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North Sydney Council
Mr George Youhanna
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Dear Mr Youhanna

Thank you for North Sydney Council's request for comments from the NSW Environment Protection Authority (EPA) on the recent document submissions by the proponent (documents detailed below) for Concurrence and Referral (CNR) CNR-5342, DA 57/19 at 6 John Street, McMahons Point NSW 2060 (the premises). The request for comments was received by the EPA on 4 March 2020.

The EPA provided comments on development application DA57/19 (the original development application, ref. DOC19/233121-8) requesting additional information on 8 May 2019. The EPA understands that the current request relates to the proponent's response to the EPA's submissions dated 8 May 2019 to address the EPA's comments on the original development application.

On 8 May 2020, the EPA provided comments to North Sydney Council on the proponent's response to the EPA's submissions dated 8 May 2019. This response provided comments on the floating dry dock (FDD) aspect of the development application and sought advice about whether the EPA was required to provide comments on the air filtration aspect of the application. On 25 May 2020, North Sydney Council advised the EPA that it will consider the application as lodged by the proponent including the air filtration system.

The purpose of this letter is to replace the EPA's letter dated 8 May 2020 and provide comments on the proponent's entire response to submissions including the FDD and air filtration system.

The EPA has reviewed the following documents:

- Berry Bay EIS for floating dry dock – Environmental Services – Noise & Vibration Assessment – FINAL Rev 7 – Jacobs -19 July 2019 (Jacobs NVA)
- Berrys Bay EIS for Floating Dry Dock – Environmental Services – Air quality assessment – Jacobs – 18 July 2019 (Jacobs AQA)
- Subject: Responses to EPA Submissions: AQIA and NVA – Jacobs – 18 July 2019 (Jacobs Letter)
- Berrys Bay Floating Dry Dock Efficiency of Carbon Filter – SLR – 29 November 2019 (SLR Letter)
- DA 57/2019: Removal of Two Jetties & Installation of Floating Dry Dock – Addendum Environmental Impact Statement – Hampton Property Services – 20 February 2020 (EIS)

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Advice
The EPA is unable to properly assess the application based on the information provided by the proponent in its response to the EPA's submissions and requests the following additional information under clause 67 of the Environmental Planning and Assessment Regulation 2000:

1. AIR FILTRATION SYSTEM

The EPA has identified that there are issues with the Jacobs AQA and the Jacobs NVA which relate to the information provided for the proposed carbon filtration unit, and is unable to verify that air quality impacts will be appropriately managed, including odour impacts, and that the sound power level of ancillary equipment (e.g. fans/pumps) will not contribute to predicted offsite noise levels.

The EPA provides the following comments on the information provided in relation to the proposed air filtration system.

1.1 Carbon filter design

A Kaire Filtration Unit (Model# 100P-715G-11_PM-30-40) has been proposed to treat the exhaust air from the wet scrubber. The SLR Letter states that the Kaire Filtration Unit utilises three stages of particle filtration and a final odour removal stage to deliver a minimum 0.3 micron (µm) particulate removal efficiency of 95% (EN 1822.5:2009) and an initial contact efficiency of 99%+ for odours.

The proposal aims to bring air from the wet scrubber via a 600 mm diameter flexible duct to the carbon filter. An airtight system will be installed where the treated air from the wet scrubber is passed through the carbon filter assembly before it is delivered to the existing exhaust air stack.

The EPA has reviewed the on-line technical manual for the proposed Kaire Filtration Unit and has identified that the unit was designed for control of kitchen exhaust emissions for cooking applications. No other control systems were discussed in the development application. The EPA therefore needs further clarification regarding the unit's appropriateness for use at the FDD and to manage air emissions from other parts of the operations at the premises.

The SLR letter states that "The incorporation of carbon filter in conjunction with wet scrubber to filter exhaust air from the FDD will further reduce the ground level pollutant concentrations than those presented in the Jacobs AQIA". The EPA understands this to mean that the proponent commits to the installation and operation of the carbon filter unit.

Further, the Jacobs NVA states the following in relation to noise: "It has been advised that there would be no additional operational noise from the carbon filtration system. The existing system is enclosed in an acoustically lined shed at the site and is generally inaudible barring start-up". This response is inadequate.

If the proponent provides a statement of compliance or similar that confirms that the proposed carbon filtration unit can reasonably achieve best practice, the EPA may consider including the installation and operation of the carbon filtration unit as a requirement in the GTA's.

