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ENVIRONMENT PROTECTION AUTHORITY

24 October 2024

Claire Hynes
Acting Executive Commissioner
Tasmanian Planning Commission
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HOBART TAS 7001

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Dear Claire Hynes

MACQUARIE POINT MULTIPURPOSE STADIUM REVIEW AND COMMENT ON PROPONENT REPORTS

Thank you for your letter of 26 September 2024, giving formal notice that the Commission is undertaking an integrated assessment of the Macquarie Point Multipurpose Stadium, and advising that the Environment Protection Authority (EPA) has 28 days to provide the Commission with submissions setting out its views in relation to the project.

I advise that the EPA has no views on the proposed project. In relation to agency-specific issues, while the EPA has made previous comment on the draft Guidelines and reports associated with the Macquarie Point Multipurpose Stadium, I consider that the Authority has no regulatory role in the operation of the stadium. Rather, Hobart City Council would be the primary regulator for the Macquarie Point Multipurpose Stadium. This is on the basis that the EPA does not regulate other existing large-scale stadiums in Tasmania and that these are typically regulated by councils.

The EPA has undertaken a technical review of the relevant proponent's reports provided to the Commission dated 17 September 2024 ([Macquarie Point Multipurpose Stadium Integrated Assessment – Tasmanian Planning Commission Website](#)), focusing on environmental matters within the EPA's technical expertise and particularly those associated with construction. Hence, I provide technical comments to the Commission for consideration relating to air quality, noise, potentially contaminated material, water and groundwater at Attachment I to this letter.

I note the EPA's particular concerns regarding assessment and management of potentially contaminated material, water and groundwater, in summary:

- The apparent lack of a development-specific Environmental (Contaminated Land) Auditor's Site Suitability Statement.
- Whether the supporting technical and management reports sufficiently reflect the current development design.
- Whether the reports adequately address all aspects of the project interacting with the environment and the associated potential environmental risks and impacts, in particular the project's interaction with groundwater. The EPA recommends a Groundwater Impact Assessment be undertaken for the proposal.

If you have any questions about the comments provided, please don't hesitate to contact Dr Martin Read, Executive Director, Environmental Assessments (details above). I also note there will be further opportunity to advise the Commission through the integrated assessment process.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Cindy Ong'.

Cindy Ong

A/ DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Att: Attachment I: EPA technical comments on proponent reports, Macquarie Point Multipurpose Stadium, October 2024

Attachment I: EPA technical comments on proponent reports, Macquarie Point Multipurpose Stadium, October 2024

These comments are based on a technical review of the Proponent's reports for the Macquarie Point Multipurpose Stadium, as submitted 17 September 2024 and available on the Planning Commission's website: [Macquarie Point Multipurpose Stadium Integrated Assessment – Tasmanian Planning Commission Website](#).

The reviewed issues include:

1. Air quality
2. Noise
3. Water, groundwater and contaminated land (integrated comments)

The EPA's review has focused on the construction phase of the proposal, although some comments relating to operation have also been provided. This is on the basis that EPA would consider that the Authority has no regulatory role in operation and that Hobart City Council would be the primary regulator for the Macquarie Point Multipurpose Stadium. The issued Guidelines were noted in preparing these comments.

I. Air quality

Relevant reports:

- Macquarie-Point-Multipurpose-Stadium-Summary-Report-September-2024
- Appendix-AA-Construction-Management-Plan-ZANCON-August-2024
- Appendix-KK-Preliminary-Results-of-Acid-Sulphate-Investigation-AECOM-2-August-2024
- Appendix-LL-Site-Environmental-Management-Plan-AECOM-22-October-2021

Specific comments:

Construction:

The proponent will submit a Construction Environmental Management Plan for approval (Section 4.1 of the Summary report refers to approval by the Minister) which includes an air quality plan to manage and mitigate air quality and odour impact during construction.

Dust management is an issue for construction.

As the land is contaminated from historical use, there is a potential of odours in soil to be excavated. The proponent states they will manage this by "covering, or spraying the stockpiles to keep the soil damp to mitigate wind erosion (Appx LL p.23, Section 4.9 Soil management plan)"

Operation:

No air emission related issues are mentioned in the reports relating to the operation stage.

The EPA notes that increased vehicle movements will lead to more emissions from vehicles, and a large amount of sewage entering to the pump station within a short time period could potentially lead to odour issues.

2. Noise

Relevant reports reviewed:

- Macquarie-Point-Multipurpose-Stadium-Summary-Report-September-2024
- Appendix-Q-Noise-and-Vibration-Assessment-AECOM-21-August-2024
- Appendix-AA-Construction-Management-Plan-ZANCON-August-2024
- Appendix-LL-Site-Environmental-Management-Plan-AECOM-22-October-2021

Specific comments:

The EPA supports the recommendations discussed in 'Appendix F Construction Noise Management Plan' of the attached *Appendix-LL-Site-Environmental-Management-Plan-AECOM-22-October-2021* document, particularly the following:

- The Macquarie Point Development Corporation ("Corporation") requires the Contractor to prepare a Construction Noise Management Plan (CNMP) in accordance with the NSW *Interim Construction Noise Guideline* and is to be approved by the Corporation (Approval by the Corporation is referred to in Appendix F and Appendix LL).
- The CNMP should predict approximate noise levels associated with each project stage and set out mitigation measures and management strategies if the noise levels are above the noise level management targets.

As stated in Section O.4 (Implementation) of the attached *Macquarie-Point-Multipurpose-Stadium-Summary-Report-September-2024* document (Macquarie Point summary report), the Mac Point Precinct Plan sets out three broad stages for the delivery of the proposed mixed-use precinct. The Multipurpose Stadium is part of Stage 1.

It is understood that predicted noise and vibration impacts and appropriate mitigation measures for each of these three stages will form a part of the project specific CNMP.

The EPA suggests updating the requirements of the construction environmental management plan (proposed conditions) on page 253 of the summary report including the following to ensure that the CNMP addresses noise and vibration impacts adequately:

- The CEMP should also include:
 - the outcomes of noise modelling which demonstrates that the noise impacts from each construction stage can be managed to meet the project specific/recommended noise level management targets.
 - a procedure to receive and respond to any complaints related to construction noise and vibration.

