.

The stockpile area is partly impacted by a flood runner where velocities may be higher and more likely to mobilise sediment.

#### Recommendation 10

Stockpiles should not be located in areas impacted by high velocity or in floodways. The area of exposed disturbance should be minimised by development of a progressive rehabilitation plan.

### 11. Flood models have been upgraded

The consultant was provided access to council flood models and has carried out upgrades to these models including change from one dimensional analysis to two-dimensional analysis in the quarry area. The model report and model files should be provided to council in a form suitable for use in future flood modelling prepared on behalf of council.

## Recommendation 11

The proponent is requested to provide Upper Hunter Shire Council with digital copies of the flood report and flood model files in accordance with agreements made.