

11 October 2019

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Lithgow City Council
180 Mort Street
Lithgow NSW 2790

Our ref: GHDDocld
Your ref:

Dear Lauren

Bell Quarry Rehabilitation Project
Additional response to submissions – DA294/18

Lithgow City Council has requested further information on a number of matters in relation to the development application for the proposed Rehabilitation of Bell Quarry, in a letter dated 06 September 2019. A number of matters were also discussed in a meeting with Lithgow City Council (Council) and Environment Protection Authority (EPA) representatives in a meeting on 03 October 2019. This letter provides additional clarifications to key issues raised in the letter and discussed at the meeting.

1 Land owner consent issues

Points 1 to 3 in Council's letter seeks clarification in relation to inconsistencies relating to the existing quarry footprint in relation to the detailed boundary survey undertaken at the site during preparation of the Environmental Impact Statement (EIS).

The boundary survey was undertaken following a site meeting with Council and National Parks and Wildlife (NPWS) representatives following discussions regarding boundary irregularities in the locality. The survey demonstrated that disturbance footprint of the previous extractive operations has extended beyond the surveyed site boundary at two locations. The edge of the main quarry void along the western boundary extends as a thin strip of approximately two metres onto Crown Land. The haul road into the site also bisects a small portion of land within the NPWS estate at the entrance to the site and a portion of the existing sediment basin is located outside the site boundary as shown in the updated plans in Attachment 1.

Rehabilitation at the site will be undertaken entirely within the existing disturbance footprint of the quarry. It will be necessary to fill marginally beyond the surveyed boundary of the site to encompass the entire disturbance area to provide effective stability and stormwater management for the final landform. Filling to the extent of the near vertical existing batters will be required to prevent pooling and uncontrolled discharge of stormwater from the site and the rehabilitation strategy is consistent with the requirement to undertake rehabilitation within a 20 metre strip of the adjoining Blue Mountains National Park within the existing consent.

Land owners consent has been provided by the Department of Industry for rehabilitation works along the western boundary of the site which extend into Crown lands with a copy of the correspondence included in the Submissions Report for the project dated June 2019.

An initial submission from OEH and NPWS was also included in the Submissions Response which indicated *“support the rehabilitation of areas of the Blue Mountains National Park that have been impacted by the quarry's operations and the restoration of a stable landform”*. Also in its correspondence the OEH stated that it intends to issue a licence under the *National Parks and Wildlife Act 1974* to enable the applicant to conduct the works, subject to a number of conditions.

A supplementary response from OEH was received on 02 October, 2019 indicating that it is not necessary for the NPWS consent to be in place prior to the determination of the project. The letter also highlighted EPA concerns regarding water quality and stated that NPWS would not provide consent for use of the sediment dam unless EPA is satisfied that water quality and risk of water pollution was considered acceptable.

Further correspondence has been undertaken with NPWS to highlight the requirement for land owners consent prior to determination of a project pursuant to clause 49 of the Environmental Planning and Assessment Regulation 2000 and the revised figure (refer Attachment 1) was provided to highlight the respective boundary issues. An email from NPWS have advised that a letter outlining land owners consent matters will be forthcoming but has not been received for the submission of this response.

The existing quarry water management system involves spills from the existing pit voids via the sediment basin to receiving waters as an unnamed tributary of the Wollongambe River. Initial liaison with NPWS indicated a preference for the sediment basin to be retained as part of the project and it is noted to provide a degree of additional buffering and polishing of water prior to release to the receiving waters. It is proposed that the existing spilling arrangements into the sediment basin will be maintained throughout the operation of the project, however the proposed water quality management system is not contingent upon the dam for treatment purposes.