The EPA makes the following comments on 'Appendix-Q-Noise-and-Vibration-Assessment-AECOM-21-August-2024' report:

- Section 1.2 (Limitations and Clarifications)
 - It is noted that a detailed construction noise and vibration assessment has not been performed as a part of this assessment.
- Section 6.0 (Noise Modelling Methodology) (page 14)
 - The predicted noise level for each receptor was calculated at a height of 1.5 metres above each habitable level. For a multistorey receiver, operation noise levels should also be predicted at upper floor levels and noise impacts assessed accordingly.
 - The reports should clarify whether predicted levels presented in this report are at ground level or at the worst affected façade/level of each receiver location.
 - The reports should discuss and confirm whether receivers at Rosny and Bellerive should be considered in this assessment.

- Section 10.0 Construction Noise and Vibration (page 25)
 - The reports should provide Rating Background Level (RBL) and RBL + 5 dB (A) at the representative noise sensitive receivers to assist preparing a CNMP at a later stage.
- Appendix A Noise Contours
 - Noise Contours should extend to cover sensitive receivers in Rosny and Bellerive.
 - The reports should confirm whether the provided contour maps are free-field or façade-corrected.

3. Potentially contaminated material, water and groundwater

Relevant reports:

- Macquarie-Point-Multipurpose-Stadium-Summary-Report-September-2024
- Appendix-D-Cut-and-Fill-WSP-7-August-2024
- Appendix-S-Stormwater-Management-Plan-BMT-26-August-2024
- Appendix-T-Solid-Waste-and-Hazardous-Material-Management-Incognitus-August-2024
- Appendix-V-Site-Remediation-Strategy-Update-2024-AECOM-17-June-2024
- Appendix-X-Geotechnical-Interpretive-Report-WSP-July-2024
- Appendix-AA-Construction-Management-Plan-ZANCON-August-2024
- Appendix-FF-Conceptual-Hydrogeological-Model-and-Numerical-Model-Memo-Hydro-Earth-Consulting-17-July
- Appendix-II-Geotechnical-Factual-Report-WSP-June-2024
- Appendix-KK-Preliminary-Results-of-Acid-Sulphate-Investigation-AECOM-2-August-2024
- Appendix-LL-Site-Environment-Management-Plan-AECOM-22-October-2021

Specific comments:

1. Lack of development-specific Environmental (Contaminated Land) Auditor's Site Suitability Statement.
2. Supporting technical and management reports did not reflect the current development design. The Precinct Plan design is not aligned with the provided environmental assessments. Many of the proposed management measures are based on radically different earlier design iterations and are not suitable for the Precinct Plan during construction or operation.
3. The reports did not adequately address all aspects of the project interacting with the environment and the associated potential environmental risks and impacts. A significant data gap relates to the lack of assessment regarding the project's interaction with groundwater. The EPA recommends a Groundwater Impact Assessment be undertaken for the proposal.

Please see Attachments 1A and 1B for detail.

Attachment 1A – Detailed issues relating to contaminated land, water and groundwater

ISSUE 1: Lack of development-specific Environmental Auditor's Site Suitability Statement

When an Environmental (Contaminated Land) Auditor issues a Site Suitability Statement, that statement applies strictly in the context of the development plan they have assessed. In the case of the Site Suitability Statements referenced by the proponent in the Summary Report (Section 7.9), the statements relate to the previous Macquarie Point mixed use commercial/residential Masterplan (Macquarie Point Strategic Framework and Masterplan 2015 – 2030¹), with clearly defined:

- building footprints,
- limits on depths of excavation,
- associated assumptions of vapour risk,
- separation from groundwater, and
- limited disturbance of remediated and residual contaminated soils, with a physical barrier layer between site users and potentially impacted soils on the site.

The EPA considers that the existing site suitability statements do not apply to the Precinct Plan (the stadium plan) despite statements by the proponent that they do. The Site Remediation Strategy Update 2024 acknowledges that *"Suitability for each area for the proposed future uses has not been reviewed by the Environmental Auditor and would require assessment of existing Site data and approval for any change in future use prior to development. This assessment does not allow for potential subsurface development (such as further excavation of the Site or development of basements or underground carparking) except where noted in existing Site Suitability Statements and the SEMP."* (Appendix V, Section 8.1.1). Following this acknowledgment, Appendix V, Table 11 implies that Site Suitability for uses including retail, commercial, recreational and public open space may be translated from the specific Site Suitability Statements addressing the former Masterplan design and applied to the Precinct Plan (the stadium plan). This is a misrepresentation of the Environmental (Contaminated Land) Auditor's Site Suitability Statements, which do not relate to the Precinct Plan.

No assessment of site suitability by a Contaminated Land Auditor, as it relates to the contaminated land issues at the site in the context of the current Precinct Plan (stadium plan) has been provided. Without such an assessment it is unclear if the Precinct Plan, which is significantly divergent from the former Masterplan, can be implemented in a way that adequately protects human health and the environment. The Auditor may require risk controls or impose project design constraints that make the project untenable for issues of constructability or capability of meeting the design brief. The assessment of site suitability for the proposed use, a critical step in any infrastructure project on a contaminated site, has not been completed.

In all other jurisdictions in Australia, for a development such as this on an area of highly contaminated land, a Site Suitability Statement from a Contaminated Land Auditor would be required. Such a requirement was legislated in section 39F(1) of the *Tasmanian Macquarie Point Development Corporation Act 2012* for this reason. However, section 19(1) of the *State Policies and Projects Act 1993* states that "Where an order under section 18(2) declaring a project to be of State significance is made, the provisions of any Act, planning scheme or interim order do not apply unless the order has been revoked". The effect of this in relation to the Macquarie Point Multipurpose Stadium is that the potentially contaminated land code provisions of the Tasmanian Planning Scheme (which applies in the City of Hobart and would require an Auditor to certify that the land is suitable for the intended use) do not apply. Section 19(1) also means that section 39F(1) of the *Macquarie Point Development Corporation Act 2012*, which prevents any redevelopment occurring without an accredited environmental auditor certifying that the remediation that has occurred to a standard that is satisfactory for the purposes of the proposed development, does not apply. Nevertheless, the requirement for a Contaminated Land Auditor to certify whether the land is suitable for the intended use is an essential risk control for the complex and highly contaminated Macquarie Point site.

