

20/04/2026

Attention: Deana Burns
EPA Part 2 Submission



Department of Planning, Housing and Infrastructure
Locked Bag 5022
Parramatta
NSW 2124

PO Box 1563
Warriewood
NSW 2102

ABN 45 162
835 083

Dear Deana

Response to EPA Part 2 Submission and EPA Advice on Submissions Report

Introduction

This letter has been prepared by Element Environment Pty Ltd (Element) on behalf of IXOM Operations Pty Ltd (IXOM) to provide a response to the second letter of advice issued by the NSW Environment Protection Authority (EPA) dated 30 September 2025 (EPA Part 2 submission). The EPA issued further advice on 15 April 2026, titled EPA Advice on Submissions Report. This letter includes the items raised in the EPA Part 2 submission as well as further comments and recommendations, which have also been addressed in this letter.

The EPA Part 2 submission raises matters relating to contaminated land management and dangerous goods associated with the proposed modification (DA35/98-Mod-6).

This response should be read in conjunction with the response to submissions (RTS) report dated 30 March 2026, which provides a comprehensive response to agency submissions, including EPA Part 1.

It is noted that matters raised by EPA in Part 2 have largely been addressed through the RTS and supporting technical documentation, however this letter provides clarification and cross-referencing to those responses and identifies any additional commitments where required.

EPA Part 2 Submission

The EPA Part 2 submission primarily relates to:

- contaminated land management, including the Detailed Site Investigation (DSI), Remedial Action Plan (RAP), and site audit requirements;
- groundwater and legacy contamination considerations;
- dangerous goods management and emergency scenarios; and
- integration of safety and environmental management systems.

Response to EPA Part 2

Consistent with the RTS, each aspect included in the EPA Part 2 submission has been reproduced in bold below with a response provided for each item.

Contaminated Land Management

The EPA reviewed the Detailed Site Investigation (DSI) and Remedial Action Plan (RAP) for the Proposal and reminds DPHI that the proposed site is regulated under the Contaminated Land Management Act (1997) (Notice No. 20204441, 20201704, 20194419, 20172802, 20174405, 21074). The EPA identified the following for DPHI's consideration when making its determination:

- **The DSI identified that the site contains asbestos in surface soil samples, and mercury and chlorinated hydrocarbons in soil vapour that exceeds the appropriate guideline criteria and may pose a risk to human health.**

Noted. The presence of asbestos and soil vapour contamination has been comprehensively assessed through the Detailed Site Investigation (DSI) and addressed via the Remedial Action Plan (RAP). The RAP includes capping of asbestos-containing material, installation of a vapour barrier beneath the proposed building, and implementation of a Long-Term Environmental Management Plan (LTEMP). These measures are consistent with EPA guidance and ensure risks to human health are appropriately mitigated. The RTS incorporates interim audit advice (Section 3.2.4 and Appendix F) which supports the findings of the DSI and RAP and confirms the site can be made suitable for the proposed use.

- **The Groundwater was not sampled as part of the investigation however the site is within the Botany Groundwater Cleanup (BGC) area which is regulated by the EPA under a Voluntary Management Proposal. The site's groundwater is known to be contaminated with chlorinated hydrocarbons and other contaminants sourced from the historical industrial land use practices.**

Noted. The modification does not involve groundwater extraction or deep excavation that would intercept groundwater. The proposed works are confined to shallow excavation within an already disturbed industrial site. The development will not interfere with the Botany Groundwater Cleanup program or alter existing contamination pathways. As outlined in the RTS, the proposal does not exacerbate existing contamination risks.

- **The Applicant has not engaged an accredited site auditor to certify that the site is suitable for the proposal.**

As outlined in the RTS (Section 3.2.4), IXOM has engaged a NSW EPA-accredited Site Auditor and obtained interim audit advice confirming that the DSI and RAP are appropriate and that the site can be made suitable for the proposed use subject to implementation of the RAP. The Site Auditor will remain engaged through remediation, validation and certification stages, and a Site Audit Statement will be issued prior to occupation.

Remedial Action Plan

The EPA reviewed the Remedial Action Plan (RAP) and is satisfied with the proposed remediation strategy. The proposed detailed remedial options assessment in Table 4.1 of the RAP includes:

- capping and containing asbestos containing material under hardstand surfaces and a marker layer which will be surveyed;
- installation of a vapour barrier beneath the complete footprint of the proposed building to prevent vapour intrusion into buildings from mercury and chlorinated hydrocarbons within soil and soil vapours beneath the site; and
- preparation of a Long-Term Environmental Management Plan to be implemented to ensure the capping of asbestos is maintained and that the vapour barrier is not compromised to ensure the ongoing protection of workers.

