

## APA Technical Note - Western Outer Ring Main - Environment Effects Statement

**TECHNICAL NOTE NUMBER:** TN32

**DATE:** 22 September 2021

**SUBJECT:** Specialist Area: Vibration & Land Use (Quarries) and Response to RFI # 98-99 & 109

**SUMMARY** This Technical Note provides responses to the Request for Further Information received from the Inquiry in relation to Technical Report F *Noise and vibration* and Technical Report K *Land use* of the Western Outer Ring Main (WORM) Environment Effects Statement (EES). This Technical Note also provides a response to submissions about quarry issues.

**REQUEST:**

98. Provide a map of the construction corridor with any relevant operational buffers associated with nearby quarries or identified future extraction areas.

99. Explain the extent to which the pipeline might affect nearby extractive industries and describe any mitigation measures that might be applicable.

109. Explain how the location and design of the pipeline respond to existing and proposed extractive industries and Extractive Industry Interest Areas.

**SUBMISSIONS:**

- Submission 22 requests engagement with extractive resources team from Department of Jobs, Precincts and Regions to discuss WORM protection works adjacent to future quarries in Merrifield North and Northern Quarries PSP areas.
- Submissions 8 & 26 raise a query about whether APA has undertaken an assessment of the impact of the Phillips/Barro Quarry rock blasting on the WORM pipeline.

**ATTACHMENTS:**

- Map of Quarries & Extractive Industry Interest Areas along pipeline route showing PSP boundaries

**NOTE:**

**Response to RFI # 98 Provide a map with quarries, operational buffers & identified future extraction areas**

- 1 A map has been prepared and is attached in Annexure 1 to this Technical Note. This mapping is based on VicPlan mapping and includes layers that are available in the APA Mapping Tool.
- 2 The map does not show operational buffers for the reasons set out further in this Technical Note.
- 3 It is important to note that there are three 'levels' of certainty in relation to identified extractive industries features on the map:
  - (a) Quarries that are approved and/or operational under the *Mineral Resources (Sustainable Development) Act 1990 (MRSD Act)* (shown as brown on the map in Annexure 1);
  - (b) Quarries subject to application or future application under the MRSD Act (shown as blue on the map in Annexure 1); and
  - (c) Extractive Industry Interest Areas (**EIIAs**) (shown as bright green on the map in Annexure 1).
- 4 Before land can be developed for extractive industry, in most cases the following approvals must be granted:
  - a work plan must first be statutorily endorsed under the MRSD Act;
  - a planning permit must be issued under the *Planning and Environment Act 1987 (P&E Act)*; and
  - the final work plan must be approved, and a work authority granted, under the MRSD Act.
- 5 Quarries identified in brown mean that the quarry has a work authority and an approved work plan. This also necessarily means that planning permission exists. Either a Planning Permit has also been issued, the quarry was exempt from Planning approval due to an Environmental Effects Statement having been prepared prior to obtaining the work authority, the quarry has existing use rights, or the quarry is otherwise approved by way of site specific controls.
- 6 Where a proposed quarry requires a planning permit, the work plan for the quarry must be first statutorily endorsed in accordance with the process set out in Part 6B of the MRSD Act. A key feature of the statutory endorsement process is referral of the work plan to referral authorities specified in Clause 66 of planning schemes.
- 7 Quarries identified in blue mean that documentation has been lodged with the Department to commence the process of an application for a work authority. Such applications are given an identifying work authority application number (which becomes the work authority number) as soon as first documentation is lodged. Such quarries may or may not ultimately achieve approval under the MRSD Act and the P&E Act.
- 8 The EIIAs are applied to land that has been identified as likely to contain stone resources of sufficient quantity and quality to support commercial extractive industry operations and where limited environmental and social constraints apply. As set out in Planning Practice Note [PN89](#), EIIAs do not imply that a quarry can be established 'as-of-right' in these

areas, nor do they preclude extractive industry from being established outside EIAs. Nor should EIAs be regarded as totally inclusive of all attainable stone resources in Victoria.

