Our ref: DOC26/90163-12

13 March 2026

Mr Daniel Gorgioski
Senior Planning Officer
Planning and Assessment Division
Department of Planning, Housing and Infrastructure

By email: daniel.gorgioski@planning.nsw.gov.au

EPA Advice on Environmental Impact Statement – Greater Parramatta, Olympic Peninsula Water Cycle – SSI-74258485 (Part 2)

Dear Mr Gorgioski

I am writing in response to your request for the NSW Environment Protection Authority (EPA) to review the Environmental Impact Statement (EIS) for the proposed water resource recovery facility (WRRF) and associated infrastructure (Application SSI-74258485) at 9 Devon Street, Rosehill.

In its letter of 10 March 2026 (Ref: DOC26/90163-9) the EPA provided the Department of Planning Housing and Infrastructure (DPHI) with advice on noise and vibration, air quality and contamination impacts in relation to the project and advised that additional comments regarding water would be provided in separate correspondence.

This letter provides the second part of the EPA's advice on the EIS. Comments on water quality and impacts in relation to the project are provided at ***Appendix A***.

If you have any questions about this response, please contact Laura Ansted on 9995 6812 or email to laura.ansted@epa.nsw.gov.au.

Yours sincerely

MH

MATTHEW HART
Unit Head – Operations

APPENDIX A

Matters to be addressed prior to determination

The EPA acknowledges that the proposal represents many positive changes for water quality in the Parramatta River and catchments affected by overflows from the Northern Suburbs Ocean Outfall Sewer (NSOOS). Addressing the following issues will characterise potential residual risks and inform any necessary mitigation measures.

1. *Discharge scenarios*

<u>*Absence of source control works scenario*</u>
The far field modelling scenarios use a baseline scenario where planned source control works in the catchment between 2025 and 2065 have been implemented. It is unclear what impacts these works will have on their own, and, if they don't proceed or are delayed, what the impacts from the proposal will be in their absence.

The EPA requests that, to enable assessment of the proposal and prior to determination, an additional scenario is completed where the effects of source control works are removed, as a worst-case scenario. The assessment should consider what the impacts will be if the proposal is discharging when these works haven't occurred, and whether the beneficial effects of source control are masking impacts from the proposal.

<u>*Brine discharges to the NSOOS*</u>
The proposal estimates that tertiary treated water will have to be discharged for two 48-hour periods per year. This estimate includes time for maintenance and an allowance for off spec water. It does not allow for other circumstances such as the potential inability to discharge brine to the NSOOS in the future due to capacity issues most likely to occur under wet weather conditions.

The design of the proposal also does not appear to have allowance for overflow brine storage. If brine cannot be discharged to the NSOOS then advanced treated water cannot be produced as there is no allowance for this storage. Situations such as this may increase the proportion of tertiary treated water that will be discharged in a year.

Increasing the proportion of tertiary treated discharges is likely to have a negative effect on water quality outcomes, particularly in relation to nutrients and chlorophyll-a.

The EPA requests that the proponent provides in its' Response to Submissions, further consideration and detail regarding its' assessment of the potential for inability to discharge brine to the NSOOS in the future. If the estimated proportion of tertiary treated discharges increase above two 48-hour periods per year, then water quality impacts will need to be re-assessed with the changed proportion.

2. *Water quality and monitoring*

<u>*Aluminium*</u>
Lime is being stored onsite as a chemical to be used in advanced water treatment and is usually used for pH adjustment prior to discharge. Lime can contain aluminium oxide (as seen at South Creek Advanced Water Recycling Facility in SSI-8609189-Mod-3) potentially resulting in effluent with elevated aluminium concentrations. Aluminium has not been identified as a toxicant in advanced treated water and its potential toxicity has not been assessed.

The EPA requests that, to enable assessment of the proposal and prior to determination, the proponent confirms if aluminium will be present in the advanced treated water discharge and identify its concentration in the discharge, if so. If aluminium is present in the discharge at non-trivial concentrations (greater than guideline values) it should be modelled to understand the potential risk, and an alternate method of pH adjustment considered (such as sodium hydroxide) if necessary.