A detailed water quality assessment has been undertaken as part of the EIS to demonstrate conformance with ANZECC Guidelines as discussed in Section 5 below. It is noted that the potential impacts upon water quality will be a key issue for consideration as part of determination of the project through the Joint Regional Planning Panel (JRPP). The determination of the project will be based upon the assessment included in the EIS and together with all submissions, including EPA

There are no physical rehabilitation works proposed to be undertaken within the existing sediment basin outside the eastern boundary of the site. The proposed water management system does not rely upon the use of the sediment basin to achieve the performance objectives for the project and therefore the sediment basin is not considered to be included as part of the development application for the purpose of land owners consent. Liaison with NPWS would be maintained for the purpose of monitoring the quality of water and control of ongoing discharges from the site.

2 Aboriginal Land Claims

Point No. 4 in Councils letter refers to an Aboriginal Land Claim held by NSW Aboriginal Land Council together with a Native Title Claim Application by Warrabinga Wiradjuri over the area and states that as these parties are stakeholders the applicant consults with them regarding the application.

Liaison with respective Aboriginal stakeholders for the project is ongoing. The Bathurst Local Aboriginal Land Council has provided email stating that they have discussed with the board and they have no

objection for the DA to decommission and rehabilitate the Bell Quarry. Further correspondence will be provided when received by the applicant.

3 Development staging

Point No. 5 in Council's letter sort clarification regarding the estimated time for each stage as part of the development.

The EIS described the project as involving the importation of up to 1,204,600 million cubic metres (approx. 2.2 million tonnes) of clean fill consisting of VENM and ENM (or material permitted under a specific resource recovery order and associated exemption) at a rate of up to 140,000 tonnes per year. A conceptual staging plan was developed which included six stages based upon access, dewatering requirements, environmental management and progressive rehabilitation. The estimated time period for each stage is outlined below.

Table 1 Quarry staging

Phase	Cubic Metres	Tonnes	Time period
Stage 1	88,800	162504	1 year 2 months
Stage 2	271700	497211	3 years 5 months
Stage 3	52000	95160	8 months
Stage 4	357600	654408	4 years 8 months
Stage 5	293800	537654	3 years 10 months
Stage 6	140,500	257115	1 year 10 months
<i>Total</i>	<i>1,204,400</i>	<i>2204052</i>	<i>15 years 9 months</i>

4 Planning agreement

It is noted that Council's Engineers are undertaking investigations into potential upgrade requirements for Sandham Road that may form part of a Planning Agreement for the project.

5 Water Resources

Water quality approach

Point 7 in Council's request for clarification highlighted EPA and OEH concerns regarding the potential for impact of discharges to receiving waters in the Wollongambe Catchment and the Greater Blue Mountains World Heritage Area. Specific queries were in relation to the lack of baseline environmental sampling and derivation of site specific guideline values for physico-chemical parameters and toxicants in accordance with IESC, 2019.

The ANZECC Guidelines (2000) were adopted as the basis to assess the impact of the project against defined objectives or values for the receiving waters in accordance with EPA guidance and input into the Secretary's Environmental Assessment Requirements (SEARs) and industry practice.

The core concept of the ANZECC Guidelines relates to managing water quality for environmental values. For each environmental value, the guidelines identify particular water quality characteristics or 'indicators' that are used to assess whether the condition of the water supports that value. The environmental values expressed as water quality objectives provide goals to assist in the selection of the most appropriate management options within a catchment. To ensure a conservative assessment, the strictest guideline values (GVs) for toxicants in fresh water at the 99 percent protection level, has been adopted in recognition of the high conservation value of the receiving environment. The assessment has also considered discharges from the sediment basin at the site boundary and it recognised that ANZECC Guidelines apply to ambient water quality and are not intended to be applied to stormwater discharges or mixing zones associated with a release from a sediment basin.

The SEARs for the project required an assessment of potential impacts upon the quality and quantity of surface and groundwater resources. The EPA's input into the SEARs required consideration of environmental values for the receiving waters and the associated trigger values and indicators sourced from ANZECC Guidelines as completed within the EIS.