<u>Additional information required</u>

1. *The proponent must confirm the stability of the ducting and other associated pipework/ infrastructure to accommodate the flow and pressure from the wet scrubbers to the Kaire Filtration Unit and then onto the stack.*

2. *The proponent must provide a statement of compliance or similar from the manufacturer or independent expert confirming that the proposed Kaire Filtration Unit (Model# 100P-715G-11_PM-30-40) can reasonably achieve best practice for the treatment of VOCs and odours from the FDD and other operations at the premises. Decisions about achievability will consider technical, logistical and financial considerations.*

3. *The proponent must quantitatively determine and justify the existing sound power level of the air filtration unit and demonstrate that its operation would not contribute to predicted offsite noise levels.*

1.2 Carbon material management and control efficiency and ground level impacts

The SLR Letter provides revised ground level concentrations assuming a 95% control efficiency is applied to the values provided in the Jacobs AQIA. All revised pollutant concentrations met the criteria under the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2016) (Approved Methods).

Information about the monitoring of efficiency and planned change-out of the carbon material has not been provided.

The SLR Letter did not assess 'complex mixtures of odorous air pollutants' in accordance with Section 7.5 of the Approved Methods. It states that "it is anticipated that the carbon filter will provide sufficient odour mitigation to not have downwind nuisance impacts". The FDD is expected to release various individual odorous compounds, that when combined will form what is referred to as a 'complex mixture of odorous air pollutants'. In accordance with the Approved Methods, such a mixture should be assessed against an 'odour unit' criteria that represents the community's perception and reaction to the odour of the mixture.

However, the EPA generally agrees that an appropriately designed carbon filtration system may be a suitable control measure for the potential odour emissions from the FDD and other emission from operations at the premises. If information is provided that confirms the unit can reasonably achieve best practice for the treatment of Volatile Organic Compounds (VOCs) and odours from the FDD and other premises operations, then the EPA considers that further odour modelling is not warranted at this time.

The EPA may require the proponent to carry out a post-commissioning compliance assessment of the carbon filtration unit, including an assessment of the removal efficiency for odorous compounds and VOCs to determine its operating efficiency and impact on odour control.

Additional information required

4. *The proponent must provide information about the monitoring of efficiency and planned change-out of the carbon material for the proposed carbon filter.*

1.3 Meteorological data

In its letter dated 8 May 2019, the EPA requested further validation of the appropriateness of the meteorological dataset used in the original development application Air Quality Assessment. In response, the Jacobs Letter provided a CALMET prepared wind rose generated at Fort Denison compared with observations at Fort Denison for 2015; the year used in the Jacobs AQIA. No other information was provided other than the single wind rose comparison.

The EPA considers that neither the wind rose or the information provided in the Jacobs AQIA is adequate to assess the appropriateness of the meteorological data used in the Jacobs AQIA.

Additional information required

5. *The proponent must provide further information that robustly validates the appropriateness of the meteorological data set used in the Jacobs AQIA. This should include tabulated and/or graphical statistical data and comparison (where available) of key atmospheric factors, such as wind direction, wind speed, calms, wind class frequency, stability class, mixing height and temperature.*

1.4 Supporting information for stack

In its letter dated 8 May 2019, the EPA requested that the stack data reports used to validate emission rates be provided. The Jacobs Letter states that this data has been provided in the Jacobs AQIA. The EPA confirms this is correct.

The EPA notes that the stack testing data used in the Jacobs AQIA was only one set of data. Typically, the EPA would prefer a more robust, repeated data set for setting such emission rates. In this instance, given the predicted ground level concentrations are well below the criteria, and the proponent proposes carbon capture which will further reduce these impacts, further stack data is unlikely to change the outcomes of the Jacobs AQIA.

The EPA may therefore require that the proponent to undertake post-commissioning compliance assessment to verify the stack emissions.

1.5 Adequacy of pollution emission control measures

In its letter dated 8 May 2019, the EPA requested further information to address the adequacy of pollution emission control measures. The Jacobs Letter provides details of the emissions controls applied in the Jacobs AQIA for welding, spray painting and sandblasting.

With the exception of some clarifications required regarding the proposed carbon filtration system (as discussed later), the information provided by the proponent in its response to the EPA's submissions has satisfied the EPA's concerns.

1.6 Assessable pollutants assessed

In its letter dated 8 May 2019, the EPA requested an assessment of all applicable air toxics, including manganese. The Jacobs Letter provides confirmation that further air toxics have been assessed in the Jacobs AQIA (including chromium, manganese and nickel). The Jacobs Letter provided the results for manganese, which met relevant limits.

The EPA's concerns have been satisfied and further information is not required about assessable pollutants.

1.7 Background pollutant concentration

In its letter dated 8 May 2019, EPA requested that the method for background pollutant calculation, as required by the Approved Methods, be applied to the revised Jacobs AQIA.

The Jacobs Letter provides confirmation that the assessment method has been updated to be consistent with the Approved Methods for situations where background levels are elevated. The EPA has reviewed the revised background data provided and the applied method and requires no further information.