Copper

It is noted that ambient copper concentrations exceed default guideline values (DGVs) and that copper has not been modelled. Copper concentrations should have been modelled to understand whether WQOs are being maintained or restored. However, given that copper concentrations in the advanced and tertiary treated water only exceed the DGV by 0.1 µg/L, the available dilution indicates it would rapidly reduce concentrations to the DGV and the risk is likely to be trivial.

Considering that the copper concentrations in the discharges and receiving environment are predicted to exceed DGVs, it will be important to monitor copper in both the advanced and tertiary treated discharges as well as receiving waters.

The EPA considers that the project should include monitoring of copper in the discharges (advanced and tertiary treated) and the receiving waters.

Salinity

The modelling indicates that salinity could decline by as much as 7 PSU at the discharge point and 3PSU 1km downstream. The Aquatic Biodiversity Impact Assessment (ABIA) says many species of estuarine fish, invertebrates and macroalgae also have wide salinity tolerances, however, optimal growth or specific life stages may occur within a more limited range and depend on a combination of factors especially temperature. With that considered, long-term changes that persist in the order of 5 to 6 PSU could result in localised shifts in assemblage composition towards species better adapted for optimal growth under reduced salinities. Remineralisation of the advanced treated water may be a viable option to avoid the potential for any long-term changes in salinity that persist in the order of 5 to 6 PSU.

The EPA requests that investigations into the feasibility of remineralising the advanced treated water to increase its salinity consistent with the salinity and mineral content of the receiving water is conducted and that these are detailed in the proponent's Response to Submissions.

If the proposal proceeds in its current form, then salinity should be monitored regularly as part of the proposed ambient water quality monitoring program.

Nutrients and chlorophyll-a

Total nitrogen is predicted to be reduced in the river as a result of advanced treated water discharges and corresponding mitigation of wet weather overflows (under climate change and non-climate change scenarios). Similar results are expected for total phosphorus. Tertiary treated water discharges, however, are anticipated to increase total nitrogen particularly in lower rainfall years where reduced flushing prolongs the impacts.

Increases in ammonia and oxidised nitrogen (NOx) are predicted for the river particularly for NOx, due to relatively high content in advanced treated water of 220 ug/L. The Water Quality Impact Assessment indicates that increases in annual medians are up to 0.5 ug/L for ammonia and 3 ug/L for NOx during lower rainfall years, although it is not clear when or where this occurs during the year. During offline discharges the increase in NOx in the vicinity of the diffusers is around 125 ug/L during low rainfall years.

Given the model under-predicts ambient concentrations, additional monitoring of NOx in the river is warranted prior to any planned offline discharges.

Further, monitoring of chlorophyll-a will be important prior to and following an offline discharge. Higher concentrations of chlorophyll-a are predicted to persist for approximately two months after tertiary treated (offline) discharges occur during extended dry periods in low rainfall years. The risk of algal blooms could be exacerbated if increased nutrients and elevated temperatures coincide with such events.

The EPA considers that the proposal should include the following additional monitoring:

- *monitoring of receiving water temperature, NOx, ammonia, TN, TP and chlorophyll-a immediately prior to planned offline discharges to determine if the discharge should be scheduled during higher flows (even in low rainfall years) to minimise potential for algal proliferation as indicated by chlorophyll-a concentrations, and*
- *increased frequency of chlorophyll-a monitoring in the 2 months following an offline (tertiary treated) discharge.*

Assessment of mixing zone consistent with NSW EPA mixing zone policy and practices

The EIS uses the Queensland Government Technical Guideline *Wastewater Release to Queensland Waters* (DETSI, 2024) and not the NSW EPA mixing zone policy.

The EPA's policy is that the NSW Water Quality Objectives (WQOs) should be met at the edge of the area where initial near-field mixing occurs. Our review of the model output indicates that zinc concentrations in tertiary effluent discharges under slack water tidal flows will not meet the relevant guideline value by the edge of the near-field mixing zone, which was not identified as a potential risk in the EIS.

This matter is noted for completeness. We expect that even though zinc concentrations will remain above the guideline value at the edge of the near-field mixing zone under slack tidal water flows, the risk should be trivial given the concentrations, available dilution, and frequency (i.e. offline events) of this scenario.

