



DOC19/264848

Ms Deana Burn
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Email: deana.burn@planning.nsw.gov.au

1 April 2019

Dear Ms Burns

By Electronic Mail

Viva Energy Clyde Western Area Remediation Project (SSD 9302) – Comments on Benchmark study

The Environment Protection Authority (“EPA”) is writing to you in reply to your email dated 8 March 2019 in relation to the Department of Planning and Environment (“DPE”) public exhibition of the Environmental Impact Statement (“EIS”) for the proposed Viva Energy Clyde Western Area Remediation Project.

The EPA’s review of the EIS included the Technical Report: “Air Quality and Odour” (AECOM, 4 December 2018) which did not adequately predict impacts utilising dispersion modelling for remediation projects involving material handling in the open.

On 21 February 2019 the EPA requested the proponent to provide an Air Quality Mitigation Benchmark Study.

On 6 March 2019 the EPA provided DPE with a response with overall comments on the EIS, noting the additional benchmarking study as requested by the EPA was yet to be provided.

On 8 March 2019 the EPA was provided with a Benchmarking Study for the Viva Energy Clyde Western Area Remediation Project Air Quality Impact Assessment (“AQIA”).

The aim of the assessment is to benchmark the proposed management and control measures against best practice design and emission control, including the alternative mitigation measure of selected remediation works under temporary environmental control enclosures.

EPA’s Air Technical Advice Unit (“TA-Air”) has reviewed the Benchmark study and provides the following comments and in the context of comments made on the publicly exhibited EIS.

Comments made during public exhibition, relevant to the review of the Benchmarking study are:

- The risk of air toxic emissions has not been adequately communicated through the provision of information on the extent of the contamination, including the presence of principal air toxics within each:
 - Area where material excavation/material handling is to be undertaken;

Phone 131 555
Phone 02 9995 5555
(from outside NSW)

Fax 02 9995 6900
TTY 131 677
ABN 43 692 285 758

PO Box 668
PARRAMATTA
NSW 2124

Level 13
10 Valentine Avenue
PARRAMATTA NSW
2150 AUSTRALIA

info@epa.nsw.gov.au
www.epa.nsw.gov.au

- Area where contaminated material is to be stored;
- Contaminated material input stream to each remediation method proposed; and
- Remediation method proposed.
- The adequacy of the mitigation measures relative to the risk of potential air toxic emissions (including principal air toxics) from individual material handling and processing areas has not been demonstrated.

Heads of Consideration in providing advice

In providing comments and advice on the benchmarking report, TA-Air has considered the following:

- Principal toxic air pollutants must be minimised to the maximum extent achievable through the application of best practice design and/or emission controls. Decisions with respect to achievability will have regard to technical, logistical and financial considerations;
- Proposed mitigation measures are not demonstrated to be consistent with best practice;
- Proposed mitigation measures include:
 - Suppressant foams for the direct thermal desorption material stockpile, and exposed biopiles;
 - Covers for active stockpiles and air filters/scrubbers for the biopile ventilation stacks. Although the filters are not described;
 - Wet suppression for controlling dust from landfarming areas and excavation areas. No controls for volatile organic compound (VOCs) emissions including principal air toxics are proposed.
 - Scrubbers for the Direct Thermal Desorption plant. Although the scrubbers are not described within the benchmarking report.
- No controls for minimising volatile emissions or air toxics are proposed to be applied to excavation areas, contaminated material handling, or landfarming. Emissions of principle air toxics from these sources will be uncontrolled which is inconsistent with the objects of the *Protection of the Environment Operations Act 1997* ("POEO Act") and the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW*.
- Other remediation projects conducted in NSW have been conducted within enclosures, indicating that enclosure is feasible.

Conclusions of the benchmarking study

The benchmarking report concludes "*the application of TECE is not considered a viable, reasonable or feasible mitigation option for the project, particularly given the efficacy of the air quality mitigation and management options proposed in the AQIA*". The conclusions are based on, but not limited to:

- Generic cost information;
- Logistical issues based on the size of the remediation area and the depth in which excavation is to be undertaken and implications the logistical issues have on project delivery;
- The outcomes of dispersion modelling and predicted ground level concentrations within the Air Quality Impact Assessment prepared for the project (specifically analysis of predicted PM_{2.5} impacts).

Summary and Recommendation of TA-Air Advice

Technical Advice Air (TA-Air) has reviewed AECOM, 2019¹ (the benchmarking report). Detailed comments are provided in **Attachment A**.

TA-Air advise the proponent has not robustly demonstrated proposed controls are consistent with best practice. A compelling rational for not implementing engineering controls for aspects of the proposal has not been provided.

The proponent should re-evaluate the proposed controls, including a more robust assessment of engineering controls (including enclosure) through a more thorough consideration of:

¹ AECOM, 2019 – letter report subject *Clyde WARP AQIA Benchmarking Study: Environmental Control Enclosures*, prepared by AECOM Australia Pty Ltd dated 8 March 2019.

- The broader regulatory principles for minimising air pollution including principle air toxic emissions;
- The extent of the contamination at the premises, the uncertainty of the extent of the contamination and the significance of principal air toxic emissions from, but not necessarily limited to:
 - Each area where material excavation/material handling is to be undertaken;
 - Each area where contaminated material is to be stored; and
 - Each contaminated material input stream to each remediation method proposed (biopiling, landfarming, DTD).
- Additional scenarios or options for implementing emission control enclosures;
- Proposed remediation methods, in particular landfarming and biopiling, and whether or not principal air toxics are minimised when these remediation methods are used.