Feasible contaminated land-related hazards that may adversely affect site users include:

- vapour accumulation in basement compartments or ground level rooms of structures leading to asphyxiation or increase in cancer risk,
- contaminated groundwater contact by construction workers or operational staff causing potential exposure to metals, cyanide, hydrocarbons or volatile organic compounds, all have which have been identified as contaminants of concern on the site,
- uncontrolled discharge of contaminated groundwater from the site resulting in adverse environmental or public health outcomes,
- contaminated soil exposure to construction workers and site users resulting in adverse health outcomes.

ISSUE 2: Supporting Technical and Management Documentation not fit-for-purpose

a) Reports insufficiently updated to address the Precinct Plan

Many of the supporting appendices provided as proponent's reports relate to the former Masterplan (which did not include a stadium, and had substantially different building, infrastructure and site use configurations), such as the Site Environment Management Plan, the referenced Site Suitability Statements and the Assessment of Off-Site Ecological Impacts, undertaken in 2020 and referenced in the Site Remediation Strategy Update 2024. These documents are not relevant to the current design (Precinct Plan). The Site Remediation Strategy Update 2024 is mostly focused on the remediation works in the context of the former Masterplan, with some small adaptations, modifications and many identified data gaps to try and account for the Precinct Plan. The result is that the Remediation Strategy Update highlights many of the misalignments between the former Masterplan and the Precinct Plan, and many key questions (site suitability, groundwater interaction, contaminated soil management, acid sulfate soils, soil vapour, etc.) that have not been adequately answered considering the change in site development plan. Therefore assessment of the contaminated land aspects of the site, as it relates to the Precinct Plan is incomplete.

Many of the supporting appendices provided do not consider or assess the significant volumes of likely contaminated excavated soil and/or significant contaminated groundwater dewatering requirements associated with the construction of the stadium and multistorey underground carpark (discussed below).

b) Significant changes to the Proposal since issue of TPC Guidelines.

It appears from the documentation provided that the three level underground carpark structure was added to the design in approximately July or August 2024. Much of the supporting documentation does not consider the significant impact on feasibility, construction methodology, construction management, residual contaminant mobilisation, waste disposal, dewatering, ongoing contaminated groundwater management, changes to groundwater flow paths, subsidence, hard rock blasting, estuarine saltwater intrusion and other environmentally relevant issues when building a deep excavation below the water table into unknown geology on contaminated land with contaminated groundwater.

The EPA considers that the large area, volume and depth of the excavation associated with the underground carpark is a significant change to the scope of the project. The EPA draws attention to the guidelines being based on the project understanding in February 2024 and questions whether the guidelines remain appropriate to capture the significant changes that have occurred to the scope of the project since their issue.

c) Reports not updated to reflect proposed Precinct Plan design

The provided reports do not reflect the proposed design. This makes it challenging to evaluate the presented potential management measures and strategies for suitability to the construction and operation of the project. The reports need to reflect the updated project design, particularly with information relating to the construction and design of underground infrastructure, to enable adequate assessment of the likely environmental risks and impacts in an integrated way. The preliminary nature of the reports and limited design information presented has created inconsistencies in reported results, assessment methods and assumptions adopted within individual reports.

Numerous data gaps have been identified within the technical reports associated with understanding the environmental risk. Given the significance of the data gaps, the EPA cannot comment on the adequacy of the proposed management measurements. This is highlighted by a series of technical reports containing statements related to further assessment being required or not addressing key aspects that are likely to influence their reports and subsequent recommendations.

The EPA considers the preliminary nature of the reports to invalidate some conclusion statements, assessment findings and management measures associated with this stage of the assessment process.

Some examples of this include:

- The TPC guidelines (section 8.7.1) asked for reports to *identify and describe environmental hazards within or adjacent to the project site, including but not limited to... groundwater fluctuations related to buried segments of Hobart Rivulet.*

The Macquarie Point Multipurpose Stadium Summary Report (Section 7.8.3) indicates that this has been addressed in Appendix FF - Conceptual Hydrogeological Model and Numerical Model Memo (Hydro Earth Consulting, 2024) through its assessment of groundwater levels and flow paths.

The modelling presented does not include an assessment of groundwater levels or flow paths associated with construction (significant dewatering to excavate stadium footprint, footings and underground carpark) or operation (tanking or draining of the underground carpark, change in recharge due to stadium roof) of the project. The modelled results are likely to differ from those presented when considering the construction and operation of the project. Therefore, the environmental hazards have not been assessed and are still unknown.

- Macquarie Point Multipurpose Stadium Summary Report (MPDC, 2024) under Section 7.5 Water Quality and Management: Stormwater discharge objectives listed in Table 7.3 references Table 5.7 from Appendix S – Stormwater Management Plan (BMT, 2024). Text on page 159 states *Generally, the achievement of operational stage discharge criteria is taken as being sufficient to demonstrate compliance with receiving water body Water Quality Objectives.*

The EPA contends that this is incorrect. The referenced table in the technical document (Table 5.7 in Appendix S) is for the exclusion of the stadium roof. Table 5.6 of Appendix S (BMT, 2024), which is for the *Developed Mitigate Site (including Stadium)* is more appropriate based on the existing design. The technical report states, in relation to Table 5.6 which includes the contribution from the stadium roof the following: *the discharge objectives are not achieved with the inclusion of the proposed indicative stormwater management controls.*

In addition, the presented values in Table 7.3 of the Macquarie Point Multipurpose Stadium Summary Report (MPDC, 2024) do not align with those presented in the referenced technical report Table 5.7 (BMT, 2024).

