Prepared for
Ampol Australia Petroleum Pty Ltd
ABN: 17 000 032 128

# Kurnell Terminal SSD-5544 MOD-7

## Submissions Report

16 Mar 2026

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Client: Ampol Australia Petroleum Pty Ltd

ABN: 17 000 032 128

Prepared by

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# Definitions

| Term | Definition |
|---|---|
| the Site | Kurnell Terminal on the southern side of Botany Bay, in Kurnell, NSW. Refer to Section 2.1.2 (the Site) of the Modification Report and Figure 1-1. |
| the approved project | The original conversion project and subsequent demolition and other projects through which the Kurnell Refinery was converted to the Kurnell Terminal as approved under SSD-5544 and subsequent modifications.<br>The approved project was divided into two phases:<br>• Converting infrastructure to allow the Site to operate as a terminal and shutdown the refinery (the conversion works); and<br>• Demolition and removal of redundant infrastructure (the demolition works).<br>Refer to Section and 3.1 and Figure 3-1 of the Modification Report. |
| SSD-5544 | State Significant Development (SSD) application reference 5544. |
| the conversion works | The works associated with the approved project. Refer to Section 3.2 and Figure 3-2 of the Modification Report. |
| the demolition works | The works predominantly associated with SSD-5544 MOD-1. Refer to Section 3.2 and Figure 3-2 of the Modification Report. |
| the proposed modification | The relocation of operational infrastructure within the boundaries of the Site, the removal of non-operational infrastructure and remediation works. Refer to Section 1.4 and Figure 1-3, Figure 1-4, and Figure 1-5. |
| the proposed modification works | The works that are proposed under this modification MOD-7. Refer to Section 1.4 and Figure 1-3, Figure 1-4, and Figure 1-5. |
| the Modification Report | The report prepared to document the response to submissions received during the exhibition of the proposed modification. |
| The Submissions Report | The report prepared to document the assessment of the proposed modification. |
| onsite | Works that are undertaken at the Site. |
| Project Area | The location within the Site that the proposed modification works would occur (see also, Zones). Refer to Section 2.1.3 (Project Area) of the Modification Report and Figure 1-1. |
| Eastern Right of Way (RoW) | The area considered as Zone 1A. |
| Ampol | The proponent of the proposed modification. The operator of the Kurnell Terminal. |
| study area | The geographical extent where environmental impacts from the proposed modification would be expected to occur. As defined by the specialist for each environmental matter. Where a study area is not stated, the Project Area is the study area. |
| Zones | Following a review of their landholdings at Kurnell to understand future use opportunities, Ampol have split the Site into various zones, as defined below and shown in Figure 1-1. |
| | Zone 1 – The area that continues to be used as an operational fuel terminal. |
| | Zone 1A – The Eastern Right of Way, which is used by the operational fuel terminal. |
| | Zone 2 – The former refinery process areas and scrap yard area, now largely vacant. |
| | Zone 3 – The Former Caltex Lubrication Oil Refinery area, now largely vacant. |

| Term | Definition |
|---|---|
| | Zones 4 and 5 – Areas of undeveloped land containing extensive native vegetation. |
| MOD-1 | Modification 1 comprised of demolition works (SSD-5544 MOD-1), consented 10 August 2015. Refer to Section 3.2 and Figure 3-2 of the Modification Report. |
| MOD-2 | Modification 2 comprised of Asbestos Contaminated Soil (ACS) management works (SSD-5544 MOD-2), consented 27 October 2017. Refer to Section 3.3 and Figure 3-3 of the Modification Report. |
| MOD-3 | Modification 3 comprised of Tank 101's demolition (SSD-5544 MOD-3), consented 17 November 2017. Refer to Section 3.4 and Figure 3-4 of the Modification Report. |
| MOD-4 | Modification 4 comprised of an update to the timing of demolition works (SSD-5544 MOD-4), consented on 9 August 2018. Refer to Section 3.5 of the Modification Report. |
| MOD-5 | Modification 5 comprised of an increase in the capacity of the ACS Containment Cell, extension in the duration of ACS management works and allowance for the retention of a portion of the cooling water outlet pipeline beneath Prince Charles Parade and adjacent dune area of Silver Beach (SSD-5544 MOD-5), consented on 10 July 2019. Refer to 3.5 of the Modification Report. |
| MOD-6 | Modification 6 comprised of an extension of the ACS management works period (SSD-5544 MOD-6), consented 21 January 2020. Refer to Section 3.6 of the Modification Report. |
| MOD-7 | Modification 7 comprised of the works proposed under this modification (SSD-5544 MOD-7) and described in this Modification Report. Refer to Section 1.4 and Figure 1-3, Figure 1-4, and Figure 1-5. |

# Abbreviations

| Term | Definition |
|---|---|
| ACHAR | Aboriginal Cultural Heritage Report |
| ACHMP | Aboriginal Cultural Heritage Management Plan |
| ACS | Asbestos Contaminated Soils |
| AEC | Area of Environmental Concern |
| AEP | Annual Exceedance Probability |
| AHIMS | Aboriginal Heritage Information Management System |
| AMP | Asbestos Management Plan |
| Ampol | Ampol Refineries (NSW) Pty Ltd |
| ANZECC | Australian and New Zealand Environment and Conservation Council |
| ANZG | Australian and New Zealand Guidelines for Fresh and Marine Water Quality |
| AORA Act | *Australian Oil Refining Agreements Act 1954* (NSW) |
| AQMP | Air Quality Management Plant |
| ARR | Australian Rainfall and Runoff Guidelines |
| ASC NEPM | National Environment Protection (Assessment of Site Contamination) Measure |
| ASS | Acid Sulfate Soils |
| ASSMP | Acid Sulfate Soils Management Plan |
| BAM | Biodiversity Assessment Method |
| BAM-C | Biodiversity Assessment Method Calculator |
| BC Act | *Biodiversity Conservation Act 2016* (NSW) |
| BDAR | Biodiversity Development Assessment Report |
| BESS | Battery Energy Storage System |
| BoM | Bureau of Meteorology |
| BOAMS | Biodiversity Offsets and Agreement Management System |
| BTEXN | Benzene, toluene, ethylbenzene, xylenes, and naphthalene |
| BWMP | Biodiversity and Weeds Management Plan |
| CEMP | Construction Environmental Management Plan |
| CHC | Chlorinated hydrocarbons |
| CLM Act | *Contaminated Land Management Act 1997* (NSW) |
| CLOR | Caltex Lubricating Oil Refinery |
| CMP | Contamination Management Plan |
| CNVMP | Construction Noise and Vibration Management Plan |
| COPC | Contaminants of Potential Concern |
| Council | Sutherland Shire Council |
| CPHR | Conservation Programs, Heritage and Regulation Group |
| CSEP | Community and Stakeholder Engagement Plan |

| Term | Definition |
|---|---|
| CSM | Conceptual Site Model |
| CTMP | Construction Traffic Management Plan |
| DA | Development Application |
| dB(A) | A-weighted decibel |
| NSW DCCEEW - Water Group | NSW Department of Climate Change, Energy, the Environment and Water – Water Group |
| D&I | Department of Planning and Infrastructure (DP&I) (now DPHI) |
| DO | Dissolved oxygen |
| DPHI | Department of Planning, Housing and Industry |
| DPIRD Fisheries | Department of Primary Industries and Regional Development Fisheries |
| EIS | Environmental Impact Statement |
| EMP | Environmental Management Plan |
| ENM | Excavated Natural Material |
| EP&A Regulation | *Environmental Planning and Assessment Regulation 2022* |
| EP&A Act | *Environmental Planning and Assessment Act 1979* (NSW) |
| EPA | NSW Environmental Protection Authority |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* (Cth) |
| EPL | Environmental Protection Licence |
| ESCP | Erosion and Sediment Control Plans |
| ESD | Ecologically Sustainable Development |
| FWS | Fire Water System |
| GDE | Groundwater Dependent Ecosystem |
| GWMP | Groundwater Management Plan |
| ha | Hectares |
| Heritage NSW | NSW Department of Climate Change, Energy, the Environment and Water – Heritage NSW |
| HIA | Heritage Impact Assessment |
| HMS | Heritage Management System |
| IAA | Interim Audit Advice |
| IAQM | Institute of Air Quality Management |
| ICNG | Interim Construction Noise Guidelines |
| KEIP | Kurnell Energy Industry Precinct |
| kL | Kilolitres |
| LALC | Local Aboriginal Land Council |
| LEP | Local Environmental Plan |
| Leq | Equivalent Continuous Sound Level |
| LGA | Local Government Area |
| LNAPL | Light Non-Aqueous Phase Liquid |

| Term | Definition |
|---|---|
| mAHD | Metres Australian Height Datum |
| mbgl | Meters below ground level |
| ML | Megalitre |
| m | Meters |
| mm | Millimetre |
| NEMP | National Environmental Management Plan |
| NHL | National Heritage List |
| NML | Noise Management Level |
| NPfI | Noise Policy for Industry |
| NSW | New South Wales |
| NSW Health | South Eastern Sydney Local Health District |
| NTU | Nephelometric Turbidity Unit |
| NVIA | Noise and Vibration Impact Assessment |
| NVMP | Noise and Vibration Management Plan |
| OEMP | Operational Environmental Management Plan |
| OSD | Onsite detention |
| OSOM | Oversize and Overmass |
| OWS | Oily Water Sewer |
| PAD | Potential Archaeological Deposit |
| PASS | Potential Acid Sulfate Soils |
| PCT | Plant Community Type |
| PFAS | Per- and polyfluoroalkyl substances |
| PFHxS | Perfluorohexanesulfonic acid |
| PFOA | Perfluorooctanoic acid |
| PFOS | Perfluorooctanesulfonic acid |
| PHC | Petroleum Hydrocarbons |
| $PM_{2.5}$ | Particulate matter with a diameter of 2.5 micrometres or less |
| $PM_{10}$ | Particulate matter with a diameter of 10 micrometres or smaller |
| PMF | Probable Maximum Flood |
| PNTL | Project Noise Trigger Levels |
| POEO Act | *Protection of the Environment Operations Act 1997* (NSW) |
| RAP | Remedial Action Plan |
| RAS | Remediation Action Strategy |
| Resilience and Hazards SEPP | *State Environmental Planning Policy (Resilience and Hazards) 2021* |
| RFS | NSW Rural Fire Service |
| RPIP | Refining Process Improvement Project |

| Term | Definition |
|---|---|
| RRO | Resource Recovery Order |
| RWP | Remedial Work Plan |
| SAII | Serious and Irreversible Impacts |
| SAQP | Sampling Analysis and Quality Plan |
| SaWMP | Soils and Water Management Plan |
| SEPP | State Environmental Planning Policy |
| SHR | State Heritage Register |
| SSD | State Significant Development |
| SSI | State Signiant Infrastructure |
| SWMP | Surface Water Management Plan |
| SWS | Surface water System |
| TARP | Trigger Action Response Plan |
| TfNSW | Transport for NSW |
| SSD Guideline | *State significant development guidelines – preparing a Submissions Report: Appendix C to the State Significant Development Guidelines* |
| THR | Total Recoverable Hydrocarbons |
| TN | Total Nitrogen |
| TP | Total Phosphorus |
| TTIA | Traffic and Transport Impact Assessment |
| VENM | Virgin Excavated Natural Material |
| VOC | Volatile Organic Compound |
| VPA | Voluntary Planning Agreement |
| WAL | Water Access Licence |
| WHS | Work Health and Safety |
| WHSMP | Work Health and Safety Management Plan |
| WQO | Water Quality Objective |
| WRMP | Waste and Resource Management Plan |
| WWTP | Waste Water Treatment Plant |

# Executive Summary

## Overview

The Kurnell Terminal (the Site) is located on the southern side of Botany Bay, in Kurnell, New South Wales (NSW). In 2012, Ampol Refineries (NSW) Pty Ltd (Ampol) decided that the oil refinery and fuel terminal would be converted to a finished product terminal (the approved project), ceasing refinery operations in 2014.

Development consent was received to undertake the approved project under State Significant Development (SSD) application reference 5544 (SSD-5544). The process to convert the refinery to a terminal involved a number of activities, including upgrades and changes to operational infrastructure, and removal and demolition of redundant infrastructure. The objective of the approved project was, and remains, *"to establish a viable, safe, reliable, and sustainable finished product import terminal at Kurnell."* This includes providing a safe working environment at the terminal and ensuring that the operation is not burdened by unnecessary costs.

Ampol has modified SSD-5544 six times to facilitate the various conversion and demolition works. Currently, the operational infrastructure is primarily located in the northern part of the Site (Zones 1 and 1A). Other parts of Ampol's landholdings at Kurnell include largely vacant areas of previously developed land (Zones 2 and 3) and areas of undeveloped land containing extensive native vegetation (Zones 4 and 5).

Ampol intends to further consolidate operational infrastructure, remove redundant assets, and undertake remediation. Completion of these works (the proposed modification) would support the ongoing viable, safe, reliable, and sustainable operation of the Kurnell Terminal by removing redundant assets, reducing maintenance requirements, installing new plant and equipment, and addressing legacy ground contamination. The location within the Site that these modification works would occur is referred to as the Project Area.

The proposed modification would support the ongoing use of the Site for purposes of a liquid fuel import terminal, specifically a fuel import terminal. The terminal provides petroleum fuels to NSW and ACT and is a key part of the country's infrastructure supporting the day to day lives of millions of Australians, as well as businesses and other organisations, across the State and Territory. The efficient operation of the terminal is vital for the economic and social welfare of communities across NSW. The proposed modification would also result in other benefits including:

- Removal of the remaining primary sources of potential contamination related to former refinery operation and related infrastructure in Zones 2 and 3 of the Site and secondary source remediation of impacted soils.
- Relocation of boats and aquatic spill response equipment from Zone 2 to Zone 1A to a purpose built building closer to the marine environment.
- Removal of redundant or aging terminal infrastructure and replacement where necessary with fit for purpose infrastructure scaled appropriately for the terminal and current site-specific conditions help maintain operational efficiency.

The proposed removal of primary and secondary sources of ground contamination would reduce potential impacts to soil and groundwater at the Site improving the ground conditions at the Site now and into the future.

The Modification Report was placed on public exhibition for 23 days from Thursday 10 July 2025 until Friday 1 August 2025 in accordance with the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). Submissions were received from government agencies (including Sutherland Shire Council (Council)) and the community during and following this period. The final submission was received by Ampol on the 1 October 2025.

This Submissions Report addresses the requirement to consider and respond to all submissions received and has been prepared in broad accordance with the NSW Government's *State significant development guidelines – preparing a Submissions Report: Appendix C to the state significant development guidelines* (DPHI, 2024) (the SSD Guideline).

## Issues raised in agency and community submissions

A total of 240 submissions were received during the public exhibition of the Modification Report, consisting of 13 agency submissions (including Council), and 227 community submissions (including three organisations) (refer to Section 2).

Of the 227 community submissions received, approximately 98.24% expressed objection to the proposed modification, while approximately 1.76% provided comments. No community submissions indicated support for the proposed modification. A geographic breakdown of the community submissions identified that 89% of submissions were local (<5 km from the Site), whilst 8% were regional (5-100 km from the Site), and 3% were from the broader community (>100 km from the Site). Issues raised in each submission were analysed, separated into categories and have been responded to by Ampol.

Section 4 presents the issues raised in community and stakeholder submissions and Ampol's response. In certain cases, as described below, further assessment has been undertaken to respond to the comments raised by agencies and community submissions.

The key issues raised from the agency submissions were:

- **Contamination and remediation**: The issues raised relate to the management and remediation of contaminated soils at the Site. Concerns focus on the chosen remediation approaches, including primary source removal and secondary source management, and the handling of soils through excavation, biopiling, reuse onsite, or offsite disposal. Potential ongoing risks to groundwater and offsite receptors were noted, as well as ensuring that residual contamination does not pose a risk to terminal operations or the surrounding environment.
- **Surface water and flooding**: The issues raised relate to potential surface water and flooding impacts from the proposed modification. Key concerns include changes to stormwater flows and runoff during construction, which could carry sediments, nutrients, or contaminants to downstream sensitive ecological areas such as Towra Point Nature Reserve, Marton Park Wetland, Quibray Bay, and Botany Bay. Additional concerns relate to the adequacy of surface water and flood modelling, including consideration of climate change, in managing extreme rainfall events and maintain downstream water quality. Concerns were also related the temporary diversion of flows or obstruction of existing drainage infrastructure during construction.
- **Groundwater take**: The issues raised relate to potential groundwater impacts associated with excavation and dewatering during construction of the proposed modification. Key concerns include the scale of groundwater extraction required, the need for a Water Access Licence, and the potential for temporary groundwater drawdown to affect nearby groundwater dependent ecosystems.
- **Removal of native vegetation**: The issues raised relate to biodiversity impacts associated with the proposed modification, including the removal of 5.36 ha of native vegetation and potential habitat for threatened species. Concerns focus on vegetation removal within the area colloquially known as the Refining Process Improvement Project (RPIP) Mountain, including low-quality regenerating coastal vegetation and marginal habitat for threatened fauna.
- **Social and economic impacts**: The issues raised relate to social and economic impacts during construction and operation of the proposed modification. Key concerns include temporary reductions in local amenity during construction due to noise, vibration, traffic, visual impacts, and the potential for construction noise to exceed guideline levels at nearby residential receivers. There were also concerns regarding potential ongoing amenity impacts during operation from relocated and new infrastructure.

- **Cumulative impacts**: The issues raised relate to potential cumulative impacts from other projects, including completed and proposed developments in the area. Concerns focus on construction-related traffic impacts from the shared use of Captain Cook Drive and social impacts associated with construction fatigue for local residents and workers, as well as operational cumulative impacts linked to the Kamay Ferry Wharves project.

The key issues raised from the community submissions were:

- **Impact of exposure of contaminated materials and acid sulfate soils**: The issues raised relate to either the mobilisation of contaminated materials offsite, including hydrocarbons, per-and poly-fluoroalkyl substances (PFAS), asbestos, and other hazardous substances, or the exposure of acid sulfate soils during construction. Concerns focus on environmental risks such as the release of asbestos fibres into air or groundwater and acidification of nearby receiving environments.
- **Impacts to community health and wellbeing**: The issues raised relate to potential health and wellbeing impacts to residents in Kurnell from the proposed modification during construction and operation. Concerns focus on short- and long-term health effects from exposure to airborne contaminants, dust, soil, surface water, and groundwater, including respiratory, cardiovascular, neurological, developmental, immune, hormonal, and cancer risks associated with substances such as hydrocarbons, PFAS, asbestos, and other hazardous substances. Submissions also highlighted mental health impacts, including stress and anxiety, largely due to increased noise, traffic, and contamination concerns. Vulnerable populations, such as children, the elderly, and people with disabilities, were identified as being at heightened risk, particularly given the proximity of schools, recreational areas, and residential areas.
- **Remediation methodology is not appropriate**: The issues raised relate to the proposed remediation methodology at the Site. Concerns focus on the use of capping as a remediation measure, with community submissions claiming it is a temporary containment strategy that leaves hazardous substances onsite indefinitely. Submissions highlighted risks from long-term degradation of containment systems, potential dispersal of contaminants in surface and groundwater, and exposure during flood events.
- **Legacy impacts of terminal and refinery operations – general operations**: The issues raised relate to the historical and ongoing environmental impacts of industrial activity in Kurnell, particularly associated with the terminal and refinery operations. Concerns include habitat destruction, mangrove loss, sand dune erosion, biodiversity decline, and residual contamination of soil, groundwater, and marine environments from hydrocarbons, PFAS, asbestos, and other hazardous substances. Submissions also noted amenity impacts such as odours, noise, heavy truck movements, and reduced recreational and economic opportunities, and expressed dissatisfaction with the adequacy of Ampol's community fund.
- **Water quality in receiving sensitive ecological environments, including protected areas**: The issues raised relate to potential impacts to water quality in Kamay Botany Bay National Park and surrounding receiving environments, including Botany Bay, Towra Point, Quibray Bay, and Marton Park Wetlands. Concerns focus on the vulnerability of local flora, fauna, migratory species, and ecological communities, and the capacity of the Site's surface water system (SWS) to manage redirected flows, particularly following removal of parts of the Oily Water System (OWS). Submissions also highlighted the risk of contamination from disturbed soils and infrastructure works entering surface water, especially during flood events, and requested long-term protection and improvement of water quality in the receiving environments.

## Proposed refinements to the proposed modification

In response to ongoing design development and feedback from the agencies and community, Ampol has made design refinements to the proposed modification. These refinements have been described in Section 3.1 and detailed in Appendix B1, including:

- Preparing the land to support uses consistent with the land use zoning: In consultation with DPHI, Ampol has elected to remove works that facilitate future land uses from the proposed modification. This refinement has resulted in removal of most activities relating to capping (previously part of Stage 3) and grading (formerly Stage 4) from this modification application.

- Construction planning developments: Through construction planning, various refinements have been made. The construction program has been updated, with works now expected to start in 2026 and be completed by 2030. Standard construction hours have been updated to follow the Interim Construction Noise Guideline (ICNG) (DECC, 2009), with limited exceptions. Updated groundwater assessments have provided conservative estimates of groundwater ingress volumes and confirm temporary dewatering requirements during some excavations. Additionally, the area required for augmentation of the OWS in the southeastern part of Zone 2 has been reduced, and further refinements have been made to the design of the permanent pump station and emergency storage tank.

The remediation approach for the proposed modification previously included in-situ containment via capping for various areas across the Site. This was applied where residual contaminants could not be removed using other remediation methods. As described in Section 3.1 and Appendix B1, capping has since been removed from the proposed modification as the low levels of asbestos in the certain soils does not present an onsite risk to the terminal and its workers of any offsite risks to the surrounding environment or community.

## Further assessment undertaken since exhibition

Since exhibition of the Modification Report, further technical assessment has been progressed to assess the proposed design refinements outlined above and respond to feedback from the agencies and community. These assessments have been described in the Section 3.3 and detailed in in Appendices E (RAP) to K (Updated Heritage Impact Assessment), including:

- **Remedial Action Plan (RAP)**: The Conceptual RAP has been converted into a RAP. This update includes discussion on the removal of capping as a remediation strategy for the proposed modification, and how this would be deferred to the subsequent development application for the Kurnell Energy and Industry Precinct (KEIP) project (SSD-86799993) as well as further detail on data gaps and preparation of a draft Acid Sulfate Soils Management Plan. The RAP has been independently reviewed by a NSW EPA accredited auditor and Interim Audit Advice has been provided and attached.
- **Updated Soils, Groundwater and Contamination Report**: The Updated Soils, Groundwater and Contamination Report includes the latest description of the proposed modification and an additional groundwater assessment detailing estimates of groundwater ingress and groundwater drawdown extents during dewatering activities.
- **Updated Surface Water, Wastewater, and Flooding Report**: The Updated Surface Water, Wastewater, and Flooding Report includes the latest description of the proposed modification and an updated surface water model to meet the requirements of the Australian Rainfall and Runoff (ARR) Guidelines (Version 4.2), incorporating two climate change scenarios, and five flooding events.
- **Updated Noise and Vibration Impact Assessment (NVIA)**: The Updated NVIA includes the latest description of the proposed modification, development of noise management levels (NMLs) in accordance with the ICNG, Updates to SoundPLAN operational model and impact assessment and consideration of feasible and reasonable mitigation measures for operational activities.
- **Updated Biodiversity Development Assessment Report (BDAR)**: The Updated BDAR includes the latest description of the proposed modification, justification for the removal of vegetation in RPIP Mountain, further detail on biodiversity offset staging and additional impact assessment of Coastal Wetlands based on information from the updated Soils, Groundwater and Contamination Report and Surface Water, Wastewater, and Flooding Report.
- **Updated Aboriginal Cultural Heritage Assessment Report (ACHAR)**: The Updated ACHAR includes the latest description of the proposed modification and an updated Aboriginal Heritage Information Management System (AHIMS) database search.
- **Updated Heritage Impact Assessment (HIA)**: The Updated HIA includes the latest description of the proposed modification and additional impact assessment for the Kamay Botany Bay National Park and Towra Point Reserve, Kurnell Peninsula Headland, and Kamay Botany Bay: botanical

collection heritage sites. Further detail has also been provided for the assessment of archaeological potential at the Site and buildings proposed to be demolished.

## Updated justification

The proposed modification would be a continuation of the approved project, which converted the Kurnell Refinery to a “Finished Product Terminal.” The primary function and purpose of the Site to operate as a finished product fuel terminal would be supported by works associated with the proposed modification.

The primary objective of the approved project, was and remains *“to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell.”* The proposed modification would meet this objective by continuing to remove redundant infrastructure and relocating or augmenting operational infrastructure, and subsequently remediating the land, thereby maintaining the viable, safe, reliable, and sustainable operations of the Kurnell Terminal.

The proposed modification is consistent with the relevant local, regional, and state strategic planning context and relevant local, state and Commonwealth environmental planning instruments. Consultation conducted prior to the lodgement of the Modification Report is described in Section 6 of the Modification Report. Consultation conducted since the lodgement and proposed future engagement is described in Section 3.2. Ampol have and will continue to consider the local community needs, as well as the value of the unique environment and cultural significance of Kurnell during the design, assessment, and development of the proposed modification. As the proposed modification progresses, Ampol will engage and share information with stakeholders and the Kurnell community about the proposed modification through various forums, and provide opportunities for the community to submit feedback and ask questions to help inform Ampol’s decisions.

This Submissions Report demonstrates that the proposed modification is likely to result in minimal and manageable environmental impacts during construction and operation. Potential environmental impacts have been, and would continue to be, examined throughout the design development process in consultation with relevant stakeholders and the community. Revised and/or new mitigation measures in response to requests from stakeholders and community submissions have been considered in Appendix D. The benefits of the proposed modification are considered to outweigh the minor and temporary impacts expected. On this basis, consent for the proposed modification can be granted with appropriate conditions and the implementation of identified mitigation measures.

# 1 Introduction

## 1.1 Background

The Kurnell Terminal (the Site) is located on the southern side of Botany Bay, in Kurnell, New South Wales (NSW) (refer to Figure 1-1 and Figure 1-2). In 2012, Ampol Refineries (NSW) Pty Ltd (Ampol) decided that the oil refinery and fuel terminal would be converted to a finished product terminal (approved project), ceasing refinery operations in 2014.

The process to convert the refinery to a terminal involved a number of activities, including upgrades and changes to operational infrastructure, and removal and demolition of redundant infrastructure. Development consent was received to undertake the approved project under State Significant Development (SSD) application reference 5544 (SSD-5544). Ampol has modified SSD-5544 six times to facilitate the conversion and demolition works.

Ampol intends to further consolidate operational infrastructure, remove redundant assets, and undertake remediation (the proposed modification, MOD-7). Completion of these works would continue the viable, safe, reliable, and sustainable operation of the Kurnell Terminal. The location within the Site that the proposed modification works would occur is referred to as the Project Area.

This change (SSD-5544 MOD-7) intends to modify development consent SSD-5544 under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979 (NSW)* (EP&A Act) and is considered to be a continuation of the approved project. The proposed modification works would support the primary function and purpose of the Site, being to operate a finished product fuel terminal. These works would reduce the commercial burden of managing redundant or aging terminal infrastructure and support the maintenance of key infrastructure.

The Modification Report for the proposed modification was placed on public exhibition for 23 days from Thursday 10 July 2025 until Friday 1 August 2025 in accordance with the EP&A Act. During exhibition, community members and stakeholders submitted feedback on the proposed modification to the Department of Planning, Housing, and Infrastructure (DPHI). This Submissions Report addresses the requirement to consider and respond to all submissions received and has been prepared in broad accordance with the NSW Government's *State significant development guidelines – preparing a Submissions Report: Appendix C to the state significant development guidelines* (DPHI, 2024) (the SSD Guideline).

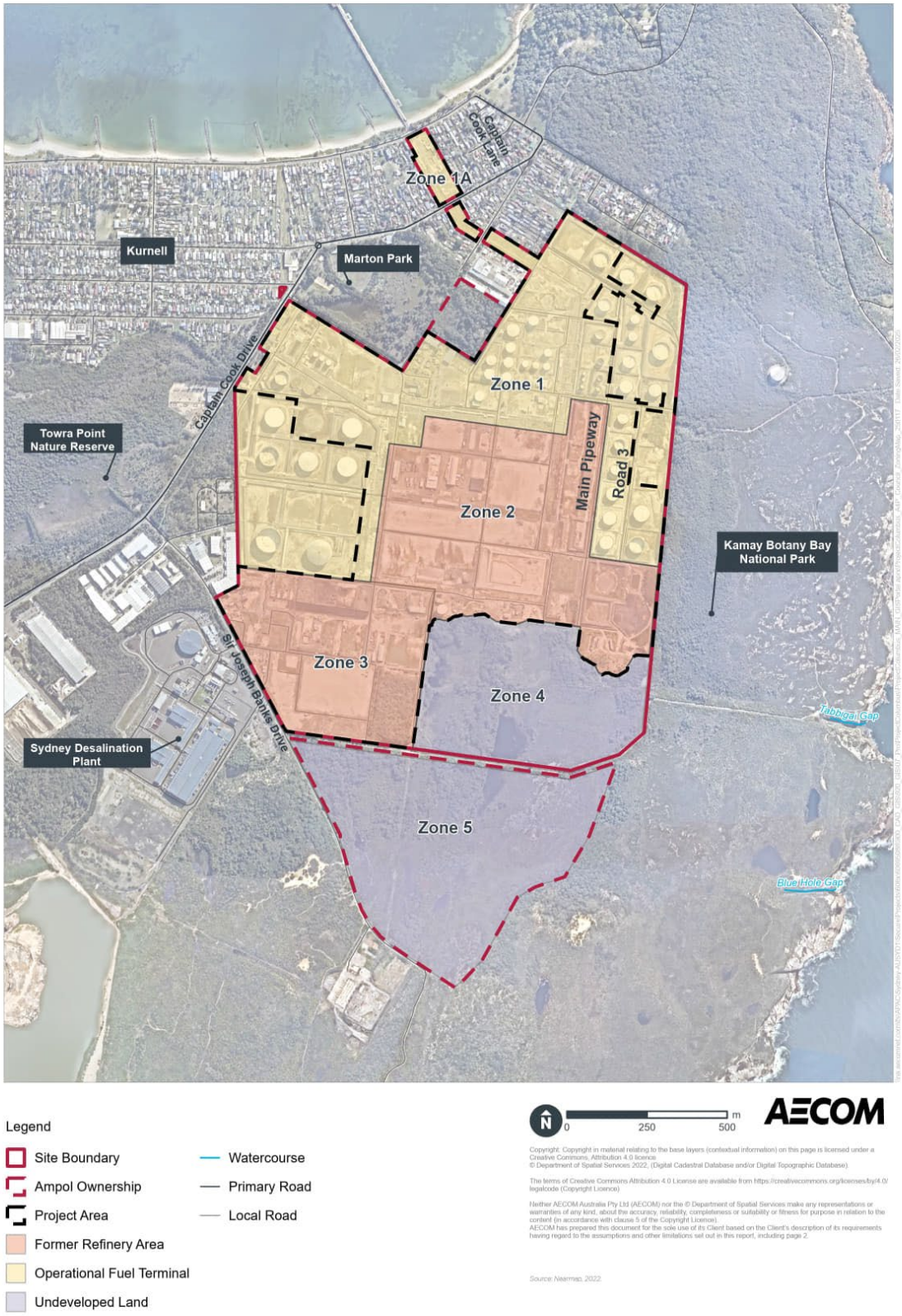



**Figure 1-1 Ampol Kurnell Terminal (the Site)**

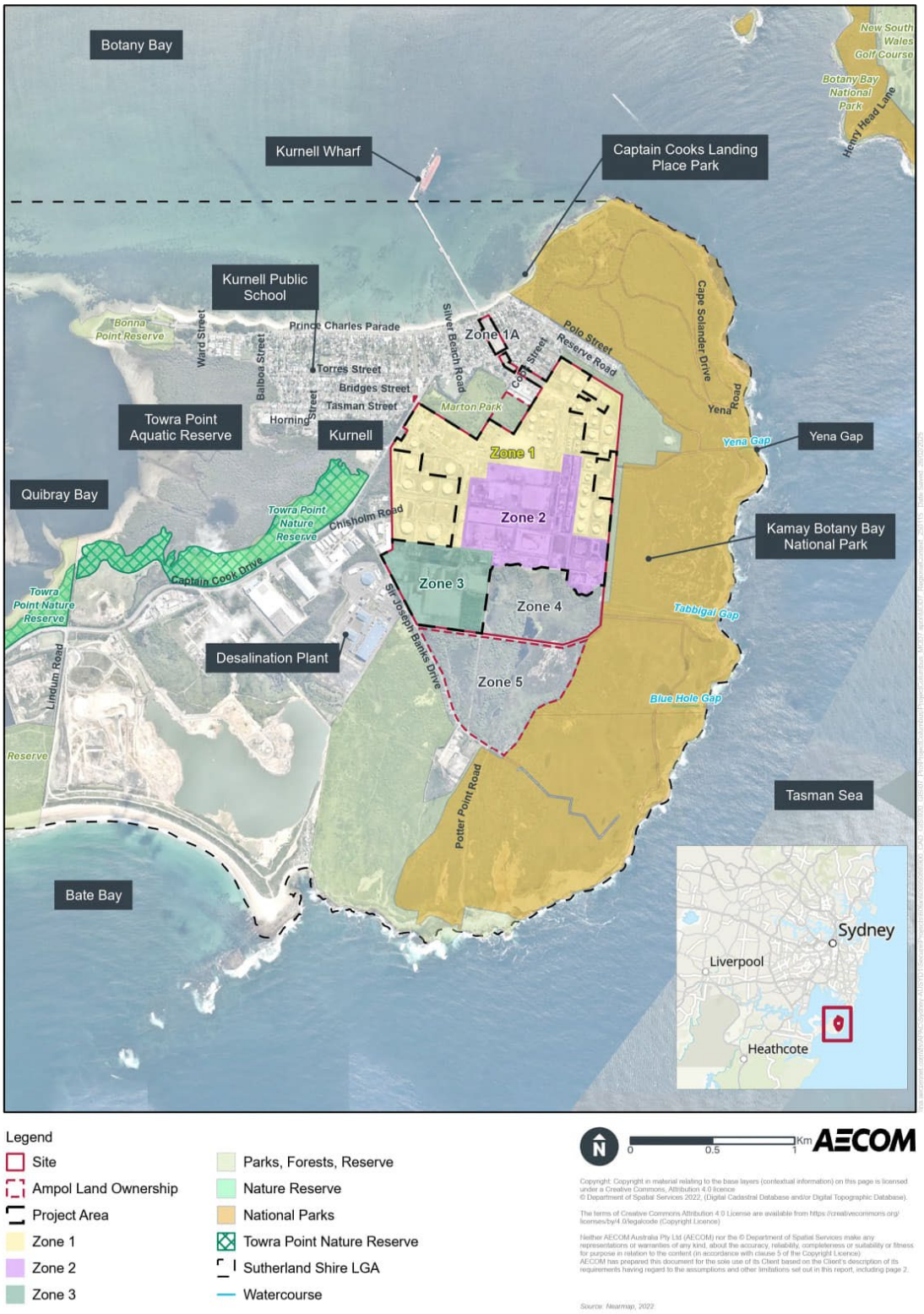



**Figure 1-2 Regional Context**

## 1.2 Project objectives

### 1.2.1 Objective of the approved project

As noted within the Environmental Impact Statement (EIS) for SSD-5544, *"Ampol initiated a review of its refining operations in May 2011."* This review concluded that, *"the Ampol Kurnell and Lytton refineries in their current configuration are relatively small and are disadvantaged compared to the modern, larger scale, and more efficient refineries in the Asian region. This disadvantage is exacerbated by the impact of the ongoing strength of the Australian dollar, lower Ampol refining margins, and increasing costs on the 'as is' refining business. As a result of the refining review, Ampol is proposing to close the Kurnell Refinery and convert the Site to a petroleum fuels import (finished product) terminal."*

While it was concluded that the refinery business was no longer viable at Kurnell, the EIS also stated that the Site was the hub of Ampol's supply chain for NSW and ACT and therefore needed to be retained as a finished product terminal to receive and distribute refined petroleum product. This provided the need for the approved project (SSD-5544) and supported its objective, which was:

*"To ensure that Ampol's operations within Australia remain viable whilst ensuring that the company can provide a safe, reliable, and sustainable supply of petroleum fuels to NSW and the ACT."*

### 1.2.2 Objective of the proposed modification

Under the proposed modification Ampol intends to further consolidate operational infrastructure, remove redundant assets, and undertake remediation. Completion of the proposed modification would support the ongoing viable, safe, reliable, and sustainable operation of the Kurnell Terminal by removing redundant assets, reducing maintenance requirements, installing new plant and equipment, and addressing legacy ground contamination. The proposed internal reconfigurations would help maintain operational efficiency and safety within the Site. The scale of the proposed modification is contained and focused, ensuring the core function and size of the Kurnell Terminal remains consistent with SSD-5544. This approach aligns with the approved Kurnell Refinery Conversion project, without introducing new elements that would significantly change the nature or increase the scale of the Site's operations.

As such, the objective of the proposed modification is to maintain the viable, safe, reliable, and sustainable operation of the Kurnell Terminal.

## 1.3 Proponent details

Ampol is an Australian company and the nation's leading transport energy provider. Ampol supplies the country's largest branded petrol and convenience network, as well as refining, importing and marketing fuels and manufacturing lubricants. In response to changing energy needs, Ampol has recently launched electric vehicle charging.

Ampol supplies fuel to approximately 80,000 customers in diverse markets across the Australian economy, including defence, mining, transport, marine, agriculture, aviation and other commercial sectors. Across its retail network, Ampol serves approximately three million customers every week with fuel and convenience products, as well as electric vehicle charging at selected locations.

Ampol's Kurnell Terminal supplies fuel primarily to the NSW region. It is Australia's largest liquid fuel import terminal, employing approximately 100 staff and contractors.

The details of the Proponent are provided in Table 1-1.

**Table 1-1 Proponent details**

| Item | Details |
|---|---|
| **Name** | Ampol Refineries (NSW) Pty Ltd |
| **Address** | 29 – 33 Bourke Road, Alexandria NSW 2015 |
| **ABN** | 17 000 032 128 |

## 1.4 Updated description of the proposed modification

### 1.4.1 Overview

This section provides a summary of the proposed modification. The updated description of the proposed modification has been provided in full in Appendix B1. The updated description of the modified project is presented in Appendix B2.

Refinements made to the proposed modification as a result of submissions received and further design considerations are discussed in Section 3.1, and have been included in the description summary below.

### 1.4.2 Key elements of the proposed modification

The proposed modification works involve:

- **Stage 1 – Preparation works**: Preparing the Project Area for proposed modification works
- **Stage 2 – Removal, relocation and/or augmentation of infrastructure**, including:
  - Relocation and/ or augmentation of firewater system (FWS) and oily water sewer (OWS) systems and construction of new operational facilities, including three replacement warehouses in Zone 1 and 1A
  - Decommissioning and removal of certain non-operational assets, redundant structures and electrical assets
- **Stage 3 – Remediation**: Addressing legacy ground contamination in specific locations across the Site
- **Stage 4 – Demobilisation**: Demobilisation of construction and remediation equipment.

Depending on where different works are required across the Site, these stages may be completed sequentially or concurrently.

A summary of project elements requiring modification and how they relate to the approved project is provided in Table 1-2. Infrastructure to be removed is presented in Figure 1-3, whilst infrastructure to be relocated or upgraded is presented in Figure 1-4. The proposed modification works would be undertaken within the Project Area.

All activities would adhere to the Kurnell Terminal permit to work system to maintain compliance with existing environmental and safety protocols.

**Table 1-2 Modified project summary table**

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 1 | Project Area | Project Area delineation | • Prepare the Project Area for the proposed modification works required under Stages 2 and 3 and exclude other parts of the Site from workers completing these works as required. |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 2 | OWS | Maintain location in Zones 2 and 3 | • Divert surface water runoff from potentially contaminated areas in Zone 2 to OWS system in Zone 1 via new OWS interception pits/ lines until Stage 3 remediation is complete<br>• Divert potential leachate from Asbestos Contaminated Soils (ACS) Containment Cell in Zone 2 to Zone 1 OWS system<br>• Install one new pump station and emergency storage tank in the south of Zone 2. Two indicative site options have been identified (refer to Figure 1-4) with specific siting to be selected during detailed design.<br>• Once Stage 3 remediation is complete in each specified area, isolate and remove redundant OWS infrastructure from identified areas in Zone 2 and Zone 3. Where complete removal is not feasible, existing pipes would be left in-situ. |
| | FWS | Maintain location in Zones 1, 2, and 3 | • Augment FWS infrastructure in Zone 1 and the south of Zone 2<br>• Excavate and install footings for the new firewater tank, pumphouse, and pipelines<br>• Construct new firewater tank and pumphouse within the FWS Relocation Area. Two indicative location options have been identified (refer to Figure 1-4) with specific siting to be selected during detailed design.<br>• Connect relocated firewater tank and pumphouse to existing FWS via new pipework<br>• Commission new firewater tank, pumphouse, and pipework to confirm operation of amended FWS<br>• Isolate and remove redundant FWS infrastructure from Zones 2 and 3 when appropriate. |
| | Electrical assets | Maintain location in Zone 2 and 3 | • Isolate and remove redundant electrical assets in Zones 2 and 3, including five substations. |
| | Structures | Maintain location in Zone 2 and 3 | • Construct new ‘fit for purpose’ warehouse to house maintenance supplies and activities in Zone 1<br>• Construct new Oil Spill Equipment Storeroom within Zone 1<br>• Construct new storage shed to house boats and emergency aquatic spill response equipment in Zone 1A<br>• Demolish identified structures in Zones 2 and 3. |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 3 | Remediation | Removal of ACS from pipeways and either containment onsite or offsite disposal | • Remediate identified land in Zone 1 to reduce operational site safety risks (refer to Figure 1-5)<br>• If required, remediate land in Zone 1 where infrastructure is proposed to be relocated or augmented<br>• Undertake targeted remediation in Zones 2 and 3 (refer to Figure 1-5)<br>• Return excavated areas to existing ground levels, with the exception of the area colloquially known as the Refining Process Improvement Project (RPIP) Mountain (which would be regraded) and removal of the bund in Source Area Excavation 5. |
| Stage 4 | Demobilisation | Demobilisation of construction equipment. | • Demobilisation of construction and remediation equipment. |

Once the modification works are complete, the Site would continue to operate as described in the SSD documentation for the approved project and would be consistent with the development consent for SSD-5544 (as modified).

In line with Figure 1-4, relocated equipment would operate in the new locations.

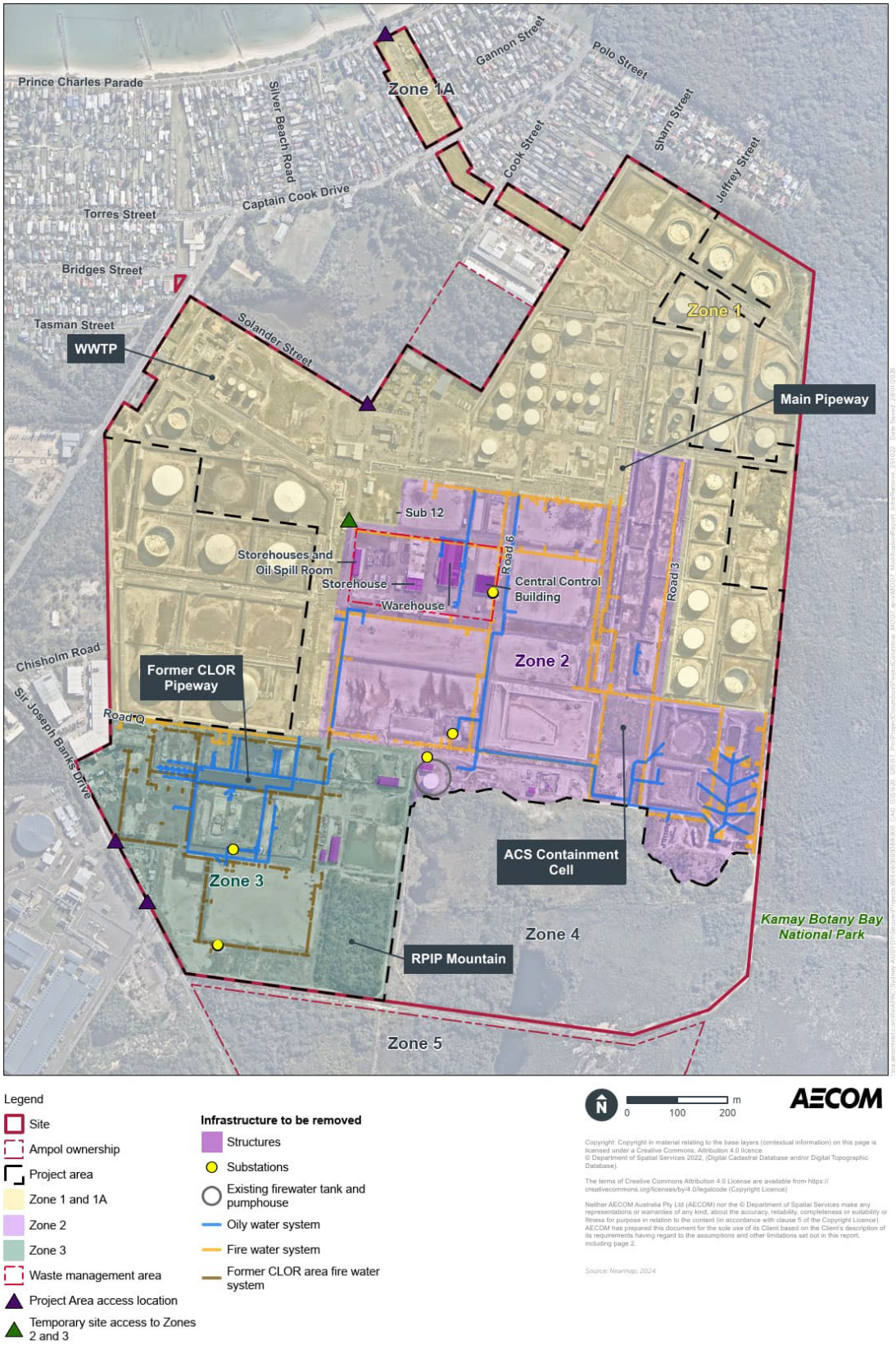



**Figure 1-3 Proposed modification – Infrastructure to be removed (Stage 2)**

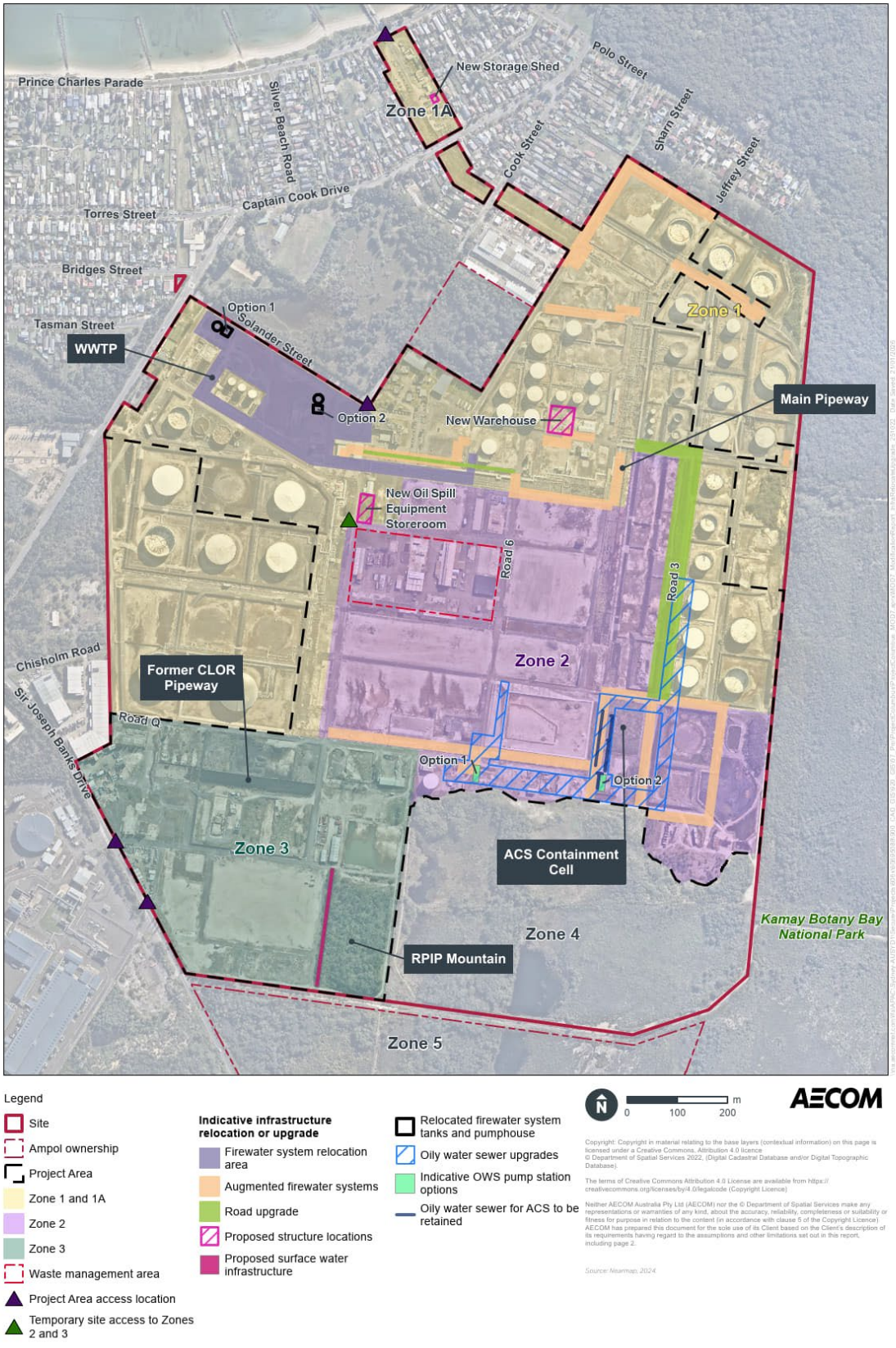



**Figure 1-4 Proposed modification – Infrastructure to be relocated/ upgraded (Stage 2)**




**Figure 1-5 Targeted remediation activities (Stage 3)**

## 1.5 Purpose of this Submissions Report

This Submissions Report has been prepared in broad accordance with the NSW Government's SSD Guideline (DPHI, 2024). The SSD Guideline provides a detailed explanation of the form and content requirements for Submission Reports. A summary of compliance against the criteria of Appendix C of the SSD guidelines has been provided in Table 1-3.

**Table 1-3 Submissions Report requirements (DPHI, 2024)**

| Requirement | Reference |
|---|---|
| Executive summary | Included at the preface of this Submissions Report |
| Introduction | Section 1 |
| Analysis of submissions | Section 2 |
| Actions taken since exhibition | Section 3 |
| Response to submissions | Section 4 |
| Updated project justification | Section 5 |
| References | Section 6 |
| Submissions register | Appendix A |
| Updated descriptions | Appendix B |
| Updated description of the proposed modification | Appendix B1 |
| Updated description of the approved project | Appendix B2 |
| Updated mitigation measures | Appendix C |
| Consultation register | Appendix D |
| Remedial Action Plan (RAP) | Appendix E |
| Interim Audit Advice (IAA) | Appendix E1 |
| Draft Acid Sulfate Soils Management Plan (ASSMP) | Appendix E2 |
| Updated Soils, Groundwater and Contamination Report | Appendix F |
| Updated Surface Water, Wastewater, and Flooding Report | Appendix G |
| Updated Noise and Vibration Impact Assessment (NVIA) | Appendix H |
| Updated Biodiversity Development Assessment Report (BDAR) | Appendix I |
| Updated Aboriginal Cultural Heritage Assessment Report (ACHAR) | Appendix J |
| Updated Heritage Impact Assessment (HIA) | Appendix K |

In line with the SSD Guideline, Section 5 provides a conclusion to this Submissions Report and provides an updated project justification and evaluation that considers the outcomes of the Modification Report and the additional information provided in this report.

# 2 Analysis of submissions

## 2.1 Overview of submissions received

This section summarises the agency, council and community submissions received in response to the public display of the Modification Report for the proposed modification.

Submissions were received by DPHI during the public exhibition of the Modification Report from 10 July 2025 to 1 August 2025 (23 days) via electronic submission (online) at the DPHI Major Projects website. Submissions were received from agencies beyond this date; the final submission was received by Ampol from DPHI on the 1 October 2025.

Copies of full submissions can be viewed or downloaded from the NSW Major Projects website on the MOD-7 application page

A total of 240 submissions were received during the public exhibition of the Modification Report, consisting of 13 agency submissions (including Sutherland Shire Council (Council)), and 227 community submissions (including three organisations). An overview of the submissions made during the exhibition period is provided in Table 2-1.

**Table 2-1 Overview of submissions received**

| Submitter type | Number of comments | Number of objections |
|---|---|---|
| **Government agencies and local councils** | | |
| State and Commonwealth government agencies | 12 | - |
| Local councils | 1 | - |
| **Community and organisations** | | |
| Members of the public | 4* | 220 |
| Organisations | - | 3 |
| **Total** | **240** | |

* Listed as “Comment” on the NSW Major Projects website, rather than “Object” or “Support”. However, these submissions were provided in objection of the proposed modification.

## 2.2 Approach

### 2.2.1 Government agencies and local council

Submissions from government agencies and local councils have been reviewed in detail to identify and understand the issues raised. The advice raised by agencies is summarised in this report and where relevant, the original text of the submission has been included verbatim. In some cases, the original text has been paraphrased for simplicity.

To assist in the accurate description of key issues raised by government agencies and council, meetings were held to clarify issues raised within the Modification Report. Details of consultation are presented in Section 3.2 and Appendix D.

A total of 13 agency submissions, including one key stakeholder submission (Council) were received. Table 2-2 summarises the government agencies and local councils that made submissions in response to the exhibition of the Modification Report, and where their comments have been responded to in this Submissions Report.

**Table 2-2 Submissions received from government agencies and local councils**

| Submission category | Submitter | Where this submission has been addressed |
|---|---|---|
| Government agencies and public authorities | NSW Department of Planning, Housing and Infrastructure (DPHI) | Section 4.1 |
| | Environment Protection Authority (EPA) | Section 4.2 |
| | Conservation Programs, Heritage and Regulation Group (CPHR) | Section 4.3 |
| | Heritage NSW (Heritage NSW) | Section 4.4 |
| | NSW Department of Climate Change, Energy, Environment, and Water (DCCEEW) – Water Group | Section 4.5 |
| | South Eastern Sydney Local Health District (NSW Health) | Section 4.6 |
| | Ausgrid | Section 4.7 |
| | SafeWork NSW | Section 4.8 |
| | Fire and Rescue NSW | Section 4.9 |
| | NSW Rural Fire Service (RFS) | Section 4.10 |
| | Transport for New South Wales (TfNSW) | Section 4.11 |
| | NSW Crown Lands | Section 4.12 |
| Local council | Sutherland Shire Council (Council) | Section 4.14 |

The majority of the government agencies or local council submissions expressed neither a view of support for, or opposition to, the proposed modification. Responses in support of the proposed modification included:

- Council supports the consolidation of the buildings, equipment, and infrastructure from across the site to Zones 1 and 1A, on the basis that this would enable the redundant lands identified as Zones 2 and 3 to become available for other uses that are commensurate with the zoning of the land.
- Council supports the remediation approach and the appointment of an independent auditor.
- Council supports the findings of the HIA (Appendix H of the Modification Report).
- NSW Health noted potential health benefits from the remediation of the Site in the long term by reducing pathways for human exposure to hazardous substances that are currently at risk of uncontrolled offsite movement.

### 2.2.2 Community and organisations

Submissions from each community member and organisation were reviewed in detail to identify, understand, and categorise the key issues raised. The content of each community submission is summarised in this report and where possible, text of the submission is included. This means that while exact wording of a particular submission may not be presented in the summary of the issue, the intent of each individual issue raised has been captured and a corresponding response to each issue is provided.

A total of 227 community submissions were received, including three from organisations (Kurnell Preschool, Save Kurnell Community Group, and the Kurnell Progress and Precinct Residents Association) and 224 from individuals. Of the 227 community submissions received, approximately 98.24% object to the proposed modification, while approximately 1.76% provided comments. No community submissions indicated support for the proposed modification.

Figure 2-1 and Figure 2-2 present the local and regional geographical distribution of community and organisation submissions. Submissions were received across 24 suburbs within Australia, from New South Wales (224 submissions), the Australian Capital Territory (one submission), and Queensland (two submissions). A total of 89% of submissions were local (within 5 km from the Site), whilst 8% were regional (5-100 km from the Site), and 3% were from the broader community (more than 100 km from the Site). A total of 86% of submissions were from residents of Kurnell. When analysed by Bureau of Meteorology (BoM) NSW districts, 97% of submissions were from the Sydney Metropolitan region. The geographical distribution of the community submissions and issues raised is summarised in Table 2-3.

A unique ID number has been assigned to each organisation and community submission to allow cross-referencing and tracking of submission responses. Appendix A identifies where issues raised in each organisation and community submission is addressed in this Submissions Report, by reference to category of issue and the unique submission ID number.

**Table 2-3 Issues raised by the community based on location**

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| **Description of the proposed modification and methodology** | | | | | | | | | | | |
| Remediation methodology is not appropriate | 154 | 1 | - | 1 | - | - | 1 | 1 | - | 158 | 69.6% |
| Lack of fixed timeline for remediation | 34 | - | - | 1 | - | - | - | - | - | 35 | 15.4% |
| Lack of long-term environmental safeguards | 69 | - | 1 | 1 | - | - | 1 | - | - | 72 | 31.7% |
| Misunderstanding of the proposed modification – Oily Water Sewer (OWS) is being redirected or removed | 10 | - | - | - | - | - | 1 | - | - | 11 | 4.8% |
| Misunderstanding of the proposed modification – increased storage, transfer, or processing of fuels and chemicals | 25 | - | 1 | - | - | - | - | - | - | 26 | 11.5% |
| Misunderstanding of the proposed modification – combustion of waste materials | 2 | - | - | - | - | - | - | - | - | 2 | 0.9% |
| Misunderstanding of the proposed modification - changes and impacts to the Asbestos Contaminated Soil (ACS) Containment Cell | 1 | - | - | - | - | - | - | - | - | 1 | 0.4% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| **Public consultation** | | | | | | | | | | | |
| Lack of consultation, public information, or access | 52 | - | 1 | - | - | - | - | - | - | 53 | 23.3% |
| Inadequate exhibition timeframe or period to review documents | 23 | - | 1 | - | - | - | - | - | - | 24 | 10.6% |
| Lack of transparency and accountability | 66 | - | 1 | - | - | - | - | - | - | 67 | 29.5% |
| **Biodiversity** | | | | | | | | | | | |
| Impacts to biodiversity (terrestrial and aquatic) and migratory birds | 112 | - | 1 | 1 | - | - | - | - | - | 114 | 50.2% |
| **Soils, groundwater and contamination** | | | | | | | | | | | |
| Impact of exposure of contaminated materials, asbestos containing soils (ACS), and acid sulfate soils (ASS) | 166 | 1 | 1 | 1 | - | - | - | 1 | - | 170 | 74.9% |
| Impacts to groundwater and Groundwater Dependent Ecosystems (GDEs) | 31 | - | - | - | - | - | - | - | - | 31 | 13.7% |
| Contamination risks have not been properly assessed | 33 | - | - | - | - | - | - | - | - | 33 | 14.5% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| **Stormwater and water quality** | | | | | | | | | | | |
| Water quality in receiving sensitive environments (Towra Point, Quibray Bay, mangroves, beaches, Botany Bay, wetlands, National Park) | 100 | - | 1 | 1 | - | - | - | 1 | - | 133 | 58.6% |
| Proposed modification would increase offsite flood risk | 10 | - | 1 | - | - | - | - | - | - | 11 | 4.8% |
| Stormwater management is not properly detailed and does not include surface water quality targets | 13 | - | - | - | - | - | - | - | - | 13 | 5.7% |
| **Air quality** | | | | | | | | | | | |
| Impacts on air quality during the construction phase | 31 | - | - | - | - | - | - | - | - | 31 | 13.7% |
| Long term impacts on air quality | 31 | - | - | - | - | - | - | - | - | 31 | 13.7% |
| **Noise and vibration impacts** | | | | | | | | | | | |
| Noise and vibration impacts during the construction phase | 29 | - | - | - | - | - | - | - | - | 29 | 12.8% |
| Noise and vibration impacts during the operational phase | 28 | - | - | - | - | - | - | - | - | 28 | 12.3% |
| **Traffic and transport** | | | | | | | | | | | |
| Increase in traffic and transport during construction | 25 | - | - | - | - | - | - | - | 1 | 26 | 11.5% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| Emergency access via Captain Cook Drive | 21 | - | - | - | - | - | - | - | 1 | 22 | 9.7% |
| **Aboriginal cultural heritage** | | | | | | | | | | | |
| Impact to Aboriginal heritage and culturally significant lands | 28 | - | - | - | - | - | - | 1 | - | 29 | 12.8% |
| **Non Aboriginal Heritage** | | | | | | | | | | | |
| Removal of buildings associated with the Australian Oil Refinery (Local Environmental Plan (LEP) #A2524) | 3 | - | - | - | - | - | - | - | - | 3 | 1.3% |
| **Social** | | | | | | | | | | | |
| Impacts to social cohesion and sense of place | 33 | - | - | - | - | - | - | - | 1 | 34 | 15% |
| Inter-generational equity | 58 | - | - | - | - | - | 1 | - | - | 59 | 26% |
| Impacts to local amenity | 47 | - | 1 | - | - | - | - | - | | 48 | 21.1% |
| Impacts to tourism | 34 | - | - | - | - | - | - | - | - | 34 | 15% |
| Impacts to the local economy | 30 | - | - | - | - | - | - | - | - | 30 | 13.2% |
| Impacts on property values | 24 | - | - | - | - | - | - | - | - | 24 | 10.6% |
| Impacts to community health, wellbeing and safety | 162 | 2 | 1 | 1 | - | - | 1 | - | 2 | 169 | 74.4% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| **Monitoring** | | | | | | | | | | | |
| No external audit or monitoring requirements, or independent review | 64 | - | 1 | 1 | - | - | 1 | - | - | 67 | 29.5% |
| **Cumulative impacts** | | | | | | | | | | | |
| Cumulative environmental impacts have not been adequately assessed | 38 | - | 1 | 1 | - | - | - | - | - | 40 | 17.6% |
| **Climate change** | | | | | | | | | | | |
| Concerns about future impacts exacerbated by climate change | 20 | - | - | 1 | - | - | - | - | - | 21 | 9.3% |
| **Land use** | | | | | | | | | | | |
| Proposes alternative community-centric land uses | 91 | - | 1 | 1 | - | - | - | - | - | 93 | 41% |
| Claims that the proposed modification prevents rezoning and extends industrial use of the Site indefinitely | 82 | - | 1 | 1 | - | - | - | 1 | - | 85 | 37.4% |
| Opposition to the proposed Battery Energy Storage System (BESS) (general opposition, hazards and risk, fire, siting) and Energy/ Industrial Precinct subdivision | 65 | 2 | 1 | - | 1 | 1 | - | - | 2 | 72 | 31.7% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| **Regulatory requirements** | | | | | | | | | | | |
| Use of outdated guidelines, studies, legislation, and policy | 6 | - | - | - | - | - | - | - | - | 6 | 2.6% |
| Proposed modification does not align with planning policies or legislation | 38 | - | 1 | - | - | - | 1 | 1 | - | 39 | 17.2% |
| Project significantly deviates from the original project approval – i.e. is not a modification | 9 | - | - | - | - | - | - | - | - | 9 | 4% |
| **A full** Environmental Impact Statement (EIS) is needed | 7 | - | 1 | - | - | - | - | - | - | 8 | 3.5% |
| **Legacy** | | | | | | | | | | | |
| Legacy impacts of terminal and refinery operations – general operations | 145 | 1 | 1 | 1 | - | - | 1 | 1 | - | 150 | 66.1% |
| Legacy impacts of terminal and refinery operations – 2015 tornado | 7 | - | - | - | - | - | - | - | - | 7 | 3.1% |
| Legacy impacts of terminal and refinery operations – past spill events | 58 | - | - | - | - | - | 1 | - | - | 59 | 26% |
| Claims that Ampol previously agreed (and/ or is legal obligated) to remediate/ regenerate the land into public parkland/ recreational space | 46 | - | 1 | 1 | - | - | - | - | - | 48 | 21.1% |

| Key matters raised | New South Wales | | | | | | | Australian Capital Territory | Queensland | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sydney Metro | Hunter | Illawarra | Northern Rivers | Riverina | Central West Slopes and Plains | Southern Tablelands | | | | |
| Ampol is prioritising corporate convenience over the local environment and people's health | 111 | - | - | 1 | - | - | 1 | 1 | 1 | 115 | 50.7% |
| Request Ampol fully exit the Site | 10 | - | - | - | - | - | - | - | - | 10 | 4.4% |

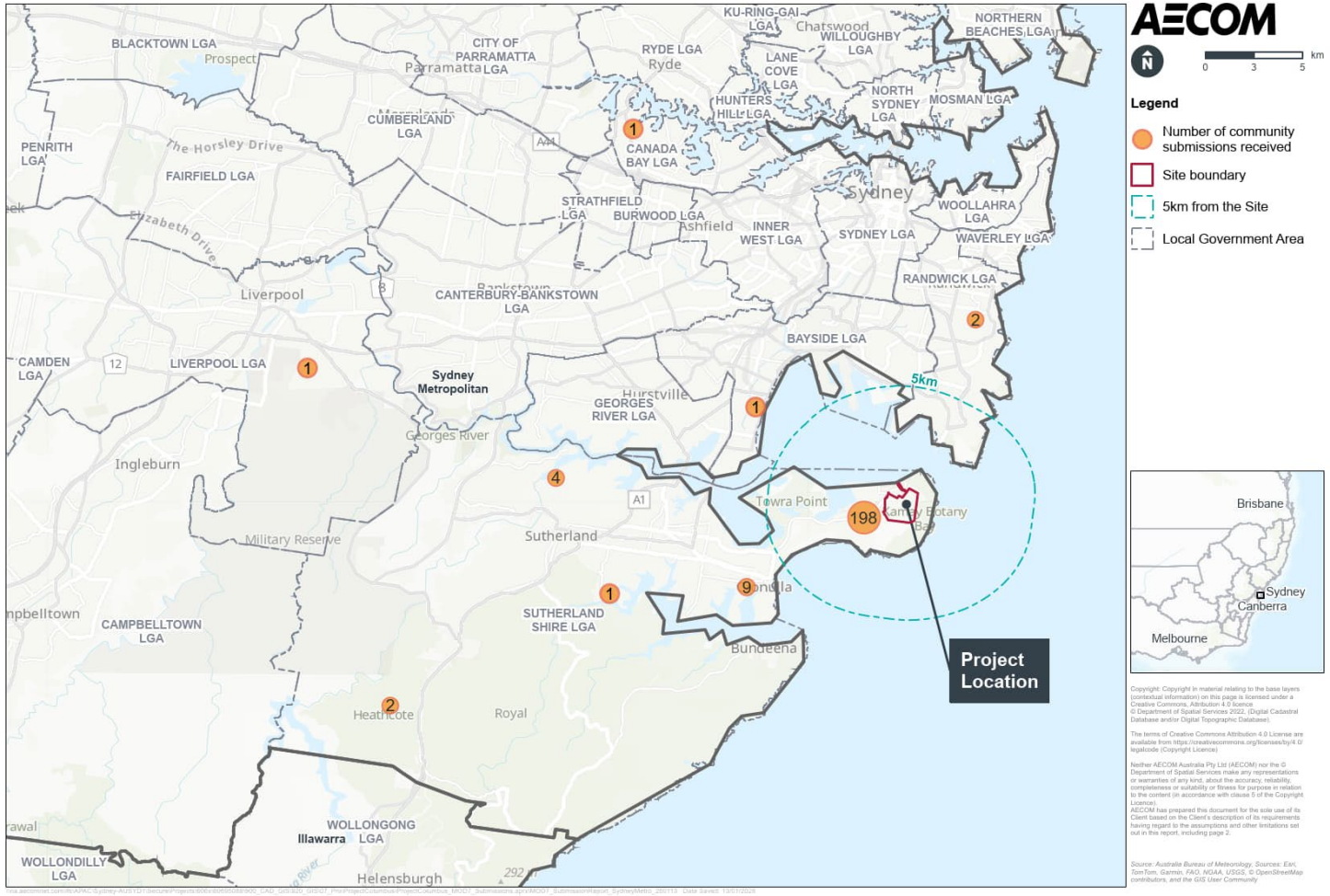



**Figure 2-1 Local spatial distribution of community submissions**

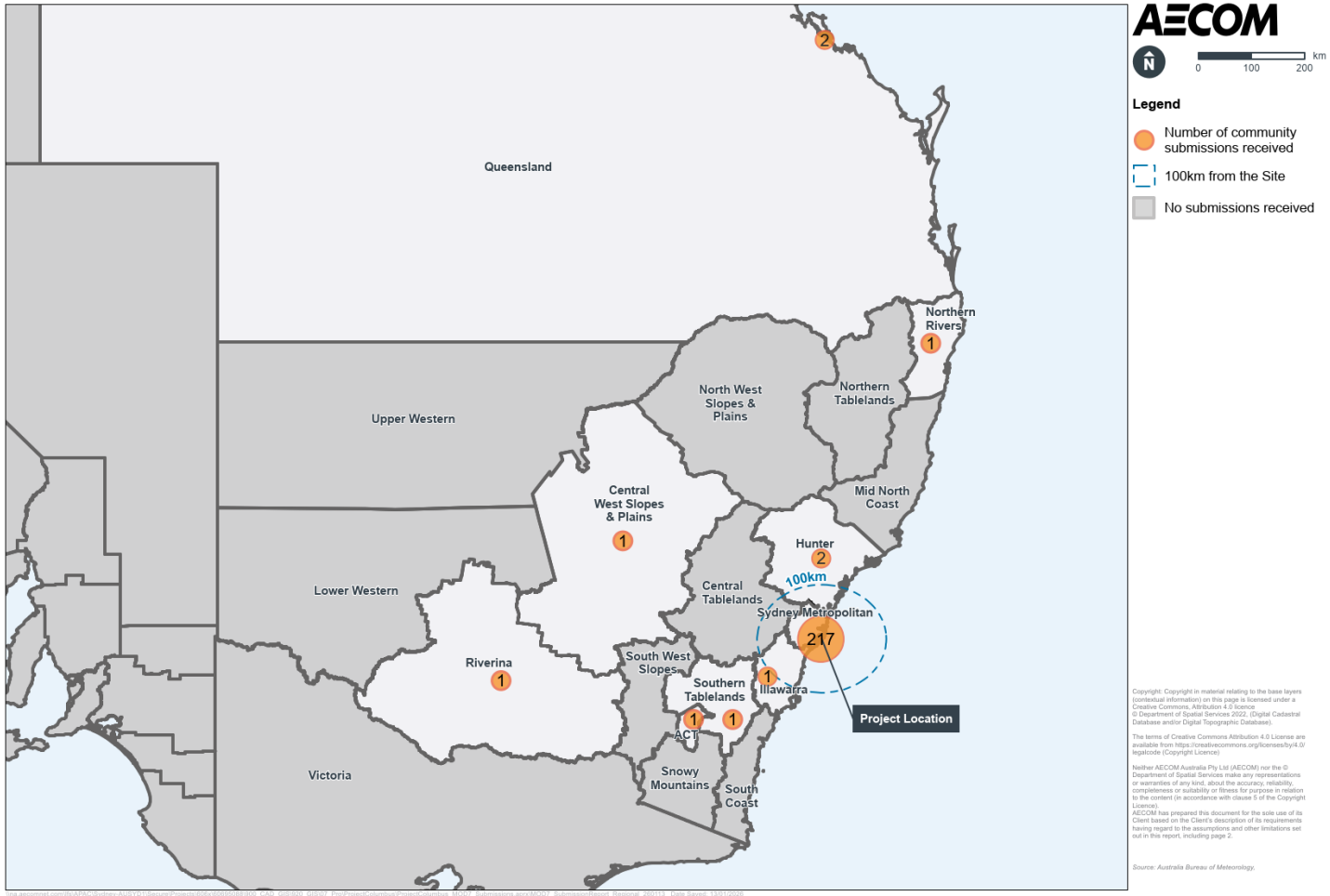



**Figure 2-2 Regional spatial distribution of community submissions**

# 3 Actions taken since exhibition

This section of the Submissions Report summarises the actions taken since the lodgement of the Modification Report, during public exhibition and following review of the submissions. Pursuant to the requirements of the SSD Guidelines, a description of refinements made to the proposed modification are described in Section 3.1. Additional consultation undertaken to date is summarised in Section 3.2, and a summary of further assessment undertaken in response to the submissions received is outlined in Section 3.3.

## 3.1 Refinements to the proposed modification

The proposed modification has been refined to respond to the submissions made by agencies and local council during the exhibition of the modification application. Refinements also have been made to reflect further design development and construction planning. The updated description of the proposed modification can be found in Appendix B.

A summary of refinements to the proposed modification are presented below.

### 3.1.1 Preparing the land to support uses consistent with the land use zoning

The objectives of the proposed modification, as presented in the Modification Report, included to "facilitate future land uses." In consultation with DPHI, Ampol has elected to remove these works from the proposed modification and to include them in a subsequent development application that focuses on preparing certain parts of the Site for alternative uses consistent with the land use zoning: i.e. the Kurnell Energy and Industry Precinct (KEIP) project, SSD-86799993. As such, the objectives of the proposed modification remain "*to continue the viable, safe, reliable, and sustainable operation of the Kurnell Terminal*." This approach aligns with approved Kurnell Refinery Conversion Project SSD consent.

This refinement has resulted in removal of most activities relating to capping (previously part of Stage 3) and grading (formerly Stage 4) from this modification application. Further information is provided below.

#### Removal of capping

Capping was proposed as part of the proposed modification where soils were anticipated to retain residual Contaminants of Potential Concern (COPCs), such as asbestos, and migration of vapours that may pose a risk to human health or the environment, following the application of other remediation methods, such as onsite bioremediation or stabilisation. This remedial approach was proposed to address legacy contamination risks and help prepare Zones 2 and 3 for future land uses consistent with the land use zoning where more people and new buildings could be present on this land in the future.

The proposed modification now seeks to remediate targeted parts of the Project Area to support terminal operations only, rather than for future land uses. These targeted areas Source Area Excavations (refer to Figure 1-5) would still be subject to remediation under the proposed modification as the contaminants present some risk to ongoing terminal operations. A hierarchy of options for site remediation and management of soil contamination has been considered so that the risk associated with the contaminant is reduced to an acceptable level for existing onsite users.

Capping as a remedial approach is not required for the terminal land use. The number of people present on the Site in addition to the application of existing Ampol safety controls, means that the level of risk does not warrant a more stringent remedial approach. This means that the proposed targeted remediation activities (refer to Appendix B1) would sufficiently address legacy contamination issues resulting from previous refinery activities.

Therefore, as the focus of proposed modification is on the terminal land use (*not* facilitating future land uses), the capping approach is no longer required or part of the modification application. As such, capping has been removed from the updated description of the proposed modification (Appendix B1).

Capping will, however, be included in the SSD application for the KEIP (SSD-86799993). This is because the KEIP application would allow for land uses consistent with the land's existing land use zoning and therefore an increase in people and buildings on the Zones 2 and 3 land. In addition, the KEIP would require the regrading of parts of Zones 2 and 3, so from a delivery perspective, it is more efficient and requires less material handling to complete the capping and regrading at the same time. Completing these activities together provides the greatest opportunity to contain ACS onsite and reduce offsite disposal, in line with key principles for the remediation and management of contaminated sites and consistent with the waste hierarchy, as outlined in the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (ASC NEPM) (NEPC, 2013).

### Removal of grading works

Grading was previously proposed to facilitate the ongoing management of the Kurnell Terminal and/ or future land uses in the western half of Zone 2 and northern part of Zone 3 (refer to Figure 4-6 in the Modification Report).

The modification application no longer seeks to facilitate land uses consistent with the land's existing land use zoning. As such, significant grading works are no longer required. Grading would only be required following excavation works to return land to grade and provide surface water drainage paths, thereby preventing water from pooling.

Activities associated with the proposed modification works would not significantly alter existing landform or finished surface levels across the Site, with the exception of works in the area colloquially known as RPIP Mountain (refer to Source Area Excavation 6 in Figure 1-5) and Source Area Excavation 5. The remaining excavations required as part of the proposed modification would be backfilled to existing finished surface levels and grade. Excavations would be stabilised with adequate surface cover, and the reinstated surface finish would be no less impervious than the existing conditions at each location.

RPIP Mountain is a former stockpile of ACS in Zone 3 which presents an asbestos mitigation risk to other parts of the Site due to the growth of vegetation across the area. The surface level lies 3 m above natural ground levels. Vegetation would be removed, and ACS removed to a depth of 1 m below existing ground levels to target asbestos at the root zone of vegetation growing at the current ground surface. For larger tree roots, there is potential for excavation to a depth of 4 mbgl.

A total of 32,500 $m^3$ of ACS would be removed (excluding contingency). This would include additional onsite detention along the western boundary of RPIP to maintain existing, pre modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% Annual Exceedance Probability (AEP) event (up to 700 $m^3$ to account for future climate scenarios). It is anticipated that this would entail extension/ widening of the existing open water channel on the western side of RPIP Mountain to provide the necessary volume.

Following excavation, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Where necessary, the excavation would be backfilled with clean material. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Once regraded, the surface levels would not be lower than existing surrounding ground levels.

The bunding at Source Area Excavation 5 would be removed to allow remediation activities to occur; this area does not currently retain large amounts of water and its removal would result in a negligible change in surface flows.

### Removal of stabilisation

Stabilisation was included as a remedial option in the Conceptual RAP to manage PFAS impacted soils. Based on the soil analysis of data collected at the Fire Training Area (Source Excavation Area 5) since lodgement of the Modification Report, the RAP has confirmed that offsite disposal would be more appropriate to manage PFAS. As such, stabilisation as a remedial option has been removed from the proposed modification.

### 3.1.2 Construction planning developments

Through construction planning, the following refinements to the proposed modification have been made.

#### Construction program

Construction was previously anticipated to commence in August 2025. Construction and remediation works are now anticipated to commence in 2026 and be completed by 2030.

Works would be staged in accordance with the indicative program in Table 3-1.

#### Construction hours

Construction working hours were previously aligned with Condition C18 of SSD-5544 (Monday to Sunday – 7am to 10pm).

In consultation with regulators, Ampol have elected to comply with the standard construction hours set out in the NSW Government document Interim Construction Noise Guideline (ICNG) (DECC, 2009). These standard construction hours are as follows:

- Monday to Friday – 7am to 6pm
- Saturday – 8am to 1pm
- Sunday and public holidays – No work is permitted.

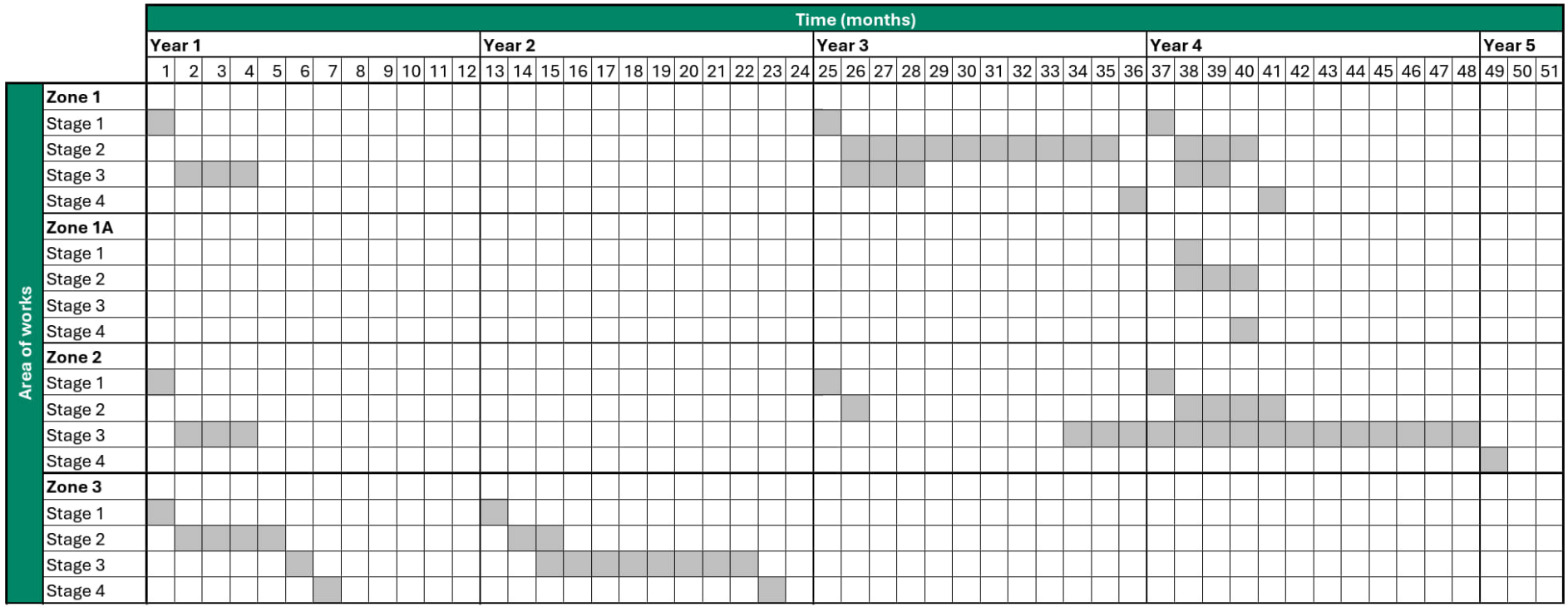
However, in line with Condition 20 of SSD-5544, construction works may be undertaken outside of the work hours identified above in the following circumstances:

- Works that are inaudible at nearest sensitive land receivers
- Works that are consistent with Ampol's existing maintenance procedures and are in accordance with Environmental Protection Licence (EPL) 837
- Works agreed to in writing by the EPA or DPHI
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property and/ or to prevent environmental harm.

In addition, the following activities may be required on a 24-hour basis to support construction activities:

- Biopiling blowers in identified Biopiling Areas (refer to Figure 1-5). As noted in the Noise and Vibration Impact Assessment (Appendix H), given their proposed location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.
- Dewatering of excavations. Dewatering would only occur at night in locations where plant would not exceed night-time limits, i.e.:
    - Where it is located a minimum of at least 200 m within the Site boundary; or
    - Where it is located a minimum of 120 m within the Site boundary if temporary noise barriers are positioned as near as practicable to the pumps, and monitoring confirms that nighttime noise limits are not exceeded.

**Table 3-1 Indicative program**



### Dewatering

A groundwater assessment has been prepared to support the Updated Soils, Groundwater and Contamination Report (Appendix F). This conservative assessment has confirmed it is likely that certain excavations could intersect groundwater. These excavations would require temporary dewatering to enable certain works to be completed. This assessment presents a conservative estimate of the groundwater ingress volumes alongside additional mitigation and management measures. Further information about the assessment is provided in Section 3.3.2.

### Oily water sewer

The works to remove the redundant sections of the OWS in Zones 2 and 3 would be undertaken progressively so that the OWS can support the remediation activities. To assist with the transition of parts of the Site from the OWS to the SWS, and in order for the OWS to support remediation activities, the OWS would be augmented in the south eastern part of Zone 2. This area was shown in Figure 4-1 of the Modification Report. As indicated in Figure 1-4, this area has reduced in size following further detailed design.

The Modification Report stated that a new permanent pump station would be installed in the south of Zone 2 to support the upgraded OWS to capture flows and direct them towards the Waste Water Treatment Plant (WWTP). The new pump station would operate intermittently, following periods of heavy rainfall. Excavations of approximately 4.5 meters (m) below ground level (mbgl) would be required, based on a 4 m deep pit, and a 0.5 m concrete slab, which would be installed at the base of the pit.

The pump pit would be approximately 3 m x by 4 m in area and require a volume of 20 kilolitres (kL). In addition, an emergency storage tank would be installed adjacent to the pump station to provide additional storage in case of pump failures or a loss of power. To contain 10 minutes of peak flow into the pump station and 4 hours of average flow, the total required capacity of the emergency storage tank has been estimated at 130 kL. A typical 130 kL cylindrical tank would be 3 m diameter by 20 m length.

To house both the pump pit and emergency storage tank, a benched pit[1] of around 12 m by 34 m would be required. As presented in the Modification Report, excavations would be to a depth of 4.5 mbgl.

## 3.2 Consultation

This section details consultation undertaken during the public exhibition of the Modification Report and during the development of this Submissions Report.

### 3.2.1 Consultation during exhibition

As detailed in Section 1.1, the Modification Report was placed on public exhibition for a total of 23 days. Ampol continued to consult with the community regarding the proposed modification and the Modification Report during this period, using existing contact points and approaches established for the proposed modification, including:

- Preparation of a list of Frequently Asked Questions in June 2025, in response to lodgement of the Modification Report and KEIP Scoping Report, distributed by email to stakeholders and letterbox drop.
- Delivery of a briefing on the KEIP project to the Kurnell Progress and Precinct Residents Association.
- Community newsletter available online, and distributed by email to stakeholders and letterbox drop, to residents of Kurnell:
    - The July 2025 Community Update (distributed on the 14 July 2025) advised that Ampol would engage with the Council on a Voluntary Planning Agreement (VPA) related to the KEIP project. Ampol informed residents of the drop-in session for the KEIP and MOD-7 projects, held on 14 August 2025.

[1] The pit itself would be 5 m by 22 m.

- A fact sheet was developed for the proposed modification and distributed 28 July 2025, to provide a high-level overview of the proposed modification during the exhibition period. The fact sheet was distributed to the community via email on the 28 July (145 recipients), the Kurnell Progress and Precinct Residents Association on the 28 July, and at the community drop-in session of the 14 August 2025. On 29 July, the fact sheet was sent via email to Lord Mayor, Councillor Jack Boyd, Councillor Carol Provan, and Councillor Kal Glanznig.
- Operation of the community hotline (1800 719 669) and email (community@ampol.com.au)
- Operation of the community opt-in community notification platform for emergencies or major incidents.

Written submissions received during the Modification Report exhibition period were forwarded from DPHI to Ampol for consideration, review, and preparation of this Submissions Report. This report will be made publicly available on the DPHI Major Projects website.

### 3.2.2 Consultation post-exhibition

Following the end of the exhibition period of the on Friday 1 August 2025, Ampol has undertaken consultation activities with agencies, Council, and the community. A register of consultation undertaken is provided in Appendix D. A summary of these consultation activities is provided below:

- Email correspondence with the office of Mr Mark Speakman on the 5 August 2025. Mr Speakman shared his submission to the Mod-7 application, highlighting community concern and the need for any approved methodology to be of the lowest risk to human health and the environment. Ampol acknowledged Mr Speakman's comments and agreed that no remediation approach should proceed unless it represents the most appropriate method for protecting human health and the environment.
- Ampol facilitated a meeting with Council on the 8 August 2025 (via Teams). This was held with Deputy Mayor, Councillor Laura Cowell, and council staff. Ampol presented the role of the proposed modification within Ampol broader land strategy (the KEIP project, SSD-86799993). This included discussion of how Ampol would stage land remediation and address legacy refinery infrastructure ahead of the KEIP project works.
- Engagement with the Save Kurnell community advocacy group via email on 8 August 2025. This engagement acknowledged the groups' key concerns and provided an update on progress regarding the proposed modification planning application, including the development of the Submissions Report and associated technical assessments.
- Correspondence with Kurnell residents. The residents originally emailed Ampol on the 28 July; Ampol responded to them via email on the 14 August. Ampol provided further clarification on the fact sheet developed for the proposed modification.
- A community drop-in session was held on 14 August 2025, providing community members an opportunity to discuss the proposed modification and learn more about the KEIP project (SSD-86799993). This event attracted 25 attendees, with the majority staying for at least 20 to 30 minutes, reading the project information and asking the project team questions. The drop-in session was advertised on two occasions in the local community newspaper, Sutherland Shire Leader (30 July 2025 and 13 August 2025) via half-page advertisements. The proposed modification fact sheet, described in Section 3.2.1, was distributed during this community drop-in session.
- Correspondence with a Kurnell resident via email on the 15 August 2025 following the drop-in session. The resident sought confirmation of Ampol's landownership of the Site. This information was provided on the 29 August.
- Correspondence with a Kurnell resident via email on the 26 August. The resident provided feedback on the proposed modification and the drop in session. Ampol responded to the resident on the 26 August, providing responses to concerns. These highlighted the misinformation spreading in the community and instead provided correct information.

- Monthly community newsletters were prepared and made available online, distributed by email and letterbox drop to residents of Kurnell:
  - The August 2025 Community Update (distributed on the 13 August 2025) acknowledged community concerns regarding the proposed modification and sought to clarify key issues raised relating to the planning approval pathway, remediation methodology, and stormwater design. Ampol informed residents of the drop-in session for the Kurnell Energy and Industry Hub on 14 August 2025.
  - The September 2025 Community Update (distributed on the 16 September 2025) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments.
  - The October 2025 Community Update (distributed on the 14 October 2025) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments. Ampol acknowledged the concerns raised by the community and highlighted key themes, including safety and wellbeing, environmental impacts, and transparency.
  - The November 2025 Community Update (distributed on the 14 November 2025) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments.
  - The December 2025 Community Update (distributed on the 12 December 2025) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments
  - The February 2026 Community Update (distributed on the 6 February 2026) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments and number of community submissions received during the exhibition period
  - The March 2026 Community Update (distributed on the 5 March 2026) outlined progress on the proposed modification planning application including the development of the Submissions Report and associated technical assessments and notification of the upcoming community drop-in session on the 11 March 2026
- Ampol facilitated a meeting with Council on 18 September 2025 (onsite). Ampol presented the role of the proposed modification within Ampol broader land strategy (the KEIP project, SSD-86799993). This included discussion of how Ampol would stage land remediation and address legacy refinery infrastructure ahead of the KEIP project works
- Ampol facilitated a meeting with DPHI 25 September 2025 (online). Ampol responded to the key issues raised in DPHI's submission (refer to Section 4.1). Misinformation was also addressed.
- Ampol emailed Councillor Carol Provan and Kal Glanznig 10 December 2025 with an update on the KEIP project and the fact sheet.
- A fact sheet was prepared regarding the proposed modification and the KEIP project and distributed on the 11 December 2025. The fact sheet was distributed via letter box drop on the 11 December 2025.
- Ampol facilitated a meeting with DPHI on the 29 January 2026 (online). Ampol provided an update of the KEIP and MOD-7 projects and an overview of how DPHI's key issues had been addressed during the preparation of the Submissions Report
- Ampol facilitated a meeting with Sutherland Shire Council planning team representatives on 4 February 2026 (online). Ampol provided an update of the KEIP and MOD-7 projects
- Ampol facilitated a meeting with the EPA on 11 February 2026 (online). Ampol provided an update of the KEIP and MOD-7 projects and an overview of how EPA's key issues had been addressed during the preparation of the Submissions Report

- Ampol attended a meeting with the Kurnell Progress & Precinct Resident's Association on 18 February 2026 to provide an update on the proposed modification, responses in the Submissions Report and discuss key concerns
- Ampol facilitated meetings with several targeted community groups on 27 February 2026, to provide an update on the proposed modification and address key concerns. These groups included:
  - Kurnell Community Sports and Recreation Club
  - The Holt Estate
  - Kurnell Men's Shed
  - Kurnell Public School
- A community drop-in session was held on 11 March 2026, providing community members an opportunity to discuss the proposed modification and the Submissions Report. A total of 13 people attended the event.
- Continued operation of the community hotline (1800 719 669), email (community@ampol.com.au), and the opt-in community notification platform for emergencies or major incidents.

Ampol acknowledges feedback from the community regarding the need for transparent, accessible and regular consultation. Ampol is committed to ongoing consultation with the community and will continue to provide opportunities for engagement. Ongoing consultation would involve:

- Update to Ampol's webpage to support transparency and ongoing community access to information
- Relevant community newsletters available online and letterbox drop to residents of Kurnell
- Community information sessions providing updates on the proposed modification, enabling direct discussion of technical issues, and opportunities for questions, including:
  - Regular in-person community drop-in sessions or online community information sessions throughout 2026
  - Discuss and address key issues raised by the community
  - Information presented and displayed at community information sessions and response to questions will be uploaded to the webpage for transparency
- Continued development of Frequently Asked Questions documents to respond to community concerns and issues, including questions received by community members following exhibition of the Modification Report
- Continued development and distribution of plain English fact sheets to provide further information on technical aspects to be available via Ampol's website and distributed via letterbox drop
- Face to face meetings with targeted community groups to discuss updates and questions
- Maintain channels for feedback including operation of the community hotline (1800 719 669) and email (community@ampol.com.au)
- Continued operation of the opt-in community notification platform for emergencies or major incidents.

## 3.3 Further assessment of the proposed modification

The following technical assessments have been updated in response to agency submissions and design development.

### 3.3.1 Remedial Action Plan (RAP)

The Conceptual RAP (Appendix H of the Modification Report) has been converted into a RAP to address agency submissions (specifically DPHI and the EPA) and include the latest description of the proposed modification. The RAP provides an overview of the remedial activities required for both the

proposed modification and the future SSD application for the KEIP project (SSD-86799993) before focusing in more detail on the MOD-7 Stage 3 activities.

The RAP is presented in Appendix E and includes the following changes:

- Discussion on the removal of capping as a remediation strategy for the proposed modification, and how this would be deferred to the subsequent development application for the KEIP project (SSD-86799993)
- Further detail on how data gaps have been addressed since lodgement of the Modification Report, what data gaps remain, and how these would be addressed
- Independent review of the RAP by a NSW EPA-accredited Site Auditor. IAA has been provided by the Site Auditor and is attached in Appendix E1
- Preparation of a draft ASSMP (presented in Appendix E2).

### 3.3.2 Updated Soils, Groundwater and Contamination Report

The Soils, Groundwater and Contamination Report (Appendix G of the Modification Report) has been updated to address agency submissions (specifically WaterNSW) and include the latest project description. The Updated Soils, Groundwater and Contamination Report is presented in Appendix F.

The groundwater impact assessment presented in the Soils, Groundwater and Contamination Report (Appendix G of the Modification Report), was high level and assumed that groundwater take would be no greater than 3 megalitre (ML) per year. This assumption was based on previous assessments undertaken for the approved project and the delivery of these works.

The approved project works were largely focused on the former refinery infrastructure located in central and southern parts of the Site. For instance, during SSD-5544 MOD-1 (Kurnell Refinery Demolition) excavations to depths of up to 2 mbgl and 3 mbgl were required for the removal of structures and certain pipelines respectively. The delivery of these works did not result in large volumes of dewatering for the approved project.

However, as part of the Kurnell Stormwater Separation Improvement Project, two pits were excavated to a depth of 3.9 mbgl in the north east of the Site. AECOM undertook a high-level groundwater assessment using recognised groundwater equations to provide estimates of groundwater ingress and drawdown to assist with the regulatory requirements and allow for informed decision-making related to the construction approach and water management. This assessment indicated that, based on the depth to groundwater, the geology and soil type, and the depth of excavations required, dewatering would likely be required for the proposed modification.

The groundwater assessment (provided in Annexure A of Appendix F) presents a conservative estimate of groundwater ingress and groundwater drawdown extent during dewatering activities. The conservative estimate of groundwater take during Stage 2 works is 96 ML, and 260 ML during Stage 3 works. Over a five year construction period, this equates to 71 ML per year.

Given the dewatering estimates, the groundwater assessment has identified a number of measures to mitigate potential impacts. In addition, a Water Access Licence (WAL) would be required for the duration of excavation activities that are anticipated to arise in groundwater take. The anticipated drawdown extents would be reviewed following completion of the construction program.

### 3.3.3 Updated Surface Water, Wastewater, and Flooding Assessment

The Surface Water, Wastewater and Flooding Report (Appendix I of the Modification Report) has been updated to address agency submissions (specifically DPHI and CPHR) and include the latest project description. The Updated Surface Water, Wastewater, and Flooding Assessment is presented in Appendix G.

A detailed modelling review and update was undertaken. This work included updating the surface water model to meet the requirements of the Australian Rainfall and Runoff (ARR) Guidelines (Version 4.2) (Ball et al, 2019), incorporating two climate change scenarios, and five flooding events.

### 3.3.4 Updated Noise and Vibration Impact Assessment

The NVIA (Appendix M of the Modification Report) has been updated to address agency submissions (specifically by the EPA) and include the latest project description. The Updated NVIA is presented in Appendix H and includes the following changes:

- Development of noise management levels (NMLs) in accordance with the ICNG (DECC, 2009)
- Updates to SoundPLAN operational model and impact assessment to include additional existing noise sources and adjusted receiver heights
- Detail on third octave results to allow identification of any annoying characteristics
- Consideration of feasible and reasonable mitigation measures for operational activities.

The EPA requested that the Noise Policy for Industry (NPfI) be applied in the Updated NVIA, instead of the existing operational noise limits for the Site, as defined under EPL 837. However, the existing noise limits for the Site are appropriate to use for the operational noise assessment as they were determined for ‘terminal’ activities rather than ‘refinery’ activities and were provided in the original Development Consent for the Conversion Project (7 January 2014). As such, this request has not been applied. Refer to Section 4.2.1 for further information.

### 3.3.5 Updated Biodiversity Development Assessment Report

The BDAR (Appendix P of the Modification Report) has been updated to address agency submissions (specifically CPHR) and include the latest project description. The Updated BDAR is presented in Appendix I and includes the following changes:

- Justification provided on the removal of vegetation in RPIP Mountain
- Further clarification provided on credit offset staging
- Updates to figures
- Further impact assessment of Coastal Wetlands based on information from the updated stormwater (Appendix G) and groundwater (Appendix F) assessments.

### 3.3.6 Updated Aboriginal Cultural Heritage Assessment Report

The ACHAR (Appendix J of the Modification Report) has been updated to address agency submissions (specifically Heritage NSW) and include the latest project description. The Updated ACHAR is presented in Appendix J.

An updated Aboriginal Heritage Information Management System (AHIMS) database search was undertaken, and a summary has been included, as well as updated mitigation measures in line with the Heritage NSW submission.

Heritage NSW requested mapping identifying areas of low, moderate, and high archaeological potential as relevant, with justification for these assessments. Sensitivity mapping has not been undertaken to divide the Project Area into discrete zones of sensitivity (i.e. low, moderate, and high) as the potential for Aboriginal archaeological deposits lies beneath extensive fill. The depth and extent of intact soils are currently unknown, and no subsurface data is available to support any meaningful differentiation. Any such division would therefore be speculative. Accordingly, the area is treated as a single zone of sensitivity. Refer to Section 4.4.2 for further information.

### 3.3.7 Updated Heritage Impact Assessment

The HIA (Appendix K of the Modification Report) has been updated to address agency submissions (specifically Heritage NSW) and include the latest project description. The Updated HIA is presented in Appendix K.

Additional impact assessments have been included for Kamay Botany Bay National Park and Towra Point Reserve (State Heritage Register (SHR) no. 01918), Kurnell Peninsula Headline (National Heritage List (NHL) 105812), and Kamay Botany Bay: botanical collection sites (NHL 106162), as requested by Heritage NSW.

Further detail has been added to the assessment of archaeological potential for the Site and for each building to be demolished, as well as additional detail of the heritage value of the storehouse, workshop, and Central Control Building. Additional information for significance assessments has been included as requested by Heritage NSW.

# 4 Response to submissions

This section provides a detailed summary from the original submission as well as a response to comments provided.

## 4.1 NSW Department of Planning, Housing and Infrastructure

DPHI provided a submission in response to the exhibition of the Modification Report. The comments raised by DPHI in their submission are summarised and addressed below.

### 4.1.1 Clarifications on the project description

**Comment**

DPHI have requested further justification for the works proposed in the area colloquially known as RPIP Mountain, and whether removal of this element is necessary for the ongoing operation of the Kurnell Terminal.

*Response*

RPIP Mountain (refer to Excavation 6 in Figure 1-5) is located within the south eastern portion of Zone 3, covering an approximate area of 32,000 $m^2$. Historical disturbance, including extensive storage and filling of soil materials, has occurred within this area. The area consists of a large stockpile of ACS and fill material which is around 3 m above the surrounding ground level. Previous assessments have identified asbestos as the primary contaminant of concern. Asbestos is located along the northern perimeter, central area, and south-eastern corner of RPIP Mountain at up to 2 mbgl and at varying elevations. Screening level exceedances were also noted for heavy metals, in particular lead, most prevalent in the northern portion at varying depths and elevations.

Current management practices are in place for RPIP Mountain to manage exposure and migration risks to Site occupants and the environment. Removal of low and regenerating condition native vegetation is required to prevent potential migration of surface asbestos through dusts and sediments. The proposed remediation would provide a long-term, reliable solution to the asbestos contamination in this area for the terminal land use.

Vegetation would be removed and ACS excavated to a depth of 1 m below existing ground levels to target asbestos at the root zone of vegetation growing at the current ground surface. For larger tree roots, there is potential for excavation to a depth of 4 mbgl. Excavated material would be removed and disposed of offsite as ‘special waste – asbestos.’ Following removal of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Where necessary, the excavation would be backfilled with clean material. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Once regraded, surface levels would not be below existing surrounding ground levels.

Giant Dragonfly was incidentally detected during the field investigations to support the BDAR (Appendix P of the Modification Report). The individual was located approximately 35 m south of the Project Area, within Zone 4. The Updated BDAR (Appendix I) provides an explanation of the generation of the Giant Dragonfly polygon, considering that the individual was detected within an area of native vegetation (Plant Community Type (PCT) 3546 Coastal Sands Littoral Scrub-Forest) that is not formally recognised as being associated with Giant Dragonfly in BioNet.

The vegetation within RPIP Mountain was found to be low and regenerating PCT 3546 Coastal Sands Littoral Scrub-Forest (Appendix P of the Modification Report). However, the habitat afforded within RPIP Mountain is of poor quality and likely to be utilised as dispersal/ perching habitat only. As detailed in the Serious and Irreversible Impact (SAII) assessment (Annexure E of the Updated BDAR), impacts from the proposed modification works would be limited to non-swamp native vegetation which is currently edge effected primarily by dense Lantana and interfaces with the existing Kurnell Terminal. Core swamp habitat critical to the survival of Giant Dragonfly is not present in RPIP Mountain and would not be impacted by the proposed modification. Viable habitat would be available in Zones 4 and 5 of the Site to allow for the dispersal to alternative swamp habitat. No additional restriction in movement is expected by the proposed modification works. As such, the proposed modification works are unlikely to cause disturbance to or impact the Giant Dragonfly population.

In summary, the proposed remediation of the ACS from RPIP Mountain would remove a legacy contamination migration risk, thereby reducing contamination risk to terminal workers and cross-contamination risks to the Site. The vegetation in RPIP Mountain is a low ecological value and contains significant numbers of invasive weed species and, whilst certain important fauna may occasionally use this land, it is not important habitat for these species. Therefore, the remediation of the RPIP Mountain is justified as part of the proposed modification.

Refer to the RAP (Appendix E) and Updated BDAR (Appendix I) for further detail.

**Comment**

DPHI note that Stage 4 of the proposed modification is described as follows: "*Grading: Landforming the Project Area following removal of infrastructure and ground remediation activities and preparing Zones 2 and 3 for future use*" and that Figure 4-6 identifies the extent of earthworks for grading, but does not show the level of change in ground levels proposed. DPHI have requested that the extent of earthworks is further clarified, and note that significant earthworks intended for future land uses are not supported as this would no longer be consistent with the original consent.

*Response*

As discussed in Section 3.1, changes to grading and inclusion of capping have been removed from the proposed modification, except for the area referred to as RPIP Mountain and Source Area Excavation 5.

Following excavation of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Once regraded, surface levels would not be below existing surrounding ground levels. A full description is provided in Appendix B1.

The bunding at Source Area Excavation 5 would be removed to allow remediation activities to occur; this area does not currently retain large amounts of water and its removal would result in a negligible change in surface flows (refer to the flood assessment in Appendix F).

The remaining excavations required as part of the proposed modification would be backfilled to existing finished surface levels and grade.

**Comment**

DPHI requested clarification about what is proposed in relation to hydrocarbon pipelines.

*Response*

Changes to the hydrocarbon pipelines are not part of the scope of the proposed modification. Text was included in the options assessment section of the Modification Report regarding the relocation of hydrocarbon pipelines as this option had been discussed with DPHI in early consultation, however following further design development this activity is not required at this stage. Refer to the updated description of the proposed modification in Appendix B1.

**Comment**

DPHI have requested further clarification about what is proposed regarding the FWS, including a description and assessment of all options being considered.

*Response*

The FWS at the Site currently operates via a network of fire hydrants, monitors, fixed and semi-fixed foam systems, and underground and aboveground firewater pipelines running through the Site, as well as two firewater tanks and pump systems, housed in pumphouses in the southern part of Zone 2 and central portion of Zone 1. Following the removal of refinery infrastructure in Zones 2 and 3, the FWS within these zones is no longer required. The location and spread of the FWS means that Ampol is managing and maintaining a larger asset at the Site than is needed which in turn impacts the viability of the terminal.

In order to align the FWS with the current terminal footprint and make it fit for purpose, the FWS infrastructure in Zones 2 and 3 would be augmented or removed and, where necessary, replaced or augmented in Zone 1. These works would include:

- Installation of new firewater pipelines, new or relocated pumps, and the construction of a new three ML firewater tank in the FWS Relocation Area in Zone 1
- Augmentation of FWS infrastructure within Zone 1 and the south of Zone 2
- Commissioning of the upgraded FWS to confirm it meets operational requirements and Australian Standards
- Isolation, disconnection, and removal of redundant FWS infrastructure in Zones 2 and 3.

These works are discussed in more detail below.

**Installation of FWS infrastructure in the FWS Relocation Area in Zone 1**

The FWS tank and pump system/ pumphouse, currently located in the south of Zone 2 (refer to Figure 1-3), would be relocated to one of the two siting options within the FWS Relocation Area in Zone 1 (refer to Figure 1-4). Construction would be limited to one option, selected as part of detailed design. Works to relocate the FWS tank, pump system, and related pipework to a location within the FWS Relocation Area would last approximately 12 months. These works would include:

- Excavation to a depth of 1 mbgl to construct new foundations for the firewater pipework along the length of the pipelines, the firewater tank, and the pumphouse. The firewater tank would require a base of 380 $m^2$ (diameter of 22 m) and the pumphouse would require a base of 11 m by 18 m
- Construction and installation of new FWS infrastructure:
    - The new tank would be approximately 12 m in height and 22 m in width and built in accordance with AS 2304-2011 Standard Water storage tanks for fire protection systems
    - The pumphouse would be built like-for-like with its existing counterpart, with three adjoining walls of around 5 m in height
    - Two existing diesel pumps would be relocated and installed in the new pumphouse, along with one new diesel pump. Importantly, during the transition between existing and new pumps, the existing northern FWS would service the Site to maintain constant appropriate fire protection across the Site at all times, in accordance with Australian Standards
- Connection of the existing and new firewater infrastructure (including the connection of pipes from the new tank to the main header).

Refer to Section 1.4 and Appendix B1.

To minimise the downtime of the FWS, new lines would be constructed parallel to the existing lines. The process to connect the new infrastructure with the existing system would occur during a FWS shutdown period, and last approximately two weeks. FWS shutdown periods are planned, permitted, and managed in line with existing terminal procedures.

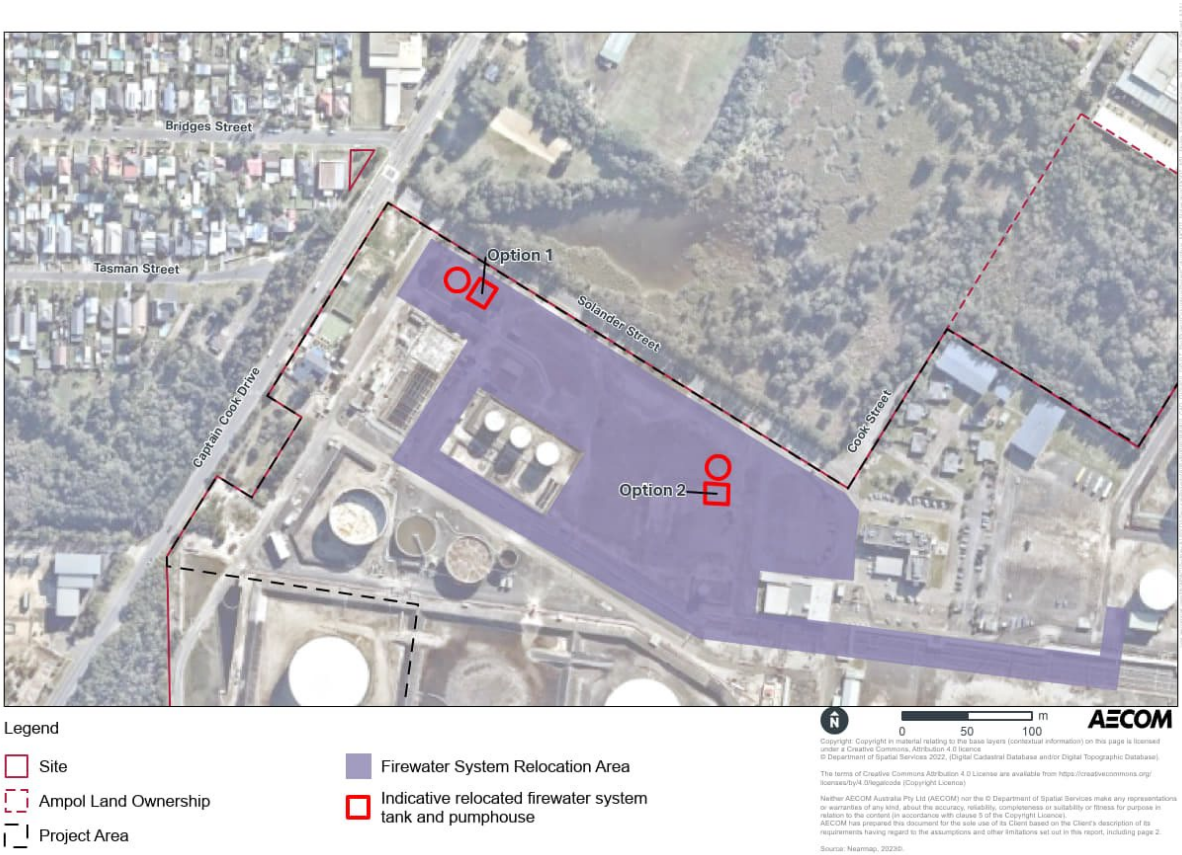



**Figure 4-1 FWS Relocation Area**

### Augmentation of other FWS infrastructure within Zone 1

Under existing conditions, the FWS in Zone 1 is designed to receive firewater from the existing pumphouse in the south of Zone 2. Under the proposed modification, this pumphouse would be relocated to the FWS Relocation Area in Zone 1 (Figure 4-1).

Modelling undertaken by R4Risk indicated that relocation of the pumphouse would require augmentation of the FWS in Zone 1. This is due to the pressure required to direct water from Option 1 or 2 in the FWS Relocation Area to a potential tank fire on the eastern area of the Site (i.e. tank 105) would exceed the maximum discharge pressure of the firewater pumps. As such, the pipes were too narrow to enable sufficient discharge pressure. Therefore, piping modifications would be required to satisfy the maximum firewater demand.

Augmentation of existing FWS infrastructure in Zone 1 (Figure 4-2) would comprise the replacement of existing narrower pipes with pipes of a larger diameter (between 400 to 600 millimetres (mm) diameter) to enable the appropriate discharge pressure of the firewater pumps. Where pipes are present underground, excavations would be required up to 1 mbgl to facilitate access and replace the existing infrastructure. Augmented pipes would be installed alongside existing pipes and only connected once construction and testing is complete to minimise downtime of operational system. FWS shutdown periods are planned, permitted, and managed in line with existing terminal procedures.




**Figure 4-2 Augmentation of other FWS infrastructure within Zone 1 – Indicative locations**

### Augmentation of the FWS infrastructure in Zone 2

Augmentation of FWS infrastructure would be required in the south of Zone 2 (Figure 4-3) to maintain FWS coverage within the Site, prior to the construction of the relocation FWS and removal of existing FWS tank, pumphouse, and firewater lines in Zone 2.

Augmentation of existing FWS infrastructure in Zone 1 (Figure 4-2) would comprise the replacement of existing narrower pipes with pipes of a larger diameter (between 400 to 600 mm diameter) to enable the appropriate discharge pressure of the firewater pumps. Where pipes are present underground, excavations would be required up to 1 mbgl to facilitate access and replace the existing infrastructure.

### Disconnection and removal of FWS infrastructure in Zones 2 and 3

Following commissioning of relocated and augmented FWS infrastructure, the redundant FWS pipework and other infrastructure within Zones 2 and 3 would be disconnected and removed (Figure 4-3).

The former Caltex Lubricating Oil Refinery (CLOR) FWS in Zone 3 has already been disconnected from the main system but remains in position. This part of the FWS would be removed. Excavations up to 1 mbgl may be required to facilitate the removal of the pipework, footings, and foundations. Once removed, redundant materials would be sent offsite for recycling or disposal dependent upon its material composition and waste classification. Where complete removal is not feasible, existing pipes would be made safe if required and left in-situ.

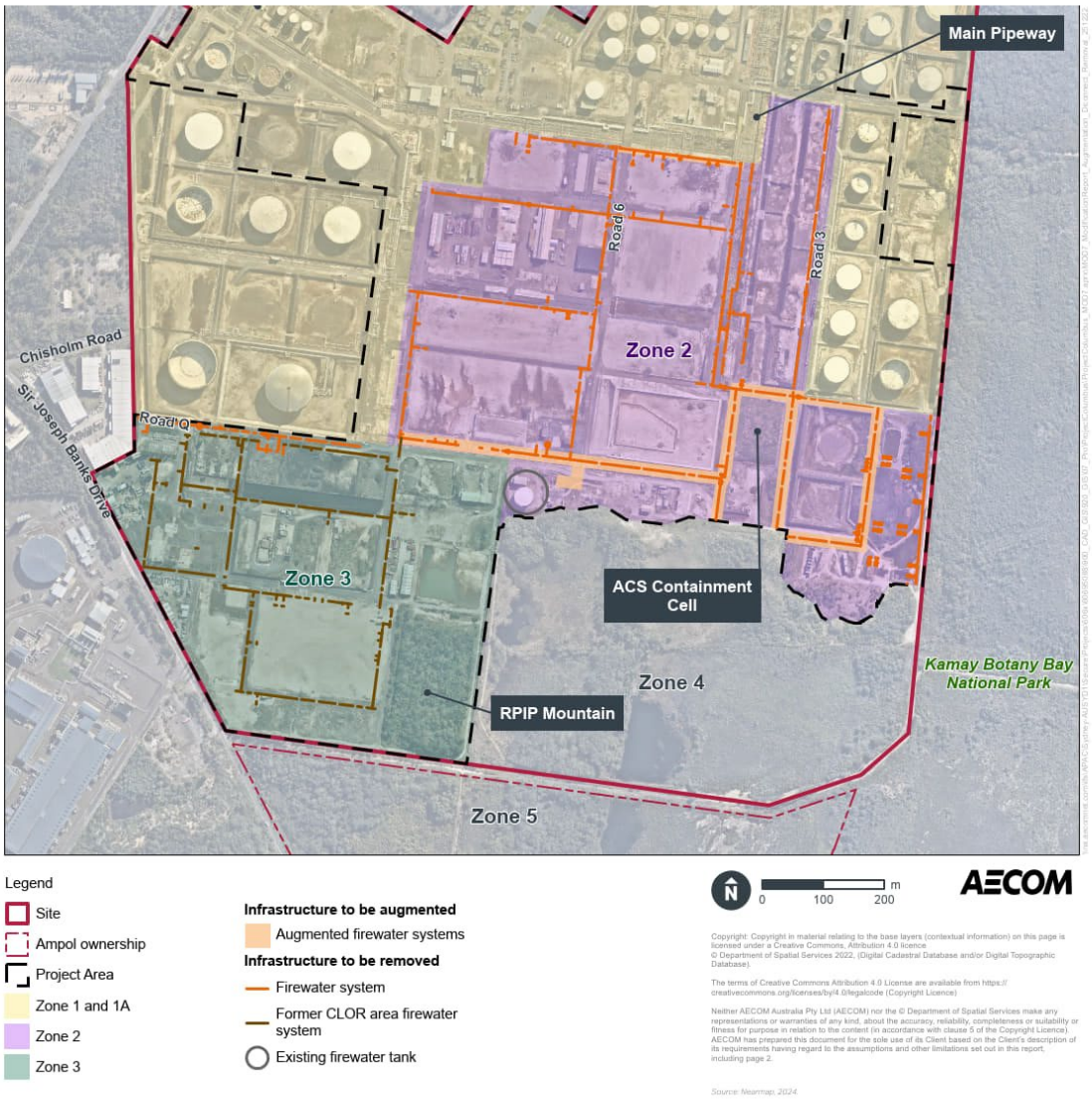



**Figure 4-3 Augmentation or disconnection and removal of the FWS infrastructure in Zones 2 and 3 – Indicative locations**

## Comment

DPHI requested a concept drawing of the proposed new storage shed within Zone 1A, given the proximity to residential dwellings.

### *Response*

The proposed new storage shed would be constructed in Zone 1A to store boats and emergency aquatic spill response equipment. The shed would be approximately 18 m by 14 m and up to 4 m tall. Concept plans are provided in Figure 4-4 and Figure 4-5.

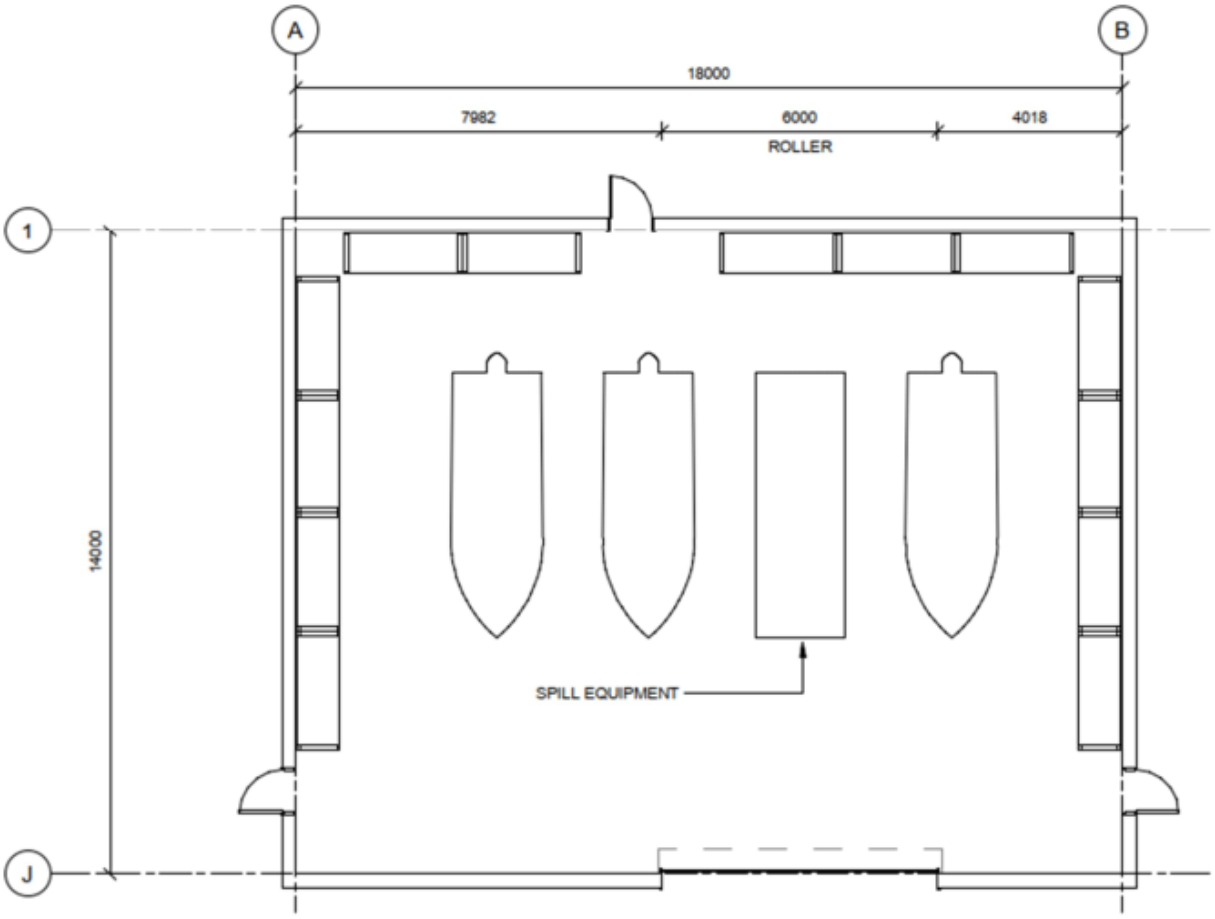



**Figure 4-4 Sketch plan of proposed shed in Zone 1A**

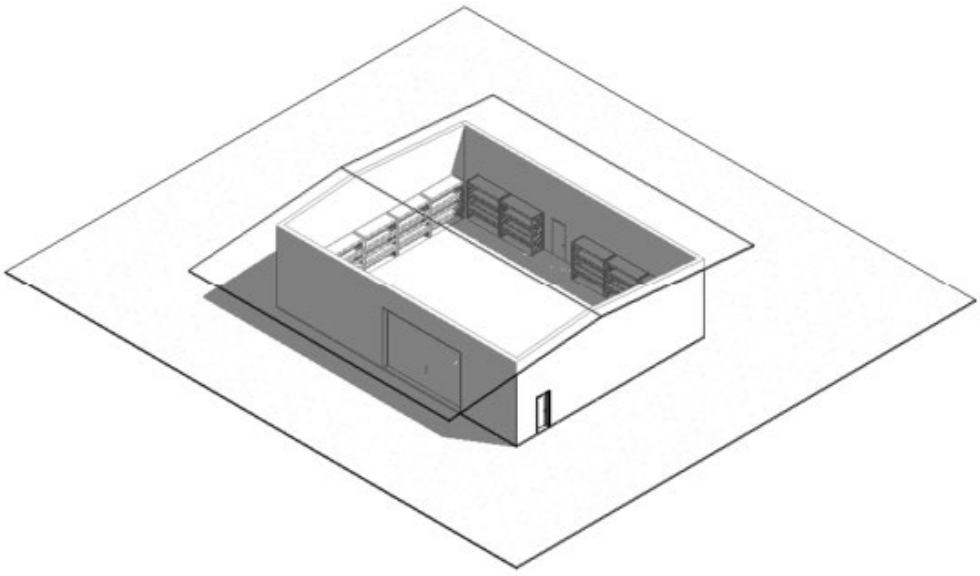


**Figure 4-5 Sketch 3D view of proposed shed in Zone 1A**

**Comment**

DPHI requested that the two siting options for the FWS shown on Figure 4-7 of the Modification Report are also shown on Figure 4-1 of the Modification Report.