The EPA can meet with DPE at a mutually convenient time to discuss any of our comments.

Should you require any further information please contact Christine Mitchell on (02) 9995 5732.

Yours sincerely



Jacqueline Ingham
Unit Head Sydney Industry
Environment Protection Authority

Attachment A

1. Predicted ground level concentrations using dispersion modelling should not be the sole justification for assessing the implementation of feasible and reasonable best practice mitigation options.

The guiding principle for considering best practice mitigation options is implementing practicable measures to prevent or minimise air pollution (including principal air toxics) at the source, in line with:

- Objects of the POEO Act;
- Section 128 (2) of the POEO Act which states that occupiers of a premises must carry out activities by such practicable means as may be necessary to prevent or minimise air pollution for non-point source emissions; and
- Section 7.2.1 of the Approved Methods for Modelling and Assessment of Air Pollutants which states *“principal toxic air pollutants must be minimised to the maximum extent achievable through the application of best-practice process design and/or emission controls. Decisions with respect to achievability will have regard to technical, logistical and financial considerations”*

Dispersion modelling is one tool that can assist with the assessment of potential impacts and inform the need for emission controls. However, modelling results should not form the basis for assessing the implementation of feasible and reasonable best practice mitigation options to minimise emissions. There is uncertainty associated with the estimation of emissions from the handling of contaminated material within the open. This is due to spatial resolution on the extent of the contamination, potential for unidentified contaminated hot-spots, reliance on emission factors and assumptions for emission estimation.

Hence there is uncertainty surrounding the predicted ground level concentrations and they should not be the sole reliance for assessing the adequacy of feasible and reasonable best practice mitigation options. Assessing reasonable and feasible best practice mitigation measures should give a more thorough consideration to the overachieving principles identified above.

2. Benchmarking report has not given consideration to the extent of the contamination or the proposed methods for remediation

The benchmarking report makes reference to other remediation projects (Macdonaldtown, Playtypus, Barangaroo) where enclosures of varying sizes have been implemented. The benchmarking report states that *“it should be noted that some of the former gas works remediation projects had additionally high concentrations of contaminants such as heavy metals and PAHs”*.

Given the site history it is reasonable to expect there will be areas of highly impacted material. The benchmarking report does not give thorough consideration to the extent and significance of contaminated material to be remediated, including the presence of principal air toxics. The justification of proposed mitigation measures must consider the extent of contamination within material handling/excavation areas, material storage areas, and input/output material to each remediation process.

The proposed methods for remediation are landfarming, bio-piling, and direct thermal desorption. The benchmarking report has not demonstrated the proposed remediation methods are best practice considering the extent of the contamination each method is treating.

It is not acceptable to use landfarming to remove volatile constituents from soils through evaporation. If volatile constituents are presented in the soils being land farmed, VOC emissions should be

captured and treated using covers, structural enclosures and abatement techniques. The proponent have not demonstrated VOC emissions, in particular principal air toxics, from landfarming will be minimised to the maximum achievable.

The benchmarking report states the use of foam suppressants for exposed biopiles, and air filters/scrubbers for bio pile vents. However, it does not describe emission management consistent with information presented in the Air Quality Impact Assessment submitted during public exhibition. The publicly exhibited impact assessment advised that the biopiles would be covered with an impermeable material and would be maintained under negative pressure with treatment via air filters. The proponent should provide more clarity on the controls for biopiles and how they are consistent with best practice.

3. Best practice benchmarking has not given consideration to varying options/scenarios to assess the viability of utilising enclosure(s)

The benchmarking report presents practical limitations with the implementation of an enclosure. The practical limitations are based on considering a single option/scenario where an enclosure is implemented on individual excavation areas with subsequent decommissioning and relocation of the enclosure as the project proceeds. Practical limitations identified are:

- The project area (40 ha) presents logistical and feasibility issues with the implementation of enclosure across the site;
- The shallow contamination depth (2-4 m) within the project area, would mean that enclosure relocation would need to occur more frequently with subsequent implications on project schedule and costs;
- Impacts on project delivery given the additional time required for site establishment, relocation and decommissioning of an enclosure should an enclosure be implemented and relocated across the project areas as excavation progresses.

Whilst TA-Air cannot provide advice on the specifics of project logistics, TA-Air can advise that given only a single option/scenario has been considered, the conclusion that emission control enclosures as not being viable has not been robustly justified. The benchmarking report does not give consideration to project alternatives, such as, but not necessarily limited to:

- Implementing enclosure(s) on the excavation areas where the most significant contamination is likely to be found, hence eliminating or reducing the need for enclosure relocation;
- Implementing enclosure(s) on areas where the most impacted material is proposed to be stored prior to processing (e.g. the DTD material feed storage area), hence eliminating or reducing the need for enclosure relocation; and
- Implementing enclosure(s) for storage of material prior to classification, and/or for storage of material for classification post processing.

TA-Air considers that additional scenarios or options should be considered especially given that the benchmarking report has identified other projects where enclosure of various sizes (ranging from 2,600 m² to 17, 500 m²) has been implemented.