The EPA notes that BMT (2024) recommends additional assessment. The EPA supports this and also recommends at minimum that the assumptions used in the model be revisited for suitability against the proposed design as more details become available. This includes the adoption of Roof 6 in the model (Figure 5.1, BMT 2024) being representative of the proposed carpark and associated facilities. Where presented findings include significant assumptions, such as the capture of stormwater, consideration to the likely storage footprint would need to be included in relevant reports, particularly where capture volumes would indicate underground storage as a primary option.

- Macquarie Point Stadium Stormwater Management Plan (BMT, 2024) stating in Section 2.10 Contamination: *The potential for 'liquid emissions' to stormwater at the Site are presently unknown and have not been considered in this report.*

The site contamination is well known and discussed within other technical reports within the Proponent's submitted reports. There is a feasible un-assessed risk for 'liquid emissions' to enter stormwater given the presence of fill, shallow groundwater and the proposed Precinct Plan design. This un-assessed risk may also (once assessed) require reconsideration of the proposed stormwater management system utilising bio-retention systems which the report (BMT, 2024) states in Section 5.4.3: *Other practical considerations for the Macquarie Point site that may influence the*

design consideration include risk of infiltrated waters becoming contaminated or of the bio-retention system becoming contaminated.

- The Construction Environmental Management Plan (CEMP, Appendix AA) identifies and estimated 120 000 m³ of excavated material required to be removed from the site. Based on the stadium footprint of 58 500 m² and an average excavation depth of approximately 2 m, this volume of material does not appear to include the underground carpark excavation, which would be an additional 8100 m² of excavation to a depth of 10 m, or 81 000 m³ of material, bringing the total volume of material to 200 000 m³ or approximately 300 000 tonnes of material.

The CEMP does not consider the time and operational impacts of stockpiling large volumes of potentially contaminated excavated material while awaiting laboratory test results, material classification and approval for disposal. The CEMP does not consider the capability of local landfills to receive a swift influx of between 180 000 and 300 000 tonnes of contaminated soil in 7-8 months. 180 000 tonnes exceeds the average annual acceptance volume for all types of waste for Copping Regional Waste Depot. 300 000 tonnes is double the average annual acceptance volume for all types of waste for Copping Regional Waste Depot, and would consume 2 operational years of landfill cell airspace, potentially requiring the design, approval, construction and commissioning of future infrastructure to be bought forwards. Sending the material to Copping would effectively be increasing the amount of material entering the landfill by 200% or more for the duration of this time (Copping would typically receive 90 000 tonnes of material in this time period). It is very unlikely Copping has the equipment, staff and infrastructure capacity to ramp up to triple (or more) the typical daily input and down on this timescale. Closer landfills (McRobies Gully, Jackson Street) do not have the airspace capacity to receive any meaningful amounts of this material.

The CEMP also fails to consider the management of the large volumes of contaminated groundwater that will be generated by dewatering for the earthworks on the site.

Recommendation

The project design must progress to a point that adequate environmental assessments can be undertaken to capture the likely environmental risks and impacts associated with the construction and operation of the project. The reports must reflect the latest design developments, such that the actual risks associated with the design may be assessed. The updated reports should also be available for critical evaluation by the relevant agencies with relevant expertise as the assessment process progresses.

The following reports require additional assessment of the environmental risk and impacts of the project in the context of the presented Precinct Plan and in order to enable review against the issued guidelines:

- Site Remediation Strategy Update 2024 (AECOM, 2024)
- Geotechnical Interpretive Report (WSP, 2024)
- Conceptual Hydrogeological Model and Numerical Model Memo (Hydro Earth Consulting, 2024)
- Stormwater Management Plan (BMT, 2024)
- Construction Management Plan (Zancon, 2024)

The MPDC must progress the Precinct Plan design, particularly the underground works and infrastructure elements, for the environmental impacts to be able to be adequately assessed by the technical reports and suitable management strategies presented.

Specific consideration should be given to groundwater (discussed further below), stormwater and contaminated soil, environmental impacts, logistics and management measures.

ISSUE 3: Groundwater

Risks and potential impacts to the environment from the project's construction and operation interacting with groundwater have not been adequately assessed. As the risk and potential impacts have not been adequately assessed, the provided environmental management strategies cannot in turn be assessed to determine whether they are sufficient to ensure that construction and operation of the project occurs within acceptable environmental limits.

The EPA notes that the Macquarie Point Multipurpose Stadium Summary Report (MPDC, 2024) states under Section 7.9.2 Ground Water Contamination that *potential exposure can be effectively mitigated through implementation of an appropriate Construction Environmental Management Plan (sic) (CEMP)*. The provided Construction Management Plan - Appendix AA (Zancon, 2024) does not reference groundwater, and therefore contains no mention regarding its management. The CEMP must reflect the likely management strategies for groundwater. Strategies must be based on technical inputs including estimated inflows rates, volumes and quality to demonstrate their suitability and practicality.

Environmental risk and impact assessment

The project's interaction with groundwater poses a significant environmental risk. The EPA was unable to identify any submitted report that adequately assessed the relevant potential risks and impacts. The project will interact with groundwater based on the information presented in the architectural design drawings (Appendix A – COX - Drawing Number A20-0100) and Macquarie Point Conceptual Hydrogeological Model and Numerical Model Memo (Appendix FF – Hydro Consulting). Environmental risk is significant where extraction is required, such as during construction and where drained structures are proposed during operation. This does not preclude the potential risk from tanked structures which may also influence groundwater levels and alter flow paths.

The interaction, extraction, handling and treatment of groundwater requires assessment to determine appropriate construction and operational management strategies and procedures to mitigate environmental impact. Without any identified management measures in place, there is significant potential for the interaction of groundwater and surface water during construction.

