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

TECHNICAL NOTE NUMBER: TN03

DATE: 13 September 2021

SUBJECT: Specialist Area: Air
An update for the purposes of the *Environment Protection Act 2017 (Vic)* and a response to RFI 93.

SUMMARY

This Technical Note outlines the implications of the *Environment Protection Act 2017 (Vic)* (as amended by the E*nvironment Protection Amendment Act 2018*) which came into effect on 1 July 2021, specific to Technical Report G *Air Quality* of the Western Outer Ring Main (**WORM**) Environment Effects Statement (**EES**). This Technical Note also addresses an RFI related to the implications of the *Environment Protection Act 2017*.

REQUEST

93. Advise whether and how Table 19-4 (Air Quality) in the EMF will be updated as recommended by EPA (Submission 9) to:

- Apply the EP Act 2017, the EP Regulations 2021 and the ERS.
- Reflect the EPA Publication 1961 Framework for air quality management and monitoring for construction and operation.
- Amend the indicators and monitoring criteria proposed in the operations emission monitoring section to reflect the stack emission rates.
- Amend AQ1 to refer to a maximum 20 km/hr speed limit in proximity to sensitive receptors.

ATTACHMENTS: Changes to EMM AQ1 & AQ2

NOTE:

Background

1 EES Technical Report G *Air Quality* and Chapter 11 of the WORM EES foreshadowed that the *Environment Protection Act 2017 (Vic)* (**new Act**) would come into effect on 1 July 2021 and that this would introduce the new General Environmental Duty (**GED**).

2 This note outlines the key implications of the new Act and relevant regulations, guidelines or standards that will be relevant to the assessment of the environmental effects of the WORM Project during construction and/or operation.

3 This note also sets out changes recommended to the exhibited version of the Environmental Management Measures (**EMMs**) to account for the new Act, regulations, guidelines or standards. This Technical Note also addresses RFI 93 which is related to the implications of the new Act.

Implications of new GED

4 The new Act contains a GED that will be applicable to APA and all contractors carrying out the construction and operation of the WORM Project.

5 The GED (as defined in Section 25 of the new Act) requires a person or entity to:

- Identify risks and hazards that may impact the environment or human health that arise from its operations; and
- Eliminate or minimise those risks as far as reasonably practicable

6 The Environmental Management Framework and Construction Environment Management Plan (**CEMP**) developed as part of the EES and Pipeline Licence Application responds to the identified risks to the environment and human health that arise from the WORM construction and operation, responding to the first aspect, as identified above in paragraph 5, of the GED. The risk assessment conducted for the EES Technical Report G *Air Quality* of the WORM EES considered the risks and hazards associated with construction and operation of the project. This included the highest risk areas of construction dust and subsequent effects on the environment – inclusive of amenity, human health and ecology/ecosystems. Therefore, it is considered that the assessment prepared for the EES in relation to air quality does not need updating.

7 The EMMs relevant to air quality as identified in EES Technical Report G *Air Quality* have been developed to manage the identified risks to human health and the environment. In this Technical Note, consideration has been given to whether the EMMs require updating to comply with the GED and that the EMMs either eliminate or minimise the risks as far as reasonably practicable.

Relevant provisions of the new Act and Regulations

8 Relevant provisions in the new Act and Regulations relating to Air Quality include:

- Section 25 (1) of the *Environment Protection Act 2017* (GED) which places a risk-based duty on a person to manage their activities to minimise the risk of harm to human health or the environment from pollution so far as reasonably practicable[1]; and
- Part 5.2 (Air) of the *Environment Protection Regulations 2021*

Relevant Standards and Guidelines

9 EES Technical Report G *Air Quality* and Chapter 11 refer to some EPA documents that have been replaced by new guidance material.

10 Prior to the commencement of the *Environment Protection Act 2017*, the following air quality standards and guidance material applied:

- State environment protection policy (Air Quality Management) (**SEPP AQM**);
- Protocol for Environmental Management: Mining and Extractive Industries (as an incorporated document of the State environment protection policy (Air Quality Management); and
- State Environment Protection Policy (Ambient Air Quality) (**SEPP AAQ**)

11 Upon commencement of the *Environment Protection Act 2017*, the above air quality guidance materials were replaced with the following:

- Part 5.2 (Air) of the *Environment Protection Regulations 2021*;

- Part 2 (Ambient Air) of the *Environment Reference Standard*, gazetted on 26 May 2021 (**ERS**);
- the relevant EPA Guidelines are detailed below; and
- the GED

12 The ERS sets out the environmental values of the ambient air (amongst others) that are sought to be achieved or maintained in Victoria, with standards to support those values. Indicators and objectives provide a basis for assessment and reporting on environmental conditions in Victoria and provide a basis for assessing actual and potential risks to environmental values. The ERS is not a compliance standard, however the EPA is to take into consideration the environmental values when deciding licences (including exemptions) and specified prescribed permits. The indicators and objectives of the ERS (see Table 2.2) have the same meaning and intent as Schedule 2 in the SEPP AAQ.