A detailed and comprehensive water resources assessment has been undertaken in accordance with the SEARS and with inputs from a number of specialist water resource engineers and scientists. The assessment used a variety industry recognised modelling packages and modelling approaches to assess the risk associated with the proposed development. Conservative assumptions were adopted to address any uncertainties regarding input data and the assessment demonstrates general conformance with ANZECC guidelines. The approach adopted is considered to give the best representation of potential water quality impacts associated with the project and was completed in accordance with the requirements of the SEARs.

It is noted that the revised Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) were first published in August 2018 (i.e. after submission of the EIS for the Project) following scientific review of the ANZECC (2000) guidelines. The Independent Expert Scientific Committee Guidelines (2019) are applicable to coal seam gas and large coal mine developments and were also released following the preparation of the EIS, but have been referenced below in accordance with the submission.

There was no requirement to develop site-specific guideline values (SSGVs) under the SEARs and the adoption of 99% protection levels offers the highest level of protection that is not expected to differ if SSGVs were derived.

Collection of more site specific reference site data would be unlikely to change the guideline values which were adopted for the project. The methodology for deriving SSGVs is based on the collection of 24 months of reference-site data which not available at the Bell Quarry site and rarely available at the time of DA submission for any project. Data and information provided within the EIS and the Specialist Water Resources Assessment show that the DGVs for the protection of 99 percent of aquatic species have been adopted to assess the potential impacts of the project. Following the methodology

recommended by ANZG (2018) and IESC (2019) would be unlikely to change the adopted guideline values, especially considering the dilute nature of water observed at the site and the fact that the derivation of SSGVs for toxicants is not recommended by IESC (2019).

IESC (2019) provides a decision tree for physio-chemical and toxicant indicators, which has been reproduced as Figure 1 below. Following the methodology provided, the 'use default GVs' option is the most appropriate and recommended outcome for toxicants, and for physico-chemical stressors the application of DGVs is recommended until local data become available. As such, the methodology used in the EIS is appropriate for managing the risk of water pollution to the Wollangambe River catchment and World Heritage Area, and is in line with the SEARs.