The EPA recommends assessment for the following potential risks and impacts related to groundwater during the construction and operation of the project:

- The potential interaction between groundwater, surface water features and any proposed stormwater management for the project.
- Volumes, quality, inflow rates and potential treatment and storage of groundwater requiring extraction during the construction and operation of the project.
- Impact to sensitive receptors or receiving environments, including environmental values and water bodies, and surrounding infrastructure due to changes in groundwater levels and water quality associated with the construction and operation of the project, such as:
 - Changes to water quality associated with transportation of onsite and offsite contaminants, exposure of potential acid sulfate / acid sulfate soils (PASS/ASS) and/or saltwater intrusion.
 - Reduced availability of groundwater to sensitive receivers.
 - Discharge of poor-quality groundwater to receiving environments.
 - Settlement resulting from drained soils (including at onsite and offsite infrastructure).
 - Groundwater fluctuations related to buried segments of Hobart Rivulet.

These should be documented in a comprehensive Groundwater Impact Assessment (GIA) report. The report should continue to be revised to account for changes in the project design as it progresses.

Management

Extracted groundwater will become wastewater that requires specific management controls during construction and operation of the project. The volumes, quality and inflow rates require determination for suitable management strategies to be identified. Considerations need to include:

- Constructability of the design and if the design requires adoption of construction methodologies that restrict or inhibit inflows.
- The potential exposure to contaminated wastewater (existing or introduced from construction methodologies, such as blasting).
- The generation of additional leachate from stockpiles.
- If generated wastewater requires storage, testing and treatment to meet any approved discharge criteria.

- If discharge criteria cannot be met, then alternative measures such as offsite disposal may be required.
- Ongoing requirement to manage wastewater if drained structures are adopted. Alternatively, if tanked structures are adopted, their impact on future groundwater levels, flow paths and water quality should be assessed.
- Logistics associated with the management of groundwater and wastewater.

Recommendation

The EPA recommends that the Proponent be required to undertake a GIA to assess the environmental risks and impacts related to the significant data gaps identified above.

The findings of the GIA will need to be considered and applied to the following reports, assessments and management plans:

- Macquarie Point Multipurpose Stadium Summary Report (MPDC, 2024)
- Financial Impact Report (KPMG, 2024)
- Conceptual Hydrogeological Model and Numerical Model Memo (Hydro Earth Consulting, 2024)
- Geotechnical Interpretive Report (WSP, 2024)
- Preliminary Results of Acid Sulphate Investigation (AECOM, 2024)
- Natural Values Assessment (North Barker, 2024)
- Transport Study (WSP, 2024)
- Construction Management Plan (Zancon, 2024)
- Stormwater Management Plan (BMT, 2024)
- Site Environment Management Plan (AECOM, 2021)
- Site Remediation Strategy Update (AECOM, 2024)

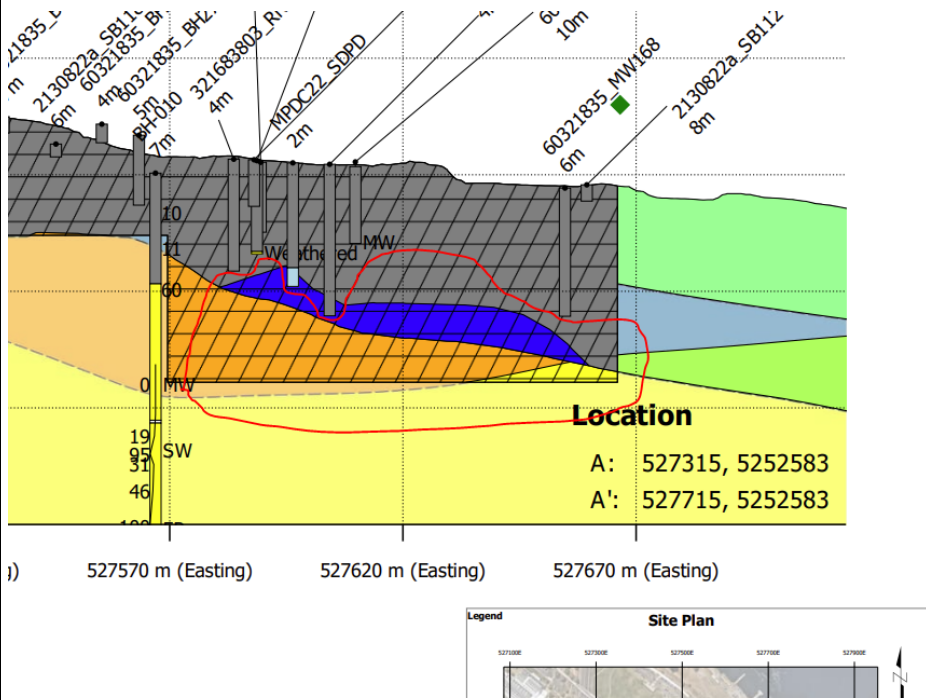
Depending on the findings of the GIA, additional environmental management plans or subplans to the CEMP may be required to demonstrate that the construction and operation of the project can occur within acceptable environmental impacts and in a manner that avoids significant adverse effects to surrounding land uses and infrastructure.

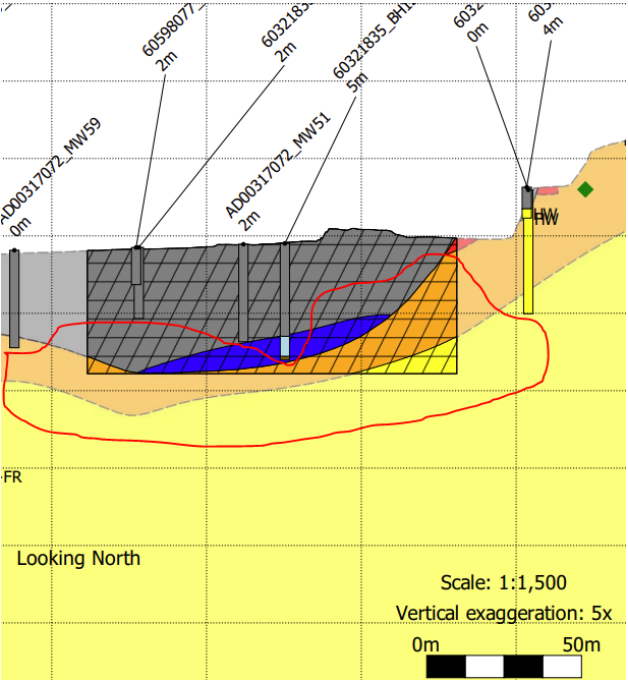
Attachment IB – Tables of specific comments relating to contaminated land, water and groundwater