## Quarry Buffers

- 9 Quarry operations can generate ground and air vibration, dust and noise. To both safeguard extractive industry operations and the amenity, health, safety and environment of surrounding land, buffers (also known as a 'separation distance') are generally maintained between extractive industry operations and sensitive uses on surrounding land. Under Clause 14.03 of planning schemes, it is a state planning policy strategy to develop and maintain buffers around quarrying activities. This strategy applies to both new extractive industry and new sensitive use and development.
- 10 However, such buffers are not generally 'protected' or mapped by way of overlay. While it is a state planning policy strategy to ensure planning permit applications clearly define buffer areas appropriate to the nature of the proposed extractive uses and to ensure these buffers are owned or controlled by the proponent, many existing extractive industries commenced operation prior to this policy requirement coming into effect and the policy is not always applied.
- 11 The State Resources Overlay (**SRO**)<sup>1</sup> is a new overlay tool that has been introduced to the VPP with the intention to protect strategic resource areas. It has only been applied to three quarries to date (as part of a pilot program), none of which are in proximity to the WORM Pipeline. The SRO has been applied in the Wyndham, South Gippsland and Cardinia Planning Schemes, including a Schedule tailored to the location where it is applied. The Schedule specifies uses, developments and subdivision that will require a planning permit, along with decision guidelines to be considered by the relevant Council. Where it is applied around an existing quarry, the SRO provides a separation distance between the quarry and new sensitive uses that may be developed on adjoining land.
- 12 Under Clause 14.03 of the Victoria Planning Provisions, it is State Planning Policy strategy to determine the buffer area for a proposed quarry on the following considerations:
- Appropriate limits on effects can be met at the sensitive locations using practical and available technology.
  - Whether a change of land use in the vicinity of the extractive industry is proposed.
  - Use of land within the buffer areas is not limited by adverse effects created by the extractive activities.
  - Performance standards identified under the relevant legislation.
  - Types of activities within land zoned for public use.
- 13 More recent strategic planning has sought to apply and map quarry buffers within the Precinct Structure Plans. For example in the northern section of the pipeline in Whittlesea City Council area, the Shenstone Park PSP proposes to show multiple buffers (noise, sensitive use, airblast and dust) to the existing Barro (Woody Hill) Quarry on Donnybrook Road as well as the proposed Barro (Phillips) Quarry to the south. This PSP has been through a Panel hearing for Whittlesea Amendment C241, but is yet to be adopted by the Planning Authority (VPA).
- 14 The proposed WORM pipeline is not a 'sensitive use' in the sense relevant to consideration of quarry buffers. The sensitive uses considered in this context are accommodation, child care centre, education centre or hospital land uses. This arises under Clause 52.09-7 of the VPPs and requires that notice of a planning permit

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<sup>1</sup> See: [https://earthresources.vic.gov.au/\\_data/assets/pdf\\_file/0012/699357/SERA-Fact-Sheet-Community.pdf](https://earthresources.vic.gov.au/_data/assets/pdf_file/0012/699357/SERA-Fact-Sheet-Community.pdf)

application to use or subdivide land or construct a building for accommodation, child care centre, education centre or hospital within 500 metres of an existing or proposed work authority be given to the Secretary of the Department administering the MRSD Act (currently DJPR). The responsible authority is also required to notify extractive industry operators of planning permit applications for the types of use and development described above if proposed within 500m from a quarry.

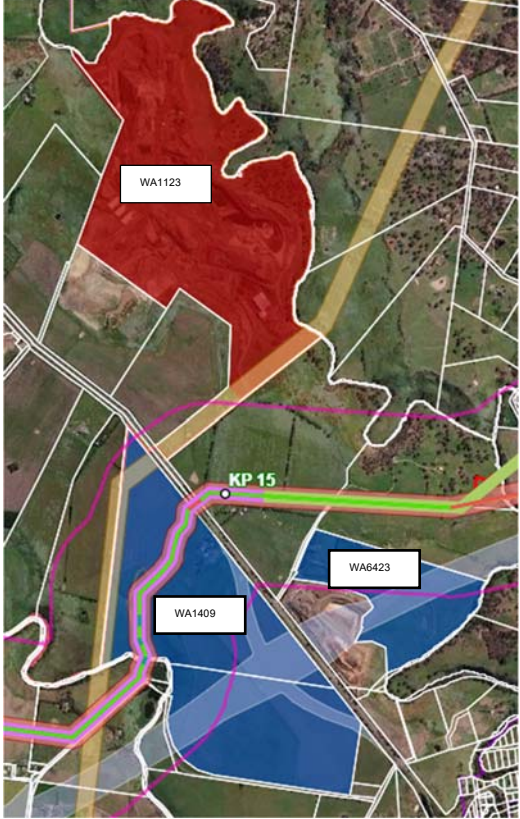
- 15 The 'sensitive use' buffers are therefore not relevant in the context of the pipeline.
- 16 There is no defined or 'normal' separation distance between a pipeline and a quarry. Pipelines regularly pass in close proximity to quarries, as at the Phillips/Barro quarry (see below) or Boral's Deer Park Quarry. The appropriate separation and/or mitigation measures to reduce ground vibration must be determined on a case-by-case basis depending on the method of extraction proposed and local conditions.