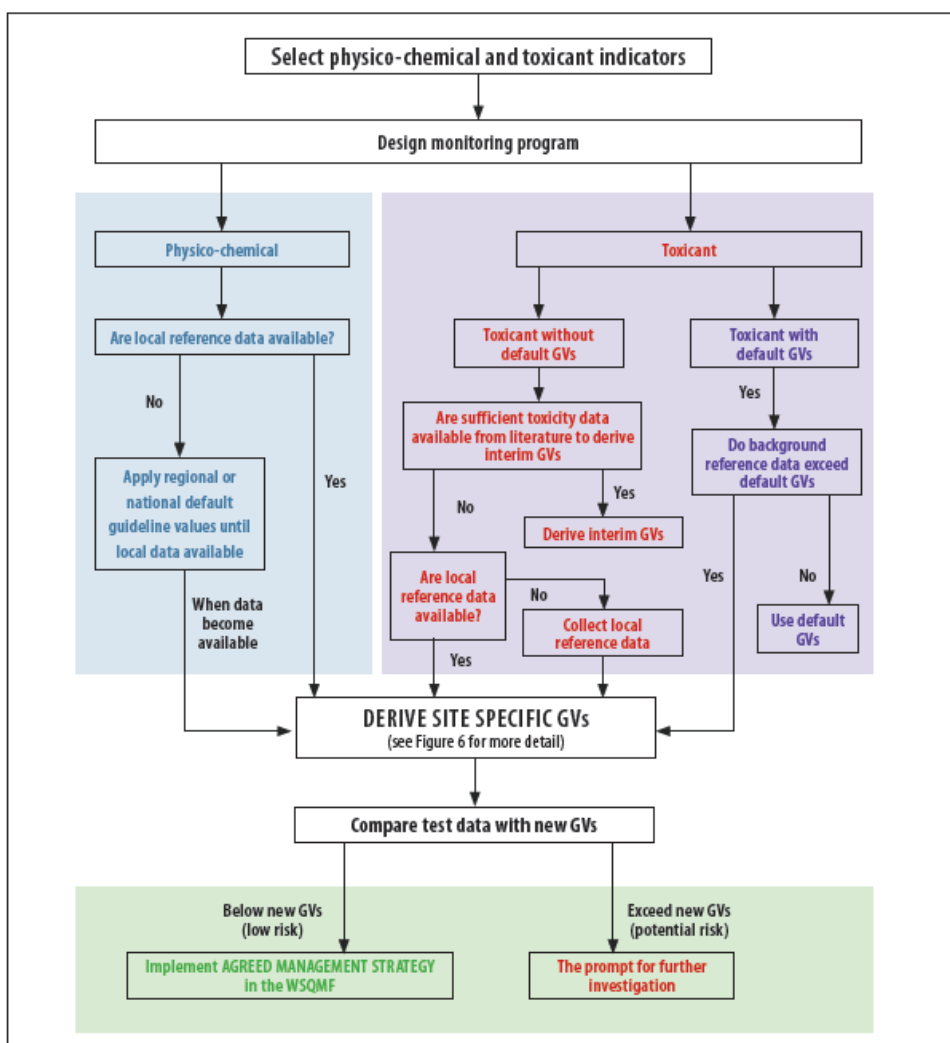


Figure 1 IESC (2019) decision tree for the derivation of SSGVs for physico-chemical stressors and toxicants

It is acknowledged that some deviation from reference condition water quality may occur in discharges from the site, due to the inherent geochemical variability of VENM and ENM, however the assessment undertaken for the EIS indicated that there would be no material adverse impact on aquatic ecosystem health. Deviations from reference conditions are occurring under the existing conditions at the site, notably for water flows and nutrient concentrations. Any potential impact of the project would be monitored, mitigated (if applicable) and appropriately reported, as detailed in the EIS.

No leachate testing of rock samples from the site was undertaken, as the water at the site is assumed to best represent the influence of local lithology on water quality. Such leachate testing would be likely to provide a further indication of the conservatism of the water quality modelling which has been undertaken, as the leachate is predicted to have higher concentrations of metals than observed in surface water at the site. The high level of conservatism of the assessment has been well documented in the EIS.

The adopted methods are considered more conservative than comparison of similarity to soils in the site vicinity on the basis that:

- The leachate prediction methods adopted (partition equation and soil/rock sampling) is likely to overestimate concentrations in the fact that it represents contact times which are unlikely to occur for much of the actual water on site
- If this was adopted for the existing soils it may provide an artificially high baseline concentration and therefore not reflective of the potential to increase concentrations in comparison to the background.
- This is not represented in the adopted method of comparison to guideline values.

Overall the assessment is considered conservative and representative of the reasonable worse case discharges from the site.

Monthly sampling of the tributary to the north of the site would commence following project approval and would allow for a Before, After, Control, Impact style assessment, and for the derivation of SSGVs for physical and chemical stressors in line with IESC (2019).

Flow

It was also discussed in the meeting with Council and EPA that the EIS relies primarily on modelling to assess flow characteristics, with little empirical data used and no flow data collected on the Wollangambe Tributary.

The water balance model developed for the project represents over 100 years of historical rainfall data compared to a project timeframe of 15 years. The modelling considers multiple water transfers throughout the site for each of the voids and models the evolution of the voids over the project life by representing each of the stages with a number of different potential climate 'realisations'. The modelling uses empirical data for selection of runoff parameters based on Boughton and Chiew, 2003. This reference provides analysis of streamflow data and translates it into usable form for implementation in the widely used Australian Water Balance Model framework. It is correct that runoff data was not collected specific for this assessment. However, the assessment was required to assess a wide range of climatic conditions that can be represented only via a long climate data series of several decades. If new data were to be collected for this assessment the length of the data series collected would be

insufficiently short to be effectively utilised to calibrate a model to a long series of rainfall data. Furthermore, a key outcome of the assessment is with relation to the predicted relative difference between existing, natural and operational stages. As the modelling assumptions are common to the different stages any implications of assumptions are significantly less for this assessment.