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
8.6 Solid Waste and Hazardous Material Management			
Clause 8.6.1 The reports are to identify the sources, nature and quantities of all solid wastes likely to be generated, any hazardous or controlled wastes that will be collected and disposed of separately from wastewater streams and describe the management of these waste materials and methods of use, storage, treatment or disposal of each type of waste. Clause 8.6.2 The reports are to review and evaluate the potential for human health to be affected by wastes from the proposed project and describe any measures required to mitigate or manage any identified human health impacts.	While Appendix T identifies (Section 8.6.1) the importance of consideration for the use of the waste hierarchy during the construction phase of the project, no further commentary or strategy for managing construction waste is discussed. The development will likely involve the excavation and removal of significant quantities of: - likely contaminated soils, - removal of contaminated groundwater; and - potential discovery of residual contaminating infrastructure from the historical site uses (such as abandoned underground storage tanks, pipelines, hazardous wastes or chemical residues). Where quantities are unknown it is not possible to adequately assess potential impacts on human health. Also in relation to Clause 8.6.2, see statements below relating to site suitability assessments.	Insufficient	Managing these construction phase wastes and their attendant risks, which may have a high consequence to human health or the environment, is a critical component of the project, and should be captured by the response to guideline 8.6.

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
Clause 8.6.1 The reports are to identify the sources, nature and quantities of all solid wastes likely to be generated, any hazardous or controlled wastes that will be collected and disposed of separately from wastewater streams and describe the management of these waste materials and methods of use, storage, treatment or disposal of each type of waste.	The Construction Management Plan identifies that up to 120 000 cubic metres of material (approximately 180 000 tonnes) will need to be excavated as part of the works. This volume and mass does not appear to account for the underground carpark excavation (estimated additional 81 000 cubic metres / 120 000 tonnes). Based on the soils classified to date that have been excavated at the site, a significant proportion of the material is likely to be classified under <i>EPA Information Bulletin 105 – Classification and Management of Contaminated Soil for Disposal</i> as Level 2 or Level 3 Material. This mass and volume of contaminated soil may be more than current available landfill cell space in Southern Tasmania and will have a significant impact on forward planning for cell construction, which typically takes 3-5 years to design, gain regulatory approval, engage a construction contractor, build and commission for use. For example, all level 3 contaminated soils must go to the C Cell at Copping, which has a capacity of 300 000 m³, and a design life of a further 20-25 years. Taking up half the capacity of the cell for a single project may not be the most efficient use of the cell. B Cells, which are able to receive Level 2 material, are typically designed to meet forecast municipal solid waste demands. There is currently very limited B Cell airspace at McRobies Gully (City of Hobart) and Jackson Street (Glenorchy) landfills. Copping landfill may have capacity, but a sudden influx of up to 300 000 tonnes of contaminated soil material may overwhelm the site infrastructure, staffing or capability, as the site typically receives 150 000 tonnes total per annum into the B Cell across all waste types.	Insufficient	The response to the guidelines must consider how the management of potentially contaminated soil and all types of confirmed contaminated soil (level 2, 3 and 4) impacts the constructability, programming and management of the works. The response to the guidelines must identify where contaminated soil materials can be disposed of, and if landfill infrastructure development needs to be bought forwards to facilitate the project, and if there are any financial, logistical or resource availability barriers to such a landfill infrastructure project that must be overcome to enable the Precinct Plan works.
Clause 8.6.1 The reports are to identify the sources, nature and quantities of all solid wastes likely to be generated, any hazardous or controlled wastes that will be collected	Any soils identified as level 4 when excavated will require remediation either on site or off site. No plan is provided to manage this waste material. Given the footprint of works, stockpiling and/or treatment on site is not likely to be feasible, and no proposed fate for the waste materials has been identified.	Insufficient	The reports must identify an appropriate and feasible management strategy for identified level 4 contaminated soil.

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
and disposed of separately from wastewater streams and describe the management of these waste materials and methods of use, storage, treatment or disposal of each type of waste.			
Clause 8.6.1 The reports are to identify the sources, nature and quantities of all solid wastes likely to be generated, any hazardous or controlled wastes that will be collected and disposed of separately from wastewater streams and describe the management of these waste materials and methods of use, storage, treatment or disposal of each type of waste.	There is an unknown quantity of potentially contaminated groundwater that will need to be extracted and disposed of to create the subgrade for the stadium footprint and the void for the underground carpark. No strategy for managing this water and the attendant environmental risks has been demonstrated.	Insufficient	The reports must identify an appropriate and feasible strategy for managing contaminated groundwater as part of the construction works.
Clause 8.6.3 The reports are to describe any measures taken to avoid or minimise the amount of waste which must be disposed of.	No design considerations for optimising the re-use of excavated material and/or limiting the extent of ground disturbance or excavation to limit the amount of waste contaminated soil material requiring disposal is discussed.	Insufficient	The response to guideline 8.6.3 should describe measures taken to optimise and reduce the volume of contaminated soil that requires removal from the site.

