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24 November 2021

Mr Nathan Heath
Senior Planning Officer
Social and Other Infrastructure Assessments
Department of Planning, Industry and Environment

(via Major Projects Planning Portal)

Dear Mr Heath

**Upper South Creek Advanced Water Recycling Centre (AWRC) (SSI 8609189)
EPA advice on Environmental Impact Statement (EIS)**

I am writing to you in reply to your invitation to the NSW Environment Protection Authority (EPA) to provide comment on the Environmental Impact Statement (EIS) for the above project.

The EPA understands the project involves construction and operation of a wastewater treatment plant on a 78 ha site at Kemps Creek with the ability to treat wastewater flows up to an advanced (reverse osmosis) level before discharging effluent to South Creek, the Nepean River and potentially the Warragamba River. The project will also involve the construction and operation of three pipelines:

- one carrying treated water 16.7 km west to the Nepean River;
- a pipe diverging off the treated water pipeline via a flow splitter at Wallacia to carry treated water 4.5 km to Warragamba River discharging treated water which is aimed at being recognised as environmental flows; and
- a 24 km pipeline to carry brine from the reverse osmosis process east to the Malabar system.

The subject EIS covers Stage 1 of the overall development consisting of the AWRC with capacity to treat 50 megalitres per day and construction of the pipelines with capacity for 100 megalitres per day. Subsequent stages would expand capacity at the AWRC to support population growth in the area.

Based on the information provided, the proposal would require an environment protection licence (EPL) under clause 36 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) for sewage treatment. Under clause 36, an activity requires a licence if it has a processing capacity that exceeds 2,500 persons equivalent ... or 750 kilolitres per day – whichever is greater. Stage 1 would treat wastewater flows up to 50 megalitres (50,000 kilolitres) per day.

The EPA provides comments on noise and vibration impacts, contaminated lands, and air quality impacts at **Appendix A**. Please note that additional advice regarding water quality, including effluent impacts, will be provided in separate correspondence at a later date.

The EPA has reviewed relevant EIS documents including:

- *Environment Impact Statement*, dated September 2021, prepared by Sydney Water
- *Appendix S: Noise and Vibration Impact Assessment Report*, Rev 4, dated 28 April 2021, prepared by Aurecon / ARUP (the NVIA)

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- Appendix N: *Soils and Contamination Impact Assessment*, Rev 2, dated 27 July 2021, prepared by Aurecon / ARUP (the contamination assessment)
- Appendix R: *Air Quality Impact Assessment*, Rev 1, dated 15 June 2021, prepared by Jacobs (the AQIA)

Should you require clarification of any of the above please contact Anna Timbrell on 9274 6345 or email anna.timbrell@epa.nsw.gov.au

Yours sincerely



SARAH THOMSON
Manager
Regulatory Operations Metro

APPENDIX A

1. Noise and Vibration

The EPA reviewed the NVIA provided at Appendix S and considers that while the Secretary's Environmental Assessment Requirements (SEARs) have generally been adequately addressed in the NVIA, there are a number of issues that should be addressed by the proponent.

The EPA recognises that the project is likely to have a significant impact during the construction stage on communities that surround the project site at Kemps Creek, and on communities in proximity to the various pipeline routes which extend from Warragamba in the west, to Fairfield in the east. The NVIA indicates the potential for airborne and ground-borne noise impacts, as well as vibration impacts, during both daytime and night-time hours for some construction activities, for an extended period of approximately 36 months.

The key to effectively managing these will be **strong and proactive engagement and consultation with these communities about the predicted impacts, and what mitigation and management measures will be implemented to address them**. The proponent must ensure that all feasible and reasonable mitigation and management measures, including those outlined in Section 7.6 of the NVIA, are implemented prior to the commencement of construction activities. These measures should extend beyond community notification of upcoming works and consider community views in works programming and management.

Additional comments on the NVIA are outlined below:

1. The NVIA has not included consideration of any cumulative impacts from the construction of other projects as discussed in Section 7.3 and acknowledges that this may result in increased impacts on receivers. **Careful management of any concurrent construction activities with other projects in a given vicinity will be necessary** to provide adequate respite and minimise the potential for noise and vibration impacts, and construction fatigue.
2. In addition to utilising background noise monitoring data for existing sensitive receiver locations, the NVIA has in some instances provided estimated background noise levels for areas of future sensitive development, such as new residential areas, as might occur under the *Western Sydney Aerotropolis Plan* (NSW Government, 2020). This approach is not acceptable, and **background noise monitoring data should be used to derive noise criteria and influence noise mitigation measures**.
3. Section 6.2.5 of the NVIA states that a **+2 dB 'engineering margin' has been applied to all predicted operational noise levels. The meaning of this is unclear, and should be further explained, together with how it has been accounted for in the design of any mitigation measures**. Predicted noise levels should be provided inclusive of any such margin.
4. **The EPA requests the applicant explain the methodology for determining which receivers are subject to a 5 dB penalty for excess low frequency noise (identified in section 6.2.5)**, with reference to Fact Sheet C of the *Noise Policy for Industry* (NPfI) (EPA, 2017).
5. The **expected noise levels associated with valve operation during surge events** (as mentioned in Section 6.5) should be quantified and assessed.
6. Table 29 in Section 7.1 identifies the potential use of a tunnel boring machine (TBM) during Phase 2c/2d. **The proponent should clarify whether a TBM is proposed to be used** on this project.
7. Section 7.5 identifies that there is greater potential for noise impacts from construction traffic on a number of local roads, especially during the night-time period. All feasible and reasonable measures should be implemented to minimise these impacts.

2. Contaminated Land

The contamination assessment report provided at Appendix N is a preliminary site investigation. The assessment has not identified any widespread contamination near the project but has identified 16 areas of environmental concern (AEC) based on desktop investigations and soil sampling.

The main contaminant of concern is asbestos, which has been found in localised areas on the AWRC site, around current and former structures at the Warragamba viewing platform, at Eighteenth Street near Warragamba River and in several other locations near the pipeline alignments. The greatest potential for impacts is through the disturbance of these contaminated soils during construction. Other sources of potential contaminants, near project infrastructure, include landfills and service stations.

The contamination assessment identified a number of notified sites within 200 metres of the project footprint including three service station sites that are within 10 metres of the proposed brine pipeline. **Presence of contamination in these notified sites should be considered in the management measures to mitigate risks** due to contamination finds within the project footprint.

Two PFAS investigation sites were identified within a 5 km radius of the desktop assessment area. One is from Kemps Creek NSW Rural Fire Service at 245 Devonshire Rd, Kemps Creek and the other site is from Bankstown Airport at 3 Avro St, Bankstown.

A detailed site investigation was completed for 245 Devonshire Rd, Kemps Creek in April 2018 which verified the presence of PFAS at and around the AWRC in soil, sediment, surface water and groundwater. The contamination assessment mentioned that the NSW Rural Fire Services is currently developing a Site Management Plan to inform management actions for the site.

The contamination assessment also considered PFAS from Bankstown Airport (3 Avro St, Bankstown). The airport is located 2.6 km from the brine pipeline and the overall PFAS groundwater contamination risk is considered low due to both distance and the shallow depths of proposed construction works.

The EPA acknowledges that the proponent has committed to further investigate AECs as design progresses, develop plans to appropriately manage any contamination found (including asbestos) and implement standard soil and erosion management measures.

The EIS and the supporting contamination reports have partially addressed the SEARs for the project. **However, detailed site investigation/s (DSI) are required to be carried out by appropriately qualified contaminated land consultants**, covering the areas likely to be disturbed as part of the development. The investigations should assess all relevant media to be affected by the project. **The EPA requests that the DSI/s be submitted as part of the Response to Submissions (RtS).**

The EPA also recommends the proponent submit a Sampling and Analysis Quality Plan (SAQP) as part of the RtS to ensure that field investigations and analyses will be undertaken in a way that enables the collection and reporting of reliable data to meet project objectives, including (where applicable) the relevant site characterisation requirements of the detailed or targeted site investigations.

Given the presence of areas of concern across the project site, **the EPA recommends a NSW EPA-accredited site auditor is engaged for the entire project footprint and throughout the duration**

of works for this project to ensure that any work required in relation to contamination is appropriately managed, including any unexpected contamination finds.

It is also recommended that as part of RtS, the proponent submit interim audit advice from a NSW accredited site auditor commenting on the nature and extent of the contamination and what further works are required.