*Response*

The two siting options for the relocated FWS tank and pumphouse in Zone 1 have been included in Figure 1-4 as requested.

### 4.1.2 Community engagement

**Comment**

DPHI recommends that Ampol undertake further consultation with the local community given the significant number of objections received during the exhibition period, and detail the outcomes of any consultation undertaken, including actions taken and future consultation activities.

*Response*

Ampol recognise the importance of engaging with the local community and considering their views and needs, during the design, assessment and development of the proposed modification. Following the end of the exhibition period on Friday 1 August 2025, Ampol has undertaken consultation activities with state agencies, Council, and the community. A register of consultation that has been undertaken is provided in Appendix D, and a summary provided in Section 3.2. This included:

- A community drop-in session held on 14 August 2025 providing community members an opportunity to discuss the proposed modification and learn more about the KEIP project (SSD-86799993)
- Monthly community newsletters available online, distributed by email and letterbox drop to residents of Kurnell
- Meetings with DPHI and the Council
- Engagement with the Save Kurnell community advocacy group via email on 8 August 2025.

Ampol is committed to ongoing consultation with the community and will continue to provide opportunities for engagement. Ongoing consultation, if the proposed modification is consented is provided in Section 3.2.2. This includes:

- Regular updates provided in Ampol's proposed modification-specific webpage, community newsletter, and in-person community drop-in sessions or online community information sessions
- Development of plain-English fact sheets and Frequently Asked Questions documents to respond to community concerns and issues. These would provide further information on technical aspects, such as capping, and be made available via Ampol's website and distributed via letterbox drop
- Continuation of the community hotline and email address for 24/7 contact.

### 4.1.3 Remediation of contaminated land

**Comment**

DPHI support the comments provided by the EPA which request the preparation of a Detailed RAP (now referred to as Remedial Work Plan(s), RWP(s)) for the proposed modification (refer to EPA submissions in Section 4.2, please note that this request did not require this RAP to be produced as part of the modification application). Given concerns raised in community submissions, summarised in Section 4.14, DPHI request the preparation of Detailed RAP (including the carrying out of any additional investigations) as part of the Submissions Report.

DPHI have requested that figures showing the indicative location of areas of known contamination and areas where data gaps exist are provided. In addition to the issues raised by the EPA, the Detailed RAP and Submissions Report must also provide a copy of written Interim Advice (IAA) issued by the Site Auditor.

*Response*

The Conceptual RAP (Appendix H of the Modification Report) was informed by sufficient site investigation and historical data to characterise contamination and define appropriate remediation pathways. While some data gaps remained, these were related to the confirmation and/or refinement of the proposed remedial approaches and estimated remediation volumes and did not affect the overall remediation approach or its suitability for the Site. Indeed certain 'data gaps' are not actually gaps at all but locations where previous investigations have occurred and the results need to be further verified. A NSW EPA-accredited Site Auditor was engaged by Ampol to review the Conceptual RAP prior to lodgement of the Modification Report.

Following review of agency and community submissions, the Conceptual RAP has been converted to a RAP (provided in Appendix E) to incorporate the updated description of the proposed modification, specifically the removal of grading and capping activities. This RAP details the findings of the Data Gap Assessment completed as part of the Sampling, Analysis and Quality Plans (SAQP), and additional investigation data that was reviewed as part of this process.

The NSW EPA-accredited Site Auditor provided an independent review of the RAP (Appendix E). IAA has been provided by the Site Auditor and is attached in Appendix E1. This confirmed that the Site Auditor agrees with the remedial approach outlined in the RAP.

Figure 4-6 shows the areas of known contamination within the Site, based on the historical investigations reviewed in Section 3.4 of the RAP. Areas of known contamination that would be addressed under the proposed modification are summarised below:

- Existing OWS and FWS: Primary source contamination, areas of noted Light Non-Aqueous Phase Liquid (LNAPL) presence/ criteria exceedance (groundwater, soil vapour, and soil)
- Source Area Excavation 1: Exceedances of petroleum hydrocarbons (PHC) in soils and groundwater
- Source Area Excavation 2: Exceedances of PHCs in soils and groundwater, presence of LNAPL
- Source Area Excavation 3: Exceedances of PHCs and chlorinated hydrocarbons (CHC) in soils and groundwater, presence of soil vapour
- Source Area Excavation 4: Exceedances of PHCs and CHCs in groundwater, presence of soil vapour
- Source Area Excavation 5: Presence of per and poly-fluoroalkyl substances (PFAS) in soils and groundwater
- Source Area Excavation 6: Presence of ACS
- Source Area Excavation 7: Asbestos has been detected in surface soils at concentrations that present as an operational safety risk if disturbed.

Figure 4-6 also indicates that there are areas of known contamination present in the Project Area that would not be addressed under the proposed modification. Remedial actions have been undertaken in these areas, and ongoing monitoring and management would continue to be undertaken by Ampol.

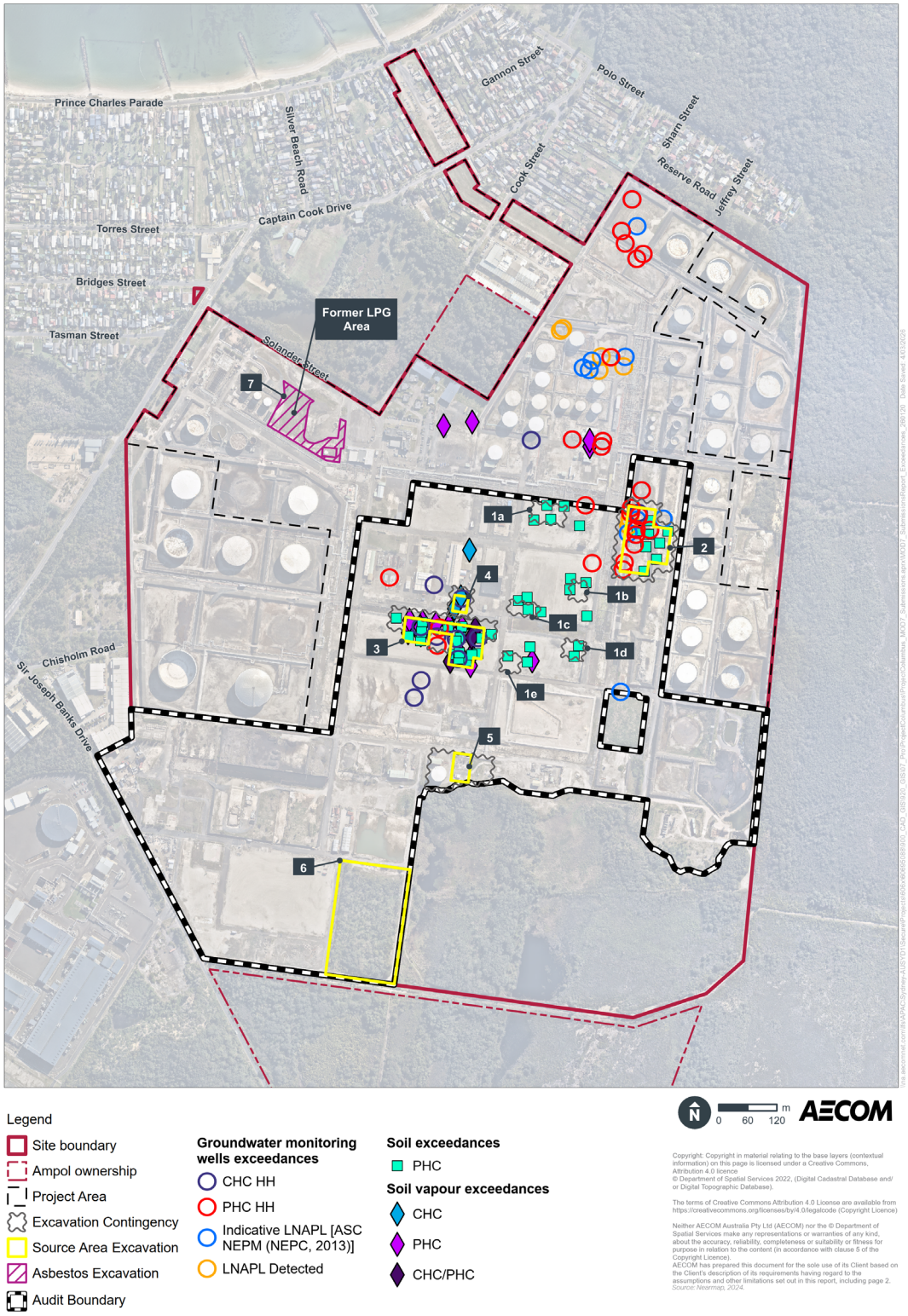



**Figure 4-6 Areas of known contamination (exceedances of applicable criteria)**

The following data gaps are known to exist:

- Hydrocarbons: Further data collection will be completed in areas where access has not been possible (e.g. existing structures in Zone 2) to confirm, or further refine, presence and/or concentrations of PHC.
- Other COPCs: Further sampling for specific process chemicals (such as methyl tert-butyl ether and tetraethyl lead, which are fuel refining additives, and methyl ethyl ketone, which were used in the CLOR refinery process), and chemicals used in the operation of a refinery (such as chlorinated cleaning agents and PFAS containing foams/ concentrates) that may have been used at the Site. This would be undertaken where historical data is limited, within discrete historical source areas (i.e. former refinery areas and the firefighting training area).
- Services removal: Sampling around existing services (e.g. OWS or FWS infrastructure) presents safety and accessibility limitations. As these are removed as part of the proposed modification, further investigations would be completed.
- Validation of historical results: A large number of ground investigation has been completed across the Site over many years (refer to Appendix E). The condition of the soils may have changed since some of these investigations occurred (e.g. due to natural attenuation, or through ongoing operational processes). Where required, additional characterisation would confirm historical investigations.

Data gaps are described in full in the RAP (Appendix E). A figure cannot be prepared for these as some are temporal (i.e. the validation of historical results). An NSW EPA-accredited Site Auditor has reviewed the RAP and approved the findings of the data gap review. These data gaps would be addressed through additional investigations, which would inform the development of the RWP(s). RWP(s) are practical documents prepared to support the implementation of the RAP following these investigations and the receipt of relevant conditions of consent if the modification application is consented. RWP(s) would be independently reviewed by an NSW EPA-accredited Site Auditor.

These additional investigations would also allow for the refinement of the Source Area Excavations (i.e. the excavation soil extents and volumes required during the proposed modification's construction) and excavation method/ staging, prior to commencement of remediation.

Conceptual RAPs and RAPs have been successfully progressed through NSW development application process despite the presence of data gaps. In the SSD application to facilitate the remediation at the Clyde Terminal (SSD-9302), data gaps were recognised and used to guide and prioritise subsequent data collection and site characterisation efforts. Specifically, focus areas for additional assessment of the site were related to the hydrocarbon data set, adequately assessing all potential COPC, risk-based thinking, pre-validation and natural source zone depletion/ natural attenuation (AECOM, 2019).

### Comment

DPHI has requested clarification about how, or if, the numerous recent and ongoing remediation activities indicated in Sections 3.3 and 6.3 of the Conceptual RAP (Appendix H of the Modification Report) relate to the remediation works proposed in the Modification Report.

#### *Response*

Recently completed and ongoing investigations at the Site, previously discussed in Section 3.3 of the Conceptual RAP, is now detailed in Section 3.4 of the RAP. Section 6.3 of the Conceptual RAP stated that, "*active groundwater remediation is currently taking place within Zone 1 (Jet Fuel Remediation and Northern Tank Farm AECs)*."

These sections describe where remediation activities are currently active at the Site, which include:

- Ongoing PFAS monitoring and management works across the Site, being completed in accordance with the Site's EPL.

- Ongoing groundwater remediation being undertaken at the Jet Fuel Remediation Area (Zone 1, east of the Terminal Operations Building within the Contractors' Carpark area). Boundary monitoring shows primary contaminants in groundwater are limited to the source area. This Area of Environmental Concern (AEC) lies within the Project Area, but not within the Audit Boundary. This remediation is subject to a separate development application (reference Development Application (DA) 09/840).
- Ongoing groundwater remediation being undertaken at the Northern Tank Farm (Zone 1). The area contains residual LNAPL and dissolved phase hydrocarbon contamination. There is a bioventing remediation system installed down hydraulic gradient of the northern tank farm, to treat groundwater. This AEC lies within the Project Area, but not within the Audit Boundary.

The investigations outlined in Sections 3.4 and 6.3 of the RAP have informed the understanding of contaminants present at the Site. Data relevance was assessed based on the extent to which the data reflects the actual conditions across the Site and appropriateness in the context of the current Site setting.

Using this data, and in accordance with the ASC NEPM (NEPC, 2013), a Conceptual Site Model (CSM) was prepared. The CSM provides a spatial and temporal overview of the contamination at the Site and its surroundings, and highlights contamination sources, potential receptors, and the potential exposure pathways between the sources and receptors. The CSM is outlined in Section 4 of the RAP (Appendix E).

The remediation proposed is not reliant on the completion of ongoing remediation activities, as the information provided is sufficient to have developed both the data gap assessment and the remedial approach presented in the RAP. Ongoing monitoring programs would continue at the Site following completion of the proposed modification targeted remedial activities.

**Comment**

DPHI has requested clarification about how the Remediation Action Strategy (RAS) endorsed by the EPA relates to the remediation works proposed in the Modification Report.

*Response*

The RAS (Ampol, 2019) contributed to the basis for understanding the conditions and contamination present on Site and was considered in the development of the RAP. The RAS consolidated available environmental data for the Site, and, where deemed appropriate and representative, this data was incorporated into the Data Gap Assessment SAQP (AECOM, 2025), that informs the remedial approach in the RAP.

Refer to the RAP (Appendix E) for further detail.

**Comment**

DPHI note that it is unclear why the following reports were not available for review in full at the time of the Conceptual RAP drafting:

- Remediation Action Strategy 2022 update (Ampol , 2022)
- Remediation Action Strategy 2023 update (Ampol, 2023)
- Ampol Kurnell Terminal PFAS SAQP 2022-2023 Investigation: Summary Report (WSP, 2024b), CLOR South PFAS Soils investigation (WSP, 2024).

*Response*

These reports have now been received and are summarised in Sections 3.4.14 and 3.4.8 of the RAP.

**Comment**

Section 8.4.2 of the Conceptual RAP states that "*Where a vapour barrier is required, the design of the future mitigation system would depend on the future land use and building footprint and as such, the design and installation of the barrier would likely be a requirement of the Environmental Management Plan (EMP) for the affected area*". DPHI noted that given the future land use and building footprint will be subject to future development applications, the remediation methodology must not be dependent on unknown future developments.

*Response*

As described in Section 3.1 and Appendix B1, capping has been removed from the proposed modification. The proposed modification would not install any vapour barriers.

**Comment**

DPHI has requested clarity on works proposed in the 'triangular area proposed for Type 2 capping in the south-eastern corner of the Site' in Figure 4-3 of the Modification Report, given other figures do not indicate works in this area.

*Response*

This area is the former scrapyard. Figure 4-3 of the Modification Report indicated that Type 2 capping would be installed in this area. The other figures did not indicate works in that area because only Type 2 capping would occur, i.e. no infrastructure removal or relocation, or excavation was proposed in this area.

As described in Section 3.1, capping has been removed from the proposed modification.

### 4.1.4 Visual impact

**Comment**

DPHI has requested a concise visual impact assessment for dwellings located adjacent to the proposed new storage shed within Zone 1A.

*Response*

A landscape and visual impact assessment was undertaken in Section 7.12 of the Modification Report and included an overview of the existing environment, as well as an assessment of construction and operational impacts resulting from the proposed modification. The following summary outlines the key findings from the visual impact assessment, including additional detail on the proposed new storage shed in Zone 1A.

**Existing environment**

The Project Area is located within the Kurnell Terminal, comprised entirely of an industrial landscape character zone. Zone 1A comprises the Eastern Right of Way, which provides pipeline easements from the Kurnell Wharf through the Kurnell township to the Site and land side facilities supporting the Kurnell Wharf and the right of way. Laydown and equipment storage, parking, and temporary offices are currently present within the northern section of the Right of Way. The access point on Prince Charles Parade (refer to Figure 4-7) has been formalised, is gated to provide secure access, and is suitable for heavy vehicles.

The landscape character zones surrounding Zone 1A include:

- Industrial zones to the south of Zone 1A (the main site of the Kurnell Terminal) and south west of Zone 1A (industrial warehouses along Cook Street)
- Residential zones to the east and west (the Kurnell township)
- Recreational zones to the north (Silver Beach), east (Kamay Botany Bay National Park), and south west (Marton Park).

Views of Zone 1A from industrial zones are in line with the surrounding industrial land zoning.

Views from residential zones are somewhat screened by fencing and existing vegetation. Existing infrastructure within the right of way is largely visible from the road (refer to Figure 4-7 and Figure 4-8) and in line with the industrial land zoning of Zone 1A. Views to the right of way from the local road network are and would remain transient in nature.

Views from Marton Park and Kamay Botany Bay National Park are screened by vegetation and housing. Silver Beach is located on the opposite side of Prince Charles Parade, and views of Zone 1A are available but somewhat screened by vegetation and surrounding housing and fencing. The wharf is the dominant industrial view from Silver Beach.

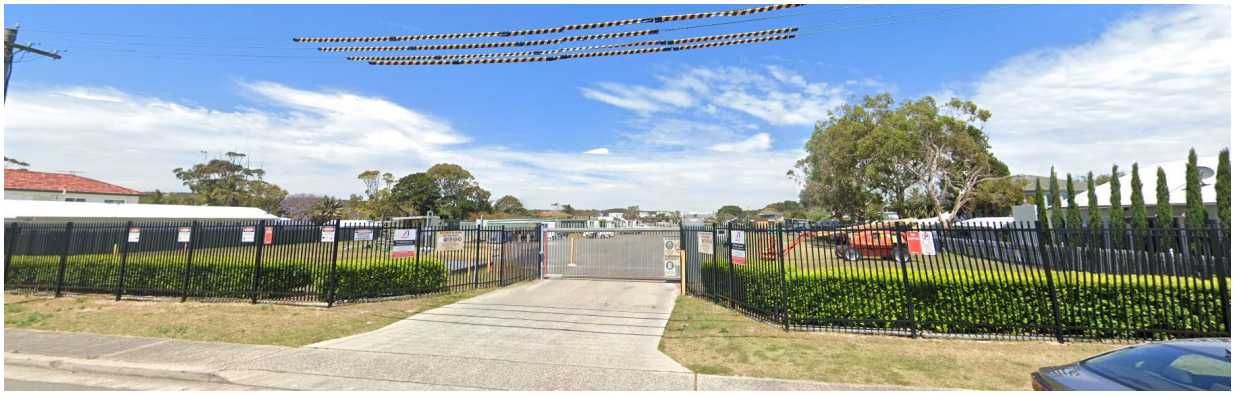


**Figure 4-7 Zone 1A – Prince Charles Parade, looking south (Source: GoogleMaps, imagery captured October 2021)**



**Figure 4-8 Zone 1A – Captain Cook Drive, looking north (Source: GoogleMaps, imagery captured October 2021)**

### Construction impacts

Activities involved in the construction of the new storage shed in Zone 1A would include site establishment, earthworks and installation of foundations, laying a slab, erection of the building, installation and connection to Site utilities, and internal fit out. Works in Zone 1A would last three months.

Three construction vehicles (e.g. cranes, semi-trailers), six truck-and-dog units (material transport), and three equipment or material delivery vehicles are expected to access Zone 1A during this period, alongside light vehicles used by the construction workforce. Vehicles would be parked within Zone 1A in the same area as they are currently (close to the Prince Charles Parade access point).

The change in views of Zone 1A during construction is expected to be minimal, as the Site is zoned for Heavy Industrial usage and the works involved during construction are not unlike those currently undertaken in Zone 1A. Similarly, there would be no change to the character of the local area. As such, mitigation measures are not considered necessary.

### Operational impacts

The new storage shed in Zone 1A would be used to store boats and emergency aquatic spill response kits. As described in Section 4.1.1, the shed would be approximately 18 m by 14 m in area and no more than 4 m tall (refer to Figure 4-4 and Figure 4-5). The proposed shed has a similar footprint to a number of residential buildings throughout the Kurnell township and will be shorter than the surrounding two storey residential properties. The proposed shed would be set back an appropriate distance from the right of way boundary fence neighbouring residential properties. The shed would be adjacent to existing terminal infrastructure and storage equipment, it would be consistent with the industrial landscape character of the Site and Right of Way, and would be consistent with the residential structures in the wider Kurnell township in terms of mass and scale.

Whilst views of the new storage shed may be visible from residential receivers and the surrounding road network, changes to views from residential or road receivers are not anticipated.

Therefore, negligible landscape character or visual impacts are anticipated from the operation of the storage shed in Zone 1A, and no measures are required to mitigate or manage these negligible changes.

## 4.1.5 Stormwater

### Comment

DPHI have requested an assessment of the impact of proposed changes to stormwater flows (redirect stormwater flow from a 4.1 hectare bunded area within Catchment F from the OWS to the SWS on the mapped coastal wetlands as per CPHR's advice.

*Response*

The Updated Surface Water, Wastewater and Flooding Report (Appendix G) has been prepared to assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, supported by updated surface water modelling (refer to Annexure A).

This updated assessment has been incorporated into the Updated BDAR (Appendix I). The assessment concluded that, with the implementation of mitigation measures (refer to Appendix C), the proposed modification would not result in impacts to coastal wetlands arising from changes to stormwater flows or surface water quality.

Additional assessment on potential impacts to coastal wetlands as a result of groundwater impacts is provided in Section 4.2.4. A summary of the existing environment, an impact assessment, and mitigation measures for proposed changes to stormwater flows across the Site is provided below.

### Existing environment

Surface water runoff generated by the Site is captured and conveyed by one of two systems:

- SWS – Collects surface water runoff from areas (including roadways and building rooftops) that have a designated low risk potential for interaction with petroleum products. Water conveyed by SWS is generally consistent with typical stormwater quality. This water receives some level of treatment prior to discharge offsite and to the receiving waterbodies.
- OWS – Collects and contains wastewater from areas containing petroleum infrastructure (such as tank bunds and pipeways) that may be impacted by petroleum products. This water is directed to the onsite WWTP for treatment before discharging to the Tasman Sea via the Yena Gap pipeline under the conditions of EPL 837.

Receiving waters, including Coastal Wetlands and associated Proximity Areas, are shown in Figure 4-9. Catchments and existing inflow/outflow locations around the Site are shown on Figure 4-10.

As the proposed modification would only involve changes to stormwater flows within Catchments B, E and F, only these catchments have been discussed below.

Catchment B

This catchment includes surface water runoff from the central and western portions of the Site, which includes most ex-refinery process areas as well as the central control building, warehouse, storehouses, oil spill room, and parking area. The WWTP and the Quibray Bay Stormwater Retention Basin are located within this catchment. Surface water flow within this catchment discharges to an open channel on the western side of Captain Cook Drive at outlet B1, where this channel then connects to the Towra Point Nature Reserve Coastal Wetland and Quibray Bay.

Catchment E

Catchment E is located on the south-western corner of the Site. Surface water from this catchment discharges to an existing open channel along the western side of Sir Joseph Banks Drive via four separate drainage outlets (E1 to E4). This open channel drains in a northerly direction, towards the Towra Point Nature Reserve Coastal Wetland and Quibray Bay.

RPIP Mountain, located at the south eastern corner of Catchment E, is a former soil stockpiling area. Currently, surface water runoff from RPIP Mountain is conveyed by an open channel that runs along the western side of this area and discharges to an existing vegetated swale along the southern boundary of the Site. This southern swale directs flow in a westerly direction towards the roadside channel along Sir Joseph Banks Drive.

Catchment F

Catchment F is the largest catchment relevant to the Site and includes a large part of Kamay Botany Bay National Park, as surface water from this land flows on to the southern part of the Site. A small area of former tank compound, the ACS Containment Cell, the former landfarm area, a recycling area, and a sludge lagoon are located in this catchment.

Surface water drains through open channels south west through Catchment F to a natural retention basin located at the southern end of the Site (refer to Figure 4-11). This natural retention basin is a mapped Coastal Wetland, and when filled, overflows to an existing culvert that discharges to the existing open channel along the southern boundary of the Site at outlet F1, which then connects to the open channel that runs along Sir Joseph Banks Drive and through to the Towra Point Nature Reserve Coastal Wetland.

**Impact assessment**

To assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, the Updated Surface Water, Wastewater and Flooding Report (Appendix G) was prepared, supported by updated surface water modelling (refer to Annexure A). Stringent environmental management and mitigation measures have been developed as part of this assessment and have been incorporated into the proposed stormwater management strategy. These measures are also listed in the sections below.

Water quality

Without mitigation, downstream waters and ecosystems may be impacted if surface water runoff carries nutrients, sediments, and organic and inorganic contaminants into drains and watercourses. During construction, this risk would be associated with potential disturbance of exposed soils and materials. During operation, there is potential for minor quantities of sediment and nutrients would be mobilised in previously pervious areas during heavy rain.

Permanent sediment control measures would be installed in Catchment E to prevent the potential transportation of sediment loads in stormwater into downstream ecosystems, such as the coastal wetlands, via Sir Joseph Banks Drive.

Site-wide construction flows

The existing SWS would remain operational during all stages of the construction phase to continue servicing the Site during periods of rainfall.

If the construction works were to obstruct existing SWS infrastructure or the overland flow paths leading to existing drainage paths, surface water flows could be diverted elsewhere, thereby changing the quality and quantity of water leaving the Site.

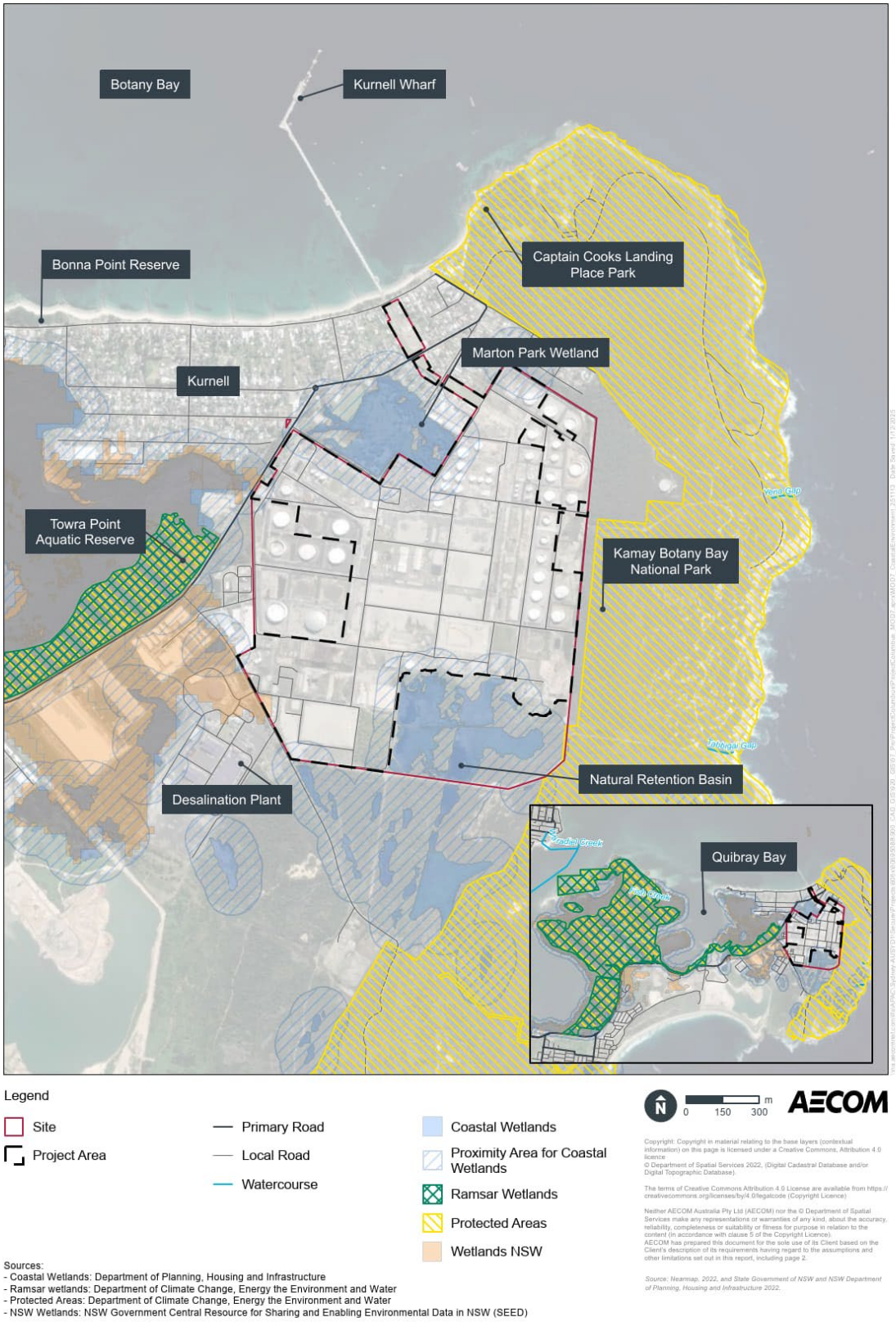



**Figure 4-9 Receiving waters**

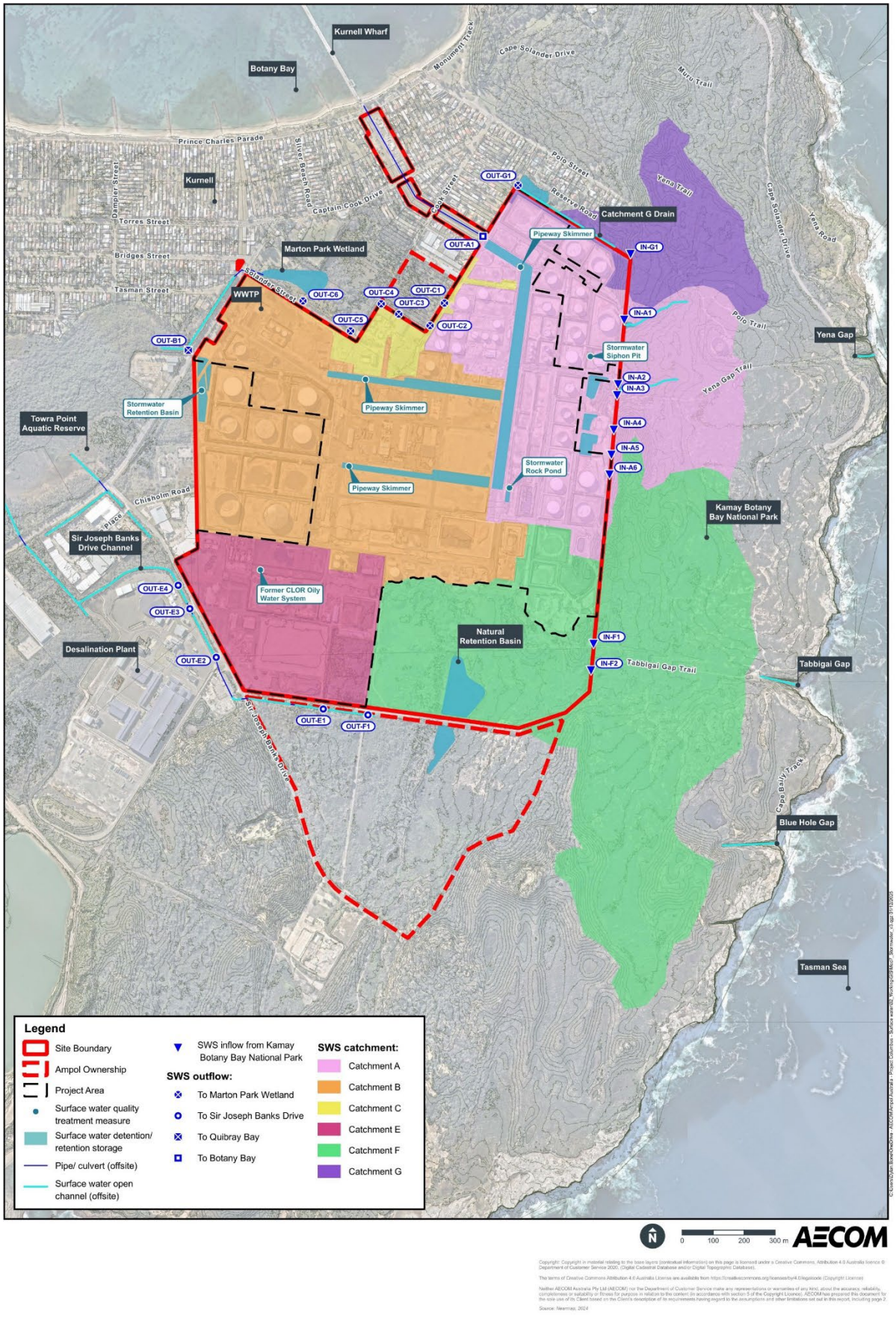



**Figure 4-10 SWS catchment plan**

To prevent this, management measures would be implemented to locate stockpiles and other potential flow obstructions away from key drainage paths (e.g. on the high side of construction areas). Temporary sediment controls would also be installed on the SWS to prevent sediment-laden runoff from blocking the pit and pipe network during construction.

Catchments B and F operational flows

Under post-modification conditions, following removal of the OWS from Zones 2 and 3, the existing SWS would collect additional surface water runoff that would have previously been collected by these redundant OWS lines.

Across the Project Area, the area of impervious surfaces would increase by 2.6%, whilst pervious surfaces would increase by 1.6%. On an individual catchment basis, the largest increases would occur in Catchment E (12.7% increase in impervious surfaces and 10.4% increase in pervious surfaces).

**Table 4-1 SWS catchment changes**

| Catchment | Discharge point | Existing catchment area (ha[2]) | Increase in: | | |
|---|---|---|---|---|---|
| | | | Catchment area (ha) | Impervious area (ha) | Pervious area (ha) |
| A | Botany Bay | 67 | 0.0 | 0.0 | 0.0 |
| B | Quibray Bay | 70 | 2.0 (2.9%) | 1.4 (2.0%) | 0.6 (0.9%) |
| C | Marton Park Wetland | 6 | 0.0 | 0.0 | 0.0 |
| E | Sir Joseph Banks Drive | 26 | 6.0 (23.1%) | 3.3 (12.7%) | 2.7 (10.4%) |
| F | Natural retention basin | 108 | 4.2 (3.9%) | 2.9 (2.7%) | 1.3 (1.2%) |
| G | Council-owned drains | 19 | 0.0 | 0.0 | 0.0 |
| **Total** | | **296** | **12.2 (4.1%)** | **7.6 (2.6%)** | **4.6 (1.6%)** |

The increase in SWS area within Catchment F (illustrated in ) would be redirected to Catchment B to avoid altering surface water inflows to the natural retention basin and coastal wetland south of the Site. For this reason, Catchment B and F impacts are discussed together in this section. Figure 4-11 shows the current and proposed surface water management strategy for both catchments.

The proposed modification would alter existing stormwater management during works to remove existing and redundant OWS lines within Catchments B and F. Retaining the existing bunds would preserve current storage volumes within these areas, allowing them to continue attenuating or retaining surface water following OWS removal.

Once the OWS is removed from the south-eastern corner of the Site, these bunded areas would not have any formal drainage outlets. Without mitigation, surface water would pool over time, only draining slowly through infiltration and evaporation. These areas are likely to hold permanent water and potentially spill during large storm events.

To mitigate these risks, low-flow outlet pipes would be installed in each bunded area (Figure 4-11). These outlets would connect to a new SWS network that bypasses the natural retention basin/ Coastal Wetland, discharging instead to the nearest existing SWS infrastructure within Catchment B.

The new SWS lines would remain separate from the existing SWS network in Catchment F, allowing areas that currently drain south towards the natural retention basin to continue to do so under the proposed modification, whilst new flows are directed towards Catchment B. This approach maintains the existing inflow regime for the natural retention basin, consistent with the Georges River Catchment river flow objectives (DECCW, 2006). The requirement for upgrades to the existing SWS would be investigated during detailed design.

[2] Hectares

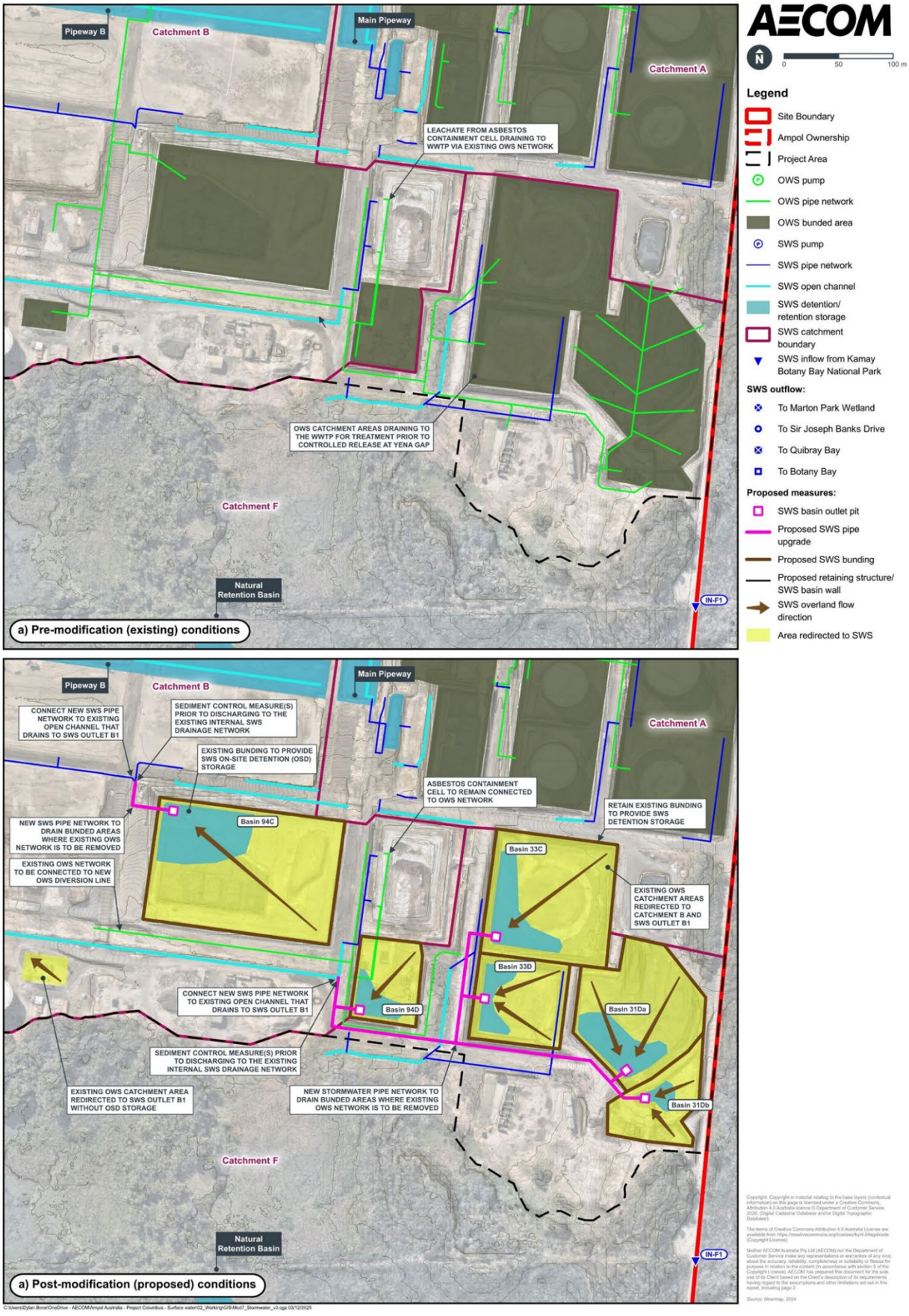



**Figure 4-11 Existing and proposed surface water management in Catchments B and F**

Modelling results (refer to Annexure A of Appendix G) indicate that using the available storage within the bunded areas and releasing flows slowly into Catchment B (including diverted flows from Catchment F) would maintain peak discharge rates from Catchment B, and ultimately to the Towra Point Nature Reserve Coastal Wetland and Quibray Bay, in all storm events up to and including the 1% AEP event. These measures would maintain pre-modification discharge rates under both present day and future climate conditions.

Catchment E operational flows

Figure 4-12 shows the current and proposed surface water management strategy for Catchment E.

The proposed modification would alter existing stormwater management during works to remove existing and redundant OWS lines across the former CLOR area and works to remediate the RPIP Mountain area.

The existing OWS area within Catchment E would be redirected to the SWS following the removal of redundant OWS lines. The area draining to the SWS in Catchment E would increase by approximately 6 ha as a result of this change. This additional SWS area would increase the peak discharge rates leaving Catchment E and entering the roadside channel along Sir Joseph Banks Drive if no mitigation or management measures were to be implemented.

Removal of vegetation and remediation works within RPIP Mountain would not result in changes to surface finishes. However, the change in surface roughness within RPIP Mountain due to removal of mature vegetation would reduce the time it takes for rainfall to convert to runoff and spread across the area. Without mitigation, this could lead to an increase in peak discharge rates from Catchment E, resulting in higher volumes of water entering the downstream drainage system along Sir Joseph Banks Drive.

As part of the proposed modification, two onsite detention (OSD) systems would be installed in Catchment E: one within or downstream of RPIP Mountain, and the former CLOR pipeway would be converted into an OSD system (refer to Appendix G). The OSD at RPIP Mountain would be installed to maintain pre-modification peak flow rates (refer to Figure 4-12).

Preliminary sizing of both OSD systems within Catchment E was undertaken as part of the hydrologic and hydraulic modelling (refer to Annexure A of Appendix G), to confirm that pre-modification peak discharge rates from Catchment E, and ultimately to the Towra Point Nature Reserve Coastal Wetland and Quibray Bay, would be maintained in all storm events up to and including the 1% AEP event.

**Management of potential impacts**

Surface water quality

Design approaches and measures to avoid and/or mitigate water quality impacts during the operation of the modified Site include:

- Once the redundant sections of the OWS network are decommissioned and removed and the proposed modification works are complete, leachate from the ACS Containment Cell would continue to drain to the WWTP via the OWS diversion line.
- Disturbed surfaces across the Site would be stabilised to provide sufficient surface cover, such as hydromulching, hardstand compaction, or temporary vegetative cover. Existing flow controls or water quality treatment devices, such as oil skimmers and PFAS treatment, would remain as part of the modified terminal.
- Remediation of RPIP Mountain would involve the removal of the existing vegetation and ACS. Following excavation, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Where necessary, the excavation would be backfilled with clean material. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Once regraded, surface levels would not be below existing surrounding ground levels.

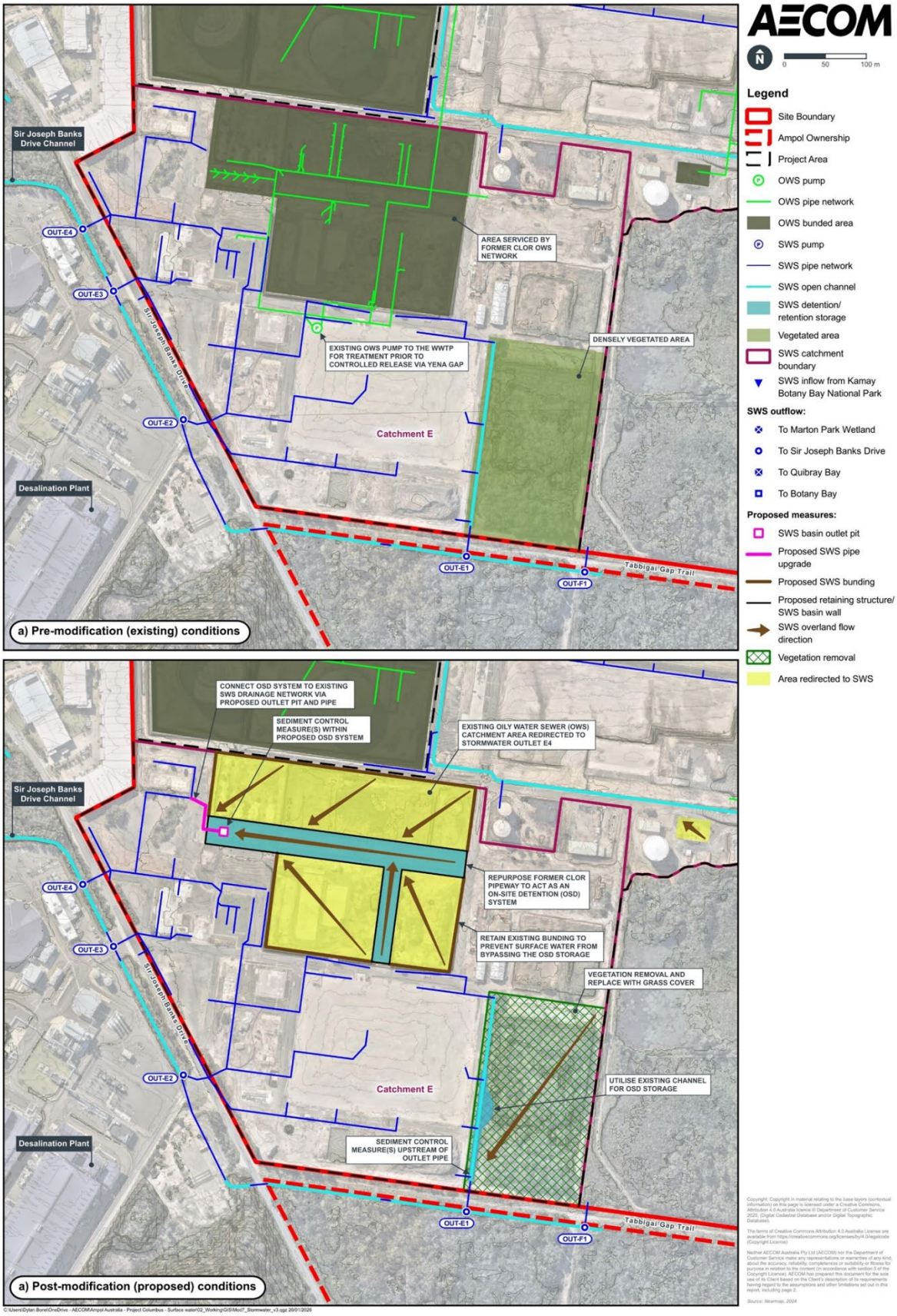



**Figure 4-12 Existing and proposed surface water management in Catchment E**

- The remaining excavated areas would be reinstated to the existing grade and stabilised with adequate surface cover, maintaining current stormwater discharge rates.
- Sediment control measures are proposed for installation at the downstream end of the two proposed OSD systems. These sediment control measures aim to minimise the amount of sediment and sediment-bound pollutants discharging off-site via the Catchment E outlets.
- Sediment loads in stormwater during the operational phase of the proposed modification are expected to be low given the final landform. However, in order to further protect sensitive receiving environments, such as the Coastal Wetlands, permanent sediment control measures are proposed to be installed within or at the downstream end of the two proposed OSD systems in Catchment E. Surface water discharge from these bunded areas would undergo treatment via the series of measures that are already in place within Catchment B, prior to discharging offsite. The slow release of flow would prevent the overloading of these existing treatment measures.
- The proposed SWS network within Catchments B and F would also incorporate sediment control measures upstream of the connection point to the existing SWS network in Catchment B. These sediment control measures would be designed during subsequent design phases and would be designed to minimise the amount of sediment and other sediment bound pollutants in the south eastern corner of the Site.

Once surface/ vegetative cover has been established, the risk of pollution of surface water runoff would therefore be negligible.

Surface water flows

The proposed surface water management strategies detailed in Appendix G would maintain pre-modification peak discharge rates from the Site (or very close to) during a range of storm events up to and including the 1% AEP storm event under current and future climate scenarios. These strategies include:

- Inclusion of new low flow outlet systems within the existing bunded OWS areas in Catchments B and F to prevent stormwater from permanently pooling and utilising the existing storage volumes within these bunded areas for stormwater detention storage.
- New stormwater pipe network connecting the low flow outlet systems from bunded areas to the existing SWS within Catchment B. Directing these flows into Catchment B would prevent changes to the inflows entering the southern natural retention basin in Catchment F, as this is a protected Coastal Wetland.
- Sediment control measures, either within the bunded areas or at the downstream end of the new stormwater pipe networks to minimise the amount of sediment and sediment bound pollutants transferring to Catchment B and potentially discharging offsite.
- OSD storage within the former CLOR pipeway with a basin outlet structure to control discharge rates, estimated to require a storage volume in the order of 11,000 $m^3$ under present day climate conditions and 17,000 $m^3$ under the future climate scenario (year 2100). The basin outlet structure would connect to the existing downstream SWS in Catchment E via a new stormwater pipe network.
- OSD storage within RPIP Mountain, estimated to be in the order of 400 $m^3$ under present day conditions and 700 $m^3$ under the year 2100 future climate scenario. To achieve the required OSD volumes, the existing open channel that runs along the western side of RPIP Mountain would be widened.
- Sediment control measures at the downstream end of the two proposed OSD systems to minimise the amount of sediment and sediment bound pollutants discharging off-site via the Catchment E outlets.

There would not be any proposed modification works that could potentially block any natural flows coming from the Kamay Botany Bay National Park, moving through and around the Site, towards downstream Coastal Wetlands.

Surface water flows entering downstream Coastal Wetlands would therefore remain relatively unchanged under post-modification conditions.

### Comment

DPHI have requested further details of the proposed OSD located within RPIP Mountain, including drawings and details of the volume/ capacity of the basin.

### *Response*

Under existing (pre-modification) conditions, surface water runoff from Catchment E is collected by the SWS and conveyed towards four main drainage outlets. As illustrated in Figure 4-10, these outlets discharge to the roadside channel along the southern side of Tabbigai Gap Trail (OUT-E1) and the western side of Sir Joseph Banks Drive (OUT-E2 to OUT-E4), which continues to convey flow in a northerly direction towards Towra Point Nature Reserve (Ramsar site) and Quibray Bay.

RPIP Mountain would be excavated to a depth of 1 mbgl[3]. Following excavation, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. The excavation would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. The total volume of runoff generated within the RPIP Mountain would remain the same; however, the peak discharge rate would be slightly increased as the removal of vegetation may reduce the time it takes for rainfall to convert to runoff and spread across the area. This would result in higher discharge rates entering the southern swale (OUT-E1) and draining to Sir Joseph Banks Drive.

Thus, an OSD is proposed to be located within RPIP Mountain to maintain the peak flow rates leaving this area and entering OUT-E1 at or below discharge rates under pre-modification conditions.

Based on preliminary modelling undertaken in the Surface Water, Wastewater and Flooding Report (Appendix I of the Modification Report), it is anticipated that a detention storage volume in the order of 5,000 $m^3$ would be required to limit the exceedance of post-construction discharge rates against pre-construction rates in all events up to and including the 1% AEP design storm event.

Preliminary sizing of the OSD systems within Catchment E, including that in RPIP Mountain, was reviewed as part of the hydrologic and hydraulic modelling, documented in the Stormwater Assessment (Annexure A of Appendix G) to confirm that pre-modification peak discharge rates from Catchment E would be maintained in all storm events up to and including the 1% AEP event. The surface water modelling has been reviewed and updated against the most recent version of the ARR guidelines (Version 4.2, first released in 2019).

The estimated OSD storage volumes required at RPIP Mountain are summarised in Table 4-2 for both present and future climate conditions.

**Table 4-2 Proposed OSD volumes at RPIP Mountain**

| Location | Minimum OSD volume required ($m^3$) | |
|---|---|---|
| | Present climate (2030) | Future climate (2100) |
| RPIP Mountain | 400 | 700 |

To achieve the required OSD volumes, the existing open channel that runs along the western side of RPIP Mountain would be widened.

[3] For larger tree roots, there is potential for excavation to a depth of 4 mbgl.

### 4.1.6 Acid sulfate soils

**Comment**

DPHI have requested a draft ASSMP for the proposed works.

*Response*

A draft ASSMP has been prepared and is provided in Appendix E2. This has been prepared to support the effective management of environmental and waste-disposal risks associated with excavating Acid Sulfate Soils (ASS) during excavation works. This plan is based on a ASSMP produced for other works at the Site and accepted by Council.

The objectives of the framework are to:

- Minimise the risk to the environment resulting from ASS
- Provide detailed management techniques and operational methodologies that will be employed to mitigate potential environmental impacts associated with AASS/ Potential Acid Sulfate Soils (PASS) disturbance
- Document monitoring and contingency methods/ actions for implementation during the proposed modification.

To achieve the objectives, the scope of the ASSMP consists of:

- Summary of the extent of PASS within the Project Area
- Development of management measures to minimise PASS impacts
- Development of environmental compliance monitoring and reporting requirements
- Outline potential contingency measures
- Outline for the ASS reporting requirements and periodic auditing of the ASSMP.

A detailed ASSMP would be prepared and issued once the final excavation methodology and staging details are confirmed.

### 4.1.7 Guidelines

**Comment**

DPHI have requested that the flood modelling undertaken is updated in accordance with the updated *Australian Rainfall and Runoff: A Guide to Flood Estimation* (Ball et al., 2024), or justification about why this is not required is provided.

*Response*

Surface water modelling and baseline flood modelling have been undertaken in response to submissions received (refer to Annexure A and Annexure B of Appendix G, respectively). This includes updated surface water modelling in accordance with *Australian Rainfall and Runoff: A Guide to Flood Estimation* (Version 4.2) (Ball et al, 2019)[4].

**Comment**

DPHI have requested that the Conceptual RAP is updated taking into account the *PFAS National Environmental Management Plan, Version 3.0.*

*Response*

The RAP has been updated taking into account the *PFAS National Environmental Management Plan (NEMP), Version 3.0* (HEPA, 2025). The PFAS NEMP Version 3.0 provides a nationally consistent PFAS risk-based framework for assessment of PFAS in land, groundwater, surface water and other receiving environments. In this version of the NEMP, the criteria are designed to be adaptive to emerging scientific evidence.

[4] *Australian Rainfall and Runoff: A Guide to Flood Estimation* continues to be referenced as "2019", rather than the date that Version 4.2 was published (August 2024).

The NEMP document presents criteria for three PFAS compounds only: Perfluorooctane sulfonic acid (PFOS), Perfluorooctanoate acid (PFOA) and Perfluorohexane sulfonic acid (PFHxS). Both the Australian and NSW State position on the use of PFAS screening criteria continues to evolve and is subject to change. Refer to the RAP (Appendix E) for further detail.

### 4.1.8 Administrative comments

**Comment**

DPHI have highlighted an error in the year of construction (2026) in the text above Table 7-24 of the Modification Report.

*Response*

The text in Section 7.7.2 of the Modification Report, above Table 7-24, states, "*Growth rates were applied to the traffic counts to reflect expected 2026 flows (the year of construction) using growth rates applied to traffic assessment for similar SSD projects in the study area, which both applied a background growth rate of 1% per annum*."

As noted by DPHI, references to 2026 as the year of construction are incorrect, as construction was planned to commence in August 2025. Instead, 2026 was expected to be the peak construction year. These references were typographical errors only and do not affect the findings or conclusions of the Traffic and Transport Impact Assessment (TTIA) (Appendix L of the Modification Report).

Section 1.4 and Appendix B1 provides an update to the indicative construction program. Construction and remediation are anticipated to commence in 2026 and be completed by 2030. Works would be staged in accordance with the indicative program in Table 3-1, which aims to provide transparency on the expected progression of works and key milestones.

**Comment**

DPHI have highlighted that the earthworks contingency excavation volumes described in Table 4-3 and on page 32 of the Modification Report do not equal 50% of the estimated earthwork volumes as described, and requested clarification.

*Response*

Table 4-3 of the Modification Report presents volumes of excavations. This provided an estimated volume of material to be excavated of 266,130 $m^3$. Including a contingency of 132,165 $m^3$, the estimated total volume of material to be excavated was 398,295 $m^3$. For all elements except for Zone 2 and 3 (OWS removal), the contingency volumes are 50% of the excavation volume. The contingency volume for Zone 2 and 3 (OWS removal) was 42% of the excavation volume.

Following further review of existing contamination onsite and remediation required, indicative excavation volumes have been reviewed and updated as part of the RAP (Appendix E). These are presented in Appendix B1. For impacted soils, Figure 1-5 shows the approximate areas that would require excavation for either onsite treatment or disposal offsite.

The revised estimated volume of excavation is 186,270 $m^3$ (refer to Table 4-3). Additional investigations would further confirm the volume and extent of excavations in identified Source Area Excavations.

Additionally, during excavation, the extent of ground contamination found may vary slightly from plan. An allowance for contingency excavation volume has been included. Depending on the extent of data available, this has been based on nearby contamination results, or a percentage allowance based on the base excavation volume.

**Table 4-3 Revised excavation estimates**

| Name | Excavation volume ($m^3$) | Contingency excavation volume ($m^3$) | Total volume ($m^3$) |
|---|---|---|---|
| **Infrastructure works** | | | |
| Zone 1 (Infrastructure construction works)<br>Zone 2 and 3 (Infrastructure removal) | 53,700 | 5,370 | 59,070 |

| Name | Excavation volume ($m^3$) | Contingency excavation volume ($m^3$) | Total volume ($m^3$) |
|---|---|---|---|
| **Source Area Excavations** | | | |
| Source Area Excavation 1 (PHC) | - | 18,000 | 18,000 |
| Source Area Excavation 2 (PHC) | 49,250 | 39,550 | 88,800 |
| Source Area Excavation 3 (PHC, CHC) | 24,640 | 19,180 | 43,820 |
| Source Area Excavation 4 (PFAS) | 2,800 | 3,360 | 6,160 |
| Source Area Excavation 5 (PFAS) | 10,000 | 5,000 | 15,000 |
| Source Area Excavation 6 (ACS) | 32,500 | 16,250 | 48,750 |
| **Other excavations** | | | |
| Excavation 7 (ACS) | 1,380 | 690 | 2,070 |
| **Total** | **186,270** | **95,400** | **281,670** |

Abbreviations:
*PHC – petroleum hydrocarbons; CHC – chlorinated hydrocarbons*
*PFAS – per and poly-fluoroalkyl substances; ACS – Asbestos Contaminated Soil*

### Comment

DPHI have highlighted that text within Table 14 (Summary of Soil Impact Areas requiring remediation) of the Conceptual RAP indicates that the figure in the right-hand column shows multiple test pits, however this is not the case.

*Response*

Following review of agency and community submissions, the Conceptual RAP has been converted to a RAP (Appendix E) to incorporate the updated description of the proposed modification, specifically the removal of grading and capping activities.

Table 14 (Summary of Soil Impact Areas requiring remediation) of Conceptual RAP since been removed from the RAP and replaced with Table 20 (Summary of Source Areas requiring remediation). The determination of the extent of remediation to be addressed under proposed modification is based on existing data summarised in Table 20 of the RAP.

## 4.2 Environment Protection Authority

The EPA provided a submission in response to the public exhibition of the Modification Report. The comments raised by the EPA in their submission are summarised and addressed below.

### 4.2.1 Noise and vibration (operation)

**Comment**

The EPA considers that it may not be appropriate to apply the SSD-5544 noise limits to ongoing terminal operations, as they applied to the previous refinery's operation and maintenance conditions to manage the demolition and conversion works. Instead, the EPA considers that the NPfI (NSW EPA, 2017c) should be used to assess the proposed modification to enable the EPA to develop appropriate noise limits for the ongoing operation of the terminal.

*Response*

The existing operational noise limits, presented in Section L5 (Noise limits) of EPL 837, were determined for 'terminal' activities rather than 'refinery' activities. As discussed in Department of Planning and Infrastructure (DP&I) (now DPHI), Assessment Report for the Kurnell Terminal Conversion Project (DP&I, 2013) "*site specific operational noise criteria for the Development* (i.e. the Kurnell Terminal) *have been developed*" and "*once refining operations cease, the site specific operational noise criteria established in the development consent would be reflected in the EPL for the converted terminal facility*". The operational noise limits presented in condition C17 of the development consent for SSD-5544 are specific to the terminal land use and recognise the long-standing industrial use of the Site and specifics of operating a major bulk storage fuel terminal. These noise limits were agreed between Caltex (now Ampol), DP&I (now DPHI), and the EPA during the assessment of the SSD application for SSD-5544 which is why they were not stated in the supporting the EIS. The EPL for the Site was updated to reflect these limits.

The EPL limits remain applicable to the operation of the modified terminal, as the proposed modification does not alter the Site's ongoing operation as a terminal. The operation of the terminal would continue to be managed in line with the development consent for SSD-5544 and the EPL for the Site. As such, Ampol will not be reassessing the operational noise limits for the terminal at this time.

**Comment**

The EPA also requested that the NPfI Transitional Arrangements be considered where relevant. Further, the EPA requests that Project Noise Trigger Levels (PNTLs) be developed consistent with the NPfI and that noise emissions from the proposed modification be assessed against these PNTLs. Where predicted noise levels exceed the PNTLs, an assessment of feasible and reasonable mitigation measures is to be provided with reference to Section 3 of the NPfI.

*Response*

The NSW EPA note, Implementation and transitional arrangements for the NPfI (2017b) states:

*"4. The Noise Policy for Industry (2017) will be used to assess and develop requirements for existing industrial developments/activities under the circumstances and through the processes described in points 5 and 6 below.*

*5. Modification to a planning approval: a. where the planning authority requires a noise impact assessment to support the modification; or, b. where a significant change to existing plant, equipment or processes is proposed.*

*6. Environment protection licence review/variation: c. where the existing environment protection licence does not include noise requirements and the regulation of noise is warranted (for example, due to complaints or changing land uses) through a pollution reduction program; or, d. where there is a change in the activity, or to existing plant, equipment or processes that may require a noise assessment."*

As described above, it is not appropriate to use the criteria outlined in the NPfI to assess operational noise impacts of the proposed modification.

As the proposed modification has been assessed against the existing operational noise limits, PNTLs consistent with the NPfI have not been developed.

However, Section 5.3 of Appendix H presents a decision matrix for reasonable and feasible mitigation measures to manage the potential impact of operational noise exceedances upon local receivers. These exceedances specifically relate to the monthly and annual testing of the relocated FWS infrastructure operating in the Option 1 location.

**Comment**

The EPA requests the confirmation of the noise sources associated with the modified premises, and that all relevant noise sources are appropriately included in the assessment.

The EPA provided a comparison of noise sources noted in the noise assessment supporting the EIS for SSD-5544 and the noise sources identified for the proposed modification and noted that there were differences. They asked for an explanation for any differences in the noise sources assessed compared to the SSD-5544 noise assessment.

The EPA also noted other noise sources that have now been installed at the Site and noted that they do not appear to be considered in the assessment of the proposed modification. The noise sources noted included: the B1A basin pumping station, Pit A and B pumps, and the Intermediate Seps pumping station.

*Response*

Noise sources at the Site have been reviewed as part of the updates to the noise and vibration assessment. This included the following noise sources that were previously included in the original EIS for the approved project:

- Five product pumps
- Slop pump
- Diesel additives injection system
- Chemical drum and dosing pump
- Two compressors
- Ship at berth.

The sound power level of this equipment has been based on the noise levels presented in the SSD-5544 Noise and Vibration Assessment, dated May 2013.

The other noise sources referenced by the EPA (B1A basin pumping station, Pit A and B pumps, and the Intermediate Separator pumping station) were installed as part of the Kurnell Stormwater Separation Improvement Project (DA24/0008). This project was not completed at the time of writing the NVIA (Appendix M of the Modification Report). As such, the additional noise sources were not included in the baseline assessment, but were instead included in the cumulative noise impact assessment.

Since the preparation of the Modification Report, construction of the Kurnell Stormwater Separation Improvement Project has been completed. Consequently, the new onsite equipment, including eight vertical electric pumps and five diesel pumps, has been included in the baseline conditions in the Updated Noise and Vibration Impact Assessment (Appendix H). However, the equipment is designed to only operate during adverse weather events, i.e. during storms or other high precipitation events. As such, this is not considered part of normal operating conditions and has not been included in the operational noise scenarios.

Locations of existing and proposed noise generating sources included in the operational noise assessment are shown in Figure 4-13. This figure does not show the second FWS tank and pumphouse at the Site as only one FWS tank and pumphouse would operate at any one time.




**Figure 4-13 Operational noise assessment equipment locations**

**Comment**

The EPA requests the inclusion of an assessment of annoying characteristics, including tonal, intermittency and low frequency noise, as defined in Fact Sheet C of the NPfI (NSW EPA, 2017c). This includes any equipment routinely used such as testing or maintenance of pumps or generators.

*Response*

The NPfI provides additional guidance and criteria for assessing noise emissions from sources with annoying characteristics such as tonality, intermittency, or dominant low-frequency content. Penalties of up to a maximum of 10 A-weighted decibel (dB(A)) may be applied where the subject noise has such characteristics at the receiver.

Annexure C of the Updated Noise and Vibration Impact Assessment (Appendix H) includes a third-octave analysis to identify any such characteristics in accordance with the NPfI (NSW EPA, 2017c). No penalties for annoying characteristics were identified and therefore no penalties would apply.

**Comment**

The EPA requests that operational noise contour maps be presented with a minimum level of Equivalent Continuous Sound Level (Leq),15min 35 dBA, to enable information to be easily interpreted by readers.

*Response*

Annexure A and B of the Updated Noise and Vibration Impact Assessment (Appendix H) includes the revised operational noise contour maps, presenting noise levels down to 35 dBA (Leq,15min) contours.

**Comment**

The noise assessment models all predictions at 1.5 m above ground. The EPA requests that the noise assessment considers appropriate receiver heights, such as the double-storey dwellings on Tasman, Bridges, Reserve, and Cook Streets.

*Response*

Residential receivers that could potentially be affected by the modified terminal are located within the Kurnell township. Noise levels at the receivers in the Updated Noise and Vibration Impact Assessment (Appendix H) have been assessed at 1.5 m and 4.5 m to represent the one- and two-storey affected receivers in the vicinity of the proposed modification. Appendix H concludes that the proposed modification would not affect the ability of the terminal to meet the operational noise limits contained within the development consent for the approved project. During construction, predicted construction noise levels are expected to exceed the construction noise management levels at some noise sensitive receivers, at times during all of the modelled construction scenarios. Construction mitigation measures have been recommended to manage the potential construction noise impacts. Refer to Section 4.2.2 below and Appendix H for further details.

### 4.2.2 Noise and vibration (construction)

**Comment**

The EPA notes that the noise assessment applies the working hours from Condition C18 of the approved project but does not apply the associated construction noise limits in Condition C16. They note that a number of noise exceedances are predicted during the delivery of the proposed modification.

The EPA have requested that the construction noise assessment be revised in accordance with the ICNG (DECC, 2009), including development of NMLs, statement of proposed working hours, justification for any works outside standard hours, and assessment of impacts and mitigation measures using the ICNG framework.

*Response*

The construction noise criteria in Section 2.2 of the NVIA (Appendix M of the Modification Report) align with the construction noise limits set out in Condition C16 of SSD-5544.

Ampol has agreed to undertake construction works in line with the standard construction hours, as defined under the ICNG (DECC, 2009). Certain activities would be undertaken outside of these times, in line with approved Condition C20 of SSD-5544. Refer to the revised construction hours presented in Section 3.1.2.

The construction noise assessment undertaken as part of the Updated NVIA (Appendix H) has taken the revised construction hours into account.

Construction activities have been assessed against the NML determined in accordance with the ICNG (DECC, 2009). The modelling adopted a conservative assumption of one item of each distinct equipment type operating concurrently for the entire 15-minute period of construction activity, while the construction equipment is at the nearest location to each sensitive receiver location. In reality, it is highly unlikely that all equipment would operate concurrently at the nearest location to sensitive receivers. An indicative timeline of construction activities has been provided in Table 3-1.

Similar to the NVIA (Appendix M of the Modification Report), the assessment considered four construction scenarios:

- Scenario 1 – All works up to Year 3, including preparation works and relocation of critical infrastructure, construction of new infrastructure in Zone 1, and remedial activities
- Scenario 2 – Construction of the new shed in Zone 1A (three month duration)
- Scenario 3 – All works up to Year 3, including preparation works and relocation of critical infrastructure, construction of new infrastructure in Zone 1, construction of the new shed in Zone 1A (three month duration), and remedial activities
- Scenario 4 – Remedial activities from Year 3 onwards.

Under these conservative assumptions, the predicted construction noise levels are expected to exceed the construction noise management levels at some noise sensitive receivers at times during all of the construction scenarios. The following number of receivers could, under the highly conservative assumptions assessed, experience noise levels above the ICNG standard hours NMLs under each construction scenario if works are occurring as close as possible to sensitive receivers:

- Up to 746 receivers during Scenario 1 (all works on the main site up to year 3)
- Up to 303 residential receivers during Scenario 2 (works in zone 1A, three month duration)
- Up to 748 receivers during Scenario 3 (all works on the main site and in zone 1A)
- Up to 102 receivers for Scenario 4 (remedial activities from year 3 onwards).

The majority of exceedances relate to noise levels which would be ‘clearly audible’, whilst other exceedances would be ‘moderately intrusive’ and a lesser number would be ‘highly intrusive’. Construction noise levels at residential receivers are also predicted to exceed the ‘highly noise affected’ level of 75 dB(A). Up to 54 receivers for Scenario 1 could be highly affected under the conservative scenario assessed; up to eight receivers for Scenario 2; up to 66 receivers for Scenario 3; and no receivers in Scenario 4.

This is primarily due to works occurring in close proximity to residents, particularly along the northern boundary of the Site. These works would include construction of a new storage shed in Zone 1A to store boats and emergency aquatic spill response kits; relocation of the FWS into Zone 1, adjacent to Solander Street; and augmentation of FWS infrastructure in Zone 1, in close proximity to residences along Cook Street and Reserve Road. Each of these works would be undertaken for limited periods of time within the overall construction period, as shown in the indicative construction program, and would be predominantly limited to standard construction hours as defined by the ICNG (DECC, 2009).

Construction mitigation measures have been recommended to manage the potential construction noise impacts. These include relevant feasible and reasonable noise mitigation measures as per the ICNG (DECC, 2009), a monitoring program to assess performance against relevant noise and vibration criteria, and arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures. These measures would be detailed in a Construction Noise and Vibration Management Plan (CNVMP) which would form part of the Construction Environmental Management Plan (CEMP) for the proposed modification. In line with the existing conditions of consent, it is expected that Ampol will be required to consult with the EPA during the development of the CNVMP.

Refer to Appendix H (Updated NVIA) for further detail.

### 4.2.3 Contaminated land remediation

**Comment**

The EPA requests that Ampol assess and demonstrate that the Site is or can be made suitable for the proposed use through remediation or management in accordance with *State Environmental Planning Policy (Resilience and Hazards) 2021.*

*Response*

The EPA request relates to clause 4.6 of the *State Environmental Planning Policy (Resilience and Hazards) 2021* which requires that the consent authority consider contamination and remediation in determining a development application. This clause requires that the consent authority consider whether the land is contaminated, and if it is contaminated that it is satisfied that the land in either its current state or following any proposed remediation will be suitable for the proposed land use.

The Site is currently used as a fuel import terminal (namely the Kurnell Terminal) and managed in line with the OEMP. The proposed modification does not propose to change this land use. The Site contains areas of contaminated land that have been identified in the Modification Report and this Submissions Report. Remediation activities are proposed under MOD-7 to address legacy refinery contamination.

**Comment**

The EPA requests that Site investigations and subsequent reports are conducted and prepared in accordance with the guidelines made or approved under section 105 of the *Contaminated Land Management Act 1997*, including:

- Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020a)
- Guidelines for the NSW Site Auditor Scheme (3rd edition) (NSW EPA, 2017a)
- Sampling Design Guidelines Part 1 – Application (NSW EPA, 2022a)
- Sampling Design Guidelines Part 2 – Interpretation (NSW EPA, 2022a)
- Guidelines for the Assessment and Management of Groundwater Contamination (DEC, 2007)
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013).

*Response*

The RAP (Appendix E) has been developed in general accordance with the applicable legislation, policy and guidelines, including:

- *Contaminated Land Management Act 1997* (NSW) (CLM Act)
- *Protection of the Environment Operations Act 1997* (NSW) (POEO Act)
- EP&A Act
- State Environmental Planning Policy (Resilience and Hazards) 2021 (in force from 1 March 2022)
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPC, 2013)

- PFAS National Environmental Management Plan 3.0, National Chemicals Working Group of Heads of EPAs Australia and New Zealand, 2025 (HEPA, 2025)
- Guidelines for the Assessment and Management of Groundwater (DEC, 2007)
- Guidelines for the NSW Site Auditor Scheme (3rd edition), (NSW EPA, 2017a)
- Contaminated Land Guidelines: Sampling Design, containing Part 1 – Application and Part 2 – Interpretation (NSW EPA, 2022a)
- Contaminated Land Guidelines: Assessment and Management of Hazardous Ground Gases (NSW EPA, 2020b).

In addition, the structure of the RAP was prepared in accordance with relevant sections of the Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020a).

Subsequent contamination assessment, remediation, validation and management reports would be undertaken and prepared in accordance with the above legislation, policies and guidelines, as well as other policy and guidance as relevant.

**Comment**

The EPA recommends that an EPA-accredited Site auditor be engaged at the earliest stages of the Detailed RAP (now referred to as the RWP(s)) to oversee the contamination assessment and remediation works.

*Response*

Ampol has engaged an NSW EPA-accredited Site Auditor, Mr Andre Smit, since early 2024, prior to the commencement of the Conceptual RAP, and has continued this engagement during the development of the RAP. Mr Smit has extensive site knowledge and has been historically involved in the review and audit of remediation documentation and activities at the Ampol Kurnell Terminal, including review of historical remediation reporting.

The Site Auditor reviewed the Conceptual RAP prior to lodgement of the Modification Report and subsequently reviewed the RAP, providing IAA (refer to Appendix E1). If consented, the Site Auditor would continue to oversee the remediation documentation and assessment works moving forward.

**Comment**

The EPA requested that the Detailed RAP (now referred to as the RWP(s)) considers the hierarchy of options for the Site's clean-up under the National *Environment Protection (Assessment of Site Contamination) Measures 1999*, which includes the following preferred approaches:

1. Onsite treatment of the contamination so that it is destroyed or the associated risk is reduced to an acceptable level; and
2. Offsite treatment of excavated soil, so that the contamination is destroyed or the associated risk is reduced to an acceptable level after which soil is returned to the Site; or
3. If the above is not practicable:
    a. Consolidation and isolation of the soil onsite by containment with a properly designed barrier; and
    b. Removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material.

*Response*

As part of the identification and selection of remediation options, consideration has been given to the hierarchy of options under the ASC NEPM (NEPC, 2013).

Due to the variation in contamination types and concentrations across the Site, multiple remedial approaches would be employed to achieve the remediation objectives. The selected remediation approaches were chosen based on a Remedial Options Assessment, provided in Annexure E of the RAP, which evaluated each option's merits, disadvantages, and overall feasibility. The chosen remediation approaches are as follows:

- **Primary source removal**: Removal of the remaining OWS in Zone 2 and Zone 3. Once these are removed, all primary sources of contamination from the former refinery infrastructure would have been removed.
- **Secondary source remediation**: Excavation of impacted soils, followed by either onsite treatment or offsite disposal to landfill. Figure 4-14 presents a proposed modification-specific flow chart to illustrate how the remedial approach aligns with the *National Environment Protection (Assessment of Site Contamination) Measure* remediation hierarchy.

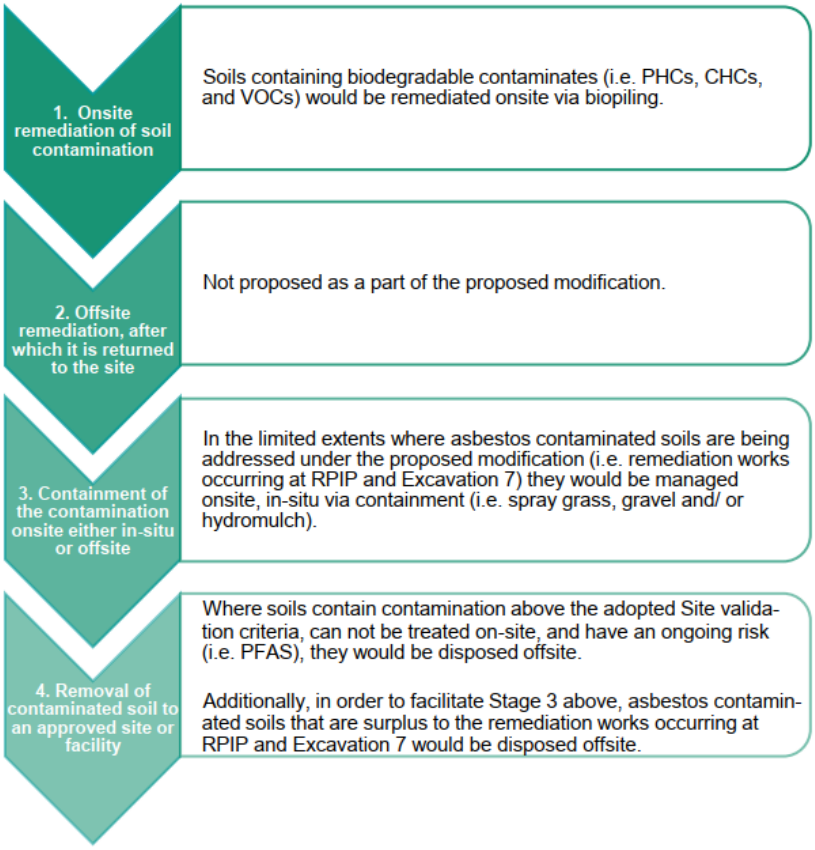



**Figure 4-14 Proposed modification secondary source remediation approach in accordance with the Hierarchy of options for site remediation (NEPC, 2013)**

## Comment

The EPA requested that the Detailed RAP (now referred to as the RWP(s)) address the following:

- How site contamination will be remediated and/ or managed to address risks to human health and/ or the environment either onsite or offsite
- Remediation of identified source zones to reduce groundwater impacts in the medium to long term and prevent future offsite migration of contamination via groundwater
- Remediation of the OWS within the Project Area.

### *Response*

Section 4 of the RAP (Appendix E) presents the CSM for the proposed modification which details contamination sources, potential receptors, and the potential exposure pathways between the sources and receptors.

The two types of sources of contamination across Zones 1, 2, and 3 include:

- **Primary Sources**, which include current and historic infrastructure, containers used for the bulk storage or transport of chemicals, and current and historic site activities (such as refuelling or firefighting training)
- **Secondary Sources**, which include soil (including reworked fill and fill from other onsite areas within RPIP Mountain) and groundwater (including LNAPL) impacted by PHC, chemical solvents, and other chemicals.

Section 7 of the RAP presents the preferred remediation approach for both impacted soils and groundwater and rationale to address the sources of contamination identified to address risks to human health and/ or the environment, either onsite or offsite. A combination of remediation technologies, as agreed with the NSW EPA-accredited Site Auditor, are proposed:

- **Primary source removal**: Removal of remaining OWS in Zone 2 and Zone 3, following which potential primary sources related to former refinery operation and related infrastructure within the Audit Boundary would have been removed.
- **Secondary source remediation**: Excavation of impacted soils, followed by either onsite treatment or offsite disposal to landfill, which is consistent with the soil remediation hierarchy:
    - Onsite treatment would comprise ex-situ bioremediation by mechanical biopiling (e.g. controlled aeration using extraction systems) for the reduction of PHC, CHC, and Volatile Organic Compound (VOC) constituents in soils. This is the preferred approach over alternatives like mechanical tilting of soils with an excavator, as it limits the disturbance of material and decreases the potential for releasing hydrocarbon vapours, residual asbestos fibres or VOCs.
    - Offsite disposal would be considered where contaminated soils cannot be treated and reused or managed in situ. The untreated and tested contaminated soils would be disposed offsite to an appropriately licenced facility by licenced contractors.
    - Whilst biopiling would target hydrocarbon contaminants within soils, friable asbestos has been identified to be present within fill soils at the Site. As such, biopiling would involve appropriate design features (e.g. vacuum-assisted negative pressure systems to manage airborne fibres) and be undertaken under appropriate occupational health and safety controls.

The soil remediation works within the Project Area would be complemented with management controls where comprehensive remediation is not deemed as practicable. Management measures can also be useful where clean-up to the extent practicable has been achieved (e.g., post LNAPL removal during remediation, restriction on groundwater abstraction whilst natural attenuation continues to reduce concentrations of dissolved phase hydrocarbons).

The groundwater conditions at the Site are expected to improve following implementation of the remedial strategy for the proposed modification on the basis of the following:

- **Primary sources**: With the removal of the OWS in Zone 2 and Zone 3, potential primary sources related to the former refinery operations and the associated infrastructure would be removed
- **Secondary sources**:
    - Residual light LNAPL impacts would be addressed as part of the soil remediation works through excavation to the extent practicable. As part of these works, impacted water may accumulate in these excavations. Impacted water would be managed via pumping and sending to the Site's existing WWTP for treatment.
    - Residual PFAS impacts in soil would be addressed as part of the soil remediation works through source area excavation and offsite disposal, which would permanently reduce PFAS mass onsite and, consequently, PFAS leaching and migration to groundwater.

- **Ongoing monitoring**: Following soil remediation, groundwater monitoring would continue to confirm that the soil remediation works were effective. The soil remediation process itself would significantly improve groundwater conditions over the long term, assisted by natural attenuation (this process involves allowing naturally occurring micro-organisms in the ground to biodegrade hydrocarbon contamination). Residual groundwater impacts requiring ongoing management would be addressed as part of a sub-plan to the Operational Environmental Management Plan (OEMP), if necessary.

Section 9 of the RAP presents the proposed mechanisms for environmental management. This explains how remediation would be managed in accordance with CEMP, prepared alongside the RWP(s), to address risks to human health and/or the environment. This CEMP would aim to:

- Implement appropriate environmental management practices during the modification works to avoid and minimise adverse impacts on the community and environmental receptors
- Achieve the overall environmental objectives
- Maintain compliance with the conditions of consent.

The CEMP would aim to address of the applicable Site management controls, as required by the Contaminated Land Guidelines: Consultants Reporting on Contaminated Land (NSW EPA, 2020a). It would set out the activities and procedures to be applied as required, and the management structure and responsibilities, including:

- Soils and Water Management Plan (SWMP), including ASSMP and Erosion and Sediment Control Plan (ESCP)(s)
- Groundwater Management Plan (GWMP)
- Contamination Management Plan (CMP)
- Asbestos Management Plan (AMP)
- Waste and Resource Management Plan (WRMP)
- Aboriginal Cultural Heritage Management Plan (ACHMP)
- Construction Traffic Management Plan (CTMP)
- Noise and Vibration Management Plan (NVMP)
- Air Quality Management Plant (AQMP)
- Biodiversity and Weeds Management Plan (BWMP).

Alongside the CEMP and RWP(s), the following existing Site management plans and documents would be updated to incorporate the proposed modification:

- Work Health and Safety Management Plan (WHSMP)
- Community and Stakeholder Engagement Plan (CSEP)
- Emergency Response and Preparedness Plan(s).

A Contingency Plan(s)[5] would also be produced as part of or alongside the RWP(s).

Refer to the RAP (Appendix E) for further detail.

### Comment

The EPA requests further detail on the post-remediation management strategy for residual contamination, including groundwater monitoring. They also request that the EPA and a NSW EPA-accredited Site Auditor are consulted regarding the proposed mechanisms to ensure long-term management and awareness of residual contamination.

[5] One or more Contingency Plan(s) would be prepared to detailed measures to be undertaken in the event of an unexpected event. Refer to Section 7.6 of Appendix E.

*Response*

Section 9.5 of the RAP (Appendix E) addresses the ongoing management required following completion of the proposed modification, detailing the post remediation management strategies for residual contamination.

Where relevant, following remediation and where further management of contamination is required within the Audit Boundary, one or more Environmental Management Plan(s) (EMPs) would be prepared. These plans would fall under and be administered by the Site's existing OEMP. The OEMP would be updated as required to incorporate new EMP(s). The EMP(s) would be prepared in general accordance with the *NSW EPA EMP Guidelines 2020* and *Consultant Guidelines 2020* (NSW EPA, 2020a).

The EMP(s) would include:

- A statement of the objectives of the EMP
- Description of responsibilities and timeframes for implementation of the EMP requirements
- Specific additional health and safety requirements for intrusive activities
- Appropriate monitoring locations and depth within and down-gradient of residual contamination
- Environmental monitoring and reporting requirements (if required).

Ampol has consulted with an NSW EPA-accredited Site Auditor regarding the proposed mechanisms to maintain long-term management and awareness of residual contamination through the independent review of the RAP. The NSW EPA-accredited Site Auditor has reviewed the RAP and provided IAA (refer to Appendix E1).

Refer to the RAP (Appendix E) for further detail.

### 4.2.4 Air quality

**Comment**

The EPA requests that real-time particulate matter with a diameter of 10 micrometres or smaller ($PM_{10}$) monitoring be undertaken during construction of the proposed modification. The EPA also requests that the monitoring data inform a Trigger Action Response Plan, detailing appropriate actions in response to elevated dust levels at sensitive receivers.

*Response*

Following review of agency and community submissions, the mitigation measures have been updated to incorporate a Trigger Action Response Plan (TARP) as a sub-plan of the AQMP, supported by real-time $PM_{10}$ monitoring (refer to Appendix C).

A continuous monitoring system for $PM_{10}$ during construction can provide an early warning of potential exceedances of the EPA air quality criteria, allowing site personnel to implement additional mitigation measures, scale back or stop works as necessary. The measured $PM_{10}$ concentrations can be assessed through comparison with a series of trigger levels. This system can be used to minimise adverse impacts on the environment and community as well as manage elevated pollutant concentrations.

The $PM_{10}$ concentrations would be compared with trigger levels designed around the following broad categories:

- **$PM_{10}$ concentrations less than EPA criteria – Normal Works**: Normal construction mitigation measures in place and no actions are required
- **$PM_{10}$ concentrations Level 1 trigger – Investigate**: Identification of the likely reasons for the elevated pollutant concentration and formulation of a contingency response for Level 2
- **$PM_{10}$ concentrations Level 2 trigger – Action**: Implementation of the measures formulated in Level 1 and review of their effectiveness

- **$PM_{10}$ concentrations above Level 3 trigger – Stop Work**: All air polluting works associated with the proposed modification identified to be generating particulates should stop until the measured particulates are below the relevant trigger level to avoid an exceedance of the pollutant criterion.

The location and number of real-time $PM_{10}$ monitoring stations, as well as the $PM_{10}$ concentration trigger levels, would be confirmed within the AQMP and/or TARP as relevant and would be specific to the works being completed.

## 4.3 Conservation Programs, Heritage and Regulation Group

The CPHR provided a submission in response to the exhibition of the Modification Report. The comments raised by CPHR in their submission are summarised and addressed below.

### 4.3.1 Biodiversity

**Comment**

CPHR noted that remediation works within the RPIP Mountain area are not required for the Site's approved use as these works aim to prepare the Site for future use as part of the Kurnell Energy and Industry Precinct (SSD-86799993).

CPHR advises that remediation works within the RPIP Mountain area would be more appropriately assessed as part of SSD-86799993, to avoid pre-emptively clearing habitat associated with the Giant Dragonfly (*Petalura gigantea*), listed as endangered and a SAII entity under the *Biodiversity Conservation Act 2016* (NSW) (BC Act). Remediation works to be avoided include, but are not limited to, excavation, capping, vegetation removal or construction of surface water infrastructure.

This approach would ensure avoidance and minimisation is implemented for the Giant Dragonfly in accordance with the BC Act and *Biodiversity Assessment Method 2020* (BAM).

*Response*

Section 4.1.1 outlines the nature and extent of contamination within RPIP Mountain and provides justification for removal of vegetation in this area. In summary, remediation is required to support the Ampol's ability to maintain the safe, reliable, and sustainable operation of the terminal and related land uses in line with the approved project (SSD-5544).

The habitat afforded within RPIP Mountain is of poor quality and is likely to be utilised as dispersal/ perching habitat for Giant Dragonfly only. As detailed in the SAII assessment (Annexure E of the Updated BDAR), impacts from the proposed modification works would be limited to non-swamp native vegetation which is currently edge effected primarily by dense Lantana and interfaces with the existing Kurnell Terminal. Core swamp habitat critical to the survival of Giant Dragonfly is not present in RPIP Mountain and would not be impacted by the proposed modification. As such, the proposed modification works are highly unlikely to cause disturbance to the Giant Dragonfly population.

Refer to the RAP (Appendix E) and Updated BDAR (Appendix I) for further detail.

**Comment**

CPHR requests that 'Greater Sydney – Compliance & Regulation' be added as a Case Party in Biodiversity Offsets and Agreement Management System (BOAMS), the required digital files (refer to Appendix L in BAM) be uploaded, and the case be submitted to 'Greater Sydney – Compliance & Regulation' as the 'consent authority' to enable review of the proposed modification.

*Response*

BAM-C was correctly submitted with Greater Sydney – Compliance & Regulation added as case party already. GIS files were also uploaded.

The BAM-C case was originally set up and prepared by Matthew Hyde of Biosis Pty Ltd (BAAS22005). Due to the expiration of Matthew Hyde's accreditation part way through this BDAR, Mitch Palmer was added as a case party and subsequently finalised the BAM-C added Greater Sydney – Compliance & Regulation added as case party, uploaded the GIS files, and finalised the BAM-C for submission.

**Comment**

CPHR requests that the BDAR be updated to clarify whether any ecosystem credit species generated in the Biodiversity Assessment Method Calculator (BAM-C) were removed, and, if so, that a justification is provided for their removal. CPHR also requests that access to BAM-C in BOAMS be provided by adding 'Greater Sydney – Compliance & Regulation' as a Case Party, as outlined above.

*Response*

No ecosystem credit species predicted by the BAM-C were excluded from the assessment. Section 4.1 of the Updated BDAR (Appendix I) has been updated to clarify this.

**Comment**

CPHR requests Figure 3-1 (Native vegetation extent) of the BDAR be reviewed and updated to ensure it includes all native vegetation in the north-eastern area of the Kurnell Peninsula. Any associated calculations should be revised if required.

*Response*

The area highlighted has been reviewed and Figure 3-1 of the Updated BDAR (Appendix I) has been updated to reflect these changes. Calculations for native vegetation cover have been updated in the BDAR, resulting in a change in native vegetation cover from 36% to 36.5%. Therefore, no change in cover class has occurred and updates to the BAM-C are not required.

**Comment**

CPHR requests that the BDAR be updated to provide justification and details on how the total number of credits to be retired is divided across the proposed modification development stages.

*Response*

Section 9 of the Updated BDAR (Appendix I) details how the staging of credits is to be split across Zones 1, 1A, 2 and 3.

There are no impacts in Zones 1 and 1A; therefore, all credits that are required are split across Zones 2 and Zones 3. The total number of credits required for each of these zones in shown in Table 9-3 (Ecosystem credit requirement) and Table 9-4 (Species credit requirement) of the Updated BDAR. The Updated BDAR has been revised to clarify that the retiring of credits has been staged to match the staged approach and timing of the proposed modification. Separate BAM-C cases have been set up to reflect each of these stages as relevant.

### 4.3.2 National Parks Estate and Coastal management

**Comment**

CPHR notes that the proposed stormwater discharge points are located in 'proximity area for coastal wetlands' listed under the *State Environmental Planning Policy (Resilience and Hazards) 2021* and are adjacent to the Towra Point Nature Reserve, a declared Ramsar site under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). CPHR also notes concern that works could mobilise dust, soils, sediments, and contaminants potentially impacting these sensitive downstream environments.

CPHR requests that further details be provided on the potential stormwater and overland flow impacts to Towra Point Nature Reserve and the 'proximity area for coastal wetlands.' CPHR also requests that suitable mitigation measures be identified to minimise these impacts.

*Response*

The Updated Surface Water, Wastewater and Flooding Report (Appendix G) has been prepared to assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, supported by updated surface water modelling. A response to this comment has been provided in Section 4.1.5 that addresses:

- Existing surface water flows across catchments affected by the proposed modification (i.e. Catchments B, E, and F)
- Construction and operational Site-wide water quality impacts

- Construction Site-wide surface water flow impacts
- Operational surface water flow impacts within Catchments B, E, and F
- Strategies to manage these potential impacts.

In summary, pre- and post-modification stormwater discharge rates at all of the stormwater discharge points were modelled, under both present-day and future climate conditions and water quality impacts associated with both the construction and operational phases were assessed. With the implementation of the stormwater management strategies provided in Appendix G, surface water flow volumes and quality entering sensitive downstream areas (including the Towra Point Nature Reserve and Proximity Areas for Coastal Wetlands) would remain relatively unchanged both during construction and under post-modification conditions.

Refer to Appendix G for further information.

### 4.3.3 Flooding

**Comment**

CPHR requests the provision of the Stormwater Separation Improvement Project report (BPM Projects, 2024) and the Site wide OWS and SWS report (MHL, 2016) for review.

*Response*

The 2024 Stormwater Separation Improvement Project Report has been superseded by the Baseline Flood Modelling Report (Annexure B of Appendix G), and the 2016 Site-Wide OWS and SWS Report has been superseded by the Stormwater Modelling Report (Annexure A of Appendix G). These assessments are specific to the Site and have been produced in accordance with current guidance. The findings of these reports have informed the updates to the Updated Surface Water, Wastewater, and Flooding Report (Appendix G).

**Comment**

CPHR requests the flooding risk assessment during remediation of the Site and for ongoing use of the facility be expanded to include the following risks:

- Risk of a flood of various magnitudes:
  - During remediation of contaminated soils on the Site
  - Overwhelming OWS/ SWS during ongoing operation of the Site
  - Overwhelming bunded systems around storage tanks which then discharges to the SWS without being treated by the OWS
- Risk of breach of the OWS during remediation of the Site
- Risk of failure of pumped systems used to discharge treated water to the ocean outfall
- Risk of failure of pumped systems proposed to be used to transfer water from the land proposed to be reprofiled to a stormwater basin.

*Response*

Pumped systems that form part of the existing SWS would not be modified as part of the proposed modification, and therefore their current operation is consented under the approved project. There are no new pumps proposed as part of the proposed SWS mitigation measures for MOD-7.

The Updated Surface Water, Wastewater and Flooding Report (Appendix G) outlines the risks of the above events during remediation activities (construction) and during operation of the completed works, as summarised below.

**Construction**

Flooding impacts on construction works

The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of RPIP Mountain and at Source Area Excavation 5. RPIP Mountain would be regraded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability; the bunding at Source Area Excavation 5 would be removed to support remediation activities. As such, the Site's resilience against external floodwaters would not change and would continue to be protected from surrounding/ external floodwaters in all events up to, and including a 1% AEP flood. Existing surface levels along the Site boundaries would also remain unchanged, thereby maintaining the same level required to keep external floodwaters out of the Site.

Surface water flows into the Site from the Kurnell Headland and National Park (refer to Figure 4-10). Existing SWS drainage infrastructure capturing and conveying these external flows through the Site would be retained during all stages of construction. The existing level of service provided for these external flows would therefore also be retained during construction.

It is unlikely that significant flow diversion works would be required, as the existing road network currently acts as an overland flow path for local and external floodwaters moving through the Site. The proposed modification would not impact the road network and would continue to provide an overland flow path during construction.

Flood protection would, however, be required around excavations or susceptible construction zones to minimise the risk of floodwater ingress and to divert large external surface flows entering the Site around these construction zones – particularly, for works within Zone 2 as external flows from the National Park move in a westerly direction through Zone 2 and towards the main pipeway. Temporary diversion systems, such as bunding around proposed excavation zones, would be installed to direct flows around construction works and towards the nearest existing SWS, thereby preventing localised flood issues.

Construction works, such as excavations, would be staged where practicable to minimise the extent of required diversion works at any one time.

Design, installation, and operation of temporary flood diversion works required during construction would be captured as part of the CEMP.

Potential impacts of construction work on flooding

Figure 4-15 and Figure 4-16 provide an indication of existing flood prone areas across the Site (refer to Annexure B of Appendix G). The results indicate that certain areas proposed to undergo excavation as part of remediation works in Stage 3 (Figure 1-5) would be located in areas subject to localised flooding in a combined 1% AEP catchment and 1% AEP coastal event. These excavation areas relative to the post-modification flood modelling results have been presented in the section below. A detailed description of the remediation works is provided in Appendix B1.

Most of these areas are subject to small amounts of flooding from local flows exceeding the capacity of road network drainage. However, the PHC hotspot excavation and remediation area at the eastern side of Zone 2 (i.e., Source Area Excavation 2 on Figure 1-5) would be spread across existing OWS bunded areas that can be subject to large flood depths during periods of rainfall. These bunded OWS areas are shown to be subject to significant (greater than 300 mm flood depths) during large flood events, such as the combined 1% AEP catchment and 1% AEP coastal event shown in Figure 4-16 as a result of retention of water during storm events.

To prevent alterations to existing flooding behaviour at these remediation locations, and to prevent an increase to floodwaters leaving the Site, the proposed modification has incorporated the following measures:

- Existing OWS bunded areas across the Site would remain bunded throughout the proposed modification works to prevent water that accumulates within these bunded areas from being uncontrollably released to the SWS network.

- The proposed modification would be completed in a manner that does not alter existing surface levels[6], i.e., remediated/ excavated areas would be returned to existing surface levels following the completion of these works.
- Where practicable, major construction works would be scheduled during dry periods, where there is not expected to be heavy rainfall.

These measures would prevent significant changes to existing flood storage volumes across the Site, which would in turn minimise the likelihood of localised flood impacts resulting from the proposed modification at other onsite or offsite locations.

**Operation**

The operational phase of the proposed modification is not expected to alter existing flooding conditions on and offsite. The design controls implemented during the construction excavations (as listed above) would also be implemented under operational conditions to maintain existing finished surface levels across the Site under post modification conditions.

In turn, this would maintain existing flood storage volumes and flood flow paths across the Site.

Stormwater discharge from the Site would be regulated by the proposed surface water management measures, detailed in Section 4.1.5, such that the post modification discharge rates would not be any larger than existing, pre modification discharge rates at all discharge locations. This would prevent significant changes to downstream flooding extents.

The proposed modification would also not alter the paths for external flows coming from the Kamay Botany Bay National Park or overland flow paths across the Site, as these overland flow paths generally follow the existing road network, which would not be impacted by the proposed modification.

The post-modification peak flood depths for the 1% AEP event for present day (2030) conditions are presented in Figure 4-17. Peak flood depths for the 1% AEP event in the future climate (2100) scenario are presented in Figure 4-18.

Similar to the current site conditions, surface water accumulating within the bunded OWS areas is contained within the bunded areas. These bunded areas will continue to drain separately towards the WWTP via the existing OWS network and would not contribute to floodwaters moving along the roads and pipeways.

[6] With the exception of RPIP Mountain (which would be regraded) and removal of the bund in Source Area Excavation 5

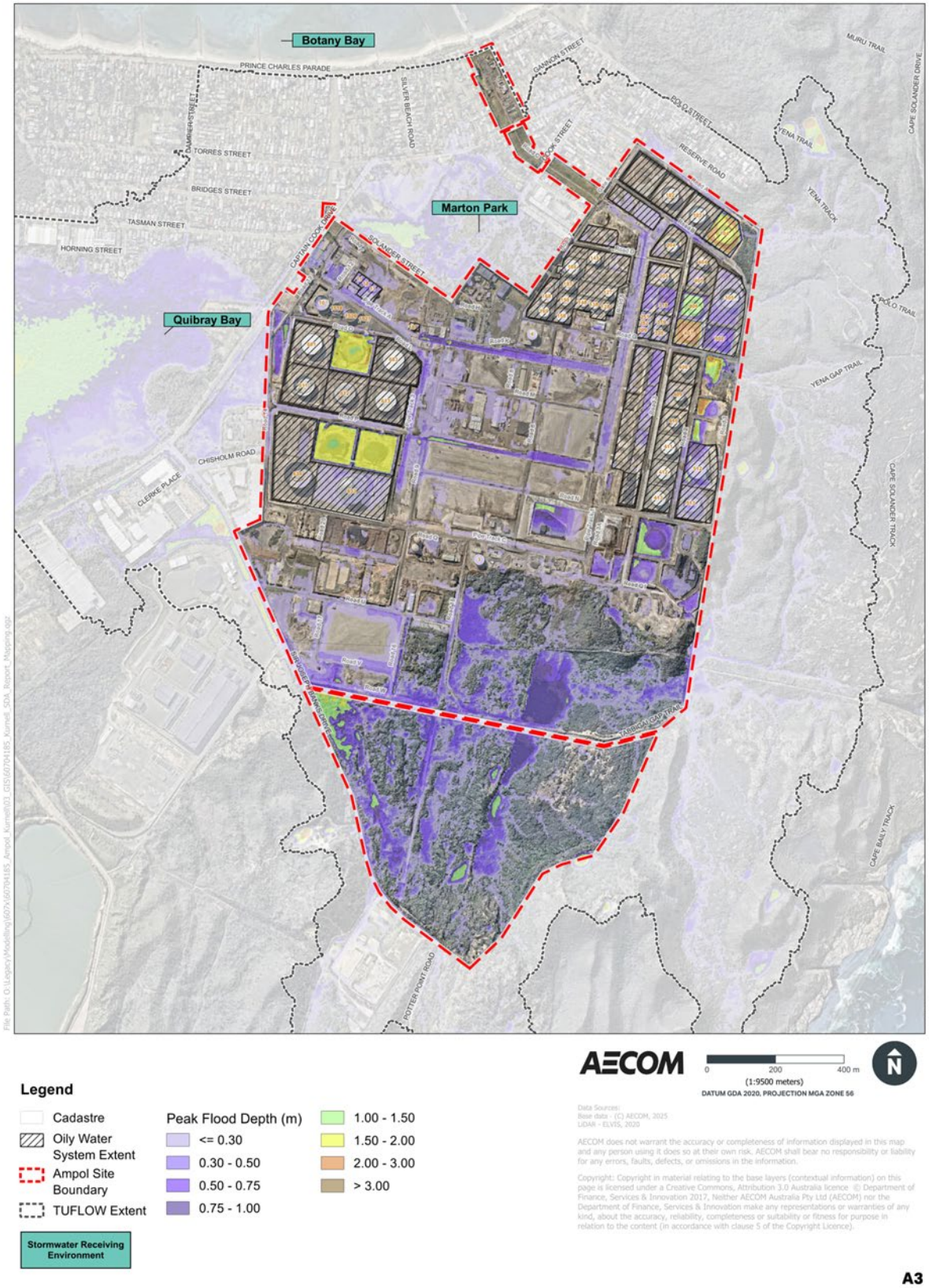



**Figure 4-15 Peak Flood Depth for 1% AEP Event with 2030 Climate Change**

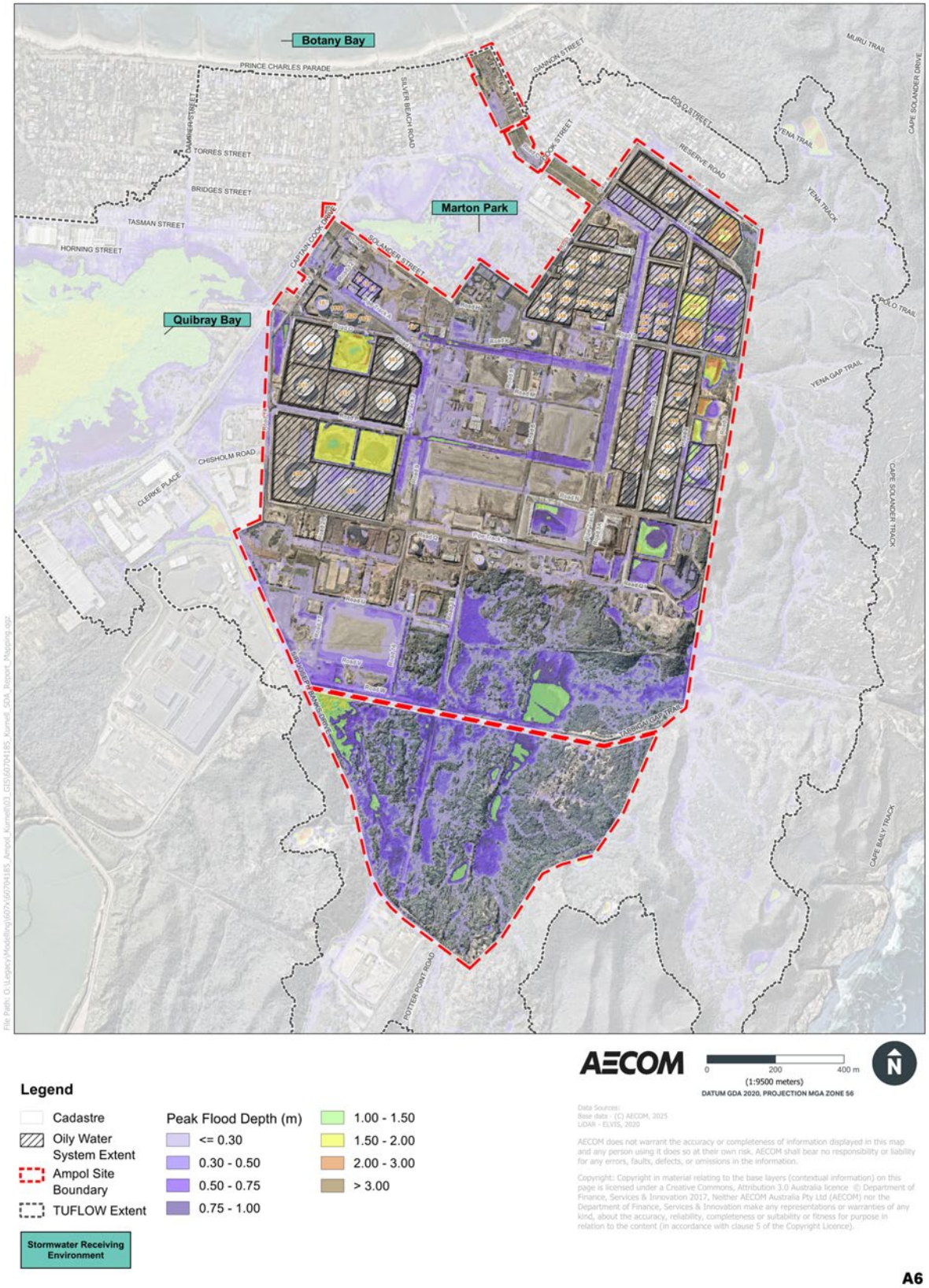



**Figure 4-16 Peak Flood Depth for 1% AEP Event with 2100 Climate Change**

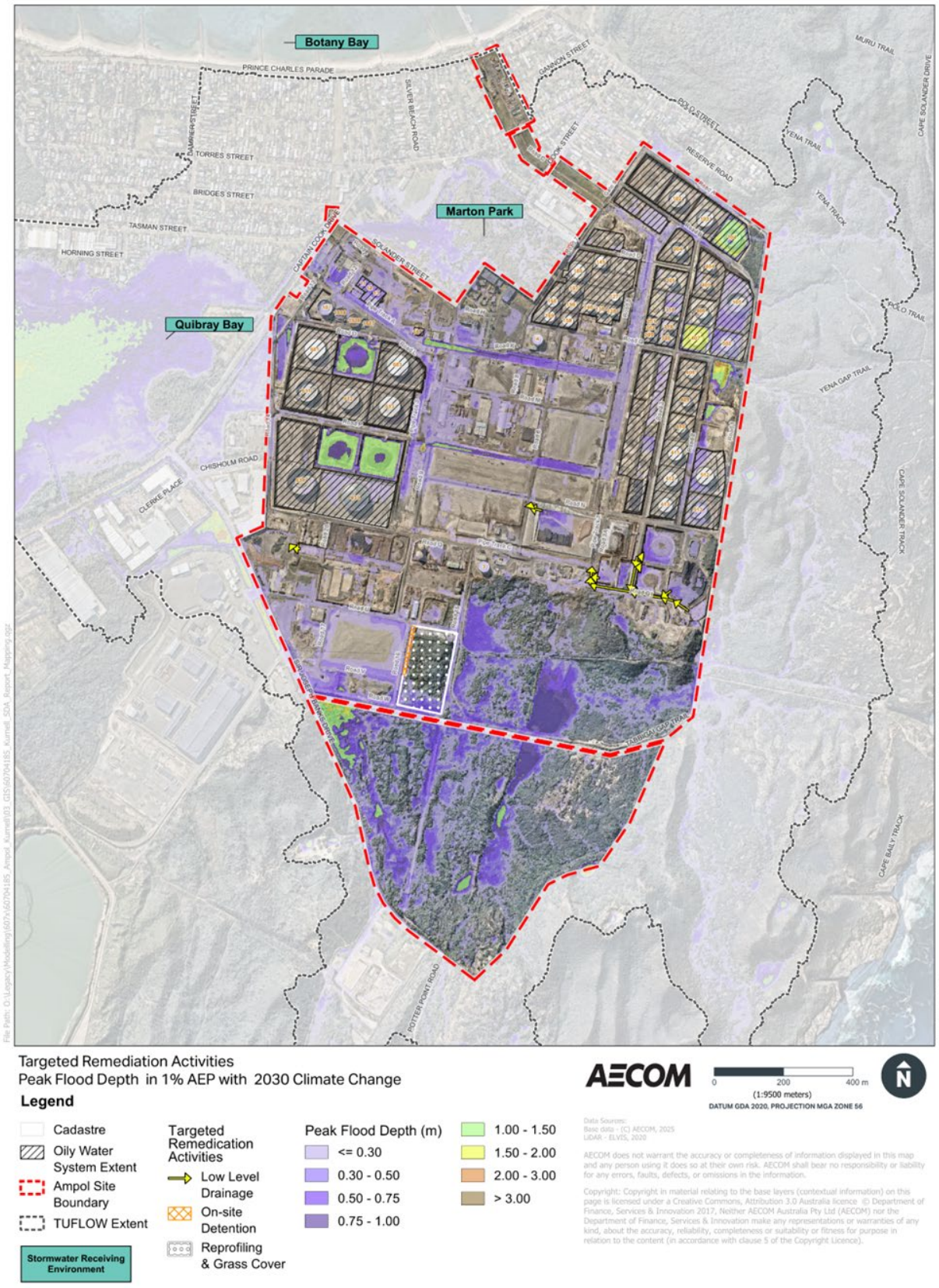



**Figure 4-17 Post-modification peak flood depth for 1% AEP event with 2030 climate change**

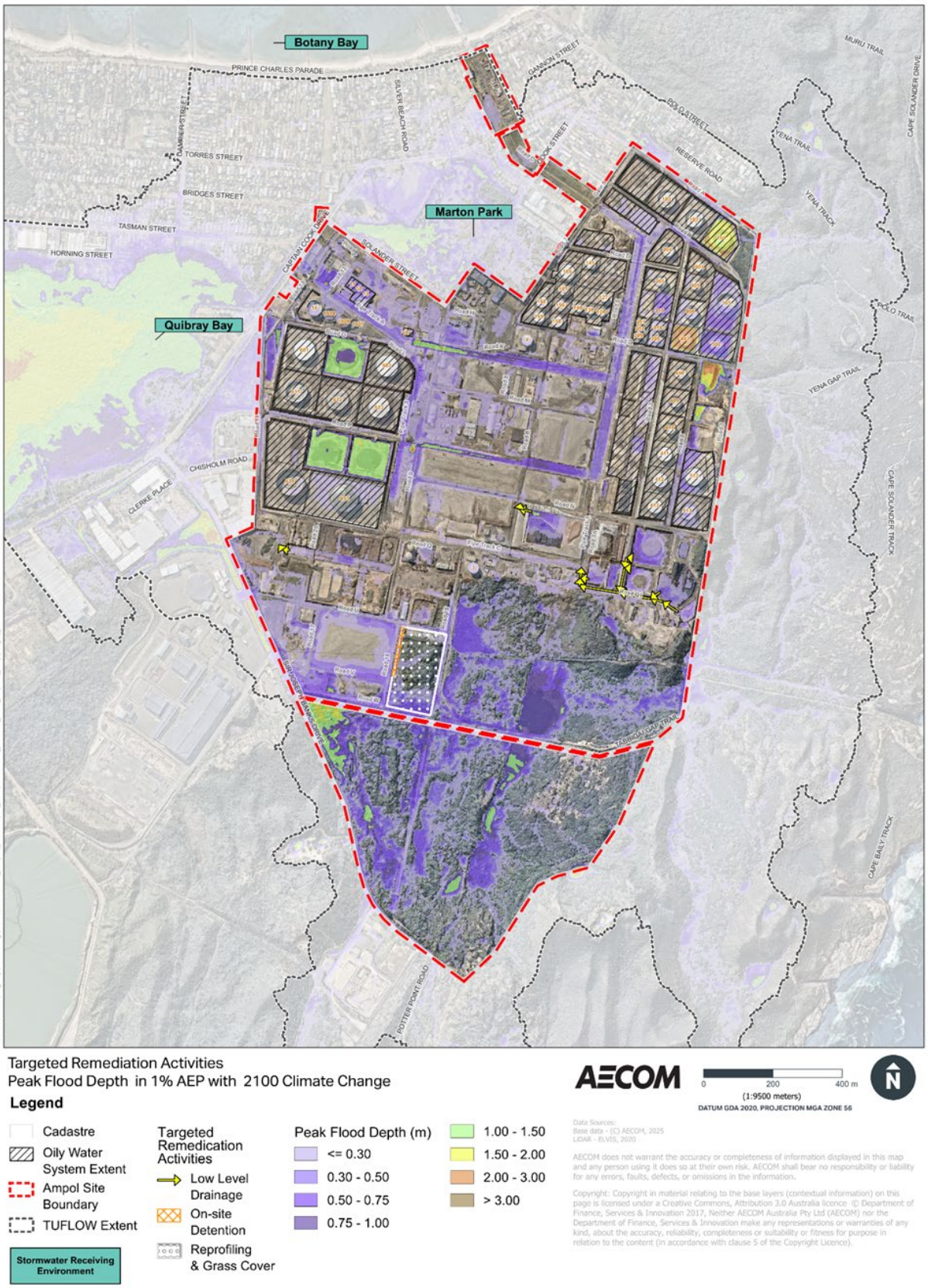



**Figure 4-18 Post-modification peak flood depth for 1% AEP event with 2100 climate change**

### Comment

CPHR requests further detail regarding pre- and post- remediation stormwater flows via the OWS and SWS. CPHR also requests justification for these changes and an explanation of how any alterations to the pre-SSD discharge regime will be managed to prevent adverse offsite flood impacts.

*Response*

The Stormwater Modelling Report (Annexure A of Appendix G) has been prepared to support this Submissions Report and the modification application. Hydrologic and hydraulic modelling was undertaken to analyse the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas.

The proposed stormwater management strategies have been designed so that peak stormwater discharge rates leaving the Site under post-modification conditions do not exceed pre-modification discharge rates in all storm events up to and including the 1% AEP event. This requirement is consistent with Clause 1.3 of the Council Development Control Plan for Stormwater and Groundwater Management (Sutherland Shire Council , 2015). Details regarding pre- and post-remediation stormwater flows across the Site are provided in Sections 2.1 and 2.2 of the Stormwater Modelling Report.

The proposed surface water management strategies detailed in the Stormwater Modelling Report (Annexure A of Appendix G) have been designed so that post-modification peak discharge rates from the Site would remain the same (or very close to) pre-modification discharge rates in all storm events up to and including the 1% AEP storm event. These strategies include:

- Inclusion of new low flow outlet systems within the existing bunded OWS areas in Catchments B and F to prevent stormwater from permanently pooling and utilising the existing storage volumes within these bunded areas for stormwater detention storage
- New stormwater pipe network connecting the low flow outlet systems from bunded areas to the existing SWS within Catchment B. Directing these flows into Catchment B would prevent changes to the inflows entering the southern Natural Retention Basin in Catchment F, as this is a Coastal Wetland.
- Sediment control measures, either within the bunded areas or at the downstream end of the new stormwater pipe networks to minimise the amount of sediment and sediment bound pollutants transferring to Catchment B and potentially discharging offsite.
- OSD storage within the former CLOR pipeway with a basin outlet structure to control discharge rates, estimated to require a storage volume in the order of 11,000 $m^3$ under present day climate conditions and 17,000 $m^3$ under future climate conditions. The basin outlet structure would connect to the existing downstream SWS in Catchment E via a new stormwater pipe network.
- OSD storage within RPIP Mountain, estimated to be in the order of 400 $m^3$ under present day conditions and 700 $m^3$ under future climate conditions. This OSD storage could be achieved by widening the existing channel along the western side of the RPIP Mountain.
- Sediment control measures at the downstream end of the two proposed OSD systems to minimise the amount of sediment and sediment bound pollutants discharging off-site via the Catchment E outlets.

### Comment

CPHR requests that detailed soil and water management plans be provided, including calculations and staging for diverting large overland flows around restoration areas during construction.

*Response*

Appendix G confirms that a SWMP would be developed as part of the CEMP if the proposed modification is consented. This plan would confirm the measures required to prevent stormwater contamination at specific parts of the Site as works are staged and progressed. The SWMP would be supported by area specific Erosion and Sediment Control Plans as required.

### Comment

CPHR notes that flood storage areas have been incorrectly identified within bunded areas forming part of the OWS. CPHR requests the provision of the Stormwater Separation Improvement Project report (BPM Projects, 2024) to ensure that flood storage is correctly identified.

*Response*

The 2024 Stormwater Separation Improvement Project Report has been superseded by the Baseline Flood Modelling Report (Annexure B of Appendix G), and the findings of this report have been incorporated into Appendix G.

Discussion of the OWS bunded areas is provided in Sections 5.1.4 and 5.2.4 (Flooding impacts) of Appendix G. These areas hold direct runoff from areas serviced by the OWS that accumulates during heavy rainfall and prevent it from spilling to the SWS. The wording has been updated in these sections to refer to this as 'water accumulating within the OWS bunded areas' instead of 'flood storage areas'. These OWS bunded areas are now also clearly defined as OWS areas in Figures 5-2 to 5-5 of Appendix G.

OSD measures have been identified and proposed as part of the Stormwater Modelling Report (Annexure A of Appendix G) to mitigate stormwater impacts resulting from the removal of OWS networks. These management strategies are listed in the preceding responses in this section.

### Comment

CPHR notes that Zone 2 is proposed to be drained via a pumped system, which is considered as an unsuitable drainage method for areas exposed to the elements due to the risk of failure during storm events. CPHR also notes that Zone 2 includes a storage basin near the western boundary adjacent to Captain Cook Drive.

CPHR requests that the assessment demonstrates all areas of the Site, except for the OWS/SWS, can drain by gravity and that any overflow from onsite treatment basins will not result in flood impacts on Captain Cook Drive.