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
8.7 Environmental Hazards			
Clause 8.7.1 The reports are to identify and describe any environmental hazards within or adjacent to the project site, including but not limited to: • overland flooding; • groundwater fluctuations related to buried segments of Hobart Rivulet; • acid sulfate soils; • coastal inundation; and • contaminated land	The EPA would like clarity on the confidence of the presented 3D geological model in the Geotechnical Interpretive Report (WSP, 2024) and whether further boreholes are proposed to refine the model. The cross-sections shown below (Appendix D – ‘Cut and Fill’ (WSP, 2024)), and the ground investigation plan, Figure A3 of Appendix X - Geotechnical Investigation Report (WSP, 2024), suggest the geological material within and underlying the carpark excavation footprint has not been tested or confirmed to depth. Refer to the marked-up areas in red.  The diagram is a geological cross-section labeled 'j)'. It shows a profile of the ground with various soil layers represented by different patterns and colors. Boreholes are indicated by vertical lines with labels such as '2130822a', '60321835', '4080321835', '321683803', 'MPDC22-SDPD', and '60321835 MW168'. Depths are marked along the boreholes, including 6m, 10m, 19m, 31m, and 46m. A red outline highlights a specific area of the cross-section, likely the carpark excavation footprint mentioned in the text. A 'Location' box provides coordinates: A: 527315, 5252583 and A': 527715, 5252583. At the bottom, a 'Site Plan' legend shows a horizontal scale with markers for 527570 m (Easting), 527620 m (Easting), and 527670 m (Easting). A north arrow is also present.	Insufficient	The incomplete Acid Sulfate Soil Assessment for the site should be completed and provided for review as part of the assessment of the development. Additional geotechnical works (boreholes) should be performed in the underground carpark area to improve confidence in the geology and risks of encountering acid sulfate soils during the excavation works. Further assessment of the projects environmental hazards related to groundwater fluctuations related to buried segments of Hobart Rivulet.

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
	 This would indicate a greater degree of uncertainty associated with the extent of material within this area. This material includes fill and estuarine sediments which are known to contain significant environmental risks associated with contaminants and acid sulfate soils. While the extent of estuarine sediments may be inferred based on sensible assumptions, the lack of full depth investigative boreholes, to and beyond the planned extent of excavation in the vicinity of the underground parking structure, is concerning. The complex site history of land reclamation with diverse types of fill, multiple contaminating land uses and remediation efforts means that confirmation of the extent of the risk, and sampling to confirm the		

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	potential or actual acid sulfate soil behaviour and effective treatment options should occur. The acid sulfate soil assessment for the site is identified in the Remediation Strategy Update as incomplete. The Strategy identifies that an Acid Sulfate Soil Management Plan is required for development at the site. Such a plan has not been provided, and cannot be fit for purpose without understanding the full extent of the risk. Regarding groundwater fluctuations related to buried segments of Hobart Rivulet, the modelling presented in Appendix FF - Conceptual Hydrogeological Model and Numerical Model Memo (Hydro Earth Consulting, 2024) does not include an assessment of groundwater levels or flow paths associated with construction or operation of the project. These are likely to differ from those presented in the report when considering the construction and operation of the project. Therefore, the environmental hazards are still unknown and have not been assessed.		
Clause 8.7.1 The reports are to identify and describe any environmental hazards within or adjacent to the project site, including but not limited to: • overland flooding; • groundwater fluctuations related to buried segments of Hobart Rivulet; • acid sulfate soils; • coastal inundation; and • contaminated land	The Site Environment Management Plan provided (SEMP - Appendix LL) relates to the former Masterplan for the Macquarie Point redevelopment (October 2021) and has not been modified to consider the stadium development (Precinct Plan) in any way. The SEMP considers an underground carpark in the unsaturated zone (1.5 m above the water table) only. The SEMP considers interaction with groundwater (Section 4.10) to be incidental, and not a significant factor in construction, with water removal undertaken by a licensed waste contractor. The Precinct Plan underground carpark extends >5 m below the water table and will require significant dewatering during construction and tanking or drainage to control contaminated groundwater ingress during operation. Neither are discussed in the plan. Damage to neighbouring structures and/or infrastructure as a result of settlement caused by excavation and/or dewatering during the large and deep excavation required for the underground carpark are not discussed or considered. Mobilisation of residual contaminants in the groundwater on the	The response to guideline 8.7.1 is not fit-for purpose. The information provided does not relate to the current Precinct Plan.	The SEMP must be updated to reflect the current Precinct Plan design.

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	site (through drawdown of groundwater) will occur during and excavation and dewatering campaign of this scale.		
Clause 8.7.1 The reports are to identify and describe any environmental hazards within or adjacent to the project site, including but not limited to: • overland flooding; • groundwater fluctuations related to buried segments of Hobart Rivulet; • acid sulfate soils; • coastal inundation; and • contaminated land	The Site Remediation Strategy 2024 generally mixes terminology between the former Masterplan and new Precinct Plan which makes it difficult to interpret. Table 6 is not updated to reflect stadium development (Precinct Plan). 5.4 Soil vapour risk remains in Precinct North, Promenade, U/G carpark areas (Antarctic Facilities, Big U/G Carpark, Stadium) Soil vapour intrusion risks to date do not consider significant excavation to the depth of the underground carpark. This is a key data gap. Activities that lower the site elevation (deep carpark excavation) and/or have the potential to modify groundwater flow and mobilise LNAPL (construction dewatering and underground carpark) are identified as triggers that may result in a requirement for further LNAPL remediation (6.3.1). The site suitability statements issued to date relate to the former Masterplan and are not fit for purpose to determine if the contaminated site can be used for the revised Precinct Plan. As the plan for the various areas of the site has changed, the suitability statements must be reassessed by a Contaminated Land Auditor new (or amended) suitability statements issued that reflect the changed proposed configuration of the site.	The response to guideline 8.7.1 is not fit-for purpose. Understanding of the contamination issues on the site is not sufficiently advanced in the context of the Precinct Plan to determine if the development is suitable for the site.	Understanding of the contaminated land issues affecting the site has not been advanced in the context of the Precinct Plan. The numerous data gaps that are identified in the Site Remediation Strategy need to be closed before the development proceeds to ensure the site is suitable for the proposed use. A Site Suitability Statement for the Precinct Plan should be provided by an Environmental Auditor before development is approved to proceed.
9.2 Construction management			
Clause 9.2.1 The reports are to provide full details on the timeframe and staging for construction. The reports are to discuss and assess the potential	Regarding <i>The reports are to provide full details on the timeframe and staging for construction.</i> Appendix AA – Construction Management Plan (Zancon, 2024) lists the period for each stage of works and identifies that construction stages may overlap. It is unclear what stages may overlap and to what degree. The total construction duration is unclear.	Insufficient	Further assessment required to inform construction timeframes and staging, including further clarity around construction periods and their interactions.