6 EPBC referral

Queries were raised in the meeting and subsequent email in regards to the need for a referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and consultation with the Department of Environment and Energy.

Detailed consideration of the need for a referral under the EPBC Act was undertaken as part of the EIS and Submissions Report. The EPBC Act requires approval from the Commonwealth Minister for the Environment and Resources for actions that may have a significant impact on listed matters of national environmental significance (MNES). Of relevance to the Project, these include world heritage properties and Commonwealth listed threatened species and ecological communities.

It is the responsibility of the applicant proposing to undertake an action to consider whether the Project is likely to have a significant impact on any MNES. If the applicant considers there is potential for significant impacts upon any matters protected under the EPBC Act, then a referral is required to be submitted to the Minister for the Environment.

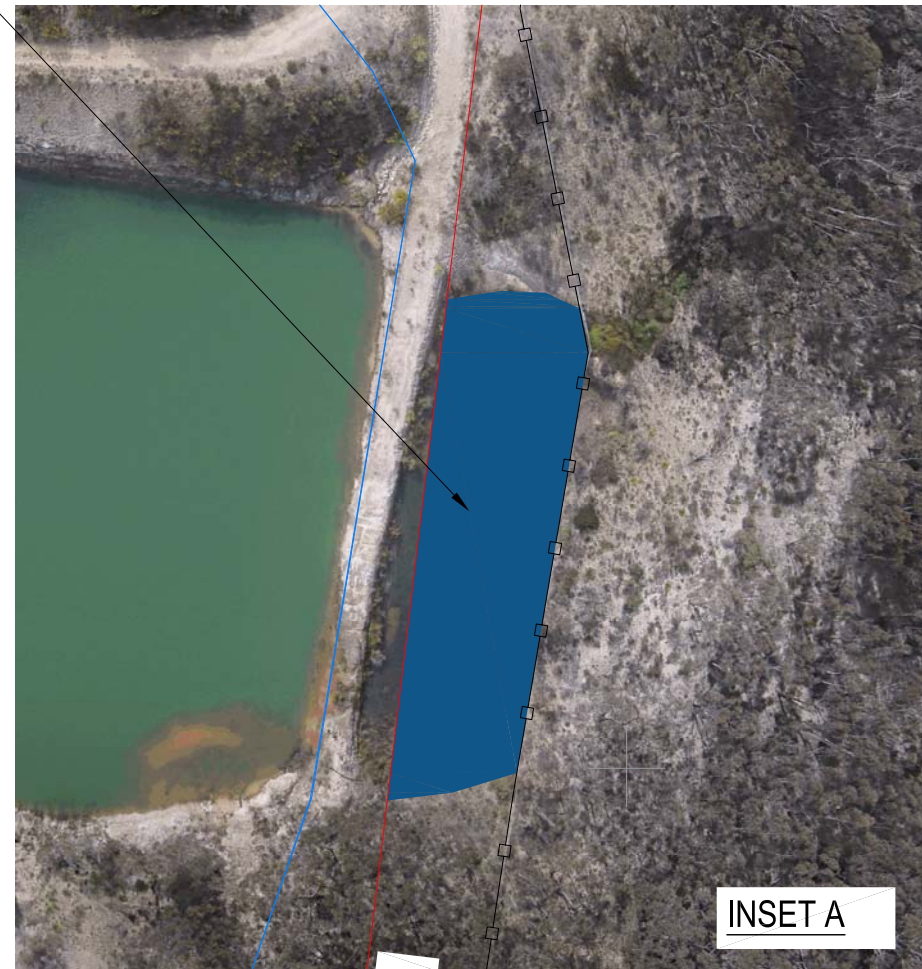
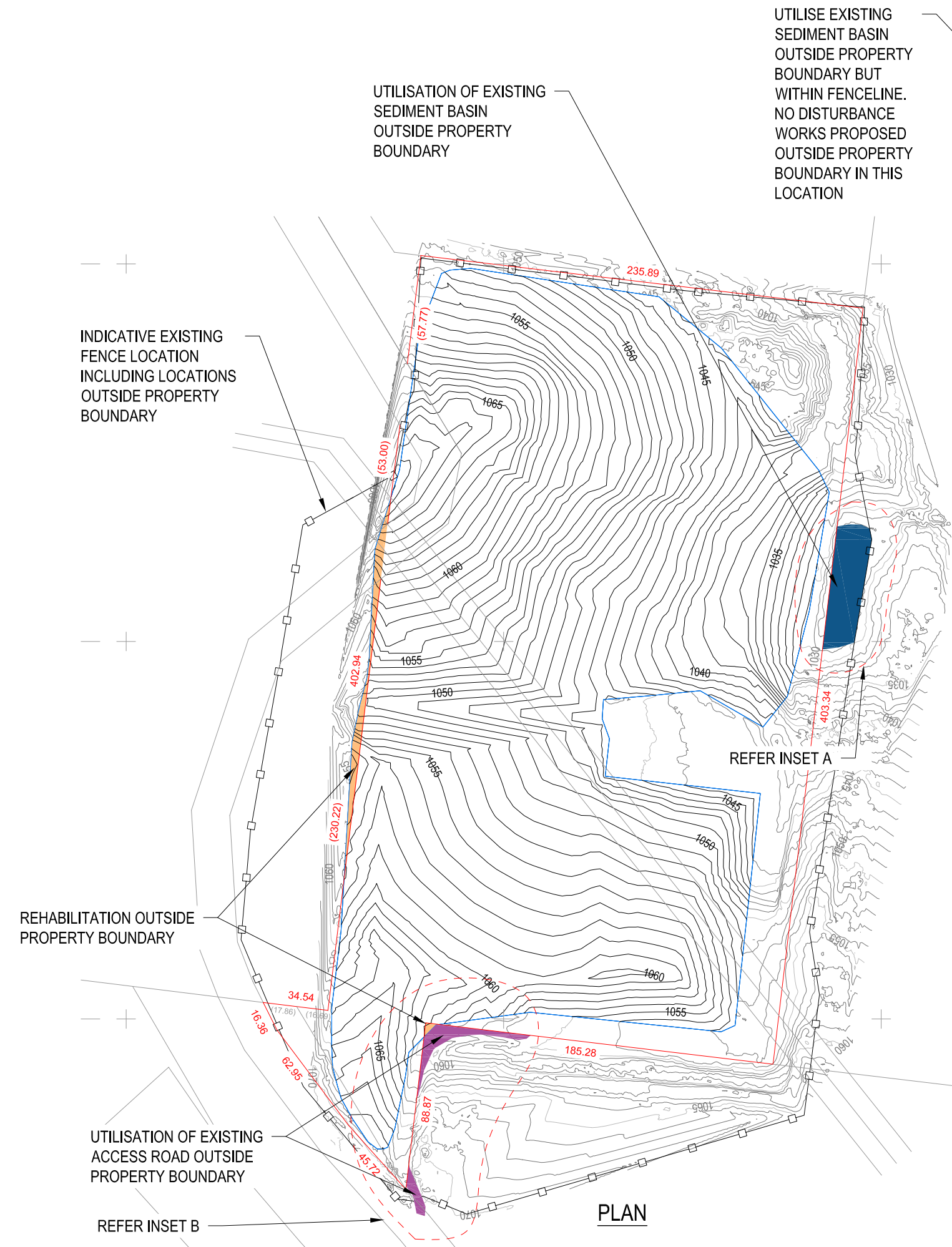
Detailed assessment was undertaken in accordance with the EPBC Act Significant Impact Guidelines and the project was determined to not have potential for a significant impact on any matters of national environmental significance. Accordingly, the requirement to refer the Project under EPBC Act not triggered.