*Response*

Parts of the existing SWS network on the Site do not drain via gravity drainage, instead using a pumped system. This infrastructure would not be modified as part of the proposed modification and therefore this has been treated as part of the existing environment at the Site.

Surface water flow within Catchment B discharges to an open channel on the northern side of Captain Cook Drive at outlet B1, where this channel then connects to Quibray Bay.

In the south-eastern corner of Zone 2, the proposed modification would remove existing OWS lines that currently service the bunded areas located at the south-eastern corner of the Site. Removing these existing OWS lines would also remove any form of drainage from these bunded areas, and may lead to stormwater runoff permanently pooling within the confines of these bunds. Stormwater accumulating within these bunded areas would continue to accumulate, and would only drain slowly via infiltration, evaporation, and/or by spilling to the surrounding area when water levels rise above bund levels.

To reduce the risks associated with these bunds holding permanent water and not having a safe spillway or overflow route, it is proposed that low-flow stormwater outlet systems are installed within each of these bunded areas. These low-flow outlet systems would allow for existing bunds in the south-eastern corner of the Site to provide detention of stormwater runoff before slowly releasing these stormwater flows to the existing SWS within Catchment B. Utilising the existing bunded areas within Catchments B and F would also maintain detention storage within these catchments as part of the proposed modification.

The slow release of flows would be controlled by the low-flow outlet structures, which could be achieved through the inclusion of small outlet pipes, orifice plates, control valves, custom outlet pits, pumped outlet systems, or other flow restriction methods. This would be confirmed during detailed design.

Modelling results (refer to Annexure A of Appendix G) showed that utilising the available storage within these bunded areas and slowly releasing surface water flows into Catchment B would be capable of maintaining peak discharge rates from Catchment B, and to Quibray Bay, in all storm events up to and including the 1% AEP event. These measures would be capable of maintaining pre-modification discharge rates under both present-day and future climate conditions.

**Comment**

CPHR notes that part of the Site will drain to the Marton Park Wetland and to a discharge point adjacent to the electricity substation. However, following the 2022 flood event, gravel accumulation has rendered this outlet ineffective, and restoration works are ongoing with Council, the Department of Primary Industries and Regional Development (DPIRD) – Fisheries, and the EPA.

CPHR requests Ampol work with Council to facilitate drainage maintenance or identify alternative discharge points until the channel is fully restored.

*Response*

As shown in Figure 4-1 of the Updated Surface Water, Wastewater and Flooding Report (Appendix G) and Figure 4-19 below, Catchments B and C drain to Marton Park in the north of the Site (OUT-C1 to OUT-C6), whilst Catchment B also drains to the east via OUT-B1.

In response to the 2022 spill, Ampol committed $17 million to substantially upgrade onsite stormwater management, delivering the Kurnell Stormwater Separation Improvement Project (DA24/0008). These works were approved by the EPA and significantly enhanced the resilience of the Kurnell Terminal, enabling it to withstand a 1-in-500-year flood event. The project included the construction of new levee walls, pump stations and upgraded stormwater infrastructure, materially reducing the risk of stormwater overflows and providing improved protection for the surrounding community and environment. The Kurnell Stormwater Separation Improvement Project is now operational, meaning that Ampol has fulfilled its obligations under Pollution Reduction Program U28 (PRP U28), as acknowledged by the NSW EPA.

Offsite drainage is outside the scope of the proposed modification. Stormwater Site discharges under Ampol's responsibility are operating effectively.

**Comment**

CPHR requests that details of all stormwater management systems, including descriptions, discharge calculations, and outlet capacities, be provided to assess potential impacts on existing offsite systems.

*Response*

The Stormwater Modelling Report (Annexure A of Appendix G) includes a more detailed description of the existing SWS under Section 2.1 and in Figure 2-2. This existing (pre-modification) SWS was modelled in full as part of the Stormwater Modelling Report to establish existing/ baseline stormwater conditions, before modelling the proposed (post-modification) conditions.

Details of how the SWS would process water through and discharge off the Site under a range of conditions are provided in the Stormwater Modelling Report (Annexure A of Appendix G) and summarised below.

The peak discharge rates under both pre- and post-modification conditions were recorded and compared at all of the discharge points shown on Figure 4-19, and are described in Table 4-4.

**Table 4-4 Flow record locations**

| Discharge point | DRAINS label | Drainage outlet(s) | Objective |
|---|---|---|---|
| North-east corner | OF40972 | G1 | To record the total flow rate discharging to the north-eastern corner of the Site, directly from Catchment G in addition to overflows coming from Catchment A. |
| Botany Bay | Pipe O1D | A1 | To record the peak flow rates discharging directly to Botany Bay via the drainage easement leading out of Catchment A. |
| Marton Park | OF19761 | C1-C6 | To capture the total combined flow rate discharging directly to the Marton Park Wetland from Catchment C, in addition to some overflows coming from Catchment A. |
| Quibray Bay | QF QB | B1 | To record peak discharge rates from the western stormwater retention basin B1 and discharging directly to Quibray Bay. |
| Sir Joseph Banks Drive 1 | OF40951 | E1-E4 and F1 | To capture the total combined peak flow rate moving along the Sir Joseph Banks Drive channel, including the total combined peak discharge rates from Catchment E and overflows from the Natural Retention basin in Catchment F. |
| Sir Joseph Banks Drive 2 | OF40945 | E4 | To record the peak discharge rates coming from the portion of Catchment E that is affected by the redirection of existing OWS areas to the SWS network, before it combines with the total flow heading along the Sir Joseph Banks Drive channel. |
| RPIP Mountain | Ch152F | E1 | To record the peak discharge rates coming from the open channel that heads along the western side of RPIP Mountain, as it discharges to the open channel along the southern side of the Site before connecting to Sir Joseph Banks Drive. |
| Natural Retention Basin | OF2562194 | F1 (upstream) | To capture the total combined flow coming from the south-eastern corner of the Site, within Catchment F, and entering the Natural Retention Basin. |

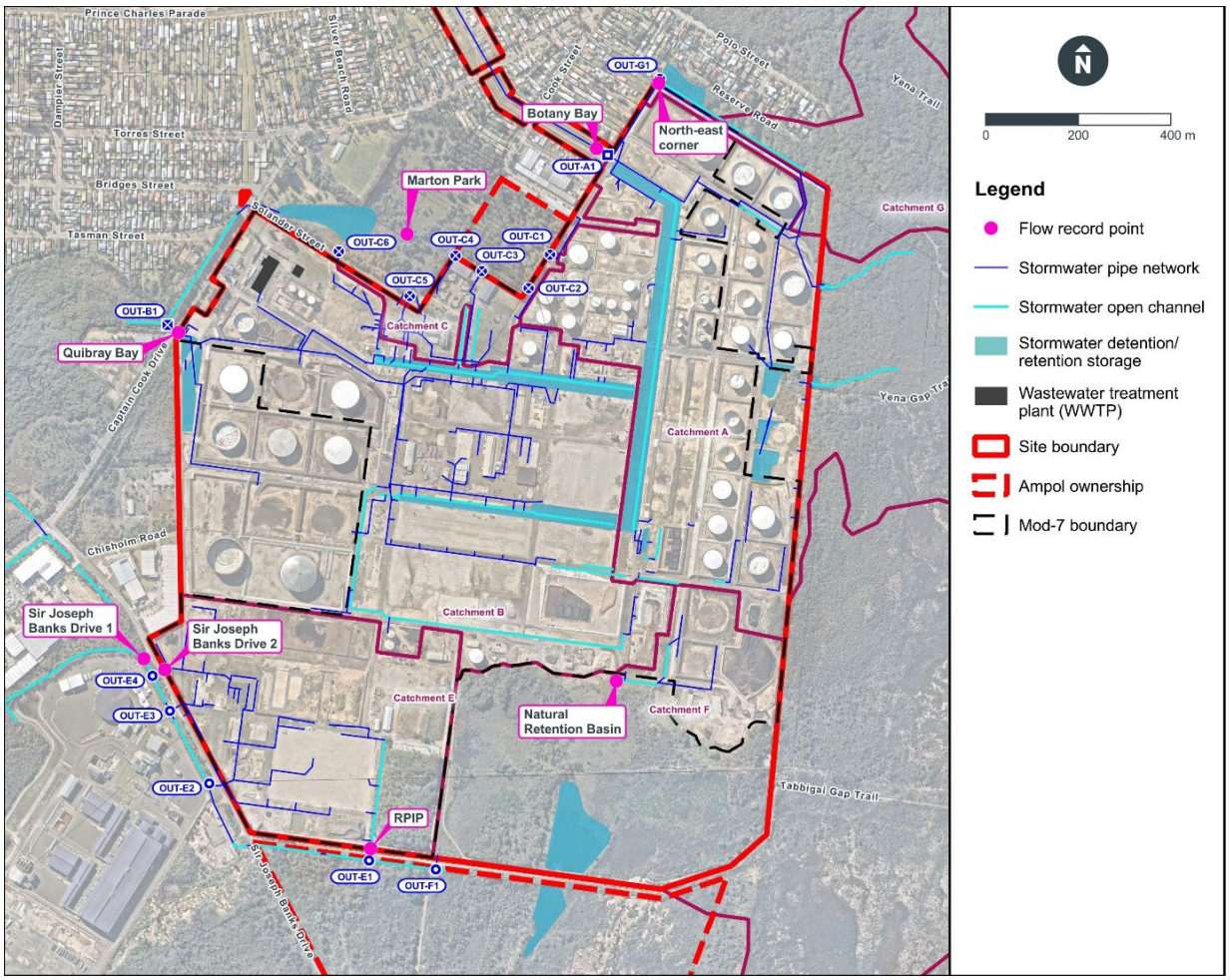



**Figure 4-19 Flow record locations**

### Present-day conditions

The peak discharge rates under present day conditions for both pre- and post- modification conditions are summarised in Table 4-5.

**Table 4-5 Peak discharge rates for present-day conditions**

| Discharge point | Result | 20% AEP | | 5% AEP | | 1% AEP | |
|---|---|---|---|---|---|---|---|
| | | Pre | Post | Pre | Post | Pre | Post |
| North-east corner | Peak flow rate ($m^3/s$): | 0.2 | 0.2 | 1.0 | 1.0 | 1.9 | 1.9 |
| | *Critical duration:* | *10-min* | *10-min* | *20-min* | *20-min* | *25-min* | *20-min* |
| Botany Bay | Peak flow rate ($m^3/s$): | 1.4 | 1.4 | 1.9 | 1.9 | 1.6 | 1.6 |
| | *Critical duration:* | *2-hr* | *2-hr* | *15-min* | *15-min* | *2-hr* | *2-hr* |
| Marton Park | Peak flow rate ($m^3/s$): | 2.0 | 2.0 | 4.3 | 4.3 | 6.5 | 6.5 |
| | Critical duration: | 45-min | 45-min | 1-hr | 1-hr | 45-min | 45-min |
| Quibray Bay | Peak flow rate ($m^3/s$): | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| | *Critical duration:* | *45-min* | *25-min* | *5-min* | *45-min* | *10-min* | *10-min* |
| Sir Joseph Banks Drive 1 | Peak flow rate ($m^3/s$): | 2.8 | 2.8 | 3.7 | 3.7 | 4.6 | 4.6 |
| | *Critical duration:* | *20-min* | *20-min* | *15-min* | *15-min* | *9-hr* | *9-hr* |
| Sir Joseph Banks Drive 2 | Peak flow rate ($m^3/s$): | 1.1 | 1.1 | 1.5 | 1.5 | 2.0 | 2.0 |
| | *Critical duration:* | *10-min* | *10-min* | *15-min* | *15-min* | *10-min* | *10-min* |
| RPIP Mountain | Peak flow rate ($m^3/s$): | 0.6 | 0.6 | 2.1 | 2.1 | 4.0 | 4.0 |
| | *Critical duration:* | *2-hr* | *2-hr* | *6-hr* | *6-hr* | *6-hr* | *6-hr* |
| Natural Retention Basin | Peak flow rate ($m^3/s$): | 0.5 | 0.5 | 0.6 | 0.6 | 0.9 | 0.9 |
| | *Critical duration:* | *10-min* | *10-min* | *5-min* | *5-min* | *5-min* | *5-min* |

The proposed stormwater management strategies are capable of limiting post modification discharge rates to pre modification rates at all Site discharge points in all storm events up to and including the 1% AEP event under present day climate conditions.

There is no significant change in the critical storm duration generating these peak discharge rates. There is only a slight difference between the critical duration recorded at the Quibray Bay discharge point for the 20% and 5% AEP storm events. This change in critical duration is due to there being only minor differences between peak discharge rates to Quibray Bay in all of the shorter storm durations (from 5 minutes to 2 hours).

### Future climate conditions

The peak discharge rates under future climate conditions for both pre- and post- modification conditions are summarised in Table 4-6. The one slight increase in peak discharge rates has been highlighted in red.

**Table 4-6 Peak discharge rates for future climate conditions**

| Discharge point | Result | 20% AEP | | 5% AEP | | 1% AEP | |
|---|---|---|---|---|---|---|---|
| | | Pre | Post | Pre | Post | Pre | Post |
| North east corner | Peak flow rate ($m^3/s$): | 1.1 | 1.1 | 2.1 | 2.1 | 3.5 | 3.5 |
| | *Critical duration:* | *20-min* | *20-min* | *20-min* | *20-min* | *20-min* | *20-min* |
| Botany Bay | Peak flow rate ($m^3/s$): | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | *Critical duration:* | *1-hr* | *1-hr* | *45-min* | *45-min* | *25-min* | *25-min* |
| Marton Park | Peak flow rate ($m^3/s$): | 5.1 | 5.1 | 7.7 | 7.6 | 11.1 | 11.1 |
| | *Critical duration:* | *45-min* | *45-min* | *1-hr* | *1-hr* | *45min* | *45min* |
| Quibray Bay | Peak flow rate ($m^3/s$): | 0.3 | 0.3 | 0.7 | 0.7 | 1.0 | 1.0 |
| | *Critical duration:* | *10-min* | *10-min* | *10-min* | *10-min* | *15-min* | *15-min* |
| Sir Joseph Banks Drive 1 | Peak flow rate ($m^3/s$): | 3.8 | 3.8 | 5.0 | 5.0 | 8.9 | 8.9 |
| | *Critical duration:* | *10-min* | *10-min* | *15-min* | *15-min* | *9-hr* | *9-hr* |
| Sir Joseph Banks Drive 2 | Peak flow rate ($m^3/s$): | 1.7 | 1.7 | 2.3 | 2.3 | 2.9 | 2.9 |
| | *Critical duration:* | *10-min* | *10-min* | *15-min* | *15-min* | *10-min* | *10-min* |
| RPIP Mountain | Peak flow rate ($m^3/s$): | 1.9 | 1.9 | 4.7 | 4.7 | 8.1 | 8.2 |
| | *Critical duration:* | *4.5-hr* | *4.5-hr* | *6-hr* | *6-hr* | *6-hr* | *6-hr* |
| Natural Retention Basin | Peak flow rate ($m^3/s$): | 0.7 | 0.7 | 1.0 | 1.0 | 1.3 | 1.3 |
| | *Critical duration:* | *10-min* | *10-min* | *5-min* | *5-min* | *5-min* | *5-min* |

The proposed stormwater management strategies are capable of limiting post-modification discharge rates to pre-modification discharge rates at all Site discharge points in all storm events up to and including the 1% AEP event under future climate conditions, except at RPIP Mountain in the 1% AEP storm event. The modelling results showed an increase in the order of 0.1 $m^3/s$ in the 1% AEP future climate scenario. This increase is caused by the attenuation of flow provided by the proposed OSD system at RPIP Mountain. While the OSD releases flows at a controlled rate that does not exceed pre-modification discharge rates, the timing of this attenuated and prolonged peak aligns with the timing of the peak overflow from the natural retention basin in the 1% AEP storm event – i.e., a synchronisation of peak overflows.

Despite this, no change in peak flow rates would occur further downstream along Sir Joseph Banks Drive. Therefore, it is unlikely that this localised increase in peak flow rates along the southern swale would have any significant impact on downstream stormwater receptors, including the Towra Point Nature Reserve Coastal Wetland.

### Comment

CPHR requests an assessment of the risk and potential consequences of failure in large flood events, up to the Probable Maximum Flood (PMF), to determine whether the proposed protection levels for the wastewater treatment plant, OWS, and bunding around storage facilities are adequate.

*Response*

Council has adopted Clause 5.22 Special Flood Consideration in the Sutherland Shire Local Environmental Plan 2015. This clause requires new hazardous industrial developments to be located above the PMF. As the proposed modification does not constitute a new development, this clause does not apply.

In addition, a range of scenarios were modelled to demonstrate the proposed stormwater design of the WWTP, OWS, and bunding around storage facilities are adequate for Site operations. These modelled events are presented in Table 4-7.

**Table 4-7 List of modelled events in the Stormwater Modelling Report**

| Development scenario | Climate scenario | Storm magnitudes | Storm durations |
|---|---|---|---|
| Pre-modification<br>Post-modification | Present-day (year 2030)<br>Future climate (year 2100) | 20% AEP<br>5% AEP<br>1% AEP | 5 minutes to 36 hours |

### 4.3.4 Waterway health and stormwater

### Comment

CPHR requests that the proposed stormwater management incorporate adequate pollution and sediment controls, including permanent stabilisation of roadways and temporary stabilisation of areas designated for future land use. CPHR also requests the provision of supporting calculations, details for the proposed treatment and management infrastructure and that alternative stormwater discharge options, including discharge via a sea outfall, be considered.

*Response*

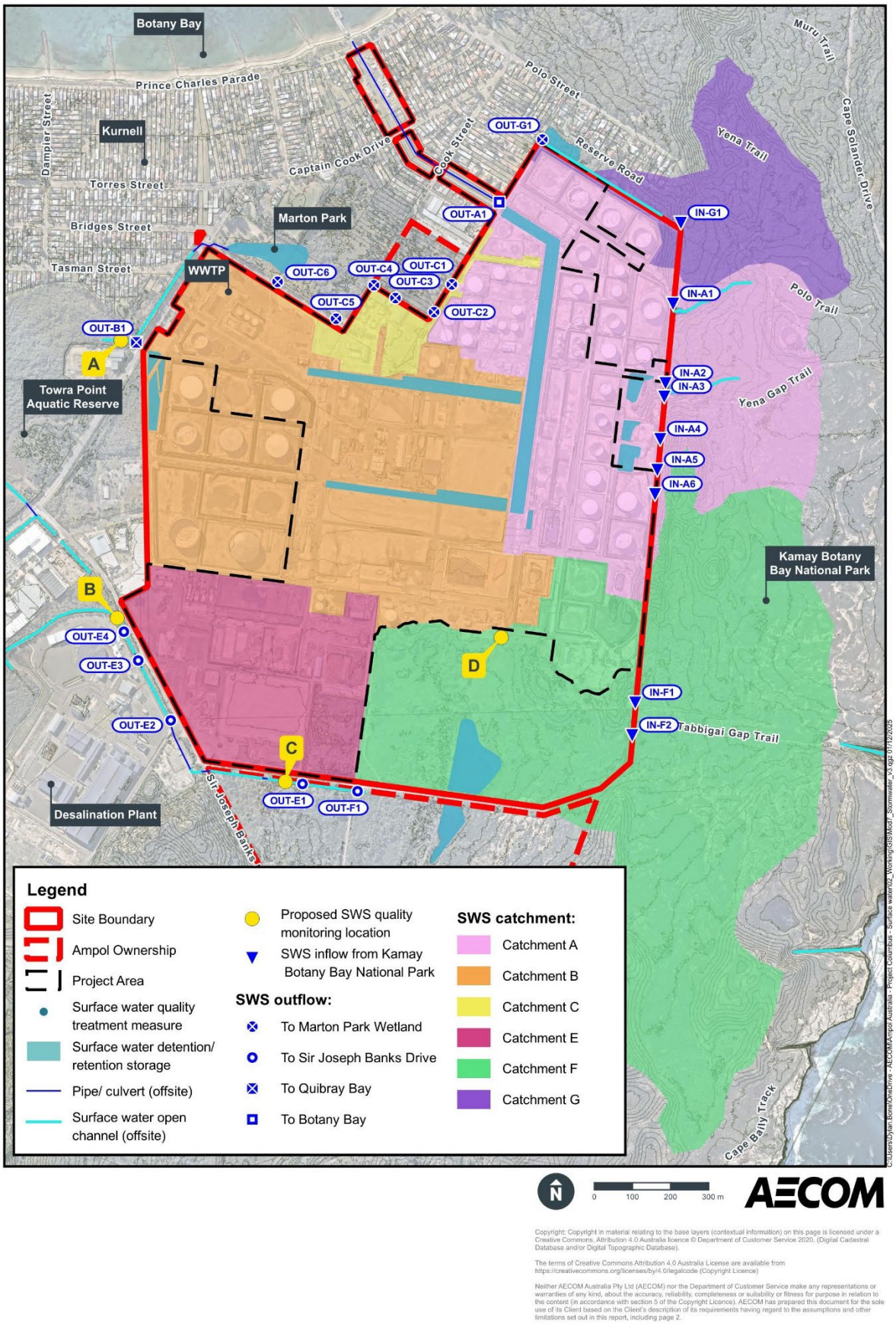
Section 5.2.1 of the Surface Water, Wastewater and Flooding Report (Appendix G), and Figure 4-11 and Figure 4-12, include permanent sediment control measures that form part of the proposed stormwater management strategy. Their purpose is to capture sediment and sediment-bound pollutants coming from the current OWS areas, i.e., where most changes to SWS flows would occur.

Design of these measures would be undertaken during future design development. The performance of these measures would be controlled through a post-construction water quality monitoring program.

Short-term post-construction water quality monitoring at main outlets of affected catchments (Catchments B, F, and E) would be undertaken to confirm the discharged stormwater quality meets the water quality objectives (WQOs) for the Georges River Catchment. These WQOs are derived from Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) and Australian and New Zealand Environment and Conservation Council (ANZECC) trigger values (ANZECC & ARMCANZ, 2000) (ANZG, 2018).

Proposed stormwater quality monitoring locations are shown in Figure 4-20. Baseline water quality sampling would be conducted at the proposed monitoring locations prior to construction to define the baseline water quality conditions.

Table 4-8 lists the proposed stormwater quality monitoring parameters and default trigger values in accordance with the aquatic ecosystem WQO for the Georges River catchment (which are the appropriate trigger values for the relevant contaminants compared to other WQOs). Should results exceed trigger values, an investigation would be undertaken to determine the cause and assess whether additional mitigation measures are required.




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*Source: Nearmap, 2024*

**Figure 4-20 Proposed stormwater quality monitoring locations**

Additional measures to manage the potential for pollutants leaving the Site via SWS discharge are provided in Section 5.2.3 of Appendix G and summarised in Section 4.1.5. Existing internal roads and existing stormwater quality controls at other areas of the Site are not being modified as part of the proposed modification and have therefore not been assessed.

**Table 4-8 Proposed stormwater quality monitoring parameters**

| Objective | Proposed water quality monitoring parameters | Default trigger value[1] |
|---|---|---|
| **Aquatic ecosystems**: maintaining and improving the ecological condition of waterbodies and their riparian zones over the long term | Total Phosphorus (TP) (*ex situ*) | 0.03 mg/L |
| | Total Nitrogen (TN) (*ex situ*) | 0.30 mg/L |
| | Chlorophyll-a (*ex situ*) | 0.04 mg/L |
| | Turbidity (*in situ*) | 0.5-10 Nephelometric Turbidity Units (NTU) |
| | Dissolved oxygen (DO) (*in situ*) | 80-110% saturation |
| | pH (*in situ*) | 7.0-8.5 |

*Notes: 1 – Derived from ANZECC/ARMCANZ/ANZG trigger values, refer to Section 3.7 of Appendix G for further details*

### Comment

CPHR requests that the assessment be updated to adopt a single set of waterway health targets, using the ANZECC (2000) guidelines, to provide consistent pollution management and ensure the protection of sensitive receiving environments, including wetlands and important fish habitat. CPHR also requests that stormwater management requirements are adequate to achieve these targets.

### *Response*

A single set of water quality targets based on ANZG and ANZECC trigger values (ANZG, 2018) (ANZECC & ARMCANZ, 2000) are now provided under Section 3.7 of Appendix G. Percentage reduction targets have been removed from any discussion. A more detailed assessment of impacts and proposed management/ mitigation measures is provided in Sections 5.1.3 and 5.2.3 of Appendix G and summarised in Section 4.1.5.

### Comment

CPHR notes that remediation of contaminated soils will be extensive and that the full scope of the remediation program is currently unknown. Consequently, more robust soil and water management is required than that provided in the Blue Book, which is intended for short-term construction disturbance without contaminated soils.

CPHR requests plans and justifying calculations be provided to demonstrate diversion of upslope water, protection of disturbed surfaces, and collection and treatment of contaminated runoff to allow for staged treatment of appropriate areas. CPHR also requests a review of additional soil removal to allow for capping depth following review of flood reports, and further details and calculations on measures to protect the environment during soil contamination remediation activities.

### *Response*

The scope of the remediation under the proposed modification has been significantly reduced. The proposed modification no longer involves capping and regrading large parts of Zone 2 and 3. As such the proposed works and remediation works in particular are not as extensive and are more targeted to specific parts of the Site (refer to the Source Area Excavations shown on Figure 1-5).

The management of potential drainage impacts on surface water runoff during the construction works, including the installation and operation of temporary sediment and erosion control measures, would be designed and documented in the SWMP, which would be prepared in accordance with the Managing Urban Stormwater – Soils and Construction Guidelines (Landcom, 2004). The SWMP would form part of the CEMP for the proposed modification and be supported by one or more ESCP specific to particular packages of works and parts of the Site.

The Blue Book is considered an appropriate guide for erosion and sediment control even for potentially long construction periods such as the proposed modification and contains several references to long-term pollution control measures. This document has been used to guide numerous projects with significant soil and remediation activities (e.g. the Clyde Western Area Remediation Project (SSD-9302) and the associated relevant management plans[7]). In the case of the proposed modification, construction works, such as excavations, would be staged to minimise the extent of exposed sediment at any one time.

**Comment**

CPHR notes that the proposed modification seeks to regrade the Site to support future use of remediated land under SSD-86799993. The Conceptual RAP indicates that some areas may require capping where full remediation is not achievable. As future development is likely to involve installation of infrastructure such as drainage, service trenches, slabs, footings, and onsite detention, CPHR requests that the design of regraded and capped areas provide sufficient depth to avoid future disturbance of soil that has not been fully remediated.

*Response*

As discussed in Section 3.1, capping and grading have been removed from the proposed modification. Capping has been deferred to the subsequent SSD application for the KEIP (SSD-86799993). This application will be supported by a detailed surface water management plan and remedial action plan for capping, which will allow Ampol to plan and develop the drainage, service trenches, slabs, footings, and onsite detention in parallel with containment requirements.

**Comment**

CPHR requests that a strategy be developed to manage offsite flows to reduce stress on the Site's stormwater systems and minimise the potential for offsite pollution events.

*Response*

The proposed surface water management strategies detailed in Appendix G are designed so that post-modification peak discharge rates from the Site would remain the same (or very close to) pre-modification discharge rates in a range of storm events up to and including the 1% AEP storm event under current and future climate scenarios. These strategies include:

- Inclusion of new low flow outlet systems within the existing bunded OWS areas in Catchments B and F to prevent stormwater from permanently pooling and utilising the existing storage volumes within these bunded areas for stormwater detention storage.
- New stormwater pipe network connecting the low flow outlet systems from bunded areas to the existing SWS within Catchment B. Directing these flows into Catchment B would prevent changes to the inflows entering the southern natural retention basin in Catchment F, as this is a Coastal Wetland.
- Sediment control measures, either within the bunded areas or at the downstream end of the new stormwater pipe networks to minimise the amount of sediment and sediment bound pollutants transferring to Catchment B and potentially discharging offsite.
- OSD system within the former CLOR pipeway with a basin outlet structure to control discharge rates, estimated to require a storage volume in the order of 11,000 $m^3$ under present day climate conditions and 17,000 $m^3$ under future climate conditions. The basin outlet structure would connect to the existing downstream SWS in Catchment E via a new stormwater pipe network.

[7] Refer to https://www.vivaenergy.com.au/operations/clyde/west-area-remediation-project

- OSD storage within RPIP Mountain, estimated to be in the order of 400 $m^3$ under present day (2030) conditions and 700 $m^3$ under future (2100) climate conditions. This OSD storage could be achieved by widening the existing channel along the western side of RPIP Mountain.
- Sediment control measures at the downstream end of the two proposed OSD systems to minimise the amount of sediment and sediment bound pollutants discharging off-site via the Catchment E outlets.

There would not be any proposed modification works that could potentially block any natural flows coming from the Kamay Botany Bay National Park, moving through and around the Site, towards downstream Coastal Wetlands and receiving environment.

## 4.4 Heritage NSW

Heritage NSW provided two submissions in response to the exhibition of the Modification Report (one for cultural heritage, and one for Aboriginal heritage). The comments raised by Heritage NSW in their submissions are summarised and addressed below.

### 4.4.1 Non-Aboriginal heritage

**Comment**

Heritage NSW have requested the HIA is updated to include an assessment of potential indirect impacts to the Kamay Botany Bay National Park and Towra Point Reserve (SHR #01918), Kurnell Peninsula Headland (NHL #105812) and Kamay Botany Bay: botanical collection sites (NHL #106162).

*Response*

An impact assessment of the potential impacts of the modification on the additional heritage items requested has been completed and provided in the Updated HIA (Appendix K). Table 4-9 presents the items identified within 100 m of the Project Area.

**Table 4-9 Database search results for items in close proximity**

| Name | Address | Identifier | Database | Proximity |
|---|---|---|---|---|
| Kamay Botany Bay National Park and Towra Point Reserve | Captain Cook Drive, Kurnell | SHR#01918 | State Heritage Register | 40 m to the east (Kamay Botany Bay National Park only) |
| Kurnell Peninsula Headland | Cape Solander Drive, Kurnell | NHL 105812 | National Heritage List | Adjacent to the east |
| Kamay Botany Bay: Botanical Collection Sites | Captain Cook Drive, Kurnell | NHL 106162 | National Heritage List | Adjacent to the east |
| Kurnell Historic Site (in Kamay Botany Bay National Park) | Polo Street and Sir Joseph Banks Drive, Kurnell | 2504 | Sutherland Shire LEP 2015 | 40 m to the east |

The location of these items is presented on Figure 4-21, and a summary of the potential impacts on items close to the Project Area during construction and operation is provided below.

During construction of the proposed modification, works would be located wholly within the Project Area and would therefore not directly impact items outside the Project Area. However, some of the proposed modification works have the potential to cause indirect impacts to nearby heritage items, including:

- Visual impacts
- Impacts to biodiversity
- Impacts from vibration.

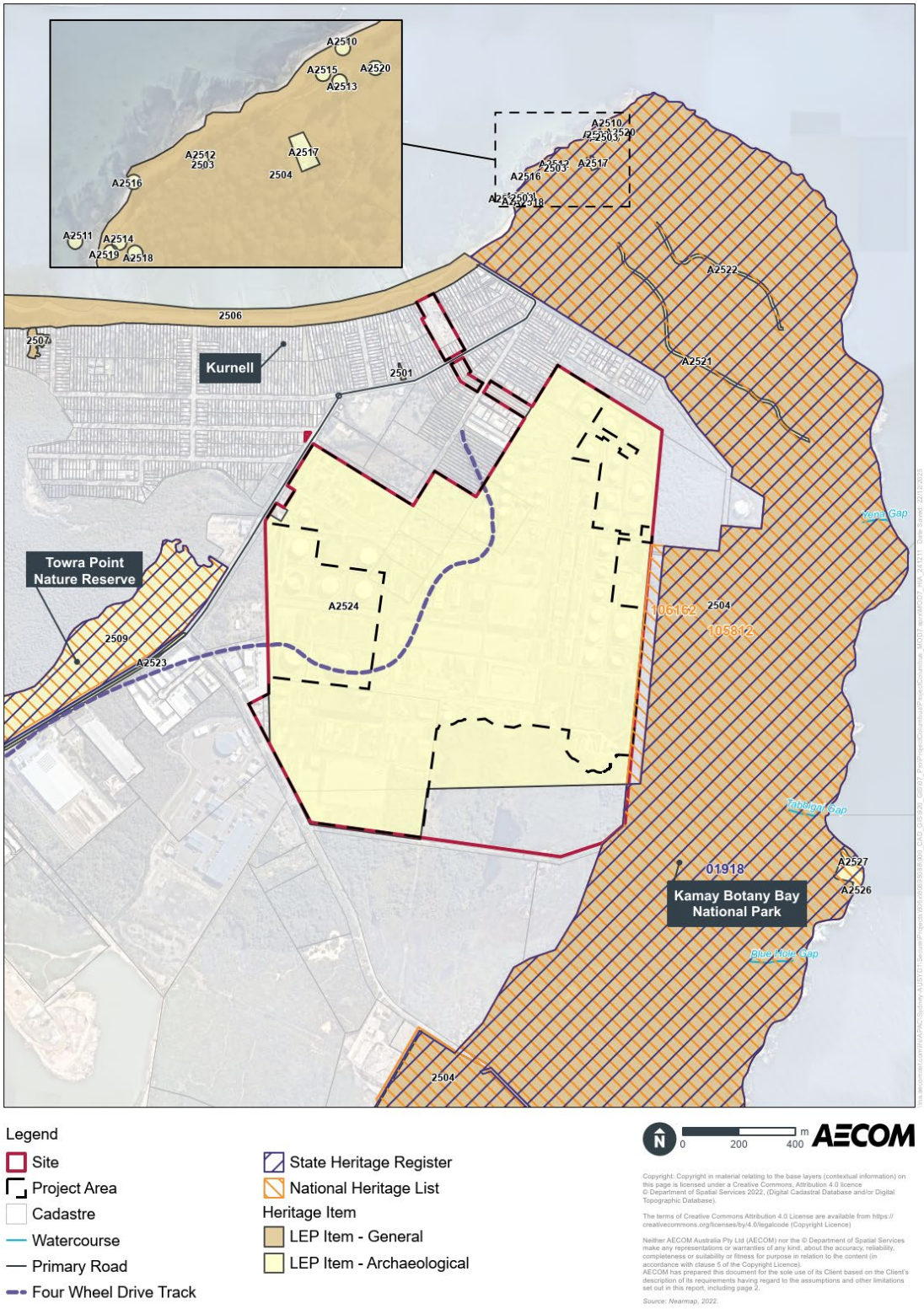



**Figure 4-21 Heritage items**

Of these, only vibration from the operation of plant or machinery used during the construction phase has the potential to impact nearby heritage items. While construction equipment would be an additional visual element on the Site during construction, it is temporary and therefore would not result in a significant visual impact from a heritage perspective. There would be no impacts to biodiversity in protected sites. In relation to impacts through vibration, as the nearby heritage items are not built items, it is considered highly unlikely that there would be any adverse impact to these items through vibration. In addition, the closest vibration-causing activity to the eastern boundary of the Site is the removal of OWS, which is located 60 metres from that boundary. These activities are located at least 60 m west of those items and therefore unlikely to cause adverse impacts.

During operation of the proposed modification, activities would continue to be located wholly within the Project Area and therefore would not directly impact items of heritage significance outside the Project Area. However, often there is a perception that indirect impacts to nearby heritage items could result from:

- Visual impacts
- Impacts to biodiversity
- Impacts from vibration.

Of these, only visual impacts from structures built during the construction phase would occur during the operational phase. No adverse impacts from vibration are expected during operation (refer to the construction vibration assessment in Appendix H). Further, there would be no offsite impacts to biodiversity values (refer to the biodiversity assessment in Appendix I).

In relation to visual impacts, the HIA for the original approval notes the following regarding significant views to and from the Kurnell Peninsula Headland and the Meeting Place precinct:

> *Although the refinery infrastructure detracts from the experience of significant views of the Kurnell Peninsula Headland from Botany Bay, there are no direct views between the Meeting Place Precinct of the Kurnell Peninsula Headland and the main Refinery Site, and only limited distant views from the Cape Bailey Lighthouse, and from the coastal walking track* (in the Kamay-Botany Bay National Park). *The proposed works would not alter the existing landscape setting of the Kurnell Peninsula Headland, insofar as there will be little or no change to the bulk or vertical scale of the existing refinery infrastructure, or otherwise impact on the existing view corridors associated with the national heritage values of the place.*
>
> (Australian Museum Business Services, 2013:91)

It is noted that in relation to these works, while much of the infrastructure noted in the 2013 HIA has since been demolished, other large infrastructure elements are still extant, such as the fuel tanks. The construction of new buildings would be comparatively of a smaller scale, and therefore not represent a change to the existing bulk or vertical scale of extant infrastructure (also refer to Section 4.1.4). Any new or relocated equipment would be surrounded by existing terminal infrastructure and consistent with the existing industrial landscape. Views of new infrastructure are not anticipated to be visible from the National Park or Towra Point Reserve due to vegetation screening, site topography and other onsite and offsite built structures. There would be little or no adverse change to the existing views.

In conclusion, there would be no adverse visual impact on the surrounding heritage items during the operation of the proposed modification.

As such, no additional non-Aboriginal heritage mitigation measures have been proposed for heritage items located in the vicinity of the Project Area.

### Comment

Heritage NSW have requested that the HIA is updated to include an assessment of the archaeological potential of the Australian Oil Refinery Site, in accordance with the *Archaeological Assessments Guidelines* (Heritage Office and DUAP, 1996) and *Assessing Significance for Historical Archaeological Sites and Relics* (Heritage Branch, 2009).

*Response*

Table 4-10 presents an assessment of archaeological significance of the Australian Oil Refinery Site, in line with the criteria defined by the *Archaeological Assessments Guidelines* (Heritage Office and DUAP, 1996) and *Assessing Significance for Historical Archaeological Sites and Relics* (Heritage Branch, 2009).

**Table 4-10 Assessment of archaeological significance**

| Criterion | Assessment |
|---|---|
| Archaeological research potential | It is considered that all archaeological material would post-date the construction of the refinery. There is high potential for subsurface remains to be present that relate to the construction and operation of the refinery dating from the 1950s onwards. However, given the relatively recent nature of these features, they are well-documented, thereby greatly reducing the scope for research potential.<br>It is considered that the archaeological resource **does not** meet this criterion. |
| Associations with individuals, events, or groups of historical importance | The archaeological deposits would relate to the construction of the oil refinery, and may be of some significance to Caltex (now Ampol), or to workers who worked there. However, it is considered that this applies to the Site in general, rather than reflected in the archaeological resource. It is also considered that these individuals and groups are not of sufficient importance to meet the threshold of local or State archaeological significance.<br>It therefore **does not** meet this criterion. |
| Aesthetic or technical significance | The archaeological resource is likely to comprise infrastructure and remains of former buildings typical of an oil refinery. These continue to be well represented and as indicated above, the technical elements of the Site are very well-documented. There is no aesthetic significance attached to this item.<br>It therefore **does not** meet this criterion. |
| Ability to demonstrate the past through archaeological remains | The archaeological resource has the ability to demonstrate the former layout and technical elements of the former oil refinery. However, it is noted that some of this has been removed since its closure, and was recorded prior to its closure. The item therefore lacks the intactness, legibility, and interpretive value necessary to meet this criterion.<br>It is therefore considered that it **does not** meet this criterion. |

Pursuant to the above assessment, it is concluded that the existing archaeological resource does not meet the threshold for local or State archaeological significance and are therefore not considered relics within the meaning of Section 4 of the *Heritage Act 1977*.

Refer to the Appendix K for further detail.

**Comment**

Heritage NSW have noted that Section 4.1.2 of the assessment notes that the three buildings of moderate to high heritage significance (storehouse, workshop and Central Control Building) were retained as a representative example of significant original structures across the Site, when other structures were approved for removal. Heritage NSW have requested that additional details are provided, given that the HIA concludes that the proposed works will result in no additional impacts. The assessment must include:

- The reasons why these buildings were retained under the original approval
- How the heritage values represented by these buildings would be retained after their removal
- Whether other buildings/ features of significance would be retained as part of the listing.

*Response*

The HIA (Appendix K of the Modification Report) has been updated to include additional discussion regarding the three buildings of moderate to high heritage significance (storehouse, workshop and Central Control Building). This assessment is presented in Appendix K.

The three buildings of heritage significance (the storehouse, workshop, and Central Control Building) were retained in 2014 in fulfilment of Strategy 14 of the Caltex Kurnell Refinery Heritage Management Strategy (HMS) (Australian Museum Consulting, 2014), being the retention of a representative sample of significant original buildings in use across the Site. While the HMS acknowledged that the shutdown of the refinery would result in large numbers of highly significant elements becoming obsolete and unable to be retained or adaptively reused, it also recommended that demolition of buildings of exceptional, high, or moderate significance should be a last resort.

The approved project related to the conversion of the Site from an oil refinery to a finished fuel terminal, requiring a much smaller footprint. The three buildings identified for demolition in this assessment (storehouse, workshop, and Central Control Building) are located outside the footprint of the finished fuel terminal. As they were assessed of being of high heritage significance owing to their status as original buildings associated with the oil refinery, they were retained as examples of such buildings. The 2014 HIA prepared for the demolition stage of the approved project stated that the reasons for retention of the workshop and storehouse were:

> *The proposed retention and adaptation of the Main Workshop and Storehouse to new uses within the terminal would help to preserve some authentic physical evidence of the industrial history of the site, and as such would have some ongoing technical and representative value… That being said, many of the significant neighbouring workshop and amenities buildings, including the original Cafeteria, Old Laboratory, the Training Centre (Old Garage) and Reliability (Old Inspection) Building are to be demolished, which will have a major, irreversible adverse impact on the physical fabric, historic integrity spatial integrity, and presentative value of the Australian Oil Refinery Site.*

In relation to the Central Control Building, it was noted that:

> *Retention and adaptive reuse of the c. 1989 Central Control Building (CCB/Bunker) would… preserve evidence of more recent technological change on the site.*

The heritage significance of these three buildings is recognised, and it is noted that these buildings are the last of the industrial buildings remaining on the Site. Other buildings at the north of the Site are still extant but relate to administration, rather than the operations of the terminal.

However, as indicated by the 2014 HIA, it is considered that their high to moderate heritage significance now relates to their intangible characteristics, in particular, to their former roles in the operations of the former refinery, rather than their existing tangible characteristics. Today, these buildings are isolated away from the operational terminal infrastructure and are therefore not in use other than the Workshop and Storehouse, which are used for non-essential storage by Ampol. These buildings are now decontextualised remnants of the former refinery's operation and no longer hold any practical or contemporary heritage significance or value. As most of the infrastructure and other buildings have already been demolished, the significance of the three buildings as crucial elements of the refinery is unavoidably diminished when removed from their original context.

Demolition of these buildings is required to maintain safe, viable, and reliable operations at the Site. The retention of the buildings in their current location and form is inconsistent with Ampol's operational requirements and risks ongoing safety, maintenance, and compliance obligations. The benefits associated with the removal of these buildings outweigh the financial burden and operational challenges of retaining these three structures.

The retention of the buildings is not considered feasible, owing to the financial burden of renovation and continued maintenance of the buildings, lack of function and inability to be adaptively reused. Further, isolation of the buildings from other operational areas has potential to create operational and safety risks.

Strategy 7 of the HMS states that, in this is scenario, demolition of the buildings is justified:

> *Demolition of exceptional, high, or moderately significant buildings and infrastructure would only be considered as a last result where there is no conceivable reuse for the building or structure, and where the financial burden of ongoing maintenance or remediation can be proved to outweigh the benefits of retention.*

It is considered that these circumstances demonstrate that the burden of their retention outweigh the benefits of their retention.

The heritage values associated with these buildings would be retained through the audio-visual and photographic recordings of the refinery while still in operation, undertaken at the time of the 2014 HIA, together with the cataloguing of the extensive archive of documents and objects held at the refinery. As these buildings heritage significance primarily relates to their former operational roles rather than their physical fabric, these records created while the refinery was operational are of particular value in retaining their heritage significance following removal.

Other buildings and features of heritage significance that form part of the listing and are not proposed for demolition under the proposed modification would be retained are largely located in the north of the Site, including:

- Examples of significant office and amenities buildings designed by architectural firm Bunning and Madden for the Australian Oil Refinery complexes
- The group of six houses designed by architect Harry Seidler
- Conservation of a representative sample of significant refinery infrastructure in use as part of the fuel import terminal, including original and early tanks.

### Comment

Heritage NSW have requested additional discussion of the following in relation to Appendix B of the HIA, which presents the significance assessment for the Australian Oil Refinery:

- How the buildings/ features of moderate and high significance proposed for demolition contribute to the aesthetic/ technical significance of the Australian Oil Refinery
- What research potential is associated with extant original and early buildings/ features.

*Response*

Table 4-11 outlines the updated significance assessment for the Australian Oil Refinery, as presented in the Updated HIA (Appendix K). This includes discussion of the aesthetic/ technical significance of the buildings and the research potential of the Site.

**Table 4-11 Significance assessment of Australian Oil Refinery**

| Criterion | Assessment |
|---|---|
| Historical significance | The Australian Oil Refinery is historically associated with the expansion of the oil refining industry in Australia in the mid-twentieth century, and more broadly with the rapid expansion of motorised transport and associated industry in the post WWII era. It was one of only three crude oil refineries to have operated historically in NSW, the others being the Shell refinery at Clyde (originally John Fell and Company) and the BORAL refinery at Matraville. Its closure in 2014 signalled the end of operational crude oil refineries in NSW.<br>Throughout its history, the refinery made important contributions to the economic development of NSW, providing a significant proportion of all transport fuels used within the State. It began operating in 1956 as the Australian Oil Refinery, the largest facility on the Kurnell Peninsula. The refinery underwent several major periods of expansion in the 1960s and 70s, responding to increasing consumer demand for fuel, better motor engine performance, and the inception of locally produced crude from new oil fields in the Bass Strait. Other later upgrades responded to health, safety and environmental standards, and associated government regulations.<br>**Level of significance: State** |

| Criterion | Assessment |
|---|---|
| Historical associations | The Australian Oil Refinery has a strong association with the Caltex (now Ampol) brand of petroleum products, and the philanthropic activities of Caltex in the local area.<br>The group of six staff houses within the original Australian Oil Refinery complex are associated with the work of architect Harry Seidler, who is generally regarded as Australian's best-known modernist architect in the post-World War II (WWII) era.<br>**Level of significance: Local** |
| Aesthetic/ Technical significance | The refinery is important in demonstrating key elements of oil refining technology introduced to Australia in the post WWII era. The refinery operated using a combination of original and updated plant and equipment, including three elements of plant from the original process line (Crude Distillation Unit No. 1, Fluid Catalytic Cracking Unit No. 1, and the Polymerisation Unit) and the original power plant.<br>The refinery site also retains its original layout and some elements of original supporting infrastructure, including the Kurnell wharf, tank farm, workshops, stores, cafeteria, laboratory, administrative and amenities buildings, and onsite staff housing. Each of these elements has been incrementally modified, upgraded and in some cases adapted to new uses as part of the ongoing character, representative of the technologically expertise and optimistic social outlook of the 1950s and the post-WWII era.<br>Administrative and amenities buildings within the original Australian Oil Refinery complex and the late Australian Lubricating Oil Refinery were designed by notable post-WWII architectural firm Bunning and Madden. The overall grouping of administrative and amenities buildings designed by Bunning and Madden have aesthetic significance as important examples of mid-twentieth century modernist architectural design and construction in an industrial setting in NSW and are illustrative of progressive nature of Caltex when the refinery was established.<br>However, the three buildings proposed to be demolished (the Storehouse, the Workshop and the Central Control Building) are now in poor condition. Their architecture is simple, with few features that can be readily interpreted as belonging to the time of its original construction. As original buildings of the oil refinery they are of historical importance and were photographically recorded both internally and externally in 2014. However, none of the buildings possess any significant aesthetic or technical qualities and are therefore not considered to be of aesthetic or technical significance.<br>The ALOR cafeteria and amenities buildings also incorporate sculptural panels with significant aesthetic value, representative of a desire to introduce a human element to the otherwise austere, machine-age character of the modernist buildings.<br>A group of six houses within the original Australian Oil Refinery complex were designed by major Australian post-WWII architect, Harry Seidler. The houses have aesthetic significance as a local example of Seidler's group housing project, designed to promote modern economies through mass-production. Seidler introduced variety and privacy to the group by reversing the plan of some of the houses, and by the subtle placement of solid and pierced brick screen walls around and garages between the buildings.<br>**Level of significance: State** |

| Criterion | Assessment |
|---|---|
| Social significance | The Kurnell Refinery site, and individual work areas within the site, has strong or special associations for former employees. The physical appearance, smell and sounds of the site are commonly associated with the development of individual and collective skills and life histories. The physical appearance of the place can trigger memories of special people or events, such as the installation of new technologies, personal advancement to a new job or level of skill, or the discovery and repair of a fault at the plant.<br>Historic images and documents regarding the history of the site can also have strong or special associations for former employees. The Kurnell Refinery Library contained staff-collected images and magazines, which provided an important social document of the people who worked at the plant, their social experiences, and the refinery's social and philanthropic initiatives in the broader community. Some of this (or similar) information is now with Sutherland Shire Library.<br>The Kurnell Refinery has strong associations with the Kurnell community and was one of the largest employers in the local area. During its tenure of operation at the refinery, Caltex took active steps to support the health and well-being of its employees and many employees worked their whole working lives on the site. Caltex was also a regular sponsor of other social initiatives in the broader community.<br>**Level of significance: Local** |
| Research potential | While operational, the physical evidence of the Kurnell Refinery plant and the knowledge and experience of the operational staff had the potential to yield information about the technology which was not available from other sources. Following closure of the plant, any remaining machinery, equipment, signage and other ephemera may provide an important industrial heritage reference collection, which could contribute to future interpretation and/or understanding of the refining technology used at the site.<br>There is little to no potential for sub-surface archaeological relics which predate the operation of the refinery to be present on the site.<br>**Level of significance: State** |
| Rarity | Following the closure of Shell's Clyde refinery in 2012, the Kurnell refinery was the only operational oil refinery in NSW. Following its closure in 2014, there are no operational refinery sites in NSW. Since the closure and removal of drawings, photographs and other memorabilia, there is therefore no rarity value remaining on the site.<br>The item therefore does not fulfil this criterion. |
| Representative value | While standing, the Kurnell Refinery was important in demonstrating the principal characteristics of a mid-20$^{th}$ century Australian oil refinery. However, since its demolition, the item does not fulfil this criterion. |
| Intactness and integrity | The Kurnell Refinery was mostly demolished in 2014, removing most of the physical evidence. The Australian Oil Refinery site is now classified as an archaeological site on the Sutherland Shire LEP 2015. |
| **STATEMENT OF SIGNIFICANCE** | The Kurnell Refinery began operating in 1956 as the Australian Oil Refinery, the largest industrial facility then built by a private enterprise in the State, and the first major industrial facility on the Kurnell peninsula. It is historically associated with the expansion of the oil refining industry in Australia in the mid-20$^{th}$ century, and more broadly with the rapid expansion of motorised transport and associated industry in the post WWII era. It is only one of three crude oil refineries to have operated in NSW. |

**Comment**

Heritage NSW have requested a copy of the Caltex Kurnell Refinery Heritage Management Strategy (Australian Museum Consulting, 2014) is provided to them.

*Response*

The Caltex Kurnell Refinery Heritage Management Strategy (Australian Museum Consulting, 2014) has been provided separately for Heritage NSWs review and records.

### 4.4.2 Aboriginal heritage

**Comment**

Heritage NSW notes that the AHIMS search cited is greater than 12 months old at the time of submission and recommends that an updated AHIMS search is provided as per Requirement 1b of the Code of Practice, which requires AHIMS searches less than 12 months old. Should results of the AHIMS search identify any restricted sites, AHIMS should be contacted to confirm that these site/s would not be impacted by the proposal.

*Response*

An updated search of the AHIMS database was undertaken on 30 October 2025 for a 4 x 4 km area centred on the Project Area. A total of 78 Aboriginal archaeological sites were identified within the search area, comprising 47 middens, 20 open artefact sites (i.e. artefact scatters and isolated artefacts), one with an associated area of Potential Archaeological Deposit (PAD), five areas of PAD, three burials, one resource and gathering site, one oven, and one rock engraving (refer to Figure 4-22).

None of the previously recorded sites are located within the Project Area, with the closest being a PAD, “Captain Cook Drive PAD 1” (AHIMS ID#52-3-2061), located 80 m to the west of the Project Area.

**Comment**

Section 10.2 of the ACHAR notes that while the surface landscape of the refinery has been significantly modified, the majority of the study area has moderate archaeological potential to contain subsurface archaeological deposits. Heritage NSW has requested the assessment is updated to include:

- Mapping identifying areas of low, moderate, and high archaeological potential as relevant, with justification for these assessments.
- An assessment of the potential impact to Aboriginal cultural heritage based on the proposed works.

*Response*

Sensitivity mapping has not been undertaken to divide the Project Area into discrete zones of sensitivity (i.e. low, moderate, and high) as the potential for Aboriginal archaeological deposits lies beneath extensive fill. The depth and extent of intact soils are currently unknown, and no subsurface data is available to support any meaningful differentiation. Any such division would therefore be speculative. Accordingly, the area is treated as a single zone of sensitivity.

Notwithstanding the above, it is noted that the majority of works would be completed within the upper, disturbed/ fill layers of the Site, which are assessed as having low archaeological potential.

Consideration of the proposed construction activities suggests that impacts to Aboriginal archaeological deposits and/or objects within the Project Area could occur where proposed excavations extend below fill layers and into intact sand deposits. Accordingly, an ACHMP is proposed to manage these potential impacts.

Refer to the ACHAR (Appendix J) for further detail.

**Comment**

In relation to the recommendations provided in Section 12.1, Heritage NSW have asked for clarity on why monitoring of excavation by Registered Aboriginal Party representatives in areas of archaeological potential is proposed rather than a program of test excavations.




**Figure 4-22 AHIMS sites – Vicinity of the Project Area**

*Response*

A Registered Aboriginal Party representative would be engaged to monitor the works, where proposed excavations extend below fill layers and into intact sand deposits. This would be determined during development of a detailed subsurface intrusive works program, during which, a map would be prepared identifying locations where proposed excavations extend below fill layers and into intact sand deposits.

Monitoring, rather than immediate test excavation, is considered an appropriate management measure for the following reasons:

- During the visual inspection of the Project Area on the 5 December 2024, the La Perouse Local Aboriginal Land Council (LALC) specifically requested that monitoring be undertaken.
    - Due to operations at the terminal and the potential for contamination, there may be health and safety risks associated with excavations within areas of the Project Area.
    - The location and depth of intact soils remain uncertain, and monitoring provides a practical means of managing these uncertainties while enabling responsive mitigation if archaeological deposits are identified. Any intact profiles are likely to occur beneath deep fill layers and within narrow excavation footprints, making pre-emptive test excavation both logistically challenging and potentially unsafe.
    - Monitoring is a commonly accepted and effective mitigation measure in comparable projects across NSW where archaeological potential is uncertain or constrained by site conditions.

Refer to Appendix J for further detail.

**Comment**

Heritage NSW have requested that Section 12.1.4 of the ACHAR is revised to state that any required reporting under an ACHMP would be provided to all Registered Aboriginal Parties as a standard, rather than only upon request.

*Response*

Section 12 of the updated ACHAR has been revised to state that any required reporting under the ACHMP would be provided to all Registered Aboriginal Parties as a standard, rather than only upon request. This has been reflected in mitigation measure J14, which has been updated to include the following: "*An Aboriginal Cultural Heritage Management Plan (ACHMP) would be prepared in consultation with Registered Aboriginal Parties and Heritage NSW, and implemented for the proposed modification*."

**Comment**

Heritage NSW advise the inclusion of the following in any ACHMP post-approval:

- Criteria for the assessment of any Aboriginal sites or objects as low, moderate or high significant to inform management.
- An outline of the process which would be followed, or the assessment and management of any human remains, if identified.
- Requirement to consult with Heritage NSW regarding the management of any sites assessed as having moderate or high significance, and where any unexpected finds are made during works.

*Response*

Section 12 of the ACHAR details information to be included in the ACHMP. In the updated ACHAR, the following has been revised to incorporate:

- A significance criterion (low, moderate, or high) to guide site management: The significance of any Aboriginal archaeological deposits identified would be assessed using the criteria outlined in *Heritage NSW's Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (NSW DECCW, 2010).

- A requirement for consultation with Heritage NSW for sites of moderate or high significance or any unexpected finds during works:
    - Objects/ sites assessed as of moderate significance would be subject to collection and appropriate analysis by a qualified archaeologist and RAP representative. Other forms of mitigation (i.e., detailed recording, test or open area excavation) may be implemented if considered appropriate/ feasible, taking into account Work Health and Safety (WHS) considerations and the nature of proposed impacts. The extent of other forms of mitigation would be determined through consultation between Ampol, Registered Aboriginal Parties, Heritage NSW, and an appropriately qualified archaeologist.
    - Management of objects/ sites assessed of high scientific significance would be determined through consultation between Ampol, Registered Aboriginal Parties, Heritage NSW, and an appropriately qualified archaeologist.

These measures have been incorporated into mitigation measure J15 (relating to the identification of Aboriginal archaeological deposits).

Section 12.1.1 describes management of human skeletal remains and the process to be followed in the event they are determined to be of pre-contact or historic Aboriginal. No changes have been made to the text. However, mitigation measure J15 (relating to management and reporting of suspected burials or human remains) and been renumbered as J16.

Refer to Appendix J and the updated consolidated list of mitigation measures (Appendix C) for further detail.

## 4.5 NSW DCCEEW – Water Group

DCCEEW Water provided a submission in response to the exhibition of the Modification Report. The comments raised by DCCEEW Water in their submission are summarised and addressed below.

### 4.5.1 Water supply, take, and licensing

**Comment**

DCCEEW Water have stated that insufficient information has been provided to confirm potential groundwater inflow volumes during construction and ongoing operation of the Site. DCCEEW Water have noted that while the Modification Report mentions the exception for water take for less than 3 ML a year (Schedule 4 Clause 7 of the *Water Management (General) Regulation 2018*), no estimations of water take have been provided to confirm the applicability of the exemption.

DCCEEW Water have requested that the maximum annual volume of water take due to aquifer interference activities must be quantified, the ability to acquire sufficient water entitlement is demonstrated, unless an exemption applies.

DCCEEW Water have stated that under the *Water Management Act 2000* (WM Act), if groundwater is intercepted a water access licence (WAL) must be obtained to account for the maximum predicted water take for construction and operation activities unless an exemption applies under the *Water Management (General) Regulation 2018.*

*Response*

In response to agency submissions, a groundwater assessment has been prepared (refer to Annexure A of Appendix F). This assessment presents a conservative estimate of groundwater ingress and groundwater drawdown extent during dewatering activities.

The estimate has been conservatively overestimated. Based on available onsite measurements, the hydraulic conductivity of soils within the Site typically range between 20 and 50 m/day, with five samples indicating that hydraulic conductivity is over 100 m/day. Intersecting these high permeability zones would increase groundwater ingress. To allow for the evaluation of drawdown impacts, the higher hydraulic conductivity values were used in all calculations throughout the Site. Groundwater ingress rates would depend on actual sediments intersected, saturated thickness, plus anisotropy (the vertical hydraulic conductivity of the sand).

The conservative estimate of groundwater take during Stage 2 works is 96 ML, and 260 ML during Stage 3 works. Over a five year construction period, this equates to 71 ML per year.

Therefore, under the conservative assessment completed, dewatering required for the proposed excavation works could exceed the 3 ML per annum threshold for a WAL to be required. The anticipated drawdown extents would be reviewed once the construction program is finalised. Additionally, the groundwater assessment has identified a number of measures to help avoid and mitigate potential impacts.

Additional groundwater take is not proposed during operation of the modified terminal.

### 4.5.2 Groundwater impacts and dewatering requirements

**Comment**

DCCEEW Water have requested that, if the take of groundwater is found to be greater than 3 ML per year, impacts due to aquifer interference activities are assessed, including potential impacts on GDEs, in accordance with the *NSW Interference Policy and framework (2012).*

*Response*

GDEs have been identified close to the Project Area, as shown on Figure 4-23. This mapping indicates that the following ecosystems in proximity to the Site rely on groundwater:

- Marton Park Wetland, to the north. Mapped as a high probability terrestrial GDE and high probability wetland GDE.
    - PCT 4028 Estuarine Swamp Oak Twig-rush Forest was mapped in moderate condition along Solander Street (i.e., along the southern border of Marton Park Wetland) as part of the field investigations supporting the current assessment.
    - The State Vegetation Type Map (NSW DCCEEW, 2024) indicates the potential further presence of PCT 3972 Sydney Creekflat Wetland and PCT 3986 Coastal Sands Swamp Mahogany Rush Forest within Morton Park Wetland.
- Vegetation within Kamay Botany Bay National Park, to the east. The closest areas to the subject land are mapped as medium probability GDEs.
    - The State Vegetation Type Map (NSW DCCEEW, 2024) indicates the potential presence of PCT 3545 Coastal Sands Bloodwood Low Forest within these vegetated areas adjacent to the subject land. This matches the vegetation mapping undertaken by Biosis for areas along the eastern edge of the subject land.
- The wetland area in Zone 4 (mapped as high to medium probability terrestrial GDE and high probability wetland GDE) and Zone 5 (mapped as medium to low probability terrestrial GDE with patches of high probability).
    - PCT 3545 Coastal Sands Bloodwood Forest, PCT 3546 Coastal Sands Littoral Scrub-Forest, PCT 3638 South Coast Sands Bangalay Forest, PCT 3921 Coastal Sydney Sands Saw-sedge Wet Shrubland and PCT 3986 Coastal Sands Swamp Mahogany Rush Forest were mapped in Zone 4 as part of the field investigation supporting the current assessment.
    - The State Vegetation Type Map (NSW DCCEEW, 2024) indicates the potential further presence of PCT 3805 Southern Sandplain Heath, PCT 3812 Sydney Coastal Sandstone Headland Heath and PCT 3922 Sydney Coastal Sand Swamp Scrub.
- A natural retention basin is located in the south of Zone 4.
    - The same PCTs recorded or predicted to occur (via the State Vegetation Type Map) in Zone 4 are likely to occur within Zone 5.

Towra Point Nature Reserve, a listed Ramsar Wetland of international significance. Mapped as a high probability terrestrial GDE and high probability estuarine and near shore marine ecosystems GDE. The mapping also indicates that there is terrestrial vegetation that relies on groundwater within RPIP Mountain (high to medium probability GDE). This vegetation would be removed as part of the proposed modification.

Patches of medium probability GDE are present along the eastern boundary of the Site. The southern two patches were assessed within the Updated Biodiversity Development Assessment Report (Appendix I of the Submissions Report. Both were assessed as PCT 3545 (Coastal Sands Bloodwood Low Forest) (Regenerating).

A groundwater assessment has been undertaken and included in Annexure A of the Updated Soils, Groundwater, and Contamination Report (Appendix F) to understand the extent of groundwater drawdown due to dewatering of required excavations/ trenches. This concluded that temporary groundwater drawdown may occur within GDEs located to the south (in Zone 4 of the Site) and to the east and north east of the Site (just inside the boundary Kamay Botany Bay National Park). Drawdown within the national park would be negligible and within natural groundwater level fluctuations. Specific impacts to the GDEs due to groundwater drawdown has been considered in the Updated BDAR (Appendix I). Given the temporary nature of the works, the length of the construction program, and through implementation of mitigation, it is unlikely that there would be a permanent impact to the identified GDEs.

Table 4-12 includes the minimal impact considerations for the groundwater resources at the Site.

**Table 4-12 Minimal Impact Considerations**

| Minimal Impact Considerations | Assessment |
|---|---|
| Water Table<br>Less than or equal to 10% cumulative variation in the water table, allowing for typical climatic 'post-water sharing plan' variations, 40 m from any high priority:<br>Groundwater dependent ecosystems<br>Culturally significant site<br>Listed in the schedule of the relevant water sharing plan. | Variation is likely to exceed 10 percent variation. While Marton Park Wetland and other GDEs are mapped within the predicted drawdown extent, the GDEs are not considered a 'high priority' GDEs under Schedule 4 of the Water Sharing Plan for the *Greater Metropolitan Region Groundwater Sources 2023.* There are no culturally significant sites within the Project Area or the zones of influence for the excavations. |
| Water pressure<br>A cumulative water pressure head decline of no more than 2 m at any water supply work. | The identified water supply bores are not predicted to be impacted by drawdown generated during construction dewatering. |
| Water quality<br>Any change in groundwater quality should not lower the beneficial use category of the groundwater source beyond 40 m of the activity. | Dewatered groundwater would be collected and sent to the onsite WWTP in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater, as per the GWMP. |

To minimise the impact to GDEs, excavations/ trenches would be staged. Excavations/ trenches in closest proximity to GDEs would be open for the shortest period of time possible. The GWMP would also outline groundwater monitoring (water levels and quality) requirements, site-specific water level and quality trigger levels, and an associated TARP to allow for effective and quick responses.




**Figure 4-23 Groundwater Dependent Ecosystems**

**Comment**

Potential acid sulfate soils (PASS) have been identified at depths greater than 2 mbgl in parts of the Site, over 1,000 tonnes of PASS may be excavated, and water from PASS dewatering would be treated via the WWTP under EPL conditions. DCCEEW Water notes that no further information is provided regarding water quality management for PASS.

Other COPC include PHC, PFAS, and asbestos in soil. DCCEEW Water request a defined extraction volume and further description of the management of extracted groundwater to understand whether the WWTP has sufficient capacity to treat groundwater onsite, or whether it will need to be transported to a licensed offsite waste facility.

*Response*

The wastewater system, including the WWTP, was originally designed to service the refinery which is no longer in operation. A 2017 study (AECOM, 2017) determined that the WWTP had a capacity of 11.7 ML per day, which was in excess of requirements at the Site[8]. As such, the dewatering estimate of is 96 ML during Stage 2 works and 260 ML during Stage 3 works, over the five year construction period, would be well within the capacity of the onsite by WWTP.

The WWTP is capable of correcting for pH, thereby maintaining pH levels within the EPL requirements. Water quality management for PASS would be included within the CEMP, as a part of the ASSMP.

The preferred method is to address ASS and PASS at the excavation. A draft ASSMP has been prepared and is provided in Appendix E2 (refer to Section 4.1.6). This has been prepared to support the effective management of environmental and waste-disposal risks associated with excavating ASS during excavation works.

A detailed and site-specific ASSMP would be prepared once the final excavation methodology and staging details are confirmed.

Testing for COPCs would also be undertaken at the excavation to confirm that this water can be appropriately treated in the WWTP. Groundwater that cannot be treated at the WWTP would either be pre- or post-treated by another method, disposed to an appropriately licenced liquid waste facility, or be addressed through a risk assessment.

The decision to undertake onsite treatment or transport groundwater to a licensed offsite facility, if required, would be informed by the actual groundwater conditions encountered, which would be verified as part of the site investigations.

### 4.5.3 Activities on waterfront land

**Comment**

DCCEEW Water have stated that the proposed modification works within waterfront land must be in accordance with the Guidelines for Controlled Activities on Waterfront Land (NSW DCCEEW, 2025b). This includes excavation and remediation works, including temporary stockpiles, proposed on waterfront land (i.e. within 40 m of mapped coastal wetlands).

*Response*

The Guidelines for Controlled Activities on Waterfront Land (NSW DCCEEW, 2025b) relate to controlled activities carried out in, on or under waterfront land, regulated by the WM Act. As a State Significant Development (SSD), the approved project and the proposed modification are not classified as controlled activities and therefore do not require a water supply work, water use approval, or controlled activity approval under Section 4.41 of the EP&A Act.

[8] Flow measurements indicated that the annual average flows to the WWTP, including wet weather flows, was 2.5 ML per day.

Despite this, an additional mitigation measure (C39) states, "*Where reasonable, take practicable measures to ensure that no more than minimal harm is caused to waterfront land (i.e. within 40 m of mapped coastal wetlands) during excavation, remediation, or temporary stockpile activities*," has been developed to manage potential impacts to waterfront land. Further, mitigation measure E9 would require that stockpiled waste be "*Located >40 m away from any sensitive receivers, heritage, ecological areas and watercourses, including mapped coastal wetlands*."

Refer to Appendix C for a full list of updated consolidation mitigation measures.

## 4.6 South Eastern Sydney Local Health District (NSW Health)

NSW Health provided a submission in response to the exhibition of the Modification Report. The comments raised by NSW Health in their submission are summarised and addressed below.

### 4.6.1 Air quality

**Comment**

NSW Health supports the recommendations of the EPA (DOC25/557257-12, 14 August 2025) for the monitoring and implementation of a Trigger Action Response Plan to ensure sensitive receivers are protected from dust during construction due to the scale of earth moving and exposed land.

*Response*

Following review of agency and community submissions, the mitigation measures have been updated to incorporate a TARP as a sub-plan of the AQMP. The TARP would be used in conjunction with real-time $PM_{10}$ monitoring to allow the appropriate site personnel to respond with additional management and mitigation measures.

Refer to Section 4.2.4 for further detail.

### 4.6.2 Noise and vibration (construction)

**Comment**

NSW Health recommends adoption of all reasonable and feasible measures to minimise noise impacts on homes and other sensitive receptors, noting the proximity of a school and preschool to the works, and the importance of adhering to established health-based noise limits so as to not interfere with learning, sleep and mental health.

*Response*

Construction mitigation measures have been recommended to manage the potential construction noise impacts. These would include relevant feasible and reasonable noise mitigation measures as per the ICNG (DECC, 2009), a monitoring program to assess performance against relevant noise and vibration criteria, and arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures.

Refer to the Updated NVIA (Appendix H) and Section 4.2.2 for further detail.

### 4.6.3 Remediation

**Comment**

NSW Health notes the potential for health benefits from the remediation of the Site in the long term by reducing pathways for human exposure to hazardous substances including petroleum hydrocarbons, asbestos and PFAS that are currently at risk of uncontrolled offsite movement.

*Response*

NSW Health's comments are noted. The proposed remediation works intend to address contaminated areas and minimise the potential for hazardous substances to migrate offsite. This approach supports both environmental protection and public health by reducing exposure pathways associated with petroleum hydrocarbons, asbestos, and PFAS.

## 4.7 Ausgrid

Ausgrid provided a submission in response to the public exhibition of the Modification Report. The comments raised by Ausgrid in their submission are summarised and addressed below.

### 4.7.1 Presence of Ausgrid-owned infrastructure

**Comment**

Ausgrid advise that underground cables and overhead powerlines are present in the vicinity of the proposed modification. Ausgrid outlines the avoidance parameters for works in proximity to such infrastructure.

Ausgrid requires that due consideration be given to the compatibility of proposed modification with existing Ausgrid infrastructure, particularly in relation to risks of electrocution, fire risks, Electric & Magnetic Fields, noise, visual amenity and other matters that may impact on Ausgrid or the proposed development. Ausgrid advise that the proponent must continue discussions regarding any new connections and load requirements to the Site directly with Ausgrid and submit a connection application to Ausgrid as soon as practicable.

*Response*

Ampol acknowledges the presence of Ausgrid services in proximity to the proposed modification works. Appropriate due diligence would be undertaken prior to the commencement of construction works to avoid above and belowground Ausgrid-owned infrastructure.

## 4.8 SafeWork NSW

SafeWork NSW provided a submission in response to the public exhibition of the Modification Report. The comments raised by SafeWork NSW in their submission are summarised and addressed below.

### 4.8.1 Process safety risks

**Comment**

SafeWork NSW have requested that DPHI include a condition of consent requiring Ampol to submit evidence demonstrating how it has implemented each of the six recommendations outlined in Section 1.1 of the Fire Safety Study Addendum (Annexure B of the Preliminary Hazard Analysis).

*Response*

Mitigation measure B2 has been updated to include, "*Ampol would submit evidence to DPHI demonstrating how the six recommendations outlined in Section 1.1 of the Fire Safety Study Addendum (Annexure B of the Preliminary Hazards Assessment [Appendix F of the Modification Report]) have been implemented*." Refer to the updated consolidated mitigation measures in Appendix C.

### 4.8.2 Cumulative process safety risks related to the future use of the Site

**Comment**

SafeWork NSW have stated that the Modification Report is limited in scope and does not consider cumulative or future risks associated with the broader development of the Site. SafeWork NSW are concerned that the incremental development of the Site via modifications risks deferring the assessment of cumulative hazards until the final stages of development, and that this could create difficulties for final approvals for new industrial operations.

SafeWork NSW have requested clarity on how cumulative and future risks arising from existing and proposed operations will be addressed, in particular, the potential for new industry to pose risks to the existing terminal, and for the existing terminal to pose risks to the new industry (for example due to a major incident).

SafeWork NSW note that comments have previously been provided regarding the broader project and future occupancy of the developed land (dated 17 June 2025), and that these comments have not been addressed or published.

*Response*

Ampol is not incrementally developing the Site through modifications. The proposed modification (SSD-5544 MOD-7) is focused on optimising terminal operations at the Site, and not the development of alternative land uses or the subdivision of land. Ampol has been open with the community and regulators (including SafeWork NSW) about the focus of the proposed modification (i.e. the terminal land use) and the need to a separate SSD application to facilitate the proposed KEIP (SSD-86799993). The approach to these two applications has been discussed with relevant agencies and refined as needed to provide further clarity to all stakeholders and the community.

The EIS for the KEIP will include a description of the proposed project and potential environmental and land use safety impacts on the community and surrounding environment. The EIS will include a Preliminary Hazard Analysis and assessment of cumulative impacts between the terminal, proposed Battery Energy Storage System (BESS) and industrial subdivision. This SSD application will assess the future risks associated with the broader development of the Site in a holistic and strategic manner which considers the Site as a whole.

The previous comments referenced by SafeWork NSW (dated 17 June 2025) were provided in response to the KEIP Scoping Report. These comments will be addressed within the KEIP EIS. The proposed modification focuses on the operation of the terminal only and does not consider the future use.

## 4.9 Fire and Rescue NSW

FRNSW provided a submission in response to the public exhibition of the Modification Report. FRNSW raised no comments or recommendations for consideration, or any requirements beyond that specified by applicable legislation. Therefore, no response is required.

## 4.10 NSW Rural Fire Service

RFS provided a submission in response to the public exhibition of the Modification Report. NSW RFS raised no objections to the proposed modification and no issues in relation to bush fire. Therefore, no response is required.

## 4.11 Transport for New South Wales

TfNSW provided a submission in response to the public exhibition of the Modification Report. TfNSW raised no requirements as the proposed development is unlikely to have a significant impact on the state classified road network. Therefore, no response is required.

## 4.12 DPHI Crown Lands

DPHI Crown Lands provided a submission in response to the public exhibition of the Modification Report. DPHI Crown Lands noted that no Crown land, roads or waterways in the vicinity of the proposal are affected by the Project. As such, Crown lands provided no further comments that require attention as part of this Submissions Report. Therefore, no response is required.

## 4.13 Sutherland Shire Council

Council provided a submission in response to the exhibition of the Modification Report. Council have provided advice on the application but are supportive of the consolidation of the buildings, equipment, and infrastructure from redundant areas of the Site into Zones 1 and 1A, as this will allow for the redundant lands identified as Zones 2 and 3 to become available for other uses that are commensurate with the zoning of the land. Council is also supportive of the remediation approach and the appointment of an independent auditor.

The comments raised by Council in their submission are summarised and addressed below.

### 4.13.1 Administrative comments

**Comment**

Council have requested that all plans must be uploaded using the .pdf file format as they have been unable to open the files uploaded with the Modification Report.

*Response*

Plans were uploaded to the NSW Major Projects website in shapefile format, in accordance with the GIS data specifications in the *State Significant Development Guidelines – preparing a modification report: Appendix E to the state significant development guidelines* (DPIE, 2022). Additionally, all shapefiles provided in this package are shown in various figures throughout the Modification Report and appendices, which were provided in PDF format.

**Comment**

Council note that as they have been unable to open plan files, the location of the heritage items to be demolished cannot be determined.

*Response*

Structures proposed to be removed of heritage significance are shown in Figure 4-1 of the Modification Report and the significance of potentially affected buildings and structures are listed in Table 7-22 of the Modification Report. The assessment of potential impacts upon non-Aboriginal heritage values has been updated to address agency submissions (specifically Heritage NSW) (refer to Appendix K).

Refer also to Figure 1-3, which shows infrastructure to be removed under the proposed modification.

**Comment**

Council note that the existing and proposed amendments to conditions use the word ‘would’. Council request the word ‘would’ be replaced with ‘must’ to provide certainty and avoid any ambiguity in what is being required or sought.

*Response*

Use of the word ‘would’ is addressed on page *i* of the Modification Report:

*“As a determination of the proposed modification will only be made after the Modification Report has been on public display and submissions considered, the future consolidated tense is used throughout this Modification Report when describing the proposed works, alternatives, and assessing impacts. “Would” is therefore used throughout the text in preference to “will.”*

*If all approvals are given for the proposed works to proceed, where applicable, all “would” references should be interpreted as “will,” subject to final conditions of consent.”*

**Comment**

Council request that rather than amending conditions to replace Caltex with Ampol, that conditions replace reference to the business identity/ name with ‘the Site operator’, as it is considered that referencing a business name in a condition is not consistent with the ‘Newbery principles’, and this will avoid another modification application in the event another operator takes control of the Site and/or the operations.

*Response*

Ampol have no intentions of ceasing operations at the Site. Use of the business name in conditions of consent are not referenced in the 'Newbery (sic) principles.' As the original conditions of consent for SSD-5544 included references to Caltex, it is proposed to amend these to Ampol, following a change of the company's legal name and rebranding between 2020 and 2022.

**Comment**

Council have requested that Condition G6 is amended to reflect standard hours of construction, and stated that reference to '*less sensitive times of the day*' is not defined and is ambiguous. In addition, Council state that the adjoining and nearby sensitive uses must have certainty regarding the construction activities, and their existing level of amenity must be maintained if not enhanced because of the works.

*Response*

The wording in mitigation measure G6 was updated for the Modification Report to align with approved Condition C19 of SSD-5544.

Following review of the submissions received, Ampol has agreed to undertake construction works in line with the standard construction hours defined under the ICNG (DECC, 2009). As such, construction works would comply with following hours:

- Monday to Friday – 7am to 6pm
- Saturday – 8am to 1pm
- Sunday and public holidays – No work is permitted.

Certain activities would be undertaken outside of these times, in line with approved Condition C20 of SSD-5544. Refer to the revised construction hours, set out in Section 3.1.2, and further detail provided in Section.

As such, mitigation measure G6 has been updated to reflect the standard construction hours defined under the ICNG (DECC, 2009). Refer to Appendix C.

It is acknowledged that construction works can cause temporary disruptions and impact amenity during the period of construction. Mitigation measures have been recommended to manage the potential construction noise impacts. These would include relevant feasible and reasonable noise mitigation measures as per the ICNG (DECC, 2009), a monitoring program to assess performance against relevant noise and vibration criteria, and arrangements for consultation with potentially affected neighbours and sensitive receivers, including notification and complaint handling procedures. Refer to the updated NVIA in Appendix H.

**Comment**

Council notes that significant and new works are proposed which were not part of the original application. Council requests that developer contributions be levied in accordance with Council's Development Contributions Plan.

*Response*

Ampol is seeking to modify development consent SSD-5544 under Section 4.55(2) of the EP&A Act. As described further in Section 1.4 and Appendix B of the Modification Report, and updated in line with the updated objective of the proposed modification (refer to Section 1.2.2), the proposed modification is substantially the same development as the approved project in that:

- The proposed modification is a continuation of the approved project, which aimed to convert the Kurnell Refinery to a "Finished Product Terminal." The primary function and purpose of the Site to operate as a finished product fuel terminal would be supported by the proposed modification.

- The objective of the approved project was and remains "*to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell*." The works proposed under the proposed modification works would meet this objective by removing redundant infrastructure and relocating or augmenting operational infrastructure within a more manageable and focused operational terminal area. These works would reduce the commercial burden of managing redundant or aging terminal infrastructure and support the maintenance of key infrastructure for site safety purposes.

On this basis, Ampol is seeking to modify the development consent for SSD-5544, pursuant to Section 4.55 of the EP&A Act. The works proposed are not significant or new in the context of the works that have been completed under SSD-5544 in the past. As the focus of the modification is the existing terminal land use, developer contributions are not appropriate.

**Comment**

Council do not understand why a corporation brand and reference to a model type of equipment is incorporated in Condition H30.

*Response*

Mitigation measure H30 relates to the retrofitting of existing equipment at the Site to meet performance standards: *Tier 1 US EPA Nonroad Compression-Ignition Engines: Exhaust Emission Standards* (EPA-420-B-16-022). The existing equipment model in use at the Site has been specified, as this will be relocated to the FWS Relocation Area.

Mitigation measure H30 has been updated to include, "*If another make or model is used, the new equipment must achieve the same or better environmental performance*."

### 4.13.2 Administrative comments unrelated to the proposed modification

**Comment**

Council anticipate that the Site's EPL 837 would be amended to only apply to the proposed Zones 1 and 1A, excluding areas designated for future land uses. Council requests that this be taken into account in the assessment of any future development applications.

*Response*

The proposed modification only applies to the terminal land use. No changes to the land controlled under the EPL are proposed at this time.

**Comment**

Council have requested that the Modification Report be amended to provide an assessment against the controls in the Sutherland Shire Development Control Plan 2015.

*Response*

Section 2.10 of the *State Environmental Planning Policy (Planning Systems) 2021* states that Development Control Plans do not apply to state significant development. As such this review is not required.

**Comment**

Council have stated that the details on why a BDAR Waiver would be sought as 5.36 hectares of vegetation is proposed to be removed should have been addressed in the Scoping Report for the BESS.

*Response*

Noted, however the BESS is a part of the subsequent development application for the KEIP project (SSD-86799993) and not relevant to the proposed modification. Following consultation with government agencies the SSD application for the KEIP will be supported by a project specific BDAR not a BDAR Waiver.

The BDAR for the proposed modification has been updated and is provided in Appendix I.

### 4.13.3 Clarification on the proposed modification

**Comment**

Council note that the location of new buildings and site improvement works have not been confirmed, and certain design elements would be confirmed during detailed design. This includes:

- The location of the new OWS pump station and emergency tank in Zone 2, where two options have been considered
- Relocated FWS in Zone 1, where two options within the overarching FWS Relocation Area have been considered.

Council request that detailed plans are provided to enable a comprehensive assessment of potential environmental impacts associated the proposed modification works, including all ancillary infrastructure required to be installed (i.e. pipelines, ancillary pumps, etc.).

Council have requested that the application confirm the locations of all buildings, infrastructure, services, works to be demolished and/or constructed, rather than the indicative locations indicated on page 129.

*Response*

The site improvement works and the location of new buildings (including options) have been confirmed, and are shown on Figure 1-4.

The Modification Report stated that the following would be confirmed during the detailed design phase:

- Selection of the preferred location for the relocated FWS (new firewater tank, pumphouse, and water pipelines) in Zone 1
- FWS equipment specifications and noise mitigation measures
- Selection of the preferred location for the OWS pump and emergency storage tank in Zone 2
- Final location and specification of the OSD in Zone 3
- Certain design aspects of the proposed buildings, i.e. to include measures to manage light spill
- The use of cranes and necessary approvals.

The Modification Report has considered and assessed design options for the proposed modification. It is typical for state significant projects to assess potential options and maximum design scenarios, and to subsequently receive approval or consent for that optionality. This optionality allows further design solutions to be developed, additional innovations to be considered and facilitates a competitive process between technology providers and contractors ahead of construction. While the preferred options would be confirmed during detailed design, the assessment has been conducted to capture the maximum potential extent of impacts for the options presented in the application. As such, the preferred option selected would be required to remain within the parameters already assessed and meet the necessary performance objectives.

Refer to Section 1.4 and Appendix B1.

**Comment**

Council notes that Stage 4 (Grading) of the proposed modification involves landform alterations within Zone 2 and 3 to prepare the Site for future uses. Council requests that landform alterations be limited to works necessary to address onsite contamination, as broader works linked to future uses are premature and should instead be considered at subdivision or through a separate application.

*Response*

Following discussions with agencies, changes to grading and inclusion of capping have been removed from the proposed modification, except for the area referred to as RPIP Mountain. Following excavation of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works.

Please refer to Section 3.1 and Appendix B1.

**Comment**

Council have stated that the height of the new 'fit for purpose' warehouse in Zone 1 (Page 29 of the Modification Report) is not specified. Council have also stated that the location of this building must be known, not a matter to be confirmed following the determination.

*Response*

Pages 29 and 30 of the Modification Report describe that the new fit for purpose warehouse would be '*approximately 32 m by 25 m, with an awning of 35 m by 10 m, and up to 8 m tall.'* The height of the warehouse would be a maximum of eight (8) m tall.

Pages 29 and 30 also confirm the proposed location for the new warehouse is to the north of Pipeway A, as shown on Figure 4-1 of the Modification Report and Figure 1-4 of this report.

**Comment**

Council refer to the demolition of existing buildings that would be undertaken to the ground level and, 'where practical,' their slab, foundations and footings be removed. Council state that this is not supported and that buildings to be demolished must be confirmed as part of the scope of works. Council also state that if a building is demolished, all foundation systems, slabs, ancillary and supporting infrastructure must be removed in full, rather than leaving building elements *in situ*, to ensure that the latter development of this land is free from any impediment and does not burden a future landowner or developer with unnecessary costs and/or design issues.

*Response*

The buildings to be demolished have been confirmed and were shown on Figure 4-1 of the Modification Report and are shown on Figure 1-4. Page 29 of the Modification Report states that, "*Each structure proposed for demolition would be demolished to ground level and, **where possible**, their slab, foundations, and footings removed*." This wording has been used because, in some cases, complete removal of slabs, foundations, or footings may not feasible due to underlying / nearby contamination controls or engineered containment systems that must remain in place. In other situations, certain structural components may need to be retained because removing them would be unnecessary or impractical. Subsurface components on buildings and structures are not always removed when buildings are demolished, deep foundations or piles are often cut off and left in situ, where their removal is impractical, impossible or not feasible.

**Comment**

Council have requested information on the future use of the new storage shed to be constructed in Zone 1A to ensure minimal environmental and amenity impacts. Council have also noted that as Zone 1A is located adjacent to residential zoned land, and that impacts associated with the operation and use of the shed could be mitigated if located in a less sensitive location.

*Response*

Page 30 of the Modification Report states that the new storage shed would be used '*to store boats and emergency aquatic spill response kits.'* The new shed is required in Zone 1A to support activities on the wharf. Such equipment is currently stored in a warehouse in Zone 1, which is considered an inefficient location from an operational perspective. Storing boats and emergency aquatic spill response kits closer to the wharf and the marine environment would reduce response times if an incident occurred and is an appropriate use of the E5 Heavy Industry zoned land.

As described in Section 4.1.1, the shed would be approximately 18 m by 14 m in area and no more than 4 m tall. Concept drawings of the proposed storage shed are provided in Figure 4-4 and Figure 4-5. The proposed shed has a similar footprint to a number of residential buildings throughout the Kurnell township and would be shorter than the surrounding two storey residential properties. The shed would be adjacent to existing terminal infrastructure and storage equipment, it would be consistent with the industrial landscape character of the Site and Right of Way, and would be consistent with the residential structures in the wider Kurnell township in terms of mass and scale.

The proposed storage shed would only be used occasionally and would be subject to periodic maintenance. Following construction it would not increase the typical number of people accessing the wharf or the right of way. Noise from the Site would continue to be controlled by EPL 837.

Refer to the visual assessment in Section 4.1.4, the TTIA (Appendix L of the Modification Report), and the Updated NVIA (Appendix H) for further detail.

**Comment**

Council notes that the assessment contains inconsistencies regarding proposed ground levels:

*"Page 40 states that existing ground levels are to be maintained, whereas Page 38 indicates that levels will be increased by a 300 mm capping layer over contaminated areas.*

*Later in the report, it is detailed that 'levels across the Project Area would remain the same as existing' and 'grading would allow stormwater flows across Zones 2 and 3 to be directed to the existing SWS at the site and for flows in Zone 1 to be managed either by the SWS or the OWS as required'."*

Council requests that a matrix of cross sections at regular intervals be provided, showing both existing and proposed finished ground levels to clarify inconsistencies.

*Response*

As stated in Section 3.1 and Appendix B1, changes to grading and inclusion of capping have been removed from the proposed modification, except for the area referred to as RPIP Mountain. Following excavation of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works.

**Comment**

Council have noted that the application does not provide information and plans of the location and height of the biopiling mounds or detail if the mounds will be vegetated and/or what other treatments, measures, etc. would be used to minimise water runoff impacts and prevent windblown impacts.

*Response*

Biopiles would be established within the areas shown on Figure 1-5. The biopiles would be temporary and only used for the proposed remediation works. The height of the biopiles would not exceed 3 m. Biopiles are proposed to be constructed in the following location as required:

- Zone 2 former flare geobag area
- Zone 2 former land farm
- Zone 3 waste management slab.

The areas where biopiling is proposed have historically been utilised for remediation and/or waste management at the Site. As such, they are connected to the Site's OWS and have electricity connections. Two of these areas have concrete slabs (Zone 2 former flare geobag area and Zone 3 waste management slab). The Zone 3 waste management slab was previously approved for a commercial soil regeneration facility that utilised biopiling to convert hydrocarbon impacted soils into engineering fill (DA15/0761). As such, this area is highly suitable for biopiling.

The Zone 2 former land farm does not have a slab present. For this part of the Site, prior to setting out the biopiling areas, this area would be prepared with a clay base or high-density polyethylene liner. A compacted sand base would be established over the liner to enable adequate air exchange into the biopile.

When biopiling, nutrients or other soil amendments would be added to the biopiles. The addition of nutrients/ amendments, compost, microbes, and moisture (as appropriate) to the biopile and the movement of air with a blower through the material would stimulate aerobic microbial activity within the soils and promote the biodegradation of hydrocarbons.

The biopiles would be covered with an impermeable material to reduce stormwater ingress and dust creation. Measures to minimise the creation of dust and odour emissions during the construction of the biopiles would include:

- Covering surfaces
- Minimising exposed area
- Wetting down exposed soils
- Treatment of extracted vapours (with respect to both PHCs and asbestos in air)
- Dust monitoring or observations.

The biopile would be maintained under negative pressure with blowers to mitigate fugitive gas emissions to the atmosphere. Off-gas from the process would be passed through a high efficiency particulate air filter to prevent liberation of asbestos fibres followed by two granulated activated carbon filters to mitigate the potential release of volatile hydrocarbons. The first unit provides primary VOC adsorption, and the second acts as a polishing filter to allow remaining vapours to be released. Regular monitoring of the air emissions would confirm when exchange of air filters is required. Moisture, temperature, nutrients, oxygen, and pH would be monitored regularly and controlled to enhance biodegradation.

The biopiling base would be graded towards a collection point. Leachate from the biopiles would be sent to the WWTP (via the OWS system) for treatment prior to being discharged in line with the EPL 837.

Regular testing of the soil in the biopiles would occur to confirm when the soil has been remediated to an industrial/commercial standard for human health receptors in accordance with the remediation screening criteria outlined in Section 5.0 of the RAP and the ASC NEPM (NEPC, 2013). Following remediation of soil to this standard, the biopiles would be deconstructed and the soil would be reused onsite as backfill.

Biopiling would follow the guidelines set out in *NSW EPA's Best Practice Note: Landfarming* (NSW EPA, 2014b).

Refer to the RAP (Appendix E) for further detail.

**Comment**

Council notes that the proposed modification includes the augmentation of infrastructure which is related to the potential future land uses within Zones 2 and 3. Council requests these works form part of the subsequent application as they relate to future land uses.

*Response*

Ampol has removed aspects related to future land uses from the proposed modification, and to defer such changes to the subsequent development application that focuses on preparing the land to support uses consistent with the land use zoning: the KEIP project (SSD-86799993).

The augmentation of FWS infrastructure in the centre of Zone 2 may be required. These works are required to support the operation of the terminal and as such they align with the objective of the proposed modification, being to maintain the viable, safe, reliable, and sustainable operation of the Kurnell Terminal.

**Comment**

Council have requested further detail of proposed waste management including plans detailing the location of material storage areas, the location of all plant and equipment used, and reports provided to demonstrate minimal environmental, and amenity impacts to adjoining and nearby sensitive uses. They have requested that Ampol refer to Clause 21, Schedule 3 of the *Environmental Planning and Assessment Regulation 2021.*

*Response*

Schedule 3 of the *Environmental Planning and Assessment Regulation 2022* (EP&A Regulation) lists the criteria used to confirm whether a development should be considered 'designated development'. This is not relevant to this application as the proposed modification is part of a State significant development.

A Waste Management Area for surface and subsurface materials removed (e.g. concrete, metals/ reinforcement bar, drainage lines, electrical equipment) would be established in the area shown on Figure 1-3 to Figure 1-5. It has been proposed in the centre of the Site, over 580 m from the nearest residential receiver. Once material is removed or excavated, it would be sorted and stockpiled separately in this area prior to processing and/or removal for the Site or reuse onsite. The Waste Management Area would remain for the duration of the modification works.

It is estimated that the proposed modification would involve the processing of approximately 40,000 $m^3$ of concrete predominantly from slabs and asphalt. As described in Section 1.4 and Appendix B1, concrete would be crushed within the Waste Management Area and where appropriate, used as backfill during Stage 3 (Remediation) to reduce the soil deficit and to improve the geotechnical stability of the land. Concrete waste that cannot be used would be taken offsite for sale, recycling, or disposal.

In addition, contaminated soils would be stockpiled separately within the Waste Management Area shown on Figure 1-3 to Figure 1-5, depending on the type and concentrations of contamination present and the remediation technology required. Where it is not feasible to remediate the soils with the approaches described in Section 1.4 and Appendix B1, they would be disposed offsite untreated, and in accordance with their Waste Classification (NSW EPA, 2014a) to an appropriately licensed facility.

Where materials are classified as special waste – asbestos, or hazardous waste, these would be tracked via the NSW EPA's Integrated Waste Tracking Solution. Tracking of transport and disposal of high-risk or hazardous waste minimises potential harm to the environment and human health.

Redundant infrastructure would be cleaned, processed, and stored prior to reuse or removal from Site. Infrastructure and waste materials would be tracked in line with a Material Tracking Plan (see mitigation measure C5 in Appendix C).

The equipment required to process and transport waste materials during the proposed modification has been documented within the Modification Report and is also provided in the updated description of the proposed modification (refer to Appendix B1). The potential amenity impacts associated with the use of this equipment and the management of waste materials was also assessed in Section 7.12 of the Modification Report. Management and mitigation measures to address these potential amenity impacts are provided in Appendix C.

During the delivery of the proposed modification works, the management of waste would be controlled by the Waste and Resource Management Plan (WRMP), prepared as a sub-plan of the CEMP (consistent with the existing conditions of consent for SSD-5544 (C40)). In addition, Waste Classification and Imported Fill assessment letters would be prepared and approved by the NSW EPA-accredited Site Auditor. Once the proposed modification works are completed, waste management at the Site would be consistent with the approved project and managed in accordance with existing Ampol waste management protocols and in line with the Site OEMP.

The proposed waste management approach, including the location of waste management areas and implementation of mitigation measures through the CEMP and WRMP, would minimise potential environmental and amenity impacts to adjoining and nearby sensitive uses.

### 4.13.4 Contaminated land remediation

**Comment**

Council have suggested that due to the remediation methodology, future land use may require the capping layer(s) to be broken for the construction of infrastructure, building foundation systems, and possible basement parking. Council recommend that the consent must ensure that future landowners and/or developers are made fully aware of the contamination to ensure that there is minimal disturbance to the capped cells.

*Response*

As stated in Section 3.1 and Appendix B1, changes to grading and inclusion of capping have been removed from the scope of the proposed modification. The considerations raised by Council will be considered in any future development applications.

**Comment**

Council have requested that the timeframes for the remediation component of the proposed modification are clarified, as the KEIP Scoping Report stated that the remediation component of the proposed modification would take four years to complete.

*Response*

Section 4.3.1 of the Modification Report outlined the anticipated delivery program for the proposed modification. In the Modification Report, works were planned to commence in August 2025 and continue for about 12 months for infrastructure removal scopes and up to four years for remediation works. All works associated with the proposed modification, including remediation, were anticipated to be complete by July 2029.

Section 1.4 and Appendix B1 provides the updated anticipated construction program. Works would be staged in accordance with the indicative program in Table 3-1. Construction and remediation are anticipated to commence in 2026 and be completed by 2030.

**Comment**

Council's Contamination Officer has advised the remediation methods proposed are considered suitable to address the twelve AEC. Council requests that, following determination, a detailed RAP be prepared specifying which remediation method will be applied to each AEC. Of particular importance:

- Asbestos Management (Section 7.5.3.3 of the Concept RAP): All asbestos must be managed in accordance with relevant WHS legislation
- Offsite Disposal (Section 7.5.3.7 of the Concept RAP): Up to 40,000 m³ of contaminated fill may require offsite disposal. Council requests that:
  - Offsite disposal and importation of clean fill be a last resort
  - These measures be applied only when all other remediation strategies are unsuitable
  - The volume of soil removed or imported be minimised.

*Response*

The Conceptual RAP has been converted to a RAP to address submissions received during the exhibition of the Modification Report and refinements to the proposed modification (refer to Appendix E). (RWP(s)) would be developed following development consent, to support the various remedial actions. Input to these RWP(s) would be sought from the project team (including contractors and sub-contractors), Site Auditor, and Ampol during the preparation of these plans. The RWP(s) would package the RAP into practical steps to be followed to meet the RAP objectives in particular locations and would detail how success would be measured and achieved.

The proposed modification would involve the handling, excavation and movement of asbestos contaminated fill materials. The completion of these works would be based on the requirements of the *Work Health and Safety Act 2011* and the *NSW Work Health and Safety Regulation 2025.*

This would include an update of the Site's existing asbestos register and associated asbestos removal control/ management plan as outlined in *NSW Work Health and Safety Regulation 2020.* Additionally, an ASMP would be prepared as a sub-plan of the CEMP in line with the *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (NSW EPA, 2020a) to manage asbestos contaminated soils.

Excavation and movement (including construction/ dismantling of static biopiles) of asbestos contaminated fill materials would be carried out in adherence to *NSW's Guidance on Managing* Asbestos *in or on Soil* (SafeWork NSW, 2014) and the *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA* (WA DoH, 2021). Whilst biopiling would target hydrocarbon contaminants within soils, asbestos has been identified to be present within fill soils at the Site. As such, biopiling would be undertaken under appropriate occupational health and safety controls to prevent the incidental liberation of asbestos fibres into the atmosphere.

Refer to the RAP (Appendix E) on further detail on asbestos management during construction.

As part of the identification and selection of remediation options, consideration has been given to the hierarchy of options under the *National Environment Protection (Assessment of Site Contamination) Measures 1999* (NEPC, 2013). The volume of soil to be removed and imported would be minimised where feasible, in line with the remediation hierarchy. The removal of contaminated soil offsite would only occur when other remediation strategies are confirmed as unsuitable and the material/ fill/ soil cannot be treated and reused or managed onsite.

The volume of untreated soils that would require offsite disposal has been updated in the Section 7 of the RAP (Appendix E). Approximately 65,820 $m^3$ of contaminated soil or fill, material excavated from asbestos and PFAS source areas would require offsite disposal with a contingency allowance of 20,000 $m^3$ (i.e. total of up to 85,820 $m^3$). As detailed in Section 6 of the RAP, this would include all soils in Source Area Excavations 5 (PFAS), 6 and 7 (ACS). For other Source Area Excavations, it is expected that excavated soils would be remediated (via biopiling) and made suitable for onsite reuse.

Refer to the RAP (Appendix E) for further detail on the preferred remediation hierarchy and excavated soils to be removed from the Site.

### 4.13.5 Acid sulfate soils

**Comment**

Council notes that ASS are potentially located across the Site and that certain excavations may be up to 4.5 mbgl. Council recognises that Ampol has committed to completing soil sampling following determination of the proposed modification to confirm the presence of ASS and where ASS is found an ASSMP would be produced.

Notwithstanding this commitment, Council do not support this approach and, in line with Clause 6.1 of the *Sutherland Shire Local Environmental Plan 2015*, request that further information is provided prior to determination of the proposed modification.

*Response*

Review of the NSW ASS risk mapping indicates that the majority of the Project Area is listed as disturbed terrain above 4 metres Australian Height Datum (mAHD) (refer to Figure 4-24). The southern portion of Zone 3 is mapped as Low ASS Probability over 4 mbgl, and the north western boundary of the Project Area is mapped as Low ASS Probability between 2 and 4 mbgl. A recent investigation along the north western boundary of Zone 1 found no indicators of actual ASS, but PASS materials were encountered, presenting grey staining and sulphurous odours (AECOM, 2024). It is therefore possible that ASS or PASS may be encountered during intrusive works. Refer to Appendix E for further information.

A draft ASSMP has been prepared to support the proposed modification and is provided in Appendix E2 (refer to Section 4.1.6). This has been prepared to support the effective management of environmental and waste-disposal risks associated with excavating ASS during excavation works. This plan is based on a ASSMP produced for other works at the Site which was accepted by Council.

A detailed and site-specific ASSMP would be prepared and issued once the final excavation methodology and staging details are confirmed.

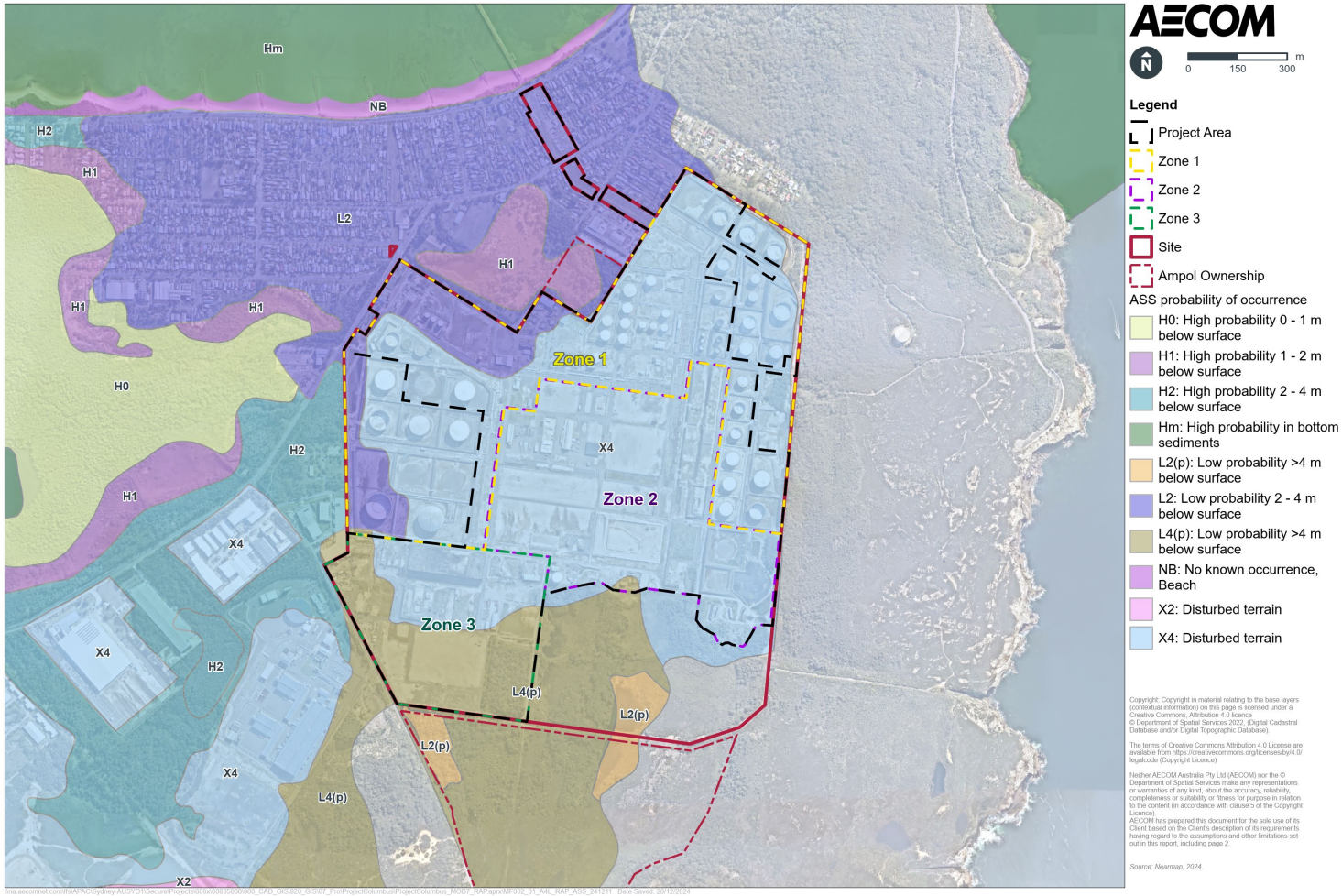



**Figure 4-24 Acid sulfate soils**

### 4.13.6 Groundwater impacts and dewatering requirements

**Comment**

Council notes that the installation of the new OWS pump station in Zone 2 would require excavation up to 4.5 mbgl, that temporary groundwater dewatering would be required during the construction phase, and such water would be appropriately treated in the WWTP.

Council states that it cannot be certain if the excavation would intercept the water table at this level.

*Response*

A groundwater assessment has been prepared to include estimates of groundwater interception associated with both pit and trench excavations. Refer to Annexure A of Appendix F.

Manual groundwater level measurements, collected at regular intervals between February 2023 and November 2024, at the monitoring bores across the Site, were reviewed. A summary of shallowest, deepest, and average groundwater levels within proximity to each key construction element of the proposed modification has been provided in the groundwater assessment, including the installation of the new OWS pump station and emergency storage tank in Zone 2 (refer to Figure 1-4). This confirmed that during excavation of the pit required for the new OWS pump station and emergency storage tank, a maximum depth of 4.5 mbgl, is likely to intersect groundwater and would require dewatering.

**Table 4-13 Groundwater level summary**

| Area | Shallowest groundwater level (mbgl) | Deepest groundwater level (mbgl) | Average groundwater level (mbgl) | Proximal groundwater monitoring wells |
|---|---|---|---|---|
| **OWS pump station and emergency storage tank (south of Zone 2)** | | | | |
| Option 1 | 0.73 | 1.14 | 0.98 | FTA_MW01, FTA_MW02, FTA_MW03 |
| Option 2 | 0.24 | 0.42 | 0.31 | SPA_MW02 |

Potential impacts due to groundwater drawdown would be temporary and managed through adherence to a GWMP, prepared as a sub-plan to the CEMP. The GWMP would include dewatering management measures for the extraction, storage, movement and treatment of groundwater encountered in excavations. Dewatered groundwater would be collected and sent to the onsite WWTP in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater. The GWMP would also outline groundwater monitoring (water levels and quality) requirements, site-specific water level and quality trigger levels, and an associated TARP to facilitate effective responses.

Refer to Appendix F for further detail.

### 4.13.7 Coastal wetland management

**Comment**

Council notes that aerial photography has revealed that a large rock-lined stormwater channel has been constructed onsite without approval, in an area mapped as wetland pursuant to *State Environmental Planning Policy (Resilience and Hazards) 2021.*

Council requests that any future development does not rely on this unauthorised drainage channel for stormwater disposal. Council further requests that the channel and all associated works be removed, and the land restored to pre-construction conditions. A long-term vegetation and land restoration management plan should accompany any future application for the restoration of the wetland environment.

Council further stipulates that the proposed SWS must be designed to capture and convey stormwater and surface runoff away from the sensitive vegetation areas mapped as Zone 4. All necessary measures must be implemented to prevent additional nutrient loading, stormwater, pollutants, and other impacts from being conveyed to this ecologically sensitive area.

Council further requests that the application demonstrate how sensitive environmental areas will be protected and future-proofed as part of this and any future applications, particularly to allow for other land use activities within Zones 2 and 3.

*Response*

This area was formerly a natural grassed drain, that was formalised by Ampol between March and April 2024 in order to mitigate buildup of sediment and invasive weed species, so that the quality of flows to the wetlands could be maintained (refer to Figure 4-26 and Figure 4-25). The drain was formalised by installing geo-textile fabric and stabilising with rock aggregate to prevent streambank erosion and downstream sedimentation. Historical water and sewer service plans dating back to at least 1973 (refer to Figure 4-26 and Figure 4-27) identify this drain in the same location. Surface water has historically drained through this area of the Site and continues to do so prior to and following its formalisation.

Direct changes to the drainage line are outside the scope of the proposed modification. Ampol will continue to consult with Council on how best to address this change.

As described in the Updated Surface Water, Wastewater, and Flooding Report (Appendix G), surface water from Catchment F flows to the south of the Site, and towards the coastal wetland area and natural retention basin via this existing drainage line. As a wetland, this area needs a level of continued surface water and groundwater flow to maintain ecosystem health. Thus, the volume, rate and quality of flows toward this wetland would be retained through implementation of stormwater management strategies outlined in Appendix G and Section 4.1.5.

Downstream waters and ecosystems may be impacted if surface water runoff carries nutrients, sediments, and organic and inorganic contaminants into drains and watercourses. Water quality mitigation measures would be implemented during construction to prevent additional nutrient loading, stormwater, and pollutants associated with the construction phase from being discharged into the coastal wetland in Zone 4. This would include sediment and erosion controls and dust suppression measures applied in accordance with the Blue Book (Landcom, 2004). Refer to the full list in Appendix C and Appendix G.

Once remediation activities are complete, the relevant areas (Zone 2 and 3) would no longer be contaminated or produce contaminated or oily water runoff. Existing surface water runoff from Catchment F would be of suitable quality for discharge into the coastal wetland in Zone 4.

As part of the proposed modification, the OWS network in Zone 2 would be removed, and flows redirected to the SWS. To prevent additional or new flows being directed towards the wetland area via the existing drainage line, a new SWS network would be installed that bypasses the southern natural retention basin and directs flows into the nearest existing SWS network within Catchment B. Refer to Figure 4-11.

Future land uses are outside the scope of the proposed modification. The subsequent development application for the KEIP project (SSD-86799993) will be supported by a detailed surface water strategy and subdivision plan that will demonstrate how offsite impacts of surface water, wastewater, and flooding impacts would be prevented.




**Figure 4-25 Formalise rock-lined stormwater channel (Source: ShireMaps, imagery captured 2024)**

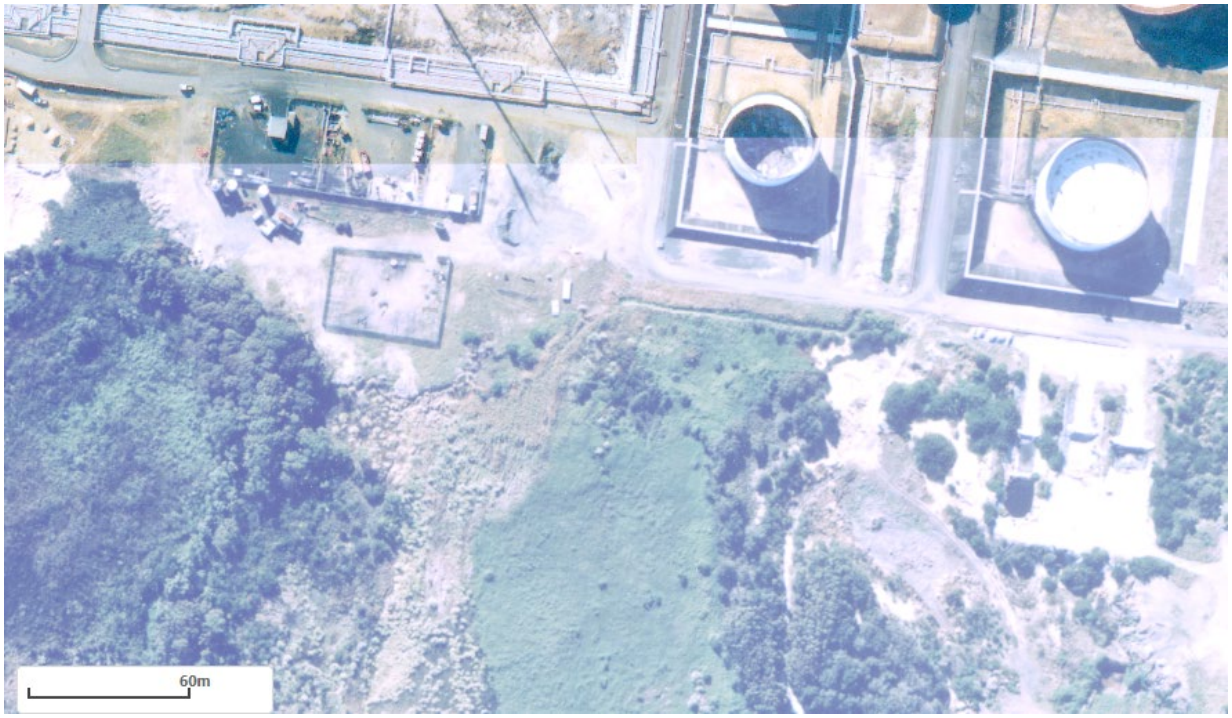



**Figure 4-26 Natural vegetated ditch drain (Source: ShireMaps, imagery captured 1994)**

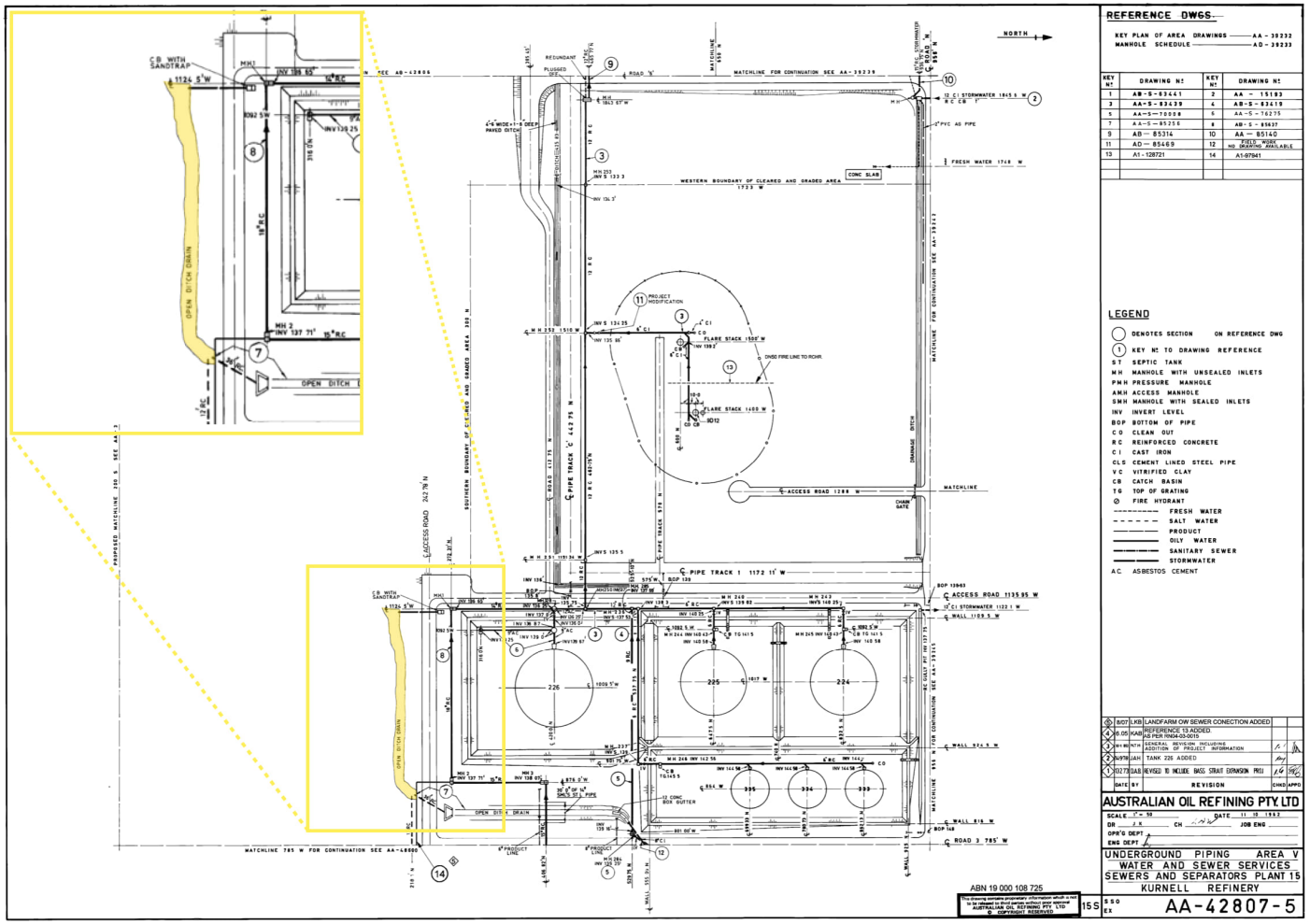



**Figure 4-27 Underground piping area V, water and sewer services, sewers and separators plant 15 – Kurnell Refinery (Source: Australian Oil Refining Pty Ltd., originally 1962, last update in 1973)**

### 4.13.8 Surface water and flooding

**Comment**

Council has requested further information to clarify the capacity of the OWS and whether the system has capacity to cater for future developments likely to be undertaken within Zones 2 and 3.

*Response*

The OWS captures, manages and treats potentially contaminated stormwater and wastewater from the terminal before directing it to the onsite WWTP for discharge via the Yena Gap pipeline under EPL 837.

Future developments would not have access to the OWS as this is required for the operation of the terminal.

**Comment**

Council notes that stormwater will continue to be discharged offsite into three receiving waterbodies: Quibray Bay, Botany Bay, and Marton Park. Council also notes that where the OWS is to be disconnected or removed, surface water would be redirected to the SWS and subsequently discharged into these receiving waterbodies.

Council requests further detail and/ or plans to demonstrate the measures and controls that will be implemented to maintain, or where possible enhance, water quality in these sensitive receiving environments.

Council further states, "*Given the scope of works proposed, it is considered an opportune time to revisit the disposal of water from the Site to ensure minimal impacts to the receiving waters of the Georges River, Botany Bay, the ocean, and Marton Park where Golden Bell Frogs* (sic) *reside*."

*Response*

The Updated Surface Water, Wastewater and Flooding Report (Appendix G) has been prepared to assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, supported by updated surface water modelling. Refer to Section 4.1.5 for a summary of this updated assessment, including the summary of surface water strategies to maintain flows into receiving waterbodies, including Coastal Wetlands.

The proposed surface water management strategies detailed in Appendix G are designed so that post-modification peak discharge rates from the Site would remain the same (or very close to) pre-modification discharge rates in a range of storm events up to and including the 1% AEP storm event under current and future climate scenarios (refer to the surface water modelling report in Annexure A of Appendix G).

Stormwater quality monitoring parameters and default trigger values have been also identified, based on Water Quality Objectives for the Georges River Catchment (DECCW, 2006). Should results exceed trigger values, an investigation would be undertaken to determine the cause and assess whether additional mitigation measures are required.

The assessment in Appendix G has been incorporated into the Updated BDAR (Appendix I), which concludes that no impacts to coastal wetlands would occur with the application of the additional mitigation measures outlined in Appendix G, and thus no further assessment of potential impacts to coastal wetlands from stormwater flows or surface water quality is required. Additional assessment on potential impacts to coastal wetlands as a result of groundwater impacts is provided in Section 4.2.4.

**Comment**

Council notes that the surface water assessment states '*The pollution of downstream waters and ecosystems may occur from surface water runoff carrying nutrients, sediments, oil, greases, and organic or inorganic contaminants into drains and watercourses.'* Council requests the development of relevant plans to understand the location, the extent of works, and design measures that will occur to minimise these potential impacts.

*Response*

Existing and proposed surface water management has been detailed in Figure 4-11 (Catchment B and F) and Figure 4-12 (Catchment E). Proposed SWS monitoring locations are provided in Figure 4-20. Refer to Appendix G for further information.

**Comment**

Council notes that the proposal would increase stormwater flows in Catchment E to Sir Joseph Banks Drive, requiring an additional 1,100 m³ of onsite detention.

Council requests further details on the location and design of the stormwater detention system, and confirmation that the capacity of the existing drainage system within the roadway has been assessed to ensure it can accommodate the anticipated water volumes.

*Response*

Refer to Section 4.1.5, which provides further details on the proposed OSD in RPIP Mountain.

**Comment**

The deletion of regular inspections of excavated areas and containment cell areas following rainfall events (mitigation measure F2) is not supported by Council.

Further, Council states that there is no justification for the deletion of '*regular inspections of erosion control structures and bunded areas*' from mitigation measure C10, and that the condition must be retained to ensure that the integrity of the existing bunds and the erosion control measures are maintained and fixed if any damage or failing is apparent.

*Response*

Various mitigation measures were identified through the assessment of the proposed modification. These measures were reviewed against the previously approved mitigation measures for SSD-5544. This review identified several instances of repeated measures or themes and duplication. Edits have therefore been made to the mitigation measures to remove duplication, update language and terms and include measures specific to the future management of the proposed modification (refer to Appendix C).