The EPA recommends DPHI request the Applicant implement the preferred remedial options detailed in the RAP for the site.

Noted. IXOM commits to implementing the RAP as submitted, including capping, vapour barrier installation and LTEMP implementation. These measures will be carried out in accordance with EPA requirements and verified by the Site Auditor.

Site Auditor

The Secretary Environmental Assessment Requirements (SEARs) required a suitable and qualified consultant to be engaged and to determine if the proposed site is suitable following remedial works. Considering the nature of the contamination at the Site the EPA recommends DPHI consider that the Applicant engages an EPA accredited site auditor to ensure the independent verification that the investigations, remedial works and validation adhere to the appropriate standards, procedures and guidelines and that it is independently verified that the site is suitable for the proposed use.

The EPA recommends that DPHI request the Applicant to engage an NSW EPA accredited site auditor to:

- review the DSI
- determine if the RAP is appropriate to make the site suitable for the proposed use
- review the validation report and Long-Term Environmental Management Plan (LTEMP); and Page 4
- issue a section A site audit statement which certifies the site has been made suitable for the proposed land use subject to implementation of an approved LTEMP following the remediation.
- The Applicant must engage a NSW EPA accredited site auditor throughout the duration of works to manage contamination.
- The Applicant must submit to the Planning Secretary for information interim audit advice from the site auditor that certifies that the Detailed Site Investigation (DSI) and Remedial Action Plan (RAP) are appropriate. The RAP must only be implemented once it is considered appropriate by the site auditor and any changes to the RAP must be approved in writing by the site auditor.
- At the completion of remediation and site validation works, the site auditor must issue either a section A1 site audit statement or a section A2 site audit statement (accompanied by a Long-Term Environmental Management Plan and the accompanying site audit report which states that the land is suitable for the proposed use.
- The site audit statement and site audit report certifying the site is suitable for the proposed use must be submitted to the Planning Secretary no later than one month before the use of the proposed development.
- During occupation and/or use of the land, the ongoing obligations of any LTEMP plan associated with a section A2 site audit statement must be complied with.

The EPA also recommends that for increased certainty on the merits of this modification application, DPHI should consider requesting the Applicant to submit an interim audit advice prepared by an accredited site auditor commenting on the adequacy and appropriateness of the RAP submitted as part of the Proposal.

A NSW EPA-accredited Site Auditor has been engaged as described in the RTS and has provided interim audit advice confirming the adequacy and appropriateness of the DSI and RAP. The auditor will continue to oversee remediation, validation and certification, and will issue a formal Section A2 Site Audit Statement and Site Audit Report following completion of the remediation works in accordance with the NSW EPA Guidelines for the NSW Site Auditor Scheme (2017). The site audit will verify outcomes and, if appropriate, confirm that the site is suitable for the approved industrial use.

The EPA recommends DPHI to remind the Applicant of the following:

- **The Applicant must ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination [note that this would render the Applicant the ‘person responsible’ for the contamination under section 6(2) of Contaminated Land Management Act (CLM Act)].**

Noted. The modification does not alter existing contamination pathways. The proposed works are confined to a highly disturbed industrial site and include implementation of remediation and containment measures in accordance with the RAP, including capping of asbestos-containing material and installation of a vapour barrier. These measures ensure that the risk profile of pre-existing contamination is not increased during construction or operation. Accordingly, the development will not result in a change of risk that would give rise to significant contamination under the CLM Act.

- **The processes outlined in State Environmental Planning Policy (Resilience and Hazards) 2021 must be followed in order to assess the suitability of the land and any remediation required in relation to the proposed use.**

Noted. The modification has been prepared having regard to the requirements of State Environmental Planning Policy (Resilience and Hazards) 2021. Land contamination has been assessed through a DSI and RAP, which confirm that the site can be made suitable for the proposed industrial use subject to implementation of the recommended remediation measures. This approach is consistent with the requirements of the SEPP and relevant EPA guidelines, and is further supported by interim audit advice provided by a NSW EPA-accredited Site Auditor.

- **The EPA should be notified under section 60 of the CLM Act for any contamination identified which meets the triggers in the Guidelines for the Duty to Report Contamination www.epa.nsw.gov.au/resources/clm/150164-report-land-contamination-guidelines.pdf**

Noted. IXOM will comply with all statutory obligations under the Contaminated Land Management Act 1997, including the duty to report contamination under section 60 where required. Any contamination identified during construction or operation that meets the reporting thresholds outlined in the EPA Guidelines for the Duty to Report Contamination will be reported to the EPA in accordance with legislative requirements.