**Response to RFI# 99: Explain the extent to which the pipeline might affect nearby extractive industries and describe any mitigation measures that might be applicable**

**Extent of impact - existing quarries**

- 17 Vibration impacts from blasting at quarry sites have the potential to cause damage to the high pressure pipeline. Consideration was therefore given to the location of the pipeline with respect to existing quarries.
- 18 The pipeline design is in accordance with AS/NZS 2885.1 which requires the application of design mitigations for known or expected threats to the pipeline. The pipeline has been designed to accommodate the threats from existing quarries to the limitation of the information available from the quarries.
- 19 Distances from existing and proposed quarries are shown in the table below:

**Table 1: Existing & Proposed Quarries**

Pipeline Location (KP)	Quarries	Comment on distance and mitigation
<p>KP14- 15</p>	 <p>The map displays an aerial view of a region with a pipeline route highlighted in green and yellow, labeled 'KP 14-15'. Three quarry sites are marked with white boxes: WA1123 (a large red-shaded area in the north), WA1409 (a blue-shaded area in the south), and WA6423 (a blue-shaded area in the south-east). The pipeline route starts near WA1123, passes through WA1409, and then continues eastward through WA6423.</p>	<p>Pipeline passes through WA1409 (Whitsunday Crushers Pty Ltd) which is a proposed quarry. The site is recorded as the subject of an application under the MRSD Act, however no further information is available. It is noted that the landowner did not make a submission to the EES. It is also noted that this location is also impacted by the OMR.</p> <p>Existing Hi Quality Quarry WA1123 to the north of KP15 is greater than 500m away from the pipeline. Given the separation distance, the pipeline is not considered to be a constraint on Hi Quality quarry operations, nor is the quarry blasting expected to impact the pipeline.</p> <p>To the south of KP16 is proposed quarry WA6423 (MJ de Frutos Nominees Pty Ltd). Immediately abutting this WA area is an existing quarry footprint that does not appear to have a supporting Work Authority. In any event, this quarry pit is outside the measurement length over 526m away from the pipeline.</p>

<p><b>KP20-21</b></p>		<p>Holcim (Australia) Pty Ltd Quarry WA176</p> <p>The pipeline in this location is over 526m from the quarry.</p> <p>Given the separation distance, the pipeline is not considered to a constraint on quarry operations, nor is the quarry blasting expected to impact the pipeline.</p>
<p><b>KP35-45.5</b></p>		<p>The pipeline passes through an EIIA at this location. No applications have been lodged for proposed quarries within this area and Lockerbie, Donnybrook and Woodstock PSPs have approved urban growth in the EIIA east of the Hume Freeway and north of Shenstone Park PSP (extractive industry prohibited). VPA has informally indicated that there may be some potential for a quarry in the northern part of Merrifields North. No further information is available. It is also noted that the OMR Public Acquisition Overlay impacts this area.</p> <p>Any future quarry would need to have consideration of the pipeline and ensure blasting vibrations were limited beyond the boundary to acceptable levels.</p>

KP48-51



The pipeline passes the operational Barro Quarry WA492 and proposed extension area WA6437. At this point the pipeline is over 1.5km from the quarry and will not present any constraint to quarry operations.

South of the existing Barro Quarry is a quarry known as the former Phillips Quarry WA6852. This quarry has planning approval but no current Work Authority/Work Plan. The pipeline is less than 30m from the future quarry property boundary at this point. [see discussion at para 27 below]

Further south west of the Wollert compressor station is the operating NuBrick Pty Ltd quarry WA117. This is outside the Measurement Length and therefore over 526m from the pipeline. The pipeline will not present any constraint to existing quarry operations.