For instance, the bullet point in mitigation measure F2 titled, "*Regular inspection of excavation areas and containment cell area, including following rainfall events*," was deleted as it was a repetition of:

- The bullet point directly above in mitigation measure F2, "Regular inspection would be undertaken of soil stockpiles~~/~~ **and** excavation areas, including following rainfall events," and
- The bullet point in mitigation measure C10 related to the Groundwater Management Plan (GWMP) titled, "Regular inspection and testing of containment areas."

The bullet point in mitigation measure C10 titled, "*Regular inspection of erosion control structures and bunded areas*," was deleted and instead added into mitigation measure C1 related to the Soils and Water Management Plan to make the requirements of the plan and thereby the responsibilities of the applicant clearer. The requirement to inspect structures has not been removed.

**Comment**

Council notes that measures to minimise the loss of flood storage from the proposed works are provided, including retention of bunds in Zone 2 and completing earthworks in a manner that does not significantly alter existing ground levels. Council also notes that the Modification Report states areas requiring 300 mm of capping would first be excavated by the same depth.

Council requests further detail regarding these works, including clarification on whether additional fill would be required to contain contaminated areas.

*Response*

As described in Section 3.1 and Appendix B1, changes to grading and inclusion of capping have been removed from the proposed modification, except for the area referred to as RPIP Mountain and Source Area Excavation 5.

As shown in Figure 4-12, two separate OSD systems are proposed in Catchment E to maintain existing, pre modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% AEP event. The former CLOR pipeways would be utilised for stormwater detention at the north western corner of Catchment E and additional OSD storage would be included within the existing open channel that runs along the western side of RPIP Mountain, at the south eastern corner of Catchment E.

When required, additional fill would be brought to the Site from offsite sources for use in the Project Area. Soils from offsite sources brought onto the Site will be limited to the following:

- Virgin excavated natural material (VENM)
- Excavated natural material (ENM) as defined by the ENM Order, 2014 (NSW EPA, 2014c)
- Material covered under an NSW EPA specific Resource Recovery Order (RRO)
- Extractive materials sourced from legal quarries (not considered a waste as defined under the POEO Act).

### Comment

Council has stated that it is important that the proposed works have no adverse impact to flood behaviour and/or no adverse impact to stormwater runoff. Council considers the current Modification Report lacks the information required to enable a comprehensive assessment of flooding and stormwater impacts which must be provided prior to the determination of the application. Council has raised the following points:

1. The proposed new stormwater pump is not supported due to the potential failure of pumps in storm events
2. Additional excavation for capping is proposed to maintain existing surface levels to prevent loss of existing flood storage
3. Cross-catchment flows (that is, the re-direction of runoff to another sub-catchment) by regrading or pipe diversion are not supported
4. Peak flood levels (up to the 1% AEP event) must not be higher than existing
5. It is stated a number of times in the report that measures will be used to prevent ‘significant changes’, but the report does not quantify potential changes to evaluate impacts. This will need to be addressed, and greater certainty provided
6. It is noted that additional OSD is proposed to address peak flowrates, however a potential resultant increase in volume and duration of flow (sic)
7. Sediment and erosion controls must be installed and operated in accordance with the ‘Blue Book.’ This must be incorporated into the conditions
8. Pollutants in stormwater discharge from the Site should not be adversely affected due to changes in operation of the OWS and SWS.

### *Response*

Section 4.3.3 provides a summary of flooding impacts associated with the proposed modification. The issues and comments raised by Council regarding stormwater and flooding are separately addressed below:

1. Pumped systems that form part of the existing SWS would not be modified as part of the proposed modification, and therefore their current operation is consented under the approved project.
2. As described in Section 4.3.3, it is proposed that low-flow stormwater outlet systems would be installed within the bunded areas in the south east of Zone 2 following removal of the OWS to reduce the risks associated with these bunds holding permanent water and not having a safe spillway or overflow route. The slow release of flows would be controlled by the low-flow outlet structures, which could be achieved through the inclusion of small outlet pipes, orifice plates, control valves, custom outlet pits, pumped outlet systems, or other flow restriction methods. This would be confirmed during detailed design.

Capping and grading works are no longer proposed as part of the proposed modification, refer to Section 3.1.1 for further details. The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of RPIP Mountain and Source Area Excavation 5.

3. Changes to drainage Catchments B and F are proposed to maintain constant low flows to coastal wetlands. Refer to Section 4.1.54.1.5 for further details.
4. The proposed surface water management strategies detailed in the Stormwater Modelling Report (Annexure A of Appendix G) have been designed so that post-modification peak discharge rates from the Site would remain the same (or very close to) pre-modification discharge rates in all storm events up to and including the 1% AEP storm event. These mitigation strategies include provision of the additional OSD basins in Catchment E. The proposed modification would not result in significant changes to stormwater flows. Refer to Section 4.1.5 and Figure 4-12 for further detail.
5. The Updated Surface Water, Wastewater and Flooding Report (Appendix G) has been prepared to assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, supported by updated surface water modelling (refer to Annexure A).
6. As shown in Figure 4-12, two separate OSD systems are proposed in Catchment E to maintain existing, pre modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% AEP event. This would also maintain existing peak discharge rates entering the downstream Towra Point Nature Reserve and Quibray Bay. The former CLOR pipeways would be utilised for stormwater detention at the north western corner of Catchment E and additional OSD storage would be included within the existing open channel that runs along the western side of RPIP Mountain, at the south eastern corner of Catchment E.
7. Erosion and sediment controls would be implemented in accordance with the ‘Blue Book’. This has been incorporated into the proposed mitigation measures, refer to mitigation measure F14 in Appendix C.
8. The Updated Surface Water, Wastewater and Flooding Report (Appendix G) has been prepared to assess the stormwater changes resulting from the proposed modification and to develop an appropriate stormwater management strategy for the modified areas, supported by updated surface water modelling. Refer to Section 4.1.5 for a summary of this updated assessment, including the summary of surface water strategies to maintain flows into receiving waterbodies, including Coastal Wetlands.

   Stormwater quality monitoring parameters and default trigger values have been also identified, based on Water Quality Objectives for the Georges River Catchment (DECCW, 2006). Should results exceed trigger values, an investigation would be undertaken to determine the cause and assess whether additional mitigation measures are required.

   This updated assessment has been incorporated into the Updated BDAR (Appendix I), which concludes that no impacts to coastal wetlands would occur with the application of the additional mitigation measures outlined in Appendix G, and thus no further assessment of potential impacts to coastal wetlands from stormwater flows or surface water quality is required. Additional assessment on potential impacts to coastal wetlands as a result of groundwater impacts is provided in Section 4.5.2.

### Comment

Council requires upgrades to the Site’s stormwater management system following the April 2022 spill to be implemented prior to the commencement of any works of the proposed modification.

#### *Response*

The upgrades to the Site’s stormwater management system were consented as part of the Kurnell Stormwater Separation Improvement Project (DA24/0008). Construction was completed in mid-2025 and the project is operational. The updated assessments have included this project as part of the consideration of baseline conditions.

### 4.13.9 Biodiversity

**Comment**

Council does not support the deletion of dot point three in Condition K3, as no justification is provided, and 'stopping works and the relocation of frogs to an area outside of the Site' is considered essential.

*Response*

As described above, whilst consolidating mitigation measures from MOD-7 with those of the approved project and subsequent modifications, it was noted that there were several instances of repeated measures or themes. Edits have been made to the mitigation measures for the proposed modification refer to Appendix C in order to streamline and optimise them.

The bullet point in mitigation measure F2 titled, "*If any frogs are found within the Project Area, works would cease until frogs have been relocated to areas outside the area of impact,*" has been deleted as the requirement has been fully captured within the remaining bullet points, including:

- "*Stop work procedures would be implemented during works on the chance encounter of any dispersing threatened frogs or birds to avoid death or injury to frogs dispersing across the Site*…" and
- "*If fauna are found to be utilising the Site, or a nest, den or roost is found, work in the immediate area is to stop and the animals are to be allowed to move off freely, or relocated by an authorised person to an area outside the construction footprint*."

**Comment**

Council requests the development of a detailed and comprehensive CEMP following determination of the application, including the controls for managing potential effects to nearby ecosystems and offsetting requirements as per the Biodiversity Offset Strategy.

*Response*

In accordance with mitigation measure A3, a CEMP would be prepared and implemented to manage potential construction phase impacts. In accordance with mitigation measure A6, Ampol would provide Council the opportunity to review and comment on the CEMP prior to the commencement of proposed modification works.

Environmental mitigation measures to manage potential biodiversity impacts of the proposed modification are outlined Appendix C. The implementation of these measures alongside the wider set of proposed measures outlined in Appendix C, would avoid and/or mitigate potential impacts to nearby biodiversity values.

Appendix I outlines the extent of biodiversity impacts associated with the proposed modification and offset requirements. The need for biodiversity offsets was identified following a review of the proposed modification to avoid and/or mitigate potential impacts to biodiversity values first prior to employing an offset strategy. Biodiversity offsetting would be undertaken in line with the requirements of the *Biodiversity Assessment Method* (DPIE , 2020) as detailed in the Updated BDAR provided in Appendix I.

### 4.13.10 Noise and vibration (construction)

**Comment**

Council notes that the noise assessment predicts construction noise will exceed EPL limits. Council considers this exceedance supportable only if works are strictly limited to normal construction hours.

*Response*

As described in Section 4.2.2, Ampol has agreed to undertake the majority of the construction works in line with the standard construction hours outlined ICNG (DECC, 2009), these include:

- Monday to Friday – 7am to 6pm
- Saturday – 8am to 1pm
- Sunday and public holidays – No work is permitted.

Activities would be undertaken outside of these times if they met the requirements of approved Condition C20 of SSD-5544. In addition, the following activities would be required on a 24-hour basis to support construction activities:

- Biopiling blowers in identified Biopiling Areas (refer to Figure 1-5). As noted in the Updated NVIA (Appendix H), given their proposed location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.
- Dewatering of excavations. Dewatering would only occur at night in locations where plant would not exceed night-time limits, i.e.:
  - Where it is located a minimum of at least 200 m within the Site boundary; or
  - Where it is located a minimum of 120 m within the Site boundary if temporary noise barriers are positioned as near as practicable to the pumps, and monitoring confirms that nighttime noise limits are not exceeded.

Construction mitigation measures have been recommended to manage potential construction noise impacts. These include relevant feasible and reasonable noise mitigation measures as per the ICNG (DECC, 2009), a monitoring program to assess performance against relevant noise and vibration criteria, and arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures. These measures would be detailed in a NVMP which would form part of the CEMP for the proposed modification. In line with the existing conditions of consent, it is expected that Ampol will be required to consult with the EPA during the development of the NVMP.

Refer to Appendix H for further detail.

### 4.13.11 Air quality and odour

**Comment**

Given the substantial works proposed, Council requests a proactive rather than reactive dust suppression management program be implemented to ensure minimal impacts to the adjoining and nearby sensitive receptors. The following mitigation measures should be employed:

- Implementation of an AQMP
  - Either as a section of the CEMP or a separate document and alongside the conceptual RAP and subsequent detailed RAPs
- Minimisation of surface disturbance, where possible
- Control of concrete crushing
- Air quality monitoring
- Asbestos air monitoring when undertaking works that may disturb asbestos, as per SafeWork NSW Codes of practice.

Council notes that there is a likelihood that dust generated during construction may carry contaminants described in the Conceptual RAP. Council requests that the handling of contaminated materials is addressed in the RAP, including controls for asbestos-impacted soil, undertaken in accordance with appropriate NSW EPA and SafeWork NSW codes of practice, guidelines and legislation.

*Response*

The Air Quality Impact Assessment (Appendix N of the Modification Report) presented a number of proactive and reactive measures to be implemented under an AQMP to avoid and minimise the impact of dust upon sensitive receivers. These would include:

- Measures to monitor dust emissions from the construction phase, such as visual inspections
- Appropriate measures to be undertaken during adverse weather conditions

- Appropriate, reasonable, and feasible measures to mitigate adverse air quality impacts, such as:
  - Vehicles would only travel on designated roads within the Site where possible and would be limited to a maximum speed of 10 km/hr in offroad areas and 25 km/hr elsewhere
  - Loads would be covered as required, and all tailgates would be securely fastened. Vehicles would not be loaded higher than the sides and tailboard.
  - Concrete cutting and coring would be undertaken using “wet tools”
  - Water sprays would be used to dampen down soils prior to excavation, handling and/or loading/ unloading materials as required
  - All plant would be maintained and operated in line with the manufacturer’s specifications in order to minimise the emission of air pollutants and offensive odours
  - Plant and construction vehicles would be turned off when not in use
- Surface disturbance would be minimised. Exposed ground would be rehabilitated as soon as practicable.

An odour reduction program would continue to be implemented in accordance with the existing EPL during construction and operation. To minimise impacts related to odour, the AQMP would include the following measures:

- Stockpiles of contaminated soil stored onsite would be managed to prevent odorous VOC emissions and windblown particulate emissions
- Excavation would be staged to manage potential VOC and odour emissions. Where practical, excavations would not commence prior to 8am nor after 4pm as weather conditions at these times are generally conducive to adverse odour air quality situations from fugitive emissions
- In the event of an odour complaint, an evaluation would be undertaken to confirm if the proposed modification demolition works are the source of the odours. If the construction works are confirmed as a potential ongoing odour source, additional mitigation measures would be implemented which could include the use of water sprays to suppress odours and, if necessary, the use of odour suppressants. Offsite olfactory observations and VOC monitoring using equipment would also be undertaken if necessary. In the event of ongoing odour issues, excavation activities would be stopped and if necessary, the excavation covered or backfilled.
- To minimise impacts related to concrete crushing the following mitigation measures would be implemented:
  - The crusher would be located as far as practicable from the Site boundary, allowing adequate buffer distance from receptors.
  - Real-time dust monitoring would be undertaking during the operation of the concrete crusher. Details of this monitoring (and associated response actions) would be incorporated into the AQMP for the construction demolition works.
- A number of dust suppression measures would be implemented. These could include regular watering of stockpiles, dust curtains and other measures as appropriate.

Following review of agency and community submissions, the mitigation measures have been updated to incorporate a TARP within the AQMP, this would include:

- A TARP, which would be developed in consultation with the NSW EPA. The TARP would detail appropriate actions in response to elevated dust levels at sensitive receivers, and supported by real-time $PM_{10}$ monitoring. The $PM_{10}$ concentrations would be compared with trigger levels designed around the following broad categories:
  - **$PM_{10}$ concentrations less than EPA criteria – Normal Works**: Normal construction mitigation measures in place and no actions are required
  - **$PM_{10}$ concentrations Level 1 trigger – Investigate**: Identification of the likely reasons for the elevated pollutant concentration and formulation of a contingency response for Level 2

- **$PM_{10}$ concentrations Level 2 trigger – Action**: Implementation of the measures formulated in Level 1 and review of their effectiveness
- **$PM_{10}$ concentrations above Level 3 trigger – Stop Work**: All air polluting works associated with the proposed modification identified to be generating particulates should stop until the measured particulates are below the relevant trigger level to avoid an exceedance of the pollutant criterion.

The completion of the proposed modification would involve the handling, excavation and movement of asbestos contaminated fill materials. The completion of these works will be based on the requirements provided in *Work Health and Safety Act 2011* and the *NSW Work Health and Safety Regulation 2025* and the preparation of an Asbestos Management Plan as a subplan of the CEMP.

Refer to the Updated Consolidated Mitigation Measures (Appendix C) and RAP (Appendix E) for further detail.

### 4.13.12 Traffic and transport

**Comment**

Council has stated that a condition is needed requiring that all parking associated with construction and ongoing operations be contained within the Site(s).

*Response*

This requirement is already covered within the SSD-5544 conditions of consent. Mitigation measure I2 relates to measures to be implemented through the CTMP, and includes, "*Designated areas within the Site and MOD-7 Project Area for … parking*."

During peak construction, a total of 230 workers (including Ampol employees, contractors, and construction workers) would be present onsite. By comparison, the refinery demolition works previously involved a maximum of 410 workers, while refinery operations in 2012 had up to 1,385 workers present (AECOM, 2015). Based on these previous worker numbers, the Site has sufficient parking capacity for the proposed modification's construction personnel. No adverse impacts to parking in Kurnell are anticipated.

**Comment**

Council requests that access to Zone 1A, regardless of whether permission is granted for the new storage, is conditional on the following elements:

- All heavy vehicle access for both construction and ongoing operational use shall be via Captain Cook Drive and not from Prince Charles Parade. Council requests that the access point along Captain Cook Drive is formalised, including appropriate measures to ensure adequate sight distances to vehicles and pedestrians, such as truck turning signs, no stopping restrictions, and offsetting of the gate, and adjacent fence line to Council's satisfaction.
- Council requests that a swept path analysis is undertaken to determine that the width of the footpath crossing and gate is sufficient to allow entering and exiting trucks to pass unhindered
- Appropriate all weather access and environmental controls to avoid tracking of any spoil onto the road network
- Alteration to approved heavy vehicle haulage routes (removal of Silver Beach Road and Prince Charles Parade).

*Response*

Approximately 5 heavy vehicles and 15 light vehicles currently access Zone 1A on a daily basis via the existing access point on Prince Charles Parade.

This access point is required to support activities on the wharf on the opposite side of Prince Charles Parade. Accessing Zone 1A from the Silver Beach Road and Prince Charles Parade (i.e. turning to the right) allows for a greater turning circle for vehicles than turning from the left from Captain Cook Drive. The access on Prince Charles Parade is shown on Figure 4-8 and is wide, formalised, gated, already used for construction/maintenance vehicles, and appropriate for the scale of construction activities

proposed in Zone 1A. Construction of the storage shed would be more straightforward than construction of a new house.

The proposed works to construct the new storage shed in Zone 1A to store boats and emergency aquatic spill response equipment would be limited to a three-month construction period. Access points for construction vehicles would remain unchanged from existing conditions. Table 4-14 provides a breakdown of vehicles required for the Zone 1A construction works only. Vehicles to be used for this work would be selected to maintain suitability for the local road network and would not be Oversize and Overmass Vehicles (OSOM).

**Table 4-14 Workforce and plant requirements for construction (Zone 1A)**

| Description | | Maximum number required | Maximum daily movements (return trips) |
|---|---|---|---|
| Heavy vehicles | Construction vehicles (cranes, semi-trailers, etc.) | 3 | 0[2] |
| | Truck and dog (offsite disposal and imported fill) | 6 | 6[3] |
| | Equipment/ material delivery vehicles | 4 | 2 |
| | ***Subtotal*** | ***14*** | ***8*** |
| Private vehicles | Construction personnel[1] | 20 | 20 |
| | **Total** | **34** | **28** |
| | Heavy vehicle proportion | 41% | 29% |

*[1] Conservatively assumed that all construction personnel would park at Zone 1A daily during 3-month construction period. Likely that workers would park at the main Site and walk to Zone 1A.*
*[2] There would be one delivery of construction vehicles at the commencement of construction, and removal of vehicles at the completion.*
*[3] Offsite disposal and imported fill would be required during site establishment and earthworks only.*

Compared to the number of vehicles currently accessing Zone 1A, the increase in heavy vehicles at Zone 1A during the three-month construction period does not warrant upgrading the access on Captain Cook Drive and additional amenity impacts that this would cause. Minimal traffic related impacts are anticipated from the storage shed construction in Zone 1A.

A CTMP, prepared as a sub-plan of the CEMP, would manage construction traffic during the proposed modification. It would include mitigation measures such as designated routes, onsite areas for truck movements, parking, loading and unloading, vehicle speed limits, and coordination of off-site heavy vehicle movements. Additionally, in accordance with mitigation measure I1, the Council and Kurnell residents would be informed of works that would significantly affect the road network at least two weeks prior to these activities occurring (or in line with regulatory requirements). Significant activities would include the proposed modification works commencing and works to construct the new storage shed in Zone 1A commencing. Environmental controls to prevent tracking of spoil onto the road network would also be implemented through the CEMP and its sub-plans.

During operation, Zone 1A would continue to operate as previously approved, with minimal changes in terms of operational vehicle traffic movements, beyond a small number of intermittent additional trips to access the proposed storage shed in Zone 1A. Given this negligible increase, traffic volumes in the study area during operation are expected to remain consistent with the forecast traffic levels, without the proposed modification. As such, Ampol do not intend to change the existing access arrangements for the northern section of the Right of Way.

In addition it is not within Ampol's control to change the NSW Government designated approved heavy vehicle haulage routes along Silver Beach Road and Prince Charles Parade.

### 4.13.13 Non-Aboriginal heritage

**Comment**

Council supports the findings of the Heritage Impact Assessment. Council requests that, should any unexpected finds relating to historic heritage be identified during works, procedures will be followed.

*Response*

In accordance with mitigation measure J10, a Stop Works procedure would be implemented should any unexpected finds of non-Aboriginal heritage importance be found including historical archaeological relics. Works would cease at the vicinity of the item and Heritage NSW would be notified as soon as possible. Refer to the Appendix C and the Updated HIA (Appendix H) for further detail.

## 4.14 Community submissions

There were 227 community submissions received during the Modification Report public exhibition period, with all submissions objecting to the proposed modification. Each submission was reviewed in detail to fully understand the issues raised. This section provides a structured summary of the matters raised across community submissions, and where appropriate, excerpts of the original wording have been included. A response has been provided to each issue raised.

The following 17 key themes and 48 issues were identified from the community submissions received:

- Description of the proposed modification and methodology (refer to Section 4.14.1)
  - Remediation methodology is not appropriate
  - Lack of fixed timeline for remediation
  - Lack of long-term environmental safeguards
  - Misunderstanding of the proposed modification – Oily Water Sewer (OWS) is being redirected or removed
  - Misunderstanding of the proposed modification – increased storage, transfer, or processing of fuels and chemicals
  - Misunderstanding of the proposed modification – combustion of waste materials
  - Misunderstanding of the proposed modification – changes and impacts to the Asbestos Contaminated Soil (ACS) Containment Cell
- Public consultation (refer to Section 4.14.2)
  - Lack of consultation, public information, or access
  - Inadequate exhibition timeframe or period to review documents
  - Lack of transparency and accountability
- Biodiversity (refer to Section 4.14.3)
  - Impacts to biodiversity (terrestrial and aquatic) and migratory birds
- Soil, groundwater, and contamination (refer to Section 4.14.4)
  - Impact of exposure of contaminated materials, asbestos containing soils (ACS), and acid sulfate soils (ASS)
  - Impacts to groundwater and Groundwater Dependent Ecosystems (GDEs)
  - Contamination risks have not been properly assessed
- Stormwater and water quality (refer to Section 4.14.5)
  - Water quality in receiving sensitive ecological environments (Towra Point, Quibray Bay, mangroves, beaches, Botany Bay, wetlands, National Park)
  - Proposal would increase offsite flood risk

  - Stormwater management is not properly detailed and does not include surface water quality targets
- Air quality (refer to Section 4.14.6)
  - Impacts on air quality during the construction phase
  - Long term impacts on air quality
- Noise and vibration (refer to Section 4.14.7)
  - Noise and vibration impacts during the construction phase
  - Noise and vibration impacts during the operational phase
- Traffic and transport (refer to Section 4.14.8)
  - Increase in traffic and transport during construction
  - Emergency access via Captain Cook Drive
- Aboriginal cultural heritage (refer to Section 4.14.9)
  - Impact to Aboriginal heritage and culturally significant lands
- Non-Aboriginal heritage (refer to Section 4.14.10)
  - Removal of buildings associated with the Australian Oil Refinery (Local Environmental Plan (LEP) #A2524)
- Social (refer to Section 4.14.11)
  - Impacts to the local social cohesion and sense of place
  - Intergenerational equity
  - Impacts to local amenity
  - Impacts to tourism
  - Impacts to the local economy
  - Impacts on property values
  - Impacts to community health, wellbeing, and safety
- Monitoring (refer to Section 4.14.12)
  - No external audit or monitoring requirements, or independent review
- Cumulative impacts (refer to Section 4.14.13)
  - Cumulative environmental impacts have not been adequately assessed
- Climate change (refer to Section 4.14.14)
  - Concerns about future impacts exacerbated by climate change
- Land use (refer to Section 4.14.15)
  - Proposes alternative community-centric land uses
  - Claims that the proposed modification prevents rezoning and extends industrial use of the Site indefinitely
  - Opposition to the proposed Battery Energy Storage System (BESS) (general opposition, hazards and risk, fire, siting) and Energy/ Industrial Precinct subdivision
- Regulatory requirements (refer to Section 4.14.16)
  - Use of outdated guidelines, studies, legislation, and policy
  - Proposed modification does not align with planning policies or legislation

  - Project significantly deviates from the original project approval – i.e. is not a modification
  - A full Environmental Impact Statement (EIS) is needed
- Legacy (refer to Section 4.14.17)
  - Legacy impacts of terminal and refinery operations – general operations
  - Legacy impacts of terminal and refinery operations – 2015 tornado
  - Legacy impacts of terminal and refinery operations – past spill events
  - Claims that Ampol previously agreed (and/or is legally obligated) to remediate/ regenerate the land into public parkland/ recreational space
  - Ampol is prioritising corporate convenience over local environment and people's health
  - Request Ampol fully exit the Site.

A response to each key matter raised by the community has been provided as follows.

### 4.14.1 Description of the proposed modification and methodology

#### Remediation methodology is not appropriate

A total of 158 submissions raised concerns regarding the remediation methodology. These submissions support a “full and thorough remediation of soils and groundwater on the Site.”

The submissions noted that capping is not a sufficient remediation measure, but rather a temporary containment strategy that leaves hazardous substances, such as asbestos, petroleum related hydrocarbons (PHC), per- and polyfluoroalkyl substances (PFAS), and heavy metals onsite indefinitely. Concerns were raised regarding the long-term degradation of containment systems causing dispersal of contaminants in surface and groundwater, and presence in flood waters during extreme weather events, particularly as the flood modelling presented in the Modification Report shows that capped areas are at risk of inundation.

Several submissions highlighted that the capping methodology approach is unethical, noting that if individuals or small businesses attempted similar practices of burying hazardous material, they would face serious legal consequences.

*Response*

Remediation can be used to remove or reduce the ways people or the environment can potentially be exposed to contamination, either by removing the contamination itself or by interrupting the pathway between the contamination and the receptor. In NSW, remediation is governed by acts and policies that focus on contaminated land, including the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP) and the *Contaminated Land Management Act 1997* (NSW) (CLM Act).

As defined in the Resilience and Hazards SEPP, ‘*remediation means—*

*a) removing, dispersing, destroying, reducing, mitigating or containing the contamination of any land, or*

*b) eliminating or reducing any hazard arising from the contamination of any land*.’

Ampol has developed the following remediation objectives for the proposed modification:

- Remediate the soil and manage groundwater within the parts of the Project Area that are relevant to the proposed modification, to address legacy ground contamination identified in specific locations across the Site, to support the ongoing viable, safe, reliable, and sustainable use of the Kurnell Terminal.
- Remove the remaining former refinery infrastructure within the Audit Boundary[9] (specifically, the OWS).

[9] The Audit Boundary includes areas in Zones 2 and 3 that would be subject to independent audit. The Audit Boundary excludes Zone 1 areas which would continue to operate as the Kurnell Terminal and the ACS containment cell located in Zone 2.

- Apply the approved remediation process so that it adheres to applicable regulatory requirements, minimising potential environmental, human health, and operational risks.

The Conceptual Remedial Action Plan (RAP) has been converted to a RAP to address submissions received during the exhibition of the Modification Report and refinements to the proposed modification (refer to Appendix E). The RAP has been developed in accordance with the applicable legislation, policy and guidelines, including:

- CLM Act
- *Protection of the Environment Operations Act 1997 (NSW)* (POEO Act)
- *Environmental Planning and Assessment Act 1979 (NSW)* (EP&A Act)
- *SEPP (Resilience and Hazards) 2021*
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (ASC NEPM) (NEPC, 2013)
- PFAS National Environmental Management Plan 3.0, National Chemicals Working Group of Heads of EPAs Australia and New Zealand, 2025 (HEPA, 2025)
- Guidelines for the Assessment and Management of Groundwater (DEC, 2007)
- Guidelines for the NSW Site Auditor Scheme (3rd edition) (NSW EPA, 2017a)
- Contaminated Land Guidelines, Sampling Design (NSW EPA, 2022a)
- Contaminated Land Guidelines, Assessment and Management of Hazardous Ground Gases (NSW EPA, 2020b).

It is noted that the legislation, policy and guidelines reviewed for the RAP incorporated all relevant amendments and updates.

Further, an independent NSW EPA-accredited Site Auditor has been engaged to review the RAP and confirm its suitability to guide an appropriate remediation strategy and its alignment with the relevant guidelines (refer to Interim Audit Advice (IAA) in Appendix E1).

In accordance with the ASC NEPM (NEPC, 2013), the preferred hierarchy of options for remediation and management of soil contamination at the Site is:

1. Onsite remediation of soil contamination, so that the risk associated with the contaminant is reduced to an acceptable level
2. Offsite remediation of excavated soil, so that the risk associated with the contaminant is reduced to an acceptable level, after which it is returned to the site.

If it is not possible for either of these options to be implemented, then other options for consideration can include:

1. Containment of the contamination onsite either in-situ with appropriate controls that reduce the risk to an acceptable level, or in an appropriately designed and managed containment facility
2. Removal of contaminated soil to an approved site or facility, and replacement with clean fill where necessary
3. Adoption of a less sensitive land use or controls onsite activities that would reduce the need for remedial works.

Due to the variation in contamination types and concentrations across the Site, multiple remedial approaches would be employed to achieve the remediation objectives. The selected remediation approaches were chosen based on a Remedial Options Assessment, provided in Annexure E of the RAP, which evaluated each option's merits, disadvantages, and overall feasibility. The chosen remediation approaches are as follows:

- **Primary source removal**: Removal of the remaining OWS in Zone 2 and Zone 3. Once this infrastructure is removed, primary sources of contamination from the former refinery infrastructure would have been removed.

- **Secondary source remediation**: Excavation of impacted soils, followed by either onsite treatment or offsite disposal to landfill. Figure 4-14 presents a proposed modification-specific flow chart to illustrate how the remedial approach aligns with the ASC NEPM (NEPC, 2013) remediation hierarchy.

Offsite transport of contaminated soil (either for treatment or disposal) would be avoided where practicable to minimise truck movements and the potential for impacts associated with traffic, air quality, odour, and amenity.

The remediation approach for the proposed modification previously included in-situ containment via capping for various areas across the Site. This was applied where asbestos or other residual contaminants could not be removed using other remediation methods. As described in Section 3.1 and Appendix B1, capping has since been removed from the proposed modification as the low levels of asbestos in the certain soils does not present an onsite risk to the terminal and its workers of any offsite risks to the surrounding environment or community. However, the remainder of this section discusses the purpose and benefits of capping as a remediation technique and explains how it can effectively manage asbestos and other residual contaminants onsite.

Remediation approaches that use containment via capping are typically applied when removing the contaminants from a site would pose higher risks to human health and the environment than leaving them in place. Containment systems achieve this by isolating contaminated soils behind a physical barrier, preventing uncontrolled exposure, water ingress, and leaching. Leaving contaminated soils contained in-situ can provide a safer outcome for both people and the environment by avoiding increased handling and transport of contaminated materials and the risk of these materials mobilising into the surrounding environment or resulting in amenity impacts (e.g. odour, noise, traffic).

Containment via capping is a well-documented and well-utilised remediation technique that has been successfully implemented across Australia and internationally. One such example is Wentworth Point, a foreshore and mixed-use precinct along the Parramatta River, which was historically impacted by industrial fill materials, including heavy metals, hydrocarbons, and asbestos (Ford Civil, 2025). Remediation involved selective removal of highly contaminated soils where required, followed by capping of remaining materials. Remediation works were completed in 2023, and a mixed-use development application for the site (State Significant Development (SSD) SSD-7281620) was approved in 2025, for retail and residential land uses (FDP Planning, 2024). This demonstrates how remediation approaches that use containment via capping can effectively protect community and environmental health while enabling the redevelopment of a former industrially impacted site.

Remediation approaches that use containment have also been implemented onsite through the ACS Containment Cell in the south east of the Site (shown on Figure 1-3 to Figure 1-5). This was approved in SSD-5544 MOD-2 and was established to remediate the Site and resolve operational challenges associated with ACS.

Ongoing management of the ACS Containment Cell has been incorporated into the Site's Operational Environmental Management Plan (OEMP). The OEMP includes post-closure management and monitoring measures for leachate, stormwater, landfill gas, odour, dust, and final cap integrity. Leachate from the ACS Containment Cell is currently treated at the Site's Waste Water Treatment Plant (WWTP), in accordance with Environmental Protection Licence (EPL) 837, prior to discharge into the Tasman Sea. Long term monitoring of the ACS Containment Cell involves:

- Regular inspections for deterioration of the cap's condition, including erosion, cracking, dead or stressed vegetation, ponding, differential settlement, slope stability, and damage to pipes, drains and other works installed on the final capping
- Repair and/or replacement of portions of the final cap found to be damaged
- Monitoring of leachate and rainfall volumes
- Groundwater monitoring.

To date, the ACS Containment Cell has had no adverse impacts on terminal operations, the local community, or the environment. Its ongoing management protects human health and safety and the environment.

Should the Site be developed in the future, containment would likely form part of the broader remedial strategy for areas affected by asbestos or other residual contaminants. These works would be supported by a separate development application, detailed environmental assessments, relevant regulatory approvals, and a NSW EPA Accredited Site Auditor-endorsed RAP.

### Lack of fixed timeline for remediation

A total of 35 community submissions raised concern that the proposed modification lacks a fixed timeline for remediation. Submissions also emphasised that the proposed modification relies on a Conceptual RAP that defers key decisions to future Detailed RAPs, leaving remediation timelines uncertain. These submissions requested that the proposed modification include a transparent remediation timeline, with enforceable deadlines and penalties to be applied by relevant agencies, in order to prevent ongoing delays, strengthen accountability, and reduce community uncertainty.

*Response*

Construction was previously anticipated to commence in August 2025 and continue for about 12 months for infrastructure removal scopes and up to four years for remediation works. All works associated with the proposed modification, including remediation, were anticipated to be complete by July 2029.

Section 1.4 and Appendix B1 provides an update to the indicative construction program. Construction and remediation works are now anticipated to commence in 2026 and be completed by 2030. The proposed modification works would require about 12 months for infrastructure removal/ relocation scopes and up to four years for remediation works.

Works would be staged in accordance with the indicative program in Table 3-1.

The timelines presented in the RAP (refer to Appendix E), which has been reviewed and endorsed by a NSW EPA-accredited Site Auditor, confirm these timelines.

### Lack of long-term environmental safeguards

A total of 72 community submissions raised concern that the proposed modification does not include long-term environmental safeguards to protect the health of the community and surrounding ecosystems. Submissions requested the implementation of long-term monitoring programs both onsite and offsite to confirm the remediation methodologies effectiveness and protect surrounding ecosystems, including Towra Point, Marton Park Wetlands, and Botany Bay. These submissions requested that ongoing monitoring data, maintenance programs, and remediation outcomes are made available to the public.

*Response*

The current operations at the terminal are managed under the OEMP Kurnell Terminal, Final Stage 2 (Ampol, 2021). This OEMP helps Ampol comply with its requirements under the development consent for the Kurnell Terminal (SSD-5544), EPL 837, and the Major Hazard Facility licence for the terminal.

Ampol provides environmental monitoring results to the NSW EPA in accordance with the requirements outlined in EPL 837. For ongoing groundwater, surface water, and effluent discharge monitoring, Ampol engages suitably qualified independent environmental consultants and/ or accredited laboratories to maintain compliance with relevant regulatory and technical standards. These monitoring results are made available online. This ongoing comprehensive environmental monitoring regime would continue during and after the construction of the proposed modification, in accordance with EPL 837.

Ampol has engaged an NSW EPA-accredited Site Auditor regarding the proposed long-term management of residual contamination. Following remediation activities for the proposed modification, where further management of contamination is required within the Audit Boundary, one or more Environmental Management Plan(s) (EMPs) would be prepared. These plans would fall under and be administered by the Site's existing OEMP. The OEMP would be updated as required to incorporate new EMP(s). The EMP(s) would be prepared in general accordance with the *NSW EPA EMP Guidelines* (2022) and *NSW EPA Consultant Guidelines* (2020).

The EMP(s) would include:

- A statement of the objectives of the EMP
- Description of responsibilities and timeframes for implementation of the EMP requirements
- Specific additional health and safety requirements for intrusive activities
- Appropriate monitoring locations and depth within and down-gradient of residual contamination
- Environmental monitoring and reporting requirements (if required).

Refer to the RAP (Appendix E) for further detail.

### Misunderstanding of the proposed modification – Oily Water Sewer (OWS) is being redirected or removed

A total of 11 submissions raised concerns that the removal or redirection of the Oily Water Sewer (OWS), whether partial or across the Site, would significantly increase untreated stormwater runoff, containing chemicals and other pollutants, discharged into Botany Bay and adjacent sensitive environments. Specific concerns were raised regarding potential impacts to the Towra Point Nature Reserve Ramsar site, Kamay Botany Bay National Park, the Quibray Bay and Marton Park Wetlands, as well as potential impacts to the recreational use of surrounding waterways.

Various community submissions claimed that tanks on Site still drain into the OWS to be removed or redirected, while others described the removal or redirection of the OWS as unethical and environmentally reckless.

#### *Response*

The Surface Water, Wastewater, and Flooding Report was prepared to support the Modification Report and has been updated for this Submissions Report (refer to Appendix G). Additional stormwater and flood modelling has also been undertaken to inform updates to Appendix G (refer to Annexure A and B of Appendix G, respectively). Surface water runoff generated by the Site is captured and conveyed by one of two systems:

- Surface water system (SWS) – Collects surface water runoff from areas (including roadways and building rooftops) that have a designated low risk potential for interaction with petroleum products. Water conveyed by SWS is generally consistent with typical stormwater quality. This water receives some level of treatment prior to discharging offsite and to the receiving waterbodies.
- OWS – Collects and contains surface water runoff and wastewater from areas containing petroleum infrastructure (such as tank bunds and pipeways) that may be impacted by petroleum products. This water is directed to the onsite WWTP for treatment before discharging to the Tasman Sea via the Yena Gap pipeline under the conditions of EPL 837.

Receiving waters, including Coastal Wetlands and associated Proximity Areas, are shown in Figure 4-9. Catchments and existing inflow/outflow locations around the Site are shown on Figure 4-10.

The OWS predominantly services Zone 1, with limited active connections to Zones 2 and 3. There would be no changes as a result of the proposed modification to the OWS in Zone 1, where operational equipment, such as the tank farms, are located. As such, potentially contaminated stormwater and wastewater from Zone 1 would continue to be captured, transported, and treated by the OWS and WWTP prior to discharge to the Tasman Sea under EPL 837.

The OWS in Zone 3 and the majority of Zone 2 is no longer required for its original purpose, as the terminal and refinery infrastructure it once serviced (such as the Caltex Lubricating Oil Refinery (CLOR), tank farms, and pipeways), are no longer operational in those areas. However, as some areas in Zones 2 and 3 contain residual contamination from previous operations, surface water from these areas is currently directed to the OWS to manage this risk.

As described in Section 1.4, the proposed modification would involve the remediation in Zones 2 and 3. The works to remove sections of the OWS in Zones 2 and 3 would be undertaken progressively so that the OWS can help support the remediation activities (refer to Appendix B1). During remediation activities, surface water could potentially enter excavations where remediation activities are occurring and become contaminated. Potentially contaminated water from surface water flows or excavations,

would be sent to the OWS and on to the WWTP for treatment. Potentially contaminated surface water flows would be captured by the existing OWS until such time that contamination sources are removed and soil remediation and treatment is undertaken in each area. Therefore, some sections of the OWS in Zones 2 and 3 may only be removed following certain remediation activities (Stage 3).

Some OWS lines within Zone 2 would remain active, including a connection to the wastewater sump from the ACS Containment Cell. These active lines are required to continue the safe collection and treatment of water that may contain residual contaminants. Once remediation works are complete, relevant areas in Zone 2 and 3 would no longer produce contaminated runoff. As such, following completion of remediation works surface water runoff from these zones would be of suitable quality for redirection to the Site's existing SWS.

As these areas would no longer generate contaminated runoff, potential impacts to adjacent sensitive environments from SWS discharge including Towra Point Nature Reserve (Ramsar site), Kamay Botany Bay National Park, Quibray Bay and Marton Park Wetlands or recreational areas are not anticipated.

Further discussion of potential stormwater and water quality impacts associated with the removal of the OWS in Zones 2 and 3 is provided in Section 4.14.5.

### Misunderstanding of the proposed modification – increased storage, transfer, or processing of fuels and chemicals

A total of 26 community submissions commented that the proposed modification would increase the storage, transfer, or processing of fuels and chemicals onsite. The community raised concerns that this would increase the frequency and scale of fuel movements and hazardous material handling, and with it, the likelihood of hazardous incidents, including bushfires or industrial explosions.

Submissions also claimed that expansion of operational activities could exacerbate environmental impacts associated with noise and vibration, air quality, soils and contamination, stormwater, water quality and biodiversity and that these have not been adequately assessed or mitigated.

Additionally, several submissions raised discontent that the proposal focused on expanding fossil fuel infrastructure rather than investing in cleaner, more sustainable alternatives. While other submissions suggested that the proposed modification would increase the overall footprint of the Site.

*Response*

The proposed modification does not involve increasing the storage, transfer, or processing of fuels or chemicals on Site. No new bulk fuel storage tanks would be constructed as part of the proposed modification. The proposed modification does not propose to change the Site's maximum storage capacity of refined products and by-products, as consented under the SSD-5544.

Once the proposed modification works are complete, the Site would continue to operate in accordance with the approved project description and remain consistent with the development consent SSD-5544 and the requirements of EPL 837. The proposed modification does not result in any increase in existing operations or expansion of the Site's existing boundaries.

For further detail, refer to Appendix B1.

### Misunderstanding of the proposed modification – combustion of waste materials

Two community submissions raised concerns regarding emissions generated by the proposed modification and the potential impacts on public health and safety during the "combustion of waste materials."

*Response*

Combustion of waste materials is not part of the proposed modification. Where it is not feasible to remediate soils or where onsite management is not practicable, the soil would be classified and disposed offsite, in accordance with Waste Classification Guidelines (NSW EPA, 2014a), to an appropriately licensed facility and in accordance with the Site's existing waste management procedures.

### Misunderstanding of the proposed modification – changes and impacts to the Asbestos Contaminated Soil (ACS) Containment Cell

One community submission raised concerns raised concerns regarding potential impacts or changes to the ACS Containment Cell. These submissions expressed concern that asbestos could be re-exposed to the atmosphere, resulting in potential offsite impacts to the community and sensitive receiving environments.

*Response*

The ACS Containment Cell is located in the south east of the Site (shown on Figure 1-3 to Figure 1-5). This was approved in SSD-5544 MOD-2 and established to manage ongoing health and safety risks and operational constraints caused by ACS. The proposed modification does not include works within the ACS Containment Cell; as and does not pose any additional risk associated with the long-term integrity of the containment cell. Ongoing management of the ACS Containment Cell has been incorporated into the Site's OEMP and would not change as a result of the proposed modification.

## 4.14.2 Public consultation

### Lack of consultation, public information, or access

A total of 53 community submissions commented on a lack of consultation, publicly available information, or accessible information. These submissions raised concern that there has been limited or no consultation, and that the proposed modification details have not been clearly communicated to the community. Some submissions claim that there is insufficient evidence of meaningful consultation with both the community and local stakeholders, that fair opportunities to comment were not given, or were limited, and that consultation has been minimal, dismissive, or did not reach all residents. Some submissions were concerned that residents are unaware of the perceived long-term impacts of the proposed modification.

The accessibility of the consultation process has also been questioned. Some submissions detailed technical issues associated with the Major Projects NSW Planning Portal, including setting up their account, technical time outs, and error codes. Others have questioned the accessibility of information due to poor advertising, the lack of summaries, and use of complicated and technical language.

Some submissions have noted the absence of references to the proposed modification in the newsletters which were cited as part of the consultation effort in the Modification Report, and that residents were unaware of the details of the proposed modification until the exhibition period. Others raised that any information provided was delivered through channels that exclude sections of the community.

Some submissions have directly requested or recommended additional consultation efforts including with First Nations, environmental scientists, and local families. Requests have been made for an independent consultation process, a public hearing, a public tour of the Site, community education process, regular updates for local residents, simplified summaries of the Modification Report, regular community briefings with independent environmental experts, more opportunities for community questions and inputs, establishment of a community advisory committee with decision-making input, and real-time environmental monitoring data accessible to the public.

*Response*

Ampol recognises that meaningful community engagement is critical to maintain relationships with the community and to the success of any future development at Kurnell. Ampol is committed to ongoing and transparent dialogue with the community.

Engagement undertaken for the proposed modification prior to exhibition is presented in Section 6 of the Modification Report. This included:

- Community newsletter available online, distributed by email and letterbox drop to residents of Kurnell (18 April 2024, 18 October 2024, February 2025).
    - The April 2024 Community Update states that Ampol is planning to relocate, remove and demolish infrastructure on redundant land within the terminal footprint

  - The October 2024 Community Update states that Ampol is planning to relocate or remove relevant infrastructure, as well as undertake staged remediation, along with a contact email address for further information
  - The February 2025 Community Update states that Ampol has conducted a strategic review of redundant land within the existing site and are considering options for potential future use. Ampol notes that they will be sharing updates on this and outlining the opportunity for residents to engage with Ampol on future community initiatives
- Operation of the community hotline (1800 719 669) and email (community@ampol.com.au)
- Operation of the opt-in community notification platform for emergencies or major incidents.

During the period of April 2024 to May 2025, no direct feedback related to the proposed modification was received via these engagement methods.

Additionally, Aboriginal community consultation was undertaken in accordance with Heritage NSW's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW , 2010). A total of 68 Aboriginal individuals and organisations were invited to register an interest in being consulted. Those registered included:

- La Perouse Local Aboriginal Land Council
- Wailwan Aboriginal Group
- Butucarbin Aboriginal Corporation
- Didge Ngunawal Clan
- Yarrawalk Pty Limited
- Yerrowah
- Ninnum
- Kamilaroi Yankuntjatjara Working Group
- Burroo Burroo
- Nerrigundah
- Yulay Cultural Services
- Thomas Dahlstrom
- Waawaar Awaa Aboriginal Corporation
- Ngambaa Cultural Connections
- Guntawang Aboriginal Resources Incorporated.

Registered Aboriginal Party consultation activities included a review of AECOM's draft assessment methodology, participation in the Site inspection, and a Registered Aboriginal Party review of a draft of the Aboriginal Cultural Heritage Assessment Report (ACHAR). Refer to the Updated ACHAR (Appendix J) for further detail.

Key themes communicated to Ampol and considered while preparing the Modification Report included noise, vibration, and concerns of strong smells and odour . These themes were raised in relation to both construction and ongoing operational activities and have been addressed through the development of mitigation measures to minimise impacts on surrounding communities and the environment. Consultation undertaken since the exhibition period has involved preparing community fact sheets, direct correspondence with the Save Kurnell advocacy group and Kurnell Progress and Precinct Residents Association, and provision of information to local government stakeholders to help inform them and to help them inform the community with accurate information. Refer to Section 3 for further detail.

Ongoing consultation, if the proposed modification is consented, would involve:

- Regular updates provided in Ampol's proposed modification-specific webpage, community newsletter, and in-person community drop-in sessions or online community information sessions
- Development of plain-English fact sheets and Frequently Asked Questions documents to respond to community concerns and issues. These would provide further information on technical aspects, such as capping, and be made available via Ampol's website and distributed via letterbox drop
- Continuation of the community hotline and email address for 24/7 contact.

Refer to the full list of consultation undertaken during and post-exhibition of the Modification Report and future consultation activities in Section 3.2.2.

The accessibility of the Major Projects NSW Planning Portal is noted. However, as the portal is managed by the NSW Government, these technical matters fall outside of Ampol's control.

### Inadequate exhibition timeframe or period to review documents

A total of 24 community submissions commented on the inadequacy of the exhibition timeframe. The submissions raised concerns that they have not been provided with a "fair" or "genuine" opportunity to comment on the Modification Report and associated documents, given the highly technical nature and length of the documents, complexity of the proposed modification, existing community concerns, as well as the perceived environmental significance of the proposal. One submission has questioned the integrity of the exhibition period, stating that it may have been intentionally designed to limit meaningful public participation.

In addition to this, some submissions have stated that there has been no clear summary or briefing prior to the exhibition period, and that adequate information was only provided "last minute", which has undermined democratic participation. Some submissions claim the details of the proposed modification were unknown or unavailable to them prior to the exhibition period. Some submissions suggested that the agency submissions should be available prior to the community submission period.

Some community members have requested an extension of the exhibition timeframe to facilitate informed responses, as well as simplified, clear public summaries.

*Response*

The Modification Report was publicly exhibited from 10 July 2025 to 1 August 2025 (23 days) online at www.planningportal.nsw.gov.au/major-projects.

The minimum standard public exhibition period for an SSD modification (requiring exhibition) is 14 days, as per the SSD Guidelines (DPIE, 2022). Department of Planning, Housing and Infrastructure (DPHI) also gives public notice of exhibitions in accordance with any relevant statutory requirements.

The Modification Report was exhibited for longer than the minimum requirement, and decisions pertaining to the length of exhibition periods are made by DPHI, rather than the proponent.

A list of Frequently Asked Questions was prepared in June 2025, in response to lodgement of the Modification Report and Kurnell Energy and Industry Precinct (KEIP) Scoping Report, distributed by email to stakeholders and letterbox drop.

A fact sheet was developed for the proposed modification in July 2025, made accessible on Ampol's website, to provide a high level overview of the proposed modification during the exhibition period. The fact sheet was also distributed at the community drop-in session on the 14 August 2025 and via letterbox drop.

In addition to the community, agencies have the opportunity to make submissions. It is noted that there is no time restriction for these agencies to provide a response as key stakeholders, leading experts, and regulatory bodies relevant to the proposed modification. The timing of agency submission availability is determined by DPHI and is not a decision of the proponent.

### Lack of transparency and accountability

A total of 67 community submissions raised concerns about Ampol's lack of transparency and accountability, both historically and during the preparation of the proposed modification. The submissions claim that Ampol has a tendency to downplay long-term health and environmental risks.

Submissions questioned the transparency of Ampol's long-term land use strategy, particularly in relation to the proposed KEIP project (SSD-86799993) and the earlier Kurnell Refinery Conversion (SSD-5544). They claim that the strategy has been obscured across multiple planning proposals, creating confusion, and misleading residents. Concerns were raised that the proposed modification is being presented as separate from the proposed KEIP project, despite directly enabling it. The submissions claimed this approach demonstrates a lack of accountability and a prioritisation of profit over community interests, furthering uncertainty, and distrust.

*Response*

Ampol has been open with the community regarding its plan to develop the land consistent with the land use zoning at the Site. This began with the previous Battery Energy Storage System (BESS) project, which was lodged on the Major Projects Portal in November 2023. Since then, Ampol has provided regular updates to the community via fact sheets and the bi-monthly Kurnell Terminal community newsletters, which respond to community questions and concerns.

Ampol's land use strategy for the Site involves two development consents, SSD-5544 and SSD-86799993, each focusing on different objectives. SSD-5544 (and its modifications) focuses on the operation of the Kurnell Terminal whereas the SSD-86799993 for the KEIP focuses on new land uses within previously developed but vacant land at the Site.

The Kurnell Refinery Conversion (SSD-5544) was undertaken as the refinery business was no longer viable at Kurnell, whilst the Site could be retained as a finished product terminal to receive and distribute refined petroleum product. This provided the need for the approved project (SSD-5544) and supported its objective, which was and remains:

"*To ensure that Ampol's operations within Australia remain viable whilst ensuring that the company can provide a safe, reliable, and sustainable supply of petroleum fuels to NSW and the ACT*."

The Kurnell Refinery Conversion project's subsequent modifications also support this objective. The Kurnell Terminal operates under SSD-5544 and would continue to do so during construction of the proposed modification and following its completion as the modified terminal.

The KEIP project's objectives relate to preparing the previously developed land at the Site to support new land uses consistent with the existing land use zoning within the Sutherland Shire Local Environmental Plan 2015 (refer to the Scoping Report available in the Major Projects Portal).

Certain civil activities had been included in the proposed modification that could have benefited the KEIP project as there was some benefit in completing these activities at the same time as the works proposed under the proposed modification. However, these activities have now been removed from the proposed modification to allow a clearer delineation between the two development applications.

### 4.14.3 Biodiversity

**Impacts to biodiversity (terrestrial and aquatic) and migratory birds**

A total of 114 community submissions raised concerns regarding the potential impacts of the proposed modification on threatened species and surrounding terrestrial and aquatic ecosystems.

Several submissions raised concern regarding the potential for ongoing harm to threatened and migratory species, including the Godwit, Ruddy Turnstone, Little Tern, Green and Golden Bell Frog, Giant Burrowing Frog, and Grey-headed Flying-fox.

Additionally, various submissions expressed concern that the proposed modification may cause both short- and long-term irreversible damage to the terrestrial and aquatic ecosystems in Kurnell. Submissions stated that construction activities may disturb contaminated soils, generate dust, and mobilise runoff and pollutants into local waterways, thereby degrading surrounding habitats for flora and fauna.

Several submissions also highlighted that stormwater and flooding events could transport pollutants into surrounding environments, exacerbating long-term risks to biodiversity and ecological health. Some submissions specifically requested that untreated runoff into Towra Point Nature Reserve be addressed in the proposed modification application due to its potential impacts on critically endangered species.

Submissions emphasised the vulnerability of the local environment, including Botany Bay, Towra Point Nature Reserve, and Quibray Bay, and expressed concern that any additional impacts that could contribute to biodiversity loss and reduce the long-term ecological stability of these sensitive ecosystems.

The submissions had several requests regarding the protection of biodiversity in Kurnell, including the implementation of environmental offsets and appropriate mitigation measures for threatened species. Submissions also emphasised the importance of habitat restoration and the application of the precautionary principle to prevent cumulative environmental risks.

*Response*

A Biodiversity Development Assessment Report (BDAR) was prepared to support the modification application and has been reviewed and updated for this Submissions Report (refer to Appendix I). This assessment was supported by biodiversity surveys of vegetation and species present within the Site on 19 to 20 February 2024, 10 to 11 April 2024, 29 November 2024, and 13 January 2025.

Based on available mapping, Bar-tailed Godwit and Black-tailed Godwit could occur within the Site, however, they were not identified during the biodiversity site surveys. The removal of onsite human-made structures, such as pipeways and channels, was identified as having the potential to impact habitat, connectivity or movement corridors for these species that have formed around these features. Accordingly, mitigation measures would be implemented for migratory bird species, including stopping work if animals or nests are encountered, limiting light spill during construction, and allowing fauna to move offsite naturally or be relocated by an authorised person outside the construction footprint if found utilising the Site.

Of the species referenced by community submissions, the Ruddy Turnstone (*Arenaria interpres*) and Little Tern (*Sternula albifrons*) are not known to occur within the Site based on available mapping or during the biodiversity site surveys, therefore were not included in the assessment. The mitigation measures detailed within the BDAR and this Submissions Report would be implemented to avoid impacts on migratory birds.

Green and Golden Bell Frog (*Litoria aurea*) was last recorded within the Site in 1996 (NSW DCCEEW, 2025a), with more recent sitings to the north east (in Kamay Botany Bay National Park) and to the south west (in the Sydney Desalination Plant site). Targeted biodiversity surveys were undertaken for the Green and Golden Bell Frog during preparation of the Modification Report. Although the subject land and the Site supports vegetation and wet areas that could provide potential habitat, no Green and Golden Bell Frogs were recorded during targeted surveys, nor were any other threatened amphibian species, such as Giant Burrowing Frog (*Heleioporus australiacus*). Despite this, a range of mitigation measures would be implemented to protect frogs, including the use of ‘frog-friendly’ and ‘wetland-friendly’ herbicides, stop-work procedures if threatened species are encountered, daily inspection of trenches with exclusion fencing maintained year-round, assessment and relocation of any trapped frogs by qualified ecologists or veterinarians, active searching by qualified zoologists if threatened frogs are present, and wash-down protocols to prevent the spread of Amphibian Chytrid Disease.

Although the Grey-headed Flying Fox has many records within 5 km of the subject land and is associated with the vegetation communities recorded in the Site, it was identified as an excluded candidate species credit species. The species credit for this species applies only to breeding habitat, with the nearest known breeding camp located approximately 700 metres southwest at Kurnell. Impacts to this camp were assessed as unlikely due to the disturbance footprint being located within the Site, limited construction hours, and implementation of noise and vibration mitigation measures.

Migratory species are listed as a Matter of National Environmental Significance under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). A search of the EPBC Act Protected Matters Search Tool was undertaken for a 5 km catchment around the Project Area. The search identified 82 listed migratory species with potential to occur within 5 km of the Project Area. The Site has the potential to support migratory species, however there are no areas that are considered significant habitat for migratory species within the Site. Migratory species may occasionally stopover on the Site; however, this would be enroute to higher quality surrounding sites such as the Towra Point Nature Reserve. As such, no direct impact is expected to any migratory listed species.

During construction of the proposed modification, works have the potential to disturb contaminated soils, generate dust, and mobilise runoff and pollutants into local waterways. To manage these risks, a range of mitigation measures would be implemented. These measures are outlined within this Submissions Report and would be further detailed in the Construction Environmental Management Plan (CEMP) for the proposed modification. This CEMP would include production of subplans including Soils and Water Management Plan (SaWMP), Acid Sulfate Soils Management Plan (ASSMP), Groundwater Management Plan (GWMP) and Asbestos Management Plan (AMP). These plans would outline procedures to reduce erosion and the spread of dust, measures to protect excavations from increased stormwater runoff (e.g. by using bunds or similar structures where required), measures for the dewatering, storage, movement and treatment of groundwater encountered in excavations, management of vehicles leaving the Site to reduce and the production of dust and introduction of contaminated soils to the groundwater and/ or SWS. These measures were successfully implemented during the demolition of the refinery during significant civil and ground excavation activities to avoid dust and surface water impacts.

Implementation of these measures would protect the surrounding sensitive ecosystems. Refer to Appendix C for further detail.

### 4.14.4 Soils, groundwater, and contamination

#### Impact of exposure of contaminated materials, asbestos containing soils (ACS), and acid sulfate soils (ASS)

A total of 170 community submissions raised concerns regarding the exposure of contaminated materials, ACS, ASS and Potential Acid Sulfate Soils (PASS) during ground disturbance works. These submissions noted that the presence of ACS (including within the ACS Containment Cell), and PASS below 2 m depth onsite creates additional environmental risks during the proposed modification works, such as release of asbestos fibres into air or groundwater and acidification of nearby receiving environments. Some submissions specifically requested the implementation of an Acid Sulfate Soil Management Plan during construction works, and another requested a detailed risk assessment of soil disturbance and contamination mobilisation.

*Response*

The ACS Containment Cell, located in the south east of the Site (shown on Figure 1-3 to Figure 1-5), was approved under SSD-5544 MOD-2 and established to manage potential health and safety risks and operational constraints caused by ACS. The proposed modification does not include works within the containment cell and does not pose any additional risk associated with mobilisation or exposure of asbestos containing materials within the containment cell. Existing monitoring and maintenance obligations established under the SSD-5544 MOD-2 consent would remain in place, ensuring the long-term stability and performance of the containment cell.

The Conceptual RAP has been converted to a RAP to address submissions received during the exhibition of the Modification Report and refinements to the proposed modification (refer to Appendix E). The Updated Soils, Groundwater, and Contamination Report (Appendix F) has also been prepared to support this Submissions Report. These assessments have identified the following primary contaminants of potential concern (COPCs) for the Site:

- Asbestos
- PHC comprising:
  - Total recoverable hydrocarbons (TRH)
  - Benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN)
  - Polycyclic aromatic hydrocarbons (PAHs)
- PFAS.

A range of secondary COPC have also been identified onsite based on observations from historic investigations.

A combination of remediation technologies for soils would be employed within the Project Area to achieve the proposed modifications remediation objectives. These are described in Section 1.4.

Where areas of fill material are identified as containing asbestos, health and safety management procedures would be followed in accordance with the requirements of the *Work Health and Safety Act 2011* and the *NSW Work Health and Safety Regulation 2017*. These would be implemented during ground disturbance and site remediation works, including excavation and movement of materials, and during subsequent construction activities. This would include preparation of a project-specific asbestos register and associated AMP, as outlined in *NSW Work Health and Safety Regulation 2017*.

During the completion of works associated with SSD-5544 MOD-2, ACS management controls were effective in preventing release of asbestos to the atmosphere, groundwater, or surface water. Specifically, during the ACS cell's construction period from July 2018 to April 2020, no exceedances of the 0.01 fibres per ml of air criterion were recorded (AECOM, 2020). The proposed modification-specific AMP would implement similar controls to protect the environment and community.

Review of the NSW ASS risk mapping indicates that the majority of the Project Area is listed as disturbed terrain above 4 mAHD (refer to Figure 4-24) (Appendix E). The southern portion of Zone 3 is mapped as Low ASS Probability over 4 mbgl, and the north western boundary of the Project Area is mapped as Low ASS Probability between 2 and 4 mbgl. A recent investigation along the north western boundary of Zone 1 found no indicators of actual ASS, but PASS materials were encountered, presenting grey staining and sulphurous odours (AECOM, 2024). It is therefore considered possible that ASS or PASS may be encountered during intrusive works.

Given historical observations of ASS at the Site, a draft ASSMP has been prepared and is provided in Appendix E2. The objective of the ASSMP is to minimise the risk to the environment resulting from ASS by outlining management techniques and operational methodologies that may be employed to mitigate potential environmental impacts associated with ASS/ PASS disturbance, and documenting monitoring and contingency methods for implementation during the proposed modification.

To achieve the objectives, the scope of ASSMP consists of:

- Summary of the extent of PASS within the Project Area
- Development of management measures to minimise PASS impacts
- Development of environmental compliance monitoring and reporting requirements
- Outline potential contingency measures
- Outline for the ASS reporting requirements.

Refer to Appendix E and Appendix F.

### Impact to groundwater and Groundwater Dependent Ecosystems (GDEs)

A total of 31 community submissions raised concerns regarding the presence of PFAS, hydrocarbons and other contaminants onsite contributing to groundwater contamination.

These submissions raised concerns that construction of the proposed modifications poses short-term risks to groundwater contamination. Various submissions also emphasised the potential for long-term risks associated with contaminated groundwater migrating offsite. They noted this could cause long-term health risks to people as well as impacts to adjacent sensitive environments, such as the Marton Park and Quibray Bay wetlands and the Towra Point Nature Reserve Ramsar site.

Some submissions also noted the increased vulnerability of nearby GDEs to impacts associated with groundwater drawdown or groundwater contamination, such as the Marton Park Wetland. Submissions also noted the vulnerability of the Site to groundwater migration due to its location in a low-lying coastal environment, susceptibility to flooding and exposure to extreme weather events exacerbated by climate change.

#### *Response*

Consequential improvements in groundwater conditions are expected as a result of the proposed modifications remediation works, as the secondary contamination sources contributing to groundwater contamination would be removed.

A quarterly groundwater monitoring program is currently implemented by Ampol at the Site as part of the existing OEMP as a monitoring and protection measure. This monitoring program would continue to be implemented throughout the construction and operation of the proposed modification to identify positive or negative changes in groundwater quality and respond as required.

Ampol has engaged an NSW EPA-accredited Site Auditor regarding the proposed long-term management of residual contamination, with the RAP independently reviewed and IAA provided (refer to Appendix E1). Following completion of remediation activities for the proposed modification, where further management of contamination is required within the Audit Boundary, one or more EMPs would be prepared. These plans would fall under and be administered by the sites existing OEMP. The OEMP would be updated as required to incorporate new EMP(s). The EMP(s) would be prepared in general accordance with the *NSW EPA EMP Guidelines* (NSW EPA, 2022b) and *NSW EPA Consultant Guidelines* (2020) (NSW EPA, 2020a).

The EMP(s) would include:

- A statement of the objectives of the EMP
- Description of responsibilities and timeframes for implementation of the EMP requirements
- Specific additional health and safety requirements for intrusive activities
- Appropriate monitoring locations and depth within and down-gradient of residual contamination
- Environmental monitoring and reporting requirements (if required).

Refer to the RAP (Appendix E) for further detail.

Additionally, GDEs have been identified in proximity to the Project Area, as shown on Figure 4-23. During the proposed modification's construction, where excavations intercept groundwater, temporary dewatering would be required to enable works to be carried out safely. Dewatering may result in temporary groundwater drawdown, with the potential to affect nearby GDEs. In response to agency submissions, a groundwater assessment has been prepared for the Updated Soils, Groundwater and Contamination Report (Appendix F) and presents a conservative estimate of groundwater ingress and groundwater drawdown extent during dewatering activities.

Specific impacts to GDEs due to groundwater drawdown have been considered in the Updated BDAR (Appendix I). A GWMP would be developed as a subplan of the CEMP to manage the extraction, storage, movement and treatment of groundwater encountered in excavations as well as potential impacts to GDEs. Dewatered groundwater would be collected and sent to the onsite WWTP in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater. The GWMP would also outline groundwater monitoring (water levels and quality) requirements, site-specific water level and quality trigger levels, and an associated Trigger Action Response Plan (TARP) to allow for effective and appropriate responses. Given the temporary nature of the works and the implementation of mitigation measures, it is unlikely that there would be a permanent impact to the identified GDEs.

Additional groundwater take is not proposed during operation of the modified terminal.

Refer to the Updated Soils, Groundwater and Contamination Report (Appendix F) and Updated BDAR (Appendix I) for further detail.

### Contamination risks have not been properly assessed

A total of 33 community submissions raised concerns regarding the improper assessment of contamination risks to people and adjacent sensitive environments, such as the Marton Park and Quibray Bay wetlands and the Towra Point Nature Reserve Ramsar site.

Various concerns were raised regarding data gaps in the Conceptual RAP, with submissions noting that remediation cannot be fully effective if the extent of contaminants and their migration pathways is not completely understood. Submitters expressed concern about the lack of detail provided on measures to prevent contamination risks during the proposed works.

*Response*

The Modification Report included a thorough assessment of potential contamination risks to people and adjacent sensitive environments. The Modification Report was supported by the Soils, Groundwater, and Contamination Report (Appendix G), the Surface Water, Wastewater, and Flood Report (Appendix I), and the BDAR (Appendix P).

The Conceptual RAP (Appendix H of the Modification Report) was informed by sufficient site investigation and historical data to characterise contamination and define appropriate remediation pathways. While some data gaps remained, these were related to confirmation and/ or refinement of the proposed remedial approaches, estimated remediation volumes, and remedial technologies to be adopted. The identified gaps did not affect the overall remediation approach or its suitability.

To address submissions received during the exhibition of the Modification Report and refinements to the proposed modification, the Conceptual RAP has been converted to a RAP (Appendix E). The RAP has incorporated the findings of the Data Gap Sampling Analysis and Quality Plan (SAQP), which involved a comprehensive historical data review of environmental works at the Site, including remediation validation reports and previous site investigations. This review has allowed for the closure of certain data gaps, and provided further detail regarding the conceptual site model, contamination of potential concern, and their associated migration pathways.

Appendix F (Updated Soils, Groundwater, and Contamination Report), Appendix H (Updated Surface Water, Wastewater, and Flood Report) and Appendix I (Updated BDAR) have been updated to reflect these updates.

### 4.14.5 Stormwater and water quality

**Water quality in receiving sensitive environments (Towra Point, Quibray Bay, mangroves, beaches, Botany Bay, wetlands, National Park)**

A total of 133 submissions raised concerns around potential impacts to water quality in the Kamay Botany Bay National Park and surrounding receiving environments, such as Botany Bay, the Towra Point, Quibray Bay, and Marton Park Wetlands. These submissions emphasised the vulnerability of the flora, fauna, migratory species, and ecological communities within these areas, as well as the state, national, and international legislative protections that apply.

Various submissions raised concerns regarding the proposed removal of the OWS and the redirection of stormwater to the SWS, and whether the Site's SWS had the capacity to capture additional flows. Four submissions refer to the redirection of 22% of the Site's stormwater into Quibray Bay as cause for concern. Concerns focused on the potential for surface water to carry contaminants into the receiving environment, posing risks to water quality and ecosystem health.

Further concerns were raised regarding the disturbance of contaminated materials and soils during the infrastructure works and remediation. Submissions claimed that such works could mobilise contaminants into surface water runoff reducing the water quality of receiving environments. They claimed that during flood events, waste contaminants could be discharged into receiving environments and further reduce surrounding surface water quality. These submissions requested the long-term protection and improvement of water quality in Botany Bay.

*Response*

Currently, surface water in Zones 2 and 3 is collected and processed by either the SWS or OWS. Under future operational (post-modification) conditions, following targeted ground remediation and removal of the OWS from Zones 2 and 3, the existing SWS would collect additional surface water runoff from areas previously serviced by the OWS. The total SWS catchment area across the Site would increase by approximately 12.2 ha as a result of redirecting sections of OWS to the SWS as part of the proposed modification. This is a 4.1% increase in catchment area. Surface water catchment changes across the whole Site are provided in . Surface water catchment changes would only occur within Catchments B and F[10], and Catchment E.

[10] The SWS area increase in Catchment F would be redirected to Catchment B so as to prevent changes to surface water inflows entering the natural retention basin and coastal wetland located south of the Site.

Due to a larger area draining to the SWS, surface water runoff within some of the site-wide catchments would increase. The Site would also experience an increase in peak discharge rates from these affected catchments which without water management controls could potentially affect water quality and ecosystem health within sensitive receiving environments. The proposed surface water management strategies detailed in Appendix G and summarised in Section 4.1.5 would maintain pre-modification peak discharge rates from the Site (or very close to) during a range of storm events up to and including the 1% Annual Exceedance Probability (AEP) [11] storm event under current and future climate scenarios.

Modelling has been undertaken as part of the Updated Surface Water, Wastewater, and Flooding Report (Appendix G) to:

- Understand existing and post-modification discharge rates from the Site.
- Determine the measures and design approaches needed that would limit peak post-modification discharge rates from the Site to existing pre-modification discharge rates in each of the following scenarios:
  - Storm events up to and including the 1% AEP event
  - Current climate (2030) scenario
  - Future climate (2100) scenario.

Surface water catchment changes are discussed in Table 4-15.

**Table 4-15 SWS catchment change in operational flows**

| Catchment | Change in operational flows |
|---|---|
| B and F | Secondary containment structures, called bunds, are located around existing and former terminal (and refinery) infrastructure for the purpose of capturing accidental spills in accordance with AS 1940 (Flammable Liquids). These bunds act as flood storage within the Site. There would be no change to these bunds, and therefore, they would continue attenuating or retaining surface water under post-modification conditions.<br>New low-flow outlet pipes would be installed in each bunded area in Catchment F to direct water towards Catchment B, thereby preventing new flows draining south towards the natural retention basin.<br>By preventing additional surface water from entering the existing SWS network in Catchment B, its current capacity would be maintained. Modelling results (refer to Annexure A of Appendix G) indicate that using the available storage within the bunded areas and releasing flows slowly into Catchment B would maintain peak discharge rates from Catchment B, and ultimately to the Towra Point Nature Reserve Coastal Wetland and Quibray Bay, in all storm events up to and including the 1% AEP event. These measures would maintain pre-modification discharge rates under both present day and future climate conditions. |
| E | Catchment E would be altered during the proposed modification through removal of the OWS and also remediation in an area colloquially known as Refining Process Improvement Project (RPIP) Mountain. Removal of vegetation and remediation works within RPIP Mountain would result in a change in surface roughness within RPIP Mountain; this is because removal of mature vegetation would reduce the time it takes for rainfall to convert to runoff and spread across the area. This could potentially lead to an increase in peak discharge rates from Catchment E, and higher volumes of water entering the downstream drainage system along Sir Joseph Banks Drive towards the Towra Point Nature Reserve Coastal Wetland.<br>As part of the proposed modification, two onsite detention (OSD) systems would be installed in Catchment E: one achieved by widening the existing channel along the western side of RPIP Mountain (refer to Figure 4-12), and for the other, the former CLOR pipeway would be converted into an OSD system. The provision of new |

[11] An event that has a 1% chance (or 1 in 100 chance) of occurring or being exceeding in any given year.

| Catchment | Change in operational flows |
|---|---|
| | storage would maintain pre-modification peak discharge rates from Catchment E, and ultimately to the Towra Point Nature Reserve Coastal Wetland and Quibray Bay, in all storm events up to and including the 1% AEP event. |

As discussed in Section 1.4, sections of the OWS would be removed in Zones 2 and 3, in a staged manner to support remediation activities. Once remediation activities are complete, the relevant areas (Zone 2 and 3) would no longer be considered contaminated from a stormwater perspective or produce contaminated or oily water runoff. As such, surface water runoff from these zones would be of suitable quality for redirection to the Site's existing SWS and discharge to the receiving environment.

The removal of surface cover and exposure of contaminated-soil may increase the potential for erosion and sediment-laden runoff. Additionally, excavation works and stockpiling of loose soils could lead to the dispersion of dust, soils, sediments and other sorbed pollutants by wind and have potential to interact with surface water runoff, leading to changes in water quality. Design approaches have been incorporated into the surface water strategy and additional measures would be implemented to prevent water quality impacts during operation of the proposed modification. These would include stabilisation of surfaces to provide adequate surface cover and perviousness, maintaining current stormwater discharge rates.

Sediment loads in stormwater during the operational phase of the proposed modification are expected to be low given the final landform. However, in order to further protect sensitive receiving environments, such as the Coastal Wetlands, permanent sediment control measures are proposed to be installed within or at the downstream end of the two proposed OSD systems in Catchment E. Surface water discharge from these bunded areas would undergo treatment via the series of measures that are already in place within Catchment B, prior to discharging offsite. The slow release of flow would prevent these existing treatment measures from becoming overloaded. The proposed SWS network within Catchments B and F would also incorporate sediment control measures upstream of the connection point to the existing SWS network in Catchment B. These sediment control measures would be designed during subsequent design phases and would be designed to minimise the amount of sediment and other sediment bound pollutants that leave the south eastern corner of the Site.

Once surface/ vegetative cover has been established via hydromulching at RPIP Mountain, the risk of pollution of surface water runoff would therefore be negligible.

The performance of these measures would be controlled through a post-construction water quality monitoring program to confirm the discharged stormwater quality meets the water quality objectives (WQOs) for the Georges River Catchment (refer to mitigation measure F14). These WQOs are derived from Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) and Australian and New Zealand Environment and Conservation Council (ANZECC) trigger values (ANZECC & ARMCANZ, 2000) (ANZG, 2018).

The management of potential impacts on surface water runoff quality during the construction works would be detailed in the CEMP and relevant subplans including a Surface Water Management Plan (SWMP) and Soil and Water Management Plan (SaWMP). The content of these subplans and their annexures would be informed by the Blue Book (Landcom, 2004). The plans would include measures to limit soil disturbance and stormwater quality monitoring during construction. Refer to the full list in Appendix C and Appendix G.

### Proposed modification would increase offsite flood risk

A total of 11 community submissions raised concerns regarding flooding, and stated that the proposed modification had potential to increase offsite flood risk. Impacts associated with flood risk included damage to private property. One submission discusses the exacerbation of existing drainage and waterlogging issues with reference to the proposed increase in overland flow.

The submissions are also concerned that inclusion of capping within the remediation methodology increases the contamination risk in the event of a flood. Two submissions noted that the flood modelling indicates capped areas are at risk of inundation. Several submissions are concerned that the

remediation methodology is dangerous due to the area being flood prone, and are concerned that heavy rainfall or flooding will mobilise or leach contaminants.

Submitters stated that the assessment of overland flood risk is based on out-of-date data and methodology.

*Response*

Figure 7-5 of the Modification Report provided an indication of flood depths within the Site, during a combined 1% AEP rainfall event and 1% AEP tide event. The areas that are shown as flooded provide an indication of areas within the Site that provide flood storage, being the tank bunds and in pipeways, as they are depressions within the Site.

The Surface Water, Wastewater, and Flooding Report was prepared to support the Modification Report and has been updated for this Submissions Report (refer to Appendix G) and includes a new baseline flood model (refer to Figure 4-17). This incorporates the Australian Rainfall and Runoff: A Guide to Flood Estimation (Version 4.2*)* (Geoscience Australia, 2019) and includes simulations of the 20%, 5% and 1% AEP events for both the baseline and post-modification scenarios in both present day (2030) and future climate (2100) conditions. Additional guidelines the flood model has been prepared to include:

- Review Of ARR Design Inputs For New South Wales, NSW Office of Environment and Heritage (OEH, 2019)
- Floodplain Risk Management Guide – Modelling the Interaction of Catchment Flooding and Oceanic Inundation in Coastal Waterways, NSW Office of Environment and Heritage (OEH, 2015)
- Coastal hazard technical guide - Determining coastal hazard areas (DES, 2013)
- Project 15 (Two Dimensional Simulations in Urban Areas), representation of buildings in 2D numerical flood models (EA, 2012)
- Project 18 (Interaction of Coastal Processes and Severe Weather Events) Stage 2 Report (EA, 2018)
- Project 18 (Coincidence of Fluvial Flooding Events and Coastal Water Levels in Estuarine Areas) Stage 3 Report (EA, 2014)
- Australian Disaster Resilience Handbook 7. Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia (Third Edition (Australian Institute for Disaster Resilience , 2017)
- Flood Emergency Planning for Disaster Resilience (First Edition), Australian Institute for Disaster Resilience (Australian Institute for Disaster Resilience , 2020).

Refer to Section 4.14.16 for further information on this guidance.

As described in Section 3.1, capping has been removed from the proposed modification.

Potential flooding impacts during the construction phase have been considered in Appendix G, including how floodwaters would impact the proposed modification, how the proposed modification would potentially impact existing flood behaviour within the Site, and whether potential impacts would have follow-on effects across downstream locations. This assessment is summarised in Table 4-16.

**Table 4-16 Potential flooding impacts**

| Type of flooding | Potential impacts |
|---|---|
| Flooding impacts on construction works | The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of RPIP Mountain and Source Area Excavation 5. Following excavation of ACS, RPIP Mountain would be regraded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability, whilst the bund at Source Area Excavation 5 would be removed during remediation activities. Once regraded, surface levels would not be below existing |

| Type of flooding | Potential impacts |
|---|---|
| | surrounding ground levels. As such, the Site's resilience against external floodwaters would not change.<br>Existing SWS drainage infrastructure capturing and conveying existing flows, such as those into the Site from the Kamay Botany Bay National Park, would be retained during all stages of construction. The existing level of service provided for these external flows would therefore also be retained during construction.<br>Flood protection would be required around excavations or susceptible construction zones, such as biopiles and the Waste Management Area, to minimise the risk of floodwater ingress and to divert large external surface flows entering the Site around these construction zones – particularly, for works within Zone 2 as external flows from the National Park move in a westerly direction through Zone 2 and towards the main pipeway. Temporary diversion systems, such as bunding around proposed excavation zones, would be installed to direct flows around construction works and towards the nearest existing SWS, thereby preventing localised flood issues.<br>Construction works, such as excavations, would be staged where practicable, to minimise the extent of required diversion works at any one time.<br>Design, installation, and operation of temporary flood diversion works required during construction would be captured as part of the CEMP and subplans, including the SWMP and SaWMP as well as any location specific Erosion and Sediment Control Plans (ESCP). |
| Potential impacts of construction work on flooding | Areas identified as being flood prone are subject to small amounts of flooding from local flows exceeding the hydraulic capacity of the road network. Bunded areas within Zone 2 are shown to be subject to significant (greater than 300 mm) flood depths during large flood events, and therefore are important to retain in order to prevent changes in flood behaviour and increases in offsite stormwater discharge.<br>To prevent alterations to existing flooding behaviour at these locations, and to prevent an increase to floodwaters leaving the Site, the proposed modification has incorporated the following measures:<br>• Existing OWS bunded areas across the Site would remain bunded throughout the proposed modification works to prevent water that accumulates within these bunded areas from being uncontrollably released to the SWS network.<br>• The proposed modification would be completed in a manner that does not alter existing surface levels – i.e., remediated/ excavated areas would be returned to existing surface levels following the completion of these works, with the exception of RPIP Mountain and Source Area Excavation 5. Once regraded, surface levels would not be below existing surrounding ground levels.<br>• Where practicable, major construction works would be scheduled during dry periods, where there is not expected to be heavy rainfall.<br>These measures would prevent significant changes to existing flood storage volumes across the Site, which would in turn minimise the likelihood of localised flood impacts resulting from the proposed modification at other onsite or offsite locations. |

Works completed under the proposed modification would return the Project Area to its current landform and grade with the exception of RPIP Mountain and Source Area Excavation 5. Following excavation of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. As there are minimal changes to the landform, the operational phase of the proposed modification is not expected to alter existing flooding conditions on or offsite. The design controls implemented during the construction excavations would also be implemented under operational conditions to maintain existing finished surface levels across the Site. As a result existing flood storage volumes and flood flow paths across the Site would be maintained.

Stormwater discharge from the Site would be controlled through the proposed surface water management measures detailed in the response above, so that post-modification discharge rates do not exceed existing pre-modification discharge rates at all discharge locations. As a result, the proposed modification would not alter current flooding extents downstream of the Site.

### Stormwater management is not properly detailed and does not include surface water quality targets

A total of 13 submissions claimed that the proposed stormwater management plans are insufficiently detailed, lack independent verification, and fail to include surface water quality targets, or publicly accessible water quality monitoring data.

Some submissions are concerned that the management plans and mitigation measures outlined to address potential impacts are inadequate given the proximity of the Site to coastal wetland, the vulnerability of the Site to stormwater impacts, and existing contamination at the Site.

Requests have been made for a new flood study and stormwater study reflecting recent climate adjusted rainfall data to be integrated into the assessment, an independent hydrological risk assessment, stormwater modelling and independent approvals, and enforcement of water quality standards for Site stormwater discharges.

*Response*

Appendix G details the stormwater management measures to prevent potential surface water, wastewater, and flooding impacts upon offsite receivers. This has been supported by updated surface water modelling (refer to Annexure A and Annexure B of Appendix G).

Recommended safeguards and management measures for the construction phase of the proposed modification, including temporary erosion and sediment controls, flow diversion measures, and stockpile locations, would be captured in the CEMP and associated subplans and supporting documents, including the SaWMP, the SWMP and any location specific ESCP(s).

As outlined above, stormwater discharge from the Site would be managed through existing controls and through proposed surface water management measures (e.g. sediment control measures to minimise the amount of sediment and sediment bound pollutants transferring to Catchment B and potentially discharging offsite) such that the post-modification discharge rates would not be greater than existing, pre-modification discharge rates at all discharge locations. Design of these measures would be undertaken during future design development, and their performance would be controlled through a post-construction water quality monitoring program.

Short-term post-construction water quality monitoring at the main outlets of each Site catchment would be undertaken to confirm the discharged stormwater quality meets the WQOs for the Georges River Catchment. These WQOs are derived from ANZG and ANZECC trigger values (ANZECC & ARMCANZ, 2000) (ANZG, 2018).

Proposed stormwater quality monitoring locations are shown in Figure 4-20. Baseline water quality sampling would be conducted at the proposed monitoring locations prior to the construction to define the baseline water quality conditions.

Table 4-8 lists the proposed stormwater quality monitoring parameters and default trigger values in accordance with the aquatic ecosystem WQO for the Georges River catchment, which are the most stringent trigger values for the relevant contaminants compared to other WQOs. Should results exceed trigger values, an investigation would be undertaken to determine the cause and assess whether additional mitigation measures are required.

Additional measures to manage the potential for pollutants leaving the Site via SWS discharge are provided in Section 5.2.3 of Appendix G and summarised in Section 4.1.5. Existing internal roads and existing stormwater quality controls at other areas of the Site are not being modified as part of the proposed modification and have therefore not been assessed.

### 4.14.6 Air quality

#### Impacts on air quality during the construction phase

A total of 31 community submissions raised concerns about impacts to air quality during the construction phase of the proposed modification. These included general concerns about the release of dust and particulate matter, release of contaminants (e.g. volatile organic compounds (VOCs), petroleum hydrocarbons, PFAS, and metals), release of asbestos, importation of excavated materials (e.g. Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM)), as well as emissions associated with construction vehicles and equipment.

There were several submissions concerned about the lack of ongoing, independent and publicly accessibly monitoring routines. One submission has requested publicly available real-time and continuous air quality monitoring data within the Site and at Site boundaries.

*Response*

Soil contaminants, such as VOCs or heavy metals attached to dust, have the potential to become airborne during earthworks associated with the remediation stage of the proposed modification works and release odour or other potential contaminants of concern. Once contaminated soils are excavated to be treated ex-situ, they would be segregated and stockpiled separately depending on the type and concentrations of contamination present and the remediation technology required within the Waste Management Area.

Based on the results of testing, soils requiring remediation via biopiling would be placed within the designated biopile areas identified on Figure 1-5. Measures to minimise the release of dust, odour or contaminants during the biopiling works would include:

- Covering surfaces with an impermeable layer
- Minimising the exposed area
- Wetting down exposed soils
- Dust monitoring or observations.

Biopiles would be maintained under negative pressure with blowers to mitigate fugitive gas emissions to the atmosphere. Off-gas from the process would be passed through air filters to remove volatile hydrocarbons and regular air monitoring of the air emissions would confirm when exchange of air filters is required. Regularly used treatment methods, such as Granular Activated Carbon scrubbing, would be implemented and works would follow the guidelines set out in *NSW EPA's Best Practice Note: Landfarming* (NSW EPA, 2014b). To further minimise impacts related to odour or other potential contaminants of concern, the AQMP would include the following measures:

- Stockpiles of contaminated soil stored onsite would be managed to prevent odorous VOC emissions and windblown particulate emissions
- Excavation would be staged to manage potential VOC and odour emissions. Where practical, excavations would not commence prior to 8am nor after 4pm as weather conditions at these times are generally conducive to adverse odour air quality situations from fugitive emissions
- In the event of an odour complaint, an evaluation would be undertaken to confirm if the proposed modification demolition works are the source of the odours. If the construction works are confirmed as a potential ongoing odour source, additional mitigation measures would be implemented which could include the use of water sprays to suppress odours and, if necessary, the use of odour suppressants. Offsite olfactory observations and VOC monitoring using equipment would also be undertaken if necessary. In the event of ongoing odour issues, excavation activities would be stopped and if necessary, the excavation covered or backfilled. An odour reduction program would continue to be implemented in accordance with the existing EPL during construction and operation.

A dust risk assessment was prepared as part of the Air Quality Impact Assessment (Appendix N of the Modification Report). This included an assessment of particulate matter (PM) with a diameter of 10 micrometres or less ($PM_{10}$) and a diameter of 2.5 micrometres or less ($PM_{2.5}$). Construction of the proposed modification would involve demolition of existing structures, earthworks, and remediation works. Potential air emission sources for these activities would primarily be dust and particulate emissions due to the mechanical disturbance of dusty materials.

Unmitigated dusk risks for sensitive and ecological receptors were rated as high during the proposed modification's construction. However, as outlined in the *Institute of Air Quality Management Guidance* (IAQM, 2024), targeted mitigation measures can achieve high degrees of dust mitigation which significantly reduce dust impacts to a negligible level.

Targeted mitigation measures would the implemented through the Air Quality Management Plan (AQMP), prepared as a subplan CEMP, to address the impact of dust upon sensitive receivers. The AQMP would include:

- Measures to monitor dust emissions from the construction phase, such as visual inspections
- Appropriate measures to be undertaken during adverse weather conditions
- Appropriate, reasonable, and feasible measures to mitigate adverse air quality impacts, such as:
    - Vehicles would only travel on designated roads within the Site where possible and would be limited to a maximum speed of 10 km/hr in offroad areas and 25 km/hr elsewhere
    - Loads would be covered as required, and all tailgates would be securely fastened. Vehicles would not be loaded higher than the sides and tailboard.
    - Concrete cutting and coring would be undertaken using "wet tools"
    - Water sprays would be used to dampen down soils prior to excavation, handling and/or loading/ unloading materials as required
    - All plant would be maintained and operated in line with the manufacturer's specifications in order to minimise the emission of air pollutants and offensive odours
    - Plant and construction vehicles would be turned off when not in use
- Surface disturbance would be minimised. Exposed ground would be rehabilitated as soon as practicable.

To minimise impacts related to concrete crushing the following mitigation measures would be implemented:

- The crusher would be located as far as practicable from the Site boundary, allowing adequate buffer distance from receptors.
- Real-time dust monitoring would be undertaking during the operation of the concrete crusher. Details of this monitoring (and associated response actions) would be incorporated into the AQMP for the construction demolition works.
- A number of dust suppression measures would be implemented. These could include regular watering of stockpiles, dust curtains and other measures as appropriate.

Following the review of agency and community submissions, the mitigation measures have been updated to incorporate a TARP as a sub-plan of the AQMP. The TARP would be used in conjunction with real-time $PM_{10}$ monitoring to identify exceedances of the air quality criteria and to allow the appropriate site personnel to respond with additional management and mitigation measures. Monitoring would be undertaken in accordance with the AQMP and communicated as agreed with the agencies. Refer to Section 4.2.4 and the Updated Mitigation Measures (Appendix C) for further detail.

Emissions generated during construction of the proposed modification are associated with the combustion of petrol and diesel fuels by vehicles, onsite mobile equipment, and stationary equipment, such as diesel generators. Offsite heavy vehicle movements would include material delivery and waste removal. Construction traffic to and from the Site (not including internal movements) is expected to include about six heavy vehicles per day during all stages. Given this relatively low number of additional

trucks compared to existing traffic volumes, combustion emissions from construction traffic are unlikely to result in a notable deterioration in ambient air quality at nearby sensitive receptors. The bulk of onsite mobile equipment would be operating in Zones 2 and 3 most of the time, with adequate buffer distance from the residential receptors to the north of the Site.

Buffer distances between potentially odour generating sources and the Project Area boundary (and residential areas beyond the boundary) allow for an increased dispersion distance for odour generated by the proposed modification works. The adequacy of buffer distances has been assessed using recommended evaluation distances for polluting activities, such as the *Evaluation distances for effective air quality and noise management* (South Australia EPA, 2023).Emissions from mobile and stationary plant equipment are unlikely to make a significant impact on local air quality at nearby receptors.

#### Long term impacts on air quality

A total of 31 community submissions raised concerns about long term impacts to air quality. These concerns are associated with increase in fuel storage, equipment failure, and capping contaminants in-situ which may perpetuate ongoing air quality impacts. Submissions are concerned that capped contamination may become airborne over time.

*Response*

Once the proposed modification works are complete, the Site would continue to operate as described in the approval documentation for the approved project and would be broadly consistent with the development consent for SSD-5544. As the general operation of the Site as a terminal would not change, there would be no material change to the potential for air emissions compared with the existing terminal operation.

As described in Section 4.14.1, the proposed modification does not involve any increase in the storage, transfer, or processing of fuels or chemicals on Site. Therefore, there are no associated long term air quality impacts associated with increases in fuel storage. Additionally, the proposed modification is not expected to increase long-term risks associated with equipment failure beyond those already present.

As described in Section 3.1, capping has been removed from the proposed modification.

### 4.14.7 Noise and vibration

#### Noise and vibration impacts during the construction phase

A total of 29 community submissions raised concerns about noise and vibration impacts during construction. The submissions raised general concerns about noise and vibration levels, as well as particular concerns about noise and vibration levels resulting from the remediation process and increased heavy vehicle movements and haulage hours. Some submissions are particularly concerned given the existing noise and vibration impacts from industrial activity.

Some submissions referenced the predicted exceedances of acceptable noise thresholds in the Noise and Vibration Impact Assessment during construction near Zone 1A, and the disruptions this may cause to daily life and wellbeing. Another submission is concerned that the assessment considers generic environmental health data and is not reflective of the "*lived experiences of vulnerable individuals in the community, who would be disproportionately affected by this proposed modification*."

*Response*

Following discussions with the EPA the construction noise assessment was updated to better align with the NSW Government's Interim Construction Noise Guideline (DECC, 2009). In addition, Ampol has committed to completing construction activities broadly in line with the standard construction hours outlined in the interim Construction Noise Guideline (ICNG) (refer to Section 4.2.2). Completing construction activities in line with the ICNG standard construction hours would largely limit works and potential noise impacts to daytime hours and would avoid noise impacts during the evening.

The Updated NVIA is provided in Appendix H of this Submissions Report. This assessment does not predict any vibration impacts on the community or their properties as a result of the proposed modification provided minimum safe working distances in Zone 1A are adhered to (refer to mitigation measure G16 in updated consolidated list in Appendix C). However the works associated with construction of the proposed modification are likely to be heard by parts of the Kurnell community during standard construction hours.

The construction noise modelling has adopted a conservative assumption of one item of each distinct equipment type operating concurrently for the entire 15-minute period of construction activity, while the construction equipment located at the nearest part of the Project Area to each sensitive receiver location. It is highly unlikely that all equipment would operate concurrently at the nearest location to sensitive receivers and as such the assessment completed is highly conservative. Equally the noise impacts would only occur when works are taking place and as shown in Table 3-1 not all activities would occur at the same time.

Under these conservative assumptions, the predicted construction noise levels are expected to exceed the construction noise management levels presented in the ICNG at some noise sensitive receivers, at times during construction. This is particularly the case for construction activities close to residential receivers including construction of a new storage shed in Zone 1A to store boats and emergency aquatic spill response kits; relocation of the firewater system (FWS) into Zone 1, adjacent to Solander Street; and augmentation of FWS infrastructure in Zone 1, in close proximity to residences along Cook Street and Reserve Road. Each of these works would be undertaken for limited periods of time within the overall construction period, as shown in the indicative construction program, and would be predominantly limited to standard construction hours as defined by the ICNG.

Construction mitigation measures have been recommended to manage the potential construction noise impacts. These would include relevant feasible and reasonable noise mitigation measures as per the ICNG. Key to the management of potential impacts would be regular consultation with the Kurnell community as the construction program is finalised to confirm when activities in close proximity to parts of the Kurnell township would occur and how long they would last. Once the construction program and delivery approaches are finalised, these would be communicated with the community as part of ongoing engagement. Reasonable and feasible measures would be further reviewed and documented within the relevant Noise and Vibration Management Plan (NVMP) for discussion with the EPA and DPHI. The NVMP would also include a monitoring program to assess performance against relevant noise and vibration criteria, and arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures.

### Noise and vibration impacts during the operational phase

A total of 28 community submissions are concerned about noise and vibration impacts due to ongoing operations at the Site. Responses mention general noise and vibration, heavy vehicle movements, and 24/7 activity as concerns.

Other concerns raised include that long-term impacts of increased noise “have not been adequately addressed in the planning documents,” that “the increase in fuel storage and throughput would also exacerbate noise,” and that noise impacts will diminish the “public’s ability to experience and appreciate this vital heritage Site.”

#### *Response*

Once the proposed modification works are complete, the typical operation of the modified terminal would continue to operate in line with the agreed noise limits for the Site presented in the development approval for SSD-5544. There would be no changes to heavy vehicle movements, operational hours, or fuel storage and throughput that would affect noise levels during operation.

The FWS would be relocated within the FWS Relocation Area, refer to Figure 4-13, with two indicative locations considered. Operational activities for the FWS would include individual testing on a monthly basis and simultaneously on an annual basis.

The predicted operational noise emissions from the proposed modification for the Option 1 monthly FWS testing scenario may lead to exceedances of the criteria during the daytime at Marton Park under both neutral and noise-enhancing meteorological conditions. This is anticipated to be an exceedance of 2 A-weighted decibel (dB(A)), which are considered negligible provided feasible and reasonable noise mitigation measures have been considered. The Option 1 annual FWS testing scenario may also lead to exceedances of the criteria during the daytime at Marton Park under both neutral and noise-enhancing meteorological conditions, with exceedances of up to 4 dB(A) and 5 dB(A) respectively at residential receivers. However, it is noted that this testing only occurs once per year for a limited time (two hours) and would therefore have a limited day to day impact.

To further reduce the impact of annual testing, feasible and reasonable mitigation measures have been proposed as per the ICNG Guidelines (DECC, 2009). These include:

- Selection of quieter equipment
- Add/ upgrade FWS mufflers
- Community consultation with local residents would be undertaken prior to the annual testing.

Refer to Appendix H for further detail.

### 4.14.8 Traffic and transport

#### Increase in traffic and transport during construction

A total of 26 community submissions note that the proposed modification would result in an increase to heavy vehicle traffic and transport movements.

The submissions expressed concerns regarding the increase of heavy vehicle traffic and haulage trucks associated with the proposed modification, particularly along Captain Cook Drive. Some submissions noted the existing hazards associated with trucks and other vehicles in Kurnell, such as congestion and pedestrian safety, and are concerned about the implications of additional trucks. Several submissions raised the heightened risk of road surface deterioration associated with increased traffic volumes resulting from the proposed modification.

*Response*

A Traffic and Transport Impact Assessment (TTIA) (Appendix L of the Modification Report) was prepared to support the Modification Report.

The proposed modification is expected to generate up to 136 heavy vehicle movements and 200 light vehicle movements per day during peak construction periods, with light vehicles expected to arrive prior to the identified AM and PM peak. The total number of heavy vehicle movements arriving and leaving the Site at any time would be 14 per hour. As such, the increase in vehicle trips associated with this proposed modification is not expected to change the operational performance of the road network in the study area with intersections along Captain Cook Drive currently achieving a Level of Service (LOS) of C. Additionally, Captain Cook Drive is identified as a B-double route approved for use by B-double heavy vehicles such as Oversize and Overmass (OSOM) vehicles (Transport for NSW, 2025).

A Construction Traffic Management Plan (CTMP) would be developed for the construction phase of the proposed modification and would include various mitigation measures such as designated routes for construction traffic, designated areas within the Site for truck turning movement, parking, loading and unloading, vehicle speed limits, coordination of off-site heavy vehicle movements and a plan for the movement of OSOM vehicles.

Once the proposed modification is complete, the Site would continue to operate as described in the SSD documentation for the approved project and would be consistent with the development consent for SSD-5544. Accordingly, no additional assessments were required for the operational phase in relation to traffic and transport, as the modification works align with the existing development consent.

The proposed modification is not expected to generate a significant increase in traffic during construction or operation that would materially accelerate road surface deterioration.

#### Emergency access via Captain Cook Drive

A total of 22 community submissions raised safety concerns about the single-carriageway two-lane road access along Captain Cook Drive during the event of an emergency. The main matters raised by the submissions are associated with potential safety concerns in the event of an evacuation due to bushfires, extreme weather events and explosions or chemical incidents as a result of industrial activity. Several submissions also acknowledged existing congestion issues along Captain Cook Drive and expressed concern that the proposed modification may intensify traffic volumes.

Additionally, some submissions requested that the single-carriageway two-lane road in and out of Kurnell be upgraded to a single-carriageway four-lane road to facilitate evacuation in the event of an emergency.

*Response*

The proposed modification would not change the risk profile of the terminal and Site. Numerous controls and measures are in place to safely operate the terminal and avoid an incident that would require the evacuation of Kurnell. The process safety controls at the Site are regularly reviewed and discussed with SafeWork NSW as required under the Site's Major Hazard Facility licence.

In 2012, the Site previously operated with up to 1,385 personnel, handling larger volumes of fuels and chemicals (including Crude Oil and Liquefied Petroleum Gas) with extensive operational equipment. During previous operations, access to the Site was also provided via Captain Cook Drive in its earlier configuration as a single carriageway. Since this time, several improvements and upgrades to Captain Cook Drive have been undertaken to enhance its function and safety.

Today around 100 people work at the Site and the terminal has a lower risk profile than the refinery. During an incident, even with the additional workforce required to complete the proposed modification, the number of vehicle movements related to the Site accessing Captain Cook Drive would be less than when the Site operated as a refinery. Once the proposed modification is complete, the modified terminal would not require an increase in workforce. As discussed in the section above, the proposed modification would not change the operational performance of Captain Cook Drive during delivery of the proposed modification or once the works are complete.

### 4.14.9 Aboriginal cultural heritage

**Impact to Aboriginal heritage and culturally significant lands**

A total of 29 community submissions raised concerns regarding impacts to both Aboriginal heritage and culturally significant lands within Kurnell.

Many submissions emphasised the spiritual, cultural, and historical significance of Kurnell for the Dharawal people, noting connections to Country, dreaming, sacred sites, and ancestral burials. Submissions also highlighted that the flora and fauna of Kurnell are an inseparable part of the Dharawal identity with stories, totems, and cultural teachings embedded in the surrounding landscapes. It was noted that since the Site's original establishment in the 1950s, irreparable fragmentation and damage to Aboriginal heritage has already occurred, and any further expansion would exacerbate this harm and undermine reconciliation efforts. One submission noted that reduced water quality would impact the Dharawal identity and cultural heritage embedded in the landscape.

Various submissions further raised the broader heritage importance of Kurnell as the site of Captain Cook's 1770 landing, describing it as both the birthplace of Australia and a painful meeting of two cultures. These submissions emphasised the importance of surrounding heritage listed sites, such as the Kamay Botany Bay National Park and Captain Cook's Monument, and raised concerns regarding further industrial encroachment and offsite environmental risks.

Submissions also raised concern that the proposed modification application fails to describe how the disturbance and impact to heritage sites would be avoided and claimed a lack of consultation with local Traditional Custodians.

*Response*

The Site and Project Area are recognised as part of the cultural landscape of the Dharawal people. Ampol acknowledges the spiritual, cultural, and historical significance of Kurnell, both for the Dharawal community and as a site of national historical importance, including its association with Captain Cook's 1770 landing and the Kamay Botany National Park.

An ACHAR was prepared to support the Modification Report and has been updated for this Submissions Report (refer to Appendix J). The ACHAR included Aboriginal community consultation in accordance with Heritage NSW's Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW , 2010). A total of 68 Aboriginal individuals and organisations were invited to register an interest in being consulted. Those registered included:

- La Perouse Local Aboriginal Land Council
- Wailwan Aboriginal Group
- Butucarbin Aboriginal Corporation

- Didge Ngunawal Clan
- Yarrawalk Pty Limited
- Yerrowah
- Ninnum
- Kamilaroi Yankuntjatjara Working Group
- Burroo Burroo
- Nerrigundah
- Yulay Cultural Services
- Thomas Dahlstrom
- Waawaar Awaa Aboriginal Corporation
- Ngambaa Cultural Connections
- Guntawang Aboriginal Resources Incorporated.

Key Registered Aboriginal Parties consultation activities included a review of AECOM's draft assessment methodology, participation in the Site inspection, and a RAP review of a draft of the ACHAR.

The ACHAR determined that the majority of land within the Project Area retains a moderate potential for the preservation of subsurface Aboriginal archaeological deposits in association with intact sands located below fill layers and above bedrock. If present, such deposits may include shell midden and/ or open artefact deposits, with hearths potentially also present. In addition, there also remains some, albeit limited, potential for Aboriginal burials to be present.

Mitigation measures to manage potential impacts to Aboriginal heritage cultural values would include the preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) for the proposed modification, prepared in consultation with RAPs, and to the satisfaction of the Heritage NSW and the NSW Department of Planning, Housing and Infrastructure. Key components of the ACHMP would include the following:

- A RAP representative would be engaged to monitor the works, where proposed excavations extend below fill layers and into intact sand deposits.
- An unanticipated finds protocol for Aboriginal objects
- An unanticipated finds protocol for human skeletal remains
- Details for an Aboriginal cultural awareness training package to form part of Site inductions
- Consultation protocols
- Reporting under the ACHMP
- ACHMP review requirements.

Refer to Appendix J for further detail.

### 4.14.10 Non-Aboriginal heritage

**Removal of buildings associated with the Australian Oil Refinery (Local Environmental Plan (LEP) #A2524)**

Three community submissions raised concerns regarding the removal of "heritage listed buildings" on Site. These submissions emphasised that the removal of these buildings would erase aspects of Kurnell's identity, history, and amenity. Further, they requested that the buildings be preserved to maintain community pride, historical continuity, and honour the people who lived, worked, and contributed to Kurnell's development.

Additionally, one submission argued that claiming the heritage-listed buildings no longer have practical value fundamentally misunderstands the significance of heritage while another highlighted that the removal of heritage listed buildings without a heritage assessment, constitutes as a breach of planning obligations.

*Response*

The Australian Oil Refinery (LEP #A2524) industrial archaeological site covers the footprint of the former Australian Oil Refinery, with the Project Area located within its boundary. Whilst several onsite buildings and structures contribute to the site's heritage significance, none are individually heritage-listed. In the past decade, many of the former buildings and tanks associated with the former refinery have been demolished.

These buildings were originally retained in 2014 in accordance with Strategy 14 of the Caltex Kurnell Refinery Heritage Management Strategy (HMS) (Australian Museum Consulting, 2014) to preserve a representative sample of significant original buildings across the Site. The HMS acknowledged that the shutdown of the refinery would render many historically significant elements obsolete and unsuitable for retention or adaptive reuse, and recommended that demolition of buildings of exceptional, high, or moderate significance should only occur as a last resort.

While the heritage value of three buildings is recognised, their significance is primarily linked to their historical role in refinery operations rather than their existing tangible characteristics. Today, the buildings are isolated from the operational terminal infrastructure, with only the Workshop and Storehouse used for non-essential storage. The removal of surrounding infrastructure and buildings has diminished their contextual significance, meaning they no longer function as critical elements of the former refinery.

Demolition of these buildings is required to maintain safe, viable, and reliable operations at the Site. The retention of the buildings in their current location and form is inconsistent with Ampol's operational requirements and risks ongoing safety, maintenance, and compliance obligations. The benefits associated with the removal of these buildings outweigh the financial burden and operational challenges of retaining these three structures.

The retention of the buildings is not considered feasible, owing to the financial burden of renovation and continued maintenance of the buildings, lack of function and inability to be adaptively reused. Further, isolation of the buildings from other operational areas has potential to create operational and safety risks.

### 4.14.11 Social

**Impacts to social cohesion and sense of place**

A total of 34 community submissions raised concerns regarding impacts to the local social cohesion and sense of place. These submissions emphasised the strong community opposition to the proposed modification.

Submissions claimed that the proposed modification would provide no meaningful social, economic, or environmental benefits to Kurnell, that it would permanently undermine the unique character of the area, and diminish the overall liveability of the neighbourhood. These submissions emphasised that the proposed modification does not respect Kurnell's unique environmental and cultural values or local needs. Submissions emphasised that Kurnell's heritage and social values are closely linked to surrounding receiving environments and noted that any impacts upon these areas would directly affect these values.

Various submissions also commented on the loss of public access to areas within Kurnell due to industrial expansion.

*Response*

A Social Impact Assessment (Appendix O of the Modification Report) was prepared to support the Modification Report.

The proposed modification includes remediation activities onsite, which would provide tangible benefits to both the Kurnell community and the surrounding sensitive receiving environments. These actions would remove contamination and support the long-term environmental health and wellbeing of the local area.

The Social Impact Assessment identified that the proposed modification was not expected to have a significant impact on social cohesion and sense of place during either construction or operation. This was largely due to the implementation of appropriate mitigation measures to avoid potential offsite impacts and the Site's location within an established industrial area, which is consistent with the existing industrial environment.

Temporary actual or perceived disruptions in access to surrounding areas may result in impacts to the use of these areas within the social locality. Construction and operation of the proposed modification would be entirely contained within the existing Site boundary, with no expansion of industrial land use beyond the current footprint. Accordingly, no changes to recreational access or other uses of surrounding cultural, natural, or heritage areas, including Kamay Botany Bay National Park and the Towra Point Nature Reserve Ramsar site, are anticipated.

Ampol is committed to undertaking comprehensive environmental management and remediation activities in accordance with regulatory requirements. Ampol will continue to engage with the community to address environmental and safety concerns and provide transparent information about ongoing operations. Refer to Section 3.2 for information on planned consultation activities.

### Inter-generational equity

A total of 59 community submissions expressed concern that the proposed modification prioritises short-term industrial convenience over the long-term health, safety, and wellbeing of current and future generations. The submissions highlighted the unfair burden, stress and anxiety placed on residents, particularly children, who would be left to carry the consequences of historical industrial activity.

Submissions emphasised fears that leaving contaminants capped onsite would create a toxic legacy, particularly if containment measures fail over time, exposing present and future generations to mental and physical health risks. They also raised concerns that further degradation of local sensitive ecological receivers would compromise their preservation for future generations. This would weaken environmental protections for generations to come and be an environmental injustice.

*Response*

Ampol is committed to undertaking environmental management and remediation activities in accordance with regulatory requirements. Completion of the proposed modification would facilitate remediation of the Site, providing long-term environmental benefits, reducing potential environmental risks and improving the overall amenity of Kurnell.

The proposed modification would maintain inter-generational equity by ensuring components of the existing bio-physical, social, and economic environment would also be maintained for future generations. Aspects of the proposed modification that would assist in achieving inter-generational equity include the following:

- Maintaining the safe, viable, sustainable and reliable operation of the Kurnell Terminal
- Addressing legacy refinery contamination issues
- Ensuring compliance with the CEMP, OEMP, and all associated environmental sub-plans Employing the avoid, minimise, and offset hierarchy to reduce direct and indirect impacts to biodiversity
- Undertaking consultation and engagement with the local community to provide an opportunity to ask questions and identify and manage areas of concern.

Through the implementation of mitigation and management measures for avoiding and minimising short-term or long-term environmental impacts, inter-generational social equality impacts have been addressed.

### Impacts to local amenity

A total of 48 community submissions raised concerns that the proposed modification could result in detrimental amenity impacts to the local community, including increased noise, vibration, traffic, air pollution, visual degradation and contamination. Further, some submissions expressed concern that the project may negatively affect the social amenity of nearby recreational spaces, including parks and nature reserves, impacting their use by the community.

#### *Response*

The Social Impact Assessment (Appendix O of the Modification Report) identified that during construction of the proposed modification there would be minimal changes to amenity in the social locality, including:

- Air quality and odour – With standard construction mitigation measures, impacts at neighbouring sensitive receptors would be negligible.
- Noise and vibration – Construction noise at some nearby residences may exceed the 75 dB(A) 'highly noise affected' level due to proximity of works. Impacts would be temporary and managed through staged, intermittent activities, with works in Zone 1A lasting three months. Following consultation with regulators, construction would now comply with the standard construction hours set out in the ICNG (DECC, 2009). Some activities would be required on a 24-hour basis to support construction activities, on the basis that their operation would not exceed night-time limits (refer to Section 3.1.2).
- Landscape character and visual amenity – Construction works in the main part of the Project Area (Zones 1 to 3) would be largely obscured from view of the public across the Site due to presence of the existing storage tanks and screening on the Site boundary. Zone 1A lies adjacent to residential receptors and has limited screening. However, visual impacts would also be minimal given the existing industrial uses in Zone 1A and that the new shed is proposed to be up to 4 m in height which is less than some of the surrounding double storey residential properties. Refer to the landscape and visual assessment in Section 4.1.4.
- Traffic and access – Construction vehicle movements may cause a minor disturbance to local amenity; however, such impacts are anticipated to be limited relative to existing conditions, as surrounding roads carry a high volume of traffic including heavy vehicles.

Temporary increases in local noise levels during standard working hours may cause some inconvenience for nearby residents. However, these impacts would only occur for a limited period during construction and would be managed within standard working hours defined by the ICNG (DECC, 2009). As such, the overall effect on residents' day-to-day lives is not expected to be severe, and normal amenity would return once construction activities in the area are completed.

The Social Impact Assessment did not specifically assess amenity impacts associated with contamination, as with the implementation of the proposed mitigation and management measures, no offsite contamination impacts are expected to occur. These measures are designed so that works are contained within the Site, preventing significant adverse effects on both the surrounding community and nearby sensitive environments, including recreational and ecologically significant areas close to the Site. These measures would be incorporated into the CEMP and associated subplans, including but not limited to the SaWMP, ASSMP, GWMP, AMP, CMP, AQMP.

Once the proposed modification works are completed, equipment would operate in their new locations in line with Figure 1-4. This would include the relocated FWS tank and pumps in the FWS Relocation Area (Zone 1) and the new warehouse in Zone 1A. The diesel pumps would require monthly and annual testing (refer to Appendix B1). The Social Impact Assessment concluded there would be minimal changes to amenity in the social locality, including:

- Air quality and odour – There is potential for impacts on amenity from the release of combustion emissions during FWS testing. In order to mitigate air quality impacts, measures would be applied to the engines and building housing the equipment. Mitigation measures would be further refined during detail design to minimise the impact to the local amenity.
- Noise and vibration – Predicted operational noise from the Option 1 monthly and annual FWS testing may slightly exceed daytime criteria, although annual testing occurs only once per year for a short period (two hours) and is therefore expected to have limited impact. Mitigation measures, such as upgraded FWS mufflers, and resident consultation prior to testing, would be undertaken to mitigate impacts.
- Landscape character and visual amenity – The relocated firewater tank and pumphouse within the FWS Relocation Area (refer to Figure 1-4) may be visible to road users as they drive past the terminal. However, as its aesthetic would be in keeping with the rest of the Kurnell Terminal, minimal amenity impacts are anticipated. The new storage shed in Zone 1A may be visible to nearby residents and recreational users; however, is also expected to have negligible visual impact, as its design aligns with the surrounding infrastructure within Zone 1A (refer to Figure 4-4 and Figure 4-5 for proposed concept drawings). Where appropriate, screening with vegetation will be implemented to further minimise effects on visual amenity.
- Traffic and access – No changes in traffic are expected during operation of the proposed modification, and therefore no changes to amenity are expected.

During operation of the proposed modification, any impacts on local noise or air quality are expected to be minimal due to the implementation of mitigation measures. Residents are unlikely to notice any changes to their day-to-day amenity, and normal conditions are expected to continue. Overall, the effect on the local community is expected to be very low.

### Impacts to tourism

A total of 34 community submissions raised concerns regarding the potential impacts to tourism within Kurnell during construction and operation of the proposed modification.

Submitters highlighted Kurnell's increasing importance as a tourism hub, attracting thousands of visitors per year for cultural, environmental, and recreational experiences. Submissions emphasised the significant recent national and state investment in Kurnell's tourism, such as the development of the Gamay Visitor Centre and Kamay Ferry Wharves and highlighted the cultural importance of the return of the Gweagal spears to be housed at the Gamay Visitor Centre.

These submissions expressed concern that the approval of the proposed modification would undermine government investments and deter tourism by reducing Kurnell's amenity and degrading surrounding natural environments.

Several submissions also raised concerns that approving the proposed modification could set a precedent for further industrial development in Kurnell, reducing the area's long-term economic and environmental potential.

#### *Response*

Tourism activity within Kurnell is supported by the area's unique cultural, historical, and environmental values, including its proximity to Kamay Botany Bay National Park, Towra Point Nature Reserve, and the Gamay Visitor Centre. Ampol acknowledges the importance of these assets to both the local economy and the broader community.

Construction and operation of the proposed modification would be entirely contained within the existing Site boundary, with no expansion of industrial land use beyond the current footprint into surrounding recreational areas. Completion of the proposed modification would facilitate remediation of the Site, with associated environmental and community benefits, reducing potential environmental risks and improving the overall amenity of Kurnell. No impacts to public investment in cultural and tourism infrastructure are expected.

### Impacts to the local economy

A total of 30 community submissions expressed concern that the proposed modification would result in negative impacts to the local economy. Various submissions highlighted that ongoing industrial activities and remediation works could reduce visitor numbers to the area due to perceived contamination risks, environmental stigma, and industrial land use. This was seen as likely to negatively affect local tourism, limit commercial opportunities, and undermine businesses that rely on visitors to the region.

#### *Response*

During construction of the proposed modification, retail, food, and beverage businesses would likely experience a temporary uplift in revenue, due to an increase in passing trade associated with the presence of construction workers in the area. Additional benefits would extend from the capital expenditure required for the proposed modification to local industries and service providers, including businesses supplying goods to the construction workforce as well as construction contractors. It is estimated that the proposed modification would support up to 100 Full Time Equivalent jobs in the peak construction year.

Accordingly, construction is anticipated to provide economic benefits to the local community by generating revenue for existing businesses and supporting employment through direct and indirect opportunities.

Once the proposed modification works are complete, the Site would continue to operate as described in the SSD documentation for the approved project. Completion of the proposed modification would facilitate remediation of the Site, providing a long-term environmental benefit.

### Impacts on property value

A total of 24 community submissions raised concerns that the proposed modification could have a detrimental impact on property values within Kurnell.

Various submissions highlighted that ongoing industrial activities and remediation works could reduce local property values due to environmental stigma, perceived contamination risks, and uncertainty surrounding future land use. These factors were seen as likely to reduce the area’s appeal and desirability, potentially creating negative market perceptions and undermining residential and business investments. Many submissions expressed concern that any decline in property values would cause significant financial stress.

Additionally, some submissions raised the issue of rising insurance costs for properties near sites with known contamination, while another requested that the proposed modification include an assessment of potential impacts on local property values.

#### *Response*

Property values are influenced by a range of economic, social, and environmental factors, including housing supply and demand, interest rates, broader economic conditions, access to services and infrastructure, and local amenity. While perceptions of industrial activity or contamination can affect local sentiment, it is likely that broader economic drivers have a greater influence on long-term property values than perceived or actual impacts of the proposed modification.

Construction of the proposed modification would be entirely contained within the existing Site boundary. The operation of the modified terminal would continue within the Site, with no expansion of industrial land use beyond the current footprint. Completion of the proposed modification would facilitate remediation of the land, reducing the level of legacy contamination in the ground at the Site.

### Impacts to community health, wellbeing, and safety

A total of 169 community submissions raised concerns about potential health and wellbeing impacts to residents in Kurnell resulting from the proposed modification.

Submissions discussed the potential for short- and long-term health impacts associated with proposed modifications construction and operation. Respiratory illnesses, including irritation, asthma, and other chronic conditions, were noted due to airborne contaminants and dust exposure. Submissions also identified carcinogenic, developmental, immune, and hormonal impacts, resulting from exposure to hazardous substances such as PFAS, asbestos, hydrocarbons, and VOCs through soil, dust, air, surface water and groundwater. Further, concerns were raised about long-term chronic health effects and safety from ongoing exposure, including neurological impacts and other systemic health issues. Specific health concerns mentioned include respiratory, cardiovascular and nervous system issues, and cancer risks.

Many submissions highlighted the potential stress and mental health impacts caused by the proposed modification, largely related to increased noise, traffic, and concerns about the spread of contamination. These submissions requested public health protections and highlighted that the proposed modification would exacerbate stress, anxiety and reduce residents' quality of life.

Vulnerable members of the community, including children, the elderly, and individuals with disabilities, were identified as being at heightened risk for health and wellbeing impacts. Many submissions emphasised the proximity of schools, recreational areas and residential areas to the Site and the importance of protecting these populations from exposure.

#### *Response*

Ampol acknowledges the concerns raised by the community related to health, wellbeing and safety. These concerns are important and as such appropriate mitigation measures have been identified and would be implemented during construction and operation of the proposed modification to avoid and minimise potential impacts on the community. Ampol has completed similar works to those proposed under the proposed modification since the conversion project was originally consented in 2014 and has successfully employed a suite of appropriate mitigation measures to manage these activities. The mitigation measures proposed for the delivery of the proposed modification build on the proven mitigation approaches from the past twelve years. Proposed mitigation measures for the delivery of the modification works are presented in Appendix C.

As noted above a number of submissions raised concerns regarding potential air quality and odour impacts related to dust and VOCs. Section 4.2.4 and Appendix C outlines the Ampol's proposed approaches for managing potential air quality impacts and avoiding significant offsite dust and odour impacts. These measures include the development of Trigger Action Response Plans which would identify potential impacts before they become an offsite issue and allow for Ampol to adopt appropriate approaches and avoid significant impacts occurring.

Ampol has considerable experience in managing asbestos contaminated soils. The ACS Management Project (SSD-5544-MOD2) involved the removal, transport, and placement of ACS from across the Site into a purpose-built onsite contaminant cell. Various measures and controls were put in place to manage these works. Asbestos monitoring was also undertaken to confirm that the measures were successful. The works were completed with no asbestos fibres above criteria identified from the surrounding air during monitoring. The measures used to manage the ACS Management Project have informed the measures that would be implemented for the proposed modification.

The proposed remediation works would improve existing site conditions and support the health and wellbeing of the Kurnell community by addressing both primary and secondary sources of contamination. Primary source removal involves the removal of the remaining OWS in Zone 2 and Zone 3, ensuring targeted contamination from the former refinery infrastructure is addressed. Secondary source remediation involves excavation of contaminated soils, followed by either onsite treatment or offsite disposal to landfill. These actions would remove soil-based contaminants that could act as secondary sources of groundwater, surface water, or air contamination, reducing potential for future exposure risks and thereby supporting the overall health and wellbeing of the Kurnell community.

A range of mitigation measures would be implemented throughout construction of the proposed modification to avoid and minimise potential environmental impacts. These would be implemented through the adoption the following sub-plans to the CEMP:

- SaWMP, including ASSMP and ESCP(s)
- SWMP
- GWMP
- CMP
- AMP
- Waste and Resource Management Plan (WRMP)
- ACHMP
- CTMP
- NVMP
- AQMP
- Biodiversity and Weeds Management Plan (BWMP).