It is also noted that Commonwealth Approval requirements are a separate process than under the EP&A Act and should not form part of the determination considerations.

Sincerely

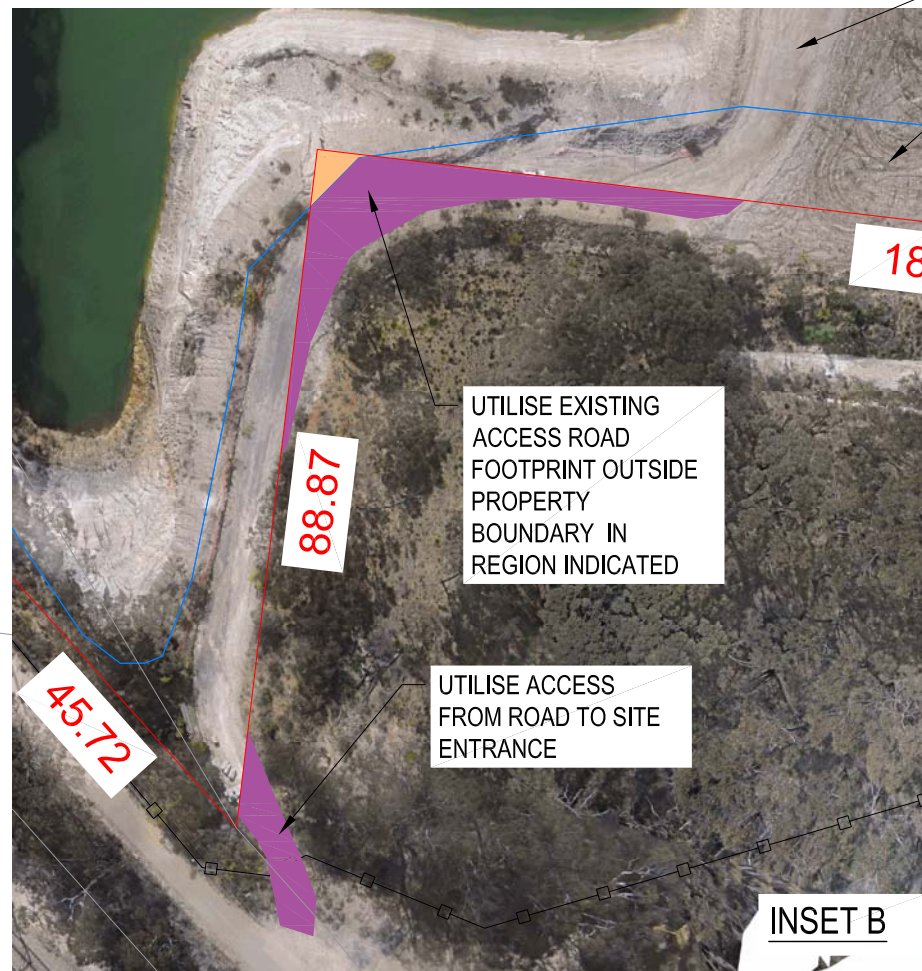
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LEGEND

- EXISTING SURFACE
- PROPOSED REHABILITATION SURFACE
- PROPOSED REHABILITATION BOUNDARY
- PROPERTY BOUNDARY
- REHABILITATION OUTSIDE PROPERTY BOUNDARY
- UTILISATION OF EXISTING ACCESS ROAD OUTSIDE PROPERTY BOUNDARY
- UTILISATION OF EXISTING SEDIMENT BASIN OUTSIDE PROPERTY BOUNDARY
- INDICATIVE EXISTING FENCE LOCATION



FURTHER EXISTING AND FUTURE ACCESS ROADS LOCATED WITHIN PROPERTY BOUNDARY

PRELIMINARY

A	INITIAL ISSUE		
rev	description	app'd	date

BELL QUARRY REHABILITATION PROJECT

PROJECT ITEMS OUTSIDE SITE BOUNDARY



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