**Mitigation Measures**

- 20 If necessary, mitigation measures can be put in place at quarry sites in order to manage and reduce vibration levels from blasting activities beyond the boundary.
- 21 Vibration levels are a factor of the size of the charge and the 'site constant' value which is determined by the surrounding geology and varies with the distance to the receptor. Therefore, the size of any charge can be adapted or alternative equipment used to reduce the vibration levels beyond the boundary of the site. Setbacks from the boundary of the blasting face can also be used to reduce vibration levels beyond the site boundary.

## Submission 22

- 22 It is noted that Submitter 22 requested engagement with extractive resources team from DJPR to discuss WORM protection works adjacent to future quarries in Merrifield North and Northern Quarries PSP areas.
- 23 As noted above, there is no identified future quarry in the Merrifield North PSP area, although the northern part of Merrifield North is in an EIIA (as is much of the Donnybrook, Lockerbie and Woodstock PSP areas, in which non-extractive uses of the EIIA have already been approved).
- 24 If any future quarry is proposed in this area, then it will require planning approval and work plan approval and the quarry operator and APA would need to engage at the relevant time to prepare a Safety Management Study to determine any mitigation measures required for the two uses to coexist safely. See further below.
- 25 The Northern Quarries future quarry in close proximity to the WORM pipeline is discussed further below. This is known as the Phillips Quarry or the Phillips/Barro Quarry.

## Submission 8 & 26 - Phillips/Barro Quarry

- 26 These submissions raise a query about whether APA has undertaken an assessment of the impact of the Phillips/Barro Quarry rock blasting on the WORM pipeline.
- 27 The proposed Phillips/Barro Quarry site is within the future Northern Quarries PSP adjacent to the southern end of the WORM pipeline (KP49-KP50) where the WORM is co-located with the existing APA pipeline and easement. This quarry has an existing planning permit (Whittlesea 704901, amended 7 December 2011) which acknowledges APA's existing transmission pipeline and is an example of requiring mitigation measures to enable coexistence, at a close distance, of a quarry and pipeline by way of permit conditions. The planning permit includes condition 15 relating to vibration limits near APA's existing pipelines. It states as follows:

15. Any blasting carried out on the land must ensure that the vibration level at Gas and Fuel Corporation 300mm transmission pressure pipeline (located to the east of the subject site) does not exceed 75mm/sec.

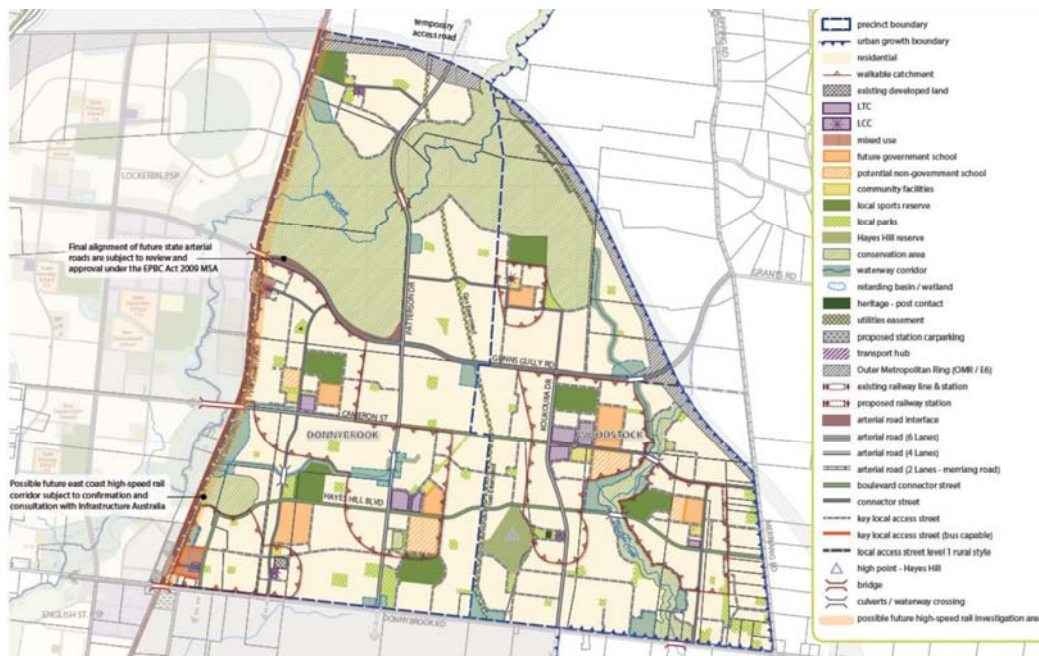
- 28 Therefore, any proposed rock blasting activities from the adjacent quarry will have vibration limits imposed by virtue of the existing pipelines that will in turn, protect the proposed WORM pipeline from any blast activities at the proposed quarry.