Alongside the CEMP and RWP(s), the following existing Site management plans and documents would be updated to incorporate the proposed modification:

- Work Health and Safety Management Plan (WHSMP)
- Community and Stakeholder Engagement Plan (CSEP)
- Emergency Response and Preparedness Plan(s).

Following completion of the construction works, Ampol's existing OEMP would be updated to include the proposed modification, to continue Ampol's approach to monitoring and managing environmental compliance.

Prior to and during delivery of the proposed modification, Ampol would engage with the community to provide regular updates and more specific construction phase information. The community would be provided with opportunities to comment on the proposed works as they progress to facilitate a better understanding of the proposed works and to help Ampol and their contractors understand particular sensitivities. The proposed approach to community engagement is discussed in Section 3.2.

### 4.14.12 Monitoring

**No external audit or monitoring requirements, or independent review**

A total of 67 community submissions raised concerns that Ampol would be self-monitoring its remediation efforts, without independent audits or enforceable safeguards. Submissions highlighted the resulting risks to health, safety, the environment and community trust. Submissions stressed that self-monitoring dismisses accountability and creates indefinite uncertainty about Site safety and exposes the community to unacceptable risks of contamination.

Several submissions raised concerns about the absence of accessible soil and water quality data and the lack of compliance measures. The submissions claim that without third-party audits or clear EPA oversight, there will be no confidence in future remediation or long-term safety. Submissions raised specific requests regarding future clean-up and remediation efforts. Various submissions requested public disclosure and transparent reporting of remediation plans and monitoring results. Some submissions urged the EPA to retain authority to supervise testing, monitoring and compliance with environmental standards to ensure accountability.

*Response*

The Modification Report and all accompanying technical assessments have been independently reviewed by various regulators, who provided formal submissions to DPHI. These have been responded to in Sections 4.1 to 4.13 of this Submissions Report. The Submissions Report will need to be accepted by DPHI to confirm that the submissions have been adequately addressed. Further, an NSW EPA-accredited Site Auditor has been engaged to provide an independent review the RAP (Appendix E) and assess its alignment with the relevant guidelines and appropriateness for the Site.

Ampol currently provides quarterly environmental monitoring results to the NSW EPA in accordance with the requirements outlined in EPL 837. Ampol engages suitably qualified independent environmental consultants and accredited laboratories to undertake this monitoring and comply with relevant regulatory and technical standards. This ongoing environmental monitoring regime would continue during and after the construction of the proposed modification.

During the construction of the proposed modification, additional environmental monitoring would be undertaken as outlined in the CEMP and associated subplans, including (but not limited to) SaWMP, ASSMP, GWMP, NVMP, and AQMP. Refer to the full list in Section 5.3.6 and Appendix C. The CEMP and associated subplans would be independently reviewed by various regulators, including DPHI and NSW EPA, to assess their alignment with the relevant guidelines and appropriateness for construction of the proposed modification. The independent NSW EPA-accredited Site Auditor would conduct site inspections of remediation works.

Following review of agency and community submissions, the mitigation measures have been updated to incorporate a TARP as a sub-plan of AQMP. The TARP would be used in conjunction with real-time $PM_{10}$ monitoring to identify exceedances of the air quality criteria and to allow the appropriate site personnel to respond with additional management and mitigation measures. Monitoring would be undertaken in accordance with the AQMP and communicated as agreed with the agencies.

A TARP would also be developed to allow for effective and quick responses to potential impacts related to groundwater and GDEs, and would be implemented through the GWMP. Monitoring would be undertaken in accordance with the GWMP and BMP and communicated as agreed with the agencies. Refer to Section 6.5.4 of Appendix I for further details.

Ampol has engaged an NSW EPA-accredited Site Auditor regarding the proposed long-term management of residual contamination. Following remediation activities for the proposed modification, where further management of contamination is required within the Audit Boundary, one or more EMPs would be prepared. These plans would fall under and be administered by the sites existing OEMP. The OEMP would be updated as required to incorporate new EMP(s). The EMP(s) would be prepared in general accordance with the *EMP Guidelines* (NSW EPA, 2022b) and *Consultant Guidelines* (NSW EPA, 2020a).

The EMP(s) would include:

- A statement of the objectives of the EMP
- Description of responsibilities and timeframes for implementation of the EMP requirements
- Specific additional health and safety requirements for intrusive activities
- Appropriate monitoring locations and depth within and down-gradient of residual contamination
- Environmental monitoring and reporting requirements (if required).

Refer to the RAP (Appendix E) for further detail.

### 4.14.13 Cumulative impacts

**Cumulative environmental impacts have not been adequately assessed**

A total of 40 community submissions raised concerns about the cumulative environmental impacts of the proposed modification. Submissions highlighted that the cumulative impacts of ongoing industrial operations in Kurnell have not been adequately assessed or mitigated, particularly given the area's history of environmental degradation.

*Response*

The environmental baselines adopted for the proposed modifications impact assessments have incorporated the Sites existing industrial operations, including activities approved under previous SSD-5544 modifications.

Section 7.13 of the Modification Report assessed the potential cumulative impacts of the proposed modification. A long list of projects, including various onsite projects, considered for the cumulative impact assessment is provided in Appendix F of the Modification Report. Short-listed projects identified for consideration in the cumulative impact assessment that met the cumulative impact screening criteria included (refer to Figure 4-28):

- Breen Resource Recovery Facility (SSD-10412)
- Kamay Ferry Wharves (SSI-10049)
- Woolooware to Kurnell Tower Replacement Project
- Kurnell Planning Proposal.

The projects identified for consideration in the cumulative impact assessment were reviewed following receipt of community and agency submissions. This review did not identify any additional projects suitable for inclusion in the shortlist. Since lodgement of the Modification Report, the following projects have been further developed:

- Kurnell Stormwater Separation Improvement Project (Development Application (DA) DA24/0008) was included in the initial cumulative impact assessment but has been constructed since the preparation of the Modification Report. This project has now been included in the baseline assessments of the technical assessments updated for this Submissions Report
- Kamay Ferry Wharves (State Significant Infrastructure (SSI) SSI-10049) has been constructed since the preparation of the Modification Report. However, as a ferry service between La Perouse and Kurnell has not yet been secured, the project continues to be included in the operational cumulative impact assessment.
- A development application for works at the Kurnell Sports and Recreation Club (DA/250066) has been approved; however, due to the minor scale and limited potential for cumulative impacts, this project was not included in the shortlist.

Table 4-17 summarises the potential cumulative impacts identified during construction of the proposed modification, which has been updated in line with changes to the appended technical reports. No operational cumulative impacts were identified.




**Figure 4-28 Projects considered in the cumulative impact assessment**

**Table 4-17 Potential cumulative impacts**

| Key matters | Summary |
|---|---|
| **Construction** | |
| Traffic and transport | Potential cumulative impacts related to traffic and transport were identified for the Breen Resource Recovery Facility and Kurnell Planning Proposal.<br><br>Both these projects may have overlapping construction periods and anticipated shared use of Captain Cook Drive for construction vehicle routes. This indicates there may be an overlap with the proposed modification's construction peak in 2026 resulting in potential cumulative traffic and transport impacts along Captain Cook Drive.<br><br>Where overlaps in program are anticipated, to avoid potential cumulative traffic and transport impacts, consultation with Transport for NSW (TfNSW), Sutherland Shire Council (Council), and other regional project proponents would be undertaken (refer to mitigation measure I5). |
| Social | Potential cumulative social impacts were identified for the Breen Resource Recovery Facility, the Woolooware to Kurnell Tower Replacement Project, and the Kurnell Planning Proposal.<br><br>As these projects may have overlapping construction periods, construction fatigue may be experienced by people living and working in areas affected by these projects due to the combined impacts (e.g. traffic impacts from one project and noise impacts from another), or simply from the concurrent or consecutive nature of disruptions in the area. Noting the proposed construction start and duration for each, as well as their proximity, this impact is likely to be most felt by residents and businesses in Kurnell.<br><br>Engagement with affected residents and businesses would be carried out during construction (refer to mitigation measure M2). This would allow for coordination and communication between the proposed modification and other projects to understand specific project timeframes and impacts and seek to avoid concurrent or immediately consecutive construction activities in close proximity, where feasible.<br><br>Additionally, consultation with TfNSW, Council, and other regional project proponents would take place as relevant through the delivery of the proposed modification works (refer to mitigation measure I5). Communication with the community would be clear, frequent, and coordinated with other projects to support consistent messaging and complaint mechanisms across different projects. |

### 4.14.14 Climate change

#### Concerns about future impacts exacerbated by climate change

A total of 21 community submissions expressed concern that climate change may lead to more frequent and severe weather events which may disturb capped materials. These submissions noted the increased risk of capped contaminants spreading into residential areas through storms and flooding events, leading to increased pollution and resulting in water quality, health, and wetland impacts, particularly within Botany Bay. The submissions highlighted the existing extreme weather conditions in Kurnell exacerbating these risks and recalled their experiences following the 2022 flood event.

Additionally, some submissions raised concerns about the potential impacts of the proposed modification on the state and federally listed Green and Golden Bell Frog, with particular emphasis on how climate change may exacerbate potential impacts.

*Response*

As described in Section 3.1, capping has been removed from the proposed modification. Containment by capping was selected as a remediation option because it prevents workers onsite directly interacting with low level ground contamination, thereby reducing contamination risks to an acceptable level, while taking into account the site-specific and baseline conditions of Kurnell (CRCCARE, 2019a) (i.e. its dynamic, low-lying coastal setting and susceptibility to storms, wind, and coastal erosion processes).

The Surface Water, Wastewater, and Flooding Report was prepared to support the Modification Report and has been updated for this Submissions Report (refer to Appendix G). A detailed modelling review and update was undertaken. This work included updating the surface water model to meet the requirements of the Australian Rainfall and Runoff (ARR) Guidelines (Version 4.2), incorporating two climate change scenarios (2030 and 2100 under Shared Socio-economic Pathway 3[12]), and five flooding events (20% to 1% AEP[13]). As such, the need for onsite stormwater detention has been calculated to withstand future climate events.

Targeted biodiversity surveys were undertaken of the Green and Golden Bell Frog (*Litoria aurea*). Although the subject land and the Site supports vegetation and wet areas that could provide potential habitat, no Green and Golden Bell Frogs were recorded during targeted surveys. Despite this, a range of mitigation measures would be implemented to protect frogs and other groundwater dependent species and ecosystems. Refer to Section 4.14.3 and Appendix I for further information.

### 4.14.15 Land use

**Proposes alternative community-centric land uses**

A total of 93 community submissions proposed potential alternative community-centric land uses of the Site, in preference to the proposed modification.

Various submissions requested the land be restored, rezoned to non-industrial use, and returned to the community as public green spaces including parklands, recreational spaces, bushland, conservation, reforestation or low-impact development. Submissions commented on the benefits of green space for the community, and for future generations over the expansion of industrial operations, highlighting the impacts of current contamination to the public and environment. Some of these submissions proposed the alternative of residential development in preference to the proposed industrial activity, while others proposed the land be rezoned for tourism benefits to the community.

*Response*

The Project Area is located in the Sutherland Shire Local Government Area and therefore the planning controls contained within the *Sutherland Shire Local Environmental Plan 2015* (the LEP) are relevant. The Site and Project Area are currently located on land that is zoned is zoned E5 (Heavy industrial) (refer to Figure 4-29) under the LEP. This land zoning has been in place for approximately 10 years. Council consulted with the community on the proposed land use zoning and planning controls for Kurnell and the Site during the development of the 2015 LEP.

The proposed modification aligns with the following objectives of the E5 zoning*:*

- To provide areas for industries that need to be separated from other land uses
- To ensure the efficient and viable use of land for industrial uses
- To minimise any adverse effect of industry on other land uses
- To encourage employment opportunities.

[12] SSP3: Regional Rivalry is one of five future scenarios developed by the Intergovernmental Panel on Climate Change (IPCC), and is characterised by resurgent nationalism, a focus on regional rather than global cooperation, and a decline in international collaboration.
[13] A 20% AEP means there is a 20% chance of a specific event, like a flood or rainfall, occurring in any given year. It is the same as a "1 in 5 year" event on average, meaning it is expected to happen roughly once every five years. A 1% AEP means there is a 1% chance that an event, or a 1 in 100 year event.

A number of principal development standards and local provisions are provided by the LEP. Clause 6.19 – Kurnell Peninsula identifies the Site as located within the Refinery Risk Area on the Activity Hazard Risk Map. This clause limits certain land uses within the Refinery Risk Area stating "*development consent must not be granted for development for the following purposes on land to which this clause applies—*

*(a) dual occupancies,*

*(b) multi dwelling housing,*

*(c) secondary dwellings,*

*(d) seniors housing*

*(e) shop top housing."*

Given the Site contains Australia's largest operating fuel import terminal, employing approximately 100 staff and contractors, and its E5 (Heavy industrial) zoning, land uses including residential, recreational and other sensitive uses are not considered suitable and are not permitted under the existing zoning.

### Claims that the proposed modification prevents rezoning and extends industrial use of the Site indefinitely

A total of 85 community submissions claimed that the proposed modification permanently zones the Site as E5 (Heavy industrial), extending industrial use of the Site indefinitely. Several submissions noted that the proposed remediation methodology, including capping, reinforces this permanent industrial zoning, removing opportunities for alternative land uses in the future.

Other submissions claimed that this land zoning conflicts with the recent national and state investments in Kurnell's tourism and is incompatible with the surrounding environment while other submissions noted that the permanent E5 (Heavy industrial) land zoning would prevent any future remediation efforts being carried out on Site. Various submissions further expressed concern that the land zoning would enable increased industrial development both on the Site and across Kurnell.

#### *Response*

As described above, the Site and Project Area are currently located on land that is zoned E5 (Heavy industrial) (refer to Figure 4-29). The proposed modification is not seeking to amend the Site or Project Area's existing land zoning.

Industrial land can be considered for alternative land uses through established rezoning processes, when aligned with strategic planning priorities. An example of rezoning following remediation of a former industrial site is Wentworth Point (SSD -7281620). Historical fill materials containing heavy metals, hydrocarbons and asbestos were managed through a combination of targeted excavation and capping. Once remediation was completed, the land was subsequently rezoned and approved for mixed residential and commercial uses in line with strategic planning priorities. As such, the proposed modification does not limit or predetermine any future rezoning should strategic priorities or circumstances change.

Industrial lands are critical for the state, accommodating jobs, businesses, and activities that contribute substantially to the state's economic output, while providing essential services for a growing population (DPHI, 2025). Retaining the Site's current E5 Heavy Industrial zoning aligns with strategic planning objectives to secure, utilise, and actively manage Sydney's limited heavy industrial land, ensuring these areas remain available for future industrial and strategic uses.

### Opposition to the proposed Battery Energy Storage System (BESS) (general opposition, hazards and risk, fire, siting) and Energy/ Industrial Precinct subdivision

A total of 72 community submissions expressed strong opposition to the proposed BESS and the subdivision of the Site for industrial and energy-related uses. Concerns included:

- Ampol's long-term strategy has been unclear, spread across multiple planning proposals, resulting in limited transparency regarding potential future industrial land uses in Kurnell
- The perceived industrial expansion of the Site and within the suburb of Kurnell

- Hazards and risks associated with fires, explosions, and chemical release, directly affecting the safety of local residents
- The impact to air quality following the release of toxic gases during a fire or explosion
- Further degradation and contamination to local sensitive ecological areas, including the Kamay Botany Bay National Park and wetlands, through the risk of chemical spills from lead-acid batteries
- Dangers associated with the proximity of the BESS to flammable materials stored on Site, which could exacerbate a fire
- Kurnell's single-carriageway two-lane road, Captain Cook Drive, could hinder emergency services and impede the evacuation of people and animals in the event of a BESS incident
- Lack of detailed risk assessment and land use planning, considering the proximity of residents to the proposed BESS area within the Site
- Potential onsite and offsite impacts during the BESS construction and operation, including traffic and transport, noise and vibration, air and water quality, aviation safety, extreme weather events, soils, groundwater, and contamination
- Inadequate assessment of environmental impacts and requested an EIS, including community consultation and project alternatives
- Inefficiency of the BESS technology, claiming that more efficient alternative electricity generation methods such as fossil fuels and nuclear power are available
- Cumulative impacts associated with the BESS facility which could exacerbate existing issues within Kurnell or introduce new environmental hazards, particularly due to the history of contamination within the area
- The BESS provides no tangible benefits to the local community, is misaligned with community interests and the Site should not be used for further high-risk industrial or energy developments.

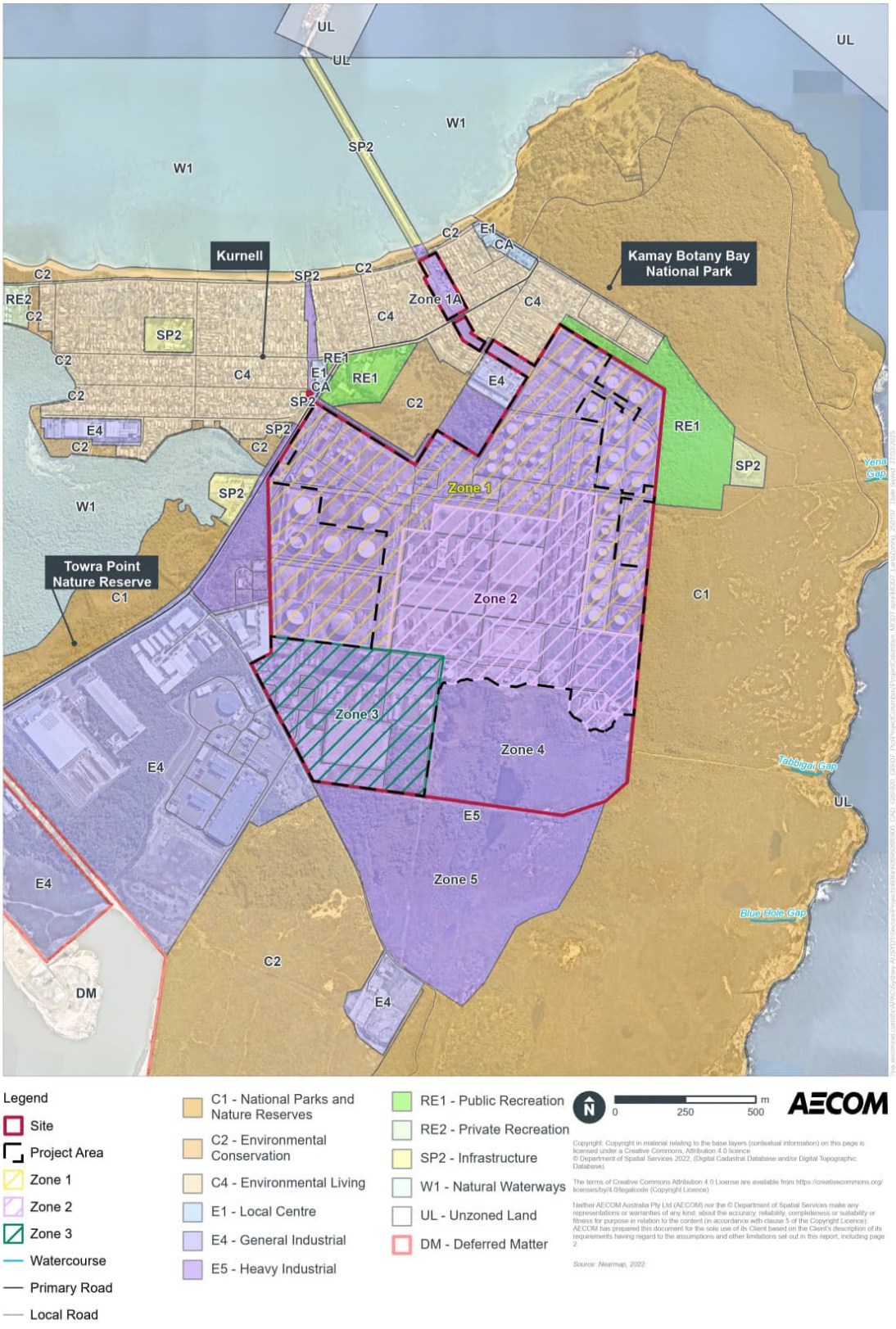



**Figure 4-29 Land zoning map**

*Response*

The proposed subdivision of land within the existing Kurnell Terminal for industry and energy uses and the development of a BESS is a part of the KEIP application (SSD-86799993), a separate development application to the proposed modification. Its application will be accompanied by an EIS, which will include a comprehensive description of the project and an assessment of potential environmental, health, and safety impacts on the community and surrounding environment.

Ampol has engaged with agencies and the community on early investigations into a potential BESS at the Kurnell site since June 2022. In early 2024, prior to the submission of the proposed modification, Ampol broadened its engagement to cover the potential KEIP, including the BESS, proposed subdivision, and masterplan vision. Over this period, a variety of channels, such as newsletters, drop-in sessions, hotline services, and community meetings, were used to share information and gather feedback.

While the concerns raised in relation to the KEIP project are acknowledged, they do not form part of the proposed modification application. As such, these matters fall outside the scope of this assessment and will not be considered further in this Submission Report.

For further information or to provide additional feedback on the SSD-86799993 proposal, community members are encouraged to contact Ampol directly via the Community Hotline on 1800 719 669, by email at community@ampol.com.au, or by attending one of the upcoming community drop-in information sessions.

### 4.14.16 Regulatory requirements

#### Use of outdated guidelines, studies, legislation, and policy

Six community submissions have raised concerns that the Modification Report and accompanying technical assessments have used outdated guidelines, studies, legislation, and policy. These submissions claim that Ampol has demonstrated a lack of due diligence or engaged in deliberate non-compliance, setting a dangerous precedent for future development applications. Submissions also raised concerns that outdated assessments, or inadequate safeguards rely on obsolete data, undermining the extent of environmental impacts from the proposed modification.

**Guidelines and studies**

Some submissions raised specific concern that the Surface Water, Wastewater and Flooding Report (Appendix I of the Modification Report) relied on the *Australian Rainfall and Runoff Quality Guide* (Ball et al., 2019), despite the release of Version 4.2 in August 2024. These submissions note that reliance on the outdated guideline, rather than the updated version incorporating climate change data, renders the impact assessment inadequate and increases the risk of uncontrolled discharge into surrounding areas and sensitive ecosystems.

Other submissions emphasised concern over reference to the *Sutherland Shire Council Kurnell Township Flood Study (WMA Water, 2019)*, noting that Council has since commissioned an updated study based on Version 4.2 of the *Australian Rainfall and Runoff Quality Guide.* As such, these submissions contended that the proposed modification has relied on outdated data, modelling, and methodologies.

Some submissions raised concern that the Modification Report, Soils, Groundwater and Contamination Report (Appendix G of the Modification Report) and Conceptual RAP (Appendix H of the Modification Report) referenced the *PFAS National Environmental Management Plan 2.0 (HEPA 2020)*, the *National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEMP, 1999), and* the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018),* despite subsequent updates in 2023 and 2024. These submissions claimed that reliance on these guidelines, rather than the updated versions underestimates risks to groundwater, ecosystems, and community health.

### Legislation

Some submissions alleged that the Modification Report references outdated legislation, including the *Contaminated Land Management Act 1997*, which has had amendments in 2024; the *Protection of the Environment Operations Act 1997*, which has had amendments in 2025; the *Fisheries Management Act 1994*, which has had amendments in 2024; and the *Heritage Act 1977*, which has had amendments in 2024.

### Policy

Some submissions raised concern that the Modification Report referenced the *Sutherland Shire Local Environmental Plan (LEP) 2015* despite its amendment in 2024. As the amendment incorporated flood-prone land clauses, the submission indicated that the Modification Report failed to adequately assess surface water and flooding.

Other submissions raised concern regarding reference to the *NSW Groundwater Quality Protection Policy* (Department of Land & Water Conservation, 1995) despite being superseded by the *Neutral or Beneficial Effect on Water Quality Assessment Guideline* (Water NSW, 2022). As the superseding document incorporated climate change, the submission claimed the Modification Report has not adequately assessed groundwater impacts.

#### *Response*

The Surface Water, Wastewater and Flooding Assessment (Appendix I of the Modification Report) incorporated two separate flood modelling studies to describe the existing flooding conditions across the Site and surrounding areas, including:

- Kurnell Township Flood Study (WMAwater, 2009)
- AA-004 Kurnell South Area Stormwater Management Project (BPM Projects, 2024).

Both of these studies were completed prior to the release of Version 4.2 of the *Australian Rainfall and Runoff Quality Guide* in August 2024. Accordingly, they adopt the then-current *Australian Rainfall and Runoff Quality Guide* and represent the best available flood information at the time of assessment.

In response to agency and community submissions, additional surface water modelling and baseline flood modelling have been undertaken in response to submissions (refer to Annexure A and Annexure B of the Updated Surface Water, Wastewater and Flooding Report, respectively). This includes updated surface water modelling in accordance with *Australian Rainfall and Runoff: A Guide to Flood Estimation (Version 4.2)* (Ball et al, 2019)[14].

Council has released a *Draft Sutherland Shire Overland Flow Flood Study* (BMT, 2023). However, the study area of this study does not incorporate the Site or broader Kurnell Peninsula. Consequently, this document is not applicable to the proposed modification and does not supersede the existing Kurnell-specific flood studies. At this time, no additional or updated flood studies for the Site or broader Kurnell area have been identified.

Regarding the use of outdated legislation and policies, the date referenced in the title is the date that each legislation and policy came into force. It is recognised that the amendments listed in the submissions were made during the production of the Modification Report. The quoted amendments have been reviewed and they do not have any implications to the outcomes of the assessments.

[14] *Australian Rainfall and Runoff: A Guide to Flood Estimation* continues to be referenced as “2019”, rather than the date that Version 4.2 was published (August 2024).

The Modification Report and accompanying technical assessments did not reference the *NSW Groundwater Quality Protection Policy* (Department of Land & Water Conservation, 1995) or the *Neutral or Beneficial Effect on Water Quality Assessment Guideline* as these relate to drinking water quality. The *Neutral or Beneficial Effect on Water Quality Assessment* provides guidance on the requirement under *State Environmental Planning Policy (Biodiversity and Conservation) 2021* for all development in the Sydney Drinking Water Catchment to have a neutral or beneficial effect on water quality. As the proposed modification is located outside the Sydney Drinking Water Catchment (refer to Figure 4-30), further assessment under this guideline is not required. Instead, the assessment relies on the current *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018), which provide updated guidance for managing water quality in natural and semi-natural water resources and supersede earlier frameworks.

The Soils, Groundwater, and Contamination Report (Appendix G of the Modification Report) and the Conceptual RAP have been updated, taking into account the key changes in Version 3.0 of the PFAS National Environmental Management Plan (HEPA, 2025). This includes consideration of additional guidance and standards on priority areas including new guideline values for investigation and risk assessment, remediation of contaminated land, re-use of resource recovery products and risk-based criteria for re-use of biosolids contaminated with PFAS. The Modification Report and accompanying technical assessments also referenced the *National Environment Protection (Assessment of Site Contamination) Measure 2013* (the ASC NEPM) (NEPC, 2013), which is the most recent revision.

The Modification Report and accompanying technical assessments referenced the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018), which is the most recent revision of the Guidelines. As such, the reports represent the most current guidelines and reflect the applicable legislative standards.

The *Contaminated Land Management Act 1997* (NSW) was amended in 2024 by the *Environment Protection Legislation Amendment (Stronger Regulation and Penalties) Act 2024* (NSW). The amendment strengthened the EPA's ability to increase penalties for non-compliance, clarified landowner responsibilities and enhancement of reporting and monitoring requirements for contaminated sites. This change does not have any implications on the assessments prepared to support the Modification Report.

The 2025 amendments to the *Protection of the Environment Operations Act 1997* (NSW) are partially in force. The *Protection of the Environment Legislation Amendment (FOGO Recycling) Act 2025, No.1* (NSW) was assented to in March 2025. This change does not have any implications on the assessments prepared to support the Modification Report. The *Environmental Legislation Amendment Act 2025, No.58* (NSW) was assented on 23 September 2025, but not all aspects of Schedule 9 of the Act are yet in force. This change does not have any implications on the assessments prepared to support the Modification Report. The *Heritage Act 1977* (NSW) was amended in 2024, with changes primarily relating to operations, processing, and the Heritage Council's membership and approvals process. The *Fisheries Management Act 1994* (NSW) was also amended in 2024, with changes largely limited to administrative changes. These changes do not have any implications on the assessments prepared to support the Modification Report.

### Proposed modification does not align with planning policies or legislation

A total of 39 community submissions stated that the proposed modification conflicts with NSW Government net zero policy by enabling the continued operation of fossil fuels infrastructure.

Various community submissions raised concerns that the proposed modification is inconsistent with State Environmental Planning Policies (SEPPs), as well as federal and state legislation. Some submissions raised concerns that the proposal is inconsistent with the *State Environmental Planning Policy (Kurnell Peninsula) 1989* (Kurnell Peninsula SEPP). These submissions emphasised that the Kurnell Peninsula SEPP requires remediation of the Site, and that retaining fuel infrastructure contradicts with its objectives relating to biodiversity and climate change.

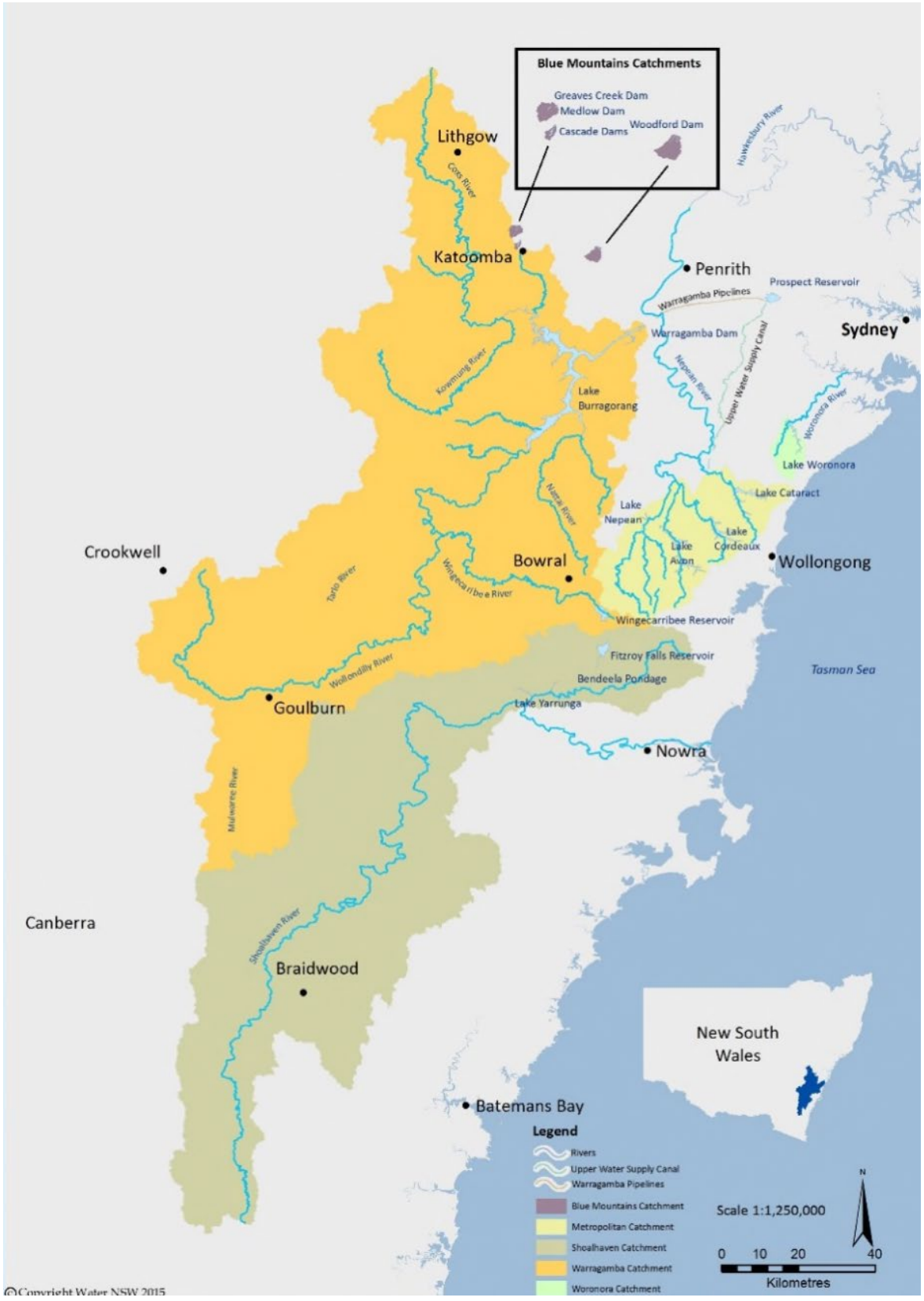



**Figure 4-30 Sydney drinking water catchment (WaterNSW, 2022)**

Various submissions raised concerns that the proposal is inconsistent with the *Australian Oil Refining Agreements Act 1954* (NSW) (AORA Act). These submissions highlighted that the Site's lease arrangements for infrastructure and Crown Land was established under the AORA Act. As refining has now ceased, submissions claim that Ampol is obligated to clear the Site and return it to the community. Additionally, submissions stated that consolidation of infrastructure for continued fuel import and distribution contradicts the intent of the original leases.

Many submissions raised concern that Ampol has not adequately met its obligations under the AORA Act, which requires that the occupier must not endanger public health, must ensure the protection of Botany Bay from pollution via compliance with pollution-prevention directives issued by the Chief Secretary's Department and the Metropolitan Water, Sewerage and Drainage Board.

*Response*

The proposed modification in its own right does not apply to the NSW Government's Net Zero Plan (NSW Climate and Energy Action, 2020) as it is not classed as a transport, electricity, or building development under Priority 2. Nevertheless, the proposed modification would not result in the expansion of fossil fuels extraction, production, or storage.

The Kurnell Peninsula SEPP was repealed on 1 March 2022 and is no longer a statutory planning instrument under the current NSW planning framework. While the concerns raised in relation to the former SEPP are acknowledged, its provisions are not relevant to the assessment of the proposed modification. For details on consistency of the proposed modification with the current SEPPs, refer to Chapter 5 (Statutory Context) of the Modification Report.

There is no statutory obligation imposed by the AORA Act for Ampol to return the Site to community use. The Site was purchased by Ampol (formerly Caltex) under the torrens title land registration system and established as an oil refinery with planning approval under the County of Cumberland Planning Scheme in the 1950s. The AORA Act concerns certain covenants related to use of the Site for the purposes of an oil refinery. That use ceased in 2014 upon the grant of the development consent SSD-5544.

Ampol has owned the Site under the torrens title land registration system since the 1950s. As described in the Modification Report and this Submissions Report, the proposed modification would not endanger public health or create pollution in Botany Bay. To the contrary, the proposed modification facilitates remediation of the land.

### Project significantly deviates from the original project approval – i.e. is not a modification

Nine community submissions raised concerns that the proposed modification has deviated from the original project description approved for the Kurnell Refinery Conversion (SSD-5544). Some submissions claimed that the proposed modification represents an unacceptable departure from the Site's original vision, while others stated that it is inconsistent with Section 4.55 of the EP&A Act.

*Response*

Modifications to development consents are obtained under Section 4.55 of the EP&A Act. This section of the EP&A Act provides three pathways for modification applications:

- Section 4.55(1) – Modifications involving minor error, misdescription, or miscalculation
- Section 4.55 (1A) – Modifications involving minimal environmental impact
- Section 4.55 (2) – Other modifications.

Given the anticipated impacts associated with the proposed modification works, Ampol is seeking to modify development consent SSD-5544 under Section 4.55(2) of the EP&A Act.

One requirement for modifications under Section 4.55(2) of the EP&A Act is that the consent authority must be "*satisfied that the development to which the consent as modified relates is **substantially the same** development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all).*"

The leading guidance on the substantially the same development test are Vacik v Penrith City Council [1992] NSWLEC 8 (Vacik) and Moto Projects (No 2) Pty Ltd v North Sydney Council (1999) 106 LGERA 298 (Moto). In Vacik, Stein J held that the term "substantially" means "essentially have the same essence."

The proposed modification is substantially the same development as the approved project in that:

- The proposed modification is considered to be a continuation of the approved project, which aimed to convert the Kurnell Refinery to a "Finished Product Terminal." The primary function and purpose of the Site to operate as a finished product fuel terminal would be supported by works associated with the proposed modification.
- The objective of the approved project was and remains "*to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell*." The proposed modification would meet this objective by removing redundant infrastructure and relocating or augmenting operational infrastructure, and subsequently remediating legacy refinery contamination, thereby continuing the viable, safe, reliable and sustainable operation of the Kurnell Terminal.

Furthermore, Section 4.55(2) applies where a modification would have more than minor environmental impact. As demonstrated within the Modification Report and this Submissions Report, the proposed modification is likely to involve a greater than minimal environmental impact on environmental matters, such as soils, contamination and groundwater, biodiversity, and noise. The relevant management and mitigation measures that were approved for the Kurnell Refinery Conversion project (SSD-5544, as modified) would continue to apply should the modification receive consent.

### A full Environmental Impact Statement (EIS) is needed

Eight community submissions requested the preparation of an EIS in place of the Modification Report. These submissions claimed that an EIS is necessary given the scale and sensitivity of the proposed works to adequately assess the potential environmental and social impacts.

*Response*

An EIS is prepared to accompany a DAs designated as SSD, SSI or Designated Development under the EP&A Act. An EIS must be prepared in accordance with relevant requirements of the EP&A Regulation and, for State Significant Projects, either the *State Significant Development Guidelines* or *State Significant Infrastructure Guidelines*. Further, an EIS for a SSD or SSI must be reviewed by a registered environmental assessment practitioner.

As described above, the proposed modification is considered to be substantially the same as the approved project and Ampol is seeking to modify development consent SSD-5544 under Section 4.55(2) of the EP&A Act, rather than seeking new development consent.

Assessment under Section 4.55(2) of the EP&A Act requires the preparation of a Modification Report to evaluate the anticipated environmental impacts, management measures, and mitigation strategies. The Modification Report was prepared in accordance with the relevant requirements of the EP&A Regulation; specifically, Sections 99 and 100, and the *State significant development guidelines – preparing a modification report* (DPIE, 2022). This report and its supporting appendices provide the appropriate level of assessment for the proposed modification.

## 4.14.17 Legacy

### Legacy impacts of terminal and refinery operations – general operations

A total of 150 submissions raised concerns about the historical and ongoing environmental impacts of industrial activity in Kurnell, particularly associated with the terminal and refinery operations.

Various submissions noted the six decades of industrial operations at the Site and stated that during that time there had been habitat destruction, mangrove loss, sand dune erosion, biodiversity decline, and restricted public access. Submissions noted residual contamination in soil, groundwater, and marine environments from hydrocarbons, PFAS, asbestos, and other hazardous substances, with offsite groundwater contamination historically evidenced by EPA advice against residential bore water use. Submissions claimed that over half of Kurnell's natural land has been lost to industrial development. They noted that the industrial development of areas of Kurnell had left communities exposed to contaminated waterways and wetlands, amenity impacts such as odours, noise, heavy truck movements, and diminished tourism and fishing opportunities.

Additionally, some submissions expressed dissatisfaction with Ampol's community fund, viewing it as insufficient to address the impacts caused by historical industrial activity.

Other submissions claimed that the cumulative impacts of previous modifications to the Kurnell Refinery Conversion have not been adequately addressed, and the proposed modification will continue this trend without sufficient regard for cumulative impacts into the future.

*Response*

Ampol acknowledges the concerns regarding historical industrial operations in Kurnell. However, the Site footprint has not expanded beyond its existing boundaries, and no significant biodiversity values or public areas have been lost as a result of the ongoing operation of the Kurnell Terminal. The proposed modification seeks to address legacy impacts of the refinery and terminal operations by implementing targeted remediation strategies to manage contaminants, such as hydrocarbons, VOCs, PFAS, and asbestos. This would be achieved through the excavation of impacted soils, followed by either onsite treatment or offsite disposal to an appropriately licensed landfill, refer to Section 1.4 for further detail.

Ampol is required to undertake onsite remediation work to reduce the risk of offsite PFAS migration. Ampol has been investigating PFAS contamination associated with the historical use of firefighting foams at the Kurnell Terminal. PFAS sampling has been undertaken by Ampol since 2018 to help determine the extent of the contamination and associated with NSW EPA's state-wide PFAS investigation program.

Concentrations of PFAS appear to be broadly stable or decreasing over time. Ampol is required to undertake onsite remediation work to reduce the risk of offsite PFAS migration. The EPA will continue to oversee the work undertaken by Ampol which includes ongoing sampling, monitoring and onsite remediation so that a robust approach continues to be applied to PFAS contamination.

As a part of the proposed modification, residual PFAS in soil would be addressed during remediation , which would permanently reduce PFAS mass onsite and, consequently, leaching of PFAS and migration to groundwater.

The Ampol Kurnell Community Fund was voluntarily established in 2022 as a dedicated initiative to support the growth and development of the local community. Focused on driving positive social impact, the fund provides financial grants to projects that improve amenity and positively impact the local community. While it is not designed to offset historical industrial impacts, it forms part of Ampol's ongoing commitment to foster long term benefits, empower local groups and organisations, and improve the overall quality of life in the Kurnell community.

### Legacy impacts of terminal and refinery operations – 2015 tornado

Seven community submissions referenced past extreme weather events, including the 2015 tornado, to illustrate how severe weather may exacerbate risks of future offsite contamination.

*Response*

On 16 December 2015, Kurnell experienced an unprecedented extreme weather event, with winds reaching around 213 km/h, hail, and heavy localised rainfall. While the event caused major damage to homes, businesses, and infrastructure in the area, the terminal's containment systems remained fully effective, and no offsite impacts were reported.

Impacts to surface water, wastewater and flooding, and noise and vibration related to the proposed modification were assessed under a variety of weather conditions, including wet weather and storms. These assessments considered site-specific conditions and operational practices, confirming that potential impacts could be appropriately managed and mitigated under both typical and extreme weather scenarios.

### Legacy impacts of terminal and refinery operations – past spill events

59 community submissions referenced the 2022 spill as an example of historical inadequate environmental management and communication with the community. Submissions described the overflow of hydrocarbons due to heavy rainfall, contaminating Marton Park Wetlands, Quibray Bay mangroves, Captain Cook Drive, and residential properties. Reported impacts included nausea, headaches, eye and throat irritation, wildlife fatalities, mangrove dieback, toxic odours, contaminated backyards, and unsafe recreational areas. Several submissions noted that previous remediation and fines or enforceable undertakings have been insufficient to repair ecological and social harm.

Many of these submissions included attachments such as photographs of impacts to the Quibray Bay mangroves after the 2022 spill, as well as floodwater contamination in Marton Park Wetlands, Captain Cook Drive and residential properties. These submissions requested public accountability for the 2022 spill.

#### *Response*

Ampol are required by law to alert relevant government agencies and the community when any reportable incident or spill occurs onsite. Historically, Ampol has met these requirements and acted promptly to contain and manage impacts, ensuring they remain within the boundaries of the Site wherever possible. This approach reflects Ampol's broader commitment to regulatory compliance, environmental management, and transparent communication with government and community stakeholders. Ampol's response to incidents raised in community submissions are discussed in the following sections.

On 7 April 2022 a 1-in-100-year storm event, combined with high groundwater levels and a peak high tide, caused a significant overflow of the wastewater separators at the Kurnell Terminal, with 9,200 litres of hydrocarbons mixed with stormwater released onto Captain Cook Drive and surrounding areas, impacting both residents and the environment. Ampol accepts full responsibility for all contributing factors to the incident that were within its control and deeply regret the impact the incident has had on the Kurnell community and the environment.

Following the hydrocarbon spill incident at Ampol's Kurnell Terminal, emergency services were contacted and initial containment measures were implemented, including absorbent pads, booms, and vacuuming of affected drains and waterways. Remediation across eight impacted zones was undertaken, involving excavation and validation sampling to confirm successful clean-up before backfilling. Additionally, a long-term ecological risk assessment, with EPA-approved experts, examined mangrove health in nearby ecosystems. Findings showed that hydrocarbons were not the cause of observed defoliation, instead, persistent freshwater conditions were identified as the likely factor.

In response to the 2022 spill, Ampol committed $17 million to substantially upgrade onsite stormwater management, delivering the Kurnell Stormwater Separation Improvement Project (DA24/0008). These works were approved by the EPA and significantly enhanced the resilience of the Kurnell Terminal, enabling it to withstand a 1-in-500-year flood event. The project included the construction of new levee walls, pump stations and upgraded stormwater infrastructure, materially reducing the risk of stormwater overflows and providing improved protection for the surrounding community and environment.

Ampol has continued to strengthen its environmental management through additional investments and operational improvements. These include enhanced noise management measures, such as ship berthing noise monitoring, implementation of an odour reduction program, and ongoing engagement with the EPA.

### Claims that Ampol previously agreed (and/ or is legally obligated) to remediate/ regenerate the land into public parkland/ recreational space

A total of 48 community submissions raised concerns that Ampol has previously agreed or is obligated to fully remediate and return the Kurnell refinery lands to the community as public open space, in line with the provisions of the AORA Act.

Several submissions highlighted the requirements of the Act on land grants and leases in Kurnell, including refinery-related use only, the removal of structures at closure, the prohibition of harmful discharges, and the reversion of the land to the Crown or for community use. Submissions emphasise that refining ceased in 2014, and the continuation of industrial operations through the proposed modification, contradicts the intent of the agreements, public reassurance, and trust. Some submissions highlight that the Act (*p.27*) prohibits the company from allowing solid or liquid waste to enter Botany Bay unless it has been rendered harmless to marine life and incapable of causing ecological harm. Submissions raise concerns that these provisions have been repeatedly breached.

The submissions expressed concerns that early commitments to fully remediate the Site and restore it as public recreational land are being disregarded. Submissions argue that the proposed modification represents a departure from those commitments, where contamination would be fully removed, soils and groundwater remediated, and the Site restored.

A significant number of submissions request for the full removal of contaminants and restoration of the land, with some submissions requesting that the Site be remediated properly rather than capping, and returned to the community as public open space, parkland, or potentially incorporated into a national park. Additionally, various submissions call for a rezoning process involving the Council and Indigenous stakeholders to ensure long-term community benefit. These submissions stress that the proposed modification is a retreat from Ampol's prior obligations, and a breach of community trust unless full restoration of the Site is implemented.

*Response*

The AORA Act does not contain any statutory requirement for Ampol to dedicate the land for public open space nor has Ampol ever provided such commitment. The Site was purchased by Ampol (formerly Caltex) under the torrens title land registration system and established as an oil refinery with planning approval under the County of Cumberland Planning Scheme in the 1950s.

To the extent that the AORA Act concerns use of the Site as an oil refinery, that use ceased in 2014 upon the grant of consent SSD-5544. Development consent SSD-5544 allows Ampol to operate a finished product terminal at the Site. The objective of the approved project was, and remains, "*to establish a viable, safe, reliable, and sustainable finished product import terminal at Kurnell*." This includes providing a safe working environment at the terminal and ensuring that the operation is not burdened by unnecessary costs. The Site has been lawfully used in accordance with the conditions set out under SSD-5544 since that time, including by the carrying out of remediation works.

Remediation would be undertaken in accordance with the following remediation objectives for the proposed modification:

- Remediate the soil and manage groundwater within the parts of the Project Area that are relevant to the proposed modification, to address legacy ground contamination identified in specific locations across the Site, to support the ongoing viable, safe, reliable, and sustainable use of the Kurnell Terminal.
- Remove the remaining former refinery infrastructure within the Audit Boundary[15] (specifically, the OWS).
- Implement the approved remediation process so that it adheres to applicable regulatory requirements, minimising potential environmental, human health, and operational risks.

[15] The Audit Boundary includes areas in Zones 2 and 3 that would be subject to independent audit. The Audit Boundary excludes Zone 1 areas which would continue to operate as the Kurnell Terminal and the ACS containment cell located in Zone 2.

Refer to Appendix B1 and Appendix E for further detail on the proposed remediation methodology. A summary of the preferred hierarchy of options for site remediation and management of soil contamination is provided in Section 4.14.1.

### Ampol is prioritising corporate convenience over the local environment and people's health

A total of 115 community submissions expressed concerns that the proposed modification reflects Ampol's prioritisation of corporate convenience and cost-cutting measures over the health, safety, and long-term wellbeing of the community and environment.

Submissions were concerned that children, families, and vulnerable community members will experience long-term health impacts from the proposed modification, whilst the company will financially benefit through industrial expansion.

*Response*

The approved project was needed to retain the Site as a finished product terminal to receive and distribute refined petroleum product because Kurnell Terminal (then refinery) was the hub of Ampol's supply chain for NSW and ACT. This supported its objective, which was: "*To ensure that Ampol's operations within Australia remain viable whilst ensuring that the company can provide a safe, reliable, and sustainable supply of petroleum fuels to NSW and the ACT.*"

In the 10 years since receiving development consent to convert the Site to a fuel terminal and the removal of refinery infrastructure, the southern and central areas of the Site have been largely vacant notwithstanding some remnant infrastructure. The proposed internal reconfigurations as part of the proposed modification would maintain operational efficiency and safety within the Site. The scale of the proposed modification is contained and focused, ensuring that the core function and size of the facility remains consistent with SSD-5544. This approach aligns with the approved Kurnell Refinery Conversion project, without introducing new elements that would significantly change the nature or increase the scale of the Site's operations.

Should the proposed modification not be undertaken, infrastructure would remain in its current reconfiguration. The retention of operational and redundant infrastructure in its current configuration would mean that terminal operations would be spread over a larger area and would not be optimised. This option would maintain a higher operational burden for the terminal and would maintain some legacy safety risks related to the presence of redundant infrastructure.

As described in Section 4.14.1, capping has been removed from the proposed modification and will be deferred to the subsequent development application for the KEIP project (SSD-86799993). However, containment via capping is a widely accepted, widely used, and compliant remediation technique that has been successfully implemented across Australia and internationally. Ampol remains committed to undertaking comprehensive environmental management and remediation activities in accordance with regulatory requirements. Ampol will continue to engage with the community to address environmental and safety concerns and provide transparent information about ongoing operations.

### Request Ampol fully exit the Site

A total of 10 community submissions request that Ampol cease industrial activity operations at Kurnell and immediately withdraw from the Site. Several submissions suggested Ampol's responsibility to return the land to the community due to years of industrial activity, in order to honour community wellbeing in Kurnell.

*Response*

Ampol acknowledges the community's concerns regarding ongoing operations at the Site and the desire for the land to be restored and returned to the community; however, Ampol has no plans to cease operations or exit the Site.

Ampol remains committed to the responsible operation of the Site in line with its E5 (Heavy industrial) land zoning under the *Sutherland Shire Local Environmental Plan 2015*. The Site plays a key role in supplying fuel to the NSW region, as Australia's largest liquid fuel import terminal, and employs approximately 100 staff and contractors.

Ampol is committed to undertaking comprehensive environmental management and remediation activities in accordance with regulatory requirements. Ampol will continue to engage with the community to address environmental and safety concerns and provide transparent information about ongoing operations. Ongoing consultation, if the proposed modification is consented, would involve:

- Update to Ampol's proposed modification-specific webpage to support transparency and ongoing community access to information
- Relevant community newsletters available online and letterbox drop to residents of Kurnell
- Community information sessions providing updates on the proposed modification, enabling direct discussion of technical issues, and opportunities for questions, including:
    - Regular in-person community drop-in sessions or online community information sessions from February 2026 to December 2026
    - Discuss and address key issues raised by the community
    - Information presented and displayed at community information sessions and response to questions will be uploaded to the webpage for transparency
- Continued development of Frequently Asked Questions documents to respond to community concerns and issues, including questions received by community members following exhibition of the Modification Report
- Continued development and distribution of plain English fact sheets to provide further information on technical aspects to be available via Ampol's website and distributed via letterbox drop
- Face to face meetings with targeted community groups to discuss updates and questions
- Maintain channels for feedback including operation of the Community hotline (1800 719 669) and email (community@ampol.com.au)
- Continued operation of the opt-in community notification platform for emergencies or major incidents.

Refer to Section 3.2 for further detail.

# 5 Updated justification and conclusion

This section provides:

- Consideration of the consistency of the proposed modification with the objects of the EP&A Act
- An assessment of the proposed modification against the principles of Ecologically Sustainable Development (ESD)
- An evaluation and justification of the proposed modification and the outcomes of the Modification Report, this Submissions Report, and updates to technical assessments to address agency submissions and refinements to the proposed modification.

The largest of these refinements is the removal of works to "facilitate future land uses." As described in Section 3.1, in consultation with DPHI, Ampol has elected to remove these works from the proposed modification and to include them in a subsequent development application that focuses on preparing certain parts of the Site for alternative uses consistent with the land use zoning: i.e. the KEIP project (SSD-86799993). Accordingly, the objectives of the proposed modification are focused on the terminal land use alone and remain "*to continue the viable, safe, reliable, and sustainable operation of the Kurnell Terminal*." This approach aligns with the approved Kurnell Refinery Conversion Project consent (SSD-5544).

## 5.1 Objects of the Environmental Planning and Assessment Act 1979

Consideration has been given to the consistency of the proposed modification with the objects of the EP&A Act as outlined below.

*a. To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources*

The proposed modification would maintain viable, safe, reliable, and sustainable operations at the Site in line with existing land use designations. The proposed modification would support the ongoing use of the Site for purposes of a liquid fuel import terminal and specifically a fuel import terminal. The terminal provides petroleum fuels to NSW and ACT and is a key part of the country's infrastructure supporting the day to day lives of millions of Australians as well as businesses and other organisations across the State and Territory. The efficient operation of the terminal is vital for the economic and social welfare of communities across NSW. The proposed modification would further improve the operation of the terminal and would remove primary and secondary sources of ground contamination, improving the local environment. As demonstrated in the Updated BDAR (Appendix I), the delivery of the proposed modification and the modified terminal would not significantly impact upon areas of ecological importance.

*b. to promote the supply, delivery and maintenance of housing, including affordable housing*

The proposed modification would not affect the supply, delivery and maintenance of housing, including affordable housing.

*c. to promote productivity through the development and management of the State and its resources*

The proposed modification would help optimise the operation of the Kurnell Terminal. The Site is already used for terminal land uses and the proposed modification would help consolidate this operation and resolve legacy refinery issues thereby improving the management of Site whilst avoiding impacts on surrounding ecological and community values.

*d. to protect the environment, including the conservation of threatened species of native animals and plants and ecological communities and their habitats*

The Modification Report, this Submissions Report, and updates to technical assessments identify the likely impacts of the proposed modification on the environment and surrounding community. Whilst temporary impacts are expected during delivery of the proposed modification works, these impacts are not expected to be significant with the implementation of the mitigation measures outlined in Appendix C. Various measures have been identified to avoid and minimise potential adverse impact and ultimately protect the environment and sensitive ecological values.

During operation of the proposed modification no significant impacts on the environment or ecological values are expected. The terminal would be managed in line with the requirements of SSD-5544 (as modified) and EPL 837 as well as the updated OEMP for the terminal. Compliance with these requirements and documents would prevent impacts to the local environment.

As demonstrated by the BDAR, the delivery of the proposed modification would not significantly impact upon areas of ecological importance or nearby ecological values.

*e. to promote resilience to climate change and natural disasters through adaptation, mitigation, preparedness and prevention*

The proposed modification would optimise the terminal operations and allow for the construction of new and fit for purpose infrastructure. This would include new storage sheds at the Site, and specifically a new shed to store boats and emergency aquatic spill response equipment closer to Botany Bay. The new location of this shed would allow quicker response times should a man-made or natural event/incident happen at the wharf or within Botany Bay.

*f. to promote the sustainable management of built and cultural heritage, including Aboriginal cultural heritage*

The proposed modification supports the sustainable management of built and cultural heritage through supporting the objective of the Site remaining as a finished product terminal. No adverse impacts on Aboriginal cultural heritage are expected as a result of the proposed modification (refer to Appendix J).

*g. to promote good design, amenity and the proper construction and maintenance of built environments, including the protection of the health and safety of the occupants of buildings*

The proposed modification would not result in a change in use of the Site, which would continue to operate as a finished product terminal. The proposed modification would not impact the built environment. The majority of the works are located within an existing industrial facility which includes large storage tanks and surrounding vegetation obscuring views of the works and the terminal.

A new storage shed to store boats and emergency aquatic spill response equipment is located in Zone 1A which is surrounded by residential land uses, however as discussed in Section 4.1.4, the shed would be consistent with the residential structures in the wider Kurnell Township in terms of mass and scale. As such the amenity of built environment would be maintained.

*h. to provide opportunities for participation in environmental planning and assessment*

Ampol have and will continue to consider the local community needs, as well as the value of the unique environment and cultural significance of Kurnell during the design, assessment, and development of the proposed modification. Ampol has engaged with the local community and their representatives through a number of methods during the development of the proposed modification and the modification application process refer to Section 3.2). As the proposed modification progresses, Ampol would continue to engage and share information with stakeholders and the Kurnell community through various forums and provide opportunities for the community to submit feedback and ask questions to help inform Ampol's decisions.

*i. to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment*

The Modification Report, this Submissions Report, and updates to technical assessments identify the likely impacts of the proposed modification on the environment and surrounding community. Additional mitigation measures to be applied to the approved project have been identified, where required, to avoid and minimise potential impacts. The proposed modification would support the objectives of maintaining viable, safe, reliable, and sustainable operations at Kurnell.

*j. to promote a proportionate and risk-based approach to environmental planning and assessment*

The modification application has included a detailed assessment of the proposed modification. Detailed technical assessments have been produced for environmental matters that present a high risk of resulting in significant environmental impacts on the environment or the community. In addition, higher level impact assessments have been produced for other matters which are unlikely to result in significant adverse impacts. The impact assessment produced for the proposed modification is both proportionate and precautionary in nature and provides a reliable basis for the consent authority to determine the application.

*k. to promote the orderly and economic use and development of land*

The Sutherland Shire LEP 2015 provides for the land use and zoning for the Site and surrounding area. Pursuant to the Sutherland Shire LEP, the Site is designated as E5 Heavy Industrial.

The proposed modification would support the existing and permissible land uses at the Site and therefore is in line with orderly and economic use and development of land.

## 5.2 Ecologically sustainable development

### 5.2.1 The principles

This section provides a review of the proposed modification against the principles of ESD in accordance with the EP&A Regulation. The principles, as listed in the Section 193 of the EP&A Regulation, are as follows:

1. *The precautionary principle* –if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
2. *Inter-generational equity* –the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations
3. *Conservation of biological diversity and ecological integrit*y –conservation of biological diversity and ecological integrity should be a fundamental consideration
4. *Improved valuation, pricing and incentive mechanisms* –environmental factors should be included in the valuation of assets and services.

These principles are discussed in the below sections.

### 5.2.2 Precautionary principle

The precautionary principle deals with certainty in environmental and technical decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

A modification application undergoes a public process that allows for better examination of the potential effects of proposed activities or development. Thus, the assessment process can be defined as precautionary in nature. The requirement to consider the potential impacts of the proposed modification is a form of regulation designed to identify and address uncertainty about the effects of these activities.

Ampol has commissioned specialists to conduct detailed assessments on several environmental matters. A number of technical assessments to address agency submissions and refinements to the proposed modification as part of the submissions phase have been completed. These assessments provide sufficient scientific understanding of the proposed modification, its interactions with the surrounding environment, and implications it may have to enable a decision to be made that is consistent with this principle. Where there has been uncertainty in the prediction of impacts through the impact assessment process, a conservative approach has been adopted to allow for the worst-case scenario to be predicted in the assessment of impacts.

For example, the construction noise modelling (refer to Appendix H) adopted a conservative assumption of one item of each distinct equipment type operating concurrently for the entire 15-minute period of construction activity, while the construction equipment is at the nearest location to each sensitive receiver location. Whilst this is a standard methodology for assessing 'reasonable' work case noise impacts, in line with the ICNG (DECC, 2009), in reality, it is highly unlikely that all equipment would operate concurrently at the nearest location to sensitive receivers.

Additionally, the estimate of groundwater ingress presented in the groundwater assessment (refer to Annexure A of the Soils, Groundwater, and Contamination Report) has been conservatively overestimated. Based on onsite measurements, the hydraulic conductivity of soils within the Site typically range between 20 and 50 m/day, with five samples indicating that hydraulic conductivity is over 100 m/day. Intersecting these high permeability zones would increase groundwater ingress. To allow for the evaluation of drawdown impacts, the higher hydraulic conductivity values were used in the assessment. Groundwater ingress rates would depend on actual sediments intersected, saturated thickness, plus anisotropy (the vertical hydraulic conductivity of the sand).

The precautionary principle has driven the development of a number of management and mitigation measures (refer to the updated consolidated list in Appendix C).

### 5.2.3 Inter-generational equity

Inter-generational equity requires that the present generation pass onto the next generation an environment that does not limit the ability of those future generations to attain a quality of life at least equal to that of the current generation.

The proposed modification would maintain inter-generational equity by ensuring components of the existing bio-physical, social, and economic environment would also be maintained for future generations. Aspects of the proposed modification that would assist in achieving inter-generational equity include the following:

- Maintaining the viable, safe, reliable, and sustainable operations at the Site
- Addressing legacy refinery contamination issues to reduce future risks that these contaminants may pose
- Maintaining agreed environmental limits during construction works
- Employing the avoid, minimise, and offset hierarchy to reduce direct and indirect impacts to biodiversity maintaining ecological resources for the future
- Undertaking consultation and engagement with the local community to provide an opportunity to ask questions and identify and manage areas of concern.

Through the implementation of mitigation and management measures for avoiding and minimising short-term or long-term environmental impacts, inter-generational social equity impacts have been addressed.

### 5.2.4 Conservation of biological diversity and ecological integrity

Biological diversity relates to the breadth and variety of life. Ecological integrity refers to maintenance of the relationships, dependencies and services supplied by all lifeforms and the physiochemical environment to each other. The conservation of these elements is critical to the proper functioning of natural environments and the biosphere in general. This principle requires that conservation of biological diversity and ecological integrity should be a fundamental consideration for a project.

The proposed modification has been designed to avoid significant impacts on sensitive ecological values close to the Site. Areas of high ecological value are not included on the Project Area. Various mitigation measures would be employed to maintain the ecological function and integrity of the surrounding area.

Biodiversity assessments undertaken to support the Modification Report found that there would be direct impacts to 5.36 ha of native vegetation or habitat for threatened species. These impacts would be compensated through the implementation of biodiversity offsets. The BDAR has been updated to address to address agency submissions and refinements to the proposed modification (Appendix I), and further surface water and groundwater assessments.

The proposed modification would not cause significant ecological impacts provided that the identified mitigation measures are followed. These measures are outlined in Appendix C and would be implemented to avoid or mitigate potential ecological impacts.

### 5.2.5 Improved valuation and pricing of environmental resources

This principle is premised on an assumption that all resources should be appropriately valued and that the value of environmental resources should be considered alongside any economic or cost benefit analysis for a project's full life cycle.

Ampol has and will continue to consider the local community needs, as well as the value of the unique environment and cultural significance of Kurnell during the design, assessment, and development of the proposed modification.

As the proposed modification progresses, Ampol will engage and share information with stakeholders and the Kurnell community about the proposed modification through various forums, and provide opportunities for the community to submit feedback to help inform Ampol's decisions.

## 5.3 Justification

The proposed modification would be a continuation of the approved project, which converted the Kurnell Refinery to a "Finished Product Terminal." The primary function and purpose of the Site to operate as a finished product fuel terminal would be supported by works associated with the proposed modification.

The primary objective of the approved project, was and remains "*to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell*." The proposed modification would meet this objective by continuing to remove redundant infrastructure and relocating or augmenting operational infrastructure, and subsequently remediating the land, thereby maintaining the viable, safe, reliable, and sustainable operations of the Kurnell Terminal.

### 5.3.1 Avoidance or minimisation of impacts

Appendix C presents the updated consolidated list of measures that would assist in avoiding, mitigating, or managing the anticipated construction and operational impacts associated with the proposed modification works. These measures would be incorporated into the modified conditions of consent for the Kurnell Terminal (SSD-5544).

Measures would be implemented during construction through a CEMP and, during operation, through the OEMP. The CEMP and OEMP would also have sub-plans (refer to Section 5.3.6) to further avoid, mitigate, or manage impacts.

### 5.3.2 Consistency with the strategic context

The proposed modification is consistent with the relevant local, regional, and state strategic planning context. Section 2 of the Modification Report describes the alignment of the proposed modification with relevant strategic plans including the State infrastructure Strategy, Greater Sydney Regional Plan, Sutherland Shire Local Strategic Planning Statement, Land Use Safety Study, and the Kamay Botany Bay National Park Master Plan. Further assessments conducted during the submissions phase have not resulted in any changes to this outcome.

### 5.3.3 Compliance with relevant statutory requirements

The proposed modification is consistent with the relevant local, state and Commonwealth environmental planning instruments. Section 5 of the Modification Report describes the proposed modifications compliance with the relevant statutory requirements including the EP&A Act, SEPPs, LEP, and Commonwealth legislation. Further assessments conducted during the submissions phase have not resulted in any changes to this outcome.

### 5.3.4 Consideration of community views

Consultation conducted prior to the lodgement of the Modification Report is described in Section 6 of the Modification Report. Consultation conducted since the lodgement and proposed future engagement is described in Section 3.2.

Ampol have and will continue to consider the local community needs, as well as the value of the unique environment and cultural significance of Kurnell during the design, assessment, and development of the proposed modification.

As the proposed modification progresses, Ampol will engage and share information with stakeholders and the Kurnell community about the proposed modification through various forums, and provide opportunities for the community to submit feedback and ask questions to help inform Ampol's decisions.

### 5.3.5 Summary of impacts of the proposed modification

#### Biophysical impacts

An assessment of potential impacts relating to the proposed modification was undertaken and summarised in the Modification Report.

Key environmental issues raised by stakeholders during the submissions phase related to contamination and remediation; surface water and flooding; groundwater take; threats to coastal wetlands and other sensitive ecosystems resulting from changes in surface water and groundwater; and removal of native vegetation. In response to submissions and design refinements, several technical assessments have also been updated, with some incorporating additional investigations. The outcomes of these assessments are summarised below.

##### *Contamination and remediation*

The Conceptual RAP has been converted into a RAP (Appendix E), presenting further detail on the proposed modification Stage 3 activities based on investigations undertaken at the Site since lodgement of the Modification Report. This details the preferred hierarchy of options for remediation and management of soil contamination at the Site, and the chosen remediation approaches for primary source removal and secondary source remediation. Affected soils would be excavated, remediated via biopiling, and reused onsite when deemed suitable, or disposed of offsite if there are residual concentrations of target contaminants remaining at levels above the remediation criteria. Where contaminated soils or sludges cannot be treated and reused or managed *in situ*, they would be captured and/or contained onsite before being disposed offsite to an appropriately licensed facility by licensed contractors.

The proposed remediation works would mitigate the risk existing contamination poses by removing or reducing the concentrations of contamination in soils and eliminating exposure pathways. Consequential improvement in groundwater conditions are expected as a result of the planned soil remediation, as the secondary contamination source contributing to groundwater contamination would be removed. Following the completion of soil remediation, ongoing management of contaminated groundwater would continue to be undertaken.

##### *Surface water and flooding*

Surface water modelling and baseline flood modelling have been undertaken in response to submissions (refer to Annexure A and Annexure B of Appendix G, respectively). This includes updated surface water modelling in accordance with Australian Rainfall and Runoff: A Guide to Flood Estimation (Version 4.2). Existing stormwater management across the Site would be altered by the proposed Stage 2 works, particularly where current sections of infrastructure associated with the OWS in Zones 2 and 3 would be removed and flows redirected to the surface water system SWS.

Downstream waters and ecosystems may be impacted if surface water runoff carries nutrients, sediments, and organic and inorganic contaminants into drains and watercourses. This may affect sensitive ecological receptors located immediately downstream of the Site, such as Towra Point Nature Reserve (Ramsar wetland), Marton Park Wetland, Quibray Bay, Botany Bay, and Coastal Wetlands.

The existing SWS would remain operational during all stages of the construction phase to continue servicing the Site during periods of rainfall. If the construction works were to obstruct existing SWS infrastructure or the overland flow paths leading to existing drainage paths, surface water flows could be diverted elsewhere, thereby changing the quality and quantity of water leaving the Site.

To prevent downstream impacts, management measures would be implemented for the length of the construction phase of the proposed modification, including temporary erosion and sediment controls, flow diversion measures, and locating stockpiles away from flow paths. These would be captured in the CEMP and associated subplans and supporting documents.

Due to the removal of capping from this modification application, grading is also no longer proposed. Activities associated with the proposed modification would not significantly alter existing landform or finished surface levels across the Site, nor would these alter the existing surface finishes (in terms of imperviousness). Existing bunds around former tanks and OWS would remain, so as not to remove thereby retaining surface water storage across the Site. The majority of excavations required as part of the proposed modification would be backfilled to existing finished surface levels and the reinstated surface finish would be no less impervious than the current scenario. Following removal of ACS, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Once regraded, surface levels would not be below existing surrounding ground levels.

The proposed operational surface water strategy has incorporated measures to prevent offsite uncontrolled flows, including diversion of additional flows from Catchment F from entering the southern natural retention basin and protected coastal wetland to the south. Two separate OSD systems are proposed in Catchment E to maintain existing, pre-modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% AEP event. Sediment loads in stormwater during the operational phase of the proposed modification are expected to be low, given there would not be significant changes to the landform, surface levels, and surface finishes. However, in order to further protect sensitive receiving environments permanent sediment control measures are proposed to be installed within, or at the downstream end of, the two proposed OSD systems. This is in addition to the existing water quality treatment measures in place, which would be retained through both the construction and operational phases. The combination of water quality treatment measures would mitigate potential water quality impacts on downstream sensitive receptors.

### *Groundwater take*

The excavation of pits and trenches would be required during Stage 2 (Removal, relocation and/or augmentation of infrastructure) and Stage 3 (Remediation) works. Excavations would range between 0.15 and 4.9 mbgl. Where excavations intercept groundwater, temporary dewatering would be required to enable works to be carried out safely.

In response to agency submissions, a groundwater assessment has been prepared (refer to Annexure A of Appendix G). This assessment presents a conservative estimate of groundwater ingress and groundwater drawdown extent during dewatering activities.

The conservative estimate of groundwater take during Stage 2 works is 96 ML, and 260 ML during Stage 3 works. Over a five year construction period, this equates to 71 ML per year. As such, a WAL would be required for the duration of each excavation activity.

Groundwater drawdown would be deepest at the point of excavation, and the depth of drawdown reduces with distance from the excavation source. Using recognised groundwater equations, the radius of influence was estimated. This is the extent of groundwater drawdown from the excavation where drawdown is negligible or unobservable. It was concluded that temporary groundwater drawdown may occur within GDEs to the east, south, and Marton Park to the north due to excavation of pits and trenches within the Project Area. The Towra Point Nature Reserve (a Ramsar wetland) is outside the predicted drawdown extent for all proposed excavations.

Potential impacts to GDEs due to groundwater drawdown would be temporary and managed by adhering to the GWMP. The GWMP would include dewatering management measures for the extraction, storage, movement and treatment of groundwater encountered in excavations. The GWMP would also outline groundwater monitoring (water levels and quality) requirements, site-specific water level and quality trigger levels, and an associated TARP to allow for effective and quick responses.

Specific impacts to the GDEs due to groundwater drawdown has been considered in Appendix I. Given the temporary nature of the works and through implementation of mitigation outlined above, it is unlikely that there would be a permanent impact to the identified GDEs.

### *Removal of native vegetation*

Biodiversity assessments undertaken to support the Modification Report found that there would be direct impacts to 5.36 ha of native vegetation or habitat for threatened species. These impacts would be mitigated through the implementation of biodiversity offsets.

Some of this vegetation removal would be undertaken in RPIP Mountain. The area consists of a large stockpile of ACS and fill material which is around 3 m above the natural ground level. The vegetation within RPIP Mountain was found to be low and regenerating PCT 3546 Coastal Sands Littoral Scrub-Forest (Appendix P of the Modification Report). Habitat to threatened species, such as Green and Golden Bell Frog and Giant Dragonfly, afforded within RPIP Mountain is of poor quality. Impacts from the proposed modification would be limited to non-swamp native vegetation which is currently edge effected primarily by dense weed species, Lantana, and interfaces with the existing Kurnell Terminal. Whilst certain important fauna may occasionally use this land, it is not an important habitat for these species.

The proposed removal of the ACS in RPIP Mountain would remove a legacy contamination migration risk, thereby reducing contamination risk to terminal workers and cross-contamination risks to the terminal site.

Therefore, the remediation of the RPIP Mountain is justified as part of the proposed modification. Refer to the Appendix I for further information.

### *Summary*

With the effective implementation of identified environmental mitigation measures, the potential residual environmental impacts of the proposed modification, including those not mentioned here, would be manageable.

## Social and economic impacts

The potential social and economic impacts of the proposed modification during construction and operation have been comprehensively assessed in Appendix O of the Modification Report and summarised in Section 7.9 of the Modification Report.

Potential negative impacts identified during construction were associated with temporary reductions in local amenity, relating to construction noise and vibration, traffic and transport, and reduction in visual amenity.

The NVIA (Appendix M of the Modification Report) has been updated to address agency submissions (specifically by the EPA) and include the latest project description. The updated construction noise assessment has been undertaken against the limits set out in the ICNG (DECC, 2009), which is more stringent that the noise limits in EPL 837 and includes standard construction hours. This assessment found that predicted construction noise levels are expected to exceed the construction noise management levels at some noise sensitive receivers, at times during construction. The majority of exceedances relate to noise levels which would be ‘clearly audible’, whilst other exceedances would be ‘moderately intrusive’ and a lesser number would be ‘highly intrusive’.

Construction noise is anticipated to exceed the 75 dB(A) (‘highly noise affected’) at residential receivers at times during the construction period. This is primarily due to works occurring in close proximity to residents, particularly along the northern boundary of the Site. These works would include construction of a new storage shed in Zone 1A to store boats and emergency aquatic spill response kits; relocation of the FWS into Zone 1, adjacent to Solander Street; and augmentation of FWS infrastructure in Zone 1, in close proximity to residences along Cook Street and Reserve Road. Temporary increases in local noise levels during standard working hours may cause some minor inconvenience and deterioration for nearby residents. However, these impacts would only occur for a limited period during construction and would be managed within approved working hours. As such, the overall effect on residents’ day-to-day lives is not expected to be significant, and normal amenity would return once construction activities in the area are completed.

Once the proposed modification is completed, equipment would operate in their new locations in line with Table 3-1. This would include the relocated FWS tank and pumps in the FWS Relocation Area (Zone 1) and the new warehouse in Zone 1A. Operation of the relocated equipment may lead to minimal changes to amenity in the social locality, following implementation of mitigation measures. Residents are unlikely to notice any changes to their day-to-day amenity, and normal conditions are expected to continue.

The proposed modification would allow the continued viable, safe, reliable and sustainable operations of the Site and the existing heavy industrial land use and, therefore, continue to support the economic use of industrial land.

Management measures have been proposed for identified potential social impacts to minimise negative consequences and to maximise social benefits for the local community (refer to Appendix C).

#### Cumulative impacts

The cumulative impacts of the proposed modification have been reviewed in this Submissions Report and the updated technical assessments. The review identified that two projects (Kurnell Stormwater Separation Improvement Project and Kamay Ferry Wharves) have been completed, and these projects have now been considered as part of the baseline assessment of the proposed modification. However, as a ferry service between La Perouse and Kurnell has not yet been secured, the Kamay Ferry Wharves continues to be included in the operational cumulative impact assessment.

Potential cumulative impacts during construction were identified for traffic and transport related to the shared use of Captain Cook Drive for construction vehicles. Traffic and transport cumulative impacts would be managed by consultation with TfNSW, Council, and other regional project proponents to understand the interaction of the proposed modification and other projects. Cumulative impacts during construction were also identified for social impacts related to construction fatigue of people living and working in areas affected by multiple projects. Social cumulative impacts would be managed by stakeholder engagement activities to a range of groups (such as residents and businesses) in the community.

Mitigation and management strategies have been proposed for identified potential cumulative impacts (refer to Appendix C). Mitigation measures would be implemented so that adverse cumulative impacts are effectively mitigated.

### 5.3.6 Future monitoring and communication

Remediation would be guided through preparation of one or more RWP(s). The RWP(s) packages the RAP into practical steps that can be followed to meet the RAP objectives, detailing how success will be achieved. The RWP(s) would be developed following development consent, to support remedial actions, for review and input from project team (including contractors, and sub-contractors), Site Auditor, and Ampol personnel.

At the completion of the remedial works under the proposed modification, one or more IAA document(s) be prepared by the Site Auditor in accordance with the Guidelines for the NSW Site Auditor Scheme (3rd edition) (NSW EPA, 2017a).

Demolition, excavation, remediation, and construction works would occur as part of the proposed modification. A project-specific CEMP would be prepared alongside the RWP(s). This CEMP would aim to:

- Promote appropriate environmental management practices during the modification works to avoid and minimise adverse impacts on environmental receptors
- Achieve the overall environmental objectives
- Maintain legal and contractual compliance.

Such management and mitigation measures would include monitoring. Examples of monitoring to be undertaken would include, but not be limited to, short-term post-construction water quality monitoring to confirm the discharged stormwater quality meets the WQOs for the wider catchment. Following review of agency and community submissions, the mitigation measures have been updated to incorporate air quality and groundwater TARP to allow for effective and quick responses to environmental changes.

Throughout construction, management measures would be implemented through the adoption the following sub-plans to the CEMP:

- SaWMP, including ASSMP and ESCP(s)
- SWMP
- GWMP
- CMP
- AMP
- WRMP
- ACHMP
- CTMP
- NVMP
- AQMP
- BWMP.

Alongside the CEMP and RWP(s), the following existing Site management plans and documents would be updated to incorporate the proposed modification:

- WHSMP
- CSEP
- Emergency Response and Preparedness Plan(s).

Following completion of the construction works, Ampol's existing Operational Environmental Management Plan (OEMP) would be updated to include the proposed modification, to continue Ampol's approach to monitoring and managing environmental compliance. A summary of planned future consultation with agency and community stakeholders is outlined in Section 3.2.2.

### 5.3.7 Key uncertainties

Due to the extent of technical studies undertaken to inform the proposed modification and the mitigation measures proposed to address impacts of the development, there are no notable uncertainties with the proposed modification. Identified impacts would be mitigated through the implementation of management measures and monitoring.

## 5.4 Conclusion

Ampol prepared a Modification Report to assess potential impacts of the proposed modification. DPHI placed the Modification Report on public exhibition from the 10 July 2025 to 1 August 2025. During this time, submissions were invited from the community and other stakeholders. The receipt of submissions was coordinated and managed by DPHI. A total of 240 submissions were received during the public exhibition of the Modification Report, consisting of 13 agency submissions, including one key stakeholder submission (Council) and 227 community submissions.

Actions undertaken since exhibition of the Modification Report are presented in Section 3. Refinements to the proposed modification includes the removal of capping and grading as well as refinements to the OWS pump station relocated FWS infrastructure. In response to submissions and design refinements, several technical assessments have also been updated, with some incorporating additional investigations.

The proposed modification has demonstrated through the Modification Report, technical assessments and subsequent additional investigations since exhibition, that the proposed modification is likely to result in minimal and manageable environmental impacts during construction and operation. Potential environmental impacts have been, and would continue to be, examined throughout the design development process in consultation with relevant stakeholders and the community. Revised and/or new mitigation measures in response to requests from stakeholders and community submissions have been considered in Appendix C. The benefits of the proposed modification outweigh the minor and temporary impacts expected. On this basis, consent for the proposed modification can be granted with appropriate conditions and the implementation of identified mitigation measures.

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# Appendix A

## Submissions register

# Appendix A Submissions register

**Table A-1 Agency and local government submissions**

| Type | Name | Where addressed in this Submissions Report |
|---|---|---|
| Public authorities | NSW Department of Planning, Housing and Infrastructure (DPHI) | Section 4.1 |
| | Environmental Protection Authority (EPA) | Section 4.2 |
| | Conservation Programs, Heritage and Regulation Group | Section 4.3 |
| | Heritage NSW | Section 4.4 |
| | NSW DCCEEW Water Group | Section 4.5 |
| | South Eastern Sydney Local Health District (NSW Health) | Section 4.6 |
| | Ausgrid | Section 4.7 |
| | SafeWork NSW | Section 4.8 |
| | Fire and Rescue NSW | Section 4.9 |
| | NSW Rural Fire Service | Section 4.10 |
| | Transport for NSW | Section 4.11 |
| | DPHI Crown Lands | Section 4.12 |
| Local government | Sutherland Shire Council (Council) | Section 4.13 |

**Table A-2 Community submissions**

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88202457 | Sydney Metropolitan | Comment | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88203707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-88212457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social) |
| SE-88254707 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88256707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts) |
| SE-88259460 | Sydney Metropolitan | Object | Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88269211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88272207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy)<br>Section 4.14.17 (Legacy) |
| SE-88280708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88286959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88287221 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88287224 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88291957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88292471 | Sydney Metropolitan | Object | Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social) |
| SE-88297957 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.10 (Non-Aboriginal heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88298221 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88298458 | Sydney Metropolitan | Object | Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-88298460 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88301721 | Sydney Metropolitan | Object | Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social) |
| SE-88318713 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88335457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88344459 | Sydney Metropolitan | Object | Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88354959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |
| SE-88355211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88359959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88361708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social) |
| SE-88363209 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |
| SE-88369957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88370208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88402960 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88404211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88428708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social) |
| SE-88434957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88437457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use) |
| SE-88445957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88448207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88464471 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88465711 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88466957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88472962 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88474457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social) |
| SE-88476707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88476709 | Sydney Metropolitan | Object | Section 4.14.10 (Non-Aboriginal heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88481459 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |
| SE-88499707 | Hunter | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-88499957 | Hunter | Object | Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88536459 | Queensland | Object | Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-88537459 | Queensland | Object | Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88542457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88543707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88547207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88586973 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88586976 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88589957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88592210 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88593207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88596462 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |
| SE-88603470 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88604972 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88605207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88607722 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88608207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88608470 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |
| SE-88608473 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88608957 | Northern Rivers | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88609207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social) |
| SE-88609457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88610707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88611457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88612216 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.10 (Non-Aboriginal heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |
| SE-88613489 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88614208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88615734 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88615958 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88616458 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88616465 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88616977 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88628236 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88628238 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |
| SE-88628958 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88655211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88667713 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring) |
| SE-88681458 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88687457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88688207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88692207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88694957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements) |
| SE-88696209 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88700957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88708207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88720959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88723214 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88738472 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-88741707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88743720 | Sydney Metropolitan | Object | Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88745470 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88750207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88752244 | Sydney Metropolitan | Object | Section 4.14.15 (Land use) |
| SE-88752247 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88753207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88753457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88753720 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88755457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88758209 | Sydney Metropolitan | Comment | Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88782208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88794957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88795457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88797469 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88797959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88808470 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social) |
| SE-88817210 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88821708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88839457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-88843712 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88848709 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.17 (Legacy) |
| SE-88850957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88853957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88857971 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.11 (Social) |
| SE-88859960 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88861957 | Sydney Metropolitan | Object | Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88862710 | Sydney Metropolitan | Object | Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88870458 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88871721 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-88871959 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88872457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88875224 | Sydney Metropolitan | Object | Section 4.14.17 (Legacy) |
| SE-88877957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use) |
| SE-88878207 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.11 (Social) |
| SE-88878707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88878957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88888710 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-88895206 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity) |
| SE-88940969 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements) |
| SE-88950457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-88964959 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88980710 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88980985 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88981208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-88983957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-88984957 | Sydney Metropolitan | Object | Section 4.14.17 (Legacy) |
| SE-88985208 | Sydney Metropolitan | Object | Section 4.14.8 (Traffic and transport)<br>Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-88998459 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.17 (Legacy) |
| SE-88998706 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89000207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89011719 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89017212 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89077208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89091207 | Sydney Metropolitan | Object | Section 4.14.15 (Land use) |
| SE-89113707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89113969 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89125457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social) |
| SE-89142708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89151708 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.17 (Legacy) |
| SE-89268710 | Sydney Metropolitan | Object | Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality) |
| SE-89268957 | Southern Tablelands | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89343457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89366967 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use) |
| SE-89381457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89412461 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89443965 | Sydney Metropolitan | Object | Section 4.14.15 (Land use) |
| SE-89452474 | Central West Slopes & Plains | Object | Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89454457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change) |
| SE-89456207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89463471 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89466207 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89468209 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89477730 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89492709 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.13 (Cumulative impacts) |
| SE-89493457 | Sydney Metropolitan | Object | Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89495707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89495971 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89497470 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89515715 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89548474 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89585211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89597224 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89597257 | Sydney Metropolitan | Object | Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use) |
| SE-89607211 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89619708 | Sydney Metropolitan | Object | Section 4.14.13 (Cumulative impacts) |
| SE-89637224 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89638494 | Sydney Metropolitan | Object | Section 4.14.12 (Monitoring)<br>Section 4.14.16 (Regulatory requirements) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89638707 | Sydney Metropolitan | Comment | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-89640476 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89641707 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89643957 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89657718 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-89660248 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89663990 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89676957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89684212 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89689457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89689466 | ACT | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89689468 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89690480 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89693460 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89698221 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89705207 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89720957 | Sydney Metropolitan | Comment | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social) |
| SE-89723460 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89723465 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89726958 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89729213 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89731213 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-89735458 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89738960 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-89740709 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |
| SE-89740730 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |
| SE-89742957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.14 (Climate change)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89743712 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89744958 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89746221 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89746976 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.11 (Social) |
| SE-89746980 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.17 (Legacy) |
| SE-89747207 | Sydney Metropolitan | Object | Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89747957 | Sydney Metropolitan | Object | Section 4.14.11 (Social)<br>Section 4.14.15 (Land use) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89748457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.6 (Air quality)<br>Section 4.14.7 (Noise and vibration)<br>Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-89750457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.14 (Climate change) |
| SE-89750707 | Riverina | Object | Section 4.14.15 (Land use) |
| SE-89750971 | Sydney Metropolitan | Object | Section 4.14.11 (Social) |
| SE-89751970 | Sydney Metropolitan | Object | Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring) |
| SE-89754208 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-89754211 | Sydney Metropolitan | Object | Section 4.14.8 (Traffic and transport)<br>Section 4.14.11 (Social)<br>Section 4.14.17 (Legacy) |
| SE-89873957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.6 (Air quality)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |
| SE-90099209 | Illawarra | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.13 (Cumulative impacts)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-90103457 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.17 (Legacy) |

| Community stakeholder | Region | View | Where issue has been addressed in the Submissions Report |
|---|---|---|---|
| SE-90105957 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.2 (Public consultation)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.9 (Aboriginal cultural heritage)<br>Section 4.14.11 (Social)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |
| SE-90105961 | Sydney Metropolitan | Object | Section 4.14.1 (Description of the proposed modification and methodology)<br>Section 4.14.3 (Biodiversity)<br>Section 4.14.4 (Soils, groundwater, and contamination)<br>Section 4.14.5 (Stormwater and water quality)<br>Section 4.14.11 (Social)<br>Section 4.14.12 (Monitoring)<br>Section 4.14.15 (Land use)<br>Section 4.14.16 (Regulatory requirements)<br>Section 4.14.17 (Legacy) |

# Appendix B

## Updated descriptions

# 1.0 Updated description of the proposed modification

## 1.1 Introduction

This section provides an overview of the key components of the proposed modification compared to the approved project, a description of the proposed modification works, construction requirements for the modification, and associated ancillary facilities and infrastructure.

This description of the proposed modification has been updated to reflect submissions received by agencies during the exhibition of the Modification Report from Thursday 10 July 2025 until Friday 1 August 2025 and design development. New text has been made **bold** and superseded text has been ~~struck out~~.

One key change in the proposed modification is the removal of "facilitate future land uses" from the proposed modification objectives. This refinement has resulted in removal of most activities relating to capping (previously part of Stage 3, refer to Section 1.2.4) and grading (formerly Stage 4, refer to Section 1.2.5) from this modification application. Consent for these activities are not sought within the proposed modification and have been removed from this updated description of the proposed modification. Instead, development consent for these activities will be sought in a subsequent development application.

A summary of how these changes have affected the Remedial Action Plan (RAP) is provided in Section 1.2.4.

## 1.2 Proposed modification

### 1.2.1 Key elements of the proposed modification

To support the continued ~~safe,~~ viable, ~~and~~ **safe**, reliable**, and sustainable** operation of the ~~Site and to facilitate the future use of the Site~~ **Kurnell Terminal**, the proposed modification works involve:

- Stage 1 – Preparation works: Preparing the Project Area for proposed modification works.
- Stage 2 – Removal, relocation and/or augmentation of infrastructure, including:
  - Relocation and/ or augmentation of **firewater system (**FWS**)** and **oily water sewer (**OWS**)** systems and construction of new operational facilities, including **three** replacement warehouses **in Zone 1 and 1A**
  - Decommissioning and removal of **certain** non-operational assets, redundant structures and electrical assets
- Stage 3 – Remediation: Addressing legacy ground contamination~~, including ACS.~~ **in specific locations across the Site**
- ~~Stage 4 – Grading: Landforming the Project Area following removal of infrastructure and ground remediation activities and preparing Zones 2 and 3 for future use.~~
- ~~Stage 5~~ **Stage 4** – Demobilisation: Demobilisation of construction and remediation equipment.

Depending on where different works are required across the Site, these stages may be completed sequentially or concurrently.

A summary of project elements requiring modification and how they relate to the approved project is provided in Table **1-1**. A detailed description of the works is provided in Sections 1.2.2 to 1.2.6.

**Infrastructure to be removed is presented in Figure 1-1, whilst infrastructure to be relocated or upgraded is presented in Figure 1-2.** The proposed modification works would be undertaken within the Project Area ~~shown on Figure 1-1~~.

**The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of Refining Process Improvement Project (RPIP) Mountain and Source Area Excavation 5. RPIP Mountain would be regraded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability, whilst the bund at Source Area Excavation 5 would be removed during remediation activities.**

All activities would adhere to the Kurnell Terminal permit to work system to ~~ensure~~ **maintain** compliance with **existing** environmental and safety protocols.

Table 1-1 Modified project summary table

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 1 | Project Area | Project Area delineation | • Prepare the Project Area for the proposed modification works required under Stages 2~~,~~ **and** 3 and ~~4 and~~ exclude other parts of the Site from ~~proposed modification~~ **workers completing these** works **as required**. |
| Stage 2 | ~~Oily water sewer (~~OWS~~)~~ | Maintain location in Zones 2 and 3 | • Divert surface water runoff from potentially contaminated areas in Zone 2 to **OWS system in** Zone 1 via new OWS interception pits/ lines until Stage 3 remediation is complete<br>• Divert potential leachate from **Asbestos Contaminated Soils (**ACS**)** Containment Cell in Zone 2 to Zone 1 OWS system~~.~~<br>• ~~Remove all redundant OWS infrastructure.~~ **Install one new pump station and emergency storage tank in the south of Zone 2. Two indicative site options have been identified (refer to Figure 1-2) with specific siting selected during detailed design.**<br>• **Once Stage 3 remediation is complete in each specified area, isolate and remove redundant OWS infrastructure from identified areas in Zone 2 and Zone 3. Where complete removal is not feasible, existing pipes would be left in-situ.** |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| | ~~Fire water systems (~~FWS~~)~~ | Maintain location in Zones 1, 2, and 3 | • Augment ~~or remove~~ FWS infrastructure ~~from Zones 2 and 3.~~ **in Zone 1 and the south of Zone 2**<br>• ~~If removed from Zone 2, augment existing FWS in Zone 1 with a new firewater tank and pipework to service the terminal infrastructure~~<br>• ~~Locate~~ **Excavate and install footings for** the new firewater tank**, pumphouse, and pipelines**<br>• **Construct new firewater tank** and pumphouse within the FWS Relocation Area. **Two indicative location options have been identified (refer to Figure 1-2) with** ~~(~~specific siting selected during detailed design~~)~~.<br>• **Connect relocated firewater tank and pumphouse to existing FWS via new pipework**<br>• **Commission new firewater tank, pumphouse, and pipework to confirm operation of amended FWS**<br>• **Isolate and remove redundant FWS infrastructure from Zones 2 and 3 when appropriate.** |
| | Electrical assets | Maintain location in Zone 2 and 3 | • ~~Remove~~ **Isolate and remove** redundant electrical assets in Zones 2 and 3, including five substations. |
| | Structures | Maintain location in Zone 2 and 3 | • ~~Demolish structures in Zones 2 and 3 (noted in Figure 1-1)~~<br>• Construct new ‘fit for purpose’ warehouse ~~and~~ **to house maintenance supplies and activities in Zone 1**<br>• **Construct new** Oil Spill Equipment Storeroom within Zone 1<br>• Construct new storage shed **to house boats and emergency aquatic spill response equipment** in Zone 1A<br>• **Demolish identified structures in Zones 2 and 3.** |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 3 | Remediation | Removal of ACS from pipeways and either containment onsite or offsite disposal | • Remediate ~~land in Zones 2 and 3 as necessary.~~ **identified** land in Zone 1 **to reduce operational site safety risks (refer to Figure 1-4)**<br>• **If required, remediate land in Zone 1** where infrastructure is **proposed to be** relocated ~~and/~~ or augmented ~~as necessary.~~<br>• ~~Conduct~~ **Undertake targeted** remediation ~~to a commercial/ industrial land use under the ASC NEPM (NEPM, 2013)~~ **in Zones 2 and 3 (refer to Figure 1-4)**<br>• **Return excavated areas to existing ground levels, with the exception of Refining Process Improvement Project (RPIP) Mountain (which would be regraded) and removal of the bund at Source Area Excavation 5.** |
| ~~Stage 4~~ | ~~OWS~~ | ~~Maintain location in Zones 2 and 3~~ | • ~~Disconnect and remove remaining underground OWS lines from Zones 2 and 3, except for lines connecting to the ACS Containment Cell.~~<br>• ~~Install a new pump adjacent to the ACS Containment Cell. Two site options have been identified (refer to Figure 1-1) (specific siting selected during detailed design).~~ |
| ~~Stage 4~~ | ~~Grading~~ | ~~Grading following demolition of structures, and removal of infrastructure across the Site and relevant project areas~~ | • ~~Construct new onsite detention (OSD) basins in Zone 3 to attenuate runoff and maintain pre-construction surface water flow rates.~~<br>• ~~Grade Zone 2 following Stage 2 and Stage 3 activities to manage stormwater and prepare for future land uses.~~<br>• ~~Grade Zones 1 and 3 as necessary.~~ |
| Stage ~~5~~ **4** | Demobilisation | Demobilisation of construction equipment. | • Demobilisation of construction and remediation equipment. |

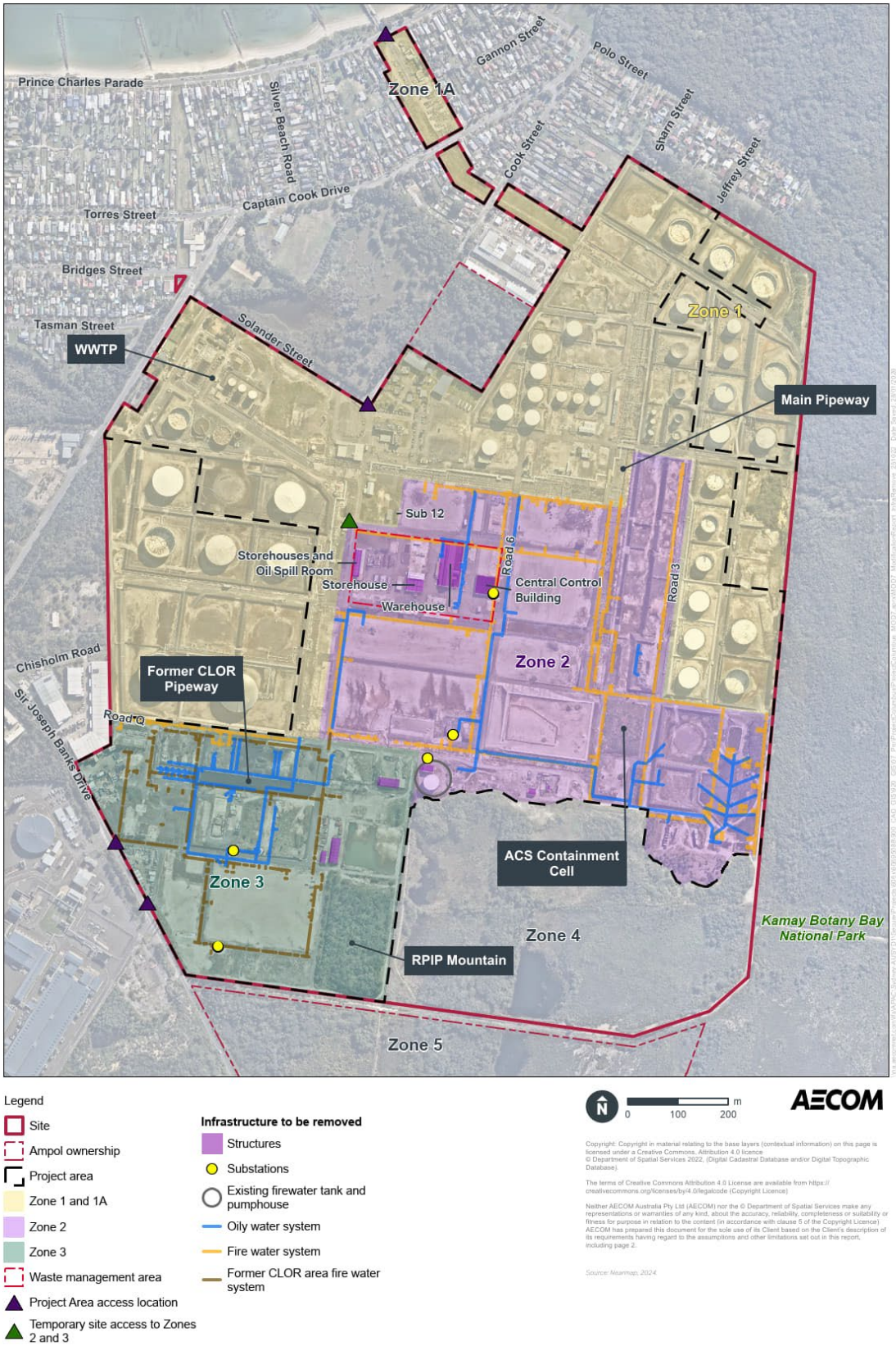



**Figure 1-1 Proposed modification – Infrastructure to be removed (Stage 2)**

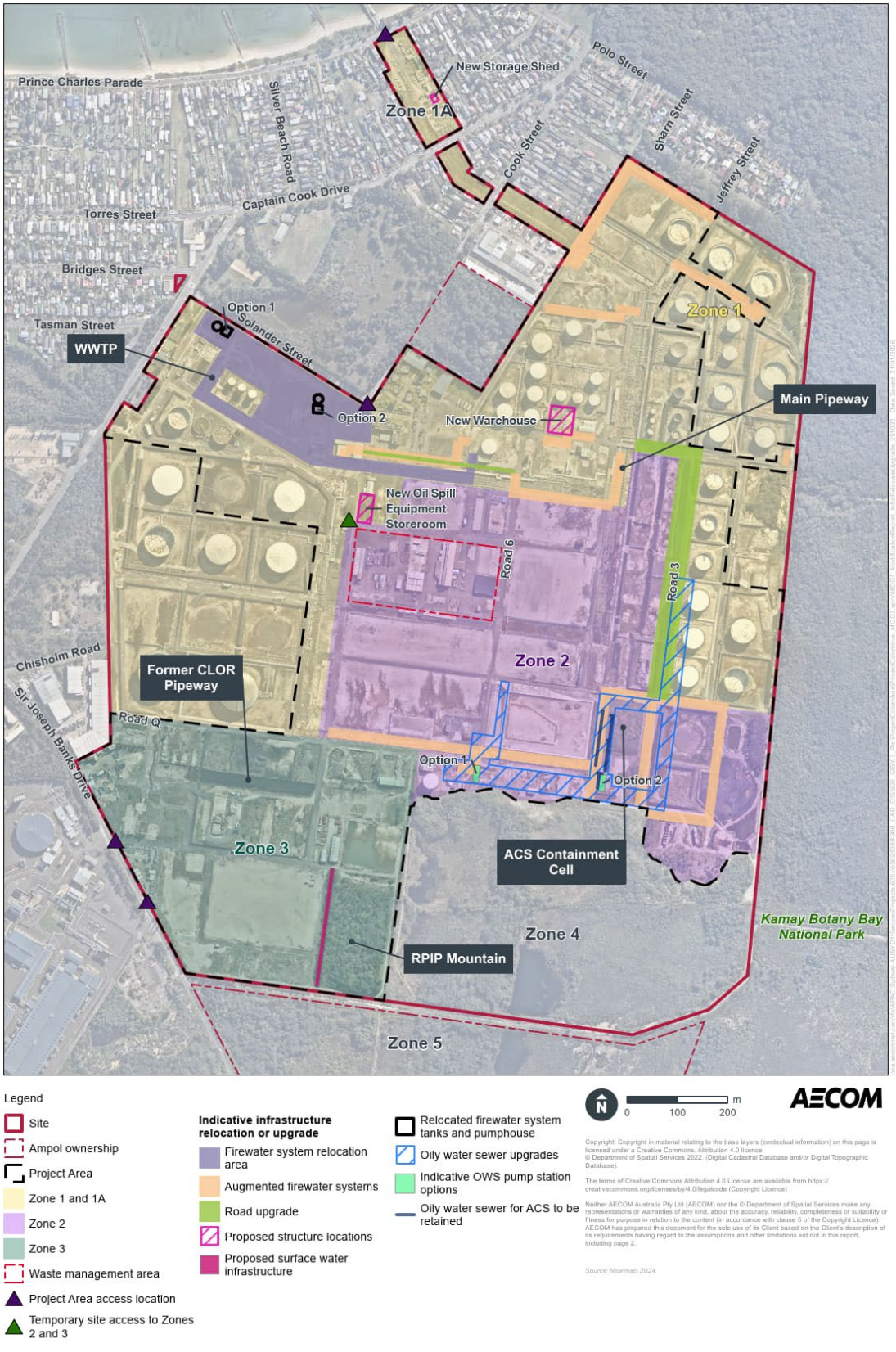



**Figure 1-2 Proposed modification – Infrastructure to be relocated/ upgraded (Stage 2)**

### 1.2.2 Stage 1 – Preparation works

In order to prepare the relevant parts of the Site for the proposed modification works the following activities would be completed:

- Installation of fencing and signage to separate terminal activities and parts of the Site outside the Project Area from **where the** proposed modification works **would occur**
- Establishment of temporary facilities (e.g. site offices) and parking for construction workers within the Site
- Removal of vegetation, where permitted and required
- Installation of temporary erosion and sediment controls for the proposed modification works
- Establishment of access to services/ utilities
- Service locating would be undertaken across the Project Area to confirm the location and type of active services.

Where necessary, these activities are discussed in more detail below.

*Establishment of fencing and signage*

Prior to the proposed modification works commencing, cyclone fencing (or suitable equivalent) would be installed where necessary to isolate the Project Area from the terminal operations and vegetated areas to the south. Gates would be installed at appropriate locations (e.g. between Zone 1 and Zone 2), to allow access for contractors and Ampol staff during the modification works and to allow for the movement of staff or emergency services across the Site. This fencing would be used to exclude contractors from certain parts of the Site where modification works are not proposed.

Some parts of Zones 1, 2, and 3 would also be excluded from the Project Area. These exclusion zones would be established to either protect key infrastructure or sensitive land uses (e.g. ACS Containment Cell).

*Establishment of temporary facilities and access*

A temporary access point (and temporary project office) would be established at the proposed entrance for Zones 2 and 3**, as shown in Figure 1-1 and Figure 1-2**. The entrance for Zone 2 would be to the south of the existing terminal gatehouse at the border of Zone 1 and Zone 2. The entrance for Zone 3 would be at the existing Site access point off Sir Josephs Banks Drive.

Each entry point~~s~~ would be used at different times during construction depending on the staging and location of work within the Site. ~~It is likely that~~ **The** following temporary facilities would be located close to the entrance being used as the primary access point at any given time:

- First aid office
- Stores
- Personnel decontamination area
- Amenities
- Wheel washing facilities.

Other temporary facilities similar to those listed above may also be located throughout Zones 1, 2 and 3 as needed to allow the proposed modification works to occur.

Zone 1A would be accessed via the existing access point on Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.

*Removal of vegetation*

Limited native vegetation is present within the Project Area, and the vegetation that is present is heavily degraded due to historic clearing and current land uses.

Vegetation clearance would occur, where required, to allow for the relocation of infrastructure and remediation.

*Establishment of erosion and sediment controls*

Erosion and sediment controls would be established, as required, across the Project Area in accordance with 'The Blue Book' *Managing Urban Stormwater - Soils and Construction Volume 1 and 2* (Landcom, 2004) **and other specific controls as required**. These controls would be checked periodically throughout the delivery of the modification works and if necessary, changed or revised. The objective of the temporary erosion and sediment controls would be to ~~manage~~ **avoid or mitigate the mobilisation of** sediment and contamination ~~that may be mobilised by~~ **in onsite** surface water flows ~~from the modification works~~ **and to prevent excess sediment and contamination from entering the downstream offsite receiving environment**.

*Service location*

Service locating would be undertaken across the Project Area to confirm the location of and identify active services. If necessary additional service investigations would be completed ahead of ground disturbance works commencing alongside consultation with utility companies and/or Ampol staff.

### 1.2.3 Stage 2 – Removal, relocation and/or augmentation of infrastructure

Following preparation works, certain structures and infrastructure would ~~either~~ be ~~permanently demolished~~**:**

- **Demolished** and**/or** removed ~~or reconstructed~~ **from Site (Figure 1-1)**
- **Removed from Zones 2 and 3 (Figure 1-1) and relocated or replaced** in Zones 1 ~~and~~ **or** 1A~~, or augmented. Demolition would involve~~ **(Figure 1-2); or**
- **Augmented in Zone 1 to support the removal and relocation of related infrastructure (Figure 1-2).**

**The** removal of the above ground elements of the infrastructure **would occur** first, followed by the removal of at grade and subsurface infrastructure. At grade and subsurface infrastructure would only be removed where required (e.g. concrete slabs may be retained for construction~~,~~**;** geotechnical or dust management reasons). Where structures or infrastructure need to be relocated, ~~it is likely that~~ new fit for purpose and/or upgraded infrastructure would be provided.

The subsequent sections detail the proposed removal, relocation**,** and/or augmentation works.

*Oily water sewer*

The purpose of the OWS is to capture, manage, and treat potentially contaminated stormwater and wastewater from the terminal before directing it to the onsite Waste Water Treatment Plant (WWTP) for treatment and subsequent discharge in line with EPL 837. The OWS predominantly services Zone 1 but it also services parts of Zone 2 and Zone 3. In particular**,** the OWS has a connection to the wastewater sump from the ACS Containment Cell.

The proposed modification works include the removal of the OWS (including all pits and pipework) from Zones 2 and 3 **(Figure 1-1)** except for a connection to the ACS Containment Cell wastewater sump and a **proposed OWS** diversion line from west of the ACS Containment Cell ~~and along the northern boundary of~~ **toward** Zone ~~2.~~ **1 (Figure 1-2).**

~~These~~ **The** works ~~are likely~~ to **remove the redundant sections of the OWS in Zones 2 and 3 would** be undertaken progressively ~~to~~ **so that the OWS can** help ~~manage potential contaminated surface water flows from other Stage 2 works or Stage 3~~ **support the** remediation activities ~~(~~described ~~further~~ in Section ~~1.5 (Ancillary facilities and infrastructure)~~ **1.2.4. During remediation activities, surface water could potentially enter excavations where remediation activities are occurring and become contaminated. Potentially contaminated water from surface water flows or excavations, would be sent to the OWS and on to the WWTP for treatment. Potentially contaminated surface water flows would be captured by the existing OWS until a time that contamination sources are removed and soil remediation and treatment is undertaken in each area (described in Section 1.2.4).** As such, some sections of the OWS in Zones 2 and 3 may only be removed following certain remediation activities (Stage 3).

Prior to the removal of the relevant sections of the OWS from Zones 2 and 3, the surface water flows from areas serviced by ~~this infrastructure would be managed in line with the contamination and erosion risks present. Where the relevant area is still likely to contaminate surface water, this water would either be~~ **the OWS would be either:**

- Intercepted or diverted to the remaining sections ~~on~~ **of** OWS ~~for treatment at the WWTP; or~~
- ~~Captured/ contained and transported to the WWTP for treatment.~~
- ~~Intercepting or diverting contaminated stormwater flows could include~~ **via** modifying interception infrastructure (such as existing pits, manholes, storages) ~~and~~ **or** the installation of temporary pipes, pits, and pump stations ~~to direct flows towards existing OWS infrastructure~~**; or**
- **Captured/ contained and transported directly to the WWTP.**

Where the relevant area is unlikely to result in contaminated surface water (e.g. due to remediation activities being complete), these surface water flows would be redirected to the Site's existing SWS.

~~The redirection of 'clean' stormwater flows to alternative infrastructure would allow redundant OWS infrastructure in Zones 2 and 3 to be removed progressively and would help continue to safely manage contaminated run-off from remediation areas (described in Section 1.2.4 (Stage 3 – Remediation)). Following completion of the remediation activities proposed during Stage 3, the land within Zones 2 and 3 would be at a commercial/ industrial standard and would no longer need to be serviced by the OWS. At this time, any remaining OWS infrastructure would be removed from Zones 2 and 3 except for a connection to the ACS Containment Cell wastewater sump and the diversion line from west of the ACS.~~

**To assist with the transition of parts of the Site from the OWS to the SWS and in order for the OWS to support remediation activities, the OWS would be augmented in the south eastern part** of **Zone 2**. A new permanent pump **station** would be installed ~~following disconnection from the existing~~ **to support the upgraded** OWS ~~infrastructure~~ in ~~Zone 2~~ **capturing flows and directing them towards the WWTP**. The **new** pump **station** would operate intermittently, following periods of heavy rainfall~~, to transfer potentially contaminated stormwater to the OWS system. Two options for the location of the new pump are being considered, with construction limited to one option selected during detailed design~~**. In addition, an emergency storage tank would be installed adjacent to the pump station to provide additional storage in case of pump failures or a loss of power. The pump would have a well of 20 kilolitres (kL) in capacity, whilst the emergency storage tank would have a volume of 130 kL.**

The **pumps at the** pump **station** would be installed in a sealed chamber below the existing ground level, at a minimum water level and therefore permanently submerged. **The emergency storage tank would be installed next to the pumps below ground. A benched pit[1] of around 12 m by 31 m would be required.** Excavations of approximately 4.5 mbgl would be required, based on a 4 m deep pit, and an additional 0.5 m concrete slab, which would be installed at the base of the pit **(refer to Figure 1-3)**. **Two options for the location of the new pump station and emergency storage tank are being considered, as shown in Figure 1-2. Only one option would be constructed, which would be confirmed during detailed design.**

**The selected option would be connected to the existing OWS in Zone 1, to the north west of the ACS Containment Cell. The pipeline would lie above and belowground, depending on the topography of the land and the presence of roads; the pipeline would be installed belowground where it crosses the road. For belowground sections, excavations of up to 3.5 mbgl would be required. For aboveground sections, 0.5 m deep footings would be required every 4 m (refer to Figure 1-3).**

**The OWS that services the ACS Containment Cell would not be removed. Leachate would continue to be collected by the existing sumps and directed to the OWS in Zone 1 via the retained OWS.**

[1] **The pit itself would be 5 m by 25 m. Benches of about 3 m either side of the pit have been assumed.**

**Following remediation (described in Section 1.2.4), the land within Zones 2 and 3 would no longer need to be serviced by the OWS. At this time, remaining OWS infrastructure would be removed from Zones 2 and 3, except for ACS Containment Cell connections and diversions.** The removal of OWS infrastructure may require excavation work of up to 3 mbgl for removal of below ground pipework and pits **(refer to Figure 1-3)**. Where complete removal is not feasible due to proximity to existing infrastructure or other considerations (e.g. geotechnical), existing pipes and/or pits would be cleaned, infilled with stabilised sand, cement slurry, or equivalent, and left in-situ.

Once removed, redundant pipes and materials from the OWS would be sent offsite for recycling or disposal based on material type and waste classification.

*Firewater systems*

The FWS at the Site currently operates via a network of fire hydrants, monitors, fixed and semi-fixed foam systems, and underground and aboveground firewater pipelines running through the Site, as well as a firewater tank and pump system, housed in a pumphouse in the southern part of the Zone 2. Following the removal of refinery infrastructure in Zones 2 and 3, the FWS within these zones is no longer required.

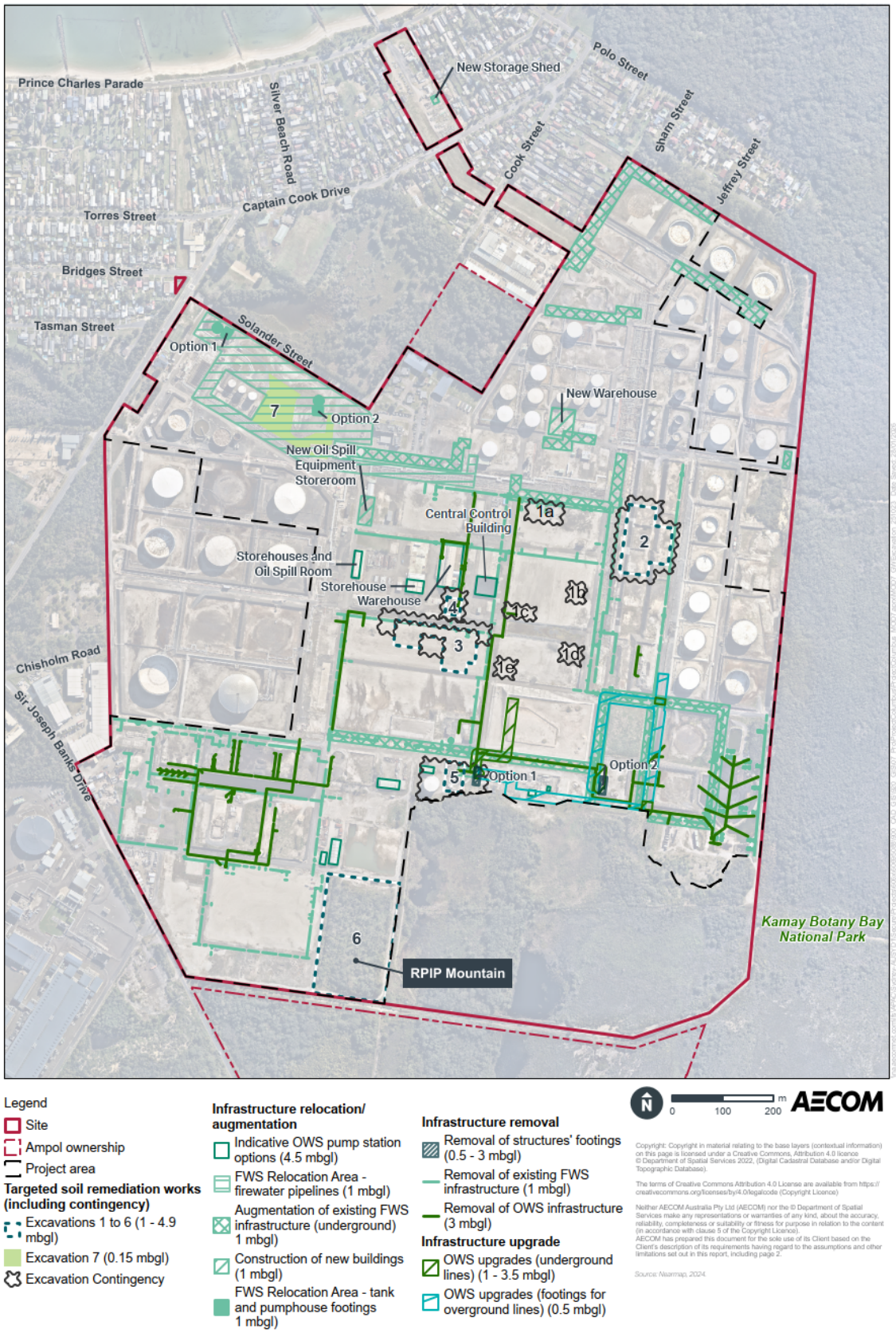



**Figure 1-3 Excavation and ground disturbance**

In order to align the FWS with the current terminal footprint, the FWS infrastructure in Zones 2 and 3 would be ~~removed or~~ augmented **or removed** and, where necessary, replaced or augmented in Zone 1 ~~(as shown in Figure 1-1)~~. These works would include:

- ~~Augmentation or disconnection and removal of the FWS infrastructure in Zones 2 and 3~~
- ~~If removed in Zone 2, installation~~ Installation of new firewater pipelines, relocated pumps, and the construction of a new ~~3~~ **three** megalitre (ML) firewater tank in the FWS Relocation Area in Zone 1 **(Figure 1-2)**
- Augmentation of ~~other~~ FWS infrastructure within Zone 1 **and the south of Zone 2 (Figure 1-2)**
- **Commissioning of the upgraded FWS to confirm it meets operational requirements**
- **Isolation, disconnection, and removal of redundant FWS infrastructure in Zones 2 and 3 (Figure 1-1).**

~~If required, the~~ **The FWS tank and pump system/ pumphouse, currently located in the south of Zone 2,** would be relocated to one of the two siting options (refer to ~~Figure 1-1~~ **Figure 1-2**) within the FWS Relocation Area in Zone 1. **Construction would be limited to one option, selected as part of detailed design.** Works to relocate the FWS **tank, pump system, and related pipework to a location within the FWS Relocation Area** would last approximately eight months. These works would include:

- Excavation to a depth of 1 mbgl ~~and remediation of the ground, where required (in line with the approach set out in Section 1.2.4 – Stage 3 – Remediation)~~ **to construct** new foundations for the firewater ~~tank, pumps, and~~ pipework **along the length of the pipelines, the firewater tank, and the pumphouse. The firewater tank would require a base of 380 m$^2$ (diameter of 22 m) and the pumphouse would require a base of 11 m by 18 m (refer to Figure 1-3)**
- Construction and installation of the new FWS infrastructure:
  - The new tank would be approximately 12 m in height and 22 m in width and built in accordance with AS 2304-2011 *Standard Water storage tanks for fire protection systems*
  - The pumphouse would be built like-for-like with its existing counterpart, with three adjoining walls of around 5 m in height
  - Existing pumps would be relocated and installed in the new pumphouse.
- Connection of the existing and new firewater infrastructure (including the connection of pipes from the new tank to the main header).

**Where required, the FWS Relocation Area would be remediated prior to relocation of infrastructure. Refer to the approach set out in Section 1.2.4.**

To minimise the downtime of the FWS, new lines would be constructed parallel to the existing lines. The process to connect the new infrastructure with the existing system would occur during a FWS shutdown period, and last approximately two weeks. FWS shutdown periods are planned, permitted, and managed in line with existing terminal procedures.

~~This modification application is seeking development consent for two siting options for the new FWS infrastructure within the FWS Relocation Area, shown on Figure 1-1. Construction would be limited to one option, selected as part of detailed design. This is discussed further in Section 1.4 (Operation).~~

Augmentation of existing FWS infrastructure would involve replacement of some of the existing pipes ~~(as shown in Figure 1-1)~~ with pipes of a larger diameter (between 400 to 600 mm diameter). Where these pipes are underground, excavations of up to 1 mbgl would be required to access and replace the infrastructure **(refer to Figure 1-3)**.

The **redundant** FWS pipework through Zone 2 would be disconnected and removed. The FWS in Zone 3 has already been disconnected from the main system but has been left in position. The pipes would be removed, and excavations up to 1 mbgl may be required to remove the pipework, footings, and foundations **(refer to Figure 1-3)**.

Once removed, redundant pipes and materials from the FWS would be sent offsite for recycling or disposal based on material type and waste classification.

### *Electrical assets*

During the closure of the Kurnell Refinery, high voltage electrical substations, power distribution rooms, and electrical infrastructure (such as buried cables) were redesigned to meet the requirements of the terminal. Following an electrical audit, existing substations/ switchboard rooms in Zones 2 and 3 have been deemed to be no longer required and are therefore proposed for demolition.

All above-ground redundant electrical assets in Zones 2 and 3 would be decommissioned and removed **(Figure 1-1)**. Below ground cables would be de-energized, and either retained ~~for potential future use~~ or removed in accordance with AS/NZS 3000:2018 *Electrical installations*.

Once removed, redundant electrical cables and materials from the electrical assets would be sent offsite for recycling or disposal based on material type and waste classification.