13 As at the date of this Technical Note, the EPA is in the process of considering feedback on its draft *Guideline for assessing and minimising air pollution in Victoria*, EPA publication 1961 (**Air Quality Guideline**)[2]. The purpose of the Air Quality Guideline is to replace the design criteria in the SEPP AQM. This would be undertaken via the draft Air Guidelines' air quality assessment criteria (**AQACs**), which are risk-based air quality assessment criteria to be defined in the final version of Publication 1961. As stated in the executive summary:

> "*The Guideline for assessing and minimising air pollution provides a framework to assess and control risks associated with air pollution. It is a technical guideline for air quality practitioners and specialists with a role managing pollution discharges to air*."

14 The EPA has indicated that the final Air Quality Guideline is due to be published in late-2021.

15 The draft Air Quality Guideline also refers to further guidance in relation to air quality monitoring (*Ambient air quality monitoring*, EPA publication 1955). The EPA has indicated that this further guidance is due to be published in September 2021. The GED requires that the most up-to-date industry knowledge is applied – this is consistent with "in accordance with applicable EPA guidance".

16 In relation to dust management at construction sites, the *Civil construction, building and demolition guide*, 2020 (EPA publication 1834) has been further updated with the EPA Publication 1820.1, *Construction – Guide to preventing harm to people and the environment* of June 2021. Publication 1834 of November 2020 replaces publications 480 released February 1996, 960 released September 2004, 981 released May 2005, Section 2 of 1254 released October 2008 and 1264 released November 2008. Publication 1820.1 further advances 'industry knowledge' in relation to construction projects.

17 The EPA is a referral authority with an increased role in mining referrals from other government agencies such as Earth Resources Regulation, the primary regulator for mining and quarrying operations. The stated purpose of Mining and quarrying – Guide to preventing harm to people and the environment (publication number 1823.1, June 2021), is how to manage risks and legal obligations including the GED for mining and quarrying. Air contaminants and dusts are identified hazards (amongst others) in the guide with similarities to the content of the Protocol for Environmental Management: Mining and Extractive Industries (EPA Publication 1191). Guideline 1823.1 does reference publication 1191 for information on controls for air contaminant hazards (inclusive of reactive management strategies.

Currency of Technical Report and Chapter

[1] The GED replaces the clean air framework that existed under Part 6 of the *Environment Protection Act 1970*.
[2] https://engage.vic.gov.au/new-environmental-laws/guideline-assessing-and-minimising-air-pollution-victoria

18 The replacement of the State Environment Protection Policies (Air Quality Management) and (Ambient Air Quality) with new guidance material was foreshadowed in the EES. For example, at section 4.3 of the Technical Report (page 12):

> "*It is noted the Environmental Reference Standard to be implemented on 1 July 2021 and which will supercede the SEPPs, will have largely the same objectives and same criteria as the current SEPP AAQ.*"

19 Having considered the new provisions referenced at paragraph 8 and the new guidance materials referenced at paragraphs 11 to 17, the construction dust assessment and recommendations are unchanged (as the qualitative methods used in screening modelling fulfills the GED requirements around a risk assessment approach) and the operational ERS impact of NO_2 is yet to be updated to the new NEPM (AAQ) hourly and daily criteria.

Notably, the new standards and guidance material alters the following:

- Air quality risk assessment - the consequence guide references SEPP AQM exceedances, whereas the new regime imposes a risk-management approach using the AQACs. The qualitative ratings of the consequences do not change.
- The SEPP AQM that formed part of the assessment listed the NO_2 1 hour objective of 100 ppb (190 µg/m^3). The AQAC's, currently in draft form until end of 2021, list NO_2 as a criteria pollutant which are defined in the ERS. The Victoria Government Gazette No. S 245 Wednesday 26 May 2021[3] is the current ERS and has the NO_2 1-hour objective of 0.12 ppm (120 ppb), i.e. a slight relaxation in criteria for NO_2 since the assessment was undertaken. The modelling of NO_2 found areas on site that do not meet the criteria. A health-based risk assessment is then required – in this case only industrial workers are exposed. The area involved will shrink to cover a lesser area onsite making the original assessment conservative.
- The National Environment Protection (Ambient Air Quality) Measure (**NEPM (AAQ)**)[4] was updated while the May 2021 ERS were being developed. The hourly NO_2 criterion has changed from 120 ppb (250 µg/m^3) to 80 ppb (157 µg/m^3) in NEPM (AAQ) while the higher values remain (as assessed), for the time being, in the ERS[5]. It is not known when the ERS 1-hourly NO_2 criteria will eventually be updated to reflect the NEPM 1-hourly NO_2 criteria. The use of the current ERS as gazetted on 26 May 2021 is appropriate, as the current State guidance and noting it is a slight relaxation of what was assessed.
- Construction air quality impacts - Part 2 (Ambient Air) of the ERS has now commenced with the particulate matter criteria unchanged; and
- Operational air quality impacts - the draft Air Quality Guidelines' AQACs are set to replace the SEPP AQM design criteria where AQACs, risk-based air quality assessment criteria to be defined in the final version of Publication 1961, act in the same way as design criteria from SEPP AQM . Consequently, EMM AQ2 has been amended to refer to the (currently draft) Air Quality Guidelines.

20 The change in law and policy does alter any conclusions in the technical report.

Response to RFI 93 - Changes to EMMs as recommended by EPA (Submission 9)

21 RFI 93 asks whether and how Table 19-4 (Air Quality) in the EMF will be updated as recommended by EPA (Submission 9) to:

[3] Environment Protection Act 2017, Environment Reference Standard. GG2021S245.pdf (gazette.vic.gov.au)
[4] National Environment Protection (Ambient Air Quality) Measure Variation Instrument 2021. 15 April 2021. https://www.legislation.gov.au/Details/F2021L00585.
[5] For criteria pollutants, the relevant objectives specified in the ERS should always be adopted as AQACs. Should the ERS be updated at any point in time (for example to implement a variation to the NEPM AAQ), then this updated ERS objective will apply as the AQAC objective.

- Apply the EP Act 2017, the EP Regulations 2021 and the ERS.
- Reflect the EPA Publication 1961 Framework for air quality management and monitoring for construction and operation
- Amend the indicators and monitoring criteria proposed in the operations emission monitoring section to reflect the stack emission rates
- Amend AQ1 to refer to a maximum 20 km/hr speed limit in proximity to sensitive receptors

22 The following EMMs relating to Air Quality require amendment to reference the latest EPA guidance documents or to update to meet the GED:

- AQ1 - Construction dust monitoring; and
- AQ2 - Air quality associated with operation of compressor station

23 EMM AQ1 has been amended to provide that construction air monitoring must be conducted "consistent with relevant EPA Victoria guidance" such as *Ambient air quality monitoring*, EPA publication 1955 once it is published later in 2021.

Apply the EP Act 2017, the EP Regulations 2021 and the ERS (Submission 9)

24 Table 19-4 (Air Quality) in the EMF has been updated as recommended by EPA to apply the EP Act 2017, the EP Regulations 2021 and the ERS as described in paragraph 22, 23 and 25. The attached mark-up shows the relevant changes proposed to EMMs to include the updated requirements of the new Act and Regulations and to reference the new Guidelines and Standards.

Reflecting EPA Publication 1961 Framework for air quality management and monitoring for construction and operation

25 EMM AQ2 has been amended to replace references to SEPP AQM with the draft Air Quality Guideline (*Guideline for assessing and minimising air pollution in Victoria*, EPA publication 1961).

26 Attached is a mark-up of the relevant EMMs showing the changes needed to include the updated requirements of the new Act and Regulations and to reference the new Guidelines and Standards.

27 Consideration has also been given to whether the EMMs reduce the risk of harm to human health and the environment to the extent reasonably practicable and therefore meet the GED. Further risk reduction is not required, as the assessment of risks was undertaken in accordance with the GED (which was foreshadowed to be implemented). Amendments to the EMMs refer to the latest Act, subordinate Regulations and ERS and supporting Guidance (refer paragraph 22).

Amend the indicators and monitoring criteria proposed in the operations emission monitoring section to reflect the stack emission rates (Submission 9)

28 Annual stack testing monitoring (as required by EMM AQ2) is only conducted as an audit undertaken by APA to meet their GED obligations and confirm that the facility is operating within acceptable parameters. While the stack emission rate does determine the ground level concentrations (GLC), the GLCs are highly variable depending on dispersion characteristics. Ground level concentrations determined by modelling are linked to the ground level design criteria (now AQACs), assuming a maximum emission rate. Based on this, there is no need to amend EMM AQ2.