## RFI#109 - location and design response to existing and proposed quarries and EIIA

- 29 RFI#109 requests an explanation of how the location and design of the pipeline responds to existing and proposed extractive industries and Extractive Industry Interest Areas.
- 30 The WORM has been located and designed to the extent possible to minimise impacts to existing and reasonably foreseeable land uses, including existing and potential quarries. In part, this has included locating the pipeline within an existing easement with existing APA pipeline assets, meaning that the impact to existing land uses does not change from the existing impact from the existing pipelines. The WORM utilises the following existing APA easements:
- (a) From KP0 to ~KP9 - the Derrimut to Sunbury T62 35m wide easement; and
  - (b) From KP42.2 to KP50.9 - the VNI 35m wide easement.



- 31 As noted above, the WORM has been designed taking into account vibration from existing quarries. The specifics of existing and proposed quarries along the alignment are explained in the table above.
- 32 Between KP35 and KP37, the WORM runs along the southern edge of an EIIA in the Merrifield North PSP area, in which extractive industry is a 'section 2', permissible use. However, the existence of an EIIA and the permissibility of a quarry does not make extractive industry a reasonably foreseeable land use to which the pipeline should or can respond specifically. In the absence of a specific proposal, there is no reason to foresee such a use and in the Urban Growth Zone, and urban development remains the most likely future use. In any case, the WORM cannot respond without any details.
- 33 In the EIIA areas along the alignment that have been approved for urban growth, a quarry is an unlikely land use given that extractive industry is prohibited in the residential zones that apply within most of the relevant PSPs. The future urban structure plan for Donnybrook-Woodstock PSP, extracted below (see also the APA Mapping Tool), shows that the pipeline passes through areas designated for residential and conservation area, both of which have an applied zone of 'General Residential Zone'.