- **The EPA recommends the use of “certified consultants”. Please note that the EPA’s Contaminated Land Consultant Certification Policy Engaging a consultant | EPA supports the development and implementation of nationally consistent certification schemes in Australia, and encourages the use of certified consultants by the community and industry. Note that the EPA requires all reports submitted to the EPA to comply with the requirements of the CLM Act to be prepared, or reviewed and approved, by a certified consultant.**

Noted. The contamination assessments supporting the modification, including the DSI and RAP, have been prepared by suitably qualified and experienced consultants accredited by the Environment Institute of Australia and New Zealand as a Certified Environmental Practitioner (Site Contamination). Where required, reports will be reviewed and/or approved by appropriately certified consultants in accordance with EPA policy. In addition, a NSW EPA-accredited Site Auditor has been engaged to independently review contamination-related documentation and verify site suitability, providing an additional level of assurance consistent with EPA expectations.

Dangerous Goods & Emergency Scenarios

The EPA has reviewed the Modification Report, Quantitative Risk Assessment and Dangerous Goods Transport Risk Assessment and recommends that DPHI request the Applicant:

- **Consider that quantity of chemicals required for Liquefaction Building Scrubber is always maintained at site to treat worst case chlorine leakage.**

Noted. The co-location of the proposed Chlorine Liquefaction Plant (CLP) with the existing Chlor-Alkali Plant (CAP) provides inherent operational and safety advantages. The site is already equipped with the infrastructure, utilities and controls required to safely manage chlorine, including the availability of caustic soda for emergency scrubbing and neutralisation.

The design and operation of the liquefaction building scrubber system will ensure that sufficient caustic soda (reactant) is available on site to treat worst-case chlorine release scenarios, consistent with the assumptions adopted in the Quantitative Risk Assessment (QRA). Caustic soda storage capacity, system redundancy and operational procedures will be confirmed and implemented as part of detailed design and commissioning to ensure ongoing compliance with this requirement.

- **During operation one chlorine tank should remain empty and standby to accommodate any chlorine storage tank leak.**

Noted. The design includes dual chlorine storage tanks to provide contingency capacity. Under normal operation, one tank is maintained on standby with capacity to accommodate transfer of inventory in the unlikely event of a storage tank leak or failure.

In such an event, operational procedures will prioritise transfer of liquid chlorine to the standby tank where practicable, with any residual release captured within the bunded containment system. The storage tanks and containment measures have been designed to manage credible failure scenarios in accordance with the QRA and relevant design standards

- **The Chlorine liquefaction system, building, ventilation, and scrubber should be designed minimum to the standards of “AS 2927, The storage and handling of liquefied chlorine gas”.**

Noted. The facility will be designed and operated in accordance with relevant Australian Standards, including AS 2927 where applicable, as part of detailed design and MHF compliance.

- **All chlorine inventory should be stored within the Chlorine Liquefaction Building for all modes of operation.**

Noted. The facility has been designed such that all chlorine inventory associated with the Chlorine Liquefaction Plant (CLP) is stored within the containment building during normal operations.

During contingent operating scenarios, there may be a limited and temporary requirement for storage of filled drums or cylinders outside the building (e.g. during filling and dispatch activities). Any such storage would occur within existing approved outdoor storage areas and be managed in accordance with established site procedures and licence conditions.

As outlined in the RTS, any temporary external storage would be subject to further assessment as part of the final hazard analysis to confirm the maximum allowable volume and duration of storage that does not materially affect risk.

Safety Management System

- **That control measures, performance indicators and performance standards should be developed for the entire scope of modification and integrated with Safety Management System before commissioning of the modification.**

Noted. Control measures for the chlorine liquefaction plant have been identified in the QRA. As outlined in the QRA, the Safety Management System (SMS) must ensure the effectiveness and reliability of these controls to reduce risk so far as reasonably practicable.

The QRA also confirms that an update to the MHF Safety Case will be required prior to commissioning of the chlorine liquefaction plant, and that QRA outputs will inform this update, including performance requirements for key safeguards.

In addition, the QRA identifies that major incident controls such as the containment building and scrubber system will have defined performance standards, with supporting inspection, testing and maintenance activities to ensure these standards are achieved and maintained throughout operations. IXOM will update the existing SMS to incorporate relevant control measures and performance standards as required prior to commissioning.