The EPA's mixing zone policy is outlined at https://www.epa.nsw.gov.au/Your-environment/Water/managing-water-pollution-in-nsw/environment-protection-licensing/Water-pollution-discharge-assessments

Water quality monitoring for sediment disturbance

The proposed water quality monitoring related to works that may disturb sediment in the vicinity of John Whitton Bridge only includes visual checks of turbid plumes and monitoring once every 3 weeks at two locations (one upstream and one downstream) of the discharge point. However, sediment concentrations of zinc, dioxins and furans are elevated in the vicinity of the discharge, and their disturbance during construction should be appropriately monitored.

Turbidity should be continuously monitored close to the works, and zinc, dioxins and furans should initially be monitored weekly during construction to ensure mobilisation of contaminants is prevented and controlled with monitoring results being tied to predefined actions in a trigger action response plan (TARP).

The EPA requests that a riverbed construction activities trigger action response plan (TARP) is prepared as part of the project to prevent and control mobilisation of pollutants from contaminated sediments. The TARP must include, at a minimum:

- *reference to a water quality monitoring program for riverbed construction activities which includes but is not limited to:*
    - *continuous monitoring of turbidity at relevant depths*
    - *initially, weekly water sampling for dioxins, furans and zinc at the construction location(s) and at multiple locations downstream of the site. Monitoring frequency to be adjusted based on results for the first three weeks*
- *action-based trigger values for all key analytes and specific actions to occur based on the level of risk and exceedance of trigger values during riverbed construction activities, including, but not limited to, action-based trigger values for turbidity, dioxins, furans and zinc.*

The proponent must consult with the EPA regarding the TARP prior to implementing the TARP.

Operational plant design in relation to water quality and monitoring

The EPA notes that there is potential for changes in water quality along the river release pipeline, most likely in relation to biological aspects.

The EPA requests that, in the detailed design of the water release pipeline, consideration is given to access for sampling to validate water quality at the end of the release pipeline prior to discharge.

The EPA is aware of circumstances where water quality sampling data had the potential to not accurately represent treatment performance or the quality of effluent leaving the plant due to factors such as contamination by birdlife and leaf debris, hydraulic stagnation, and shared use of pipelines containing residues from other discharges.

The EPA requests that, in the detailed design of the WRRF, consideration is given to the need to reduce the risk of contamination and non-representativeness of water quality samples at water quality monitoring points.

The EPA considers it likely that any variation of Environment Protection Licence no. 372 in relation to the proposal would include a requirement to monitor influent volumes to the plant and a requirement that flowmeter(s) installed for this purpose have the capacity to provide data in litres/second that is within 5% of the actual volume over the likely full range of flow required to be measured by the equipment.

The EPA requests that, in the detailed design of the proposal, consideration is given to use of flowmeters capable of monitoring influent to the premises that can provide data in litres/second that is within 5% of the actual volume over the likely full range of flow required to be measured by the equipment.

Based on the information available, and should the proposal be approved, the EPA is likely to, through licensing processes, propose use of 100%iles as regulatory limits on EPL no. 372 for pollutant concentrations in the WRRF's advanced treated discharges, consistent with the performance capabilities of this equipment and the approach taken with other plants (including the proponent's Badu Yarragul WRRF under EPL no. 21800).

The EPA notes that the proponent may wish to consider, in the detailed design of the WRRF, any optimisations as appropriate to support compliance with 100%ile limits for advanced treated flows, such as buffering capability.

Management of contaminated construction water

The soils and groundwater in the vicinity of the proposal are contaminated with a range of pollutants. During construction it is likely that contaminated groundwater will seep into trenches, other excavations and the coffer dam being used for construction of the river release structure. The EIS indicates that contaminated water dewatered from the project area may be re-used, treated and discharged, discharged to sewer or treated offsite. The EIS does not assess the impacts of discharging contaminated groundwater from excavations into stormwater or other surface water or consider if there is suitable land available to receive the water.

The proponent needs to ensure that any water that is reused is fit-for-purpose and does not have the potential to harm human health or the environment with reference to the relevant best practice guidance and occupational health and safety requirements. If a discharge is proposed, the proponent must complete a discharge impact assessment consistent with the requirements at section 45 of the *Protection of the Environment Operations Act 1997.*