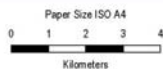
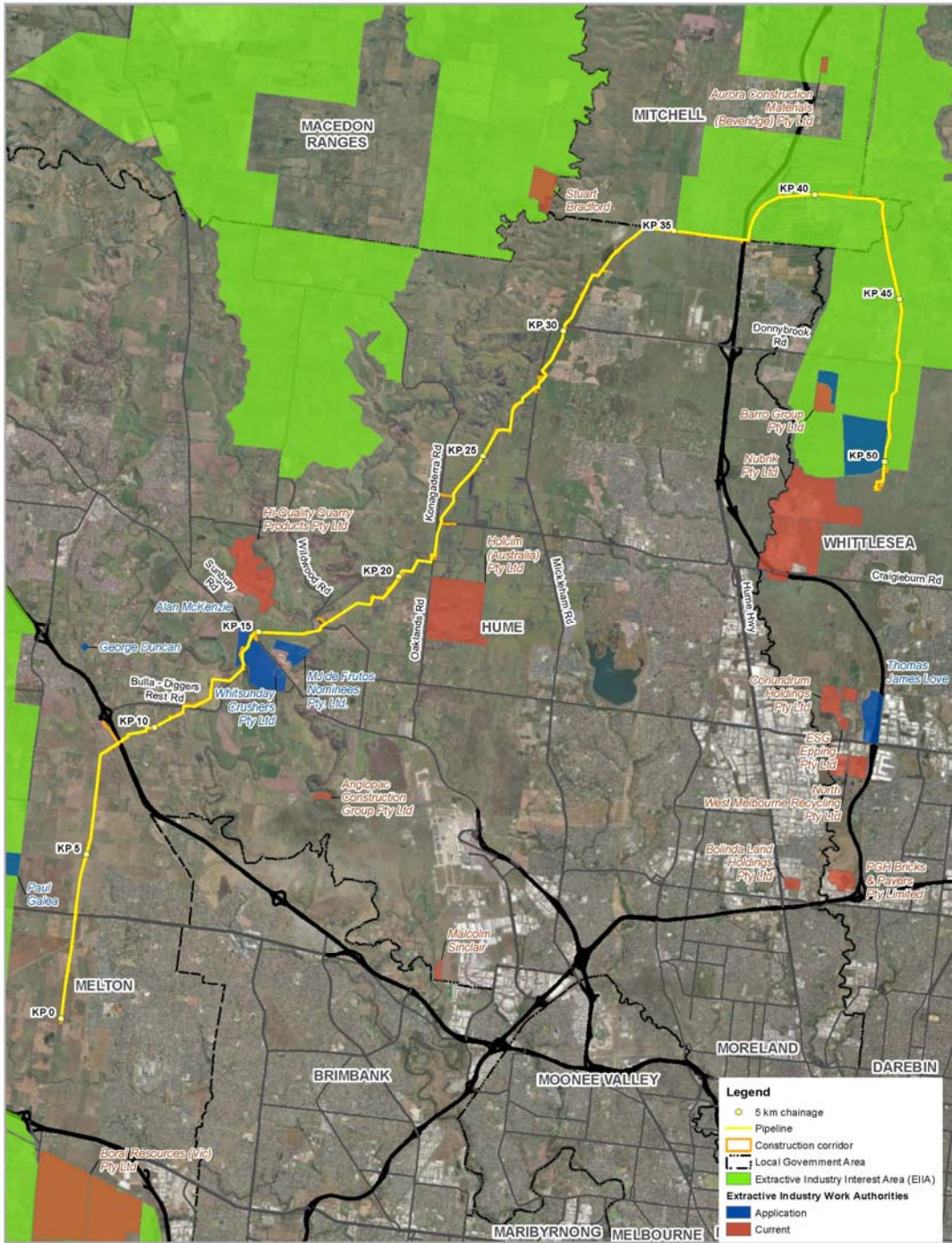
- 34 If any new quarries are proposed after the pipeline has been constructed, a work authority and planning permit would be required.
- 35 One of the central requirements of any work plan is the identification, assessment and minimisation of risks that the quarrying may pose to infrastructure in the vicinity of the quarry (*Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2019*). Pipelines must therefore be identified and considered through this process.
- 36 APA would expect that Earth Resources would engage with DELWP Pipelines where there is an existing easement and pipeline in close proximity to a proposed new quarry. Although, APA is aware that there is no statutory process for third parties to be given notice of Work Authority and Work Plan applications. At the relevant time, depending on the distance between the quarry and the pipeline and the quarrying methods proposed to be used, a site specific Safety Management Study may be required to determine the potential impacts to the pipeline and any mitigation measures that should be applied to protect the pipeline from vibrations from blasting. If necessary, limits would then be imposed on the quarry by way of planning permit conditions limiting the vibration level at the boundary to a certain level to ensure the pipeline is protected.

37 In summary:

- (a) The proposed alignment has a limited interface with an EIIA in an area that is not currently proposed to be quarried. Any impacts of the WORM on the EIIA are speculative and, in any case, unlikely to be significant.
- (b) The analysis in this Technical Note demonstrates that all existing quarries and specifically proposed quarries along the pipeline route will readily coexist.
- (c) Any other potential future quarries are at such a preliminary stage that they cannot reasonably be specifically accounted for.
- (d) A requirement for a future quarry to respond to the pipeline would not be unreasonable in a context where the quarry will be the 'agent of change'.
- (e) As the Phillips/Barro quarry example shows, there is no reason to expect that the potential of future quarries – whether currently anticipated or not - will be materially compromised by the existence of the pipeline. Adjustments to limits of extraction and to blasting practice may be required (although this is speculation without a specific quarry being proposed).
- (f) There is no reason to expect the pipeline to 'sterilise' extractive resources.

# Annexure 1

## Map of nearby quarries and WORM construction footprint



APA VTS (Operations) Pty Ltd  
Western Outer Ring Main Gas Project

Project No. 31-12529997  
Revision No. A  
Date 07/09/2021

**Extractive Industry Work Authorities**

**FIGURE 01**

lightwell@EMA/MelbourneProject/011052020/010/MapPublishing/Confaminations\_EE0102007\_001\_Editable/indatares\_ALP\_Feeds\_Raw.mxd Data source: Source: Esri, Microsoft, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by lightwell on 07 Sep 2021 - 17:03.  
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