### *Structures*

A number of buildings and other structures are located within Zones 2 and 3 ~~(Figure 1-1)~~. These include small storage structures and larger buildings such as the storehouse, main warehouse, central control building, and the Oil Spill Room ~~(Figure 1-1)~~. Many of these buildings are no longer fit for purpose for the terminal and are relatively isolated from the terminal footprint. On this basis~~, and to facilitate the future use of Zones 2 and 3~~, Ampol are proposing to remove these structures as part of the proposed modification works.

Each structure proposed for demolition would be demolished to ground level and, where possible, their slab, foundations, and footings removed. The **remaining** foundations of buildings and structures previously demolished as part of the approved project within Zones 2 and 3 would be also excavated and removed~~, where they haven't already been removed and~~ where practicable. These activities would require excavation works up to 2 mbgl, depending on depth of footings (generally focused within 1 mbgl) **(refer to Figure 1-3)**.

Once removed, building waste materials from the demolition would be sent offsite for recycling or disposal based on material type and waste classification. Concrete would be crushed within the ~~waste management area~~ **Waste Management Area** and where appropriate, used as backfill during Stages 3 and 4 to reduce the soil deficit and to improve the geotechnical stability of the land. Concrete waste that cannot be used would be taken offsite for sale, recycling or disposal.

A new 'fit for purpose' warehouse would be constructed within Zone 1 to house maintenance supplies and small-scale terminal maintenance activities currently undertaken in part of the oversized existing main warehouse building in Zone 2. This new warehouse would be approximately 32 m by 25 m, with an awning of 35 m by 10 m, and up to 8 m tall. The new warehouse would also include space adjacent to the structure for semi-trailer parking and an extension of the wet store area of 25 m by 10 m. The proposed location for the new warehouse is to the north of Pipeway A**, as shown on Figure 1-2**.

A new Oil Spill Equipment Storeroom, approximately 18 m by 14 m and up to 8 m tall, would also be constructed in Zone 1. The location of the new Oil Spill Equipment Storeroom would be adjacent to the existing Firehouse near Substation 12**, as shown on Figure 1-2**.

A new storage shed would be constructed in Zone 1A to store boats and emergency aquatic spill response kits. This **shed** would be approximately 18 m by 14 m and ~~less~~ **no more** than 4 m tall. **The location of this shed is shown on Figure 1-2.**

Construction of the new warehouse, Oil Spill Equipment Storeroom, and storage shed would involve excavation and installation of foundations of up to 1 mbgl, laying a slab, installation and connection to Site utilities, construction of the structure, and internal fit out **(refer to Figure 1-3)**.

### *Waste management*

Redundant infrastructure would be cleaned, processed, and stored prior to reuse or removal from Site. Infrastructure and waste materials would be tracked in line with a Material Tracking Plan (see measure C5 in~~ the Consolidated Mitigation Measures~~ Appendix C~~)~~.

A waste management area for surface and subsurface materials removed (e.g. concrete, metals/ reinforcement bar, drainage lines, electrical equipment) would be established in an area shown on **Figure 1-1 and** Figure 1-2. Once material is removed or excavated it would be sorted and stockpiled separately in this area prior to processing. The waste management area would remain for the duration of the modification works.

It is estimated that the proposed modification would involve the processing of approximately 40,000 $m^3$ of concrete predominantly from slabs and asphalt. As described above, concrete would be crushed within the waste management area and where appropriate, used as backfill during Stage~~s~~ 3 ~~and 4~~ – **Remediation** to reduce the soil deficit and to improve the geotechnical stability of the land. Concrete waste that cannot be used would be taken offsite for sale, recycling, or disposal.

*Backfill*

**The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of RPIP Mountain and Source Area Excavation 5.**

**The removal of underground assets (e.g. pipes, foundations etc.) may create a void which would need to be backfilled to maintain the existing landform. In addition, the removal and offsite disposal of asbestos contaminated soils from targeted areas within the Project Area may also require additional material to return the ground to its current landform.**

**Backfill material may need to be brought to Site.** Where soils are brought from other sites, the material ~~should~~ **would** be classified as virgin excavated natural material (VENM), excavated natural material (ENM) as defined by the ENM Order 2014, ~~or~~ material covered under an NSW EPA specific Resource Recovery Order (RRO), **or extractive materials sourced from legal quarries (not considered a waste as defined under the POEO Act)**. The ~~soils~~ **material** would be managed in line with ~~this order as well as a specific Validation Plan, which would outline acceptance criteria, and sampling and analytical requirements. Once material is validated (using the criteria outlined in the Validation Plan), the soil would be~~ **the RRO and** reused onsite under an NSW EPA approved Resource Recovery Exemption. The imported fill would be stockpiled and tracked separately to the ~~onsite~~ materials ~~and~~ **that have come from onsite excavations. Imported fill would be** tested/ validated to confirm ~~they have been remediated~~ **it is suitable** for reuse on the Project Area.

***Contamination management***

Contaminated soils encountered during Stage 2 would be managed in line with the processes outlined in Section 1.2.4 ~~(Stage 3 – Remediation)~~. If contaminated liquids are encountered (for example potentially where pipework is being removed), appropriate containment/ spill mitigation measures would be employed as part of the approved Spill Response Plan (see measure B4 in ~~the Consolidated Mitigation Measures~~ Appendix C) and the Soils and Water Management Plan (see measure C18). Light non-aqueous phase liquid (LNAPL) and/or impacted water would be directed to the WWTP or contained and disposed offsite by a licensed contractor as discussed below.

### 1.2.4 Stage 3 – Remediation

**Background**

Significant soil and groundwater investigations have been conducted on the Site since the 1990s. An Environmental Site Assessment Data Gap Assessment (WSP, 2018) was undertaken to reduce data gaps within the former refinery process unit areas, pipeways of the site and redundant tank bunds. Additional investigations conducted between 2018 ~~and 2023~~ **to present** have been completed to understand the type, location, concentration, depth, volume, and risk associated with contaminants of potential concern (COPC). Primary COPCs in soils and groundwater at the Site comprise the following:

- Asbestos
- Petroleum related hydrocarbons (PHC)
- Per- and polyfluoroalkyl substances (PFAS).

**Two types of sources of contamination across Zone 1, 2, and 3 which are considered include:**

- **Primary sources: Including current and historic infrastructure (such as containers used for the bulk storage or transport of chemicals) and current and historic site activities (such as refuelling or firefighting training)**
- **Secondary sources: Including soil and groundwater (including light non-aqueous phase liquid, or LNAPL) impacted by PHC, chemical solvents, and other chemicals.**

In 2019, Ampol collated the ground investigation works completed to that point and developed the Kurnell Remediation Action Strategy (RAS) (Ampol, 2019), which identified areas of potential ground and groundwater contamination, and provided information on areas identified for remediation with**in** the context of continued terminal use. Since 2019, additional ground investigation and remediation activities have been completed to further define and manage areas impacted by contamination. **Refer to the RAP (Appendix E) for further information.**

### Conceptual Remedial Action Plan

A Conceptual RAP ~~has been~~ **was** prepared to support the proposed modification, and to:

- Provide a summary of historical environmental characterisation studies
- Identify the scope of necessary remedial activities potentially required
- Identify the remedial strategy(ies) to be adopted
- Document the proposed remediation methodology
- Establish validation criteria relevant to the commercial/ industrial land use and detail the validation program as part of a future Validation Sampling and Analysis Quality Plan (SAQP).

The Conceptual RAP **was submitted to the Department of Planning, Housing, and Infrastructure (DPHI) with the Modification Report, and placed on public exhibition from Thursday 10 July 2025 until Friday 1 August 2025. In accordance with feedback received by DPHI, the Conceptual RAP has been converted to a RAP. Further information on the RAP is provided below.**

### Remedial Action Plan

**The RAP presents a remediation strategy for the Project Area that addresses legacy contamination issues resulting from previous refinery activities, providing an overview of the remedial activities required for both the proposed modification and the future State Significant Development (SSD) application for the Kurnell Energy and Industry Precinct project (SSD-86799993) before focusing in more detail on the proposed modification Stage 3 activities.**

**Whilst the RAP presents a broader remediation strategy for the Project Area, development consent under this modification application is only sought for targeted remediation in Zones 2 and 3. Activities relating to capping activities have been removed from the scope of this proposed modification. Nevertheless, in order to present a holistic and transparent remedial strategy for the Project Area, capping is discussed as a future remedial strategy in the RAP. The works completed under the RAP would be complemented by the future KEIP RAP, and together the two documents would facilitate works to make the Site suitable for commercial/ industrial use.**

**The RAP** has been prepared in accordance with the NSW EPA Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA, 2020). ~~It~~ **The RAP** would be ~~updated~~ **used** to **inform** one or ~~a number of Detailed RAPs~~ **more Remedial Work Plans (RWP(s)), which would be produced** following further investigations within the Project Area and receipt of relevant conditions of consent for Modification Application SSD-5544 MOD-7 **(if consented). The RWP(s) would be developed for review and input from project team (including principal contractors, contractors, and sub-contractors), the Site Auditor, and Ampol.** The differences between ~~this version (the Conceptual RAP) and the future final version(s) (~~**the RAP and** the ~~Detailed RAP~~ RWP(s) are presented in the ~~Conceptual~~ RAP in Appendix E.

The ~~Conceptual~~ RAP has been reviewed by an EPA accredited Site Auditor (Site Auditor). ~~Future Detailed RAP(s)~~ **and their Interim Audit Advice is provided in Appendix E1. The RWP(s)** would also be reviewed by an EPA accredited Site Auditor prior to commencement of remedial activities ~~to facilitate future validation of the site~~, and Site Auditor sign-off **would be provided** in the form of a Site Audit Statement and Site Audit Report. **This would be limited to the Audit Boundary, which excludes two portions of the Project Area: areas in Zone 1 that would continue to operate as the Kurnell Terminal and the Asbestos Contaminated Soil (ACS) Containment Cell, located in the east of Zone 2.** Validation requirements are further discussed in the following sections.

~~The Conceptual RAP outlines management of the remediation works across the Project Area and identifies the remediation approach and proposed remediation technologies to be utilised for the proposed modification works. This is described below.~~

## Remediation approach

### *Overview*

Remediation and/ or management of ground contamination would be required ~~across~~ **in** Zones **1,** 2**,** and 3 ~~and parts of Zone 1~~, where:

- **LNAPL is present; and/or**
- **Where** soil and groundwater **(expressed via soil vapour)** quality does not currently meet the **human health-based** commercial/ industrial land use standard, as defined by **the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, amended 2013 (**ASC NEP~~C~~**M**) (NEPM, 2013)

~~As part of this proposed modification, where~~ **Where** ground disturbance is proposed within Zone 1, **excavated material that is found to be** contaminated ~~material~~ would be managed in accordance with the terminal's existing OEMP (Ampol, 2021) ~~and Kurnell RAS~~ (Ampol, 2019)~~ and subsequent progress reports, last prepared in November 2023~~ (Ampol, 2023). Excavation works in Zone 1 would be limited to shallow excavations related to installation of footings and foundations**, and targeted remediation of asbestos**. Excess soil or fill material generated during these works would be categorised and either disposed offsite to landfill (consistent with the OEMP) or potentially incorporated into Zone 2 and 3 remediation activities.

**A combination of remediation technologies for soils is preferred at the Project Area to achieve the remediation objectives. These are as follows:**

- **Primary source removal: Removal of remaining OWS in Zones 2 and 3. Following this, all potential primary sources of contamination within the Audit Boundary would have been removed.**
- **Secondary source remediation: Excavation of impacted soils, followed by either onsite treatment or offsite disposal to landfill, consistent with the preferred soil remediation hierarchy:**
  - **Onsite treatment via biopiling, for soils contaminated with elevated levels of hydrocarbons**
  - **Offsite disposal would be considered where contaminated soils cannot be treated and reused or managed in situ. This would include soils contaminated with hydrocarbons that cannot be biopiled, PFAS contaminated materials that are not able to be stabilised, and ACS material in Source Area Excavations 6 and 7.**

**Whilst biopiling would target hydrocarbon contaminants within soils, friable asbestos has been identified to be present within fill soils at the Site. As such, biopiling would be undertaken under appropriate occupational health and safety controls to prevent the incidental liberation of asbestos fibres into the atmosphere.**

~~To remediate areas of ground contamination within the Zones 2 and 3 (referred to as 'remediation areas'), contaminated soils would be tested and categorised and either be:~~

- ~~Excavated (Figure 1-2), and treated onsite for reuse (i.e. through biopiling or stabilisation), or disposed offsite; or~~

~~• Managed in situ and capped (Figure 1-3).~~

~~The primary technologies that would be used to remediate identified contamination would be based the matrix provided in Table 1-2.~~

A description of the remediation technologies required for the **proposed** modification works~~, their indicative location within the Project Area~~ and relevant environmental controls is provided the sections below.

~~**Table 1-2 Remediation options matrix**~~

| ~~Contaminant~~ | ~~Excavation and onsite biopiling~~ | ~~Excavation and onsite stabilisation~~ | ~~Capping (in-situ management)~~ | ~~Offsite disposal~~ |
|---|---|---|---|---|
| ~~Asbestos~~ | ~~N/A~~ | ~~N/A~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Hydrocarbons~~ | ~~Yes~~ | ~~No~~ | ~~Yes~~ | ~~Yes~~ |
| ~~PFAS~~ | ~~N/A~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |

Where soil in the Project Area has been assessed as not requiring remediation, this is because the soil and groundwater quality either:

- Already meets the commercial/ industrial standard ~~(refer to Appendix)~~, **as defined by the ASC NEPM** (NEPM, 2013); and/ or
- The ~~remaining contamination impacts~~ **conditions** either do not pose a risk to human health or the environment, or can be managed and mitigated by implementation of existing environmental management procedures for the Site.

~~Where residual concentrations are assessed to still be present above criteria after soil remediation activities, remediation capping works would be undertaken to address residual impacts.~~

~~Two types of capping would be used depending on the types of contamination present:~~

~~• Type 1 capping: A soil capping layer underlain by a geotextile marker layer or equivalent highly visible marker to separate contaminated and non-contaminated soils. The primary remediation strategy to address asbestos contamination in soils.~~

~~• Type 2 capping: Layers of structural fill, a geotextile separation marker and impermeable HDPE or low permeability layer. Primarily used in areas with residual PFAS and/ or hydrocarbon impacts~~

~~Capping works would be undertaken underneath active pipelines, where required, in order to maintain access to pipelines for operational and maintenance purposes.~~

~~Key areas requiring either capping to address asbestos and residual PFAS and/ or hydrocarbon impacts have been identified, as per Figure 1-3, which shows the indicative locations where the Type 1 and Type 2 capping may be required across the Project Area. During the remediation works, if the remaining Zone 2 and 3 areas are found to require capping, it is assumed that this would be Type 1 (shown in Figure 1-3 as "contingency").~~

Stage 3 (Remediation) would commence concurrently with Stage 2 (Removal and/ or relocation of infrastructure). **Refer to the indicative program in Table 1-5.**

### *Excavation*

**Excavation would be required for infrastructure works (i.e. during removal of existing infrastructure, and construction of new or relocated infrastructure) and for targeted remediation in Zones 1, 2, and 3. Infrastructure to be removed is presented in Figure 1-1, whilst infrastructure to be relocated or upgraded is presented in Figure 1-2. The seven areas of targeted remediation are shown on Figure 1-4.**

Based on the analytical data obtained from previous site investigations, the soil remediation works would be limited to less than 4**.9** mbgl and would be generally focused within 1 mbgl. **For soils contaminated with elevated levels of hydrocarbons, depth of excavation has been determined through review of the depth of the local groundwater table. Excavation 7 would require surface excavation, to a depth of 0.15 mbgl, only.**

**The total volume of excavated soil from infrastructure works and targeted remediation activities is presented in Table 1-3.**

**As presented in Appendix E,** ~~For hydrocarbon (PHC), asbestos, and/or PFAS impacted soils, Figure 1-2 shows the approximate areas that would require excavation for either onsite treatment or disposal offsite. As presented in the Conceptual RAP~~ the volume of hydrocarbon, asbestos and/or PFAS impacted soil that would require excavation and either treatment or offsite disposal has been estimated at ~~83,000~~ **186,270** $m^3$. This area of contamination may require "chasing" during remediation works, which involves the process of continuing to remove/ excavate contamination that extends beyond the initially identified areas. **An allowance for contingency excavation volume has been included. Depending on the extent of data available, this has been based on nearby contamination results, or a percentage allowance based on the base excavation volume.** Therefore, for the purpose of the assessment within this Modification Report, an approximate contingency soil volume of ~~40,600~~ **95,400** $m^3$ ~~(50%)~~ has also been included for assessment (i.e. a **sub**total of ~~123,600~~ **281,670** $m^3$).

~~To prevent loss of existing flood storage and to avoid offsite flooding impacts, earthworks and capping would be completed in a manner that does not significantly alter existing surface levels. For example, areas requiring up to 300 mm of capping that are within areas of flood storage would need to be initially excavated by 300 mm before the capping occurs. Areas requiring excavation prior to capping are shown on Figure 1-3. Additional excavation (approximately 183,130 $m^3$ of excavated soil, with 91,565 $m^3$ contingency) would be required in these areas to allow for the capping layer.~~

~~The estimate of 266,130 $m^3$ (with contingency allowance for 132,165 $m^3$) is comprised of the following excavation areas, soil volume estimates, and contingency volumes.~~

**Table 1-3** ~~Excavations~~ **Infrastructure works and targeted remediation excavations**

| Name | Excavation volume ($m^3$) | Contingency excavation volume ($m^3$) | Total volume ($m^3$) |
|---|---|---|---|
| **Infrastructure works** | | | |
| ~~Zone 1 (Infrastructure construction works)~~ | ~~13,000~~ | ~~6,500~~ | ~~19,500~~ |
| **Zone 1 (Infrastructure construction works)**<br>Zone 2 and 3 (OWS removal **and augmentation**)<br>**Zone 3 (RPIP OSD)** | ~~11,800~~ **53,700** | ~~5,000~~ **5,370** | ~~16,800~~ **59,070** |
| **Source Area Excavations** | | | |
| **Source Area** Excavation 1 (PHC) **(contingency)** | ~~4,000~~ **Nil** | ~~2,000~~ **18,000** | ~~6,000~~ **18,000** |
| **Source Area** Excavation 2 (PHC) | ~~15,550~~ **49,250** | ~~7,775~~ **39,550** | ~~23,325~~ **88,800** |
| **Source Area** Excavation 3 (PHC**, CHC**) | ~~2,450~~ **24,640** | ~~1,225~~ **19,180** | ~~3,675~~ **43,820** |
| **Source Area Excavation 4 (PFAS)** | **2,800** | **3,360** | **6,160** |
| **Source Area** Excavation ~~4~~ **5** (PFAS) | 10,000 | 5,000 | 15,000 |
| **Source Area** Excavation ~~5 (PFAS)~~ **6 (ACS)** | ~~2,550~~ **32,500** | ~~1,275~~ **16,250** | ~~3,825~~ **48,750** |
| **Other excavations** | | | |
| **Excavation 7 (ACS)** | **1,380** | **690** | **2,070** |

| Name | Excavation volume ($m^3$) | Contingency excavation volume ($m^3$) | Total volume ($m^3$) |
|---|---|---|---|
| **Infrastructure works** | | | |
| ~~Asbestos Excavation~~ | ~~23,650~~ | ~~11,825~~ | ~~35,475~~ |
| ~~Capping Excavation~~ | ~~183,130~~ | ~~91,565~~ | ~~274,695~~ |
| Total | ~~266,130~~ **186,270** | ~~132,165~~ **95,400** | ~~398,295~~ **281,670** |

**Abbreviations:** ***OSD – onsite detention system***
***PHC – petroleum hydrocarbons; CHC – chlorinated hydrocarbons***
***PFAS – per and poly-fluoroalkyl substances; ACS – Asbestos Contaminated Soil***

Once contaminated soils are excavated, soil sampling and analytical testing would occur within the excavations to validate the remaining soil against a pre-determined validation criteria and in accordance with the specific Validation SAQP.

Impacted soils to be treated ex-situ would be excavated and stockpiled based on visual and olfactory evidence, field screening, and laboratory data. Contaminated soils would be stockpiled separately **within the waste management area (refer to Figure 1-4)** depending on the type and concentrations of contamination present and the remediation technology required ~~within the waste management area~~.

Where it is not feasible to remediate the soils with the ~~technologies~~ **approaches** listed above, they would be disposed offsite untreated, and in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014a) to an appropriately licensed facility.

Figure 1-4 ~~also~~ shows the indicative locations where the excavated soils would be stored, managed, and treated~~, which is discussed further in the Biopiling and Stabilisation sections below~~.




**Figure 1-4 Targeted remediation activities (Stage 3)**

*Biopiling*

Following testing, soils requiring remediation due to hydrocarbon impacts, but not impacted ~~by asbestos or PFAS~~ **to an extent that would make biopiling impractical due to gross contamination**, would be remediated by biopiling~~, where practicable~~**. This would be undertaken to the extent practicable, with adherence to asbestos management requirements.**

Under normal conditions, naturally occurring bacteria in the ground slowly degrade hydrocarbon contamination to compounds that do not pose a risk to human health or the environment. Biopiling promotes and facilitates this natural process (through the addition of nutrients etc.) expediting the remediation process. Based on ground investigations, it is ~~estimated that approximately 10,000 $m^3$ of hydrocarbon contaminated soil from the Project Area would be remediated by biopiling, however a contingency soil volume of 5,000 $m^3$ has also been included for this assessment (i.e. a total of 15,000 $m^3$)~~ **assessed that biopiling would be suitable for the remediation of soils from Excavations 1 to 4**.

Biopiles would be established within areas shown on Figure 1-4. **These areas have all historically been utilised for waste management at the Site. As such, they are connected to the Site's OWS, and have electricity connections. Two of these areas have concrete slabs (Zone 2 former flare geobag area, and Zone 3 waste management slab). The Zone 3 former land farm does not have a slab present.** ~~Prior~~ **In this area, prior** to setting out the biopiling areas, ~~these areas would be remediated and/or managed (if required) prior to being~~ **this area would be** prepared with a base clay or **high-density polyethylene (**HDPE**)** liner~~, where suitable concrete slabs are not present~~. A compacted sand base would be established over the liner to enable adequate air exchange into the biopile.

~~The soils would be mixed with~~ **When biopiling,** nutrients or other soil amendments **would be added** and placed in the biopile area. The biopiles would be covered with an impermeable material to reduce stormwater ingress and dust creation. Measures to minimise the creation of dust and odour emissions during the construction of the biopiles would include:

- Covering surfaces
- Minimising exposed area
- Wetting down exposed soils
- **Treatment of extracted hydrocarbon vapours**
- Dust monitoring or observations.

**The total height of the biopiles would not exceed 3 m.**

The biopile would be maintained under negative pressure with blowers to mitigate fugitive gas emissions to the atmosphere. Off-gas from the process would be passed through air filters to remove volatile hydrocarbons and regular air monitoring of the air emissions would confirm when exchange of air filters is required. Moisture, temperature, nutrients, oxygen, and pH would be monitored regularly and controlled to enhance biodegradation.

The addition of nutrients/ amendments, compost, microbes, and moisture (as appropriate) to the biopile and the movement of air with a blower through the material ~~would~~ **is shown to** stimulate aerobic microbial activity within the soils and promote the biodegradation of hydrocarbons.

The biopiling base would be graded towards a collection point. Leachate from the biopiles would be sent to the WWTP (via the OWS system) for treatment prior to being discharged in line with the EPL 837.

Biopiling blowers may operate on a 24 hour basis in identified Biopiling ~~and Stabilisation~~ Areas (see Figure 1-4). Given their location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.

Regular testing of the soil in the biopiles would occur to confirm when the soil has been remediated to an industrial/ commercial standard **(as defined by the ASC NEPM** (NEPM, 2013)**)**. Once the soil is remediated to this standard, the biopiles would be deconstructed and the soil would be reused onsite as backfill ~~or for capping~~. **Biopiling would follow the guidelines set out in *NSW EPA's Best Practice Note: Landfarming*** (NSW EPA, 2014b)**.**

**Following the completion of soil treatment, if there are residual concentrations of target contaminants remaining at levels above the remediation criteria in soils, that may pose unacceptable risk to future human health receptors, the soils would be assessed for offsite disposal. Soils that do not meet remedial criteria might still be suitable for onsite reuse, provided appropriate additional remedial actions can be undertaken that would address the residual risks.**

*Stabilisation*

~~Excavated soils from the former Fire Training Area and small quantities of soil impacted by PFAS from other areas would be disposed offsite; however, should larger volumes of contaminated soil be present in a specific location, or if the concentrations result in the soils being classified as Restricted Soil Waste (RSW) or higher, ex-situ stabilisation maybe required. The decision to either dispose of the contaminated soils offsite or to use stabilisation would be based on a cost benefit analysis.~~

~~Stabilisation involves the use of a binding reagent (typically activated carbon) to encapsulate contaminants). To confirm the appropriate approach for soil stabilisation, bench scale trial testing would be undertaken to:~~

- ~~Confirm the optimal treatment application (i.e. additive ratios)~~
- ~~Demonstrate longer-term effectiveness of the treatment~~
- ~~Demonstrate that the treated material has been appropriately stabilised and is suitable to be reinstated into excavations and/or accepted by an appropriately licenced landfill.~~

~~Following the completion of the bench scale trial, the results would be confirmed and the full-scale stabilisation works would commence.~~

~~Once excavated, PFAS impacted soils would be stockpiled separately to non-contaminated soils and other contaminated soils in the waste management area. Stabilisation works would progress in a sequential manner with progressive validation testing conducted to confirm the remediation objectives have been achieved.~~

~~The stabilisation works would require setup of the stabilisation process (preparation and construction of treatment areas) and related environmental controls.~~

~~Following set up the stabilisation process involves the thorough mixing of the selected additives into the soil. This would be undertaken in a segregated area as shown in Figure 1-2. This may be achieved using either an excavator fitted with at grid bucket, or mixing plant/ trommel including a feed hopper, mixing apparatus and an additive hopper depending on the volume of soils to be treated and the associated scale of mixing operation required.~~

~~Once complete, the treated material would be validated for onsite reuse or classified for offsite disposal.~~

*~~Capping~~*

~~Onsite *in-situ* containment by capping would be carried out where soils have residual COPC concentrations that pose a potential risk for direct contact.~~

~~Capping would be considered in the areas shown on Figure 1-3. The need for capping in these areas would be confirmed following additional sampling to be conducted as part of the data gap assessment and Detailed RAP(s) planning.~~

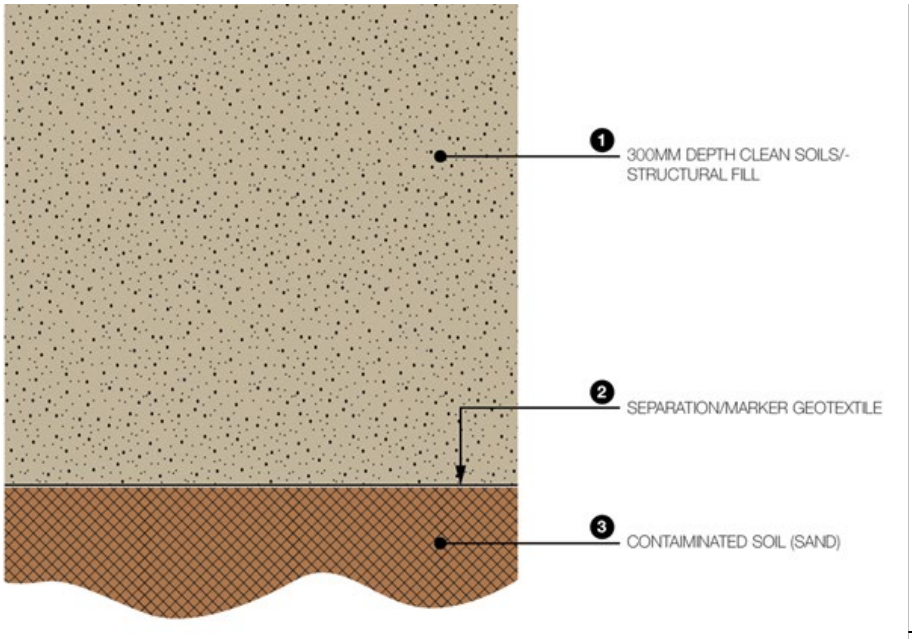
~~Capping of soil would be conducted sequentially in a staged manner. Following remediation of one area, soils would be validated in accordance with a specific SAQP (further described below). During validation of one area, remediation of the next area would commence, with the first area being clearly marked to avoid potential cross-contamination from other parts of the Project Area. Capping of soil could occur concurrently in different spatial areas where cross-contamination is not a concern.~~

~~Two types of capping would be used depending on the types of contamination present. These two capping approaches (Type 1 and Type 2) are described in detail below. Capping thickness would meet the requirements of an industrial/ commercial land use and would be designed to meet the final landform grade. The thickness may be reduced if contaminated materials are situated under building slabs, roadways and other hardstand surfaces.~~

### ~~Type 1 capping~~

~~The primary remediation strategy to address asbestos contamination in soils is to cap the contamination by creating a physical barrier that would prevent exposure to asbestos (this is referred to herein as Type 1 capping). It is estimated that approximately 60 ha across Zones 2 and 3 would be capped with a Type 1 capping layer. The Type 1 capping layer would typically comprise a standard 300 mm clean fill cap underlain by a geotextile marker layer to delineate areas which still contain asbestos. Capping thickness would meet the requirements of a industrial/ commercial land use and would be designed to meet the final landform grade (refer to Section 1.2.5 (Stage 4 – Grading)).~~

~~A schematic for a typical Type 1 capping layer is shown in Figure 1-5. The precise depth, design and extent of the Type 1 capping across the Project Area would be agreed with the Site Auditor and outlined in the relevant Detailed RAP.~~

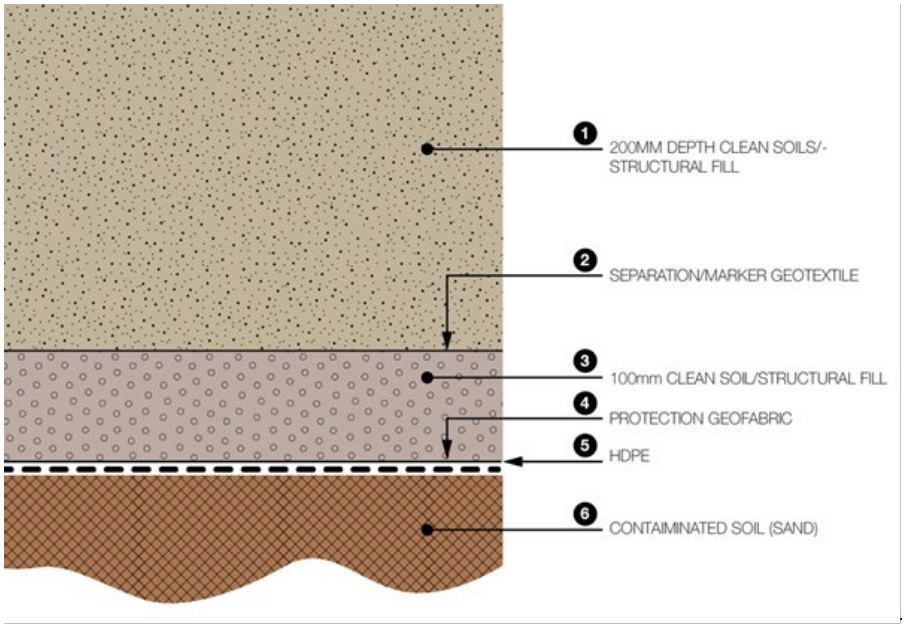



~~Figure 1-5 - Schematic for typical Type 1 capping layer~~

### ~~Type 2 capping~~

~~If required, an impermeable cap would also be constructed in areas with residual PFAS and/ or hydrocarbon impacts (Type 2 capping). The Type 2 capping layer has been designed both as a vapour barrier to prevent migration of volatile vapours and also as an impermeable barrier to mitigate further migration of PFAS into groundwater. The typical construction of the Type 2 capping layer would comprise 200 mm structural fill over a geotextile separation marker followed by 100 mm of clean soil/ structural fill followed by protection geofabric and impermeable HDPE or low permeability layer.~~

~~A schematic for typical Type 2 capping layer is shown in Figure 1-6. The precise depth, design and extent of the Type 2 capping across the Project Area would be agreed with the Site Auditor and outlined in the relevant Detailed RAP.~~




~~Figure 1-6 Schematic for typical Type 2 capping layer~~

*Offsite disposal (untreated soils)*

Where contaminated soils or sludges cannot be treated and reused, or managed in situ, they would be disposed offsite to an appropriately licenced facility by licenced contractors.

Up to ~~40,000~~ **67,730** $m^3$ of contaminated soil, fill, or sludge material may require offsite disposal **from Source Excavation Areas in Figure 1-4 (including contingency)**. This untreated material may be petroleum or non-petroleum impacted soils or sludges.

**Two primary areas of the Site have been identified as requiring surface soils to be removed due to the presence of asbestos. These areas are:**

- **The area colloquially known as Refining Process Improvement Project (RPIP) Mountain (Excavation 6 in Figure 1-4) – a former stockpile of asbestos contaminated soils (ACS) in Zone 3 which presents an asbestos mitigation risk to other parts of the Site due to the growth of vegetation across this area.**
- **The LPG Area (Excavation 7 in Figure 1-4) – an area in Zone 1 where soils have asbestos concentrations that pose a potential operational safety risk if direct contact occurs**

**In order to address the risk in the LPG Area, a surface scape of 150 mm would occur to remove the ACS at the surface, thereby removing the direct contact risk. This area would be backfilled following the surface scape to return the land to its current surface levels.**

**At RPIP Mountain, vegetation would be removed and ACS removed to a depth of 1 m below existing ground levels to target asbestos at the root zone of vegetation growing at the current ground surface. For larger tree roots, there is potential for excavation to a depth of 4 mbgl. A total of 32,500 $m^3$ of ACS would be removed (excluding contingency). This would include excavation of an onside detention basin (OSD) to maintain existing, pre modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% AEP event (up to 700 $m^3$ to account for future climate scenarios). It is anticipated that this would entail extension/ widening of the existing open water channel on the western side of RPIP Mountain to provide the necessary volume.**

**Following excavation, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Where necessary, the excavation would be backfilled with clean material. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Following grading, the surface of RPIP Mountain would be level with the existing surrounding surface levels.**

**The works associated with the removal of ACS would be completed and managed in line with appropriate occupational health and safety controls, including SafeWork NSW's Guidance on Managing Asbestos in or on Soil** (SafeWork NSW, 2014) **and the Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA** (WA DoH, 2021)**. Excavated material would be removed and disposed of offsite as 'special waste – asbestos.'**

Soils to be disposed offsite would be excavated and transported to a dedicated section of the waste management area for temporary storage or containment (depending on their characteristics). Further testing and waste classification in accordance with the Waste Classification Guidelines (NSW EPA, 2014a) would be undertaken prior to disposing of these materials offsite.

**Where materials being disposed offsite are classified as special waste – asbestos, or hazardous waste, these must be tracked via the NSW EPA's Integrated Waste Tracking Solution (IWTS). Tracking of transport and disposal of high-risk or hazardous waste minimises potential harm to the environment and human health.**

*Groundwater (extraction)*

**Groundwater is relatively shallow across the Site, with the shallowest depth of 0.2 m bgl recorded in Zone 2. Consequently, groundwater may be intercepted and accumulate within trenches and pits during excavations, requiring temporary dewatering to enable works to be carried out safely.**

**Dewatering is currently managed onsite as wastewater in accordance with SSD-5544 and EPL-837. The Site's OWS is a continuous operation system designed to direct waste water to the onsite WWTP for treatment. Extracted groundwater that that cannot be treated at the WWTP would either be pre-treated by another method or disposed to an appropriately licenced liquid waste facility. Once wastewaters are treated, this wastewater is discharged under EPL-837 via the Yena Gap pipeline to an ocean outfall in the Tasman Sea.**

**A project specific Groundwater Management Plan (GWMP) would be developed as part of the CEMP for the proposed modification. This plan would outline the specific dewatering requirements, given the proposed maximum excavation extents.**

*Groundwater (remediation)*

Based on existing investigations, as presented in the ~~Conceptual~~ RAP (Appendix E), groundwater contaminants **at some locations** are present above commercial/ industrial standard (NEPM, 2013)**.** ~~; however, where these residual concentrations are assessed to still be present above criteria after soil remediation activities, remediation capping works would be undertaken to prevent exposure to future commercial/ industrial site users. Furthermore, the~~ **Based on the investigations to date, active remediation of groundwater is not proposed. The** groundwater conditions are ~~likely~~ **expected** to improve ~~further~~ **following completion of the remediation works under the proposed modification,** based on the following:

- Primary sources: ~~Various~~ **With the removal of the OWS in Zone 2 and Zone 3, all potential** primary sources ~~have been removed previously from Zone 2 and 3, with the majority of remnant subsurface~~ **related to the former refinery operations and the associated** infrastructure ~~(such as below ground pipework) to~~ **would** be removed ~~during the proposed modification.~~
- Secondary sources:

- ~~Shallow hydrocarbon~~ **Residual light non-aqueous phase liquid (LNAPL)** impacts would be addressed as part of the soil remediation works ~~by the~~ **through** excavation ~~of impacted soils~~ to the extent practicable. As part of these works, impacted water may accumulate in these excavations ~~either from groundwater ingress or stormwater flows~~. Impacted ~~groundwater in these excavations would be removed, captured, and tested. In the majority of cases, it is expected that this groundwater would be treated through the WWTP, however it may also be disposed offsite if required~~ **water would be managed via pumping and sending to the Site's existing WWTP for treatment.**
- **Residual PFAS impacts in soil would be addressed as part of the soil remediation works through source area excavation and offsite disposal, which would permanently reduce PFAS mass onsite and, over time, PFAS leaching and migration to groundwater.**

- Ongoing monitoring: Following soil remediation, groundwater monitoring would continue to confirm ~~groundwater conditions in the short term~~ **that the soil remediation works were effective in mitigating future impacts to groundwater**. The soil remediation process itself ~~is likely to~~ **would** significantly improve groundwater conditions over the long term, assisted by natural attenuation (this process involves allowing naturally occurring micro-organisms in the ground to biodegrade hydrocarbon contamination). **Residual groundwater impacts requiring ongoing management would be addressed as part of the Operational Environmental Management Plan (OEMP).**

~~Active remediation of groundwater is not anticipated to be required; should it be warranted based on a risk assessment, in-situ treatment with injection of chemical oxidants or colloidal carbon would be undertaken.~~

~~Following soil remediation, ongoing management of contaminated groundwater would continue to be undertaken. As recommended in the Conceptual RAP, one or more Groundwater Monitoring Plan(s) (GMP) would be prepared for Zones 2 and 3 to confirm residual COPCs in groundwater are being appropriately managed in the Project Area. The GMP(s) would be reviewed and approved by the Site Auditor as part of their review and approval of the final validation report and one or more Environmental Management Plan(s) (EMP).~~

*Validation*

Following treatment, soils would be subject to validation testing against a pre-determined validation criteria and in accordance with a specific SAQP. Soils ~~which~~ **that** have been validated to meet the commercial/ industrial standard (including any validated imported materials) would be stockpiled separately from soils requiring remediation.

Validated soils, or validated soils mixed with the crushed concrete, would be placed in excavations as soon as practicable following removal of contaminated soils and subsurface infrastructure. **Excavations would be reinstated to the existing grade and stabilised with adequate surface cover.**

At the completion of the remediation works, areas used for stockpiling contaminated soils would be validated appropriately in accordance with a specific SAQP. Tracking documentation would be completed for each excavation and stockpile**,** in accordance with the Material Tracking Plan.

Following the completion of the remediation works **proposed under this modification application**, one or more (depending on the staging approach for the remediation works) Validation Report(s) would be prepared in accordance with the NSW EPA Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA, 2020)~~ and~~**. Works within the Audit Boundary would be** reviewed and ~~approved~~ **endorsed** by the Site Auditor, confirming that the ~~area(s) are~~ **land within the Audit Boundary is** suitable for ~~future~~ commercial/ industrial ~~land uses~~ **use**. The Validation Report may include progressive validation reports for separate portions of the Project Area to enable progressive validation of these areas.

~~One or more EMP(s) would be prepared for implementation across the Project Area to appropriately manage~~ **Where relevant, following the remediation works, the Site's OEMP would be updated to detail the ongoing management and monitoring requirements for** residual contaminated soil and/ or groundwater impacts that do not meet commercial/ industrial standards~~. The EMP(s) would include GMP(s), which would detail groundwater monitoring requirements for the Project Area. The EMP(s)~~**, in accordance with the *NSW EPA EMP Guidelines 2020* and *Consultant Guidelines 2020*** (NSW EPA, 2020)**. The updated OEMP** would be provided to the Site Auditor for endorsement **and to appropriately manage remaining impacts**. ~~Once the remediation works are complete~~ **At the completion of the remedial works under the proposed modification, one or more** Site Audit ~~Statement~~ **Statement(s)** and Site Audit ~~Report~~ **Report(s)** would be prepared by the Site Auditor in accordance with the Guidelines for the NSW Site Auditor Scheme (3rd edition). (NSW EPA, 2017).

### ~~1.2.5 Stage 4 – Grading~~

~~Following remediation works, the Project Area would be graded to facilitate the ongoing management of the Kurnell Terminal and/ or future land uses in the western half of Zone 2 and northern part of Zone 3 (refer to Figure 1-6). The levels across the rest of the Project Area would remain the same as existing. Grading would allow stormwater flows across Zones 2 and 3 to be directed to the existing SWS at the Site and for flows in Zone 1 to be managed by either the SWS or the OWS, as required.~~

~~Surface treatments, such as grassing or temporary pavement, would be provided to help mitigate soil erosion and limit sediment discharging into the existing drainage network.~~

~~The grading works would consist of the following activities:~~

- ~~Placement and compaction of fill to required levels over remediated surface~~
- ~~Forming the finished design surface through grading~~
- ~~If required, placement of an additional surface layer (typically topsoil) and surface treatment (grassing, spray grass or temporary pavement).~~

### 1.2.6 Stage 4 ~~Stage 5 –~~ Demobilisation

Demobilisation from the Project Area would include:

- Removal of plant and equipment
- Securing Zones 2 and 3
- Removal of temporary environmental controls and waste management areas
- Removal of offices, temporary structures etc. installed within the Project Area as part of Stage 1.

## 1.3 Construction staging and program

### 1.3.1 Construction program

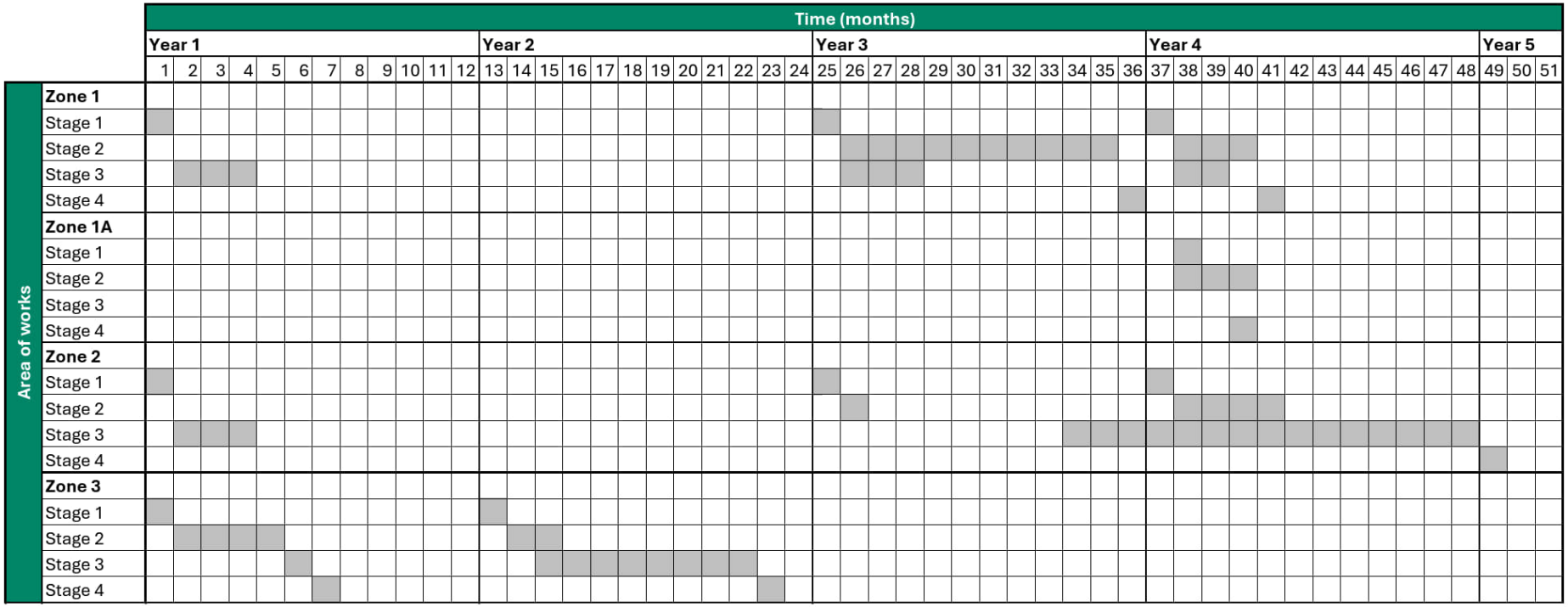
Works ~~are planned to commence in August 2025 and~~ would ~~continue for about 12 months for infrastructure removal scopes and up to four years for remediation works~~ **be staged** in accordance with the ~~schedule~~ **indicative program** in ~~Table 14~~ **Table 1-5**. **Construction and remediation are anticipated to be completed by 2030.**

~~**Table 1-4 Proposed modification program**~~

| ~~Stage~~ | ~~Indicative timeframe~~ |
|---|---|
| ~~Stage 1 – Preparation works~~ | ~~August 2025~~ |
| ~~Stage 2 – Removal and/or relocation of infrastructure[1]~~ | ~~August 2025 – August 2026~~ |
| ~~Stage 3 – Remediation~~ | ~~August 2025 – July 2029~~ |
| ~~Stage 4 – Grading~~ | ~~Zone 2: August 2026 – December 2026~~<br>~~Zone 3: Up to July 2029~~ |
| ~~Stage 5 – Demobilisation~~ | ~~September 2026 (for all works except remediation)~~ |

[1] ~~Construction in Zone 1A expected to last 3 months.~~

**Table 1-5 Indicative program**



### 1.3.2 Working hours

In line with ~~Condition C18 of SSD-5544~~ **the Interim Construction Noise Guideline (ICNG)**, construction works would comply with following hours:

- Monday to ~~Sunday~~ **Friday** – 7am to ~~10~~ **6**pm
- **Saturday – 8am to 1pm**
- **Sunday and public holidays – No work is permitted.**

~~High noise generating construction works, including works within the Eastern Right of Way (Zone 1A), would be confined to less sensitive times of the day and not undertaken on Sundays, public holidays, or outside of the hours 7am and 6pm Monday to Saturday (in line with Condition C19).~~ Construction works outside of the work hours identified above would only be undertaken in the following circumstances (in line with Condition C20 **of SSD-5544**):

- Works that are inaudible at nearest sensitive land receivers
- Works that are consistent with Ampol's existing maintenance procedures and are in accordance with EPL 837
- Works agreed to in writing by the EPA or DPHI
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property and/ or to prevent environmental harm.

~~Biopiling blowers may operate~~ **In addition, the following activities would be required** on a 24-hour basis **to support construction activities:**

- **Biopiling blowers** in identified Biopiling ~~and Stabilisation~~ Areas (see Figure 1-4). Given their location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.
- **Dewatering of excavations. Dewatering would only occur at night in locations where plant would not exceed night-time limits, i.e.:**
  - **Where it is located a minimum of at least 200 m within the Site boundary; or**
  - **Where it is located a minimum of 120 m within the Site boundary if temporary noise barriers are positioned as near as practicable to the pumps, and monitoring confirms that nighttime noise limits are not exceeded.**

### 1.3.3 Construction plant and equipment

The plant and equipment that would be used to deliver the modification works is shown in Table 1-6.

**Table 1-6 Indicative plant and equipment**

| Plant/ equipment | Maximum number of plant and equipment required per day | | |
|---|---|---|---|
| | All stages except Stage 3 | | Stage 3 (Remediation) only |
| | Entire Site | Zone 1A | |
| Front end loader | 6 | **2** | 6 |
| ~~20 t excavator~~ **Excavator** | ~~6~~ **Nil** | **2** | 6 |
| **Excavator (including large hydraulic hammer)** | **6** | **Nil** | **Nil** |
| Dump truck | 6 | **2** | 6 |
| Grader (up to 7 m blade) | ~~Nil~~ **2** | **1** | 4 |
| Large crane (60 t) | 4 | **1** | Nil |

| Plant/ equipment | Maximum number of plant and equipment required per day | | |
|---|---|---|---|
| | All stages except Stage 3 | | Stage 3 (Remediation) only |
| | Entire Site | Zone 1A | |
| Elevated work platform | 6 | **4** | Nil |
| Franna crane (30 t) | 6 | **1** | Nil |
| Cement truck | 6 | **2** | Nil |
| Bobcat | 6 | **2** | 2 |
| Water cart | 6 | **2** | 6 |
| Concrete crusher | ~~2~~ **1** | **Nil** | Nil |
| Telehandler | 6 | **Nil** | Nil |
| Truck and dog (offsite disposal) | 6 | **6** | 6 |
| Truck and dog (imported fill) | - | **6** | 12 |
| Generator | 2 | **1** | 2 |
| Biopiling blower | - | **Nil** | 8 |
| **Dewatering pump** | **6** | **Nil** | **6** |

### 1.3.4 Construction traffic

The traffic generated by the proposed modification would incorporate a mix of construction plant vehicles, delivery vehicles, and construction personnel movements that would scale up and down throughout construction. A summary of the construction vehicles and associated staff numbers that would be required during the works is summarised in Table 1-7.

Table 1-7 Workforce and plant requirements for construction

| Description | | Maximum daily movements (return trips) | Peak hour trips[1] |
|---|---|---|---|
| Heavy vehicles | Construction vehicles (cranes, semi-trailers, etc.) | 10 | 0 |
| | Truck and dog (offsite disposal and imported fill) | 120 | 12 |
| | Equipment/ material delivery vehicles | 6 | 2 |
| | *Subtotal* | *136* | *14* |
| Private vehicles | Construction personnel[2] | 200 | 100 |
| | Total | 336 | 114 |
| | Heavy vehicle proportion | 40% | 12% |

[1] *Assumptions:*

- *Conservatively, it has been assumed that all personnel would arrive to Site during the AM Peak Hour and depart during the PM Peak Hour*
- *Personnel would utilise their own private vehicle with no use of car-pooling or public transport*
- *Heavy vehicle movements would be evenly distributed throughout the hours of operation (10-hour workdays during weekdays and 5-hour workdays on Saturdays)*
- *All plant delivery vehicles are assumed to occur on the same day in order to produce a 'worst-case' scenario.*

[2] *Max number of construction staff (refer to Table 1-8).*

~~During the~~ **The proposed works to construct the new storage shed in Zone 1A to store boats and emergency aquatic spill response kits would be limited to a** three month construction period ~~in Zone 1A, the number of heavy vehicles accessing the Site would remain the same, but about three~~. **During this period, a total of four** construction vehicles (cranes, semi-trailers, etc.), six truck and dog (off-site disposal and imported fill), and ~~three~~ **four** equipment/ material delivery vehicles ~~return trips~~ would be expected to access Zone 1A **alongside light vehicles used by the construction workforce**. Vehicles to be used for this work will be selected ~~to ensure~~ **for** suitability on the local road network and ~~will~~ **would** not be Oversize and Overmass Vehicles (OSOM). **Access to Zone 1A for these construction activities would be primarily from the established gated entrance on Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.**

### 1.3.5 Workforce

Table **1-8** provides the workforce profile for the proposed modification, including current and projected numbers during construction and operation. The current workforce, including Ampol employees and contractors is approximately **130. For context of the capacity of the Site, during the refinery demolition works, a maximum of 410 workers were present onsite and during the operation of the refinery in 2012, a maximum of 1,385 workers were present onsite (AECOM, 2014).**

Table 1-8 Workforce numbers (current and projected)

| Type | Year 1 ~~2025~~ | Year 2 ~~2026~~ | Year 3 ~~2027~~ | Year 4 ~~2028~~ | Year 5 ~~2029~~ |
|---|---|---|---|---|---|
| Ampol employees | 30[1] | 30 | 30 | 30 | 30 |
| ~~Contractors~~ **Ampol contractors** | 100[1] | 100 | 100 | 100 | 100 |
| Workforce for the proposed modification | 100 | 25 | 25 | ~~25~~ **35**[2] | 25 |
| Total | 230 | 155 | 155 | ~~155~~ **165** | 155 |

*Notes:*

1. *Current employee numbers at the Site **(as of 2026)**.*
2. ***Up to 10 construction personnel would be required for works in Zone 1A.***

## 1.4 Operation

Once the modification works are complete, the Site would continue to operate as described in the approval documentation for the approved project and would be consistent with the development consent for SSD-5544 **(as modified)** and the requirements of EPL 837.

**Operational traffic generated by the Site, accessing Zones 1 and 1A, would be the same as existing vehicle numbers.**

Relocated equipment would operate in the new locations, as shown on Figure 1-1.

As discussed in Table 1-1, the FWS would be relocated within the FWS Relocation Area in Zone 1, including a new firewater tank and pipework to allow it to service the terminal infrastructure, with specific siting selected during detailed design.

For the purpose of assessment in this Modification Report, two indicative locations have been assessed for the relocation of the FWS, which have been selected based on optioneering completed in the concept design phase in consultation with key stakeholders, including **Fire and Rescue NSW, including** Firewater and Process Safety Subject Matter Experts. The location of each option is shown in Figure 1-7.




**Figure 1-7 Relocated FWS – Indicative locations**

Operation and maintenance of the relocated FWS would be consistent with existing operations. The FWS would include three diesel engines used to operate FWS pumps housed within an enclosed area. Regular maintenance testing of the pumps would include:

- Operation of all three pumps individually for approximately half an hour once a month
- One annual maintenance test conducted over a two-hour period once per year.

## 1.5 Ancillary facilities and infrastructure

### 1.5.1 Electricity

*Construction*

Electricity would be required for the duration of construction. Coordination would be required between the decommissioning of electrical assets across Zones 2 and 3 and other construction works requiring electricity. To manage this, electricity would be routed from existing substations in Zone 2 and 3, prior to demolition, or from Zone 1 as required for the duration of construction. Following modification works, electricity for terminal operations would be supplied by substations in Zone 1.

Construction works would use electricity from within the Site, with the exception of Stage 3 biopiling works, which would require generators.

*Operational*

As noted in Section 1.2.3 ~~(Stage 2 – Removal and/ or relocation of infrastructure)~~, both above and below ground electrical infrastructure were retained at the Site during the original Kurnell Refinery Conversion works. Given Ampol's intent to consolidate site operations, no electrical infrastructure would be required in Zones 2 and 3 once the modification works are complete.

### 1.5.2 Water, stormwater, and wastewater management

*Construction*

The Site includes seven main stormwater sub-catchments. An underground pipe network and above ground open drains are present throughout the Site. Stormwater and wastewater from the Site are currently managed through the SWS and the OWS respectively.

Stormwater from the Site, inflows, and runoff generally flows from east to the west, with the higher point close to Kamay Botany Bay National Park. Key Site stormwater outlets include Quibray Bay, Botany Bay, and Marton Park Wetland. Modification works are not proposed to the SWS, except where required for remediation as discussed below. Modification works to the OWS are detailed in Section 1.2.3 ~~(Stage 2 – Removal and/ or relocation of infrastructure)~~.

During the remediation works, the existing surface water management system (pipeways and box drains) would continue to operate.

As the remediation progresses, the stormwater and wastewater systems would be progressively isolated where remediation works are occurring, with ~~excavation pits~~ **excavations** being bunded temporarily to minimise the impact on surface water from contact with contaminated soils. Stormwater would be diverted around the work areas using temporary drainage channels. Surface water runoff would continue to follow existing drainage patterns, unless temporary diversion from active remediation areas is warranted.

The approach to managing water within remediation areas and disturbed areas is as follows:

- Minimise the volume of potentially contaminated water during construction of the proposed modification wherever possible by directing surface water away from excavations, depressions, pits, and stockpiles by the construction of drainage works such as bunds and diversion drains. These measures would minimise the flow of surface water into parts of the Project Area that contain potentially contaminated materials
- Capturing uncontaminated surface water where possible and using it during the works for various activities, e.g. dust suppression, wheel washing, etc. To assist in the collection of surface water, a temporary sediment basin may be constructed in a suitable location to be determined during detailed design
- Capturing potentially contaminated water (e.g. in bunded remediation areas) and directing it to the WWTP, if appropriate, or disposing of it at an appropriately licensed facility.

The generation of impacted surface water would be minimised by:

- Covering biopiles and contaminated soil stockpiles to reduce the amount of contaminated water produced
- Completing the remediation in a staged manner so as to minimise the extent of excavations at any one time that could collect water and require dewatering and treatment at the WWTP.

Liquids and water that is produced or collected during the works would be directed through the existing OWS system and, where possible, to the WWTP. If it is not practical for the liquids and water to be sent via this system, it would be collected (e.g. in a tanker, vacuum truck) and be transported to the WWTP for subsequent treatment and discharge in line with EPL 837, or taken offsite for disposal at appropriately licensed facility. Accumulated groundwater in excavated areas would be tested**, if required,** to confirm that it can be appropriately treated in the WWTP.

*Operational*

Stormwater generated on the Site would continue to be collected in the SWS from areas that have been designated as having low risk of interaction with petroleum products. Stormwater would continue to be discharged offsite into the three receiving water bodies: Quibray Bay, Botany Bay, and Marton Park Wetland.

Where disconnection and removal of OWS is proposed, controls to limit peak discharge and **achieve** ~~ensure~~ appropriate water quality ~~is achieved~~ would be put in place once areas have been remediated, stabilised and disconnected from the OWS system. Runoff from catchments within Zone 2 are partially managed by pumps and splitter pits to ~~only~~ allow **only** clean water to be discharged and the peak flow rate to be controlled. This system would continue to operate post remediation such that no additional infrastructure is required for Zone 2.

Two ~~additional~~ **separate onsite** detention ~~basins~~ **(OSD) systems are proposed in Zone 3** ~~required to manage Zone 3 discharges: one would be located within existing pipeway infrastructure, and one would require construction of a new temporary detention basin/ swale within Zone 3~~ **to maintain existing, pre-modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% Annual Exceedance Probability (AEP) event[2]** (refer to ~~Figure 1-1~~ **Figure 1-2**). **This would also maintain existing peak discharge rates entering the downstream Towra Point Nature Reserve (Ramsar site) and Quibray Bay. The former Caltex Lubricating Oil Refinery (CLOR) pipeways would be utilised for stormwater detention, and additional OSD storage would be included within the existing open channel that runs along the western side of RPIP Mountain.**

Sediment control measures would be required until remediated areas are stabilised. Short term **water quality** monitoring would **likely** be required to confirm that these areas are functioning as expected.

Where water may have been impacted by petroleum products, the OWS would continue to handle this water. This water is treated at the WWTP prior to being discharged to the Tasman Sea under EPL 837.

### 1.5.3 Sewers

Sewerage management would continue to operate as described in the Kurnell Refinery Conversion EIS (URS, 2013) and would be consistent with the development consent for the approved project.

### 1.5.4 Road access

Road access arrangements would continue to operate as described in the Kurnell Refinery Conversion EIS (URS, 2013) and would be consistent with the development consent for the approved project.

Access to Zone 1A would continue to be primarily from Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.

## 1.6 Environmental management

### 1.6.1 Construction

The current operations at the terminal are managed under the Operational Environmental Management Plan (OEMP) Kurnell Terminal, Final Stage 2 (Ampol, 2021) (as approved by DPE, now DPHI). This OEMP helps Ampol comply with its requirements under the development consent for the Kurnell Terminal (SSD-5544), EPL 837, and the MHF licence for the terminal. This is the primary document that informs how the Site identifies and provides management solutions for potential environmental impacts arising from terminal operations.

In order to maintain compliance with relevant legislative and regulatory requirements, Ampol also implements an Environmental Management System (EMS). The EMS consists of a suite of internal policy documents and plans. The EMS is overseen by a dedicated member of the Ampol Environment Team.

**[2] A 1% AEP event is the equivalent of a 1 in 100 chance of a flood of a specific size being reached or exceeded in any given year.**

Appendix C ~~(Consolidated mitigation measures)~~ presents the **updated** consolidated list of measures that would assist in avoiding, mitigating, or managing the anticipated impacts associated with the proposed modification works. These measures would be incorporated into the modified conditions of consent for the ~~proposed modification~~ **approved Project** and, during construction, would be implemented through a **project-specific** Construction Environment Management Plan (CEMP). **This CEMP would aim to:**

- **Promote appropriate environmental management practices during the modification works to avoid and minimise adverse impacts on environmental receptors**
- **Achieve the overall environmental objectives**
- **Maintain legal and contractual compliance.**

The CEMP would cover all environmental matters associated with the construction of the proposed modification and ~~would~~ include the mitigation measures and controls identified in ~~Sections 7.2 (Hazards and risk) to 7.13 (Cumulative impacts)~~ **the Modification Report and this Submissions Report**.

The CEMP would help ~~ensure that~~ **to**:

- **Achieve compliance** ~~All work complies~~ with all relevant environmental legislation, regulations, and standards
- **Integrate consideration of environmental matters** ~~Environmental factors are taken~~ into ~~account for~~ each activity
- **Maintain** ~~Maintenance of~~ environmental compliance and performance ~~is achieved~~ through ongoing environmental monitoring and reporting
- **Conduct regular** ~~Regular~~ audits to confirm compliance with environmental policies and standards.

**Such management and mitigation measures would include monitoring. Examples of monitoring to be undertaken would include, but not be limited to, short-term post-construction water quality monitoring to confirm the discharged stormwater quality meets the WQOs for the wider catchment. Following review of agency and community submissions, the mitigation measures have been updated to incorporate air quality and groundwater Trigger Action Response Plans (TARP) to allow for effective and quick responses to environmental changes.**

As discussed in Section 1.2.4 ~~(Stage 3 – Remediation)~~ and the ~~Conceptual~~ RAP (Appendix E), ~~Detailed RAP(s)~~ **one or more Remediation Work Plan(s)** would be prepared ~~separately to~~ **alongside** the CEMP, prior to the commencement of remediation.

Workforce safety would continue to be managed onsite in line with the measures and procedures outlined in the existing Work Health and Safety Management Plan (WHSMP) for the Site, as updated for the **proposed** modification ~~works~~.

### 1.6.2 Operation

**Following completion of the construction works, Ampol's existing Operational Environmental Management Plan (**OEMP**)** would ~~continue to be active for~~ **be updated to include** the proposed modification ~~following construction~~**, to continue Ampol's approach to monitoring and managing environmental compliance**. Updates required to address issues identified as part of ~~this~~ **the** Modification Report **and this Submissions Report** are presented in Appendix C ~~(Consolidated mitigation measures)~~.

# 2.0 References

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# 1.0 Consolidated project description

This appendix presents the revised project description for the approved project, including all seven modifications:

- The conversion works, consented 7 January 2014
- Modification 1 – Demolition works (MOD-1), consented 10 August 2015
- Modification 2 – Asbestos contaminated soil (ACS) management works (MOD-2), consented 27 October 2017
- Modification 3 – Tank 101 demolition (MOD-3), consented 17 November 2017
- Modification 4 – Timing of demolition works (MOD-4), consented on 9 August 2018
- Modification 5 – Increased the capacity of the ACS Containment Cell, extended the duration of ACS management works and allowed for the retention of a portion of the cooling water outlet pipeline beneath Prince Charles Parade and adjacent dune area of Silver Beach (MOD-5), consented on 10 July 2019
- Modification 6 – Extension of the ACS management works period (MOD-6), consented 21 January 2020
- Modification 7 – Supporting the continued viable, safe, reliable, and sustainable operation of the Kurnell Terminal (MOD-7).

These modifications have been laid out in largely chronological order and separated by the following themes:

- Conversion works
  - Includes the conversion works
- Demolition works
  - Includes MOD-1, MOD-3, and MOD-4
- Asbestos Containment Cell management works
  - Includes MOD-2, MOD-5, and MOD-6
- Supporting the continued viable, safe, reliable, and sustainable operation of the Kurnell Terminal
  - Includes MOD-7 (description of the proposed modification as per this Submissions Report).

Where works have been superseded, new text has been made **bold** and former text has been ~~struck out~~. The tense has also been updated to reflect project status at the time of writing.

## 1.1 Conversion works

### 1.1.1 Introduction

~~Caltex~~ **Ampol** ~~is seeking~~ **sought** development approval to convert the existing Kurnell Refinery into a Finished Product Terminal (the '**Conversion** Project'). The conversion ~~would involve~~ **involved** the continued use of parts of the **Conversion** Project Area, in a manner similar to that ~~currently~~ **previously** in place, for the storage and distribution of petroleum products. A number of existing crude oil tanks ~~would be~~ **were** cleaned and modified to allow for the storage of refined product (i.e. conversion to finished product tanks). A small number of other tanks already storing one type of refined product ~~would be~~ **were** converted to store another. New pumps, pipes and electrical infrastructure ~~would be~~ **were** installed within the **Conversion** Project Area. A range of ancillary works ~~would also be~~ **were also** undertaken to improve efficiency and to facilitate the conversion of the refinery into a terminal. These ancillary works ~~include~~ **included** upgrades to and consolidation of the utilities, transportation and management systems on the Site. The **Conversion** Project ~~is~~ **was** expected to be undertaken over a 54 month period and would cost approximately $230 million.

The refinery plant ~~would~~ **was** also ~~be~~ shut down, depressurised, de-inventoried and left in situ. ~~Caltex~~ **Ampol** shut down, depressurise and de-inventory the refinery plant during routine maintenance activities as part of the existing operation. Therefore approval ~~is~~ **was** not being sought or required to complete this action as these works ~~would be~~ **were** completed in line with the Environment Protection Licence (EPL) for the Site.

No demolition, dismantling or remediation works ~~would be~~ **were** undertaken on the Site as part of ~~this~~ **the Conversion** Project. ~~Should it be~~ **If** required, this work would **have been** ~~be~~ subject to separate approvals at a later stage.

### 1.1.2 Proposed Works

#### Overview

The **Conversion** Project ~~would~~ **included** modifications to the existing Kurnell Refinery (the 'Site') to convert it to a working finished product terminal. The Site ~~would have~~ **has** a nominal maximum storage capacity of 925 ML of refined product and by products. The proposed terminal ~~would manage~~ **manages** the following products:

- Gasoline – Unleaded Petrol (ULP), Premium Unleaded Petrol (PULP) and Super Premium Unleaded Petrol (SPULP);
- Diesel;
- Jet Fuel; and
- Fuel Oil.

The terminal ~~would~~ also **manages** the following by-products:

- Slop; and
- Wastewater.

The **Conversion** Project ~~would involve~~ **involved** the conversion of tanks and installation of pumps and associated pipelines within the **Conversion** Project Area to allow for the expansion of terminal operations. These works ~~would all~~ **occurred** within the **Conversion** Project Area outlined on ~~Figure 4-1~~ **Figure 1-1.**

No works ~~are~~ **were** proposed within the pipeline right of way (refer to ~~Figure 4-1~~ **Figure 1-1**).

During the initial conversion activities the Site ~~would~~ still ~~operate~~ **operated** in its ~~current~~ **existing** mode as both a refinery and a terminal. Cessation of refinery operations ~~would occur~~ **occurred** in in the second half of 2014 and ~~would be~~ **was** followed by the continued conversion of some tanks within the **Conversion** Project Area to hold finished products. Eventually the Site ~~would operate~~ **operated** wholly as a terminal. Construction staging is described in greater detail in Section ~~4.3.1~~ **1.1.3**.

An overview of the modifications required for the **Conversion** Project are summarised below.

### *Gasoline*

Gasoline Products, including ULP, PULP and SPULP, ~~would be~~ **were** stored within tanks in the Eastern Tank Area. Two existing dedicated gasoline pipelines **were** extend**ed** from the Kurnell Wharf to the Eastern Tank Area along Pipeline Easement 1 (refer to ~~Figure 4-1~~ **Figure 1-1**). Gasoline products ~~would be~~ **were** distributed along these pipelines to a total of sixteen existing finished product tanks within the Eastern Tank Area. Twelve of these tanks ~~are currently~~ **were** in use for storage of gasoline or similar service. Four tanks ~~would be~~ **were** converted from other services to ULP/PULP/SPULP service.

### *Diesel*

Two existing dedicated diesel pipelines **were** extend**ed** from the wharf to the Eastern Tank Area within Pipeline Easement 1 (refer to ~~Figure 4-1~~ **Figure 1-1**). Diesel product ~~would be~~ **was** distributed along these lines to twelve finished product tanks within the Eastern Tank Area. ~~At present all~~ **All** of these tanks ~~already~~ **previously** store**d** diesel, excluding one that ~~is currently~~ **was previously** used for fuel oil.

The two existing diesel pipelines ~~would be~~ **were** extended from the Oil Movements Centre (OMC) (refer to ~~Figure 4-1~~ **Figure 1-1**) along Pipeline Easement 2 to supply four large tanks within the Western Tank Area that ~~would be~~ **were** converted from crude oil storage to the storage of diesel products. These pipelines ~~would be~~ **were** installed low to the ground, along pipe racks in line with the existing pipework on the Site.

The existing diesel additives injection system at the OMC manifold ~~would be~~ **was** duplicated at a new location within the Western Tank Area (refer to ~~Figure 4-1~~ **Figure 1-1**). This system ~~would be~~ **was** used to dose diesel as it ~~is~~ **was** received into the terminal from the wharf to ensure that the finished product ~~meets~~ **met** the required specification.

### *Jet Fuel*

Two existing dedicated jet fuel pipelines **were** extend**ed** from the wharf to the Eastern Tank Area within Pipeline Easement 1. Jet fuel ~~would be~~ **was** distributed to six existing finished product tanks within the Eastern Tanks Area.

The two existing jet fuel pipelines ~~would be~~ **were** extended from the OMC along Pipeline Easement 2 to supply four large tanks within the Western Tank Area that ~~would be~~ **were** converted from crude oil to jet fuel service. These pipelines ~~would be~~ **were** installed low to the ground, along pipe racks as per the existing pipework on the Site.

A small chemical drum and dosing pump ~~would be~~ **was** installed at Gate 5 (refer to ~~Figure 4-1~~ **Figure 1-1**). This system ~~would be~~ **was** attached to the jet fuel pipeline and used for dosing an additive into the jet fuel as it ~~is~~ **was** received into the Site from the wharf.

### *Fuel Oil*

Two existing dedicated fuel oil pipelines **were** extend**ed** from the wharf to the **Conversion** Project Area within Pipeline Easement 1. Fuel oil product ~~would be~~ **was** distributed to four existing finished product tanks within the Eastern Tank Area. No proposed conversion works ~~would be~~ **were** associated with these tanks as they are already used for fuel oil storage.

### *Slop Oil*

An existing pipeline within Pipeline Easement 1 ~~would be~~ **was** transferred from its current usage to transfer Slop oil. This ~~would involve~~ **involved** flushing the existing pipeline. No intrusive works ~~would~~ occur**red** within Pipeline Easement 1. Slop produced from normal terminal transfers ~~would be~~ **was** stored within five existing tanks within the Eastern Tank Area. Two of these tanks require**d** minor piping and tank nozzle modifications to change their service to storage of slop.

It ~~is~~ **was** proposed that a tank within the Western Tank Area ~~would be~~ **was** changed from crude oil into slop service. No changes ~~are~~ **were** required to this tank to facilitate this change of service. The existing pipelines that connect this tank to the existing slop tanks ~~would be~~ **were** replaced in kind.

### *Wastewater*

The existing Oily Water Management System (OWMS) at the Site collects process effluent and stormwater from areas of the Site where there is potential for interaction of water flows with petroleum products. Oily water from a range of sources is collected in the Site's oily water sewer system and is transferred to the wastewater treatment plant (WWTP) (refer to ~~Figure 4-1~~ **Figure 1-1**).

Oily water is treated in the WWTP. The treatment process utilises physical, chemical and biological treatment to treat the oily water. Treated effluent is discharged to the Tasman Sea via the Yena Gap outfall under conditions of the Site EPL.

The WWTP ~~would remain~~ **remained** in service as part of the **Conversion** Project, operating in line with the EPL for the Site.

### *Utilities*

The existing air, potable water, firewater, natural gas and nitrogen utilities ~~would~~ **remained** in place on the Site. Demand for these utilities ~~would~~ significantly decrease**d** as a result of the **Conversion** Project. Some minor relocation and consolidation of utilities equipment ~~would be~~ **was** required. These relocation works ~~would~~ include**d** moving certain compressors and pipework within the **Conversion** Project Area (refer to ~~Figure 4-1~~ **Figure 1-1**).

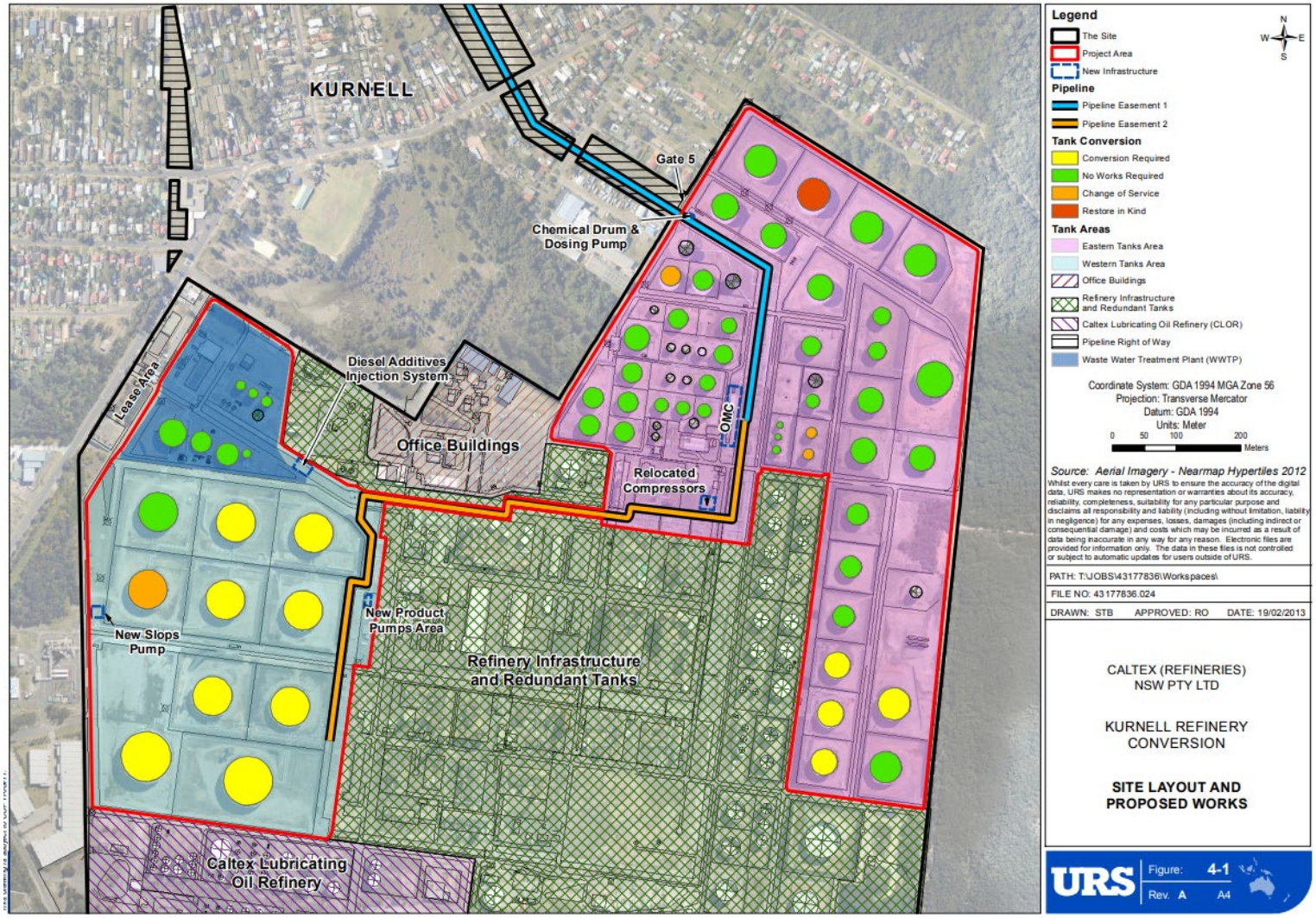



**Figure 1-1 Site Layout and Proposed Works**

## Tanks

### *Overview*

The existing Site ~~has~~ **had** over 100 tanks used for storing crude oil, refined or finished product, other petroleum intermediate products and effluent water. Some of these tanks ~~would~~ remain**ed** in current service, some ~~would~~ change**d** service with no modifications required and some ~~would be~~ **were** modified to contain finished product when the refinery ~~is~~ **was** converted to a terminal.

Tanks that ~~do~~ **did** not require modification in order to change service ~~would have~~ **had** the tank levels drawn down to minimum and, in cases where product specifications would not **have** be**en** compromised, the new product ~~would be~~ **was** added to the tanks. In cases where product specifications could be compromised, the tank heel ~~would be~~ **was** safely emptied using a vacuum truck. The material removed ~~would be~~ **was** relocated to another product tank and the tank ~~would be~~ **was** filled with new material.

For tanks which require**d** modification in order to change service or ~~have~~ **had** reached their statutory inspection date (Turnaround and Inspection (T&I)) the works may **have** involve**d** some or all the following activities:

- shutdown of the tanks and associated infrastructure;
- removal of the existing product from the tanks;
- draining the excess product from the pipes connecting to the tanks;
- isolating and making safe any infrastructure and instrumentation that ~~is~~ **was** no longer required;
- upgrading control systems to improve efficiency; and
- modifications to the tanks including upgrades to the tank internals, roofs, nozzles, floors, manifolds and finished product distribution pipework where **it was** required.

Other works associated with the tank modifications (where required) include:

- installation of additional product quality controls; and
- upgrading safeguard systems.

The specific works required for those tanks that ~~would be~~ **were** converted to contain gasoline, diesel and jet fuel are outlined below.

### *Gasoline*

The changes required for the conversion of heavy oil tanks to gasoline tanks involve the following works:

- The water draw-off system for the tank ~~would be~~ **was** evaluated and where required replaced.
- Installation of an internal floating roof (with air scoops, hinged covers and stainless mesh screens) and an external cone roof. These ~~would be~~ **were** installed where required. This arrangement ~~protects~~ **protected** gasoline from external contaminants, e.g. water, and ensures safer operation.
- Internal painting ~~would be~~ **was** undertaken for entire floor and shell up to the first strake only unless additional protection ~~is~~ **was** required. The external side of the tank ~~would be~~ **was** painted where required.
- Vent systems ~~would be~~ **were** designed and installed on the gasoline tanks in line with API 2000, API1650 and API1653.
- A sleeve on the slotted guide pole ~~would be~~ **was** installed on all converted EFRTs.
- Fire systems ~~would be~~ **were** modified as required to meet fire foam and water volume requirements.
- New power and signal cables, cable ladders, switchgear, instrumentation and electrical motors ~~would be~~ **were** installed where required.

No new mixers ~~would be~~ **were** installed in these tanks. Tank mixers ~~would be~~ **were** modified or replaced to meet requirements.

*Diesel*

The changes required for the conversion of crude oil tanks to diesel tanks involve**d** the following works:

- The water draw-off system for the tank ~~would be~~ **was** evaluated and where required replaced.
- The tank floor ~~would be~~ **was** evaluated and where required repaired or replaced.
- Vent systems ~~would be~~ **were** designed and installed on the diesel tanks in line with API 2000.
- Internal painting ~~would be~~ **was** undertaken for the entire floor up to 600 mm. The external side of the tank ~~would be~~ **was** painted where required.
- New power and signal cables, cable ladders, switchgear, instrumentation and electrical motors ~~would be~~ **were** installed where required.

No new mixers ~~would be~~ **were** installed in these tanks. The existing mixers ~~would be~~ **were** retained.

The roofs of all the tanks ~~would~~ remain**ed** as an external floating roof.

*Jet Fuel*

The changes required for the conversion of crude oil tanks to jet fuel tanks involve**d** the following works:

- The tank floor ~~would be~~ **was** replaced with a cone down floor.
- A fast flush system ~~would be~~ **was** installed to remove free water from the Jet Fuel.
- The tanks ~~would be~~ **were** fully painted internally to minimise the possibility of product contaminations due to shell/floor corrosion.
- New power and signal cables, cable ladders, switchgear, instrumentation and electrical motors ~~would be~~ **were** installed where required.
- Fire systems ~~would be~~ **were** modified as required to meet foam and water volume requirements.

No new mixers ~~would be~~ **were** installed in these tanks. The existing mixers ~~would be~~ **were** retained.

The fixed roof ~~would be~~ **was** retained on all of the tanks.

*Tank Replacement*

A tank in the Eastern Tank Area (refer to ~~Figure 4-1~~ **Figure 1-1**) ~~is~~ **was** due for routine inspection and ~~would be~~ **was** restored in kind for service. This tank ~~currently sits~~ **sat** at ground level on a concrete ring beam pad. The restoration ~~would~~ involve**d**:

- dismantling the existing tank; and
- preparing a foundation for the new tank (which ~~would be~~ **was** the same size and shape as the existing tank) in the same location as the ~~current~~ **existing** base. This ~~would be~~ **was** prepared for a cone up tank floor. This type of tank floor ~~does~~ **did** not require major excavation works. Excavation depth ~~would~~ **did** not extend past half a metre below ground level.

*Tank Conversion Summary*

The tank conversion works described above ~~would~~ commence**d** in advance of recommissioning the tanks to receive imported finished product. These works ~~would be~~ **were** conducted throughout the construction phase. At the end of the conversion works there ~~would be~~ **was** a reduction in the total number of tanks required for the storage of finished product imports and terminal operations when compared to the number ~~currently~~ **previously** required for refinery operations. The tanks that are not required for terminal operations are shown on ~~Figure 4-1~~ **Figure 1-1**. These tanks ~~would be~~ **were** emptied, isolated, cleaned and left with all manhole covers removed. The dismantling and remediation of the redundant tanks, if required, ~~would be~~ **was** subject to a separate approval process in consultation with Sutherland Shire Council and the NSW Environmental Protection Authority.

~~Table 4-1~~ **Table 1-1** provides a summary of the final tankage use within the **Conversion** Project Area.

**Table 1-1 Terminal Tank Changes Summary**

| Proposed Tank Service | No. of Tanks Requiring Conversion* | No. of Tanks Requiring Change of Service |
|---|---|---|
| Gasoline | 5 | - |
| Diesel | 4 | 1 |
| Jet Fuel | 4 | - |
| Fuel Oil | 0 | 0 |
| Waste Water and SLOP | 0 | 3 |
| Total | 13 | 4 |

Note: One tank in the Eastern Tank Area ~~would be~~ **was** restored in kind

Where it ~~has been~~ **was** identified that either a change of service or no works ~~are~~ **were** required for a tank, a T&I would be carried out for remaining tanks at a date which complies with statutory requirements for that tank. This ~~is~~ **was** a normal operating procedure at the Site. A T&I involves the following high level activities:

- removing the tank out of service and moving the product to another location;
- internally cleaning the tank to allow accurate inspection of the tank walls, floor and roof;
- preparing a scope of works based on the results of the inspection and taking into account the service period since the last tank T&I;
- undertaking repair works as required which may include tank repair, painting or further testing; and
- returning the tank to service with the proposed finished product.

## Bunding

### *Bund Capacity*

~~Caltex~~ **Ampol** ~~has~~ committed that the bunding capacity for tanks retained in service ~~would~~ ~~comply~~ **complied** with the requirements of AS1940.

The ~~current~~ **existing** inspection programs at the Site monitor**ed th**e external bund walls and identify if repairs are required. The routine tank T&I program ~~(refer to Section 4.2.2)~~ ~~would~~ continue**d** through the conversion phase and into the operational phase of the **Conversion** Project. This program ~~includes~~ **included** inspections of and repairs to tank internal bund walls. The current tank T&I program ~~results~~ **resulted** in the inspection and required repairs of approximately 8 – 10 tanks per year.

### *Tank and Bund Floors*

Of the tanks which ~~would~~ remain**ed** in hydrocarbon service, there ~~are~~ **were** some bund areas which ~~are~~ **were** of natural ground construction.

Any tank floors that ~~are~~ **were** rebuilt during the **Conversion** Project and during the ongoing operation of the terminal ~~would~~ incorporate**d** a tank underfloor liner. Four tanks ~~are currently~~ **were** scheduled as part of the **Conversion** Project to include new installation of tank underfloor liners.

### *Protection Measures*

~~Caltex~~ **Ampol**'s focus during the construction and operation of the **Conversion** Project ~~would be~~ **was** on inspections, maintenance and spill prevention within the tank and tank bund areas. Extensive spill prevention measures ~~would continue to be~~ **were** incorporated into the operation of the **Conversion** Project.

The measures for tanks containing low flash materials include**d**:

- explosive vapour detectors within the bunds;
- triple infrared scanners on tank roofs; and

- CCTV in conjunction with infrared cameras as a confirmation for alarms.

All tanks on-site ~~would be~~ **were** subject to:

- an automated high level shut off system; and
- continuance of a comprehensive inspection/repair program.

In addition, in the unlikely event of a spill, the Site ~~has~~ **had** significant contingency arrangements, including tertiary containment capacity available within the oily wastewater system.

### Pumps

Five new product transfer pumps ~~would be~~ **were** installed in the Western Tank Area. These pumps ~~would~~ service**d** the newly converted large diesel and jet fuel product tanks (refer to ~~Figure 4-1~~ **Figure 1-1**). The product transfer pumps ~~would~~ consist**ed** of three jet fuel product pumps and two diesel pumps. They ~~would be~~ **were** located on the eastern side of the Western Tank Area (refer to ~~Figure 4-1~~ **Figure 1-1**).

One new product transfer pump ~~would be~~ **was** located within the Western Tank Area to transfer Slop Oil. This pump ~~would be~~ **was** located on the western side of the Western Tank Area (refer to ~~Figure 4-1~~ **Figure 1-1**).

Two new product transfer pumps ~~would be~~ **were** installed at the OMC to transfer slop oil and jet fuel respectively across the Site.

For each set of pumps new concrete foundations ~~would be~~ **were** installed.

### Electrical / Instrumental Facilities

The instrumentation within the **Conversion** Project Area ~~would be~~ **was** upgraded as part of the **Conversion** Project. This work ~~would~~ include**d** upgrades to the:

- wharf and tank instrumentation and control systems to enable remote and automated control;
- electrical tracing would be implemented to maintain fuel oil temperatures;
- oil movements manifold systems and remote valves with segregated product distribution piping to respective tanks;
- power supplies to new pumps; and
- consolidated site electrical systems.

These works ~~would~~ all ~~occur~~ **occurred** within the existing Site footprint.

### Refinery Infrastructure and Redundant Tanks

The **Conversion** Project ~~would~~ **did** not include the plant associated with the refining process. The tanks and refining infrastructure (in the area marked Refinery Infrastructure and Redundant Tanks shown on ~~Figure 4-1~~ **Figure 1-1**) ~~would be~~ **was** shut down, depressurised, de-inventoried and left in situ in a staged manner.

The shut down, depressurisation, emptying, isolating and cleaning of the refinery plant ~~is~~ **was** a process that occurs as part of the T&I program on a continuous rotating basis as part of the maintenance program for the Site. ~~Caltex~~ **Ampol** has extensive documented procedures which are used routinely during T&I activities. These procedures enable all safety and environmental aspects (for example, air and noise emissions) of ~~this~~ **the** process to be monitored and managed in compliance with the EPL. Therefore, it is ~~Caltex~~ **Ampol**'s understanding that they ~~do~~ **did** not require approval to shut down, depressurise and de-i**n**ventory the refinery. The refinery infrastructure ~~would be~~ **was to be** shut down, depressurised, de-inventoried and left in situ in the second half of 2014.

The tanks that ~~are~~ **were** not required (i.e. the tanks located in the area marked Refinery Infrastructure and Redundant Tanks shown on ~~Figure 4-1~~ **Figure 1-1**) ~~would be~~ **were** emptied, isolated, cleaned and left in situ with all manhole covers removed. As above, this process already ~~occurs~~ **occurred** as part of the T&I program on a continuous rotating basis as part of the maintenance program for the Site. This work ~~would~~ **was to** start in the second half of 2013 and be completed by the end of 2016.

The dismantling and remediation of the refinery infrastructure, redundant tanks (and any redundant ancillary infrastructure), if required, ~~would be~~ **was** subject to a separate approval process in consultation with Sutherland Shire Council and the NSW Environmental Protection Authority.

### 1.1.3 Construction Staging and Programme

*Construction Programme*

Following **the Conversion** Project Approval, construction works ~~are~~ **were** proposed to begin in Q3 2013. During the construction phase, the Site ~~would~~ still operate**d** as both a refinery and a terminal. Cessation of refinery operations ~~would occur~~ **occurred** in the second half of 2014. This ~~would be~~ **was** followed by continued conversion of some tanks and associated piping within the **Conversion** Project Area to hold finished products.

A high level schedule for conversion activities is shown in ~~Table 4-2~~ **Table 1-2** below.

**Table 1-2 Proposed Construction Schedule**

| Task | Date |
|---|---|
| Detailed Engineering & Design Start | Mid 2012 |
| Engineering & Design Completed | Q2 2013 |
| Tank Conversions Start | Second half 2013 |
| Installation of Piping, Pumps and Associated Infrastructure | Second half 2013 |
| Construction on Piping Completed | Q2 2014 |
| Kurnell Refinery Shutdown | Second half 2014 |
| Continued Tank Conversions | End 2014 – end 2016 |
| CONVERSION TO TERMINAL COMPLETED | December 2016 |

*Working Hours*

The majority of the conversion works ~~would be~~ **were** typically completed between 7.00 am to 10.00 pm seven days a week. However, some works consistent with ~~Caltex~~ **Ampol's** existing maintenance procedures ~~would need to occur~~ **needed to occur** over a 24 hour period.

The nature of the proposed works ~~are~~ **were** the same as the activities that ~~Caltex~~ **Ampol** carries out as part of their ongoing maintenance and T&I work. For the latter, the Site's existing Environmental Protection Licence (No. 837) (EPL) asks that ~~Caltex~~ **Ampol** ensure that any operational or maintenance activities on Site do not exceed 70 dB (A) between 7.00am and 10.00pm, and do not exceed 65 dB (A) between 10.00 pm and 7.00 am. The working hours for ~~any~~ **all** construction works that are the same as ongoing maintenance activities ~~would be~~ **were** governed by the noise limits presented in the relevant EPL for the Site.

Potential noise impacts related to the **Conversion** Project ~~are~~ **were** discussed further in Chapter 12 Noise and Vibration and Appendix F Noise and Vibration Impact Assessment **of the Conversion Project's Environmental Impact Statement (EIS)**.

*Construction Traffic*

The traffic generated by the **Conversion** Project ~~would~~ incorporate**d** a mix of construction plant vehicles, delivery vehicles and construction personnel movements. A summary of the construction vehicles and associated staff numbers that ~~would be~~ **was** required during the construction of the **Conversion** Project is summarised in ~~Table 4-3~~ **Table 1-3**. Further detail ~~is~~ **was** provided in Chapter 16 Transport and Access **of the Conversion Projects EIS**.

**Table 1-3 Staff and Plant Requirements for Construction**

| Description | | Daily Movements (return trips) | Peak Hour Trips |
|---|---|---|---|
| Heavy Vehicles | Construction Vehicles (Cranes/ semi-trailers etc.) | 10 | 2 |
| | Equipment/ Material Delivery Vehicles | 10 | 2 |
| Private vehicles | Construction Personnel* | 140 | 140 |
| **Total** | | **160** | **144** |
| **Heavy vehicle proportion** | | 13% | 3% |

*1 All personnel would arrive to site during the AM Peak Hour and depart during the PM Peak Hour;*

*2 Personnel would utilise their own private vehicle with no use of car-pooling or public transport;*

*3 Heavy vehicle movements would be evenly distributed throughout the hours of operation (10 hour workdays); and*

*4 All plant delivery vehicles are assumed to occur on the same day in order to produce a 'worst-case' scenario.*

**Max number of construction staff (refer to ~~Table 4-4~~ **Table** 1-4).*

### 1.1.4 Workforce

~~Table 4-4~~ **Table C-4** provides the workforce profile for the **Conversion** Project, including ~~current~~ **existing** and projected numbers during the construction and operation of the **Conversion** Project.

The ~~current~~ **existing** workforce, including ~~Caltex~~ **Ampol** employees and contractors ~~is~~ **was** approximately 885. This increases by up to 500 people during maintenance shutdown periods. These periods range from 8-12 weeks in duration.

During the peak construction year of the **Conversion** Project (2014), the workforce ~~would include~~ **was proposed to include** up to an additional 140 people on Site.

Following all construction works, and when the **Conversion** Project ~~is~~ **was** fully operational, there ~~would be~~ **were** approximately 100 people on Site, with an addition 90 people during maintenance shutdown periods.

**Table 1-4 Workforce Numbers (Current and Projected)**

| Workforce Numbers (Current and Projected) | | | | | | |
|---|---|---|---|---|---|---|
| | 2012[2] | 2013 | 2014[3] | 2015 | 2016 | 2017 |
| ~~Caltex~~ **Ampol** Employees | 410 | 400 | 450[4] | 40 | 45 | 45 |
| Contractors | 475 | 475 | 475 | 40 | 55 | 55 |
| | - | 140 | 140 | 100 | 90 | - |
| **Total** | **885** | **1,015** | **1,065** | **180[5]** | **190** | **100** |
| Maintenance Shutdown Periods[1] | 500 | 0[6] | 0[6] | 0[6] | 90 | 90 |
| **Total including Maintenance Activities** | **1,385** | **1,015** | **1,065** | **180** | **280** | **190** |

*1 Maintenance shutdown periods ~~are~~ **were** periodic and for short time frames (8-12 weeks).*

*2 ~~Current~~ **Previous** employee numbers at the Site.*

*3 2014 ~~would be~~ **was** the peak construction period. Additional personnel brought to the Site for the **Conversion** Project construction ~~would be~~ **were** a maximum of 140 personnel.*

*4 Additional ~~Caltex~~ **Ampol** Employees in 2014 ~~would be~~ **were** staff hired for terminal operations.*

*5 The large reduction in numbers between 2014 and 2015 follows the cessation of refining at the Site. The increase in workforce numbers between 2015 and 2016 represents a gradual stabilisation of the terminal operational workforce.*

*6 No maintenance shutdown periods ~~will occur~~ **occurred** during 2013 and 2015.*

### 1.1.5 Operation

#### Operation as a Terminal

Once the conversion ~~is~~ **was** complete, ~~Caltex~~ **Ampol** ~~would import~~ **imported** finished products (gasoline, jet fuel, diesel and fuel oil) through the two fixed berths at the existing wharf and the additional sub berth located in Botany Bay. These products ~~would be~~ **are** stored in existing and converted tanks.

The major product distribution systems would continue to operate in line with ~~current~~ **existing** practice, i.e. product would be pumped under Botany Bay to the Banksmeadow Terminal, the Sydney/ Newcastle pipeline or the Joint User Hydrant Installation (JUHI) at Sydney Airport for further distribution. Slop ~~would be~~ **is** out loaded to the wharf and transported via ship to be sold for reprocessing. Under typical operation, road transport of products from the Site ~~would~~ cease**d**. However, in exceptional circumstances some road transport of product ~~may be~~ **is** required.

With the cessation of the refining operation at the Site and the high levels of automation of the terminal, the number of employees on Site ~~would reduce~~ **reduced** (as described in Section ~~4.4~~ **1.1.4**). These employees ~~would~~ operate in a shift arrangement 24 hours a day, 7 days a week.

Ongoing operational activities ~~would be~~ **are** undertaken on the Site. As described ~~in Section 4.2.2~~ **above** this ~~would~~ include**s** Tank T&I's.

### 1.1.6 Ancillary Facilities and Infrastructure

#### Electricity

The existing electricity infrastructure on Site ~~would be~~ **was** used to service the new terminal. Electricity usage ~~would~~ reduce**d** significantly following the shutdown of the refinery operations. However, some power ~~would~~ **was** still ~~be~~ required for operation of the terminal assets and general amenities.

### Water and Stormwater / Wastewater management

The ~~current~~ **existing** Site operations consume approximately 6 megalitres (ML) of potable water per day. Approximately 90% of this consumption ~~would cease~~ **ceased** following shutdown of the refinery operations at the Site.

A further 1 Ml of potable water per day ~~is~~ **was** consumed for amenities. This volume ~~would reduce~~ **reduced** over time as the work force ~~declines~~ **declined**. The long term demand at the Site following the completion of the **Conversion** Project ~~is~~ **was** expected to reduce the overall potable water consumption by approximately 90%.

The drainage arrangements for the existing process plants ~~would be~~ **was** kept in service during the **Conversion** Project. Storm water runoff from paved areas ~~would~~ continue**d** to be routed to the Waste Water Treatment Plant (WWTP) on Site. No changes ~~are~~ **were** proposed to this system. Tank bunded areas and tank water draws ~~would~~ remain**ed** unchanged and flow from these sources ~~would~~ continue**d** to be processed through the WWTP.

Issues regarding water management on Site ~~are~~ **was** discussed further in Chapter 11 Surface Water, Wastewater and Flooding **of the Conversion Projects EIS**.

### Sewers

Existing sewerage infrastructure ~~would~~ continue**d** to be used. It ~~is~~ **was** expected that the amount of sewerage generated by the Site would decrease significantly.

### Road Access

Road access to the Site ~~would~~ remain**ed** unchanged. Vehicle (car and truck) usage ~~may~~ increase**d** marginally during initial conversion activities (2013-2014), but ~~would~~ decrease**d** following the termination of refining. Vehicle movements to and from the Site ~~would~~ continue**d** to decrease until full terminal operation ~~is~~ **was** established reflecting reduced employees, service groups, deliveries and tanker loading activities on Site. The changes to traffic movements ~~are~~ **was** discussed further in Chapter 16 Transport and Access **of the Conversion Projects EIS**.

### Shipping Movements

The upgrade to the Port and Berthing Facility (SSD-5353) ~~would~~ allow**ed** flexibility in the size of the ships able to berth at the Kurnell Wharf. This flexibility ~~would see~~ **resulted in** an anticipated reduction in ships arriving at the facility by approximately 40% in 2020 (compared to 2011 figures). This reduction ~~would~~ occur**ed** progressively over the life of the **Conversion** Project.

## 1.1.7 Decommissioning

~~At this stage the~~ **The Conversion** Project ~~is~~ **was** unlikely to be decommissioned whilst there ~~is~~ **was** still a demand for finished petroleum products.

Continued maintenance and upgrade works ~~are likely to occur~~ **were anticipated to occur** over the ~~coming~~ **following** years which ~~would mean that~~ **allowed** the **Conversion** Project ~~would~~ **to** remain viable into the future. ~~These~~ **The** upgrade works ~~would be~~ **were** subject to relevant approvals and permits which ~~would be~~ **were** applied for prior to the works being undertaken as required.

In the event that the terminal ~~is~~ **was** no longer required, all decommissioning and restoration activities would be in accordance with applicable federal, state, and local permits, approvals and regulatory requirements and would be completed in accordance with existing licences and the relevant legislation and safeguards at the time. These works ~~are~~ **would be** subject to certain environmental approvals and safeguards, which would help ensure that any related work would be completed in a safe and appropriate manner.

## 1.2 Demolition works

### 1.2.1 Overview

The demolition works **(MOD-1)** ~~would~~ broadly involve**d** the following activities within the ~~demolition~~ **MOD-1** works area presented on ~~Figure 4-1~~ **Figure 1-2**:

- Demolition, dismantling or removal of:
  - Refinery process units and associated infrastructure;
  - Redundant tanks and associated infrastructure;
  - Redundant pipe ways and above and underground pipelines; and
  - Redundant buildings and services
- Associated civil works with works outlined;
- Waste management activities including concrete crushing; and
- Returning the works areas to ground level

~~Figure 4-1~~ **Figure 1-2** also shows the location of the ~~demolition~~ **MOD-1** works. The majority of the ~~demolition~~ **MOD-1** works ~~would be~~ **were** completed within the boundary of the Site (as defined by the EIS for SSD-5544). The exceptions of this include**d**:

- The removal of the Continental Carbon Pipeline which ~~is~~ **was** also located on land owned by ~~Caltex~~ **Ampol** to the south of the Site;
- Sections of the redundant pipelines that ~~run~~ **ran** through the western and eastern ROWs that ~~are~~ **were** located outside of the Site (i.e. under the roads that cross the ROWs and under Silver Beach); and
- The removal of the cooling water intake pipelines and associated infrastructure from the Kurnell Wharf

Landowners consent ~~is~~ **was** required for the works within the road reserves and Silver Beach (refer to Chapter 5 Legislation, Planning Policy and Approvals of **the MOD-1 Statement of Environment Effects (SEE))**. These works ~~would be~~ **were** completed following the shutdown, deinventorisation, and cleaning of redundant infrastructure.

The buildings and equipment ~~to be~~ **that were** demolished ~~have been~~ **were** determined with consideration of the Heritage Management Strategy (HMS). Refer to Section 16 Heritage and Appendix F Heritage Impact Assessment for more detail **the MOD-1 SEE**.

Following ~~the demolition~~ **MOD-1** works, the Site ~~would operate~~ **operated** as a finished product terminal. The ~~demolition~~ **MOD-1** works ~~would~~ support**ed** the operation of Site as a finished product import terminal, as approved by SSD-5544.

The Site ~~would not be~~ **was not** remediated as part of ~~this Project~~ **MOD-1**. Remediation work ~~would occur~~ **occurred** in consultation with relevant stakeholders and the relevant approvals ~~would be~~ **and was** sought at a later stage **(refer to Section 1.3 and Section 1.4)**.

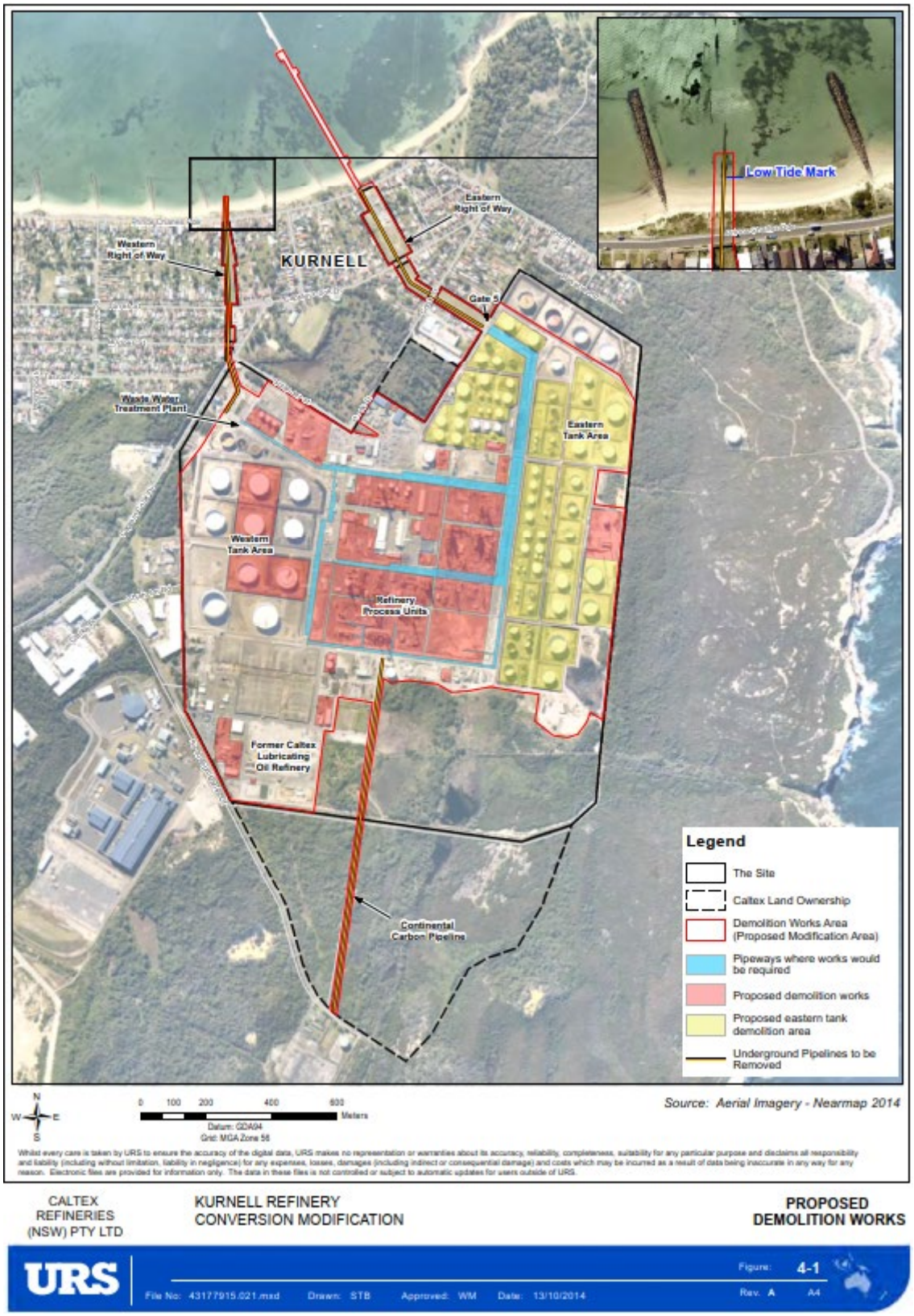



**Figure 1-2 Proposed ~~demolition~~ MOD-1 works**

### 1.2.2 Refinery Process Units and Associated Infrastructure

~~This is the~~ **The** first stage of the ~~demolition~~ **MOD-1** works ~~and would~~ involve**d**:

- disconnection and removal of pipelines from the process units area;
- removal of insulation, corrosion protection materials and other building materials prior to demolition taking place;
- demolition of the refinery process units by lowering to a level where they can be more easily cut up using heavy machinery;
- intermediate storage of demolished material on the former Caltex Lubricating Oil Refinery (CLOR) as required prior to disposal, recycling or divestment;
- removal of the foundations and slabs below the process units; and
- removal of redundant cabling and some underground services including the Oily Water Sewer from the area beneath the refinery process units.

These demolition works ~~would~~ require**d** excavation work which ~~may~~ **had potential to** extend down to 2 metres below ground level (mbgl).

### 1.2.3 Tanks and Associated Infrastructure

~~This is the~~ **The** second stage of the ~~demolition~~ **MOD-1** works ~~and would~~ involve**d**:

- disconnection and removal of a number of tanks and vessels from both the eastern and western tank areas;
- demolition of the tanks using heavy machinery to cut them up;
- intermediate storage of the demolished material at the former CLOR prior to disposal or recycling; and
- removal of redundant infrastructure associated with the tanks (such as water draw equipment and pipelines).

~~These~~ The ~~demolition~~ **MOD-1** works ~~may require~~ **potentially required** excavation work which may extend down to 1 mbgl. The bunds associated with the demolished tanks ~~would~~ remain**ed** intact and in situ. Bund drainage ~~would be~~ **was** by manual drain valve actuation.

Within the Western Tank Area all of the tanks highlighted on ~~Figure 4-1~~ **Figure 1-2** ~~would be~~ **were** demolished. Four tanks in the Western Tank Area that were approved under SSD-5544 for conversion, ~~are now~~ **were now** proposed for demolition **under MOD-1** (refer to ~~Figure 4-1~~ **Figure 1-2**).

Within the Eastern Tank Area a maximum of 64 of the 77 tanks within the yellow highlighted area ~~would be~~ **were proposed to be** demolished (refer to ~~Figure 4-1~~ **Figure 1-2**).

Following the tank demolition works, the fuel throughput ~~would be~~ **was anticipated to be** less than or equal to the approved throughput under the approved Project SSD-5544.

#### Tank 101 Demolition

The tank 101 demolition **(MOD-3)** works ~~are~~ **were** in addition to the **MOD-1** works described ~~in Chapter 3.0 Approved Project and ACS Management~~ **above**.

Tank 101 ~~is~~ **was** located on the north eastern corner of the Site (refer to ~~Figure 4-1~~ **Figure 1-3**). The demolition of this tank ~~would be~~ **was** undertaken using the same approach used for the demolition of the other tanks under the approved demolition works (SSD-5544 MOD-1). The tank ~~has~~ **had** already been cleaned and ~~is currently~~ **was** empty awaiting demolition. The tank ~~is~~ **was** predominantly made of metal.

The **MOD-3** works to remove the tank include**d** the following activities:

- disconnection of the tank from the existing pipework;
- demolition and dismantling of Tank 101 and associated infrastructure;

- associated civil works with the works outlined above;
- intermediate storage of the demolished material at the former Caltex Lubricant Oil Refinery (CLOR) prior to disposal or recycling; and returning the works areas to ground level.

The works ~~are~~ **were** planned to be completed over a four week period in Q4 2017 as part of the wider program of the approved demolition works.

These works ~~may require~~ **potentially required** excavation extending down to 1 meter below ground level. The bund associated with the demolished tank ~~would remain~~ **remained** intact. Bund drainage ~~would~~ **was** not be affected by the works. The bund ~~would~~ still drain**ed** to the Site's oily water sewer.

The following equipment and plant ~~would be~~ **was** required to demolish Tank 101:

- Large Shearer
- Oxycutter
- Mobile 130T Crane
- Vacuum Truck or Trucks
- Concrete Crusher
- Excavator
- Jackhammer.

The majority of the work to demolish the tank itself ~~would be~~ **was** completed by an excavator and shear. ~~Figure 4-2, Figure 4-3 and Figure 4-~~**4 Figure 1-4, Figure 1-5 and Figure 1-6** below show an excavator and shear demolishing a tank. No additional equipment or plant ~~would~~ **was** need**ed** to be bought to Site to complete these works. No additional staff ~~would be~~ **was** required on Site. ~~The demolition of Tank 101~~ **MOD-3** ~~would be~~ **was** completed by the contractors who ~~are currently~~ **were previously** completing the other demolition works. ~~The demolition of Tank 101~~ **MOD-3** ~~would be~~ **was** undertaken within the boundary of the Site. The presence of the relevant equipment and personnel at the Site means that an increase in traffic as a result of these works ~~is~~ **was** not anticipated. Traffic impacts ~~are~~ **were** discussed further in Section 12.4 **of the MOD-3 SEE**.




**Figure 1-3 Demolition of Tank 101**




**Figure 1-4 Excavator/ shear Part 1**



**Figure 1-5 Excavator/ shear part 2**



**Figure 1-6 Excavator/ shear part 3**

The ~~Tank 101 demolition~~ **MOD-3** works ~~would be~~ **were** completed in line with the Conditions of Consent for SSD-5544 and SSD-5544 MOD-1, in particular Conditions C18, C19 and C20. In summary:

- Construction to be undertaken between 7.00 am and 10.00 pm seven days a week (Condition C18);
- High noise generating construction and demolition works would be confined to less sensitive times of the day, and shall not be undertaken on Sundays or public holidays or outside the hours of 7.00 am to 6.00 pm Monday to Saturday (Condition C19); and
- Construction outside those hours would only be undertaken in certain circumstances as defined in Condition C20.

Given the proximity of Tank 101 to residential areas of Kurnell, ~~Caltex~~ **Ampol** ~~has~~ committed to completing these works during daytime hours in line with Condition 19. Potential noise impacts related to the Tank 101 demolition works ~~are~~ **was** discussed further in Chapter 9.0 Noise and Vibration and Appendix A Demolition Noise Assessment **of the MOD-3 SEE**.

### *Environmental Management*

The ~~Tank 101 demolition~~ **MOD-3** works ~~would be~~ **were** undertaken in accordance with the existing Demolition Environmental Management Plan (DEMP) and associated sub-plans where applicable.

### *Operation*

The operation of the Kurnell Terminal ~~would remain~~ **remained** as described in the Kurnell Refinery Conversion EIS **detailed above** ~~(URS, 2013)~~ and ~~would be~~ **was** consistent with the development consent for SSD-5544. The demolition of Tank 101 ~~would~~ **was** not **anticipated to** affect the operation of the terminal.

### 1.2.4 Pipelines/ Pipeways

The ~~demolition~~ **MOD-1** work ~~would~~ also include**d** the removal of seven underground pipelines. These pipelines include**d** the following:

- the cooling water outlet (CWO) running from the refinery through the Western Right of Way (ROW), under Silver Beach and into Botany Bay **(excluding approximately 35 meters of the CWO pipeline beneath the road reserve of Prince Charles Parade and the Silver Beach dune area, as consented under MOD-5 discussed below)**
- two cooling water intake lines running from the pumphouse on Kurnell Wharf through the Eastern ROW to the refinery;
- three redundant product lines running through the Eastern ROW; and
- the Continental Carbon pipeline running south from the Site.

The locations of these underground pipelines ~~are~~ **is** shown in orange on ~~Figure 4-1~~ **Figure 1-2**. This figure also shows a close up of Silver Beach and the associated demolition works area.

Some pipeways ~~would~~ **were** also ~~be~~ removed as part of the ~~demolition~~ **MOD-1** works. This work ~~would~~ **was** all ~~be~~ above ground and within the refinery process area.

Once removed, redundant pipes and materials from the pipeways ~~would be~~ **was** stored at the former CLOR site prior to recycling or disposal.

The works to remove the underground pipelines ~~is~~ **are** discussed in more detail below.

#### Cooling Water Outlet

The cooling water outlet ~~would be~~ **was** removed from the Site, the Western ROW, the roads under which it passes in Kurnell, Silver Beach and part of Botany Bay (refer to ~~Figure 4-1~~ **Figure 1-2**). This pipeline ~~is~~ **was** 1.8 m in diameter and ~~is~~ **was** made of reinforced concrete.

Within the Site and the Western ROW, the pipeline ~~would be~~ **was** excavated, removed and the surface returned to grade. Where the pipeline crosses Captain Cook Drive, Bridges Street, Torres Street and Prince Charles Parade, the roads ~~would be~~ **were** excavated, the pipeline removed and the roads restored in kind. The depth of excavation required for the removal of this pipeline ~~would be~~ **was** approximately 2 mbgl.

In addition to removing the pipeline from beneath the ROW and roads, the cooling water outlet pipeline ~~would~~ **was** also **proposed to** be removed from beneath Silver Beach north of Prince Charles Parade up to 20 m seaward from the low tide mark into Botany Bay. As noted, not all of the Cooling Water Pipeline ~~would be~~ **was** removed. Beyond 20 m from the low tide mark the rest of the pipeline ~~would be~~ **was proposed to be** left in situ. The remaining pipeline ~~is~~ **was** approximately 400 m in length.

The following works ~~are~~ **were** proposed to remove the cooling water outlet pipeline from Silver Beach.

- The pipeline would be excavated where it is covered with sediment/sand. The pipeline would be cut or dismantled at the original construction joints prior to lifting and removal. Where the pipeline needs to be cut into sections, excavations may be deeper (i.e. as deep as the pipe) than elsewhere (possibly only half the pipe height). Two divers ~~may be~~ **were potentially** required to complete the cutting.
- Once dismantled or cut, sections of the pipe would be lifted out of the sea bed. The preferred technique for lifting sections of pipe would be using a terrestrial backhoe with a lifting attachment given the shallow waters.
- Sections of pipe would be moved to the Western ROW for storage prior to being loaded onto a truck and transported to the main refinery site.
- Following removal of the pipeline, the backhoe would backfill the excavated area with suitable material to restore the sea bed profile. A gabion and geotextile material would be placed inside the landward end of the redundant pipe that would remain in Botany Bay to prevent sediments moving down into the pipe over time.

~~It is anticipated that the~~ **The** ~~proposed~~ **MOD-1** works at Silver Beach ~~would be~~ **were proposed to be** completed before the rest of the cooling water pipeline ~~is~~ **was** removed. This ~~would allow~~ **allowed** the ~~demolition~~ **MOD-1** contractor access to Silver Beach at the point where the Cooling Water Pipeline ~~is currently~~ **was** located, prior to it being removed.

Suitable backfill material ~~to be~~ **was** sourced and brought to Silver Beach to return the dunes, beach, intertidal and sub tidal areas to grade. The beach and dune areas ~~would~~ **were** also ~~be~~ rehabilitated (refer to Chapter 18 Coastal Processes **of the MOD-1 SEE**).

*Retention of CWO*

**However**~~, Caltex~~ **Ampol then** ~~are proposing~~ **proposed** to retain approximately 35 meters of the CWO pipeline beneath the road reserve of Prince Charles Parade and the Silver Beach dune area **(MOD-5). Refer to Figure 1-7 for the location of the section of CWO to be retained.** Condition B16A of the Conditions of Consent for SSD-5544 (as modified) ~~requires~~ **required** ~~Caltex~~ **Ampol** to remove the CWO pipeline from beneath Silver Beach north of Prince Charles Parade and up to 20 metres (m) seaward from the low tide mark in Botany Bay. ~~Caltex~~ **Ampol** ~~has~~ **had** removed the majority of the CWO pipeline within this area including within the Western ROW to the south of Prince Charles Parade and to the north of the dune area beneath Silver Beach, however a portion ~~remains~~ **remained** beneath Prince Charles Parade and the dune area of Silver Beach.

The pipeline is 1.8 meters in diameter and ~~is~~ located approximately 4 metres below the ground surface. Works to remove the pipeline would require significant excavation of approximately 6 m in depth to facilitate its removal. This level of excavation in sandy soils creates a number of technical challenges. Essentially in order to complete the works concrete piles would be required to shore the excavation and remove the pipe. In essence concrete would be used to replace concrete, except that by removing this section of pipe the road and beach would also be affected.

It ~~has been~~ **was** agreed with Council that this approach ~~is~~ **was** impractical and as such, ~~Caltex~~ **Ampol** ~~has~~ capped this section of the pipeline, filled it with a flowable concrete grout and sealed it. This was completed as other parts of the pipeline were removed to ensure a large void was not left in the ground.

To allow for the retention of this section of pipeline, ~~Caltex~~ **Ampol** ~~are requesting~~ **requested** that Condition B16A be removed to allow for the retention of this part of the CWO pipeline.

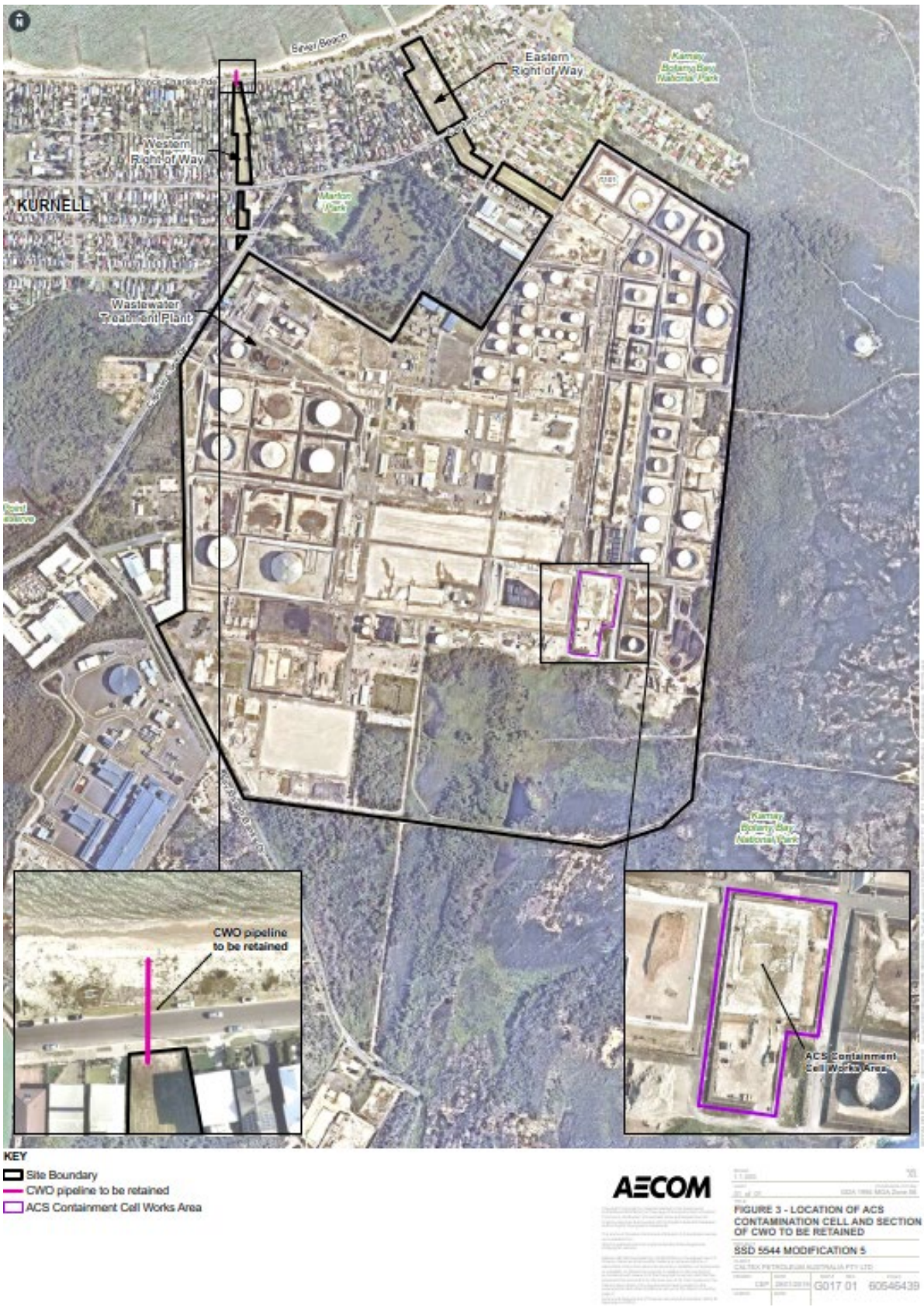



**Figure 1-7 Location of ACS contamination cell and section of CWO to be retained**

### Cooling Water Intakes and Product Pipelines

There ~~are~~ **were** five redundant pipelines to be removed from the Eastern ROW (refer to ~~Figure 4-1~~ **Figure 1-2**). Two of these pipes ~~are~~ **were** the redundant cooling water inlet pipes which ~~are~~ **were** made from cement lined steel, and the other three ~~are~~ **were** redundant product pipelines ~~which are~~ fabricated from carbon steel pipe. These pipelines ~~run~~ **ran** from Gate 5 to Kurnell Wharf and are of varying diameters.