3. Air Quality

It is noted that the closest private residential properties to the AWRC are approximately 500 metres to the south, southeast, east and northeast, while the Twin Creeks residential development is located approximately 1.5 km to the northwest. There is also potential for new dwellings to be developed to the northwest. Nearby local industries and activities include: the SUEZ Resource Recovery Park (processing waste) approximately 1 km to the southwest, a wholesale nursery approximately 1.5 km to the south, chicken broiler / layer farms to the south, northeast and east, and the Western Sydney Airport currently under construction approximately 7 km to the southeast. The EPA has reviewed the AQIA provided at Appendix R and has identified that there are some information deficiencies. As such the EPA is unable to verify that air quality impacts will be satisfactorily managed. The following sections identify issues and recommendations:

Adopted emission rates are not justified

The results of the dispersion modelling are presented as contour maps. Figure 10 in the AQIA shows the predicted incremental odour concentrations (99th percentile) for the 50 ML (Stage 1) scenario. The contours indicate compliance with the EPA's¹ impact assessment criterion (IAC) of 2OU (for urban areas) at nearby sensitive receptors (both existing and future). Figure D2 in the AQIA presents the results for the 100 ML modelling scenario. Only marginal compliance with the EPA's 2OU criterion is predicted at future likely sensitive receptors with impacts between 1 and 2 odour units being predicted.

Whilst the modelling presents marginal compliance with the EPA's IAC, there is some uncertainty regarding the adopted emission rates used in the modelling.

The Sydney Water odour emissions database has been used to develop estimates of maximum emissions from the proposed AWRC. Emission test data from other treatment plants has been relied upon to develop the emissions inventory. However, it has not been adequately demonstrated that the adopted emissions are appropriate for the proposed plant design and scale of the operations. Furthermore, it has not been shown that the adopted emission rates represent reasonable worst case.

The biosolids loadout building has been modelled as a volume source, using a flow rate of 10 m³/s. The method used to calculate this emission rate has not been detailed. Furthermore, biosolids loadout emissions have only been modelled for the hours between 7 am and 3 pm. There is no justification for why this time period is appropriate, and how odours will be controlled outside of this period.

The EPA recommends the AQIA be updated to include robust justification for the emission rates adopted in the dispersion modelling assessment.

Odour control measures are not adequately described

Section 4.2 of the EIS Executive Summary states that the AWRC will include a range of design measures to minimise odour impacts. However, these have not been adequately detailed in the AQIA. The AQIA does not include any plans, process flow diagrams or descriptions that clearly

¹ *Technical framework: Assessment of odour from stationary sources in NSW* (DEC, 2006)

identify and explain all pollution control equipment and odour mitigation techniques proposed for all processes on the premises. No design specifications of the odour control unit (OCU) were provided. Whilst it is noted that the design of the plant will aim to achieve an odour emission performance of 500 OU, details about the control system design, configuration and operational variability should be provided.

The AQIA identifies the biosolids loadout building as the most significant source of odour associated with the AWRC. However, there is no discussion about the design and operation of the building. Odours from biosolids are recognised as a major odour source associated with wastewater treatment facilities. The EPA considers best practice odour control measures should be included in the final design of the plant. This may include full enclosure of the biosolids loadout building with capture and treat technologies applied that include capture and control of odorous air from odorous processes associated with a wastewater treatment plant.

The *Technical framework: Assessment and management of odour from stationary sources in NSW* (DEC, 2006) identifies that additional feasible odour mitigation measures that could be implemented should be considered at the assessment / planning stages of a proposal. The assessment does not identify or discuss additional feasible measures that could be adopted in the event that odour impacts occur once the proposed facility is operational.

It is the proponent's responsibility to comply with section 129 of the POEO Act. Should odour impacts be experienced once a facility is operational the proponent will need to address these and, if necessary, modify the facility based on actual operational outcomes. Addressing odour impacts retrospectively is likely to be more difficult and costly than incorporating such measures in the initial proposal.

The EPA recommends the proponent update the AQIA to:

- 1. include plans, process flow diagrams and descriptions that clearly identify and explain all pollution control equipment and odour mitigation techniques for the proposed facility; and**
- 2. identify and nominate additional feasible odour control measures and/or contingency measures for mitigating odour impacts, in the event they do occur once the facility is operational.**

Cogeneration plant not adequately detailed

The proposal includes energy recovery via the combustion of biogas in a cogeneration engine. No details about the engine design or operation have been included. It has not been discussed if the engine will operate on biofuel alone, or if supplementary fuel will be required.

It has been assumed in the AQIA, that the cogeneration unit will achieve compliance with the standards of concentration prescribed in the *Protection of the Environment Operations (Clean Air) Regulation 2021*, however, no evidence has been provided to demonstrate the expected emission performance of the unit.

The EPA recommends the AQIA be updated to include plans, process flow diagrams and descriptions that clearly identify and explain how the cogeneration plant will be fuelled, configured, and operated. Manufacturer design specifications (or similar) should also be provided to confirm the expected emission performance of the plant, and to demonstrate that the cogeneration unit will achieve compliance, with prescribed concentrations contained in the Clean Air Regulation.