1.8 Cumulative operations emissions and controls

The Jacobs AQIA assesses the FDD operating in isolation from other premises activities, such as operations in the workshops. Should the FDD operate concurrently with other premises operations (i.e. there would be cumulative emissions from FDD, workshops or other sources), this may alter the modelled and assessed emissions profile from the site, and hence potential impacts.

The Jacobs AQIA does not identify if the proposed carbon filtration unit would be used for all future wet scrubber exhaust emissions or just for the FDD emissions. The EPA requests clarification on this matter.

Additional information required

6. *The proponent must clarify the operational scenario regarding the potential for concurrent premises operations (i.e. simultaneous operation of FDD and workshops), and identify if this may change the assessed emissions profile for the premises and, if required, revise the AQIA accordingly.*

7. *The proponent must clarify whether the future application of the carbon filtration unit will be used to treat all wet scrubber emissions at the premises. The EPA would be encouraged if the installed carbon filtration unit is proposed to be used for all future wet scrubber exhaust emissions.*

1.9 Model inputs

The heights at which the sensitive receivers have been assessed at have not been provided. The surrounding buildings are multi-level, whilst the exhaust stack is 8 meters high. The stack has a relatively low flowrate/velocity, meaning that strong cross winds may have the potential to 'bend' the plume horizontally and into adjacent multi-story buildings without significant dispersion. The location and height at which the sensitive receiver has been assessed is therefore critical.

The Jacobs AQIA model assumes a vertical exhaust stack. Stack design is a critical input for the model regarding potential for plume dispersion and impacts. The EPA requests confirmation that the proposed stack as designed, installed and operated has a vertical exhaust design.

The Jacobs AQIA did not provide the model input, output and meteorological files as required by Section 9.6 of the Approved Methods. These files may have provided answers to some of the issues requiring clarification identified above.

Additional information required

8. *The proponent must provide the heights for all assessed sensitive receivers. If they are not at height(s) that appropriately represent the multi-level design of the surrounding buildings, then a revised AQIA will be required to address this matter.*

9. *The proponent must confirm the stack design regarding exhaust direction (vertical or horizontal) and confirm that the model represents the proposed operational design.*

10. *The proponent must provide confirmation that the stack is to be designed with consideration of the sample port and other requirements of AS4323.1.*

11. *The proponent must provide the model input and output files with any revised AQIA.*

2. FLOATING DRY DOCK

The EPA has identified that there are issues with the Jacobs AQIA and Jacobs NVA which relate to the information provided for the proposed FDD. The EPA is unable to verify that air quality impacts will be appropriately managed, and also considers that the proponent has not adequately identified the quantum of potential noise impacts associated with the development proposal.

The EPA provides the following comments on the information provided in relation to the FDD.

2.1 Air quality impacts

The proponent must address the required additional information listed under 1.3 (meteorological data) and 1.8 (cumulative operations emissions and controls).

2.2 Noise – Meteorological data

The proponent has correctly identified that wind speed and directions reported for Sydney Observatory Hill is obtained from Fort Denison and has used 2015 data to perform a verification analysis. The proponent has failed to indicate why 2015 was identified as a representative and suitable year for review. The review identifies that noise enhancing winds are not a significant feature of the area.

Additional information required

12. *The proponent must provide an analysis of noise enhancing wind conditions in accordance with the NSW Noise Policy for Industry (2017) for the most recent year i.e. 2019.*

2.3 Noise – Concurrent operations

In the original development application, the only noise sources from existing operations considered in the noise model included light vehicles, a crane and boat manoeuvring. No consideration was given

to other existing works such as sandblasting, painting steel grinding, noise sources in the sheds or noise from the travel lift.

The noise levels from the operation of the FDD are predicted to be at or near accepted criteria which implies that no other noisy activity can occur on site whilst works are being undertaken on the FDD.

The EPA notes that the proponent's response in the Jacobs Letter is that the "assessment presents planned operations as advised by the client". This response is inadequate. The proponent, through its acoustical consultant, should confirm that operational scenarios considered in the assessment reflect proposed operations. This is especially the case where the proposal involves a component of existing operations where observations can be made.

Additional information required

13. *The proponent must include other existing maintenance activities in the noise model (justified with observations), and the model should include average maximum noise emissions from existing operations of the premises.*

14. *The proponent must clarify the operational scenario regarding the potential for concurrent premises operations (i.e. simultaneous operation of FDD, workshops and slipway), and identify if this may change the assessed premises noise emissions profile and, if required, revise the NVA accordingly.*

2.4 Tug

The EPA acknowledges that a tug will not be required to manoeuvre the vessels into and out of the FDD and is therefore not included as a noise source in the NVA.

