



Department of Primary Industries

OUT15/2252

Mr Colin Phillips
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NSW Department of Planning and Environment
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Dear Mr Phillips

**Teven Quarry (SSD 6422)
Response to exhibition of Environmental Impact Statement**

I refer to your email dated 8 December 2014 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment by NSW Office of Water

I refer to the referral dated 5 December 2014 seeking the NSW Office of Water's comments on the Environmental Impact Statement (EIS) for Teven Quarry. The Office of Water has reviewed the EIS and our comments are outlined below, with our recommended conditions in **Attachment A**.

Groundwater Management

Site Groundwater Assessment

A hydrogeological assessment has been undertaken in the EIS including:

- A description of the conceptual hydrogeological model detailing the local and regional hydrogeology of the area;
- An assessment to identify the potential for the existing and proposed operations to have an adverse impact on the local or regional groundwater;
- A review of any sensitive groundwater receptors at the site and in the area;
- A literature review of historical reports;
- An assessment of surrounding licensed bores.

Assessment of the pit, following reported significant rainfall events, did not show any evidence of groundwater inflows. It is documented in the EIS that intermittent seeps have been reported by workers but are suggested to be associated with surface water rather than saturated groundwater flow.

Following assessment of the area's groundwater, it is expected that the water table is below the base of the quarry floor.

Analysis of the site's water quality presented as a piper diagram suggests that the water contained within the base of the quarry is characteristic of the local surface water as opposed to groundwater.

Groundwater Impact Assessment - Overview

The proposed future extraction will widen and extend the pit but not extend below the current level. As there are currently no observed groundwater inflows, it is considered unlikely that future extraction will intersect the water table and therefore will not impact groundwater levels. As such, there will be no water level impacts on groundwater users.

The only identified groundwater dependent ecosystems (GDEs) in the area are associated with the adjacent flood plain at a location 3km away. The height of the flood plain is below the height of the final quarry floor level therefore impacts on GDEs are not expected.

Groundwater quality impacts from the site would be as a result of direct impact from pollution events as well as the potential acid formation from minerals within the quarried rock. As such, water quality monitoring is proposed in the EIS to manage pH levels prior to surface water discharge off site.

These impacts will be managed through the Environment Protection Licence administered by the NSW Environment Protection Authority (EPA).

Aquifer Interference Assessment

The proponent has provided an aquifer interference assessment for the activity as detailed below:

It is important to note that the AIP defines an aquifer as any such type of saturated geological formation irrespective of permeability or water quality. The AIP provides minimal impact considerations for aquifer interference activities. The fractured basalt in the area is quantified as a less productive groundwater source and therefore potential impacts would fall under these considerations.

Teven Quarry has been assessed as not intersecting the saturated water table and therefore it is not deemed an aquifer interference activity while this remains the case.

The Office of Water's assessment of the development concurs with these comments.

Proposed Mitigation Measures

As it has been identified that the quarry will not receive groundwater inflows, a water quality management plan has been developed specifically for surface water management, to be reviewed annually.

The EIS proposes that if groundwater interception is suspected based on observation of sustained flow, a hydrogeological investigation will be undertaken in consultation with the Office of Water. It is reported that this would be undertaken in accordance with the requirements of the AIP with respect to assessment against the minimal harm criteria. This is acceptable to the Office of Water.

Groundwater Monitoring

No groundwater monitoring is proposed which is acceptable to the Office of Water for this proposal.

As outlined above, a water quality management plan has been developed specifically for surface water management, to be reviewed annually. If groundwater intrusion is detected, a hydrogeological investigation will be undertaken and groundwater monitoring will be expected at that time.

Water Licensing

At present, the current conditions at the site do not require a groundwater licence to be held by the proponent. In the event that sustained groundwater flows are encountered at the site, a groundwater licence will be required for dewatering.

Geology

It is noted that there are discrepancies in the description of the geology for the site, where the description of the material in section 3.4.1 of the report refers to the quarried material being a meta-argillite (metamorphosed mudstone) of the Neranleigh – Fernvale Beds. The environmental assessment (Table 7.1) from which the aquifer interference impact assessment is made, as well as the hydrogeological assessment (Appendix 4) describes the site as "Teven Quarry extracts hard rock from a Tertiary basalt formation", and a "fractured rock aquifer of low hydraulic conductivity.....associated with the basalt formation".

Therefore, it should be noted that, with respect to section 7.4.2 of the EIS (Groundwater monitoring, licensing, and reporting), should a groundwater licence be required in the future, there is potential for differing licence requirements should the site be presented as a basalt or meta-argillite, being managed under the *Water Management Act 2000* (Alstonville Basalt Groundwater Source), or *Water Act 1912* respectively.

Recommendation

Based on the information presented in the EIS it appears that the proposed project will not intersect groundwater levels and therefore have negligible impact on groundwater levels, quality, GDE's and other groundwater users.

Therefore the following is recommended:

1. The Statement of Commitments should include a commitment that "a groundwater licence shall be obtained in the event that groundwater is intersected based on the assessment undertaken as part of Statement of Commitments No.13" (If groundwater interception is suspected based on observation of sustained flow, a hydrogeological investigation will be completed in consultation with the NSW Office of Water and DP&E).

Surface Water Management

The EIS outlines the project site is located in the catchment area of Maguires Creek and Emigrant Creek, with surface flows from the site draining to Maguires Creek approximately 1km to the east via a cane drain along the eastern boundary of the project area. It appears from the EIS sediment laden water is diverted to and captured in the main pit. It is understood the proponent plans to enlarge the pit dam storage volume from 17.7 ML to 23.5 ML. There is also a 115ML dam located on the site. It is important all dams located on the site are in accordance with the Harvestable Right Order published under section 54 of the *Water Management Act 2000*.

For further information please contact Christie Jackson, Water Regulation Officer (Tamworth), on (02) 6701 9652 or at christie.jackson@dpi.nsw.gov.au.

Yours sincerely



Kristian Holz

Policy, Legislation and Innovation

Attachment A

Teven Quarry (SSD 6422) NSW Office of Water Recommended Conditions of Approval

1. A groundwater licence must be obtained in the event that groundwater is intersected during the operations.
2. All dams associated with the project must be in accordance with any Harvestable Right Order published under section 54 of the Water Management Act 2000, or otherwise licensed through the Office of Water.
3. The Office of Water must be consulted in the development and finalisation of any future management plans, including the Environmental Management Plan.

ATTACHMENT A