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
effects of construction activities on the environment, surrounding land uses and infrastructure.	Given the agency specific issues identified in Appendix A, the timeframes presented may not be accurate. Regarding <i>The reports are to discuss and assess the potential effects of construction activities on the environment, surrounding land uses and infrastructure.</i> The EPA considers that the submitted reports contain insufficient information in their discussion and assessment of the potential effects of construction activities on the environment. Further detail is required to support the assessment including: • quantity of contaminated material (liquid and waste) to be managed • environmental impacts related to excavations below the water table, particularly regarding groundwater and deeper excavations associated with the proposed carpark. Impacts may extend to surrounding land uses. • environmental effects related to blasting for excavation, in reference to Geological unit 4C of the Geotechnical Interpretive Report (WSP, 2024) • potential risk and management around potential acid sulfate soil. The EPA notes that this assessment is in progress. • potential risk for contaminated liquid (wastewater and groundwater) to enter stormwater.	Insufficient	The design needs to progress with further environmental assessments required to understand the likely environmental impacts.
Clause 9.2.2 The reports are to outline: The stages and periods of construction Daily working timeframes for different elements of the construction process	<i>The stages and periods of construction</i> The stages have been outlined although the total period of construction is unclear. <i>Daily working timeframes for different elements of the construction process</i> The EPA has no comment.	Clause 9.2.2 was not addressed in the Macquarie Point Multipurpose Stadium Summary Report (page 197).	The key impacts can only be outlined once adequate assessment has been undertaken. For this to occur the design needs to progress. The Proponent should provide information regarding the construction on all excavations required for the proposal, including any associated with

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Transport routes and access points for heavy and light vehicles Location of areas of storage, on-site manufacturing or temporary offices Potential adverse environmental effects Potential adverse environmental effects from construction noise Potential adverse effects from dust The results of soil contamination and acid sulfate soil analysis and description of any proposed disturbance The proposed construction stormwater management approach and mitigation strategies for the potential for release of entrained sediment and contaminants from construction activities to the Derwent Estuary; and The expected overall and daily quantities of materials	Transport routes and access points for heavy and light vehicles The EPA has no comment. Location of areas of storage, on-site manufacturing or temporary offices Location of areas of storage for handling of construction waste (solid and liquid) have not been outlined. The storage of stormwater (North Sediment Pond) proposed in Appendix AA – Construction Management Plan (Zancon, 2024) may not be suitable or practical. Potential adverse environmental effects Potential adverse environmental effects regarding groundwater have not been outlined. Potential adverse environmental effects from construction noise Addressed separately in EPA comments relating to noise. Potential adverse effects from dust Addressed separately in EPA comments relating to air quality. The results of soil contamination and acid sulfate soil analysis and description of any proposed disturbance Results from soil contamination have been outlined, although data-gaps remain around sampling location and depths associated with the Proposal and the time lapsed since sampling was undertaken. Results of acid sulfate soil sampling are outstanding. The proposed construction stormwater management approach and mitigation strategies for the potential for release of entrained sediment and contaminants from construction activities to the Derwent Estuary Management and mitigation strategies were outlined but require further consideration, backed by additional assessment, to their suitability. The expected overall and daily quantities of materials and movement of heavy and light vehicles.	The following line items were insufficiently addressed: The stages and periods of construction Location of areas of storage. Potential adverse environmental effects. The results of soil contamination and acid sulfate soil analysis and description of any proposed disturbance. The proposed construction stormwater management approach and mitigation strategies for the potential for release of entrained sediment and	management measures (such as storage for stormwater or construction inflows), and basement designs (tanked or drained). The following reports need to be updated to address all environmental impacts associated with the design progression: <i>Conceptual Hydrogeological Model and Numerical Model Memo (Hydro Earth Consulting, 2024)</i> <i>Geotechnical Interpretive Report (WSP, 2024)</i> <i>Preliminary Results of Acid Sulphate Investigation (AECOM, 2024)</i> <i>Natural Values Assessment (North Barker, 2024)</i> <i>Transport Study (WSP, 2024)</i> <i>Stormwater Management Plan (BMT, 2024)</i> <i>Site Environment Management Plan (AECOM, 2021)</i> <i>Site Remediation Strategy Update (AECOM, 2024)</i>

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
and movement of heavy and light vehicles.	The expected overall and daily quantities of materials (waste) were not provided. Whilst movements of heavy and light vehicles were outlined, given the data-gaps associated with waste (solid and liquid), these numbers may not be representative.	contaminants from construction activities to the Derwent Estuary. The expected overall and daily quantities of materials and movement of heavy and light vehicles.	In addition, a Groundwater Impact Assessment (GIA) should be submitted addressing the Agency Specific Issues and recommendations outlined in Appendix A.
Clause 9.2.3 The reports are to outline strategies that address significant effects and demonstrate that construction is able to occur: • Within acceptable environmental limits; and • In a manner that avoids significant adverse effects to surrounding land uses and infrastructure.	Due to the responses outlined above against guideline clauses, where the assessment of significant effects was insufficiently addressed, the EPA is unable to advise if the provided outlined strategies are appropriate.	Insufficient. In addition, Clause 9.2.3 was not addressed in the Macquarie Point Multipurpose Stadium Summary Report (page 197).	The design needs to progress with further environmental assessments required to understand the likely environmental impacts. Once the impacts are known, then an assessment of proposed strategies can be undertaken. The following management plans will need to be updated following receipt of additional assessments: <i>The Construction Management Plan (Zancon, 2024)</i> <i>Site Environment Management Plan (AECOM, 2021)</i> <i>Site Remediation Strategy Update (AECOM, 2024)</i>

TPC Guideline	EPA Comments on information provided	Assessment of response	Recommendation
			<i>Stormwater Management Plan (BMT, 2024).</i> Depending on the findings of the GIA, additional management plans may be required.