2.5 Acoustic curtains

The EPA originally requested additional detail regarding the attenuation from the acoustic curtains and how it was included in the noise model. The proponent provided a response in the Jacobs Letter and Jacobs NVA stating that the "FDD is now intended to be enclosed" and provided the following key modelling inputs:

- A linear sound power level of Lw112dB for sand blasting operations which is the loudest noise producing activity considered in the assessment (in octaves from 63Hz to 8Khz); and

- Rw values for Flexshield Sonic Curtain 6kg/m^2 (1/3 octaves from 50Hz to 5KHz)

The EPA is concerned about the following issues arising from the information provided above:

- The sound power level for the sand blasting activity appears to be significantly lower than would be expected. Sound power levels in the order of Lw 120-128dB(A) would be expected from commercial sand blasting activities;

- The response suggests that the noise modelling has considered laboratory sound reductions tested for Flexshield. These reductions are obtained under perfect laboratory conditions with the Flexshield material being perfectly sealed to adjoining test surfaces. If these sound reductions have been applied in the model, it has not appropriately considered the real-world derating effect of air leakage paths (i.e. flanking paths) in the Flexshield curtains; and

- It is proposed that Flexshield will enclose external surfaces of the hulls being blasted (and maintained) including by draping Flexshield from the upper walls of the FDD to the top of the vessel being maintained. The potential for re-radiated noise from exposed surfaces or openings on the top of the vessel have not been considered.

Additional information required

15. *The proponent is required to provide documented evidence that the sound power levels used in the assessment are achievable.*

16. *The proponent must consult the Flexshield manufacturer to determine the quantum of noise leakage paths when using Flexshield in the manner proposed in the FDD scenario to enable modelling to take field conditions into account. The derating effect from imperfections in sealing should be clearly documented.*

17. *The proponent must consider the potential for re-radiated noise from exposed surfaces or openings on the top of the vessel in the assessment.*

2.6 Sound power levels

The EPA acknowledges that a legend has now been added in Table 5-3 of the NVA to indicate the sound power levels.

2.7 Noise enhancing activities

The EPA acknowledges that the proponent initially considered the use of saw cutting equipment during construction, however it has now concluded that no plant or equipment exhibiting noise enhancing characteristics is intended either during construction or operations.

2.8 Usage factors and penalties

In its letter dated 8 May 2020, the EPA requested the proponent to clarify what was meant by the statement "usage factors and penalties were applied as appropriate" (page 26 of original NVA). The proponent has not provided sufficient details on the usage factors and penalties or sufficient justification for applying them.

Additional information required

18. *The proponent must consider for each item of plant that has had a "usage" factor applied, the time that the plant will operate across a 15 minute period. The resulting reduction in sound power level used in the model should be presented and justified based on site observations at the existing facility.*

2.9 Noise contour plots

The noise contour plots in Figure 5-2 and 5-6 in the NVA should indicate the location of the FDD and the noise sources, however Table 5-3 of the Jacobs NVA appears to illustrate 'welding' and 'sandblasting' as a line or building source around the outside of a vessel in the FDD. This response is considered inadequate. The additional information request at point 19 should be considered in conjunction with section 2.5 of this letter and any resulting changes to model outputs reflected in point to point calculations and contours.

Additional information required

19. *The proponent must quantitatively explain the modelling process for the FDD, including:*
    a. *reverberation time in the enclosure;*
    b. *the location of noise sources in the enclosure;*
    c. *the space averaged sound pressure level on the inside of the enclosure;*
    d. *the derived sound power level for the external face of the enclosure etc.*

2.10 Noise from construction and operational equipment

In its letter dated 8 May 2020, the EPA identified discrepancies in sound power levels listed for operational equipment such as light vehicle, crane, forklift and vessel entering/departing the site. The Jacobs NVA report states that the equipment list was provided by the proponent, forming the basis of the operational and construction noise modelling.

The acoustical consultant must verify sound power levels used in the assessment and the realism of likely construction and operational scenarios. The construction scenarios should include all noise sources (including the barge crane, concrete cutting equipment and truck/barge movements) at the site associated with importation and removal of construction materials.

Additional information required

20. *The proponent must supply a statement from a construction contractor regarding the likely equipment that will be used and the intensity of operations. This information should be reviewed by the acoustical consultant to confirm that the assessment is based on the likely equipment and methods to be used.*

In accordance with clause 110 of the Environmental Planning and Assessment Regulation, the assessment clock is now stopped until two days after the requested information is provided to the EPA.

If you have any questions about this request please contact Rajesh Mottey on 9995 6563 or via email at rajesh.mottey@epa.nsw.gov.au.

Yours sincerely

5 June 2020

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