The removal of these pipelines ~~would require~~ **required** works on land owned by ~~Caltex~~ **Ampol** (including the Kurnell Wharf), and the road reserves associated with Cook St, Captain Cook Drive and Prince Charles Parade. In the Eastern ROW and in the road reserves, the six redundant pipelines ~~would be~~ **were** excavated, the pipelines removed and the surface returned to grade or the roads repaired in kind. The depth of excavation required for the removal of these pipelines ~~would be~~ **was** approximately 2 mbgl.

To the north of Prince Charles Parade, where the pipelines move from underground to aboveground and onto the wharf, only the two cooling water intake pipelines ~~would be~~ **were** removed. The four redundant product pipelines ~~would~~ remain**ed** on the wharf. The cooling water intake pipelines ~~would be~~ **were** removed from their supports, cut into sections and moved by a barge crane on to a truck located on the wharf.

### Continental Carbon Pipeline

The Continental Carbon Pipeline ~~would be~~ **was** removed from the southern section of the Site and within Lot 2 DP215818. This land is owned by ~~Caltex~~ **Ampol**.

This redundant pipeline ~~would be~~ **was** excavated, removed and the surface returned to grade. The depth of excavation required for the removal of this pipeline ~~would be~~ **was** approximately 2 mbgl.

## 1.2.5 Buildings

The **MOD-1** building demolition work ~~would be~~ **was** likely to commence later than the other demolition activities. This work ~~would~~ involv**ed**:

- the demolition and removal of a number of redundant buildings on Site related to the operation of the refinery as shown on ~~Figure 4-1~~ **Figure 1-2**;
- demolition ~~would be~~ **were** undertaken using heavy machinery such as bulldozers and hydraulic excavators;
- intermediate storage of the demolished material at the CLOR prior to disposal or recycling; and removal of foundations and services associated with the redundant buildings.

These demolition works ~~may~~ **potentially** require**d** excavation work which may extend down to 1 mbgl.

## 1.2.6 Services

Redundant cabling and underground services associated with the redundant infrastructure in the refinery process area and redundant buildings across the Site ~~would~~ **was** also ~~be~~ removed. These services include**d**:

- connection points and underground pipes to the Oily Water Sewer beneath the refinery process units; and
- redundant sewer lines and cabling from redundant buildings that included amenities.

### 1.2.7 Demolition Staging and Program

#### Demolition Program

~~Caltex is planning~~ **Ampol planned** to commence the ~~demolition~~ **MOD-1** works during the second half of 2015. The ~~demolition~~ **MOD-1** works ~~are~~ **were** ~~likely~~ **anticipated** to be completed by the end of 2017.

The interaction between the conversion works program and the ~~demolition~~ **MOD-1** works program is presented in ~~Table 4-1~~

Table 1-5. By the time that the ~~demolition~~ **MOD-1** works commence, the only conversion works **anticipated to** still ~~being~~ **be** completed ~~will~~ **were** relate**d** to the conversion of certain tanks across the Site.

#### Demolition Program extension

**However**, **due to the** uncertainty regarding the future butane assets and the confirmation regarding their proposed removal ~~has resulted in~~ a delay to ~~demolition~~ **the MOD-1** works program **occurred**. ~~Caltex~~ **Ampol** ~~has~~ **had** removed or demolished the majority of above ground redundant infrastructure and ~~is~~ **was** in the process of demolishing certain buildings, completing various civil works (e.g. below ground infrastructure removal, grading land etc.) and waste management activities across the Site to finalise the demolition works prior to 10 August 2018. **However,** the need to ~~now~~ demolish the butane assets ~~has~~ meant that these assets ~~now need~~ **needed** to be removed prior to the remaining works at the Site being completed. Completing these works **was** required to remove these assets safely ~~and then~~ **indicating that** completing the remaining civil works ~~is~~ **was** not possible prior to 10 August 2018 in line with Condition B7A of SSD-554.

On this basis ~~Caltex~~ **Ampol** ~~is now seeking~~ **sought** consent for a further modification of SSD-5544 to extend the duration of the demolition period by an additional ten months **(MOD-4).** The proposed extension ~~would~~ accommodate**d** both the demolition of the butane assets as well as the remining activities consented under MOD-1. This ~~would allow~~ **allowed** for the most orderly, safe and economic programming of demolition works across the Site. This proposed change would be considered ~~modification four (~~MOD-4~~)~~ to the original consent SSD-5544.

~~The modification would~~ ~~involve~~ **MOD-4 involved** amending condition of consent B7A of SSD-5544. ~~This~~ **The** condition ~~currently states~~ **previously stated**:

*"B7A. The demolition works associated with the development shall not extend beyond three (3) years from the date of consent for MOD-1"*

~~We~~ **Ampol** ~~are seeking~~ **sought** consent to amend ~~this~~ **the** condition to state:

*"B7A. The demolition works associated with the development shall not extend beyond fort-six (46) months from the date of consent of MOD-1"*

The proposed schedule to complete the demolition works **(including MOD-1 and MOD-4)** is provided in ~~Table 1~~ **Table 1-5** below.

**Table 1-5 Proposed conversion and demolition schedule**

| Task | Timing |
|---|---|
| **Conversion Works** | |
| Detailed Engineering & Design Start | Mid 2012 |
| Engineering & Design Completed | Second half 2013 |
| Tank Conversions Start | Q1 2014 |
| Installation of Piping, Pumps and Associated Infrastructure | Q1 2014 |
| Construction on Piping Completed | Q2 2014 |
| Kurnell Refinery Shutdown | Q4 2014 |

| Task | Timing |
|---|---|
| Kurnell Refinery Decommissioning Process Units | First half 2015 |
| Kurnell Refinery Decommissioning Tanks and lines | 2015 – Mid 2016 |
| Continued Tank Conversions | End 2014 – end 2016 |
| CONVERSION TO TERMINAL COMPLETED | December 2016 |
| **Demolition Works*** | |
| Demolition of refinery process units **(excluding butane assets)** | ~~Mid 2015 – Mid 2017~~ **Complete** |
| Demolition of **redundant** tanks **(excluding butane assets)** | ~~Mid 2016 – End 2017~~ **Complete** |
| ~~Pipeline~~ Removal **of redundant pipelines** | Start 2016 ~~– End 2017~~ **to Mid 2018** |
| **Demolition and removal or butane assets** | **May 2018 to September 2018** |
| Demolition **of remaining** buildings | ~~Mid 2016 – End 2017~~ **July 2018 to December 2018** |
| ~~Concrete Crushing~~ | ~~End 2017~~ |
| **Final tank removals (last three tanks)** | **January 2019 to February 2019** |
| **Final waste processing (scrap, concrete, etc.)** | **October 2018 to March 2019** |
| **Final civil works (currently 50% complete)** | **November 2018 to April 2019** |

*Depending on timing of development consent.

### 1.2.8 Working Hours

The working hours ~~would be~~ **were** in line with the Conditions of Consent for SSD-5544, in particular Conditions C18, C19 and C20. In summary:

- Construction to be completed between 7.00 am and 10.00 pm seven days a week (Condition C18);
- High noise generating construction works would be confined to less sensitive times of the day and not outside the hours of 7.00 am to 6.00 pm Monday to Saturday (Condition C19); and
- Construction outside those hours would only be undertaken in certain circumstances as defined in Condition C20.

As the pipeline removal works within the ROWs ~~would occur~~ **occurred** close to residential receptors these works ~~would be~~ **were** confined to 7.00 am to 6.00 pm Monday to Saturday as per Condition C19.

Potential noise impacts related to the ~~demolition~~ **MOD-1** works ~~are~~ **were** discussed further in Chapter 13 Noise and Vibration and Appendix E Noise and Vibration Impact Assessment **of the MOD-1 SEE**.

### 1.2.9 Demolition Traffic

The traffic generated by the ~~demolition~~ **MOD1** works ~~would~~ incorporate**d** a mix of construction plant vehicles and construction personnel movements. Access ~~would~~ remain**ed** the same as for the conversion works with access to the main refinery site only undertaken from Solander Street, Kurnell.

In addition to construction personnel movements, the ~~demolition~~ **MOD-1** works ~~are~~ **were** likely to result in approximately 2,675 additional heavy vehicle movements to and from the Site between 2015 and 2017. This equates to approximately 6 heavy vehicle movements a day on average with a peak of 30 additional movements on any one day. Further detail is provided in Chapter 15 Transport and Access **of the MOD1 SEE**.

### 1.2.10 Workforce

The ~~demolition~~ **MOD-1** works ~~would~~ result**ed** in an increase of approximately 230 employees at the Site in 2015 and 130 contractors for 2016 and 2017. These workers ~~would be~~ **were** in addition to the workforce numbers presented in Section ~~3.3.4~~ **1.1.4** for these three years and shown in ~~Table 3-4~~ **Table C-4.** As demonstrated in ~~Table 3-4~~ **Table 1-6** the cumulative number of workers at the Site for 2015 to 2017 (410 maximum) ~~would~~ **were** still ~~be~~ significantly lower than the workforce present in 2012 (1,385 maximum).

**Table 1-6 Workforce Numbers (Current and Projected) – Conversion and Demolition Works**

| Workforce Numbers (Current and Projected) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2012[2] | 2013 | 2014[3] | 2015 | 2016 | 2017 | 2018 |
| ~~Caltex~~ **Ampol** Employees | 410 | 400 | 450[4] | 40 | 45 | 45 | 45 |
| Contractors | 475 | 475 | 475 | 40 | 55 | 55 | 55 |
| | - | 140 | 140 | 100 | 90 | - | |
| | | | | 230 | 130 | 130 | |
| **Total** | **885** | **1,015** | **1,065** | **410[5]** | **320** | **230** | **100** |
| Maintenance Shutdown Periods[1] | 500 | 0[6] | 0[6] | 0[6] | 90 | 90 | 90 |
| **Total including Maintenance Activities** | **1,385** | **1,015** | **1,065** | **410** | **410** | **320** | **190** |

*1 Maintenance shutdown periods ~~are~~ **were** periodic and for short time frames (8-12 weeks).*

*2 Employee numbers at the Site in 2012.*

*3 2014 ~~would be~~ **was** the peak construction period. Additional personnel brought to the Site for the **Conversion** Project construction ~~would be~~ **were** a maximum of 140 personnel.*

*4 Additional ~~Caltex~~ **Ampol** Employees in 2014 ~~would be~~ **were** staff hired for terminal operations.*

*5 The large reduction in numbers between 2014 and 2015 follows the cessation of refining at the Site. The increase in workforce numbers between 2015 and 2016 represents a gradual stabilisation of the terminal operational workforce.*

*6 No maintenance shutdown periods ~~will occur~~ **occurred** during 2013 and 2015.*

### 1.2.11 Demolition Material Management

The ~~demolition~~ **MOD-1** works ~~would~~ result**ed** in the production of a number of waste streams. ~~Caltex's~~ **Ampols** target ~~is~~ **was** to recycle as much waste material as possible and where possible reuse it at the Site. As demolition works progress**ed**, materials ~~would be~~ **were** classified in line with the Waste Classification Guidelines (DECCW, 2009) and stored in identified areas on Site prior to being reused, recycled or disposed.

Demolition materials ~~would be~~ **were** managed and stored on Site at the former CLOR prior to being either recycled (e.g. steel, alloys, copper etc.) or disposed offsite.

Further detail on the management of this process is provided in Chapter 11 Waste Management **of the MOD-1 SEE**.

### 1.2.12 Concrete Crushing

Concrete that ~~is~~ **was** produced during the ~~demolition~~ **MOD-1** works ~~would be~~ **was** reused on Site where possible and appropriate. The concrete ~~would be~~ **was** crushed at the end of the ~~demolition~~ **MOD-1** program on the former CLOR site (refer to ~~Figure 4-1~~ **Figure 1-2**) and used as an aggregate to cover areas where structures and buildings ~~have been~~ **were** removed.

Further detail on the management of this process is provided in Chapter 11 Waste Management and Chapter 14 Air Quality and Odour **of the MOD-1 SEE**.

### 1.2.13 Spoil Management

As the works progress**ed**, the soil removed during the excavation work ~~would be~~ **was** stockpiled and, where appropriate, reused as backfill. Along pipeline routes, excavation ~~would occur~~ **occurred** in discrete sections, so that the length of time temporary stockpiles are required is minimised.

Soils ~~would be~~ **were** checked for contamination and odour as they ~~are~~ **were** excavated. Soils considered contaminated ~~would be~~ **were** stored at the former CLOR site. These soils ~~would be~~ **were** placed in stockpiles and appropriately bunded and managed.

Where no contamination issues ~~are~~ **were** identified, excavated material ~~would be~~ **was** used as backfill to bring the excavated area back to grade as soon as practicable. If required, Virgin Excavated Natural Material, Excavated Natural Material or appropriately remediated soils ~~would be~~ **was** brought to the ~~demolition~~ **MOD-1** works area and used to provide additional backfill material.

Chapter 9 Soils, Groundwater and Contamination **of the MOD-1 SEE** provides further detail on the mitigation measures that ~~would be~~ **were** implemented to minimise impact related to the excavation works.

### 1.2.14 Operation

The operation of the Kurnell Terminal ~~would be~~ **was** as described in the Kurnell Refinery Conversion EIS (URS, 2013) and ~~would be~~ **was** consistent with the development consent for SSD-5544 **(refer to Section 1.1.5)**.

## 1.3 Asbestos Containment Cell management works

### 1.3.1 Overview

The **Asbestos Containment Cell (**ACS**)** Modification works **(MOD-2)** ~~would~~ broadly involve**d** the following activities within the ACS Modification works area presented in ~~**Figure 1-2**~~ **Figure 1-8**:

- Construction:
  - Additional soil sampling within the pipeways to further improve the accuracy of waste classification of the soil prior to placement in the Containment Cell or ACS biopile;
  - Construction of the Containment Cell base and leachate collection system in the proposed cell location;
  - Installation of ground water monitoring wells down gradient of the proposed cell location;
  - Excavation and transportation of ACSs that ~~have been~~ **were** classified as general or restricted solid waste directly to the Containment Cell location for emplacement;
  - Excavation and transportation of ACSs from the pipeways that ~~have been~~ **were** classified as hazardous waste to be managed in one of the following ways:
    - Biopile the soil to process it until it ~~can be~~ **was** classified as 'restricted solid waste' at a minimum and added to the Containment Cell; or
    - Removal off-site for treatment and disposal at an appropriately licenced facility in the event that biopiling ~~does~~ **did** not effectively reduce the level of contaminants to a restricted level in the required timeframe.
  - Filling and compaction of the ACSs into the Containment Cell;
  - Environmental management of both the Containment Cell and the temporary ACS biopile areas;
  - Verifying the removal of ACS from the pipeways; and
  - Closure of the Containment Cell.
- Operation:
  - Managing and monitoring the closed Containment Cell.

The preferred approach to managing the ACSs that are classified as hazardous waste ~~would be~~ **was** to biopile them on Site in order to reduce the level of hydrocarbons by biodegradation to a level where the soils can be classified as restricted solid waste. Whilst this method ~~is~~ **was** expected to be successful based on previous examples, this assessment has included the option of removing these soils from the Site to a licenced waste facility as a contingency measure.

It ~~is~~ **was** proposed that the Containment Cell would predominantly be used to dispose of ACSs from the pipeways in order to remove the hygiene risk and remove the WHS Regulation Exemption. However, ~~Caltex~~ **Ampol** ~~are~~ also ~~proposing~~ **proposed** to dispose of ACSs from other parts of the Site if there is available capacity following disposal of the pipeway ACSs. These ACSs ~~would~~ need**ed** to be classified as either Special General Solid Waste or Special Restricted Solid Waste. All soils that ~~would be~~ **were** placed within the Containment Cell or in the ACS biopile ~~would~~ **were** only ~~be~~ sourced from the Site. No material from off site ~~would be~~ **was** accepted in either the Containment Cell or in the ACS biopile.

Equally, it's important to note that SSD-5544 MOD-1 provided consent for the excavation, handling, management and transport of ACS at the Site. As such, the modification for the ~~ACS Modification~~ **MOD-2** works ~~does~~ **did** not require consent for the excavation, handling and transport of ACS from other parts of the Site (i.e. outside of the pipeways) to the Containment Cell. Indeed, as the ~~demolition~~ **MOD-1** works assessed the management of contaminated soils and ACS, the DEMP that ~~is being~~ **was** used to manage these works ~~contains~~ **contained** a large number of measures that ~~would be~~ **were** relevant to the ~~ACS Modification~~ **MOD-2** works.

The **MOD-2** works to construct, fill and close the cell ~~are~~ **were** estimated to take approximately 18 months. The ACS biopiling works ~~are~~ **were** expected to take approximately 11 months.

The capital investment value for the ~~ACS Modification~~ **MOD-2** works ~~is~~ **was** $13.5 million.

Concept design drawings for the Containment Cell are provided in **Appendix B of the MOD-2 SEE**.

### 1.3.2 Investigations and design

#### Soil

*Soil Classification*

Prior to the commencement of the construction works, further soil sampling ~~would be~~ **was** undertaken to:

- to further improve the accuracy of waste classification of the soil for ongoing management, either to be placed into the cell directly, or to be processed in the ACS biopile; and
- to confirm the volume of soil classified as hazardous for processing at the ACS biopile and the characteristics of the soil to determine the appropriate biopiling process.

Section 4.4.3 **of the MOD-2 SEE** outlines the different management options for hazardous waste.




**Figure 1-8 Proposed ~~ASC Modification~~ MOD-2**

### *Soil Volumes*

Based on the review of the data provided in the *Pipeways Waste Classification Report* (AECOM, 2016a), the soils within the pipeways were classified in accordance with the Waste Classification Guidelines. The extent of each of these areas is shown on ~~**Figure 1-2**~~ **Figure 1-8**. The calculated volumes are listed in ~~**Table 1-4**~~ **Table 1-7** below.

**Table 1-7 Kurnell Pipeways – Waste Classification and Estimated Waste Volume*****

| Soil Category* | | Area (ha) | Volume[1] ($m^3$) | Mass (tonnes)** |
|---|---|---|---|---|
| 1 | Soil - asbestos not detected | 3.48 | 6,955 | - |
| 2 | Special Waste (Asbestos)/ General Solid Waste | 3.57 | 7,960 | 10,600 |
| 3 | Special Waste (Asbestos)/ Restricted Solid Waste | 1.15 | 2,308 | 3,100 |
| 4 | Special Waste (Asbestos)/ Hazardous Waste | 1.44 | 2,880 | 3,850 |

**Waste Classification based on the Waste Classification Guidelines (EPA, 2014).*

***The conversion density used for soil from $m^3$ to tonnes is 1.34 t/$m^3$ based on the average minimum dry density tests carried out for soils located at the proposed asbestos Containment Cell area and assuming a moisture content of 5%.*

****Testing was focused on the pipeways as this was subject to the WHS Exemption. However other parts of the Site are also known to contain asbestos.*

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## Proposed Cell Location

In order to determine the most suitable location for the proposed Containment Cell an options analysis was undertaken (AECOM, 2016b). The proposed ~~located~~ **location**, as shown in ~~**Figure 1-2**~~ **Figure 1-8** and ~~**Figure 1-3**~~ **Figure 1-10,** was identified as the preferred location based on the following characteristics:

- The area is bunded area:
- . has an area of 11,398 $m^2$;
- is 268 m away from Kamay Botany Bay National Park;
- is 931 m away from residential dwellings;
- is 540 m away from commercial offices;
- is 650 m away from the SSRF (reducing cross contamination risks); and
- is within 13 m from the pipeways containing ACS

Furthermore, the area ~~provides~~ **provided** easy access from all sides and ~~is~~ **was** within the same area as the land farm, aligning with the current waste management use of this part of the Site.

The proposed cell location ~~is~~ **was** contained within the existing tank bunds for tanks 224 and 225 and the majority of the bunded area for tanks 333, 334 and 335. The tanks ~~have been~~ **were** demolished and associated infrastructure removed as part of the ~~demolition~~ **MOD-2** works.

*The Kurnell Terminal Geotechnical / ESA* (AECOM, 2016c) identified that the geotechnical and environmental ground conditions ~~would be~~ **were** suitable for construction of a Containment Cell within this location. Constraints associated with the shallow groundwater and bedrock preclude constructing a below ground Containment Cell. As such an aboveground Containment Cell ~~is~~ **was** proposed.

## Cell Design and Capacity

Based on review of the data provided in the *Pipeways Waste Classification Report* (AECOM, 2016a), the Containment Cell ~~has been~~ **was** designed to create a maximum airspace capacity for up to 24,500 tonnes of ACS.

The 24,500 tonnes ~~has been~~ **was** determined based on the following:

- 10,600 tonnes of Special General Solid Waste;
- 3,100 tonnes of Special Restricted Solid Waste;
- 3,850 tonnes of Special Hazardous Waste (assuming this volume ~~can~~ **could** be successfully treated to allow re-classification as Special Restricted Solid Waste); and
- A 40% contingency which allows for sensitivity in soil density, potential use of daily cover soils during waste placement and space for other ACS from other parts of the Site if required.

Based on an average maximum wet density of 1.6 t/$m^3$; a 24,500 tonne capacity Containment Cell ~~would require~~ **required** a waste containment volume of approximately 15,300 $m^3$. This airspace volume ~~has been~~ **was** allowed between the top of the leachate barrier system and the underside of the capping layer.

The highest classification of waste to be contained within the Containment Cell is Special Restricted Solid Waste, and therefore the Containment Cell ~~has been~~ **was** designed in accordance with the requirements for a restricted landfill cell. The concept design of the proposed Containment Cell ~~has been~~ **was** prepared generally in accordance with the NSW *EPA Environmental Guidelines: Solid Waste Landfills, second edition 2016* (the Landfill Guidelines) (refer to **Appendix B of the MOD2 SEE**).

### Increase in ASC Containment Cell Capacity

The lowest point within the ASC Containment Cell is the base of the leachate sumps. The original design **(MOD-2)** set the base of the leachate slumps at the approximate existing ground level. **However,** during detailed design it was confirmed that this approach would ~~however~~ require a significant volume of subgrade fill to be placed to create suitable grades to drain leachate to the sumps in accordance with the *Environmental Guidelines for Solid Waste Landfills* (EPA, 2016) (EPA Guidelines).

To reduce the volume of subgrade fill required, the base level of the leachate sumps was set below the existing ground level but above the limit of consent of 500 mm below ground surface (refer to Section 8.3.4 of the ~~ASC Management Project~~ **MOD-2** SEE (AECOM, 2016)). This limit was put in place to ensure that the base of the cell ~~does~~ **did** not interact with groundwater.

Setting the base level of leachate sumps below the existing ground level allowed the existing soil at the cell to be used to grade the base of the cell. ~~This~~ **The** lowering of the base of leachate sumps did not include a change in the grade of leachate drainage surfaces which continue**d** to comply with EPA guidelines.

~~The result of this~~ **This** change ~~has~~ resulted in an increase in the volumetric capacity of the cell from 15,300 $m^3$ to approximately 22,240 $m^3$ **(MOD-5),** as the final cap levels remain as per the original **MOD-2** design**.**

The as built design of the ASC Containment Cell, including the lowered leachate sumps, was approved by the EPA site auditor as part of the review of the Remedial Action Plan (RAP) for the ~~ACS management~~ **MOD-2** works.

This change ~~does~~ **did** not involve a modification to the conditions of consent. The design and works to fill and close the cell ~~will~~ remain**ed** as presented in the SEE and RAP for the ~~ASC management~~ **MOD-2** works. The only change ~~will be~~ **was** an increase in the time the cell ~~is~~ **was** open as it ~~will take~~ **was anticipated to take** longer to fill. ~~Should this modification be approve~~d, **M**inor updates to the relevant managed plants ~~would be~~ **were** required ~~but~~ **however** the majority of content ~~would~~ remain**ed** the same.

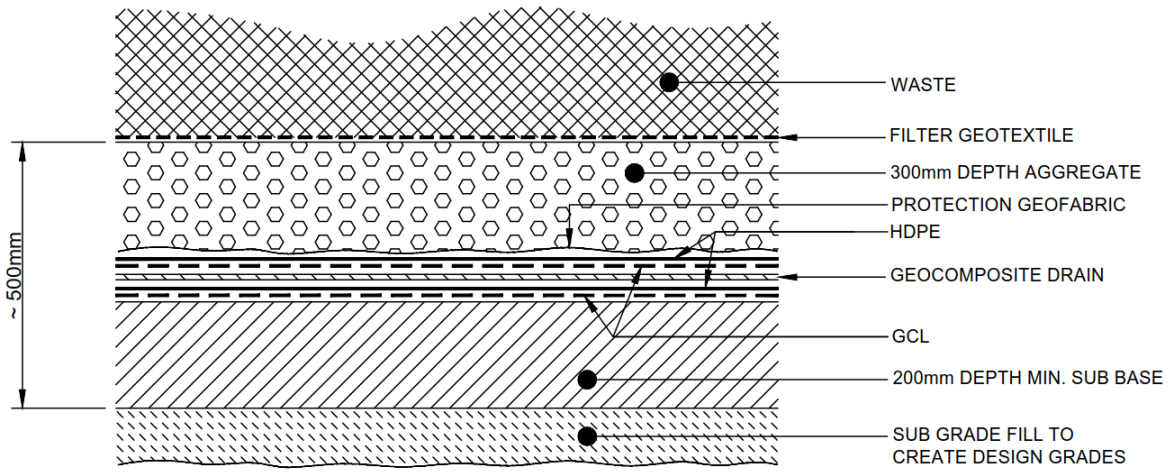
### 1.3.3 Construction

#### Cell Construction

The Containment Cell ~~would be~~ **was** constructed in accordance with the Landfill Guidelines and in the following manner:

- Minor excavation ~~in~~ **of** the existing ground surface for sump bases. Sump bases ~~would be~~ **were** designed to be depressed to create a storage volume to minimise continuous pumping of leachate and/or inundation of large areas of the liner with leachate. The sump base ~~is~~ **was** depressed approximately 500 mm into the existing surface in the area of the two sumps.
- Placement of sub-base fill to mirror the top of the liner. Liner surface grades ~~would be~~ **were** designed in accordance with the Landfill Guidelines.
- Installation of the lining system, including leachate collection layer, to extend for the full extent of the footprint area to the top of the surrounding bunds. The proposed lining system is presented in ~~**Figure 4-1**~~ **Figure 1-9**.
- The leachate barrier system would be a dual barrier system for containment of Restricted Solid Waste.
- Installation of a leachate storage tank within bund for tank 226.

The approximate extent of the Containment Cell is 80 metres in the east-west direction and 114 metres north-south. The proposed Containment Cell footprint for construction is shown in ~~**Figure 4-1**~~ **Figure 1-9**.




Notes: HDPE - High Density Polyethylene
GCL - Geosynthetic Clay Liner

**Figure 1-9 Proposed Containment Cell Liner**

#### Excavation and Transport of ACSs

ACS from within the pipeways ~~would be~~ **were** excavated by a licenced contractor. ACS classified as General Solid Waste and Restricted Solid Waste, as per ~~**Figure 1-2**~~ **Figure 1-8**Figure 1-8, ~~would be~~ **was** excavated into a truck and dog and transported to the Containment Cell. ACS ~~would be~~ **were** progressively excavated to align with the filling rate of the Containment Cell to minimise stockpiling.

A water truck ~~would be~~ **was** used to wet down areas during excavation to minimise dust emissions. In the event that stockpiling ~~is~~ **was** required, stockpiled soils would be wetted down to minimise dust emissions, placed on impermeable sheeting and covered, if being left overnight or unattended.

Following excavation, validation of the excavated areas ~~would be~~ **was** undertaken to certify that asbestos is no longer present (refer to **Section 8.5 of the MOD-2 SEE** for further detail). Where required, the pipeways ~~would be~~ **were** graded and backfilled with an appropriate material to protect against erosion.

### ACS Preparation

5,390 tonnes (around 3,600 $m^3$) of Special Hazardous Waste ~~has been~~ **was** determined to be present within the pipeways based on the following:

- 3,850 tonnes of Special Hazardous Waste being calculated as being present (AECOM 2016a); and
- A 40% contingency on this amount which allows for variations in soil density.

This means that the amount of Special Hazardous Solid Waste being assumed to require on-site processing, or disposal off-site ~~is~~ **was** a conservative estimate.

Based on ~~Caltex's~~ **Ampols** previous experience at the Site, biopiling ~~has been~~ **was** determined as an appropriate way to treat the hydrocarbon contaminated ACS to allow ~~it~~ **them** to be contained within the Containment Cell. The proposed approach to biopiling outlined in this section ~~is~~ **was** based on the key learnings from the Kurnell Pilot Sustainable Soil Remediation Facility (PSSRF) (EPS, 2015), as well as the key learnings from consultation with the NSW EPA for the permanent facility (the 'Caltex Soil Remediation Facility' (CSRF)).

The objective of biopiling ~~would be~~ **was** to reduce the concentrations of hydrocarbons ($C_{10}$-$C_{36}$) to a level below the upper threshold for Restricted Solid Waste before placement into the Containment Cell, whilst protecting the Site personnel and the community. Only ACS classified as Special Hazardous Waste from the pipeways ~~would be~~ **were** biopiled.

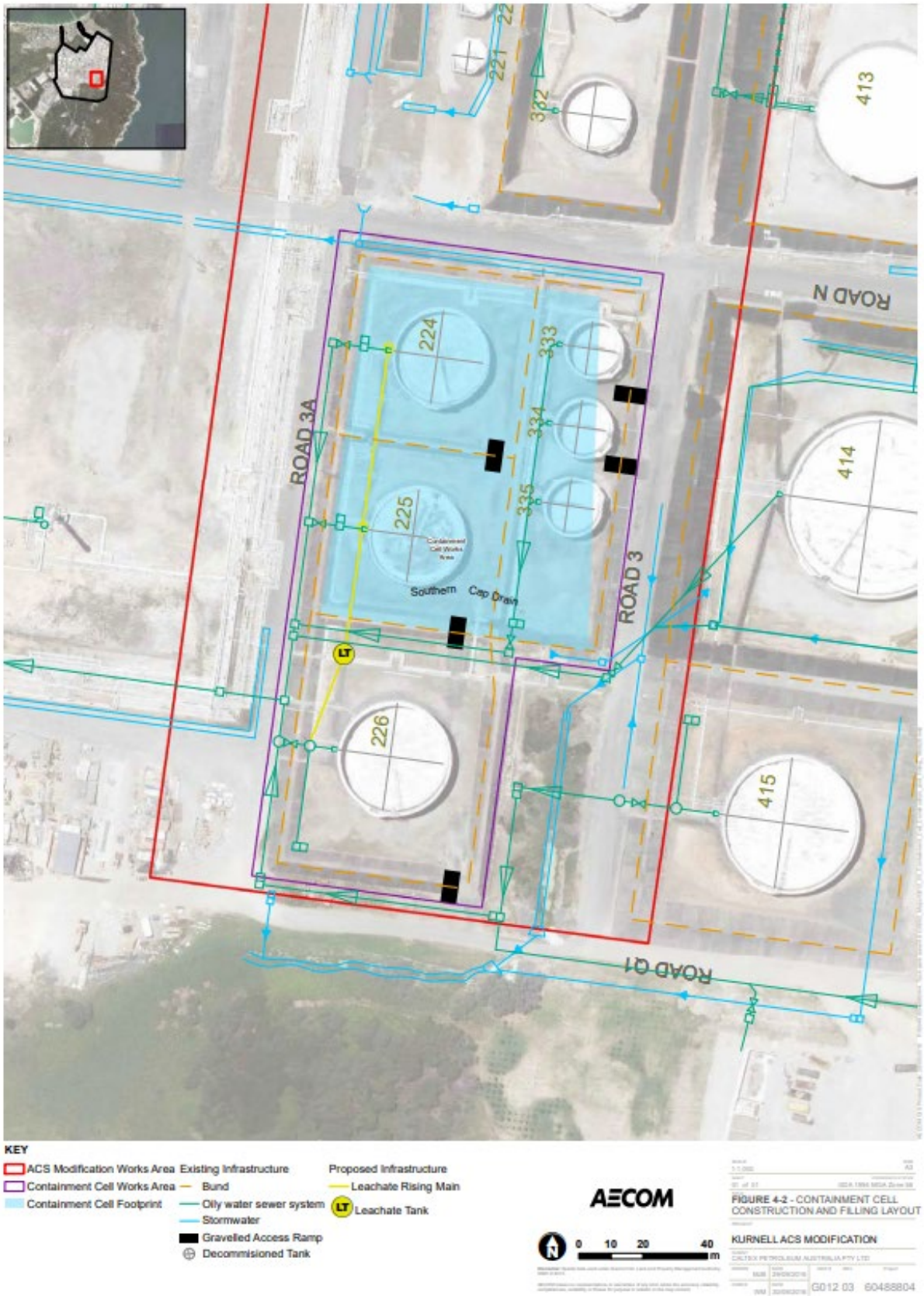



**Figure 1-10 Containment Cell construction and filling layout**

*Overview*

Biopiling the Special Hazardous Solid Waste ~~would~~ broadly involve**d** the following works:

- establishment of the Biopile works area;
- excavation of soils from the pipeways for immediate transport to the bipopile pads, or to the soil homogenisation area;
- construction of the biopiles;
- bio-remediation of the impacted soil;
- testing of the treated soil; and
- transport to the Containment Cell.

These aspects are discussed in more detail below.

*Biopile Works Area Construction and Biopiling Process*

The biopiling area ~~would be~~ **was** constructed within the former bunds of tanks 213, 214, 215, 327, 328, 353 and 354 (refer to ~~Figure 4-4~~ **Figure 1-12)**. The existing bunds ~~would be~~ **were** utilised to prevent surface water flowing into or out of the biopiling works area.

To prepare the biopiling works area, the biopile pads and soil homogenisation area ~~would be~~ **were** lined with a geosynthetic clay liner or 1.5 mm thick HDPE liner. These ~~would be~~ **were** aligned and connected to the existing oily water sewer system (OWSS) which ~~still services~~ **continued to service the** bunded area. Although production of leachate from the material ~~is~~ **was** considered unlikely, the ACS biopile ~~would be~~ **was** designed to dispose of leachate through the Oily Water Sewer System (OWSS).

Crushed concrete ~~would be~~ **was** utilised to stabilise vehicle access locations.

An ‘active’ biopiling process ~~is~~ **was** proposed due to the need to minimise the risk of release of asbestos fibres from the soil. Active biopiling is a covered aerated system retained under negative pressure. The aeration system uses blowers and a pipe network to introduce air to the system. Air and vapour leaving the system ~~are~~ **is** directed to a carbon filtration drum. This drum captures and negates the release of odours and remaining volatile organic compounds (VOCs) to the airshed. This ~~is~~ **was** preferable to an “intensive” bioremediation method which would involve frequent mechanical turning of the material.

~~**Figure 4-3**~~ **Figure 1-11** provides a schematic of a typical active biopiling aeration system, which ~~would be~~ **was** a similar system to what would be used for the ~~ACS Modification~~ **MOD-2 Works**. As shown in ~~**Figure 4-3**~~ **Figure 1-11,** each active biopiling system ~~would~~ **was** ~~normally~~ comprise**d** the following:

- a network of perforated PVC piping connected via gathering system;
- a phase separation tank, where extracted water is collected (either due to the presence of water in the biopile, or the condensation of water vapour in the aeration system);
- two Granular Activated Carbon (GAC) canisters in series;
- a vacuum blower; and
- a short exhaust vent which can be monitored using a Photo-ionisation Detectors to determine the presence or absence of VOCs.

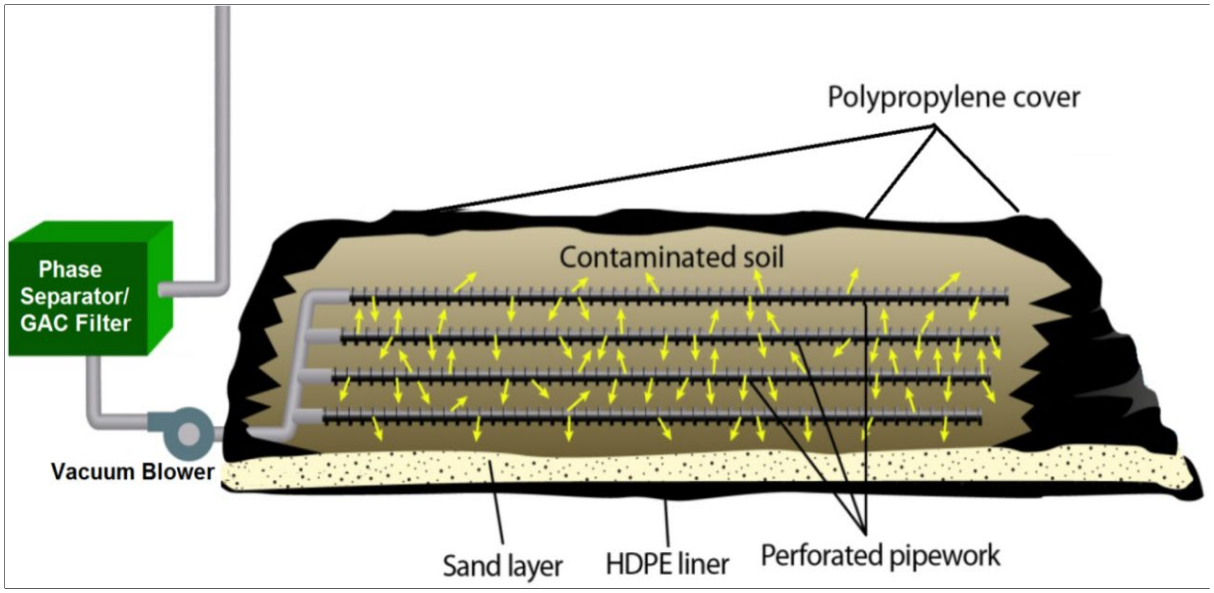



**Figure 1-11 Schematic of Typical Biopile Aeration System (adapted from NSW EPA 2012)**

The maximum height of the biopile ~~would be~~ **was** 2.5 m. The volume of the biopile ~~would be~~ **was** finalised following further classification and pending the volume of impacted soils needing to **be** homogenised (described further below). ~~For current purposes it is~~ **It was** assumed that the total volume of ACS for biopiling would be approximately 4,000 $m^3$ which ~~is~~ **was** comparable to the conservative estimate. This volume ~~would be~~ **was** divided into four biopiles each of 1,000 $m^3$. For a 2.5 m high biopile holding a volume of 1,000 $m^3$ this ~~would require~~ **required** a basal footprint for each biopile of approximately 20 m x 30 m, ~~allowing~~ **to allow** for a stable slope at the perimeter of the material.

Granular activated carbon drums ~~would be~~ **were** placed in series to capture VOCs, although they are anticipated to be minimal. Photo-ionisation Detectors ~~would be~~ **were** utilised to confirm the absence of VOCs following construction. The biopiles ~~would be~~ **were** covered at all times following placement of soils.

### *Soil Characteristics*

The soil to be processed ~~is~~ **was** classified as 'Special Hazardous Waste' as per the NSW Waste Classification Guidelines (EPA, 2014) based on the presence of elevated concentrations of petroleum hydrocarbons and asbestos fibres. Analysis ~~has shown~~ **showed** that the hydrocarbons generally ~~occur~~ **occurred** in the carbon band range $C_{15}$ – $C_{36}$ which is generally non-volatile or semi-volatile. With reference to petroleum hydrocarbons in the range $C_{10}$ – $C_{36}$ the Waste Classification threshold values ~~are~~ **were** as follows:

- for General Solid Waste, max concentration of 10,000 mg/kg;
- for Restricted Solid Waste, max concentration of 40,000 mg/kg; and
- concentrations greater than 40,000 mg/kg: classifies as Hazardous Waste.

The measured concentrations in the $C_{10}$ – $C_{36}$ range ~~are~~ **were** between less than 50 mg/kg to 106,000 mg/kg with a mean of 19,087 mg/kg and a median of only 915 mg/kg, indicating that the higher concentrations ~~are~~ **were** sporadic and that the material ~~is~~ **was** not homogeneous (AECOM, 2016a).

Further, asbestos fibres also ~~occur~~ **occurred** in the soils sporadically. Their presence does not correlate with the presence or absence of hydrocarbon contaminants in the soil.

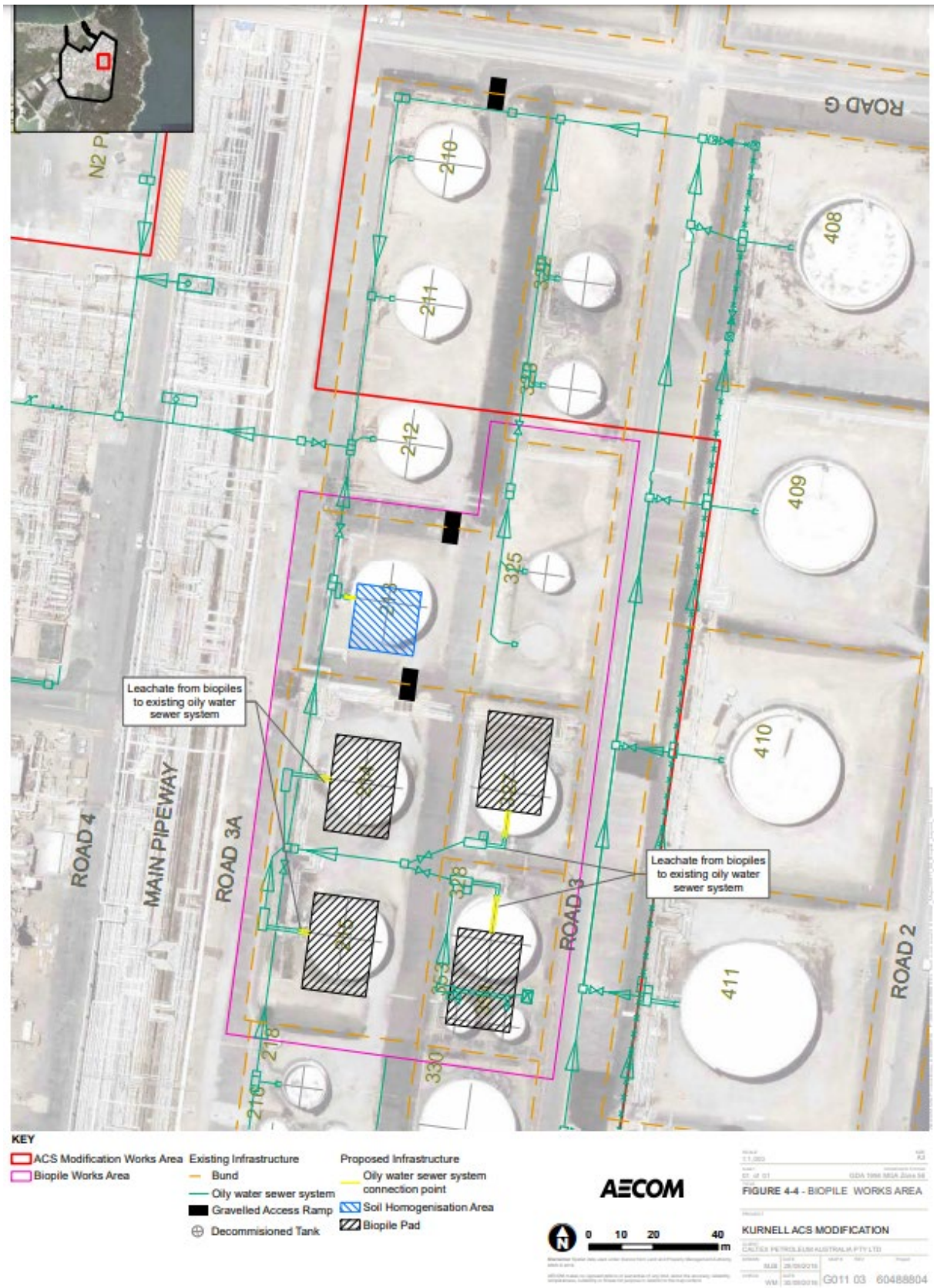



**Figure 1-12 Biopile Works Area Layout**

### *Homogenisation Process*

Active biopiling for hydrocarbons in the $C_{10}$-$C_{36}$ range can only be effective if the typical hydrocarbon concentration**s** ~~is~~ **are** no greater than 50,000 mg/kg, and homogenous. Homogenisation is necessary to lower peak concentrations so as to promote microbe activity. The process of excavating the soils and placement within a truck prior to placement in the ACS biopile ~~is~~ **was** expected to result in some homogenisation of the material. However, until the actual excavation works ~~take~~ **took** place the level of soil mixing through this process ~~is~~ **was** unknown. Therefore a separate homogenisation process as described below ~~is~~ **was** proposed when required.

If necessary the soil ~~would be~~ **was** homogenised by blending the material with elevated hydrocarbons (> 50,000 mg/kg) with excavated material from the pipeways classified as general solid waste to bring the hydrocarbon levels below 50,000 mg/kg prior to placement within the ACS biopile. The excavated material ~~would be~~ **was** placed in a controlled stockpile next to the proposed biopiles where homogenisation ~~is~~ **was** applied (refer to ~~Figure 4-4~~ **Figure 1-12**). The material ~~would be~~ **was** homogenised in batches using a screening bucket such as the Allu Screener Crusher bucket (or similar) attached to the dipper arm of an excavator. The crusher screener bucket and the controlled stockpile ~~shall be~~ **were** kept wet whenever active to minimise the generation of dust.

### *Monitoring of the ACS Biopile*

During the construction and operation of the ACS biopile(s), the following ~~would be~~ **was** monitored:

- Prior to the commencement of excavations for biopiling, dust and aerosol monitoring stations ~~would be~~ **were** placed at a minimum of six locations around the working area with the objective of monitoring prevalent upwind and downwind locations.
- During operation of the ACS biopile these stations ~~would be~~ **were** used to monitor for particulate matter being mobilised from the biopile works area. The monitoring ~~would be~~ **was** focused on identifying dust and asbestos emissions from this area to ensure that the ACS biopile ~~is~~ **was** operating effectively and not resulting in asbestos and dust emissions.
- Carbon: nitrogen: phosphate: potassium ratios ~~would be~~ **were** tested during the operation of the ACS biopile to determine the need, or otherwise, for additives such as straw, farm manure, Urea and fertilizer products such as diammonium phosphate.
- Soil sampling at 'time zero' ~~would be~~ **was** undertaken (i.e. following construction and prior to covering of the biopiles) to confirm hydrocarbon concentrations at a rate of one sample per 100 $m^3$ of biopile. Subsequent samples from soil auger sampling beneath the cover ~~would be~~ **occurred** every two weeks for the first month and every month for the following six months at a rate of one sample per 200 $m^3$ of biopile to determine and to maintain where necessary the appropriate levels of moisture content, oxygen and temperature. ACS Biopile soils ~~would be~~ **were** tested to determine the rate of degradation of hydrocarbons and to allow forward projection of the necessary residence time in the ACS biopile prior to placement in the Containment Cell.

The specifics of this testing, including frequency, based on ~~Caltex's~~ **Ampol's** knowledge from the demolition works, PSSRF, and CSRF ~~would be~~ **was** outlined in an ACS Biopile Management Plan specific to ~~the~~ ~~ACS Modification~~ **MOD-2**.

Once the soils meet the restricted waste thresholds (40,000 mg/kg) or less, the biopiles ~~would be~~ **were** deconstructed and the soils ~~would be~~ **were** excavated and placed in the Containment Cell.

The soils to be biopiled ~~have~~ **had** a mixture of the lighter and heavier hydrocarbon fractions dominated by aliphatics which would be relatively more amenable to degradation. A conservative period of treatment of up to 10 months ~~is~~ **was** estimated for the treatment of the homogenised soils prior to placement in the Containment Cell. One month ~~would be~~ **was** required for deconstruction of the ACS biopile.

## ACS Disposal

It ~~is~~ **was** expected that the biopiling approach would be effective in bringing the hazardous ACS within the 'Restricted Solid Waste' classification. In the event that ~~this~~ **the** approach ~~is~~ **was** unsuccessful, this material ~~would be~~ **was** transported to a licenced waste facility for treatment and disposal.

This material ~~would have been~~ **was** moved to the biopile works area by this point. From here it ~~would be~~ **was** carefully loaded into truck and dogs, securely covered, and transported by a licenced waste contractor to a licenced waste facility for treatment and disposal.

### Cell Filling and Temporary Management

ACS classified as General or Restricted Soil Waste ~~would be~~ **were** transported from the pipeways or biopile works area via truck. These soils ~~would~~ **were** then be placed in the Containment Cell at the same rate as the ACSs ~~are~~ **were** excavated from the pipeways. General and restricted soils ~~will be~~ **were** placed first, followed by the soils from the ACS biopile once suitable. Once soils ~~are~~ **were** placed into the cell a dozer and compactor ~~would be~~ **was** used to fill in the cell in the appropriate sequence and grade.

It ~~is~~ **was** proposed to use temporary plastic sheeting which ~~would be~~ **was** placed immediately over the ACS after it is placed in the Containment Cell. The use of suitably rigid plastic sheeting ~~would minimise~~ **minimised** the generation of dust from the placement of ACS. Prior to placement of the next load of ACS and at the start of each day's filling works, the plastic sheeting ~~would be~~ **was** stripped back to allowing filling operations to continue. At the end of each day's filling operation the plastic sheeting ~~would be~~ **was** secured in place to prevent it being lifted or displaced due to wind.

As discussed **Chapter 10 Surface Water, Wastewater and Flooding of the MOD-2 SEE** the Containment Cell ~~is~~ **was** located within a bunded area. During filling of the Containment Cell stormwater from within the bunded area ~~would be~~ **was** treated as leachate and directed to the Site's WWTP via the OWSS. Stormwater outside of the Containment Cell area ~~would~~ continue**d** to be managed in accordance with the existing processes at the Site.

### Cell Closure

The Containment Cell capping layer ~~would be~~ **was** designed to meet the minimum requirements of the Landfill Guidelines. At the completion of the filling the final cap ~~would be~~ **was** installed and meet the following requirements:

- The top of the cap ~~would meet~~ **met** the outer crest of the surrounding bunds except for the eastern side where the cap is limited to the boundary shown in ~~**Figure 4-2**~~ **Figure 1-10.**
- The existing eastern bund ~~would be~~ **was** removed to allow surface water flows from the final cap to drain to the Site's stormwater drainage system.
- The final height of the cap ~~would be~~ **was** determined during waste placement and ~~would be~~ **was** dependent on the final volume of waste generated from the ACS excavation works.
- To facilitate runoff and minimise ponding of water, the cap ~~would have~~ **had** a gradient of greater than 5% to defined drainage points. However, to reduce the risk of erosion, the cap ~~has been~~ **was** restricted to a gradient of ≤20%.
- The cell ~~would be~~ **was** revegetated as soon as practicable following civil works with native grasses.

The Landfill Guidelines and *Protection of the Environment Operations (Waste) Regulation 2014* (Waste Regulations) ~~require~~ **required** 3 m of VENM cover over asbestos contaminated waste however they ~~do~~ **did** not require a geosynthetic liner in the cap. The proposed cap design, as described above, ~~includes~~ **included** 1.6 m of soil and aggregate layers and two layers of geosynthetic including a GCL and an HDPE, as shown in ~~**Figure 4-3**~~ **Figure 1-11**. The detailed design ~~would include~~ **included** the design of the connection between the capping and liner layers, in particular the welding of the upper and lower HDPE liners, thereby fully containing the waste within HDPE and other layers. The 3 m of VENM over asbestos containing waste ~~is~~ **was** prescribed in the Waste Regulations to ensure no friable particles ~~are~~ **were** released from waste. The 1.6 m of soil and aggregate and the two layers of geosynthetic ~~are~~ **were** considered an appropriate alternative to 3 m of VENM to contain asbestos fragments. In addition a marker layer ~~would be~~ **was** included as a separation geotextile to reduce the risk of the cap being removed.

The proposed cell cap is presented in ~~Figure 4-5~~ **Figure 1-13**.

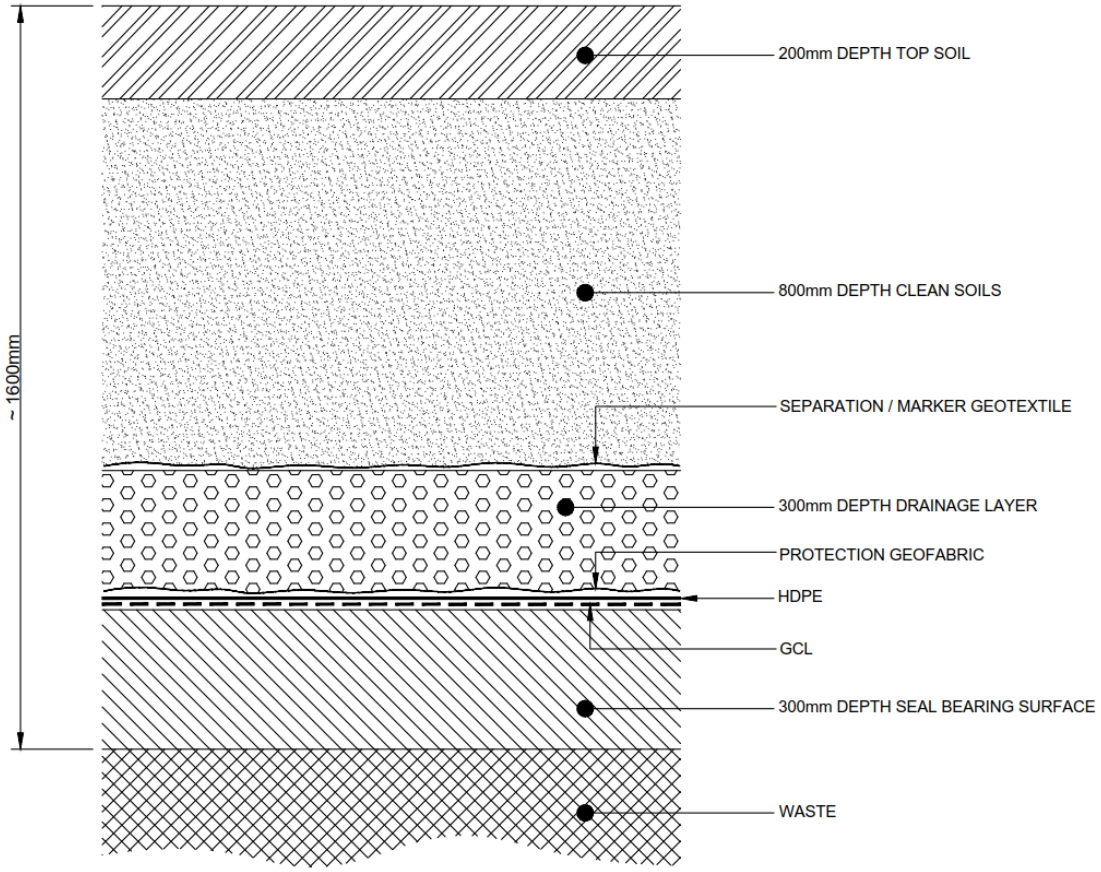



**Figure 1-13 Proposed Containment Cell Capping Layer**

## Program

The ACS Modification works ~~would be~~ **were** undertaken over an 18 month period starting in January 2017, **presented in Table 1-8.**

**Table 1-8 Proposed ACS Modification Works Schedule**

| Task | Indicative Date* |
|---|---|
| Containment Cell Construction | ~~Start 2017 – Mid 2017~~ **Late 2017 – Mid 2018** |
| ~~Excavation of ACS (hazardous waste) from Pipeways~~ | ~~Start 2017 – Q2 2017~~ |
| ~~Excavation of ACS (general and restricted solid waste) from Pipeways~~ | ~~Mid 2017 – End 2017~~ |
| ~~Preparation of ACS Hazardous Waste via Biopiling~~ | ~~Q1 2017 – Q4 2017~~ |
| ~~Filling of Containment Cell with ACS~~ | ~~Mid 2017 – End 2017~~ |
| **Excavation of ACS from Pipeways and Filling of Containment Cell** | Late 2017 – Mid 2019 |
| Closure of Containment Cell | ~~Start 2018 – Mid 2018~~ **Mid 2019 – Early 2020** |
| On-going Management of Closed Containment Cell | - |

*Depending on timing of approval.

*Program extension*

**However,** ~~Caltex~~ **Ampol** ~~are proposing~~ **proposed** to amend Condition B7B of the conditions of consent to extend the duration of ASC management works to 30 November 2019 **(MOD-5).**

The extension in duration of ASC Management Works ~~is~~ **was** proposed due to a number of project delays, including adverse weather, ongoing discussions with the EPA, excavation of the ASC taking longer than expected and auditor discussions and requirements resulting in the works falling behind the anticipated program. These various delays meant that the excavation of the ACS from the pipeways did not start until mid-2018 instead of the anticipated late-2017 timescale presented in ~~Table 3-1~~ **Table 1-8**.

It ~~is~~ **was** expected that the excavation work in the pipways ~~will~~ **would** finish mid-2019 and then the cell ~~will~~ **would** be closed. It ~~is likely~~ **was anticipated** that the cell will be closed before November but ~~this~~ **the** date would provide enough contingency to ensure that the works could be completed.

**However**~~, Caltex~~ Ampol ~~are proposing~~ **proposed** Condition B7B of the conditions of consent for SSD-5544 to extend the timescale allowed to complete the ACS management works **(MOD-6).** ~~Currently this~~ **The** condition ~~states~~ **stated** the following:

*B7B. Notwithstanding Condition B7A, the ACS management work shall not extend beyond 30 November 2019*

~~Caltex are seeking~~ **Ampol sought** development consent to modify this condition to extend the duration of ACS management works from 30 November 2019 to 31 March 2020. An amendment of Condition B7B ~~is~~ **was** required to allow the ACS management works to be completed within an approved timescale. Originally the ACS management works were expected to be completed by 30 April 2019. This deadline was conditioned under SSD-5544 MOD-2. The deadline was extended to 30 November 2019 under SSD-5544 MOD-5.

~~Until recently it~~ **It** was expected that this revised deadline would be met. The works to move ACS from the Site and bring them to the Containment Cell ~~have now~~ **had previously** been completed. In addition, the initial capping layers for the cell ~~have~~ **had previously** been put in place, effectively closing the cell. The location of the Containment Cell works area is shown on ~~Figure 1~~ **Figure 1-14.**




**Figure 1-14 SSD-5544 Modification 6**

The cap design ~~includes~~ **included** 1.6 m of soil and aggregate layers and two layers of geosynthetic including a Geosynthetic Clay Liner (GCL) and a High Density Polyethylene (HDPE), as shown in ~~Figure 2~~ **Figure 1-16**. There ~~will be~~ **were** connections between the capping and liner layers, in particular the upper and lower HDPE liners ~~will be~~ **were** welded together, thereby fully containing the waste within HDPE and other layers. A marker layer ~~will be~~ **was** included as a separation geotextile to reduce the risk of the cap being removed.

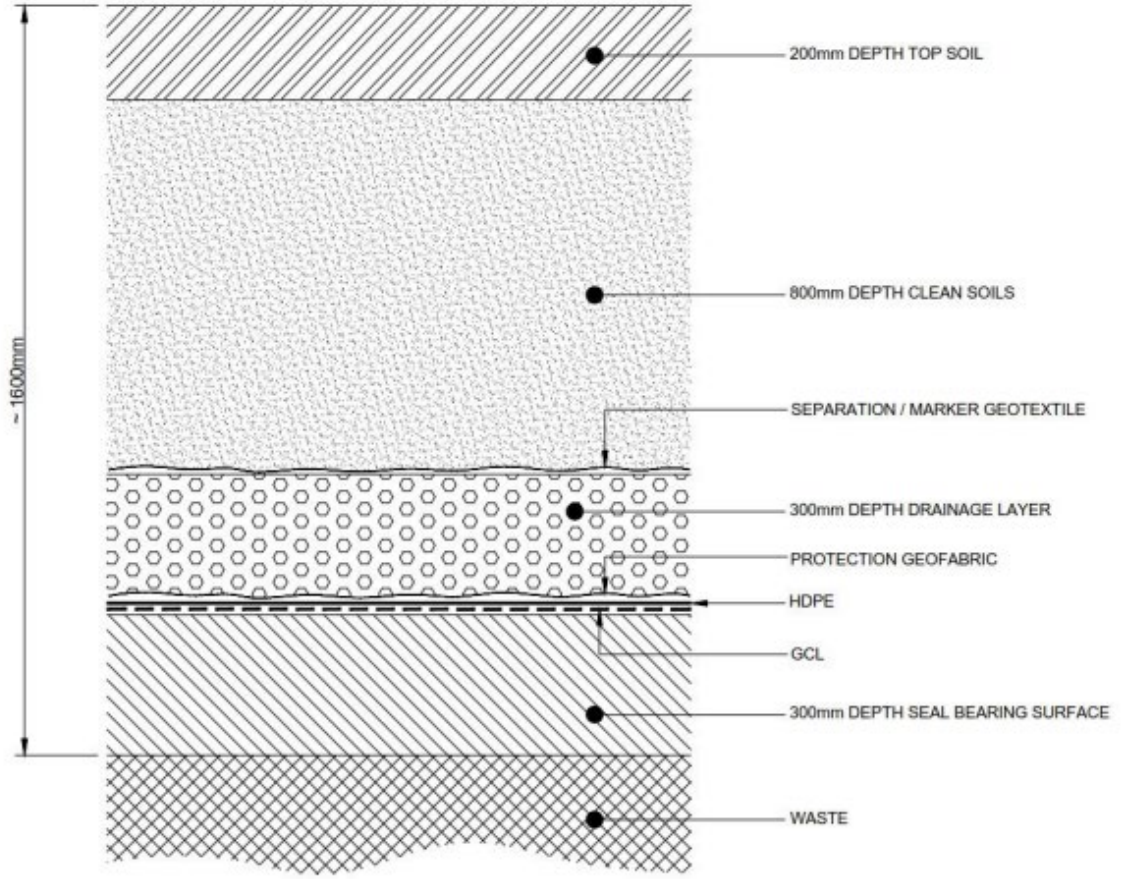



**Figure 1-15 Containment Cell Capping Layer (as shown in SSD-5544 MOD-2)**

The next capping layer to be installed ~~involves~~ **involved** placing an HDPE layer over the whole of the cell and welding it to the HDPE liner layers. This work ~~can~~ **could** only be completed by specialist contractors. Due to delays on another project the selected contractors ~~cannot~~ **were unable to** complete the necessary HDPE liner work until late November 2019 which in turn ~~means~~ **meant** that the remaining civil works to cap the Containment Cell (installing a drainage layer, marker layers, clean soil and top soil) ~~will~~ **could** not be completed until December or January (weather depending).

Consequently, the ACS works ~~will~~ **would** take longer than expected resulting in the works falling behind the anticipated program. It ~~is likely~~ **was anticipated** that the cell ~~will~~ **would** be closed before March 2020, however ~~Caltex~~ **Ampol** believes that this date would provide enough contingency to ensure that the works ~~can~~ **would** be completed.

Therefore, ~~Caltex are seeking~~ **Ampol sought** development consent to modify Condition B7B to the following:

*B7B. Notwithstanding Condition B7A, the ACS management work shall not extend beyond 31 March 2020 (emphasis added)*

No additional or amended physical works ~~are~~ **were** proposed as part of ~~this modification~~ **MOD-6**. The revised ACS management works program is provided in ~~Table 4 below~~ **Table 1-8 above**.

### Working Hours

The working hours ~~would be~~ **were** in line with the Conditions of Consent for SSD-5544 and SSD-5544 MOD-1, in particular Conditions C18, C19 and C20. In summary:

- Construction to be completed between 7.00 am and 10.00 pm seven days a week (Condition C18);
- High noise generating construction and demolition works would be confined to less sensitive times of the day, and shall not be undertaken on Sundays or public holidays or outside the hours of 7.00 am to 6.00 pm Monday to Saturday (Condition C19); and
- Construction outside those hours would only be undertaken in certain circumstances as defined in Condition C20.

Potential noise impacts related to the ~~ACS Modification~~ **MOD-2** works ~~are~~ **were** discussed further in **Chapter 11 Noise** and **Appendix A Noise Impact Assessment of the MOD-2 SEE**.

### Equipment and Plant

The following equipment and plant ~~would be~~ **was** required for the ~~ACS Modification~~ **MOD-2** works:

- Water truck
- Truck and dog
- Compactor
- Manitou Forklift
- Excavator
- Small Excavator (5 tonne)
- Dozer
- 360 degree 30 tonne crawler mounted back actor-excavator
- Hydraulic breaker
- Power mixer / Allu bucket
- Water bowser with spray feed
- Forklift
- Welding tools
- Wheel mounted front end loader
- Light weight wheel mounted tractor with narrow (600mm) back hoe)
- Tank and spray feed to apply nutrients.

### Workforce

The ~~ACS Modification~~ **MOD-2** works ~~would require~~ **required** approximately 50 contractors at the Site over the program with a maximum of 30 staff on Site at any one time, **refer to Table 1-9**. A number of these staff ~~are~~ **were** already based at the Site.

**Table 1-9 ACS Modification Workforce**

| Stage | Workforce Numbers |
|---|---|
| Cell Construction | 10 |
| Excavation and Transport of ACSs | 6 |
| ACS Preparation | 16 |
| Cell Filling & Management | 8 |

| Stage | Workforce Numbers |
|---|---|
| Cell Closure | 10 |

*Truck movements to and from the site have not been included in the workforce numbers.

For comparison, ~~Table 4-4~~ **Table 1-10** presents the workforce numbers for the other activities that ~~have~~ **were** previously, currently and are projected to take place at the Site

**Table 1-10 Kurnell Terminal Workforce**

| Workforce Numbers (Previous, Current and Projected) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2012[2] | 2013 | 2014[3] | 2015 | 2016 | 2017 | 2018 | 2019 |
| Caltex Employees | 410 | 400 | 450[4] | 40 | 45 | 45 | 45 | 45 |
| Contractors | 475 | 475 | 475 | 40 | 55 | 55 | 55 | 55 |
| Conversion works construction numbers | - | 140 | 140 | 100 | 90 | - | - | - |
| Demolition works construction numbers | - | - | - | 230 | 130 | 130 | - | - |
| Caltex Soil Remediation Facility | - | - | - | - | 10 | 5 | 5 | 5 |
| **ACS Modification works** | **-** | **-** | **-** | **-** | **-** | **30** | **30** | **-** |
| **Total** | **885** | **1,015** | **1,065** | **410[5]** | **330** | **265** | **135** | **105** |
| Maintenance Shutdown Periods[1] | 500 | 0[6] | 0[6] | 0[6] | 90 | 90 | 90 | 90 |
| **Total including Maintenance Activities** | **1,385** | **1,015** | **1,065** | **410** | **420** | **355** | **225** | **195** |

*1 Maintenance shutdown periods are periodic and for short time frames (8-12 weeks).*
*2 Employee numbers at the Site in 2012.*
*3 2014 will be the peak construction period. Additional personnel brought to the Site for the conversion works would be a maximum of 140 personnel.*
*4 Additional Caltex Employees in 2014 would be staff hired for terminal operations.*
*5 The large reduction in numbers between 2014 and 2015 follows the cessation of refining at the Site. The increase in workforce numbers between 2015 and 2016 represents a gradual stabilisation of the terminal operational workforce.*
*6 No maintenance shutdown periods will occur during 2013 and 2015*

### ~~ACS Modification~~ MOD-2 Works Traffic

The traffic generated by the ~~ACS Modification~~ **MOD-2** Works would depend on whether the hazardous ACS are successfully biopiled or disposed offsite.

Based on previous experience it ~~is~~ **was** likely that the biopiling process would be successful and as such the traffic movements associated with the ~~modification~~ **MOD-2** works ~~would incorporate~~ **were comprised of** a mix of construction plant vehicles and personnel movements. Under this scenario, traffic movements required for the ~~ACS Modification~~ **MOD-2** works ~~are~~ **were** likely to be minimal. Certain equipment ~~would be~~ **was** required to construct and manage the Containment Cell and the biopiling area. Equally, up to 30 personnel ~~would come~~ **came** to Site each day in private vehicles.

If the hazardous ACS need to be disposed offsite, then approximately 5,390 tonnes of Special Hazardous Waste would need**ed** to be transported to a licensed waste facility. This would conservatively require 180 truck and dogs or 360 truck and dog movements.

Access ~~would remain~~ **remained** the same as for the conversion ~~and demolition~~ works **(SSD-5544)** with access to the Site predominantly undertaken from Solander Street.

### Environmental Management

The ~~ACS Modification~~ **MOD-2** works ~~would be~~ **were** undertaken in accordance with the existing Demolition Environmental Management Plan (DEMP) and associated sub-plans where applicable. A large number of the measures and controls documented within the DEMP and its subplans ~~are~~ **were** relevant to the management of the ~~ACS Modification~~ **MOD-2** works. This ~~is~~ **was** particularly the case for the excavation of the ACSs from the pipeways.

The ACS biopile works and Containment Cell works constitute**d** additional activities beyond the scope of works covered within the DEMP. To address these additional activities two additional subplans to the DEMP ~~would be~~ **were** produced, one for the Containment Cell and one for the ACS biopile. These two subplans ~~would~~ reference other parts of the DEMP as necessary ~~but would~~ **and** also include specific measures for these works. These subplans ~~would be~~ **were** called:

- Containment Cell Management Plan
- ACS Biopile Management Plan.

### 1.3.4 Operation

The on-going management of the Containment Cell ~~would be~~ **was** incorporated into the Site's Operational Environmental Management Plan (OEMP). A relevant section of the OEMP ~~would be~~ **was** developed and ~~would include~~ **included** measures in line with the Landfill Guidelines. The OEMP ~~would include~~ **included** the post-closure management and monitoring measures for leachate, stormwater, landfill gas, odour, dust, litter and final cap integrity. Refer to ~~Figure 4-6~~ **Figure 1-16** for the Containment Cell Footprint layout during operation.

Leachate from the closed Containment Cell ~~would be~~ **was** treated at the Site's Wastewater Treatment Plant (WWTP), in accordance with EPL 837. Stormwater ~~would be~~ **was** directed to the existing stormwater catchments at the Site.

Following closure of the Containment Cell, post closure monitoring ~~would include~~ **included**:

- Regular inspections for deterioration of the capping's condition, including erosion, cracking, dead or stressed vegetation, ponding, differential settlement, slope stability, and damage to any pipes, drains and other works installed on the final capping;
- Repair and/ or replacement of portions of the final capping found to be damaged;
- Monitoring of leachate and rainfall volumes; and
- Groundwater monitoring.

The Containment Cell ~~would~~ **was** not **anticipated to** have an effect on the operation of the rest of the terminal.

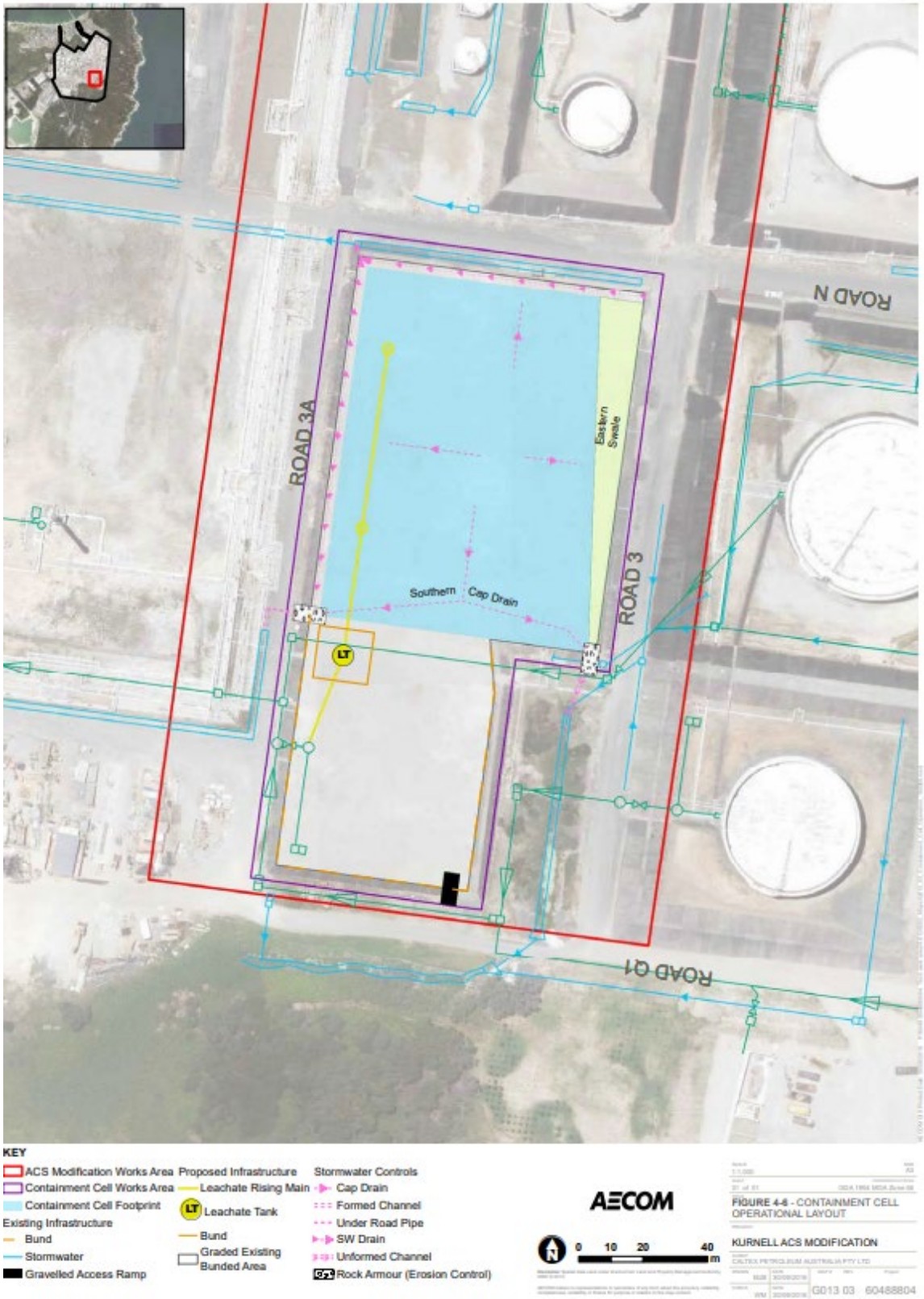



**Figure 1-16 Containment Cell Operation Layout**

## 1.4 The proposed modification: Supporting the continued viable, safe, reliable, and sustainable operation of the Kurnell Terminal

This section of the consolidated project description presents the works involved in the proposed modification. All works should be considered additional to the approved project.

### 1.4.1 Key elements of the proposed modification

**To support the continued viable, safe, reliable, and sustainable operation of the Kurnell Terminal, the proposed modification works involve:**

- **Stage 1 – Preparation works: Preparing the Project Area for proposed modification works.**
- **Stage 2 – Removal, relocation and/or augmentation of infrastructure, including:**
  - **Relocation and/ or augmentation of firewater system (FWS) and oily water sewer (OWS) systems and construction of new operational facilities, including three replacement warehouses in Zone 1 and 1A**
  - **Decommissioning and removal of certain non-operational assets, redundant structures and electrical assets**
- **Stage 3 – Remediation: Addressing legacy ground contamination in specific locations across the Site**
- **Stage 4 – Demobilisation: Demobilisation of construction and remediation equipment.**

**Depending on where different works are required across the Site, these stages may be completed sequentially or concurrently.**

**A summary of project elements requiring modification and how they relate to the approved project is provided in Table 1-11. A detailed description of the works is provided in Sections 1.4.2 to 1.4.5.**

**Infrastructure to be removed is presented in Figure 1-17, whilst infrastructure to be relocated or upgraded is presented in Figure 1-18. The proposed modification works would be undertaken within the Project Area.**

**The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of Refining Process Improvement Project (RPIP) Mountain and Source Area Excavation 5. RPIP Mountain would be regraded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability, whilst the bund at Source Area Excavation 5 would be removed during remediation activities.**

**All activities would adhere to the Kurnell Terminal permit to work system to maintain compliance with existing environmental and safety protocols.**

**Table 1-11 Modified project summary table**

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| **Stage 1** | **Project Area** | **Project Area delineation** | • **Prepare the Project Area for the proposed modification works required under Stages 2 and 3 and exclude other parts of the Site from workers completing these works as required.** |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| Stage 2 | OWS | Maintain location in Zones 2 and 3 | • Divert surface water runoff from potentially contaminated areas in Zone 2 to OWS system in Zone 1 via new OWS interception pits/ lines until Stage 3 remediation is complete<br>• Divert potential leachate from Asbestos Contaminated Soils (ACS) Containment Cell in Zone 2 to Zone 1 OWS system<br>• Install one new pump station and emergency storage tank in the south of Zone 2. Two indicative site options have been identified (refer to Figure 1-18) with specific siting selected during detailed design.<br>• Once Stage 3 remediation is complete in each specified area, isolate and remove redundant OWS infrastructure from identified areas in Zone 2 and Zone 3. Where complete removal is not feasible, existing pipes would be left in-situ. |
| | FWS | Maintain location in Zones 1, 2, and 3 | • Augment FWS infrastructure in Zone 1 and the south of Zone 2<br>• Excavate and install footings for the new firewater tank, pumphouse, and pipelines<br>• Construct new firewater tank and pumphouse within the FWS Relocation Area. Two indicative location options have been identified (refer to Figure 1-18) with specific siting selected during detailed design.<br>• Connect relocated firewater tank and pumphouse to existing FWS via new pipework<br>• Commission new firewater tank, pumphouse, and pipework to confirm operation of amended FWS<br>• Isolate and remove redundant FWS infrastructure from Zones 2 and 3 when appropriate. |
| | Electrical assets | Maintain location in Zone 2 and 3 | • Isolate and remove redundant electrical assets in Zones 2 and 3, including five substations. |
| | Structures | Maintain location in Zone 2 and 3 | • Construct new ‘fit for purpose’ warehouse to house maintenance supplies and activities in Zone 1<br>• Construct new Oil Spill Equipment Storeroom within Zone 1<br>• Construct new storage shed to house boats and emergency aquatic spill response equipment in Zone 1A<br>• Demolish identified structures in Zones 2 and 3. |

| Stage | Element | Approved project | Modified project |
|---|---|---|---|
| **Stage 3** | **Remediation** | **Removal of ACS from pipeways and either containment onsite or offsite disposal** | • **Remediate identified land in Zone 1 to reduce operational site safety risks (refer to Figure 1-20)**<br>• **If required, remediate land in Zone 1 where infrastructure is proposed to be relocated or augmented**<br>• **Undertake targeted remediation in Zones 2 and 3 (refer to Figure 1-20)**<br>• **Return excavated areas to existing ground levels, with the exception of Refining Process Improvement Project (RPIP) Mountain (which would be regraded) and removal of the bund at Source Area Excavation 5.** |
| **Stage 4** | **Demobilisation** | **Demobilisation of construction equipment.** | • **Demobilisation of construction and remediation equipment.** |

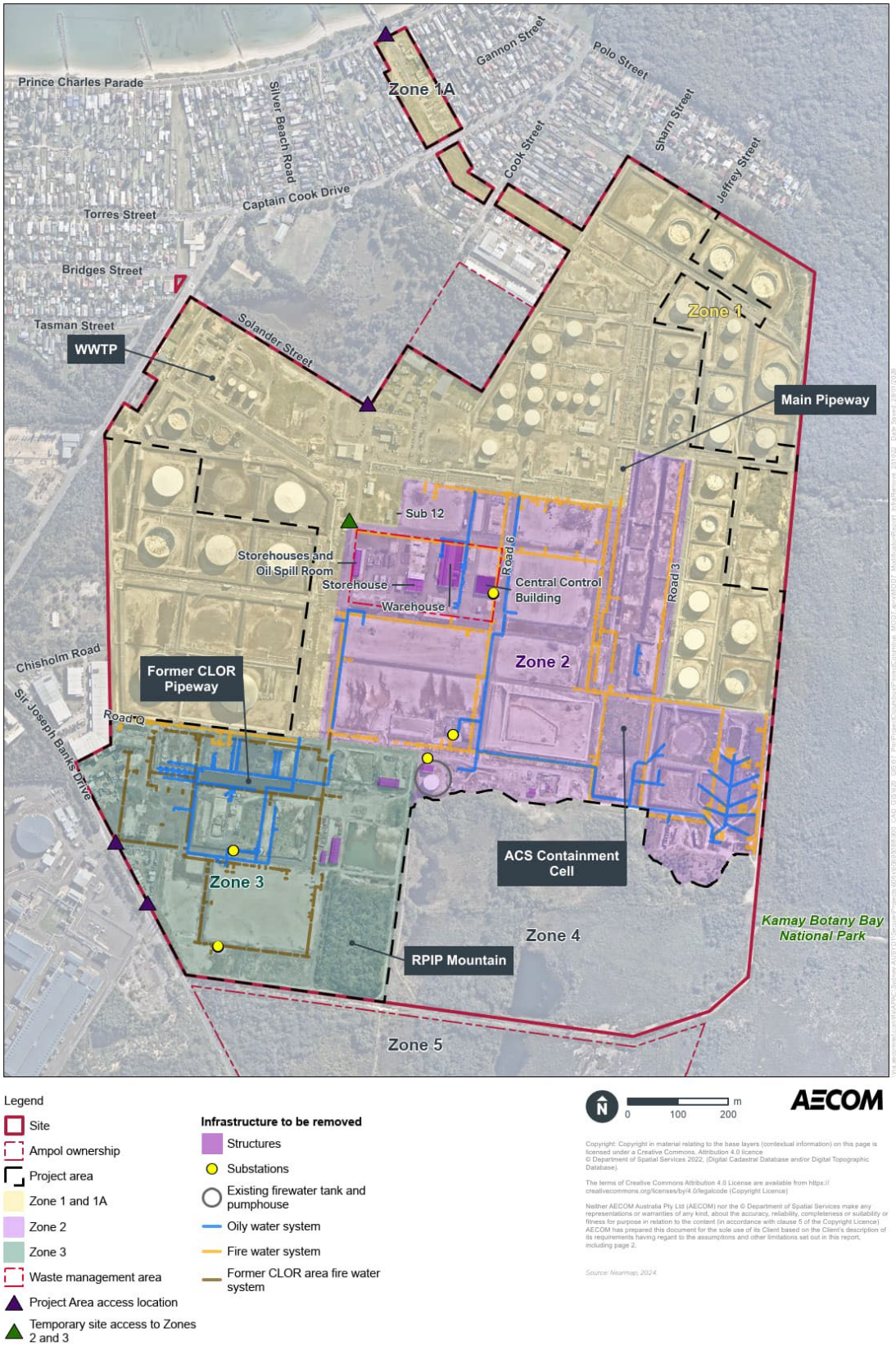



**Figure 1-17 Proposed modification – Infrastructure to be removed (Stage 2)**

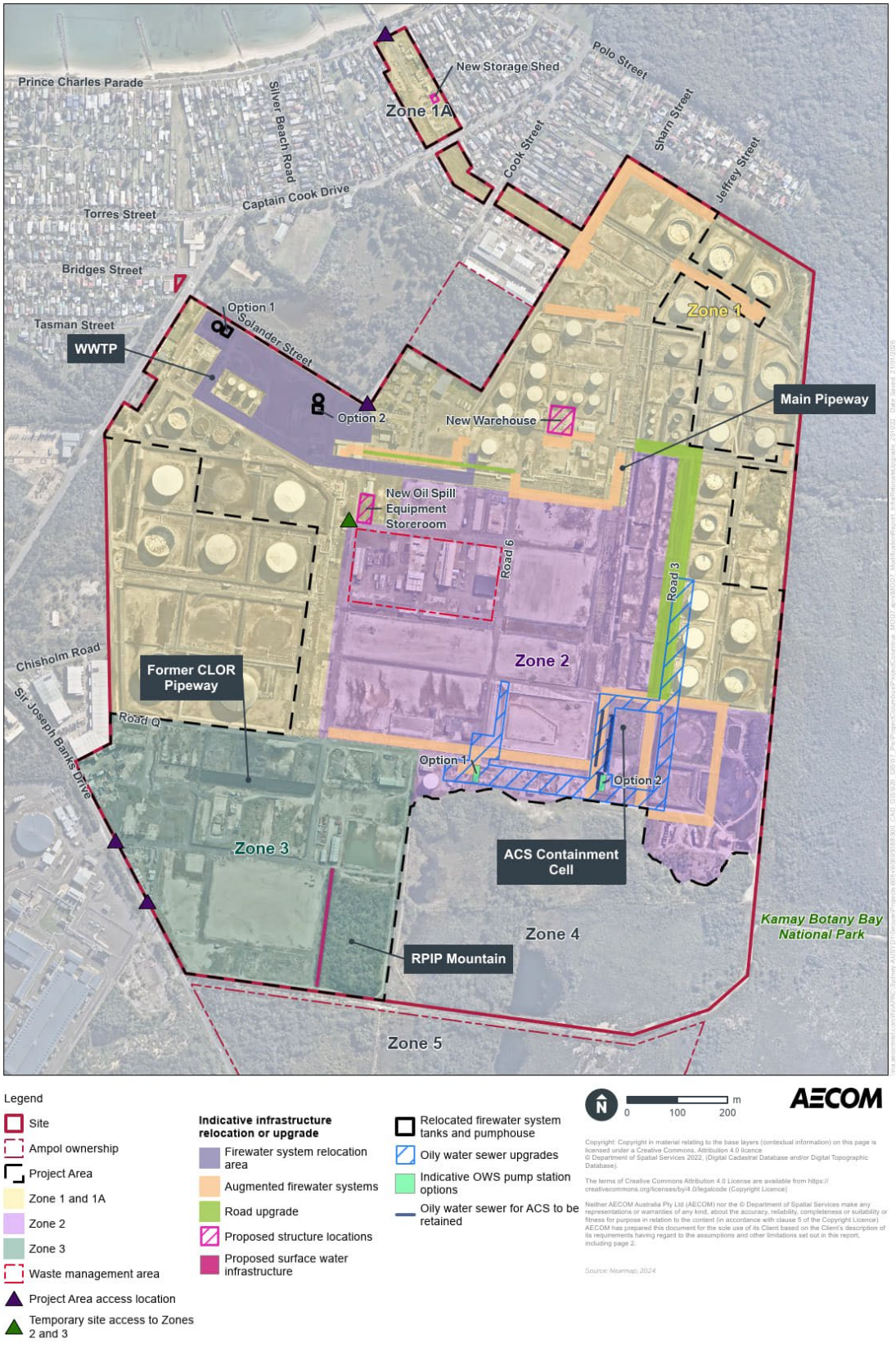



**Figure 1-18 Proposed modification – Infrastructure to be relocated/ upgraded (Stage 2)**

### 1.4.2 Stage 1 – Preparation works

**In order to prepare the relevant parts of the Site for the proposed modification works the following activities would be completed:**

- **Installation of fencing and signage to separate terminal activities and parts of the Site outside the Project Area from where the proposed modification works would occur**
- **Establishment of temporary facilities (e.g. site offices) and parking for construction workers within the Site**
- **Removal of vegetation, where permitted and required**
- **Installation of temporary erosion and sediment controls for the proposed modification works**
- **Establishment of access to services/ utilities**
- **Service locating would be undertaken across the Project Area to confirm the location and type of active services.**

**Where necessary, these activities are discussed in more detail below.**

#### Establishment of fencing and signage

**Prior to the proposed modification works commencing, cyclone fencing (or suitable equivalent) would be installed where necessary to isolate the Project Area from the terminal operations and vegetated areas to the south. Gates would be installed at appropriate locations (e.g. between Zone 1 and Zone 2), to allow access for contractors and Ampol staff during the modification works and to allow for the movement of staff or emergency services across the Site. This fencing would be used to exclude contractors from certain parts of the Site where modification works are not proposed.**

**Some parts of Zones 1, 2, and 3 would also be excluded from the Project Area. These exclusion zones would be established to either protect key infrastructure or sensitive land uses (e.g. ACS Containment Cell).**

#### Establishment of temporary facilities and access

**A temporary access point (and temporary project office) would be established at the proposed entrance for Zones 2 and 3, as shown in Figure 1-17 and Figure 1-18. The entrance for Zone 2 would be to the south of the existing terminal gatehouse at the border of Zone 1 and Zone 2. The entrance for Zone 3 would be at the existing Site access point off Sir Josephs Banks Drive.**

**Each entry point would be used at different times during construction depending on the staging and location of work within the Site. The following temporary facilities would be located close to the entrance being used as the primary access point at any given time:**

- **First aid office**
- **Stores**
- **Personnel decontamination area**
- **Amenities**
- **Wheel washing facilities.**

**Other temporary facilities similar to those listed above may also be located throughout Zones 1, 2 and 3 as needed to allow the proposed modification works to occur.**

**Zone 1A would be accessed via the existing access point on Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.**

### Removal of vegetation

**Limited native vegetation is present within the Project Area, and the vegetation that is present is heavily degraded due to historic clearing and current land uses.**

**Vegetation clearance would occur, where required, to allow for the relocation of infrastructure and remediation.**

### Establishment of erosion and sediment controls

**Erosion and sediment controls would be established, as required, across the Project Area in accordance with 'The Blue Book' *Managing Urban Stormwater - Soils and Construction Volume 1 and 2*** (Landcom, 2004) **and other specific controls as required. These controls would be checked periodically throughout the delivery of the modification works and if necessary, changed or revised. The objective of the temporary erosion and sediment controls would be to avoid or mitigate the mobilisation of sediment and contamination in onsite surface water flows and to prevent excess sediment and contamination from entering the downstream offsite receiving environment.**

### Service location

**Service locating would be undertaken across the Project Area to confirm the location of and identify active services. If necessary additional service investigations would be completed ahead of ground disturbance works commencing alongside consultation with utility companies and/or Ampol staff.**

## 1.4.3 Stage 2 – Removal, relocation and/or augmentation of infrastructure

**Following preparation works, certain structures and infrastructure would be:**

- **Demolished and/or removed from Site (Figure 1-17)**
- **Removed from Zones 2 and 3 (Figure 1-17) and relocated or replaced in Zones 1 or 1A (Figure 1-18); or**
- **Augmented in Zone 1 to support the removal and relocation of related infrastructure (Figure 1-18).**

**The removal of the above ground elements of the infrastructure would occur first, followed by the removal of at grade and subsurface infrastructure. At grade and subsurface infrastructure would only be removed where required (e.g. concrete slabs may be retained for construction; geotechnical or dust management reasons). Where structures or infrastructure need to be relocated, new fit for purpose and/or upgraded infrastructure would be provided.**

**The subsequent sections detail the proposed removal, relocation, and/or augmentation works.**

### Oily water sewer

**The purpose of the OWS is to capture, manage, and treat potentially contaminated stormwater and wastewater from the terminal before directing it to the onsite Waste Water Treatment Plant (WWTP) for treatment and subsequent discharge in line with EPL 837. The OWS predominantly services Zone 1 but it also services parts of Zone 2 and Zone 3. In particular, the OWS has a connection to the wastewater sump from the ACS Containment Cell.**

**The proposed modification works include the removal of the OWS (including all pits and pipework) from Zones 2 and 3 (Figure 1-17) except for a connection to the ACS Containment Cell wastewater sump and a proposed OWS diversion line from west of the ACS Containment Cell toward Zone 1 (Figure 1-18).**

**The works to remove the redundant sections of the OWS in Zones 2 and 3 would be undertaken progressively so that the OWS can help support the remediation activities described in Section 1.4.4. During remediation activities, surface water could potentially enter excavations where remediation activities are occurring and become contaminated. Potentially contaminated water from surface water flows or excavations, would be sent to the OWS and on to the WWTP for treatment. Potentially contaminated surface water flows would be captured by the existing OWS until a time that contamination sources are removed and soil remediation and treatment is undertaken in each area (described in Section 1.4.4). As such, some sections of the OWS in Zones 2 and 3 may only be removed following certain remediation activities (Stage 3).**

**Prior to the removal of the relevant sections of the OWS from Zones 2 and 3, the surface water flows from areas serviced by the OWS would be either:**

- **Intercepted or diverted to the remaining sections of OWS**
- **via modifying interception infrastructure (such as existing pits, manholes, storages) or the installation of temporary pipes, pits, and pump stations; or**
- **Captured/ contained and transported directly to the WWTP.**

**Where the relevant area is unlikely to result in contaminated surface water (e.g. due to remediation activities being complete), these surface water flows would be redirected to the Site's existing SWS.**

**To assist with the transition of parts of the Site from the OWS to the SWS and in order for the OWS to support remediation activities, the OWS would be augmented in the south eastern part of Zone 2. A new permanent pump station would be installed to support the upgraded OWS in capturing flows and directing them towards the WWTP. The new pump station would operate intermittently, following periods of heavy rainfall. In addition, an emergency storage tank would be installed adjacent to the pump station to provide additional storage in case of pump failures or a loss of power. The pump would have a well of 20 kilolitres (kL) in capacity, whilst the emergency storage tank would have a volume of 130 kL.**

**The pumps at the pump station would be installed in a sealed chamber below the existing ground level, at a minimum water level and therefore permanently submerged. The emergency storage tank would be installed next to the pumps below ground. A benched pit[1] of around 12 m by 31 m would be required. Excavations of approximately 4.5 mbgl would be required, based on a 4 m deep pit, and an additional 0.5 m concrete slab, which would be installed at the base of the pit (refer to Figure 1-19). Two options for the location of the new pump station and emergency storage tank are being considered, as shown in Figure 1-18. Only one option would be constructed, which would be confirmed during detailed design.**

**The selected option would be connected to the existing OWS in Zone 1, to the north west of the ACS Containment Cell. The pipeline would lie above and belowground, depending on the topography of the land and the presence of roads; the pipeline would be installed belowground where it crosses the road. For belowground sections, excavations of up to 3.5 mbgl would be required. For aboveground sections, 0.5 m deep footings would be required every 4 m (refer to Figure 1-19).**

**The OWS that services the ACS Containment Cell would not be removed. Leachate would continue to be collected by the existing sumps and directed to the OWS in Zone 1 via the retained OWS.**

[1] **The pit itself would be 5 m by 25 m. Benches of about 3 m either side of the pit have been assumed.**

**Following remediation (described in Section 1.4.4), the land within Zones 2 and 3 would no longer need to be serviced by the OWS. At this time, remaining OWS infrastructure would be removed from Zones 2 and 3, except for ACS Containment Cell connections and diversions. The removal of OWS infrastructure may require excavation work of up to 3 mbgl for removal of below ground pipework and pits (refer to Figure 1-19). Where complete removal is not feasible due to proximity to existing infrastructure or other considerations (e.g. geotechnical), existing pipes and/or pits would be cleaned, infilled with stabilised sand, cement slurry, or equivalent, and left in-situ.**

**Once removed, redundant pipes and materials from the OWS would be sent offsite for recycling or disposal based on material type and waste classification.**

### Firewater systems

**The FWS at the Site currently operates via a network of fire hydrants, monitors, fixed and semi-fixed foam systems, and underground and aboveground firewater pipelines running through the Site, as well as a firewater tank and pump system, housed in a pumphouse in the southern part of the Zone 2. Following the removal of refinery infrastructure in Zones 2 and 3, the FWS within these zones is no longer required.**

**In order to align the FWS with the current terminal footprint, the FWS infrastructure in Zones 2 and 3 would be augmented or removed and, where necessary, replaced or augmented in Zone 1. These works would include:**

- **Installation of new firewater pipelines, relocated pumps, and the construction of a new three megalitre (ML) firewater tank in the FWS Relocation Area in Zone 1 (Figure 1-18)**
- **Augmentation of FWS infrastructure within Zone 1 and the south of Zone 2 (Figure 1-18)**
- **Commissioning of the upgraded FWS to confirm it meets operational requirements**
- **Isolation, disconnection, and removal of redundant FWS infrastructure in Zones 2 and 3 (Figure 1-17).**

**The FWS tank and pump system/ pumphouse, currently located in the south of Zone 2, would be relocated to one of the two siting options (refer to Figure 1-18) within the FWS Relocation Area in Zone 1. Construction would be limited to one option, selected as part of detailed design. Works to relocate the FWS tank, pump system, and related pipework to a location within the FWS Relocation Area would last approximately eight months. These works would include:**

- **Excavation to a depth of 1 mbgl to construct new foundations for the firewater pipework along the length of the pipelines, the firewater tank, and the pumphouse. The firewater tank would require a base of 380 $m^2$ (diameter of 22 m) and the pumphouse would require a base of 11 m by 18 m (refer to Figure 1-19)**
- **Construction and installation of the new FWS infrastructure:**
  - **The new tank would be approximately 12 m in height and 22 m in width and built in accordance with AS 2304-2011 *Standard Water storage tanks for fire protection systems***
  - **The pumphouse would be built like-for-like with its existing counterpart, with three adjoining walls of around 5 m in height**
  - **Existing pumps would be relocated and installed in the new pumphouse.**
- **Connection of the existing and new firewater infrastructure (including the connection of pipes from the new tank to the main header).**

**Where required, the FWS Relocation Area would be remediated prior to relocation of infrastructure. Refer to the approach set out in Section 1.4.4.**

**To minimise the downtime of the FWS, new lines would be constructed parallel to the existing lines. The process to connect the new infrastructure with the existing system would occur during a FWS shutdown period, and last approximately two weeks. FWS shutdown periods are planned, permitted, and managed in line with existing terminal procedures.**

**Augmentation of existing FWS infrastructure would involve replacement of some of the existing pipes with pipes of a larger diameter (between 400 to 600 mm diameter). Where these pipes are underground, excavations of up to 1 mbgl would be required to access and replace the infrastructure (refer to Figure 1-19).**

**The redundant FWS pipework through Zone 2 would be disconnected and removed. The FWS in Zone 3 has already been disconnected from the main system but has been left in position. The pipes would be removed, and excavations up to 1 mbgl may be required to remove the pipework, footings, and foundations (refer to Figure 1-19).**

**Once removed, redundant pipes and materials from the FWS would be sent offsite for recycling or disposal based on material type and waste classification.**




**Figure 1-19 Excavation and ground disturbance**

### Electrical assets

**During the closure of the Kurnell Refinery, high voltage electrical substations, power distribution rooms, and electrical infrastructure (such as buried cables) were redesigned to meet the requirements of the terminal. Following an electrical audit, existing substations/ switchboard rooms in Zones 2 and 3 have been deemed to be no longer required and are therefore proposed for demolition.**

**All above-ground redundant electrical assets in Zones 2 and 3 would be decommissioned and removed (Figure 1-17). Below ground cables would be de-energized, and either retained or removed in accordance with AS/NZS 3000:2018 *Electrical installations*.**

**Once removed, redundant electrical cables and materials from the electrical assets would be sent offsite for recycling or disposal based on material type and waste classification.**

### Structures

**A number of buildings and other structures are located within Zones 2 and 3. These include small storage structures and larger buildings such as the storehouse, main warehouse, central control building, and the Oil Spill Room. Many of these buildings are no longer fit for purpose for the terminal and are relatively isolated from the terminal footprint. On this basis, Ampol are proposing to remove these structures as part of the proposed modification works.**

**Each structure proposed for demolition would be demolished to ground level and, where possible, their slab, foundations, and footings removed. The remaining foundations of buildings and structures previously demolished as part of the approved project within Zones 2 and 3 would be also excavated and removed where practicable. These activities would require excavation works up to 2 mbgl, depending on depth of footings (generally focused within 1 mbgl) (refer to Figure 1-19).**

**Once removed, building waste materials from the demolition would be sent offsite for recycling or disposal based on material type and waste classification. Concrete would be crushed within the Waste Management Area and where appropriate, used as backfill during Stages 3 and 4 to reduce the soil deficit and to improve the geotechnical stability of the land. Concrete waste that cannot be used would be taken offsite for sale, recycling or disposal.**

**A new 'fit for purpose' warehouse would be constructed within Zone 1 to house maintenance supplies and small-scale terminal maintenance activities currently undertaken in part of the oversized existing main warehouse building in Zone 2. This new warehouse would be approximately 32 m by 25 m, with an awning of 35 m by 10 m, and up to 8 m tall. The new warehouse would also include space adjacent to the structure for semi-trailer parking and an extension of the wet store area of 25 m by 10 m. The proposed location for the new warehouse is to the north of Pipeway A, as shown on Figure 1-18.**

**A new Oil Spill Equipment Storeroom, approximately 18 m by 14 m and up to 8 m tall, would also be constructed in Zone 1. The location of the new Oil Spill Equipment Storeroom would be adjacent to the existing Firehouse near Substation 12, as shown on Figure 1-18.**

**A new storage shed would be constructed in Zone 1A to store boats and emergency aquatic spill response kits. This shed would be approximately 18 m by 14 m and no more than 4 m tall. The location of this shed is shown on Figure 1-18.**

**Construction of the new warehouse, Oil Spill Equipment Storeroom, and storage shed would involve excavation and installation of foundations of up to 1 mbgl, laying a slab, installation and connection to Site utilities, construction of the structure, and internal fit out (refer to Figure 1-19).**

### Waste management

**Redundant infrastructure would be cleaned, processed, and stored prior to reuse or removal from Site. Infrastructure and waste materials would be tracked in line with a Material Tracking Plan (see measure C5 in Appendix C.**

**A waste management area for surface and subsurface materials removed (e.g. concrete, metals/ reinforcement bar, drainage lines, electrical equipment) would be established in an area shown**

**on Figure 1-17 and Figure 1-18. Once material is removed or excavated it would be sorted and stockpiled separately in this area prior to processing. The waste management area would remain for the duration of the modification works.**

**It is estimated that the proposed modification would involve the processing of approximately 40,000 $m^3$ of concrete predominantly from slabs and asphalt. As described above, concrete would be crushed within the waste management area and where appropriate, used as backfill during Stage 3 – Remediation to reduce the soil deficit and to improve the geotechnical stability of the land. Concrete waste that cannot be used would be taken offsite for sale, recycling, or disposal.**

### Backfill

**The proposed modification would maintain the existing landform and surface levels at the Site, with the exception of RPIP Mountain and Source Area Excavation 5.**

**The removal of underground assets (e.g. pipes, foundations etc.) may create a void which would need to be backfilled to maintain the existing landform. In addition, the removal and offsite disposal of asbestos contaminated soils from targeted areas within the Project Area may also require additional material to return the ground to its current landform.**

**Backfill material may need to be brought to Site. Where soils are brought from other sites, the material would be classified as virgin excavated natural material (VENM), excavated natural material (ENM) as defined by the ENM Order 2014, material covered under an NSW EPA specific Resource Recovery Order (RRO), or extractive materials sourced from legal quarries (not considered a waste as defined under the POEO Act). The material would be managed in line with the RRO and reused onsite under an NSW EPA approved Resource Recovery Exemption. The imported fill would be stockpiled and tracked separately to the materials that have come from onsite excavations. Imported fill would be tested/ validated to confirm it is suitable for reuse on the Project Area.**

### Contamination management

**Contaminated soils encountered during Stage 2 would be managed in line with the processes outlined in Section 1.4.4. If contaminated liquids are encountered (for example potentially where pipework is being removed), appropriate containment/ spill mitigation measures would be employed as part of the approved Spill Response Plan (see measure B4 in Appendix C) and the Soils and Water Management Plan (see measure C18). Light non-aqueous phase liquid (LNAPL) and/or impacted water would be directed to the WWTP or contained and disposed offsite by a licensed contractor as discussed below.**

## 1.4.4 Stage 3 – Remediation

### Background

**Significant soil and groundwater investigations have been conducted on the Site since the 1990s. An Environmental Site Assessment Data Gap Assessment** (WSP, 2018) **was undertaken to reduce data gaps within the former refinery process unit areas, pipeways of the site and redundant tank bunds. Additional investigations conducted between 2018 to present have been completed to understand the type, location, concentration, depth, volume, and risk associated with contaminants of potential concern (COPC). Primary COPCs in soils and groundwater at the Site comprise the following:**

- **Asbestos**
- **Petroleum related hydrocarbons (PHC)**
- **Per- and polyfluoroalkyl substances (PFAS).**

**Two types of sources of contamination across Zone 1, 2, and 3 which are considered include:**

- **Primary sources: Including current and historic infrastructure (such as containers used for the bulk storage or transport of chemicals) and current and historic site activities (such as refuelling or firefighting training)**

- **Secondary sources: Including soil and groundwater (including light non-aqueous phase liquid, or LNAPL) impacted by PHC, chemical solvents, and other chemicals.**

**In 2019, Ampol collated the ground investigation works completed to that point and developed the Kurnell Remediation Action Strategy (RAS)** (Ampol, 2019)**, which identified areas of potential ground and groundwater contamination, and provided information on areas identified for remediation within the context of continued terminal use. Since 2019, additional ground investigation and remediation activities have been completed to further define and manage areas impacted by contamination. Refer to the RAP (Appendix E) for further information.**

### Conceptual Remedial Action Plan

**A Conceptual RAP was prepared to support the proposed modification, and to:**

- **Provide a summary of historical environmental characterisation studies**
- **Identify the scope of necessary remedial activities potentially required**
- **Identify the remedial strategy(ies) to be adopted**
- **Document the proposed remediation methodology**
- **Establish validation criteria relevant to the commercial/ industrial land use and detail the validation program as part of a future Validation Sampling and Analysis Quality Plan (SAQP).**

**The Conceptual RAP was submitted to the Department of Planning, Housing, and Infrastructure (DPHI) with the Modification Report, and placed on public exhibition from Thursday 10 July 2025 until Friday 1 August 2025. In accordance with feedback received by DPHI, the Conceptual RAP has been converted to a RAP. Further information on the RAP is provided below.**

### Remedial Action Plan

**The RAP presents a remediation strategy for the Project Area that addresses legacy contamination issues resulting from previous refinery activities, providing an overview of the remedial activities required for both the proposed modification and the future State Significant Development (SSD) application for the Kurnell Energy and Industry Precinct project (SSD-86799993) before focusing in more detail on the proposed modification Stage 3 activities.**

**Whilst the RAP presents a broader remediation strategy for the Project Area, development consent under this modification application is only sought for targeted remediation in Zones 2 and 3. Activities relating to capping activities have been removed from the scope of this proposed modification. Nevertheless, in order to present a holistic and transparent remedial strategy for the Project Area, capping is discussed as a future remedial strategy in the RAP. The works completed under the RAP would be complemented by the future KEIP RAP, and together the two documents would facilitate works to make the Site suitable for commercial/ industrial use.**

**The RAP has been prepared in accordance with the NSW EPA Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites** (NSW EPA, 2020)**. The RAP would be used to inform one or more Remedial Work Plans (RWP(s)), which would be produced following further investigations within the Project Area and receipt of relevant conditions of consent for Modification Application SSD-5544 MOD-7 (if consented). The RWP(s) would be developed for review and input from project team (including principal contractors, contractors, and sub-contractors), the Site Auditor, and Ampol. The differences between the RAP and the RWP(s) are presented in the RAP in Appendix E.**

**The RAP has been reviewed by an EPA accredited Site Auditor (Site Auditor). and their Interim Audit Advice is provided in Appendix E1. The RWP(s) would also be reviewed by an EPA accredited Site Auditor prior to commencement of remedial activities, and Site Auditor sign-off would be provided in the form of a Site Audit Statement and Site Audit Report. This would be limited to the Audit Boundary, which excludes two portions of the Project Area: areas in Zone 1 that would continue to operate as the Kurnell Terminal and the Asbestos Contaminated Soil (ACS) Containment Cell, located in the east of Zone 2. Validation requirements are further discussed in the following sections.**

## Remediation approach

### *Overview*

**Remediation and/ or management of ground contamination would be required in Zones 1, 2, and 3, where:**

- **LNAPL is present; and/or**
- **Where soil and groundwater (expressed via soil vapour) quality does not currently meet the human health-based commercial/ industrial land use standard, as defined by the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, amended 2013 (ASC NEPM)** (NEPM, 2013)

**Where ground disturbance is proposed within Zone 1, excavated material that is found to be contaminated would be managed in accordance with the terminal's existing OEMP** (Ampol, 2021)**. Excavation works in Zone 1 would be limited to shallow excavations related to installation of footings and foundations, and targeted remediation of asbestos. Excess soil or fill material generated during these works would be categorised and either disposed offsite to landfill (consistent with the OEMP) or potentially incorporated into Zone 2 and 3 remediation activities.**

**A combination of remediation technologies for soils is preferred at the Project Area to achieve the remediation objectives. These are as follows:**

- **Primary source removal: Removal of remaining OWS in Zones 2 and 3. Following this, all potential primary sources of contamination within the Audit Boundary would have been removed.**
- **Secondary source remediation: Excavation of impacted soils, followed by either onsite treatment or offsite disposal to landfill, consistent with the preferred soil remediation hierarchy:**
  - **Onsite treatment via biopiling, for soils contaminated with elevated levels of hydrocarbons**
  - **Offsite disposal would be considered where contaminated soils cannot be treated and reused or managed in situ. This would include soils contaminated with hydrocarbons that cannot be biopiled, PFAS contaminated materials that are not able to be stabilised, and ACS material in Source Area Excavations 6 and 7.**

**Whilst biopiling would target hydrocarbon contaminants within soils, friable asbestos has been identified to be present within fill soils at the Site. As such, biopiling would be undertaken under appropriate occupational health and safety controls to prevent the incidental liberation of asbestos fibres into the atmosphere.**

**A description of the remediation technologies required for the proposed modification works and relevant environmental controls is provided the sections below.**

**Where soil in the Project Area has been assessed as not requiring remediation, this is because the soil and groundwater quality either:**

- **Already meets the commercial/ industrial standard, as defined by the ASC NEPM** (NEPM, 2013)**; and/ or**
- **The conditions either do not pose a risk to human health or the environment, or can be managed and mitigated by implementation of existing environmental management procedures for the Site.**

**Stage 3 (Remediation) would commence concurrently with Stage 2 (Removal and/ or relocation of infrastructure). Refer to the indicative program in Table 1-13.**

### *Excavation*

**Excavation would be required for infrastructure works (i.e. during removal of existing infrastructure, and construction of new or relocated infrastructure) and for targeted remediation in Zones 1, 2, and 3. Infrastructure to be removed is presented in Figure 1-17, whilst infrastructure to be relocated or upgraded is presented in Figure 1-18. The seven areas of targeted remediation are shown on Figure 1-20.**

**Based on the analytical data obtained from previous site investigations, the soil remediation works would be limited to less than 4.9 mbgl and would be generally focused within 1 mbgl. For soils contaminated with elevated levels of hydrocarbons, depth of excavation has been determined through review of the depth of the local groundwater table. Excavation 7 would require surface excavation, to a depth of 0.15 mbgl, only.**

**The total volume of excavated soil from infrastructure works and targeted remediation activities is presented in Table 1-12.**

**As presented in Appendix E, the volume of hydrocarbon, asbestos and/or PFAS impacted soil that would require excavation and either treatment or offsite disposal has been estimated at 186,270 $m^3$. This area of contamination may require "chasing" during remediation works, which involves the process of continuing to remove/ excavate contamination that extends beyond the initially identified areas. An allowance for contingency excavation volume has been included. Depending on the extent of data available, this has been based on nearby contamination results, or a percentage allowance based on the base excavation volume. Therefore, for the purpose of the assessment within this Modification Report, an approximate contingency soil volume of 95,400 $m^3$ has also been included for assessment (i.e. a subtotal of 281,670 $m^3$).**

**Table 1-12 Infrastructure works and targeted remediation excavations**

| Name | Excavation volume ($m^3$) | Contingency excavation volume ($m^3$) | Total volume ($m^3$) |
|---|---|---|---|
| **Infrastructure works** | | | |
| Zone 1 (Infrastructure construction works)<br>Zone 2 and 3 (OWS removal and augmentation)<br>Zone 3 (RPIP OSD) | 53,700 | 5,370 | 59,070 |
| **Source Area Excavations** | | | |
| Source Area Excavation 1 (PHC) (contingency) | Nil | 18,000 | 18,000 |
| Source Area Excavation 2 (PHC) | 49,250 | 39,550 | 88,800 |
| Source Area Excavation 3 (PHC, CHC) | 24,640 | 19,180 | 43,820 |
| Source Area Excavation 4 (PFAS) | 2,800 | 3,360 | 6,160 |
| Source Area Excavation 5 (PFAS) | 10,000 | 5,000 | 15,000 |
| Source Area Excavation 6 (ACS) | 32,500 | 16,250 | 48,750 |
| **Other excavations** | | | |
| Excavation 7 (ACS) | 1,380 | 690 | 2,070 |
| Total | 186,270 | 95,400 | 281,670 |

Abbreviations: ***OSD – onsite detention system***
***PHC – petroleum hydrocarbons; CHC – chlorinated hydrocarbons***
***PFAS – per and poly-fluoroalkyl substances; ACS – Asbestos Contaminated Soil***

**Once contaminated soils are excavated, soil sampling and analytical testing would occur within the excavations to validate the remaining soil against a pre-determined validation criteria and in accordance with the specific Validation SAQP.**

**Impacted soils to be treated ex-situ would be excavated and stockpiled based on visual and olfactory evidence, field screening, and laboratory data. Contaminated soils would be stockpiled separately within the waste management area (refer to Figure 1-20) depending on the type and concentrations of contamination present and the remediation technology required.**

**Where it is not feasible to remediate the soils with the approaches listed above, they would be disposed offsite untreated, and in accordance with the *Waste Classification Guidelines*** (NSW EPA, 2014a) **to an appropriately licensed facility.**

**Figure 1-20 shows the indicative locations where the excavated soils would be stored, managed, and treated.**




**Figure 1-20 Targeted remediation activities (Stage 3)**

*Biopiling*

**Following testing, soils requiring remediation due to hydrocarbon impacts, but not impacted to an extent that would make biopiling impractical due to gross contamination, would be remediated by biopiling. This would be undertaken to the extent practicable, with adherence to asbestos management requirements.**

**Under normal conditions, naturally occurring bacteria in the ground slowly degrade hydrocarbon contamination to compounds that do not pose a risk to human health or the environment. Biopiling promotes and facilitates this natural process (through the addition of nutrients etc.) expediting the remediation process. Based on ground investigations, it is assessed that biopiling would be suitable for the remediation of soils from Excavations 1 to 4.**

**Biopiles would be established within areas shown on Figure 1-20. These areas have all historically been utilised for waste management at the Site. As such, they are connected to the Site's OWS, and have electricity connections. Two of these areas have concrete slabs (Zone 2 former flare geobag area, and Zone 3 waste management slab). The Zone 3 former land farm does not have a slab present. In this area, prior to setting out the biopiling areas, this area would be prepared with a base clay or high-density polyethylene (HDPE) liner. A compacted sand base would be established over the liner to enable adequate air exchange into the biopile.**

**When biopiling, nutrients or other soil amendments would be added and placed in the biopile area. The biopiles would be covered with an impermeable material to reduce stormwater ingress and dust creation. Measures to minimise the creation of dust and odour emissions during the construction of the biopiles would include:**

- **Covering surfaces**
- **Minimising exposed area**
- **Wetting down exposed soils**
- **Treatment of extracted hydrocarbon vapours**
- **Dust monitoring or observations.**

**The total height of the biopiles would not exceed 3 m.**

**The biopile would be maintained under negative pressure with blowers to mitigate fugitive gas emissions to the atmosphere. Off-gas from the process would be passed through air filters to remove volatile hydrocarbons and regular air monitoring of the air emissions would confirm when exchange of air filters is required. Moisture, temperature, nutrients, oxygen, and pH would be monitored regularly and controlled to enhance biodegradation.**

**The addition of nutrients/ amendments, compost, microbes, and moisture (as appropriate) to the biopile and the movement of air with a blower through the material is shown to stimulate aerobic microbial activity within the soils and promote the biodegradation of hydrocarbons.**

**The biopiling base would be graded towards a collection point. Leachate from the biopiles would be sent to the WWTP (via the OWS system) for treatment prior to being discharged in line with the EPL 837.**

**Biopiling blowers may operate on a 24 hour basis in identified Biopiling Areas (see Figure 1-20). Given their location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.**

**Regular testing of the soil in the biopiles would occur to confirm when the soil has been remediated to an industrial/ commercial standard (as defined by the ASC NEPM** (NEPM, 2013)**). Once the soil is remediated to this standard, the biopiles would be deconstructed and the soil would be reused onsite as backfill. Biopiling would follow the guidelines set out in *NSW EPA's Best Practice Note: Landfarming*** (NSW EPA, 2014b)**.**

**Following the completion of soil treatment, if there are residual concentrations of target contaminants remaining at levels above the remediation criteria in soils, that may pose unacceptable risk to future human health receptors, the soils would be assessed for offsite disposal. Soils that do not meet remedial criteria might still be suitable for onsite reuse,**

**provided appropriate additional remedial actions can be undertaken that would address the residual risks.**

*Offsite disposal (untreated soils)*

**Where contaminated soils or sludges cannot be treated and reused, or managed in situ, they would be disposed offsite to an appropriately licenced facility by licenced contractors.**

**Up to 67,730 $m^3$ of contaminated soil, fill, or sludge material may require offsite disposal from Source Excavation Areas in Figure 1-20 (including contingency). This untreated material may be petroleum or non-petroleum impacted soils or sludges.**

**Two primary areas of the Site have been identified as requiring surface soils to be removed due to the presence of asbestos. These areas are:**

- **The area colloquially known as Refining Process Improvement Project (RPIP) Mountain (Excavation 6 in Figure 1-20) – a former stockpile of asbestos contaminated soils (ACS) in Zone 3 which presents an asbestos mitigation risk to other parts of the Site due to the growth of vegetation across this area.**
- **The LPG Area (Excavation 7 in Figure 1-20) – an area in Zone 1 where soils have asbestos concentrations that pose a potential operational safety risk if direct contact occurs**

**In order to address the risk in the LPG Area, a surface scape of 150 mm would occur to remove the ACS at the surface, thereby removing the direct contact risk. This area would be backfilled following the surface scape to return the land to its current surface levels.**

**At RPIP Mountain, vegetation would be removed and ACS removed to a depth of 1 m below existing ground levels to target asbestos at the root zone of vegetation growing at the current ground surface. For larger tree roots, there is potential for excavation to a depth of 4 mbgl. A total of 32,500 $m^3$ of ACS would be removed (excluding contingency). This would include excavation of an onside detention basin (OSD) to maintain existing, pre modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% AEP event (up to 700 $m^3$ to account for future climate scenarios). It is anticipated that this would entail extension/ widening of the existing open water channel on the western side of RPIP Mountain to provide the necessary volume.**

**Following excavation, RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Where necessary, the excavation would be backfilled with clean material. The surface of RPIP Mountain would be hydromulched (or fixed using another appropriate method) to help prevent surface water flows from this land being impacted by sediment following the works. Following grading, the surface of RPIP Mountain would be level with the existing surrounding surface levels.**

**The works associated with the removal of ACS would be completed and managed in line with appropriate occupational health and safety controls, including SafeWork NSW's Guidance on Managing Asbestos in or on Soil** (SafeWork NSW, 2014) **and the Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA** (WA DoH, 021)**. Excavated material would be removed and disposed of offsite as 'special waste – asbestos.'**

**Soils to be disposed offsite would be excavated and transported to a dedicated section of the waste management area for temporary storage or containment (depending on their characteristics). Further testing and waste classification in accordance with the Waste Classification Guidelines** (NSW EPA, 2014a) **would be undertaken prior to disposing of these materials offsite.**

**Where materials being disposed offsite are classified as special waste – asbestos, or hazardous waste, these must be tracked via the NSW EPA's Integrated Waste Tracking Solution (IWTS). Tracking of transport and disposal of high-risk or hazardous waste minimises potential harm to the environment and human health.**