29 It is noted that AQ2 is not included in the CEMP. This is because it relates to the operational phase of the Project, rather than construction and is covered in the OEMP.

Amending AQ1 to refer to a maximum 20 km/hr speed limit in proximity to sensitive receptors

30 In relation to the EPA's recommended speed limit reduction within the construction area, it is not proposed to adopt EPA's recommendation. It is considered that a 30km/hr speed limit is appropriate for the following reasons:

(a) The speed limit within the construction area has already been reduced from 40km/hr to 30km/hr as a result of discussions with the EPA during the TRG process.

(b) Every reduction in speed limit increases the time spent undertaking construction, and the duration of construction impacts (including noise, dust and access), Speed limits should only be reduced if benefits flow from the reduction.

(c) Reducing the vehicle speed limit within the construction area further to 20km/hr is not considered to be reasonably practicable. This is because most of the vehicle movements involve heavy vehicles where speed is not the dominant emission factor variable. There would therefore be negligible benefits from the reduction.

(d) Moreover, the reactive real-time monitoring used when sensitive receptors (SRs) are close (high risk) is highly effective measure, meaning that the blanket speed reduction would have negligible benefits.

(e) If it is raining, or has rained, or the wind is blowing dust away from SR's, a reduced speed limit does nothing to control dust impacting on the environmental values.

(f) However, if vehicles are causing excessive dust at nearby SR's, the practical solution of the real-time monitoring triggers an alarm and all dust sources are targeted for reduction. This will involve vehicles reducing speed, or indeed completely stopping (speed = 0 km/hr) until the dust has settled/cleared (including weather conditions changing).

(g) Implementing the control measures as outlined at AQ1 will appropriately manage construction dust impacts to sensitive receptors.

Annexure 1

Changes to Air Quality EMMs

AIR QUALITY MANAGEMENT		
Ref.	**Environmental controls**	**Project phase**
AQ1	**Construction dust management** Implement management and control measures during construction activities to minimise dust including: ▪ Water carts to be used on unsealed work areas as required ▪ Crushed rock to be placed on existing permanent unsealed access tracks where agreed with relevant stakeholders – especially in areas where housing abuts, or may abut by the time construction occurs, the construction corridor ▪ Water spray units to be used, where required, on soil stockpiles and during the loading and unloading of dust generating materials, ie Soil/sand/fill and aggregates ▪ Vehicle loads to be covered when carrying dust (or litter) generating material ▪ Vehicle speed within the construction area must be restricted to 30 km/hr ▪ Dust suppression activities must consider weather patterns, ground cover, ground conditions eg type and moisture content of soil ▪ present, and type of activities being conducted as well as proximity to sensitive receptor locations ▪ Undertake a sufficient level of compaction on stockpile surfaces to minimise dust. If all available methods of dust stabilisation fail to suppress dust and dust emissions are evident beyond the site boundary at identified sensitive receptor locations (as identified by real-time reactive monitoring, as required), the contractor must temporarily modify or suspend dust generating activities until conditions subside. Additional controls must be implemented if dust is observed to be causing a hazard (such as a wind barrier where directly impacted residences are located immediately adjacent to the construction corridor). If dust levels cannot be contained works must be modified or stopped until dust hazard is reduced to a manageable level, such that it can be controlled using the standard measures. **Construction dust monitoring** Reactive dust monitoring instruments must be used during construction where isolated rural residences or rows of housing that abut the construction corridor are within the impact 'footprint' distances identified in Table 23 of Technical Report G Air Quality. Instruments must be consistent with relevant EPA Victoria guidance relating to reasonably practicable measures~~those detailed in the Protocol for Environmental Management: Mining and Extractive Industries~~ and be capable of sending a SMS text message to the contractor. These instruments must be deployed for each work day subject to where the daily work front is in relation to the specific areas where sensitive receptors are located.	**Construction**

AQ2	**Air quality associated with operation of compressor station** Emissions of products of combustion (engines burning natural gas) during operation of the compressor station from the stacks must be managed in ~~compliance~~ accordance with ~~SEPP (Air Quality Management)~~the *Guideline for assessing and minimising air pollution in Victoria*, EPA publication 1961. Key design and operation mitigation measures must include: ▪ Compressor on a concrete area and surrounded by crushed rock hardstand; ▪ Above ground oily water separator with triple interceptor and underground overflow pit with level sensors, serviced annually; ▪ Residents notified prior to weed spraying (annual); ▪ Annual stack test monitoring and servicing of compressors; ▪ Proposed compressor discharge point to be installed to ~~achieve the SEPP AQM requirements~~minimise emissions so far as reasonably practicable.	**Design/Operation**