Site design

- **The design needs to incorporate measures to identify any leakages in the building with appropriate alarms and response plans.**

Noted. The design incorporates measures to detect and respond to chlorine leaks within the building, including installation of chlorine gas detectors, alarm systems and associated control responses.

The building is also designed to operate under negative pressure, directing any gaseous chlorine to the scrubber system. These systems will be verified during commissioning and maintained through routine inspection and maintenance.

- **Relevant studies need to be conducted to thoroughly investigate the claims of availability and effectiveness of entire Liquefaction Scrubber System elements.**

Noted. The availability and effectiveness of the scrubber system has been considered in the QRA, including conservative assumptions regarding system unavailability.

Further verification of system performance and availability will be undertaken during detailed design and commissioning, with ongoing inspection and maintenance to ensure performance remains consistent with QRA assumptions.

EPA Advice on Submissions Report

Operational and Incident Generated Waste Management

The EPA reviewed the Submissions Report and there is insufficient information provided regarding the appropriate handling of waste management during normal operations and during incident response activities. Specifically, there is a lack of information provided to able to understand the minimum onsite stock holding of 50% Caustic Solution; and a minimum available onsite storage capacity of Sodium Hypochlorite.

As outlined in the RTS, sodium hypochlorite is a standard product of the existing CAP and is routinely stored, managed and distributed as part of normal operations.

The co-location of the CLP with the existing CAP provides operational and safety benefits, including access to established infrastructure, utilities and inventory management systems for both caustic soda and sodium hypochlorite.

In relation to caustic availability, the site will maintain a minimum inventory of approximately 112 tonnes of 50% caustic solution to ensure sufficient capacity is available to operate the liquefaction building scrubber under worst-case chlorine release scenarios.

In relation to storage capacity, chlorine scrubbed with caustic soda produces sodium hypochlorite solution, which is an existing product stream at the site. Under a worst-case scenario, approximately 370 tonnes (315 m³) of sodium hypochlorite would be generated over an eight-day period, with approximately 115 tonnes (98 m³) generated within the first 12 hours. The site has four sodium hypochlorite storage tanks with a total capacity of approximately 640 tonnes (540 m³), which is sufficient to accommodate these volumes.

Under normal operating conditions, the CAP produces up to approximately 350 tonnes per day of sodium hypochlorite, and the volumes generated during a chlorine release scenario can be adjusted as required.

Accordingly, both reactant availability and product storage capacity have been appropriately considered and are supported by existing site systems, consistent with the RTS.

The EPA recommends the following information is provided to demonstrate appropriate handling of operational and incident generated waste management:

- **During operation one chlorine tank should remain empty and standby to accommodate any chlorine storage tank leak.**

Noted. This matter has been addressed in the RTS and has been responded to above. The design includes dual chlorine storage tanks to provide contingency capacity. Under normal operation, one tank is maintained on standby with capacity to accommodate transfer of inventory in the unlikely event of a storage tank leak or failure.

In such an event, operational procedures will prioritise transfer of liquid chlorine to the standby tank where practicable, with any residual release captured within the bunded containment system. The storage tanks and containment measures have been designed to manage credible failure scenarios in accordance with the QRA and relevant design standards

- **All chlorine inventory should be stored within the Chlorine Liquefaction Building for all modes of operation.**

Noted. As outlined in the RTS, all chlorine inventory associated with the CLP is stored within the containment building during normal operation.

As noted above, and in the RTS, during contingent operating scenarios, there may be a limited and temporary requirement for storage of filled drums or cylinders outside the building. Any such storage would occur within existing approved areas and be managed in accordance with established site procedures and licence limits. Further assessment of allowable volumes and duration will be undertaken as part of the final hazard analysis.

- **The design needs to incorporate measures to identify any leakages in the building with appropriate alarms and response plans, and**

Noted. The design incorporates measures to detect and respond to chlorine leaks within the building, including installation of chlorine gas detectors, alarm systems and associated control responses.

The building is also designed to operate under negative pressure, directing any gaseous chlorine to the scrubber system. These systems will be verified during commissioning and maintained through routine inspection and maintenance.

- **Relevant studies need to be conducted to thoroughly investigate the claims of availability and effectiveness of entire Liquefaction Scrubber System elements.**

Noted. The availability and effectiveness of the scrubber system has been considered in the QRA, including conservative assumptions regarding system performance. As outlined in the RTS, further verification will be undertaken during detailed design and commissioning.

Kind Regards

A handwritten signature in black ink, appearing to read 'JV', is positioned above the printed name and title.

Jacob Vickers
Senior Environmental Consultant

0481 203 334
jacob@elementenvironment.com.au