*Groundwater (extraction)*

**Groundwater is relatively shallow across the Site, with the shallowest depth of 0.2 m bgl recorded in Zone 2. Consequently, groundwater may be intercepted and accumulate within trenches and pits during excavations, requiring temporary dewatering to enable works to be carried out safely.**

**Dewatering is currently managed onsite as wastewater in accordance with SSD-5544 and EPL-837. The Site's OWS is a continuous operation system designed to direct waste water to the onsite WWTP for treatment. Extracted groundwater that that cannot be treated at the WWTP would either be pre-treated by another method or disposed to an appropriately licenced liquid waste facility. Once wastewaters are treated, this wastewater is discharged under EPL-837 via the Yena Gap pipeline to an ocean outfall in the Tasman Sea.**

**A project specific Groundwater Management Plan (GWMP) would be developed as part of the CEMP for the proposed modification. This plan would outline the specific dewatering requirements, given the proposed maximum excavation extents.**

*Groundwater (remediation)*

**Based on existing investigations, as presented in the RAP (Appendix E), groundwater contaminants at some locations are present above commercial/ industrial standard** (NEPM, 2013)**. Based on the investigations to date, active remediation of groundwater is not proposed. The groundwater conditions are expected to improve following completion of the remediation works under the proposed modification, based on the following:**

- **Primary sources: With the removal of the OWS in Zone 2 and Zone 3, all potential primary sources related to the former refinery operations and the associated would be removed**
- **Secondary sources:**
  - **Residual light non-aqueous phase liquid (LNAPL) impacts would be addressed as part of the soil remediation works through excavation to the extent practicable. As part of these works, impacted water may accumulate in these excavations. Impacted water would be managed via pumping and sending to the Site's existing WWTP for treatment.**
  - **Residual PFAS impacts in soil would be addressed as part of the soil remediation works through source area excavation and offsite disposal, which would permanently reduce PFAS mass onsite and, over time, PFAS leaching and migration to groundwater.**
- **Ongoing monitoring: Following soil remediation, groundwater monitoring would continue to confirm that the soil remediation works were effective in mitigating future impacts to groundwater. The soil remediation process itself would significantly improve groundwater conditions over the long term, assisted by natural attenuation (this process involves allowing naturally occurring micro-organisms in the ground to biodegrade hydrocarbon contamination). Residual groundwater impacts requiring ongoing management would be addressed as part of the Operational Environmental Management Plan (OEMP).**

*Validation*

**Following treatment, soils would be subject to validation testing against a pre-determined validation criteria and in accordance with a specific SAQP. Soils that have been validated to meet the commercial/ industrial standard (including any validated imported materials) would be stockpiled separately from soils requiring remediation.**

**Validated soils, or validated soils mixed with the crushed concrete, would be placed in excavations as soon as practicable following removal of contaminated soils and subsurface infrastructure. Excavations would be reinstated to the existing grade and stabilised with adequate surface cover.**

**At the completion of the remediation works, areas used for stockpiling contaminated soils would be validated appropriately in accordance with a specific SAQP. Tracking documentation would be completed for each excavation and stockpile, in accordance with the Material Tracking Plan.**

**Following the completion of the remediation works proposed under this modification application, one or more (depending on the staging approach for the remediation works) Validation Report(s) would be prepared in accordance with the NSW EPA Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites** (NSW EPA, 2020)**. Works within the Audit Boundary would be reviewed and endorsed by the Site Auditor, confirming that the land within the Audit Boundary is suitable for commercial/ industrial use. The Validation Report may include progressive validation reports for separate portions of the Project Area to enable progressive validation of these areas.**

**Where relevant, following the remediation works, the Site's OEMP would be updated to detail the ongoing management and monitoring requirements for residual contaminated soil and/ or groundwater impacts that do not meet commercial/ industrial standards, in accordance with the *NSW EPA EMP Guidelines 2020* and *Consultant Guidelines 2020*** (NSW EPA, 2020)**. The updated OEMP would be provided to the Site Auditor for endorsement and to appropriately manage remaining impacts. At the completion of the remedial works under the proposed modification, one or more Site Audit Statement(s) and Site Audit Report(s) would be prepared by the Site Auditor in accordance with the Guidelines for the NSW Site Auditor Scheme (3rd edition).** (NSW EPA, 2017)**.**

### 1.4.5 Stage 4 – Demobilisation

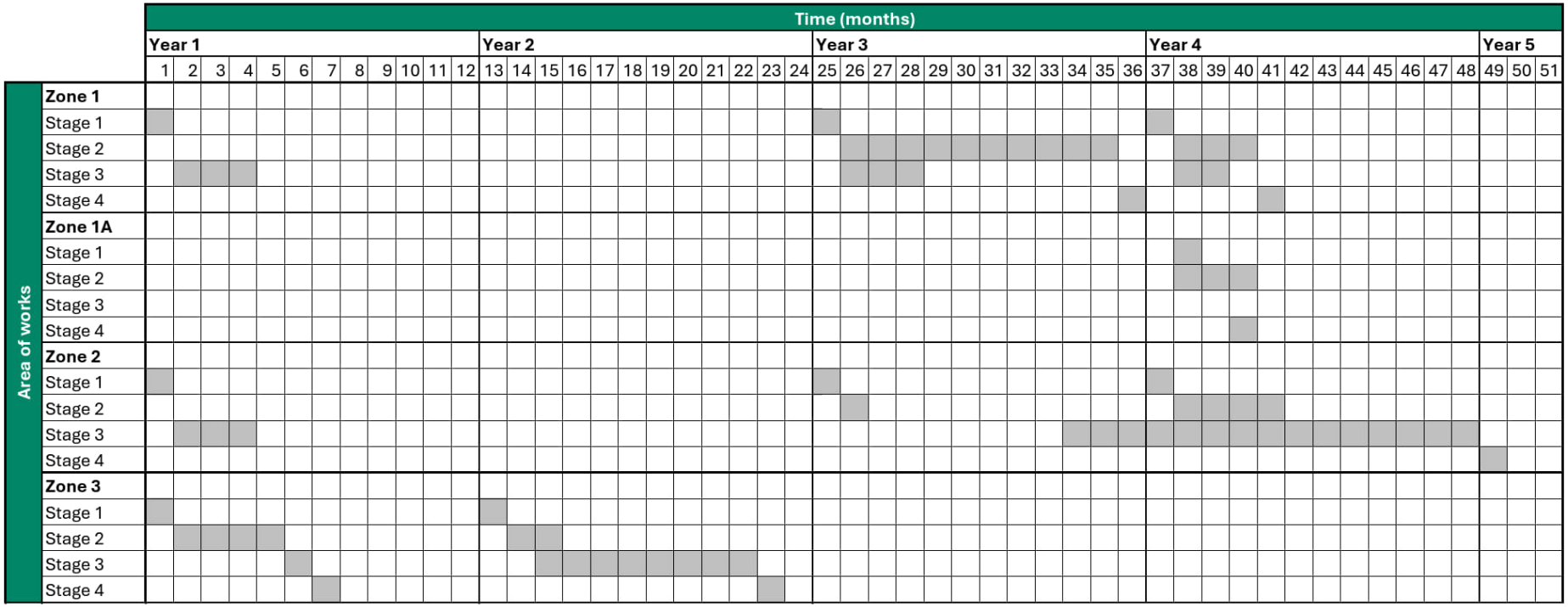
**Demobilisation from the Project Area would include:**

- **Removal of plant and equipment**
- **Securing Zones 2 and 3**
- **Removal of temporary environmental controls and waste management areas**
- **Removal of offices, temporary structures etc. installed within the Project Area as part of Stage 1.**

### 1.4.6 Construction program

**Works would be staged in accordance with the indicative program in Table 1-13. Construction and remediation are anticipated to be completed by 2030.**

**Table 1-13 Indicative program**



### 1.4.7 Working hours

**In line with the Interim Construction Noise Guideline (ICNG), construction works would comply with following hours:**

- **Monday to Friday – 7am to 6pm**
- **Saturday – 8am to 1pm**
- **Sunday and public holidays – No work is permitted.**

**Construction works outside of the work hours identified above would only be undertaken in the following circumstances (in line with Condition C20 of SSD-5544):**

- **Works that are inaudible at nearest sensitive land receivers**
- **Works that are consistent with Ampol's existing maintenance procedures and are in accordance with EPL 837**
- **Works agreed to in writing by the EPA or DPHI**
- **For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons**
- **Where it is required in an emergency to avoid the loss of lives, property and/ or to prevent environmental harm.**

**In addition, the following activities would be required on a 24-hour basis to support construction activities:**

- **Biopiling blowers in identified Biopiling Areas (see Figure 1-20). Given their location within the Site, noise from the blowers would be inaudible at the nearest noise sensitive receivers.**
- **Dewatering of excavations. Dewatering would only occur at night in locations where plant would not exceed night-time limits, i.e.:**
  - **Where it is located a minimum of at least 200 m within the Site boundary; or**
  - **Where it is located a minimum of 120 m within the Site boundary if temporary noise barriers are positioned as near as practicable to the pumps, and monitoring confirms that nighttime noise limits are not exceeded.**

### 1.4.8 Construction plant and equipment

**The plant and equipment that would be used to deliver the modification works is shown in Table 1-14.**

**Table 1-14 Indicative plant and equipment**

| Plant/ equipment | Maximum number of plant and equipment required per day | | |
|---|---|---|---|
| | All stages except Stage 3 | | Stage 3 (Remediation) only |
| | Entire Site | Zone 1A | |
| Front end loader | 6 | 2 | 6 |
| Excavator | Nil | 2 | 6 |
| Excavator (including large hydraulic hammer) | 6 | Nil | Nil |
| Dump truck | 6 | 2 | 6 |
| Grader (up to 7 m blade) | 2 | 1 | 4 |
| Large crane (60 t) | 4 | 1 | Nil |
| Elevated work platform | 6 | 4 | Nil |
| Franna crane (30 t) | 6 | 1 | Nil |

| Plant/ equipment | Maximum number of plant and equipment required per day | | |
|---|---|---|---|
| | All stages except Stage 3 | | Stage 3 (Remediation) only |
| | Entire Site | Zone 1A | |
| Cement truck | 6 | 2 | Nil |
| Bobcat | 6 | 2 | 2 |
| Water cart | 6 | 2 | 6 |
| Concrete crusher | 1 | Nil | Nil |
| Telehandler | 6 | Nil | Nil |
| Truck and dog (offsite disposal) | 6 | 6 | 6 |
| Truck and dog (imported fill) | - | 6 | 12 |
| Generator | 2 | 1 | 2 |
| Biopiling blower | - | Nil | 8 |
| Dewatering pump | 6 | Nil | 6 |

### 1.4.9 Construction traffic

**The traffic generated by the proposed modification would incorporate a mix of construction plant vehicles, delivery vehicles, and construction personnel movements that would scale up and down throughout construction. A summary of the construction vehicles and associated staff numbers that would be required during the works is summarised in Table 1-15.**

**Table 1-15 Workforce and plant requirements for construction**

| Description | | Maximum daily movements (return trips) | Peak hour trips[1] |
|---|---|---|---|
| Heavy vehicles | Construction vehicles (cranes, semi-trailers, etc.) | 10 | 0 |
| | Truck and dog (offsite disposal and imported fill) | 120 | 12 |
| | Equipment/ material delivery vehicles | 6 | 2 |
| | *Subtotal* | *136* | *14* |
| Private vehicles | Construction personnel[2] | 200 | 100 |
| | Total | 336 | 114 |
| | Heavy vehicle proportion | 40% | 12% |

[1] ***Assumptions:***

- ***Conservatively, it has been assumed that all personnel would arrive to Site during the AM Peak Hour and depart during the PM Peak Hour***
- ***Personnel would utilise their own private vehicle with no use of car-pooling or public transport***
- ***Heavy vehicle movements would be evenly distributed throughout the hours of operation (10-hour workdays during weekdays and 5-hour workdays on Saturdays)***
- ***All plant delivery vehicles are assumed to occur on the same day in order to produce a 'worst-case' scenario.***

[2] ***Max number of construction staff (refer to Table 1-16).***

**The proposed works to construct the new storage shed in Zone 1A to store boats and emergency aquatic spill response kits would be limited to a three month construction period. During this period, a total of four construction vehicles (cranes, semi-trailers, etc.), six truck and dog (off-site disposal and imported fill), and four equipment/ material delivery vehicles would be expected to access Zone 1A alongside light vehicles used by the construction workforce. Vehicles to be used for this work will be selected for suitability on the local road network and would not be Oversize and Overmass Vehicles (OSOM). Access to Zone 1A for these construction activities would be primarily from the established gated entrance on Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.**

### 1.4.10 Workforce

**Table 1-16 provides the workforce profile for the proposed modification, including current and projected numbers during construction and operation. The current workforce, including Ampol employees and contractors is approximately 130. For context of the capacity of the Site, during the refinery demolition works, a maximum of 410 workers were present onsite and during the operation of the refinery in 2012, a maximum of 1,385 workers were present onsite (AECOM, 2014).**

**Table 1-16 Workforce numbers (current and projected)**

| Type | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Ampol employees | 30[1] | 30 | 30 | 30 | 30 |
| Ampol contractors | 100[1] | 100 | 100 | 100 | 100 |
| Workforce for the proposed modification | 100 | 25 | 25 | 35[2] | 25 |
| Total | 230 | 155 | 155 | 165 | 155 |

*Notes:*

1. *Current employee numbers at the Site (as of 2026).*
2. *Up to 10 construction personnel would be required for works in Zone 1A.*

### 1.4.11 Operation

**Once the modification works are complete, the Site would continue to operate as described in the approval documentation for the approved project and would be consistent with the development consent for SSD-5544 (as modified) and the requirements of EPL 837.**

**Operational traffic generated by the Site, accessing Zones 1 and 1A, would be the same as existing vehicle numbers.**

**Relocated equipment would operate in the new locations, as shown on Figure 1-18.**

**As discussed in Table 1-11, the FWS would be relocated within the FWS Relocation Area in Zone 1, including a new firewater tank and pipework to allow it to service the terminal infrastructure, with specific siting selected during detailed design.**

**For the purpose of assessment in this Modification Report, two indicative locations have been assessed for the relocation of the FWS, which have been selected based on optioneering completed in the concept design phase in consultation with key stakeholders, including Fire and Rescue NSW, including Firewater and Process Safety Subject Matter Experts. The location of each option is shown in Figure 1-21.**




**Figure 1-21 Relocated FWS – Indicative locations**

**Operation and maintenance of the relocated FWS would be consistent with existing operations. The FWS would include three diesel engines used to operate FWS pumps housed within an enclosed area. Regular maintenance testing of the pumps would include:**

- **Operation of all three pumps individually for approximately half an hour once a month**
- **One annual maintenance test conducted over a two-hour period once per year.**

### 1.4.12 Ancillary facilities and infrastructure

#### Electricity

##### *Construction*

**Electricity would be required for the duration of construction. Coordination would be required between the decommissioning of electrical assets across Zones 2 and 3 and other construction works requiring electricity. To manage this, electricity would be routed from existing substations in Zone 2 and 3, prior to demolition, or from Zone 1 as required for the duration of construction. Following modification works, electricity for terminal operations would be supplied by substations in Zone 1.**

**Construction works would use electricity from within the Site, with the exception of Stage 3 biopiling works, which would require generators.**

##### *Operational*

**As noted in Section 1.4.3, both above and below ground electrical infrastructure were retained at the Site during the original Kurnell Refinery Conversion works. Given Ampol's intent to consolidate site operations, no electrical infrastructure would be required in Zones 2 and 3 once the modification works are complete.**

## Water, stormwater, and wastewater management

### *Construction*

**The Site includes seven main stormwater sub-catchments. An underground pipe network and above ground open drains are present throughout the Site. Stormwater and wastewater from the Site are currently managed through the SWS and the OWS respectively.**

**Stormwater from the Site, inflows, and runoff generally flows from east to the west, with the higher point close to Kamay Botany Bay National Park. Key Site stormwater outlets include Quibray Bay, Botany Bay, and Marton Park Wetland. Modification works are not proposed to the SWS, except where required for remediation as discussed below. Modification works to the OWS are detailed in Section 1.4.3.**

**During the remediation works, the existing surface water management system (pipeways and box drains) would continue to operate.**

**As the remediation progresses, the stormwater and wastewater systems would be progressively isolated where remediation works are occurring, with excavations being bunded temporarily to minimise the impact on surface water from contact with contaminated soils. Stormwater would be diverted around the work areas using temporary drainage channels. Surface water runoff would continue to follow existing drainage patterns, unless temporary diversion from active remediation areas is warranted.**

**The approach to managing water within remediation areas and disturbed areas is as follows:**

- **Minimise the volume of potentially contaminated water during construction of the proposed modification wherever possible by directing surface water away from excavations, depressions, pits, and stockpiles by the construction of drainage works such as bunds and diversion drains. These measures would minimise the flow of surface water into parts of the Project Area that contain potentially contaminated materials**
- **Capturing uncontaminated surface water where possible and using it during the works for various activities, e.g. dust suppression, wheel washing, etc. To assist in the collection of surface water, a temporary sediment basin may be constructed in a suitable location to be determined during detailed design**
- **Capturing potentially contaminated water (e.g. in bunded remediation areas) and directing it to the WWTP, if appropriate, or disposing of it at an appropriately licensed facility.**

**The generation of impacted surface water would be minimised by:**

- **Covering biopiles and contaminated soil stockpiles to reduce the amount of contaminated water produced**
- **Completing the remediation in a staged manner so as to minimise the extent of excavations at any one time that could collect water and require dewatering and treatment at the WWTP.**

**Liquids and water that is produced or collected during the works would be directed through the existing OWS system and, where possible, to the WWTP. If it is not practical for the liquids and water to be sent via this system, it would be collected (e.g. in a tanker, vacuum truck) and be transported to the WWTP for subsequent treatment and discharge in line with EPL 837, or taken offsite for disposal at appropriately licensed facility. Accumulated groundwater in excavated areas would be tested, if required, to confirm that it can be appropriately treated in the WWTP.**

### *Operational*

**Stormwater generated on the Site would continue to be collected in the SWS from areas that have been designated as having low risk of interaction with petroleum products. Stormwater would continue to be discharged offsite into the three receiving water bodies: Quibray Bay, Botany Bay, and Marton Park Wetland.**

**Where disconnection and removal of OWS is proposed, controls to limit peak discharge and achieve appropriate water quality would be put in place once areas have been remediated, stabilised and disconnected from the OWS system. Runoff from catchments within Zone 2 are partially managed by pumps and splitter pits to allow only clean water to be discharged and the peak flow rate to be controlled. This system would continue to operate post remediation such that no additional infrastructure is required for Zone 2.**

**Two separate onsite detention (OSD) systems are proposed in Zone 3 to maintain existing, pre-modification discharge rates entering the existing roadside channel along Sir Joseph Banks Drive in all storm events up to and including the 1% Annual Exceedance Probability (AEP) event[2] (refer to Figure 1-18). This would also maintain existing peak discharge rates entering the downstream Towra Point Nature Reserve (Ramsar site) and Quibray Bay. The former Caltex Lubricating Oil Refinery (CLOR) pipeways would be utilised for stormwater detention, and additional OSD storage would be included within the existing open channel that runs along the western side of RPIP Mountain.**

**Sediment control measures would be required until remediated areas are stabilised. Short term water quality monitoring would likely be required to confirm that these areas are functioning as expected.**

**Where water may have been impacted by petroleum products, the OWS would continue to handle this water. This water is treated at the WWTP prior to being discharged to the Tasman Sea under EPL 837.**

#### Sewers

**Sewerage management would continue to operate as described in the Kurnell Refinery Conversion EIS** (URS, 2013) **and would be consistent with the development consent for the approved project.**

#### Road access

**Road access arrangements would continue to operate as described in the Kurnell Refinery Conversion EIS** (URS, 2013) **and would be consistent with the development consent for the approved project.**

**Access to Zone 1A would continue to be primarily from Prince Charles Parade. A secondary access point is available on Captain Cook Drive for smaller vehicles.**

### 1.4.13 Environmental management

#### Construction

**The current operations at the terminal are managed under the Operational Environmental Management Plan (OEMP) Kurnell Terminal, Final Stage 2** (Ampol, 2021) **(as approved by DPE, now DPHI). This OEMP helps Ampol comply with its requirements under the development consent for the Kurnell Terminal (SSD-5544), EPL 837, and the MHF licence for the terminal. This is the primary document that informs how the Site identifies and provides management solutions for potential environmental impacts arising from terminal operations.**

**In order to maintain compliance with relevant legislative and regulatory requirements, Ampol also implements an Environmental Management System (EMS). The EMS consists of a suite of internal policy documents and plans. The EMS is overseen by a dedicated member of the Ampol Environment Team.**

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**[2] A 1% AEP event is the equivalent of a 1 in 100 chance of a flood of a specific size being reached or exceeded in any given year.**

**Appendix C presents the updated consolidated list of measures that would assist in avoiding, mitigating, or managing the anticipated impacts associated with the proposed modification works. These measures would be incorporated into the modified conditions of consent for the approved Project and, during construction, would be implemented through a project-specific Construction Environment Management Plan (CEMP). This CEMP would aim to:**

- **Promote appropriate environmental management practices during the modification works to avoid and minimise adverse impacts on environmental receptors**
- **Achieve the overall environmental objectives**
- **Maintain legal and contractual compliance.**

**The CEMP would cover all environmental matters associated with the construction of the proposed modification and include the mitigation measures and controls identified in the Modification Report and this Submissions Report.**

**The CEMP would help to:**

- **Achieve compliance with all relevant environmental legislation, regulations, and standards**
- **Integrate consideration of environmental matters into each activity**
- **Maintain environmental compliance and performance through ongoing environmental monitoring and reporting**
- **Conduct regular audits to confirm compliance with environmental policies and standards.**

**Such management and mitigation measures would include monitoring. Examples of monitoring to be undertaken would include, but not be limited to, short-term post-construction water quality monitoring to confirm the discharged stormwater quality meets the WQOs for the wider catchment. Following review of agency and community submissions, the mitigation measures have been updated to incorporate air quality and groundwater Trigger Action Response Plans (TARP) to allow for effective and quick responses to environmental changes.**

**As discussed in Section 1.4.4 and the RAP (Appendix E), one or more Remediation Work Plan(s) would be prepared alongside the CEMP, prior to the commencement of remediation.**

**Workforce safety would continue to be managed onsite in line with the measures and procedures outlined in the existing Work Health and Safety Management Plan (WHSMP) for the Site, as updated for the proposed modification.**

### Operation

**Following completion of the construction works, Ampol's existing Operational Environmental Management Plan (OEMP) would be updated to include the proposed modification, to continue Ampol's approach to monitoring and managing environmental compliance. Updates required to address issues identified as part of the Modification Report and this Submissions Report are presented in Appendix C.**

# Appendix C

## Updated mitigation measures

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| **General** | | | | | | | | | | | | |
| A1 | ~~Caltex~~ **Ampol** would carry out the proposed works in accordance with the EIS, the SEEs, the Mod**ification** Reports, and the approval conditions. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| A2 | ~~Caltex~~ **Ampol** would implement reasonable and practicable measures to avoid or minimise impacts to the environment that may arise as a result of the **approved p**~~P~~roject **and proposed modification**. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| A3 | ~~Caltex~~ **Ampol** would ensure that the ~~Project~~ contractor **for the proposed modification** prepares and implements a Construction Environmental Management Plan (CEMP) ~~for the conversion works and a Demolition Environmental Management Plan (DEMP) for the demolition works (inclusive of the ACS Modification works, Tank 101 demolition works)~~ to manage ~~any Project~~ **potential construction phase**-impacts. This would be reviewed and approved by a ~~Caltex~~ **Ampol** Environmental Management Representative (EMR). Elements of these plans may be shared as required. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| A4 | ~~Caltex~~ **Ampol** would appoint an EMR to monitor the implementation of all required environmental mitigation and management measures. The EMR would ensure that all measures ~~were~~ **are** being effectively applied during the proposed works and that the work would be carried out in accordance with the CEMP~~, the DEMP~~ and all environmental approvals and legislative conditions. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| A5 | ~~Caltex~~ **Ampol** and the various works' contractor personnel would undergo training in accordance with the CEMP~~, the DEMP~~ and currently implemented environmental and safety measures agreed as part of the ~~Project~~ **proposed modification** approval. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| A6 | ~~Caltex~~ **Ampol** would provide Sutherland Shire Council the opportunity to review and comment on the CEMP prior to the commencement of ~~conversion~~ **proposed** works. | | ✓ | | | | | | | | ✓ | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~A7~~ | ~~Prior to the demolition works commencing for a particular structure or group of structures, Caltex would develop a specific demolition management plan (DMP) for each structure or group of structures to be demolished. The DMPs would be made available to the appropriate regulators prior to being implemented if requested. The DMPs for the two concrete stacks (power plant and common stacks) and for the tall complex structures (two catalytic cracker units (plants 4 and 34)) would be provided to the EPA for comment ahead of the demolition works for these structures taking place.~~ | | | | | ✓ | | | | ✓ | | |
| ~~A8~~ | ~~Caltex would provide a draft of the DEMP and SWMP to NSW DPI for review and comment prior to finalising.~~ | | | | ✓ | | | | ✓ | | | |
| ~~A9~~ | ~~Caltex would provide NSW Health with a copy of the DEMP and Asbestos Management Plan (AMP) for review and comment prior to finalising.~~ | | | | ✓ | | | | ✓ | | | |
| A10 | ~~Caltex~~ **Ampol** would provide ~~NSW OEH~~ **NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)** with a copy of the Biodiversity and Weed Management Plan (BWMP) for review and comment prior to finalising. | | | | ✓ | | | | | | ✓ | |
| A11 | Following the ~~ACS Modification works~~ **proposed modification**, ~~Caltex~~ **Ampol** will update the Asbestos Management Plan **(AMP)** for the Site and Asbestos Register. | | | | | | | ✓ | | | | ✓ |
| A12 | ~~A~~ **The** Containment Cell Long Term Environmental Management Plan (CCLTEMP) would **continue to be implemented for the Asbestos Contaminated Soil containment cell**. ~~be prepared in consultation with the EPA prior to the closure of the containment cell. The CCLTEMP would detail the ongoing environmental management of containment cell, including maintenance of the capping and drainage, groundwater monitoring (including groundwater quality and levels), and land use restrictions that will apply to the containment cell. The CCLTEMP would~~ | | | | | | | ✓ | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | ~~be attached to the positive covenant for the land where the containment cell is located, if required.~~ | | | | | | | | | | | |
| ~~A13~~ | ~~From development consent of SSD-5544-MOD-2 until the quarterly community meeting after the containment cell is closed, Caltex **Ampol** will provide an update on the progress of the ACS Modification works, including issues faced or complaints received, at each of the quarterly community meetings.~~ | | | | | | ✓ | ✓ | | | | |
| ~~A14~~ | ~~ACS from the pipeways classified as hazardous waste under the NSW EPA Waste Classification Guidelines would have a minimum cover of at least 500 mm plus the surface cap.~~ | | | | | | ✓ | | | | | |
| ~~A15~~ | ~~Within one month after it has been validated that all ACS from the pipeways has been removed, the containment cell would be capped and permanently sealed as per the containment cell design.~~ | | | | | | ✓ | | | | | |
| ~~A16~~ | ~~Caltex **Ampol** would prepare an ACS Modification Works Completion Report following the completion and closure of the containment cell. The report would include a summary of the waste classification and environmental monitoring data conducted in accordance with the Environmental Management Plans (and associated Sub Plans). Monitoring data should include but not necessarily be limited to:~~<br>~~i. Waste Characterisation and Tracking~~<br>~~ii. Air Quality monitoring (including dust and asbestos)~~<br>~~iii. Groundwater Monitoring.~~ | | | | | | ✓ | | | | | |
| **Hazards and Risk** | | | | | | | | | | | | |
| B1 | A program of routine testing, inspection and maintenance would be developed for each new piece of equipment or instrumentation. This program would be added to the preventative maintenance program already established for existing plant and equipment. | | ✓ | ✓ | | | | | | | ✓ | ✓ |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| B2 | The recommendations of the Fire Safety Study and **SSD-5544 MOD-7 Fire Safety Study Addendum, as appended to the PHA (Appendix F) of the MOD-7 Modification Report),** would be implemented for the design and operation of the terminal.<br>**Ampol would submit evidence to DPHI demonstrating how the six recommendations outlined in Section 1.1 of the Fire Safety Study Addendum (Annexure B of the Preliminary Hazards Assessment [Appendix F of the Modification Report]) have been implemented.** | ✓ | ✓ | | | | | | | | ✓ | ✓ |
| B3 | The Process Hazard Analysis Recommendations would be implemented for the design and operation of the terminal. | ✓ | ✓ | | | | | | | | | |
| B4 | The relevant spill response plan for the Site would be updated for the ~~proposed~~ terminal. | | ✓ | | | | | | | | | ✓ |
| B5 | ~~Caltex~~ **Ampol** would review hardware protection in place and proposed to ensure the risk of filling low flash point material into tanks designed for high flash point usage is minimised. Particular attention to human factors issues at manifolds. | ✓ | ✓ | | | | | | | | | |
| B6 | ~~Caltex~~ **Ampol** would determine need for additional means of communication, e.g. for lone worker on the proposed terminal. | | ✓ | | | | | | | | | |
| B7 | ~~Caltex~~ **Ampol** would review the procedures used for potentially hazardous manual operation to ensure they are appropriate and sufficient for any increased frequency of use. | | ✓ | | | | | | | | | |
| ~~B8~~ | ~~The bullet pointed measures listed in Section 8.7 of the Demolition Works SEE would be implemented to ensure that the conclusions of Appendix C Hazards and Risks Assessment of the Demolition Works SEE remain valid.~~ | | | | ✓ | ✓ | | | ✓ | ✓ | | |
| ~~B9~~ | ~~Personnel required to work with hazardous/ flammable/ contaminated materials would be trained in safe use and handling and would be provided with all relevant safety equipment.~~ | | | | | | ✓ | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~B10~~ | ~~Procedures are currently in place to manage incidents and injuries at the Site. This includes an established incident reporting and response process. These processes would be implemented for the ACS Modification.~~ | | | | | | ✓ | ✓ | | | | |
| **B11** | **Ampol would continue to implement onsite safety processes and procedures and update the relevant existing Work Health and Safety Management Plan (WHSMP) to include the proposed modification as required.** Procedures would include training staff for the safe use and handling of hazardous/ flammable/ contaminated materials, use of relevant safety equipment, and incident reporting and response processes. | | | | | | | | | | ✓ | ✓ |
| **B12** | **The SSD-5544 MOD-7 HAZID Workshop Recommendations, as appended to the PHA (Appendix F of the MOD-7 Modification Report), would be implemented for the design and operation of MOD-7 infrastructure.** | | | | | | | | | | ✓ | ✓ |
| **Soils, Groundwater, and Contamination** | | | | | | | | | | | | |
| C1 | A Soils ~~and Erosion~~ **and Water** Management Plan **(SWMP)** would be developed as part of the Construction Environmental Management Plan (CEMP) to manage the excavation, testing, stockpiling, reuse, and rehabilitation of soils **as well as water management requirements**. This plan would be developed in accordance with 'The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2 (Landcom, 2004) and would outline:<br>• The areas where soil disturbance is likely<br>• Soil testing procedures<br>• Soil handling procedures<br>• Locations where soil would be stockpiled on-site for either removal, treatment, or reuse<br>• Locations of potentially contaminated areas<br>• Procedures to reduce erosion and the spread of dust | | ✓ | | | | | | | | ✓ | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | • Restricting traffic to defined roads or tracks where necessary<br>• Measures to manage vehicles leaving the Site to reduce soil on public roads<br>• ~~The rehabilitation of bare soil following completion of the construction works~~<br>• Inspection program for any erosion control structures and bunded areas<br>• How excavations would be staged so that the length of time that excavations are left open and temporary stockpiles are required is minimised<br>• **Remediated soils and validated crushed clean concrete slabs would be used as backfill where practicable. Imported material would be classified as virgin excavated natural material (VENM), excavated natural material (ENM) as defined by the ENM Order, 2014, or material covered under an NSW EPA specific Resource Recovery Order (RRO), extractive materials sourced from legal quarries (not considered a waste as defined under the POEO Act, Schedule 1, clause 19).**<br>• Measures to protect excavations from increased stormwater runoff (e.g. by using bunds or similar structures where required)<br>• That equipment is to be maintained and operated in a proper and efficient condition to reduce the likelihood of spills or leaks<br>• How the rehabilitation of bare soil would be managed across the Site once areas are returned to grade. | | | | | | | | | | | |
| C2 | All materials would be stockpiled in accordance with 'The Blue Book' *Managing Urban Stormwater – Soils and Construction Volume 1 and 2* (Landcom, 2004). Principal controls would include the following:<br>• Silt fences would be installed around stockpiles to reduce erosion and protect vegetation or Site infrastructure as necessary<br>• Silt and sediment traps would be installed across stormwater drains in proximity to excavation areas | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | • Stockpiles would be restricted to cleared areas and not impact any vegetation<br>• **Contaminated s**~~S~~tockpiles would be placed on impermeable ~~sheeting~~ **surface**<br>• Stockpiles would be covered and wetted down in order to reduce dust creation<br>• Stockpiles would not be located in close proximity to any stormwater drainage systems **(where possible)**<br>• ~~Caltex~~ **Ampol** would not stockpile in areas that are prone to flooding as identified in ~~Figure 4-10 of Appendix D of the Demolition Works SEE~~ in **the Surface water, wastewater, and flooding report (Appendix I of the MOD-7 Modification Report**)<br>• Stockpile locations and erosion and sediment control requirements associated with the ~~Project~~ **proposed modification** would be reviewed by a suitably qualified person to ensure that the recommended measures achieve the environmental outcomes for the Site. | | | | | | | | | | | |
| ~~C3~~ | ~~The Soils and Erosion Management Plan would also outline the inspection program for any erosion control structures and bunded areas.~~ | | ✓ | | | | | | | | ✓ | |
| ~~C4~~ | ~~Excavated soils would be tested for both contaminants and odour using standard practices~~ | | ✓ | | | | | | | | ✓ | |
| C5 | Clean materials would be separated from contaminated materials for reuse as backfill where required. **A Material Tracking Plan would be implemented to track materials to be reused or removed from the Site.** | | ✓ | | | | | | | | ✓ | |
| ~~C6~~ | ~~A Contamination Management Plan would form part of the CEMP for the Project. This plan would outline measures for testing, classifying, handling, storing and managing contaminated soils and contaminated groundwater.~~ | | ✓ | | | | | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~C7~~ | ~~Suspected contaminated materials would be assessed and classified in accordance with Environment Protection Licence (No. 837) (EPL) requirements and NSW (2009) *Waste Classification Guidelines: Part 1: Classifying Waste*, batched, further tested (where required) and disposed by a licenced contractor.~~ | | ✓ | | | | | | | | ✓ | |
| C8 | **Offsite** disposal of any contaminated soils or groundwater **(or suspected contaminated material)** would be in accordance with Environment Protection Licence (No. 837) (EPL) requirements, ~~and NSW DECCW's Waste Classification Guidelines~~ NSW EPA Waste Classification Guidelines: Part 1: Classifying Waste (2014), and the Contamination Management Plan (CMP) for the ~~Project~~ **proposed modification**. Contaminated materials **to be disposed offsite** would be sent to appropriately licensed facilities in accordance with the Contaminated Land Management Act 1997 (NSW). | | ✓ | | | | | | | | ✓ | |
| C9 | ~~If Acid Sulfate Soils (ASS) are encountered during construction or the ACS Modification works, an ASS Management Plan would be prepared in accordance with the ASS Manual (*ASS Management Advisory Committee 1998*).~~<br>**Detailed investigations within the Project Area would include targeted sampling to identify the presence of Potential Acid Sulfate Soil (PASS) within remediation areas where excavations are anticipated to be greater than 2 metres below ground level (mbgl). The results would be used to inform finalisation of the draft Acid Sulfate Soil Management Plan (ASSMP) (Appendix E2 of the Submissions Report). Processes in the ASSMP would include:**<br>• **Establishment of a suitable area for the assessment and treatment of excavated soils**<br>• **Treatment of material containing ASS, such as the addition of lime to neutralise the acid**<br>• **Validation testing of treated ASS** | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |

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| | • **Manage leachate and wastewater according to procedures**<br>• **Onsite reuse or offsite disposal of treated ASS**<br>• **Reporting and documentation.** | | | | | | | | | | | |
| C10 | A Groundwater Management Plan (GWMP) would be developed and included within the CEMP. This plan would outline the measures that would be used to manage the testing, dewatering, storage, movement and treatment of any groundwater intercepted during the construction phase. **It would also outline measures to prevent and/ or minimise impacts to groundwater dependent ecosystems (GDEs) within groundwater drawdown areas.** Measures would include:<br>• Measures for the dewatering, storage, movement and treatment of groundwater encountered in excavations. Dewatered groundwater would be collected and sent to the on-site Wastewater Treatment Plant in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater<br>• The use of appropriate drip trays and interception techniques for any construction specific liquids stored on the Site<br>• Bunding of any fuel or chemical storage area at the construction Site<br>• Regular inspection of construction equipment to ensure any leaks are minimised and rectified<br>• Management of vehicles leaving the Site to reduce soil on roads, production of dust and the introduction of contamination to the groundwater and/or stormwater system<br>• Appropriate and timely disposal of any contaminated soil, water or waste generated during construction<br>• ~~Regular inspection of erosion control structures and bunded areas~~<br>• Regular inspection and testing of containment areas~~, drainage lines and process pipe work~~ | | ✓ | | | | | | | | ✓ | |

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| | • A plan for corrective action should an unexpected **find** ~~increase in contaminants of potential concern (COPC)~~ be observed ~~in the groundwater monitoring~~ **during the proposed modification**.<br>• **The anticipated drawdown extents would be reviewed following completion of the construction program.**<br>• **Excavations/ trenches would be staged to minimise drawdowns during delivery of the works. Excavations/ trenches in closest proximity to GDEs would be open for the shortest period of time possible.**<br>• **Following review of the drawdown extents, if required, a monitoring program for GDEs within the drawdown areas would be developed. The scope and frequency of the monitoring program would be developed based on the finalised design for excavations/ trenches and the level of drawdown influence, available field data (surface water, groundwater, and mapping of GDE extents and PCTs), and other relevant factors, including the timing and intensity of storm events. The monitoring program would include:**<br>- **Establishment of groundwater level and quality triggers, and GDE vegetative triggers, and associated response actions in a Trigger Action Response Plan (TARP) by a suitably qualified ecologist.**<br>- **Establishment of adaptive management actions to be implemented to minimise prescribed impacts and/ or protect potentially affected GDEs within the area of drawdown influence.**<br>- **Post-construction survey to confirm no ongoing impacts to GDEs occur.**<br>- **In the unlikely event that permanent prescribed impacts to GDEs do occur, a Restoration Management Plan** | | | | | | | | | | | |

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| | **would be developed, outlining how affected the GDE community would be rehabilitated.** | | | | | | | | | | | |
| C11 | Any runoff that may accumulate in excavations would be periodically tested for elevated levels of contamination. Water that is found to have elevated levels of contaminants would be collected and sent to the onsite Waste **W**~~w~~ater Treatment Plant in accordance with the established refinery wastewater management procedures. | | ✓ | | | | | | | | ✓ | |
| ~~C12~~ | ~~Runoff entering any excavations would be limited by using bunds or similar structures as required.~~ | | ✓ | | | ✓ | | | | ✓ | | |
| ~~C13~~ | ~~Construction /demolition workers would be instructed in appropriate health and safety and handling protocols for minimising human contact with contaminated soils and groundwater.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | | |
| ~~C14~~ | ~~During the cleaning of the crude and finished fuel tanks, measures would be implemented in line with Caltex existing Turnaround and Inspection process to contain and collect any potentially contaminating material for appropriate disposal to the on-site wastewater treatment plant, landfarm or appropriate off-site disposal facilities. This process would be detailed within the CEMP.~~ | | ✓ | | | | | | | | | |
| C15 | Permits would be required to work in the areas where potential soil and groundwater contamination exists. The work permit includes requirements such as monitoring and **personal protective equipment (**PPE**)**. No unauthorised entry into these areas ~~is~~ **would be** permitted, without a permit. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| C16 | Appropriate inspection, assessment, maintenance and repair programmes that would be implemented as part of the operation of the ~~Project~~ **terminal (as modified)**. These safeguards would be incorporated into the updated management plans for the proposed terminal. The ~~Project~~ **terminal (as modified)** would be appropriately licenced under the *Protection of the Environment Operations Act 1997* and would be managed in accordance with EPL requirements. | | ✓ | ✓ | | | | ✓ | | | | ✓ |

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| C17 | A Contamination Management Plan would be developed to outline measures for monitoring, handling, storing and managing contaminated soils and contaminated groundwater. It would include the following:<br>• Excavated soils would be **inspected and if necessary,** tested for both contaminants and odour using standard practices<br>• **Should elevated levels of contamination or odour (i.e. levels above those expected or planned for in the relevant location) be present in the soils or excavations, work related to the excavation would be suspended until a suitably qualified environmental consultant can instruct on how best to proceed to manage contamination, or vapour, or odour risks to deliver the works and support continued achievement of work achieve work health and safety and environmental compliance requirements.**<br>• ~~During excavation visual and olfactory indicators of impact would be monitored. Where there is potential for volatile organic contaminants (based on known ground conditions) or where hydrocarbons are seen or smelt during excavations, soils would be inspected for hydrocarbon impacts using a PID and/or testing.~~<br>• ~~Excavated soils would not be used for backfill if they are impacted at levels exceeding commercial/ industrial as defined by Schedule B1 Guidelines, *Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013*.~~<br>• All excavations would be sampled for asbestos. Asbestos assessment would be undertaken in accordance with Schedule B1 Guidelines, *Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013*<br>• ~~Asbestos impacted soil not found in the pipeways would be disposed of at the ACS containment cell or removed from the Site~~ | | | | | ✓ | ✓ | | | ✓ | ✓ | |

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| | ~~as soon as practicable if excavated. If these soils need to be temporarily stockpiled they would be stored at a defined location at the former CLOR site, covered and labelled as asbestos waste.~~ Asbestos impacted soil **to be disposed of offsite** would be classified in accordance with NSW EPA guidelines for transport and disposal at ~~either the ACS Containment Cell or~~ a licensed landfill ~~(~~and in accordance with the Site waste management system and the ~~Demolition~~ Waste and Resource Management Plan (~~D~~WRMP) ~~for the demolition works~~ **or capped and contained onsite in accordance with the Remedial Work Plan(s)**. The excavation, transport and disposal of asbestos impacted soil would be undertaken by a licenced contractor and comply with NSW ~~WorkCover~~ **SafeWork** requirements.<br>• **Remedial Work Plan(s) would outline when hydrocarbon impacted soil can be temporarily stockpiled adjacent to an excavation. This would depend on the level of hydrocarbon and duration of stockpiling and specific controls in place at each excavation.**<br>• ~~Hydrocarbon impacted soil would not be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled, they would be stored at a defined location at the former CLOR site.~~<br>• Excavated soils would be separated into stockpiles according to odours, staining and other environmental indicators. Soils that are potentially contaminated (following visual and olfactory inspection and or use of monitoring equipment) would be placed on impermeable ~~sheeting~~ surfaces into uniquely identified stockpiles and appropriately bunded and managed. The bunds would be impermeable and of sufficient capacity to ensure that runoff from these stockpiles is contained prior to being sent to the WWTP. | | | | | | | | | | | |

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| | ~~• Works in the vicinity of the contaminated water would be suspended until the environmental consultant can further assess the impacted groundwater and the associated risks.~~<br>~~• Where no contamination issues are identified, excavated material would be used as backfill to bring the excavated area back to grade as soon as practicable. If required, certified VENM, ENM or appropriated remediated material would be used to provide additional backfill material.~~<br>• If excavated material cannot be re-used or managed onsite then it would be removed off-site as waste to an appropriately licensed facility.<br>• Further, excavated material; would be classified in accordance with EPL condition O5.1 which requires "any liquid and/or non-liquid waste generated and/or stored [at the Site] is assessed and classified in accordance with the ~~NSW (2009) *Waste Classification Guidelines: Part 1: Classifying Waste*, batched and further tested (where required, for example Toxicity Characteristics Leaching Procedure (TCLP) testing)~~ **NSW EPA Waste Classification Guidelines as in force from time to time**."<br>• **Where contaminants exceed General and/or Restricted Solid Waste, and/or Hazardous Waste classification, the toxicity characteristics leaching procedure (TCLP) would be conducted to assess the leachable concentration and classification of waste can be reduced.**<br>• The method of disposal or reuse would be in line with the materials' classification in accordance with specifications set out in a ~~D~~WRMP.<br>• Where soils are reused on Site (i.e. are not considered to ~~be impacted at levels exceeding~~ **present a risk to** commercial/ industrial **receptors** ~~as defined by *Schedule B1 Guidelines, Investigation Levels for Soil and Groundwater, National*~~ | | | | | | | | | | | |

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| | ~~*Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013*~~) a record would be kept ~~(in the Waste Management Database)~~ of where these soils are reused, the volumes reused; the type and levels of contaminants present in the soils and the soil classification. | | | | | | | | | | | |
| ~~C18~~ | ~~The Soil and Water Management Plan would outline management measures for any soils that are excavated or stored on site during the demolition works and ACS Modification works and water management requirements. It would identify:~~<br>~~The areas where soil disturbance is likely~~<br>~~How excavations would be staged so that the length of time that excavations are left open and temporary stockpiles are required is minimised~~<br>~~Locations where soil would be stockpiled on-site for either removal, treatment or reuse~~<br>~~That if additional backfill material is required, only certified VENM, ENM or appropriated remediated material would be used~~<br>~~Procedures to reduce erosion and the spread of dust~~<br>~~Restricting traffic to defined roads or tracks where necessary~~<br>~~Measures to protect excavations from increased stormwater runoff (e.g. by using bunds or similar structures where required)~~<br>~~Measures to manage the storage of demolition and ACS Modification works specific liquids at the Site and the appropriate bunding or containment of demolition related fuel or chemical storage areas~~<br>~~Demolition and ACS Modification works equipment is maintained and operated in a proper and efficient condition to reduce the likelihood of spills or leaks~~<br>~~Measures to manage vehicles leaving the Site to reduce soil on roads, production of dust and the introduction of contamination to the groundwater and/or stormwater system~~ | | | | | ✓ | ✓ | | | ✓ | ✓ | |

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| | ~~Measures for the dewatering, storage, movement and treatment of groundwater encountered in excavations. Dewatered groundwater would be collected and sent to the on-site Wastewater Treatment Plant in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater~~<br>~~Procedures for dewatering, including the need to liaise with NOW to ensure the necessary water licences are obtained, if required~~<br>~~How the rehabilitation of bare soil would be managed across the Site once areas are returned to grade.~~ | | | | | | | | | | | |
| ~~C19~~ | ~~The Soil and Water Management Plan would also:~~<br>~~Be developed in accordance with *'The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2* (Landcom, 2004)~~<br>~~Outline the inspection program for erosion control structures and bunded areas~~<br>~~Continue the existing groundwater monitoring program~~<br>~~Include a plan for corrective action should an unexpected increase in COPC be observed in the groundwater monitoring.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| C20 | An Asbestos Management Plan would be developed in accordance with the relevant guidelines.<br>~~Caltex~~ **Ampol** would utilise existing registers, procedures and plans in place for the Site for the preparation of an Asbestos Management Plan. | | | | | ✓ | ✓ | | | | ✓ | |
| ~~C21~~ | ~~Additional sampling would be undertaken to ensure that the area of soil disturbance is restricted as far as practicable to asbestos impacted areas only.~~ | | | | | | ✓ | | | | | |
| ~~C22~~ | ~~ACS in the pipeways would be wetted down prior to excavation, loading and transport.~~ | | | | | | ✓ | | | | | |

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| ~~C23~~ | ~~ACS classified as general or restricted under the Waste Classification Guidelines would be transported directly to the containment cell. Excavation works would be staged to allow placement of ACS directly into the containment cell to minimise the need to stockpile ACS.~~ | | | | | | ✓ | | | | | |
| ~~C24~~ | ~~Where hazardous ACS cannot be appropriately managed on-site, it would be taken off-site for treatment and disposal at an appropriately licensed facility.~~ | | | | | | ✓ | | | | | |
| ~~C25~~ | ~~All vehicle tyres would be cleaned before exiting the containment cell works area a temporary truck wash system.~~ | | | | | | ✓ | | | | | |
| ~~C26~~ | ~~During the works, the containment cell area would remain bunded to prevent water flowing out of the respective areas except via the OWSS and WWTP.~~ | | | | | | ✓ | ✓ | | | | |
| ~~C27~~ | ~~During the works, stormwater within the containment cell works area would be directed to the OWSS and treated at the WWTP.~~ | | | | | | ✓ | | | | | |
| ~~C28~~ | ~~Stormwater from within excavated areas of the pipeways would be sent to the WWTP unless it is tested and is of suitable quality to be directed to stormwater, as per normal operation of the pipeways.~~ | | | | | | ✓ | | | | | |
| ~~C29~~ | ~~Two groundwater monitoring bores would be installed at the north and west of the containment cell. Quarterly monitoring of the two groundwater monitoring bores would be undertaken during construction, filling and closure of the cell.~~ | | | | | | ✓ | ✓ | | | | |
| ~~C30~~ | ~~A marker layer would be installed during the final capping of the containment cell to identify the presence of asbestos as a safeguard for potential future use.~~ | | | | | | ✓ | | | | | |
| ~~C31~~ | ~~Following excavation of ACS, an independent licenced asbestos inspector would be employed to verify that the friable asbestos has been removed from the pipeways and that the Exemption Order under Section 419 of the Work, Health and Safety Regulation 2011 is no longer required.~~ | | | | | | ✓ | | | | | |

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| C32 | The OEMP for the Site would ~~be updated to include~~ **continue to implement** the following measures:<br>• Appropriate groundwater monitoring, in accordance with the Site's EPL.<br>• ~~Quarterly groundwater monitoring for two years for the two installed monitoring wells. Following this time, annual groundwater monitoring would be undertaken to provide ongoing demonstration that the containment cell liner is operating effectively. Monitoring of these bores would occur in accordance with the existing groundwater monitoring program for the Site.~~<br>• Regular inspections of the Containment Cell to monitor the effectiveness of the erosion and sediment control measures incorporated into the design of the containment cell, in line with the Site's existing Inspection Checklist and following heavy rain events. | | | | | | | ✓ | | | | ✓ |
| **C33** | **The Remediation Action Plan (RAP) for MOD-7 works would be implemented, which would include:**<br>**a. Data gap investigations within the Project Area**<br>**b. Preparation of one or more Remediation Work Plan(s).**<br>**The Remediation Work Plan(s)would be prepared in accordance with NSW EPA *Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2020) and be reviewed and endorsed by the Site Auditor.** | | | | | | | | | | ✓ | |
| **C34** | **One or more Validation Report(s) would be prepared in accordance with the NSW EPA *Contaminated Land Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2020).**<br>**At the completion of the remedial works under the proposed modification, one or more Interim Audit Advice (IAA) document(s) would be prepared by the Site Auditor in accordance with the Guidelines for the NSW Site Auditor Scheme (3rd edition).** | | | | | | | | | | ✓ | |

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| **C35** | **Where relevant, following remediation and where further management of contamination is required within the Audit Boundary, one or more Environmental Management Plan(s) (EMPs) would be prepared. These plans would fall under and be administered by the Site's existing OEMP. The OEMP would be updated as required to incorporate new EMP(s). The EMP(s) would be prepared in general accordance with the NSW EPA EMP Guidelines 2020 and Consultant Guidelines 2020 (NSW EPA, 2020).** | | | | | | | | | | | ✓ |
| **C36** | **Where reasonable, take practicable measures to prevent more than minimal harm is caused to waterfront land (i.e. within 40 m of mapped coastal wetlands) during excavation, remediation, or temporary stockpile activities.** | | | | | | | | | | ✓ | |
| C37 | Construction personnel would be made aware of the potential presence of **Light** Non Aqueous Phase Liquids (**L**NAPL) and would be shown how to identify its presence. The GWMP would include management measures to appropriately deal with any **L**NAPL found onsite. | | | | | | | | | | ✓ | |
| ~~**Human Health and Ecological Risk**~~ | | | | | | | | | | | | |
| ~~D1~~ | ~~Construction/demolition personnel would be made aware of the potential presence of Non Aqueous Phase Liquids (NAPL) and would be shown how to identify its presence. The CEMP/ DEMP would include management measures to appropriately deal with any NAPL found onsite.~~ | | ✓ | | ✓ | | ✓ | | ✓ | ✓ | | |
| ~~D2~~ | ~~Construction/demolition staff would be inducted and provided with training prior to working with potentially contaminated soil as part of the Project, to prevent unnecessary disturbance (e.g. dust generation, asbestos fibre liberation, contaminant mobility and volatilisation).~~ | | ✓ | | ✓ | | ✓ | | ✓ | ✓ | | |
| ~~D3~~ | ~~The location of potentially contaminated areas would be noted in the CEMP/DEMP and provided to construction/demolition personnel involved in soil excavation and handling. The CEMP/ DEMP would also~~ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | |

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| | ~~identify the type of contamination found in each area. Where necessary, safety training, and appropriate PPE would be provided.~~ | | | | | | | | | | | |
| ~~D4~~ | ~~Caltex would continue to monitor groundwater quality in areas that are known to contain impacts to ensure that significant mobilisation of COPC from groundwater to surface water is not occurring.~~ | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | |
| **Waste Management** | | | | | | | | | | | | |
| E1 | The ~~Project~~ **proposed modification** would be integrated into existing resource efficiency, waste management and handling, emergency response and preparedness plans for the existing Site. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| E2 | Construction and Operation Waste and Resource Management Plans (WRMP) ~~and Demolition Waste and Resource Management Plans (DWRMP)~~ would be compiled prior to ~~the~~ each phase commencing. ~~The DWRMP would be updated to include reference to management of waste generated by the ACS Modification works prior to construction works commencing.~~ | ✓ | | | ✓ | | ✓ | | ✓ | | ✓ | ✓ |
| E3 | The WRMPs ~~and DWRMP~~ would:<br>• Identify requirements consistent with the waste and resource hierarchy<br>• Ensure resourcing efficiency is delivered through the design and responsible construction, demolition and operational practices<br>• Ensure procurement of pre-fabricated materials to eliminate off-cuts on-site, and the re-use of materials where possible<br>• Provide consistent clear direction on waste and resource handling, storage, stockpiling, use and reuse management measures (consistent with current management practices relating to ~~Caltex~~ **Ampol's** Kurnell Waste Management System)<br>• Provide separate waste containers/ skips to ensure waste material segregation and maximise the opportunities for re-use and recycling | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |

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| | • Set out procedures for management of recyclable wastes, including storage in suitable containers and designated waste management areas, to be transferred by a licensed waste contractor to an appropriate recycling facility where possible.<br>• Identify disposal and management routes consistent with current management practices as adapted for the ~~Project~~ **proposed modification**<br>• Set out clear requirements for meeting legislative and regulatory requirements<br>• Ensure safe storage and disposal of waste ensuring least amount of harm to surrounding environment<br>• Define requirements to support ~~Caltex~~ **Ampol's** sustainable procurement objectives through effective, design, construction, operation and procurement<br>• Set out processes for disposal, including onsite transfer, management and the necessary associated approvals<br>• Set out procedures for analysing new waste streams and determining the most suitable management measures to use when handling, storing, transporting and disposing of the waste<br>• Set out procedures for management of unidentifiable waste streams. Unidentifiable waste streams would be analysed and sent for testing in an accredited laboratory to assess the risks associated with handling and disposal of the waste. | | | | | | | | | | | |
| E4 | The WRMP ~~and DWRMP~~ would incorporate the requirements of the waste and resource hierarchy and cleaner production initiatives. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| E5 | The WRMP ~~and DWRMP~~ would include a process for auditing, monitoring and reporting, which would include regular inspections offsite activities and the waste management area(s). The WRMP ~~and DWRMP~~ would be subject to regular auditing and a system would be used to record and report the types, volumes and management measures for all waste and resource arising from/used for the works. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |

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| ~~E6~~ | ~~Project generated waste would be segregated at the source and stored in accordance with current Site practices. Site management practices would potentially need adapting to consider additional storage requirements. Regardless, all waste would be stored in suitable containers and designated waste management areas.~~ | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | |
| E7 | ~~Caltex~~ **Ampol's** existing procedures for the disposal of sewage, greywater, hazardous materials, general waste and recyclable materials would be adopted for the ~~Project~~ **terminal (as modified)** ~~(and modified if required)~~. This would include using licensed contractors to remove and transport waste from the Site. | | | | | | ✓ | ✓ | ✓ | | ✓ | ✓ |
| E8 | A Waste Register would be prepared, used and maintained by the ~~Demolition~~ Contractor to track all wastes generated from ~~Project~~ **the proposed modification**. The ~~Demolition~~ Contractor would retain waste receipts to indicate evidence of waste disposal. The database would also be used to track all materials reused at the premises including its reuse location, type of waste and classification.<br>~~A Waste Register would be prepared, used and maintained by the Contractor to track all wastes generated from the ACS Modification works and used to record and report the types, volumes and management measures for all waste and resources arising from/used for the works. This would be subject to regular auditing.~~ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| E9 | Stockpiled wastes would be:<br>• Appropriately segregated to avoid mixing and contamination<br>• Clearly labelled<br>• Contained in bunded areas and if necessary on an appropriate lining<br>• Less than 5 m in height<br>• Located >40 m away from any sensitive receivers, heritage, ecological areas and watercourses**, including mapped coastal wetlands**. | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |

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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~E10~~ | ~~Materials to be re-used would be analysed to ensure material is not contaminated and re-use is appropriate.~~ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | | |
| ~~E11~~ | ~~An Asbestos Management Plan would be prepared and implemented in accordance with relevant legislative and other requirements. This plan would outline proposed methods of managing asbestos waste by the contractor.~~<br>~~The Asbestos Management Plan would be updated to include the ACS Modification works.~~ | | | | ✓ | ✓ | ✓ | | | | ✓ | |
| E12 | The Site's existing Asbestos Waste Register would be amended as appropriate, implemented and maintained to track asbestos wastes generated during the works. | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| E13 | If stored onsite, asbestos wastes would be located away from operational areas and properly sealed and contained to minimise human exposure and clearly labelled. Signage and barriers/ fencing would be installed to ensure all employees, contractors and visitors would keep away from the area at all times. | | | | | ✓ | ✓ | | | ✓ | ✓ | |
| ~~E14~~ | ~~The removal and disposal of asbestos wastes would be undertaken by a licenced asbestos contractor.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| ~~E15~~ | ~~A Decontamination Area would be provided onsite for all authorised personnel handling asbestos.~~ | | | | ✓ | ✓ | ✓ | | | | | |
| E16 | Wastes (both liquid and non-liquid) generated from the works would be assessed, classified and managed.<br>Where it is not feasible to remediate soils or where onsite management is not practicable, the soil would be classified and disposed offsite in accordance with Waste Classification Guidelines (NSW EPA, 2014) to an appropriately licenced facility by licenced contractors. ~~Wastes would be disposed of at an appropriately licenced facility.~~ | | | | | ✓ | ✓ | | | ✓ | ✓ | |

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| ~~E17~~ | ~~Recyclable wastes would be stored in suitable containers and designated waste management areas, to be transferred by a licensed waste contractor to an appropriate recycling facility where possible.~~ | | | | | | ✓ | | | | | |
| ~~E18~~ | ~~Treated soils from the CSRF would be used where possible for the containment cell construction works in accordance with the conditions of the Caltex treated soil exemption 2016.~~ | | | | | | ✓ | | | | | |
| ~~E19~~ | ~~New waste streams would be addressed as they arise and assessed to determine the most suitable management measures to use when handling, storing, transporting and disposing of the waste.~~ | | | | | | ✓ | | | | | |
| ~~E20~~ | ~~Unidentifiable waste streams would be analysed and sent for testing in an accredited laboratory to assess the risks associated with handling and disposal of the waste.~~ | | | | | | ✓ | | | | | |
| ~~E21~~ | ~~Additional sampling will be undertaken in the pipeways to further delineate the areas classified as asbestos contaminated in order to minimise the volume of soil classified as Special Waste and disposed of in the containment cell.~~ | | | | | | ✓ | | | | | |
| E22 | ~~Caltex~~ **Ampol** would complete inspections following periods of extended heavy rainfall to confirm that pumps within the containment cell sumps are directing leachate to the Site's WWTP. | | | | | | ✓ | ✓ | | | | |
| **Surface Water, Wastewater and Flooding** | | | | | | | | | | | | |
| F1 | The Construction Environmental Management Plan (CEMP) for the ~~Project~~ **proposed modification** would include a Soil ~~and Erosion~~ **and Water** Management Plan **(SaWMP)**. This plan would include the following measures:<br>• ~~All materials would be stockpiled in accordance with 'The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2 (Landcom, 2004)~~<br>• **Sediment and erosion controls would be installed and operated in accordance with The Blue Book' Managing Urban** | | ✓ | | | | | | | | ✓ | |

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| | **Stormwater – Soils and Construction Volume 1 and 2 (Landcom, 2004)**<br>• Silt fences would be installed around stockpiles to reduce erosion and the movement of suspended solids as necessary<br>• Soil stockpiles and any polluted materials would be stored in designated areas which are not in close proximity to any stormwater drainage systems<br>• Erosion control structures, bunded areas, containment areas, drainage lines and interception measures would be subject to regular inspection<br>• Clean materials would be separated from contaminated materials<br>• Soil erosion and sedimentation devices would remain in place until the disturbed ground surface is restored. These devices would also capture any gross pollutants. | | | | | | | | | | | |
| F2 | A Soils and Water Management Plan **(SaWMP)** would **include** ~~be developed as a sub-plan to the DEMP~~ **CEMP**. ~~M~~ **m**easures to be ~~included in the plan and~~ implemented during the ~~demolition~~ **construction** works to protect stormwater quality ~~would~~ includ**ing** ~~e~~:<br>• Stormwater or groundwater ponded in excavations would be sent to the WWTP, unless it is tested and is of suitable quality to be directed to stormwater<br>• Stormwater that is captured in the bunds around the contaminated soil stockpiles would be collected and sent to the WWTP<br>• Silt fencing and/or alternate sediment control measures would be installed around soil stockpiles and disturbed areas or areas where dust suppression is being undertaken<br>• Regular inspection would be undertaken of soil stockpiles~~/~~ **and** excavation areas, including following rainfall events<br>• ~~Regular inspection of excavation areas and containment cell area, including following rainfall events~~ | | | | | ✓ | ✓ | | | | ✓ | |

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| | • Regular inspections would be undertaken of stormwater drains down hydraulic gradient of disturbed areas.<br>• ~~Stormwater management measures incorporated into the design of the containment cell would be regularly inspected during operation in line with the Site's existing Inspection Checklist and following heavy rain events;~~<br>• ~~If stormwater quality is impacted during the demolition works and ACS Modification works in areas that have been disturbed, water would be diverted to the intermediate sewer system; and~~<br>• ~~During the demolition works and ACS Modification works, following notable but prolonged rainfall events (over three days) or following heavy rainfall events over a shorter timescale, water sampling would be completed at the stormwater retention basin to ensure that the quality of the water is of an appropriate standard to be discharged from the Site. Water that is not of an appropriate quality would be either treated in situ or directed to the WWTP.~~ | | | | | | | | | | | |
| ~~F3~~ | ~~Caltex would continue to implement the measures within the Stormwater Management Plan (SMP) for the Site. This plan has been produced in response to Environment Protection Licence No. 837, PRP U24.1: Stormwater Catchment and Management Plan. The SMP has committed Caltex to implementing a Stormwater Management Strategy and completing a number of stormwater management measures in a staged manner. Measures include:~~<br>~~Ongoing maintenance of the existing stormwater system~~<br>~~Implementation of a number of projects to improve the infrastructure, reduce the potential for the refinery to flood, and prevent contaminated stormwater leaving the refinery premises~~<br>~~Working with the NSW Office of Environment and Heritage (OEH), NSW EPA and Sutherland Shire Council to divert to flow of stormwater from the National Park away from the Site's stormwater system to the Sutherland Shire Council's stormwater infrastructure~~ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |

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| | ~~Carrying out stormwater flow monitoring~~<br>~~Updating the Site's stormwater system performance model to account for the changes to the stormwater system infrastructure that can then be used as a tool to assess future modifications, as necessary.~~<br>~~This work would be completed in consultation with NSW EPA.~~ | | | | | | | | | | | |
| F4 | Discharges from the Wastewater Treatment Plant would be within existing EPL limits during ~~demolition,~~ construction and operation. ~~Any required change to this Oily Water Management System would be discussed and agreed with NSW EPA.~~ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| F5 | The measures and processes currently in place at the Site to prevent ~~any~~ loss of contaminant would be maintained throughout the ~~demolition, construction and~~ operation phases of the **terminal (as modified) and during the delivery of the** ~~Project~~ **proposed modification**. This includes appropriate measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (as relevant). All bunds on tanks which are retained in service would meet the capacity requirements of *Australian Standard AS1940* during the operation of the ~~Project~~ **terminal (as modified)**. | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| F6 | ~~Improvements to m~~ **M**onitoring would **continue to** be initiated to **confirm** ~~ensure~~ that if a loss of containment into a bund occurs**,** it is detected early and contingency actions can be taken promptly.<br>The measures for tanks containing low flash materials include:<br>• Explosive vapour detectors within the bunds<br>• Triple infrared scanners on tank roofs<br>• CCTV in conjunction with infrared cameras as a confirmation for alarms.<br>All tanks onsite would **continue to** be subject to:<br>• An automated high level shut off system<br>• Continuance of a comprehensive inspection/ repair program. | | | ✓ | | | | | | | | |

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| F7 | **Earthworks required for MOD-7 works would not remove existing bunding in the Site (with the exception of the bund at Source Area Excavation 5) and would not result in an increased offsite flood risk.**<br>~~Caltex undertakes a flood study, commencing in March 2018 that assesses potential flood risks from the Site to the Kurnell township, with a particular emphasis on the impacts from surface water entering the Site from land to the east and south of the Site and whether current diversion methods are appropriate. The flood study would consider the Sutherland Shire Council's *Draft Sea Level Rise Policy* (May 2016), or a latest revision.~~<br>~~Caltex to remain in consultation with Sutherland Shire Council during throughout the flood risk ing investigation works to identify a mutually acceptable solution to potential flood risks along the north eastern boundary of the Site. The timing and form of consultation is to be mutually agreed by both parties (Caltex and Sutherland Shire Council) and outlined within a written document to be produced by Caltex prior to March 2018. It shall include regular reporting updates and milestone meetings, for example, at the Scope of Works, concept design, at the issuing of the draft report to discuss results and recommendations as a result of the study.~~ | | | ✓ | | ✓ | | ✓ | | ✓ | ✓ | |
| F8 | The following measures would be employed during and following the ~~demolition~~ **remediation** of ~~the refinery process units and associated infrastructure~~ **land within the Project Area**:<br>• Appropriate bunding and controls would be put in place to prevent stormwater runoff from ~~the demolition works area~~ **contaminated soils** entering the stormwater system.<br>• **Activities associated with the proposed modification would not significantly alter existing landform or finished surface levels across the Site, with the exception of RPIP Mountain and Source Area 5, nor would these alter the existing surface** | | | | | ✓ | | | | ✓ | ✓ | |

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| | **finishes (in terms of imperviousness).** Following the completion of the ~~demolition works and removal of redundant infrastructure, the former refinery process area would be regraded. The regrading would aim to ensure that water does not pool in this area.~~ **construction, the landform would be returned to grade (except RPIP Mountain and Source Excavation Area 5), thereby retaining surface levels across the Site. Reinstated surface finishes would be no less impervious than the current scenario.**<br>• **RPIP Mountain would be graded to allow water to drain, prevent water pooling in the centre of the mound, and prevent slope instability. Once regraded, surface levels would not be below existing surrounding ground levels.**<br>• ~~As part of the regrading works, the Surface material in this area would meet the commercial/ industrial~~ **use** ~~criteria as defined by Schedule B1 Guidelines, *Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013.* A crushed aggregate made from clean concrete and asphalt from the demolition works would also be spread across the surface to help reduce soil erosion.~~ **Surface treatments, such as grassing hydromulch, would be provided to help mitigate soil erosion.**<br>• Stormwater runoff collected in the stormwater system would be subject to the controls within this system ~~(such as the oily water separators)~~ prior to being discharged. | | | | | | | | | | | |
| F9 | **All** excavation ~~of the pipeways~~ would be staged, effectively minimising the area of disturbance at one time. The ~~ACS Modification~~ **MOD-7** works would be undertaken in a manner to minimise the potential for soil erosion and sedimentation. | | | | | | ✓ | | | | ✓ | |

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| F10 | Local weather patterns would be monitored to **confirm** ~~ensure~~ that workers completing the ~~ACS Modification~~ **construction** works at the Site were aware of predicted heavy rainfalls so that work could be stopped in the pipeways **and other flood-prone areas** prior to them containing surface water flows. | | | | | | ✓ | | | | ✓ | |
| ~~F11~~ | ~~The OEMP for the Site would be updated to include the following measures:~~<br>~~The new stormwater management infrastructure for the containment cell would be regularly maintained to ensure that stormwater flows are properly conveyed to the wider catchment; and~~<br>~~The leachate collection system including the tank would be regularly inspected to ensure that it is operating effectively and that no leaks have occurred.~~ | | | | | | | ✓ | | | | |
| **F12** | **Works required for the proposed modification would not remove existing bunding currently used in the OWS (with the exception of Source Area Excavation 5) and would not result in an increased offsite flood risk.** | | | | | | | | | | ✓ | |
| **F13** | **Post-MOD-7 construction discharge rates from the Site would not exceed pre-construction discharge rates in all events up to and including the 1% AEP design storm event.** | | | | | | | | | | ✓ | |
| **F14** | **Stormwater quality monitoring would be carried out pre-construction to establish a baseline, as well as short-term post-construction to confirm the efficacy of stormwater treatments.**<br>**This water quality monitoring would be undertaken in accordance with the Blue Book (Landcom, 2004) and ANZECC & ARMCANZ (2000) guidelines.**<br>**The stormwater quality monitoring regime would be detailed in the Soils and Water Management Plan (SaWMP) and would include a** | | | | | | | | | | ✓ | |

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| | **reactive management approach whereby actions are taken to avoid impacts prior to significant impacts occurring.**<br>**In the event of non-compliance, corrective and preventative actions would be identified.** | | | | | | | | | | | |
| **F15** | **The existing OWS network would be protected during construction works, to avoid damaging or blocking this existing infrastructure and the WWTP.** | | | | | | | | | | ✓ | |
| **Noise and Vibration** | | | | | | | | | | | | |
| G1 | The CEMP~~/ DEMP~~ for the Project would include a Noise and Vibration Management Plan (NVMP). The NVMP would outline:<br>• The locations of noise sensitive receivers<br>• **Potential significant noise and vibration generating activities associated with the proposed modification**<br>• Relevant feasible and reasonable noise mitigation measures as per the NSW Interim Construction Noise Guideline<br>• **Measures to be implemented during construction to minimise noise and vibration impacts, such as restrictions on working hours, staging, placement and operation of work compounds, parking and storage areas, temporary noise barriers, haul road maintenance and controlling the location and use of vibration generating equipment**<br>• ~~Construction noise monitoring procedures; and~~<br>• Construction equipment maintenance to ensure good working order<br>• **A monitoring program to assess performance against relevant noise and vibration criteria**<br>• **Arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures.** | | ✓ | | | ✓ | | | | | ✓ | |

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| G2 | Low-noise plant and equipment would be selected, where practicable, in order to minimise potential for noise and vibration. All equipment would be regularly checked to ensure that the mufflers and other noise reduction equipment are working correctly. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| G3 | Community consultation with local residents would be undertaken to assist in the alleviation of community concerns. Prior to the proposed **modification** ~~demolition~~ works commencing within the Eastern ~~and Western~~ Right of Way~~s~~ **(Zone 1A)**, ~~at Silver Beach, on the Wharf or~~ **and** prior to particularly loud ~~demolition~~ works occurring on the main terminal site, potentially affected residents within Kurnell would be notified in advance. Should complaints be received, the complaints register would continue to be maintained and managed in line with the existing feedback process at the Site. | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | ✓ | |
| G4 | Any noise complaint(s) would be investigated immediately. Reasonable and feasible measures would to be implemented to reduce noise impacts. | | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| G5 | Construction~~/demolition~~ equipment would be located to reduce noise emission to sensitive receptors, where practicable. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| G6 | **In line with the Interim Construction Noise Guideline (ICNG) (DECC, 2009), construction works would comply with following hours:**<br>• **Monday to Friday – 7am to 6pm**<br>• **Saturday – 8am to 1pm**<br>• **Sunday and public holidays – No work is permitted.**<br>**Construction works outside of the work hours identified above would only be undertaken in the following circumstances (in line with Condition C20 of SSD 5544):**<br>• **Works that are inaudible at nearest sensitive land receivers**<br>• **Works that are consistent with Ampol's existing maintenance procedures and are in accordance with the existing** | | ✓ | | | ✓ | ✓ | | | | ✓ | |

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| | **Environment Protection Licence (No. 837) (EPL)**<br>• **Works agreed to in writing by the Environment Protection Authority or the Department of Planning, Housing and Infrastructure**<br>• **For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons**.<br>**Biopiling blowers may operate on a 24-hour basis in identified Biopiling Areas.**<br>**Dewatering may occur on a 24-hour basis. Outside of standard hours, dewatering pumps would only be operated under the following conditions:**<br>• **Dewatering pumps are located a minimum of 200 m from the Site boundary; or**<br>• **Dewatering pumps are located a minimum of 120 m from the Site boundary if temporary noise barriers are positioned as near as practicable to the pumps, and monitoring confirms that nighttime noise limits are not exceeded.**<br>~~The majority of the conversion works for the Project would typically be completed between 7.00am to 10.00pm seven days a week. Some works consistent with Caltex~~ Ampol's existing day-to-day operational and maintenance procedures would **continue to** occur over a 24 hour period as regulated by the EPL for the Site. | | | | | | | | | | | |

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| G7 | Construction~~/Demolition~~ staff and contractors would undergo training in environmental noise issues including:<br>• Minimising the use of horn signals and maintaining a low volume. Alternative methods of communication should be considered<br>• Avoiding any unnecessary noise when carrying out manual operations and when operating plant<br>• Switching off any equipment not in use for extended periods during construction work<br>• Ensuring works occur within approved hours. | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| G8 | Should any unexpected construction activities occur which could potentially generate significant noise not described in this report, monitoring would be undertaken to ensure construction noise emission levels do not exceed EPL limits. | | ✓ | | | | ✓ | | | | ✓ | |
| ~~G9~~ | ~~Pipeline removal works would be confined to 7.00 am to 6.00 pm Monday to Saturday as per Condition C19 (for SSD 5544).~~ | | | | | ✓ | ✓ | | | | | |
| ~~G10~~ | ~~Demolition works near 30D Cook Street (i.e. within 500m) would be confined to 7.00am to 6.00 pm Monday to Saturday as per Condition C19.~~ | | | | | ✓ | | | | ✓ | | |
| ~~G11~~ | ~~Demolition noise monitoring would be undertaken when necessary to ensure compliance with demolition noise criteria.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| G12 | ~~Caltex~~ **Ampol** would ensure that the noise generated by the **proposed construction** ~~demolition~~ works does not exceed the **construction NMLs** criteria defined in **Table 3-2 of the Updated Noise and Vibration Impact Assessment** ~~Table 2 (from Condition of Consent C16 of SSD 5544)~~ unless the reasonable and feasible noise mitigation strategies outlined within the ~~D~~NVMP have been implemented. Reasonable and feasible noise mitigation strategies would include appropriate respite periods during particularly noisy or prolonged activities. | | | | | ✓ | | | | ✓ | ✓ | |

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| ~~G13~~ | ~~The DNVMP would describe where demolition noise limits from Table 2 (from Condition of Consent C16 of SSD-5544) are likely to be exceeded and what reasonable and feasible noise mitigation would be employed to minimise noise.~~ | | | | | ✓ | | | | ✓ | | |
| ~~G14~~ | ~~To help ensure that the structures on Site that are to be retained with high or medium heritage significance are protected from potential vibration impacts, the DNVMP would also~~<br>~~Utilise Appendix H Heritage Impact Assessment to identify the medium to high heritage significance buildings to be retained;~~<br>~~Identify where works to demolish redundant structures are occurring within 20 m of a medium to high significance heritage building and the requirement to undertake vibration monitoring and management for these buildings to protect their integrity; and~~<br>~~Outline general monitoring and management measures to monitor vibration and manage buildings.~~ | | | | ✓ | | | | ✓ | | | |
| ~~G15~~ | ~~The Tank 101 demolition works would be coordinated with other nearby demolition works to reduce the potential for cumulative impacts.~~ | | | | | | | | | ✓ | | |
| **G16** | **Vibration intensive equipment would be selected and minimum working distances, as presented in Table 4-5 of the Noise and Vibration Impact Assessment, would be adhered to. The use of less vibration intensive methods of construction or equipment would be considered where feasible and reasonable.** | | | | | | | | | | ✓ | |
| **G17** | **Equipment associated with the relocated firewater system would be treated so that operational noise levels do not exceed the criteria defined in Condition of Consent C17 of SSD-5544.**<br>**Maintenance and testing activities associated with the firewater system would be conducted during standard daytime hours only:**<br>• **Monday to Saturday – 7am to 6pm**<br>• **Sunday – 8am to 6pm.** | | | | | | | | | | | ✓ |

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| | **Equipment associated with the relocated firewater system would reduce running times as far as practical during maintenance and testing activities.** | | | | | | | | | | | |
| **G18** | **Equipment specifications and physical upgrades to the exhaust, diesel pumps, and pumphouse in the Relocation FWS Area to limit noise (such as a new or upgraded muffler with an improved insertion loss of 5 dB at each octave band) would be verified during detailed design.** | | | | | | | | | | | ✓ |
| **Air Quality and Odour** | | | | | | | | | | | | |
| H1 | An Air Quality Management Plan (AQMP) would be prepared as part of the CEMP to minimise the impact of dust upon sensitive receivers. This would include:<br>• Measures to monitor dust emissions from the construction phase, such as visual inspections<br>• Appropriate measures to be undertaken during adverse weather conditions<br>• Appropriate, reasonable, and feasible measures to mitigate adverse air quality impacts, such as:<br>- Vehicles would only travel on designated roads within the Site where possible and would be limited to a maximum speed of 10 km/hr in offroad areas and 25 km/hr elsewhere<br>- Loads would be covered **as required**, and all tailgates would be securely fastened. Vehicles would not be loaded higher than the sides and tailboard.<br>- Concrete cutting and coring would be undertaken using “wet tools”<br>- Water sprays would be used to dampen down soils prior to excavation, handling and/or loading/ unloading materials **as required** | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |

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| | - All plant would be maintained and operated in line with the manufacturer's specifications in order to minimise the emission of air pollutants and offensive odours.<br>- Plant and construction vehicles would be turned off when not in use.<br>**A Trigger Action Response Plan (TARP) would be developed and detail appropriate actions in response to elevated dust levels at sensitive receivers, and supported by real-time $PM_{10}$ monitoring.**<br>~~Dust emissions from the construction phase of the Project and during the demolition works would be monitored by construction/demolition staff.~~<br>~~Visual inspections would be completed by demolition staff during the works.~~<br>~~Demolition staff would also complete dust deposition monitoring during the demolition works (as per AS/NZS 3580) in appropriate locations on the Site boundary and in Kurnell. Staff would also monitor dust ($PM_{10}$) levels using the onsite real time ambient air quality monitoring station.~~<br>~~When required, during activities likely to cause high dust levels or adverse weather conditions etc., a designated worker would continuously monitor downwind emissions to the community or local residents, using the methods described above, and call a halt to activities if sensitive receptors are likely to be affected by airborne particulate matter.~~<br>~~Should significant impacts be likely, appropriate measures would be taken to mitigate adverse air quality impacts.~~ | | | | | | | | | | | |
| ~~H2~~ | ~~Within the refinery, vehicles would only travel on designated roads where possible and would be limited to a maximum speed of 10 km/hr in offroad areas and 25 km/hr elsewhere.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | | |

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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~H3~~ | ~~Where there is the potential for dust or odour generation from trucks carrying spoil, loads would be covered and all tailgates would be securely fastened. Vehicles would not be loaded higher than the sides and tailboard.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | | |
| ~~H4~~ | ~~Construction and potentially dust generating demolition activities would be limited during high wind events if sensitive receivers are likely to be significantly impacted.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | | |
| ~~H5~~ | ~~All plant would be maintained and operated in line with the manufacturer's specifications in order to minimise the emission of air pollutants and offensive odours. Plant and construction vehicles would be turned off when not in use.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | | |
| ~~H6~~ | ~~Stockpiled material would be assessed for the potential for causing odorous or particulate emissions. If air pollutants and offensive odours are likely, controls would be put into place to manage adverse impacts.~~ | | ✓ | | | ✓ | | | | ✓ | | |
| ~~H7~~ | ~~All concrete cutting and coring would to be undertaken using "wet tools."~~ | | ✓ | | | ✓ | | | | ✓ | | |
| H8 | An odour reduction program would **continue to** be implemented in accordance with the existing EPL **during construction and operation.** | | ✓ | ✓ | | | | | | | ✓ | ✓ |
| H9 | The guide poles on the External Floating Roof Tanks (EFRTs) in gasoline service would be fitted with sleeves. | | ✓ | ✓ | | | | | | | | |
| H10 | ~~Caltex~~ **Ampol's** Leak Detection and Repair (LDAR) Program would continue in accordance with the Environment Protection Licence. | | ✓ | ✓ | | | | | | | | |
| ~~H11~~ | ~~All reasonable and feasible measures would be implemented to minimise dust and odour emissions during the demolition works~~ | | | | | ✓ | ✓ | | | ✓ | | |
| ~~H12~~ | ~~VOC and Odour Monitoring would be undertaken by demolition workers or ACS Modification workers (i.e. visual and olfactory monitoring) and monitoring equipment during excavation activities where potential hydrocarbon contamination is present. Contractors would notify the Caltex Environment Specialist of any significant odours identified during demolition.~~ | | | | | ✓ | ✓ | | | ✓ | | |

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| H13 | Soils or concrete with significant hydrocarbon staining or obvious hydrocarbon odours would be transported to the ~~former CLOR area~~ **Waste Management Areas (refer to Figure 1-5 of the MOD-7 Submission Report)** and stored appropriately.<br>**To minimise impacts related to odour, the AQMP would include the following measures:**<br>• Stockpiles of contaminated soil stored onsite would be managed to prevent odorous **volatile organic compound (**VOC**)** emissions and windblown particulate emissions<br>• Excavation would be staged to manage potential VOC and odour emissions. Where practical, excavations would not commence prior to 8am nor after 4pm as weather conditions at these times are generally conducive to adverse odour air quality situations from fugitive emissions<br>• In the event of an odour complaint, an evaluation would be undertaken to confirm if the **proposed modification** works are the source of the odours. If the construction works are confirmed as a potential ongoing odour source, additional mitigation measures would be implemented which could include the use of water sprays to suppress odours and, if necessary, the use of odour suppressants. Offsite olfactory observations and VOC monitoring using equipment would also be undertaken if necessary. In the event of ongoing odour issues, excavation activities would be stopped and if necessary, the excavation covered or backfilled. | | | | | ✓ | | | | ✓ | ✓ | |
| ~~H14~~ | ~~Excavation would be staged to manage potential VOC and odour emissions. Where practical, excavations would not commence prior to 8am nor after 4pm as weather conditions at these times are generally conducive to adverse odour air quality situations from fugitive emissions.~~ | | | | | ✓ | ✓ | | | ✓ | | |

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| ~~H15~~ | ~~In unfavourable weather conditions (e.g. dry and windy conditions) or where dust sources are present near sensitive receivers, water sprays would be used to dampen down soils prior to excavation, handling and/or loading/ unloading materials. All exposed surfaces (from recent excavations) and stockpiles (of excavated material) would also be watered, sprayed or covered where required, to minimise nuisance dust and odours.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| ~~H16~~ | ~~During adverse meteorological conditions and extraordinary events, such as events where elevated background dust is present, additional mitigation measures would be considered to prevent and minimise air quality impacts from demolition works. These measures would include, but not be limited to implementing the following during high wind events (e.g. > 8 m/s hourly average):~~<br>~~Reducing working surface area~~<br>~~Commencing excavation during favourable wind conditions~~<br>~~Increase wetting agents for exposed surfaces~~<br>~~Increase covering of exposed surface areas.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| H17 | Surface disturbance would be minimised. Exposed ground would be rehabilitated as soon as practicable. | | | | | ✓ | ✓ | | | ✓ | ✓ | |
| H18 | During concrete crushing:<br>• The crusher would be located as far as practicable from the Site boundary, allowing adequate buffer distance from receptors.<br>• Real-time dust monitoring would be undertaking during the operation of the concrete crusher. Details of this monitoring (and associated response actions) would be incorporated into the AQMP for the **construction** ~~demolition~~ works.<br>• A number of dust suppression measures would be implemented. These could include regular watering of stockpiles, dust curtains and other measures as appropriate. | | | | | ✓ | | | | ✓ | ✓ | |

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| ~~H19~~ | ~~During crushing, a number of dust suppression measures would be implemented. These could include regular watering of stockpiles, dust curtains and other measures as appropriate.~~ | | | | | ✓ | | | | ✓ | | |
| ~~H20~~ | ~~Where biological matter is present within cooling water inlet pipework, the pipework would be removed be as soon as possible. This would help to minimise the potential for odour issues associated with the degradation and then exposure of the biological matter.~~ | | | | | ✓ | | | | ✓ | | |
| ~~H21~~ | ~~Where visible dust emissions are observed appropriate management actions would be implemented to prevent impact.~~ | | | | | ✓ | | | | ✓ | | |
| ~~H22~~ | ~~In the event of an odour complaint, an evaluation would be undertaken to confirm if the demolition works are the source of the odours. If the demolition works are confirmed as a potential ongoing odour source, additional mitigation measures would be implemented which could include the use of water sprays to suppress odours and, if necessary, the use of odour suppressants. Offsite olfactory observations and VOC monitoring using equipment would also be undertaken if necessary. In the event of ongoing odour issues, excavation activities would be stopped and if necessary, the excavation covered or backfilled.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| H23 | In line with ~~Caltex~~ **Ampol's** existing procedure, following a complaint and its subsequent investigation, feedback regarding the source and nature of the complaint would be provided to the affected community members. | | | | | ✓ | ✓ | | | ✓ | ✓ | |
| ~~H24~~ | ~~Dust deposition monitoring would be undertaken during the demolition works (as per AS/NZS 3580). This would include monitoring points in appropriate locations on the Site boundary and in Kurnell.~~ | | | | | ✓ | | | | ✓ | | |
| H25 | The onsite real time ~~ambient air quality~~ **meteorological** monitoring station would ~~continue to~~ operate throughout the **construction/**demolition works. This station **would** continuously monitor~~s, for $PM_{10}$~~, wind direction and speed, temperature**, air pressure,** ~~and~~ humidity and rainfall. | | | | | ✓ | ✓ | | | ✓ | ✓ | |

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| ~~H26~~ | ~~A summary of the air quality monitoring data for the demolition works would be provided to the community during Caltex quarterly community meeting.~~ | | | | | ✓ | ✓ | | | ✓ | | |
| ~~H27~~ | ~~The DEMP would include a subplan: the Containment Cell Management Plan. With regards to air quality, this subplan would include:~~<br>~~A brief overview of the containment cell operations relevant to potential air emission sources.~~<br>~~Identification of mitigation measures for each respective emission source including those measures outlined in the DEMP for the Site (where relevant to operations within the containment cell area).~~<br>~~Details of proposed monitoring and recordkeeping procedures.~~<br>~~During the production of this plan the NSW EPA *Guidelines for Environmental Management On-Site Remediation*, would be reviewed and if necessary relevant measures incorporated.~~ | | | | | | ✓ | | | | | |
| ~~H28~~ | ~~The Containment Cell Management Plan would be prepared and include the following mitigation measures:~~<br>~~A Soil Acceptance Criteria which identifies:~~<br>~~Only soil contaminated with airborne asbestos* (referred to in the ACS Modification works as ACS) from the Site (as defined by Figure 1-2 in the SEE) would be accepted into the containment cell.~~<br>~~Soils entering the containment cell from the Site but outside of the pipeways must be classified in accordance with the NSW EPA Waste Classification Guidelines 2014, as either special general solid waste or special restricted solid waste.~~<br>~~All soils, regardless of their classification under the NSW EPA Waste Classification Guidelines 2014 from the pipeways on the Site (as shown on Figure 1.2 of the SEE) would be disposed of in the containment cell.~~<br>~~The total volume of ACS would be limited by the design specifications final landform.~~<br>~~Prior to the commencement of filling activities dust and aerosol monitoring stations would be placed at a minimum of six locations~~ | | | | | | ✓ | | | | | |

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| | ~~around the working area with the objective of monitoring prevalent upwind and downwind locations.~~<br>~~Soil moisture content will be managed to ensure that it is greater than 15% in order to minimise potential particulate matter and asbestos [fibre] emissions to the maximum extent practicable by wetting of soils during filling of cell to minimise the generation of dust.~~<br>~~Directed water sprays will be used when required throughout ACS handling operations.~~<br>~~A biodegradable cover would be sprayed over ACS in the containment cell to minimise the generation of dust. The cover would be applied following the placement of ACS within the containment cell, and at the end of each day.~~<br>~~Limiting potentially dust generating activities during high wind events (i.e. >8m/s hourly average or in severe wind gust conditions)~~<br>~~Stockpiles will be maintained in a moist condition when not covered, and be covered if not in use or left overnight.~~<br>~~Completed areas of the works area will be revegetated with native grasses as soon as is practicable.~~<br>~~*Note – Airborne asbestos means any fibres of asbestos small enough to be made airborne (Safe Work Australia, April 2016, Code of Practice: How to Safely Remove Asbestos)~~ | | | | | | | | | | | |
| ~~H29~~ | ~~The DEMP and relevant sub plans (e.g. Asbestos Management Plan and Containment Cell Management Plan) would be revised to include the following measures:~~<br>~~A defined exclusion zone around the work area within which only staff who have been appropriately inducted in relation to the site procedures are permitted entry~~<br>~~Wetting of soils during excavation and disturbance works to minimise the generation of dust~~ | | | | | | ✓ | | | | | |

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| | ~~An Asbestos Removal Control Plan which identifies appropriate procedures for personal protective equipment; staff induction and decontamination of equipment~~<br>~~Preparation of an asbestos monitoring and management plan to account for the activities that may liberate asbestos into the atmosphere. Dust and aerosol monitoring would occur in areas of the Site where asbestos in soil has been identified or is suspected to occur (including the pipeways) together with monitoring and analysis methods, exposure and control criteria and contingencies that will be implemented in the event specific exposure control criteria are exceeded.~~ | | | | | | | | | | | |
| **H30** | **Caterpillar 3406B diesel engines in the relocated firewater system would be retrofitted to improve emission performance to meet Tier 1 US EPA Nonroad Compression-Ignition Engines: Exhaust Emission Standards (EPA-420-B-16-022). If another make or model is used, the new equipment must achieve the same or better environmental performance.** | | | | | | | | | | ✓ | |
| **Transport and Access** | | | | | | | | | | | | |
| I1 | **Sutherland Shire Council and Kurnell residents would be informed of works that would significantly affect the road network at least two weeks prior to these activities occurring (or in line with regulatory requirements). Significant activities would include the MOD-7 works commencing, works to construct the new storage shed in Zone 1A commencing, and Oversize and Overmass (OSOM) movements along Captain Cook Drive**.<br>~~Local Authorities and Kurnell residents would be informed of any Project related work which would affect the road network.~~ | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| I2 | A **Construction** Traffic Management Plan **(CTMP)** would be developed for the construction~~/ demolition~~ phase. The Traffic Management Plan would comply with all relevant Regulations and By-Laws and in | | ✓ | | | ✓ | ✓ | | | | ✓ | |

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| | particular address safe access and egress to the public road network.<br>The ~~Transport Management Plan~~ **CTMP** would include:<br>• Hours of permitted vehicle activity<br>• Designated routes for construction ~~and demolition~~ traffic and defined access points to the Site ~~and demolition works area~~<br>• Duration of works<br>• Permitted ~~demolition~~ vehicle types<br>• Designated areas within the Site and **MOD-7 Project Area** ~~demolition works area~~ for truck turning movements, parking, loading and unloading to allow heavy vehicles to enter and leave the Site and **MOD-7 Project Area** in a forward direction<br>• Sequence for implementing traffic management measures should these be required<br>• Procedures and/or principles for construction and demolition vehicle speed limits and the safe operation of construction and demolition vehicles<br>• Coordination of off-site heavy vehicle movements from the ~~demolition works and ACS Modification works~~ **Site** to help ensure that heavy vehicle movements do not exceed ~~60~~ **136** movements per day~~.~~<br>• **Outline plan for the movement of OSOM vehicles accessing the Site, including routes, appropriate construction hours for deliveries, road closures, and permit requirements.** | | | | | | | | | | | |
| ~~I3~~ | ~~Works to remove pipelines from under the road reserves in Kurnell would not take place before a road opening application has been approved by Sutherland Shire Council and on the days the following events are taking place:~~<br>~~Australia Day (January);~~<br>~~The Festival of Kites (May);~~<br>~~The Boree Regatta (October). and~~ | | | | ✓ | ✓ | | | | | | |

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| | ~~Water events for the Australian Scout Jamboree (first two weeks of January 2016).~~ | | | | | | | | | | | |
| ~~I4~~ | ~~Traffic related to the ACS Modification works would be managed under the Traffic Management Plan that forms a sub-plan to the DEMP~~ | | | | | | ✓ | | | | | |
| **I5** | **Notification of Transport for NSW, Sutherland Shire Council, and other proponents of the Breen Resource Recovery Facility and Kurnell Planning Proposal projects would take place, as relevant, through the delivery of the MOD-7 works to help manage potential cumulative traffic impacts along Captain Cook Drive.** | | | | | | | | | | ✓ | |
| **Heritage** | | | | | | | | | | | | |
| ~~J1~~ | ~~A Heritage Management Strategy would be prepared for the Australian Oil Refinery prior to shut-down of the refinery plant, to provide Caltex with a basic framework for the ongoing management of the Site's heritage during present and future works. The Strategy would include a review of the heritage significance of the overall Site. The review would clarify the extent and relative heritage value of the place by identifying key elements of industrial and built heritage as well as social values of the refinery, and the relative contribution of these elements to the overall significance of the Site. Recommendations would also address the future assessment and management of memorabilia and other significant items of moveable heritage maintained on site.~~ | ✓ | | | | | | | | | | |
| J2 | If any further heritage items were discovered throughout the **delivery of the** ~~Project~~ **proposed modification**, work would cease until an assessment is carried out by a qualified heritage professional. | ✓ | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | |
| ~~J3~~ | ~~An archival photographic record of the existing fabric and operations of the Kurnell Refinery would be prepared while the plant is still operational, and during the decommissioning process. The recording would be undertaken in accordance with the Heritage Council guidelines on *Photographic Recording of Heritage Items Using Film and*~~ | ✓ | ✓ | | | | | | | | | |

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| | ~~*Digital Capture* (2006). The archival recording would be maintained for the appreciation of present and future generations. To this end, the recording would be lodged with the Sutherland Shire Library and NSW State Library.~~ | | | | | | | | | | | |
| J4 | The Heritage Management Strategy (HMS) and the **relevant** management strategies within it would continue to be implemented. | | | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ |
| ~~J5~~ | ~~Opportunities to adaptively reuse redundant buildings identified in the HMS as having high or moderate heritage significance would continue to be reviewed prior to final demolition works.~~ | | | | ✓ | ✓ | | | | | | |
| J6 | The sculptural panels by Bert Flugelman would be retained and preserved. | | | | ✓ | ✓ | | | | | ✓ | ✓ |
| ~~J7~~ | ~~Sandstone blocks from the informal sandstone wall along Silver Beach would be set aside in a secure location prior to works, and reinstated in the same location following removal of the cooling water outlet pipeline.~~ | | | | ✓ | ✓ | | | | | | |
| ~~J8~~ | ~~Appropriate mitigation measures would be implemented to reduce the likely damage to the interpretive footpath in front of the driveway entrance to the Kurnell Wharf. Measures would include:~~<br>~~Making a record of the current state of the pavement.~~<br>~~Removing the affected pavement in sections and storing these sections in a secure location.~~<br>~~Reinstating the pavement in the same location following the removal of pipelines;~~<br>~~If this is not practicable, a similar pavement treatment and a matching or compatible interpretative design would be reinstated.~~ | | | | ✓ | ✓ | | | | | | |
| ~~J9~~ | ~~If historical archaeological relics are unexpectedly found during the demolition works, works in the area of the relics would cease and the Heritage Council of NSW would be notified.~~ | | | | | ✓ | ✓ | | | ✓ | ✓ | |

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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| J10 | A Stop Works procedure would be implemented should any **unexpected finds of** Aboriginal Heritage **or non-Aboriginal heritage importance** ~~items~~ be found **including** historical archaeological relics. Works would cease at the vicinity of the item and ~~OEH~~ **Heritage NSW** would be notified as soon as possible | | | | | ✓ | ✓ | | | ✓ | ✓ | |
| J11 | If any human remains are disturbed, all work in the vicinity of the remains would stop immediately and the remains would not be further disturbed or moved. Works would cease at the vicinity of the item and ~~OEH~~ **Heritage NSW** and NSW Police would be notified as soon as possible. | | | | | ✓ | ✓ | | | ✓ | ✓ | |
| J12 | Prior to works commencing, all personnel and contractors involved in ground disturbance works would be briefed on the procedures to follow if human remains or unexpected heritage items are found. | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| J13 | As part of the **CEMP** ~~DEMP~~, a Heritage Management Section ~~will~~ **would** be developed. This ~~will~~ **would** incorporate previous management and mitigation measures that are not already included in the HMS. | | | | ✓ | ✓ | ✓ | | | | ✓ | |
| **J14** | **An Aboriginal Cultural Heritage Management Plan (ACHMP) would be prepared and implemented for the proposed modification. Measures would include:**<br>• **Following the development of a detailed subsurface intrusive works program, a map would be prepared identifying locations where proposed excavations extend below fill layers and into intact sand deposits.**<br>• **Where impacts to Aboriginal archaeological deposits are identified, a Registered Aboriginal Party representative would be engaged to monitor works in this area**<br>• **Reporting against the ACHMP would be undertaken in line with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW. Printed and/or digital copies of** | | | | | | | | | | ✓ | |

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| | **any associated reports would be made available to Registered Aboriginal Parties.**<br>• **Ampol would confirm that the proposed modification's standard environmental site induction includes an Aboriginal heritage component.** | | | | | | | | | | | |
| **J15** | **If Aboriginal archaeological deposits are identified during intrusive subsurface works, the following procedure would be followed:**<br>• **All works would cease immediately in the area to prevent further impacts to the object(s)**<br>• **Notify the Project Manager**<br>• **Engage a suitably qualified archaeologist and RAP representative to determine the nature, extent and significance of the object(s) and provide appropriate management advice. Management action(s) would vary according to the type of evidence identified, its significance (both scientific and cultural) and the nature of potential impacts. The significance of any Aboriginal archaeological deposits identified would be assessed using the criteria outlined in Heritage NSW's Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales. Management would include the following:**<br>- **Objects/ sites assessed as of low significance would be subject to collection and appropriate analysis by a qualified archaeologist and RAP representative. Outside of this, no further mitigation would be required.**<br>- **Objects/ sites assessed as of moderate significance would be subject to collection and appropriate analysis by a qualified archaeologist and RAP representative. Other forms of mitigation (i.e. detailed recording, test or open area excavation) may be implemented if considered appropriate/ feasible, taking into account Worker Health** | | | | | | | | | | ✓ | |

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| | **and Safety considerations and the nature of proposed impacts. The extent of other forms of mitigation would be determined through consultation between Ampol, RAPs, Heritage NSW, and an appropriately qualified archaeologist.**<br>**- Management of objects/ sites assessed of high scientific significance would be determined through consultation between Ampol, RAPs, Heritage NSW, and an appropriately qualified archaeologist. Such mitigation measures may include archaeological excavations or conservation.**<br>**• Prepare and submit an Aboriginal Heritage Information Management System (AHIMS) site card for the Site.** | | | | | | | | | | | |
| **J16** | **An Aboriginal community representative must be present where it is reasonably suspected burials or human remains may be encountered. If human remains are unexpectedly encountered and they are thought to be Aboriginal, the Aboriginal community would be notified immediately.**<br>**Recording of Aboriginal ancestral remains would be undertaken by, or be conducted under the direct supervision of, a specialist physical anthropologist or other suitably qualified person.**<br>**Archaeological reporting of Aboriginal ancestral remains would be undertaken by, or reviewed by, a specialist physical anthropologist or other suitably qualified person, with the intent of using respectful and appropriate language and treating the ancestral remains as the remains of Aboriginal people rather than as scientific specimens.** | | | | | | | | | | ✓ | |

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| **J17** | **Provisions regarding appropriate consultation protocols with Registered Aboriginal Parties would be included in the ACHMP. Contact details and preferred contact methods for each Registered Aboriginal Party (RAP), as well other relevant stakeholders, would be specified.** | | | | | | | | | | ✓ | |
| **Ecology** | | | | | | | | | | | | |
| K1 | A Biodiversity and Weed Management Plan (BWMP) would be prepared in order to limit and control the spread of noxious weeds within the Site~~/demolition works area~~. It would include the following:<br>• Wash down procedures to reduce the spread of weeds via vehicles and machinery<br>• Measures to target potential new weed outbreaks including soil stockpiles and any other disturbed areas<br>• Outline monitoring programs for noxious and problematic weeds on site and in the surrounding areas<br>• Measures for strict stockpiling control to help eradicate all noxious weeds as per NSW DPI specifications for Sutherland Shire LGA<br>• Include a list of 'frog-friendly' and 'wetland friendly' herbicides such as Roundup Biactive or Weedmaster DUO for the control of noxious weeds; and ensure that only amphibian friendly herbicides are used<br>• Wash down protocols for construction/demolition vehicles and machinery to prevent the spread of root-rot fungus (*Phytophthora cinnamomi*) and noxious weeds<br>• All personnel undertaking routine management activities of any noxious weeds should be appropriated trained and all contractors should hold the necessary permits and licences. Noxious weed information sheets would be provided to demolition contractors to help identification of relevant noxious weeds. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | |

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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| K2 | ~~A BWMP would be prepared in order to limit potential impacts to existing vegetation outside of the area of proposed works, but within the Site. It would include the following:~~<br>~~Existing vegetation on Site would be clearly marked on all Site plans and construction diagrams, with clear indications of no-go zones within all vegetated areas~~<br>~~Existing vegetation would be clearly signposted and fenced off prior to the commencement of construction activities, and should remain fenced off until the completion of works (as per the Vegetation Exclusion Zones shown on Figure 17-1).~~<br>Absolutely all works would be limited to the ~~defined construction/ demolition footprint~~ **Project Area, as defined in Figure 4-1 of the MOD-7 Modification Report**. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | |
| K3 | To minimise the potential for impacts to native fauna species, the BWMP would be developed and include following measures:<br>• Identification sheets would be provided to all construction workers on Site for the ~~two~~ threatened ~~frog~~ species predicted to occur within the Site.<br>• Stop work procedures would be implemented during the works on the chance encounter of any dispersing threatened frogs or birds to avoid death or injury to frogs dispersing across the Site, or disturbance to nesting threatened birds.<br>• ~~If any frogs are found within the Project Area, works would cease until frogs have been relocated to areas outside the area of impact~~<br>• If any threatened frogs, e.g. Green and Golden Bell Frog or Wallum Froglet, are identified within the Site, works would cease and active searching should be undertaken by a qualified zoologist experienced in the identification and management of the Green and Golden Bell Frog and Wallum Froglet<br>• All trenches would be inspected prior to works each morning.<br>**Exclusion fencing shall be maintained during all seasons of** | ✓ | ✓ | ✓ | | | | | | | ✓ | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | **the year.** Any frogs that become trapped within trenches would be assessed by a suitably qualified ecologist or veterinarian and then released into the nearest suitable habitat if uninjured<br>• Wash down protocols to prevent the spread of Amphibian Chytrid Disease (chytridiomycosis) would be implemented at relevant work areas. Protocols would be consistent with **NSW DCCEEW** ~~OEH~~ guidelines (DECC, 2008b)<br>• 'Frog-friendly' and 'wetland friendly' herbicides such as Roundup Biactive or Weedmaster DUO would be used for the control of noxious weeds<br>• If fauna are found to be utilising the Site, or a nest, den or roost is found, work in the immediate area is to stop and the animals are to be allowed to move off freely, or relocated by an authorised person to an area outside the construction footprint<br>• **Measures to limit light spill during construction, such as strategic placement and directional lighting, and implementing motion sensor activation.** | | | | | | | | | | | |
| ~~K4~~ | ~~To minimise the potential impacts to native fauna during the demolition works the following measures would be included in the BWMP: Demolition workers would be provided with identification sheets relating to the threatened fauna species predicted to occur within the Site. Stop work procedures would be implemented during the works on the chance encounter of any dispersing threatened frogs or the identification of nesting Pied Oystercatcher, Little Tern, Osprey or White-bellied Sea-eagle to avoid death or injury to frogs dispersing across the study area, or disturbance to nesting threatened birds. Trenches/ holes would be back-filled daily or covered overnight. Where this is not possible, other measures would be considered to prevent and/or mitigate fauna entrapment. Trenches/ holes would be inspected prior to works each morning. Injured frogs that become trapped within trenches would be assessed by a veterinarian or ecologist. Uninjured~~ | | | | ✓ | ✓ | | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | ~~frogs would be captured and released into the nearest suitable habitat to the south of the study area.~~<br>~~If threatened frogs, Green and Golden Bell Frog or Wallum Froglet are identified during demolition works, active searching would be undertaken by a qualified zoologist experienced in the identification and management of the Green and Golden Bell Frog and Wallum Froglet.~~<br>~~When open trenching/ digging/ excavating, Caltex Ampol would ensure that exclusion fencing is erected prior to works commencing each morning. Exclusion fencing shall be maintained during all seasons of the year, given the active season for the Green and Golden Bell Frog extends from September to April and the Wallum Froglet peak activity period occurs during the colder months.~~<br>~~If practicable, works at Silver Beach to remove the cooling water outlet should be completed outside of the known nesting periods for Pied Oystercatcher (August to January) and Little Tern (Spring/Summer). If nesting shorebirds are encountered in the Silver Beach foreshore area in the vicinity of works (within 20 m), works at Silver Beach would cease, a qualified zoologist would be consulted and appropriate actions would be implemented, prior to works recommencing.~~<br>~~If practical, works to remove tall structures on site should be completed outside of the known nesting periods the threatened bird species (July to September for Osprey and June to January for White-bellied Sea-eagle). If not practical then tall structures would be inspected for active nests prior to commencing the demolition works.~~ | | | | | | | | | | | |
| ~~K5~~ | ~~The following recommendations, would be contained in the Cooling Water Outlet Management Plan for managing the potential marine ecology impact and implemented during demolition works:~~<br>~~Silt curtains would be installed seaward of the demolition works area but not directly above existing seagrass communities;~~ | | | | ✓ | ✓ | | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
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| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| | ~~All plant and equipment used in the water column would be appropriately prepared, checked and cleaned to avoid potential release of contaminants;~~<br>~~Plant and equipment used in the water column would be inspected to ensure fragments of the invasive algae Caulerpa taxifolia are not present;~~<br>~~Spill kits would be used to contain and clean up any spills from demolition plant and equipment. Spill kits would be located within 20 m of demolition plant and equipment; and~~<br>~~Demolition works at Silver Beach (particularly those located in the water column) would be timed such that they do not coincide with high tide conditions or during significant wave action.~~ | | | | | | | | | | | |
| ~~K6~~ | ~~Following the removal of the continental carbon pipeline and other infrastructure Caltex would develop a strategy to manage the redundant right of way (CCROW). The strategy would include measures to:~~<br>~~Remove fencing, reprofile and allow natural regeneration the southern part of the CCROW (beyond the southern boundary of the Site) to promote consistent and connected vegetative communities across the southern part of Caltex ownership;~~<br>~~Remove and keep out noxious and invasive weeds, especially during the regeneration phase; and~~<br>~~Reprofiling of the CCROW could include creating gaps in the raised easement to allow for hydrological exchange and habitat regeneration.~~ | | | | | ✓ | | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~K7~~ | ~~Caltex would undertake the following prior to excavation along the Continental Carbon Right of Way:~~<br>~~pre-clearing inspections; and~~<br>~~implementing frog exclusion measures to ensure dispersing frogs are not captured and trapped in trenches during pipeline removal (e.g. exclusion fencing).~~ | | | | | ✓ | | | | | | |
| **K8** | **The following measures would be considered in the detailed design of new buildings to manage light spill:**<br>• **Lighting is directed away from nearby retained habitat**<br>• **Installation of light shields**<br>• **Timer switchers (when possible)**<br>• **Appropriate wavelength controls.** | | | | | | | | | | | ✓ |
| ~~Coastal Processes~~ | | | | | | | | | | | | |
| ~~L1~~ | ~~A Cooling Water Outlet Management Plan would be developed as part of the Demolition Environment Management Plan (DEMP). Rehabilitation works at Silver Beach would be in accordance with this Cooling Water Outlet Management Plan. The following measures would be included:~~ | | | | ✓ | ✓ | | | | | | |
| ~~L2~~ | ~~A detailed survey of the likely extent of the disturbed area at Silver Beach would be undertaken prior to commencing demolition works to ensure that the pre-existing topography is re-established following the works.~~ | | | | | ✓ | | | | | | |
| ~~L3~~ | ~~The affected sand dunes (including the back-beach and sub-aerial beach) would be re-instated using the stockpiled overburden sand and if necessary, additional sand. Additional sand used for reinstating sand dunes would be of similar particle size and composition as the overburden sand.~~ | | | | | ✓ | | | | | | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| ~~L4~~ | ~~The affected sand dunes would be restored to match the previously surveyed topography. A smooth profile from the back-beach area to the dune would be re-established to ensure the aerodynamics are as consistent as possible with the undisturbed areas adjacent to the disturbed area. If necessary, liquid sprays or geotextiles would be used to help stabilise the beach and protect against erosion.~~ | | | | | ✓ | | | | | | |
| ~~L5~~ | ~~The affected sand dunes would be re-vegetated using indigenous, native flora. The existing vegetation is limited to grasses, with no woody vegetation. The area would be re-planted with similar grass species in a manner that ensures minimal loss of wind-blown sand from the dune while the area is re-vegetating. All re-vegetated areas would:~~<br>~~contain signage to highlight these areas as rehabilitation zones that prohibit public and vehicular access;~~<br>~~be temporarily fenced, and~~<br>~~be maintained and monitored until vegetation is established using approved dune rehabilitation methods.~~ | | | | | ✓ | | | | | | |
| ~~L6~~ | ~~Material of a similar sediment size and colour characteristics would be used as back fill material for the trench below the low tide mark. To account for later settling and consolidations, some overfilling would be undertaken to account for later consolidation (approximately 10 % would be recommended).~~ | | | | | ✓ | | | | | | |
| **Social impact** | | | | | | | | | | | | |
| **M1** | **Construction workers for the proposed modification would be employed from the local area where possible to reduce the need for workers to relocate to the area during construction, and to contribute to local employment opportunities.** | | | | | | | | | | ✓ | |

| Item | Management and Mitigation Measure | Conversion (SSD 5544) | | | Demolition (MOD 1, 4 and 5) | | ACS Works (MOD 2, 5 and 6) | | Tank 101 demolition works (MOD 3) | | MOD-7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CD | Conv | Op | DD | Dem | Con | Op | DD | Dem | Con | Op |
| **M2** | **Stakeholder engagement activities carried out during construction would be accessible to a range of groups (such as residents and businesses) in the community. This would include, at a minimum, a range of engagement methods (including options for physical copies of engagement materials). Material in relevant languages used in the local area would be made available if requested.** | | | | | | | | | | ✓ | |

Management and mitigation measures for SSD-5544 (including MOD-1, MOD-2, MOD-3, MOD-4, MOD-5, MOD-6, and MOD-7) are consolidated in the table below. Additional and/ or modified environmental safeguards and management measures to those presented in the approved SSD-5544 are shown in **bold**. Deleted measures, or parts of measures, have been ~~struck out~~. Where approved measures have been consolidated to reduce duplication, previously agreed text that has been brought into existing or new measures has been <u>underlined</u>.

As the works associated with SSD-5544 and MOD-1 to MOD-6 are either completed or ongoing (and not relevant to the proposed modification), these measures have been kept as is, redacted, or amended as necessary to reflect ongoing management. Where these measures are relevant to the proposed modification (MOD-7), they have been kept as is or amended as necessary.

The following acronyms have been used to describe each stage:

CD – Conversion Design; Conv – Conversion; Op – Operation; DD – Demolition Design; Dem – Demolition; and Con – Construction.

# Appendix D

## Consultation table

# Appendix D Consultation table

**Table D-1 Consultation post-exhibition of the Modification Report**

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Mr Mark Speakman MP | 5 August 2025 | Email | Email to Ampol from the office of Mr Speakman to provide a copy of his submission to Ampol's Mod-7 application. Mr Speakman acknowledged that the application related to the consolidation of operational infrastructure, removal of redundant assets, as well as remediation and grading. Mr Speakman acknowledged the concern from the community of potential impacts of this work. Mr Speakman indicated that no methodology to deal with contaminants of potential concern should be approved unless it represents the method with the lowest risk to human health and the environment. |
| Mr Mark Speakman MP | 6 August 2025 | Email | Email from Ampol to the office of Mr Speakman to thank him for sharing his submission. Ampol acknowledged the concerns raised on behalf of the local community. Ampol agreed no remediation approach should proceed unless it represents the most appropriate method for protecting human health and the environment. Ampol also confirmed the methodology will be subject to detailed assessment through public exhibition and scrutiny by regulators and an independent auditor. |
| 'Save Kurnell' community advocacy group | 8 August 2025 | Email | Email correspondence between Ampol and 'Save Kurnell' community advocacy group, sent by Ampol on the 8 August 2025. This engagement acknowledged the groups' key concerns and provided an update on progress regarding the proposed modification planning application, including the development of the Submissions Report and associated technical assessments. Incorrect information being circulated in the community regarding the proposed modification was also addressed. This included, but was not limited to, clarifying the description of the proposed modification, confirming that capping of asbestos is a safe and regulated remediation method used widely in residential and recreational settings, and that any capping would be subject to ongoing management under the Site's Operational Environment Management Plan (OEMP). |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Kurnell community residents | 14 August 2025 | Drop-in session | Ampol facilitated a community drop-in session on 14 August 2025. The drop-in session was advertised on two occasions in the local community newspaper, Sutherland Shire Leader (30 July 2025 and 13 August 2025) via half-page advertisements.<br><br>This provided community members an opportunity to discuss the proposed modification and learn more about the KEIP project (SSD-86799993). This event attracted 25 attendees, with the majority staying for at least 20 to 30 minutes, reading the project information and asking the project team questions.<br><br>The proposed modification fact sheet, described in Section 3.2.1, was distributed during this community drop-in session. |
| Kurnell Pre-School Committee | 14 August 2025 | Email | Ampol acknowledged the submission to the Mod-7 application. It also highlighted some key information on remediation, environmental impacts and the BESS. |
| Kurnell Residents | 14 August 2025 | Email | Ampol acknowledged submission to the Mod-7 application. It also highlighted some key information on the remediation approach. |
| Kurnell Residents | 14 August 2025 | Email | Ampol provided a response to email correspondence issued on the 28 July 2025 by two residents of Kurnell.<br><br>Ampol responded to concerns regarding the Mod-7 Fact Sheet by explaining that the document was designed as a high-level overview, rather than a full technical reference. Ampol clarified that, while asbestos was highlighted due to recent community interest, the broader remediation strategy covers additional contaminants including PFAS, hydrocarbons, cadmium, and chromium; all of which would be managed in line with legal requirements.<br><br>Ampol stated that the protection of Towra Point Nature Reserve had been integral to the design of the proposed modification and that surface water modelling confirmed no increased risk to the site. Ampol further advised the residents of the need of the proposed modification. Ampol reaffirmed its commitment to transparent engagement and offered further opportunities for discussion through meetings and the scheduled community drop-in session. |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Kurnell Resident | 15 August 2025 | Email | The resident emailed Ampol on the 15 August 2025 following the drop-in session, requesting further information on the land ownership of the Site.<br><br>Ampol responded to the resident on the 20 August, acknowledging receipt.<br><br>Ampol emailed the resident on the 29 August and provided an information document, including maps of Ampol's landownership, schedule of land parcels, and title records. |
| Kurnell Resident | 26 August 2025 | Email | The resident raised the following concerns regarding the proposed modification at the community drop-in session:<br><br>• Impacts relating to biodiversity, particularly in reference to mangrove dieback in Towra Point Nature Reserve.<br>• The impact of localised flooding<br>• Proposed remediation strategy<br>• Planning policies referenced in the Modification Report<br>• The future use of the Site:<br>• Community engagement<br>• Whether there would be Sustainable Aviation Fuel at the terminal.<br><br>Ampol responded to the resident on the 26 August, providing responses to concerns. These highlighted the misinformation spreading in the community and instead provided correct information. |
| Sutherland Shire Council | 18 September 2025 | Onsite meeting | Ampol held an onsite meeting with the Sutherland Shire Council on 18 September 2025. The purpose of the meeting was to provide an overview of Ampol's State Significant Development strategy for the Kurnell Energy & Industry Precinct (KEIP). The meeting also outlined the role of the proposed modification within this broader strategy, to remediate land and address legacy refinery infrastructure ahead of the BESS and subdivision works. |
| DPHI | 25 September 2025 | Online meeting | Ampol held an online meeting with DPHI on 25 September 2025. The purpose of the meeting was to discuss the key issues raised in DPHI's submission and to agree on Ampol's actions in response. Instances of misinformation about the proposed modification in other agency and community submissions were also discussed.<br><br>Meeting slides were prepared and distributed to DPHI on 25 September 2025. |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Fire and Rescue NSW | 26 November 2025 | Email | Email correspondence between Ampol and Fire and Rescue NSW, requesting advice on the placement of the relocated FWS in Zone 1. While the preferred location would be determined during detailed design, Ampol sought comment on Option 1 as it is anticipated to provide Fire and Rescue NSW faster and less obstructed access to the infrastructure.<br><br>A response was received on the 1 December, confirming that Fire and Rescue NSW had no objection to either option. |
| Sutherland Shire Council | 10 December 2025 | Email | Ampol provided an update on the KEIP and revised scope for the BESS. Ampol provided a fact sheet titled, “Ampol in Kurnell Fact Sheet.” This outlined the current activities and objectives within Kurnell. |
| Sutherland Shire Council | 12 December 2025 | Email | Email correspondence between Ampol and Council. Ampol requested further engagement prior to lodgement of the Submissions Report to continue discussions on the interrelation between MOD-7 and KEIP. This meeting has been booked for the 20 January 2026.<br><br>Ampol provided a fact sheet titled, “Ampol in Kurnell Fact Sheet.” This outlined the current activities and objectives within Kurnell. |
| DPHI | 29 January 2026 | Online meeting | Ampol held an online meeting with DPHI on the 29 January 2026. Ampol provided:<br><br>• An update of the KEIP and MOD-7 projects<br>• An overview of how DPHI’s key issues had been addressed during the preparation of the Submissions Report<br>• An overview of the updated assessments and outcomes that are described in the Submissions Report<br>• An overview of engagement activities undertaken with the community since exhibition of the Modification Report.<br><br>DPHI had specific questions about removal of capping from the proposed modification, how RAP data gaps have been addressed, and the progress of community engagement.<br><br>Meeting slides were prepared and were distributed to DPHI on the 29 January 2026. |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Sutherland Shire Council | 4 February 2026 | Online meeting | Ampol attended a meeting with Sutherland Shire Council on 4 February 2026.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report. |
| EPA | 11 February 2026 | Online meeting | Ampol attended a meeting with the EPA on 11 February 2026.<br><br>Ampol provided an update on the progress of the proposed modification planning application and an overview of how the EPA's key issues had been addressed during the preparation of the Submissions Report. |
| Kurnell Progress & Precinct Resident's Association | 18 February 2026 | In person meeting | Ampol attended a meeting with the Kurnell Progress & Precinct Resident's Association on 18 February 2026. Approximately 20 residents attended the meeting.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report.<br><br>Ampol also discussed key concerns raised during the meeting. Key community concerns raised related to the KEIP including potential safety and noise impacts associated with the development of the BESS. While these matters were discussed during the meeting, they fall outside the scope of the proposed modification. |
| Kurnell Community Sports and Recreation Club | 27 February 2026 | In person meeting | Ampol attended a meeting with the Kurnell Community Sports and Recreation Club on 27 February 2026.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report.<br><br>Ampol also discussed key concerns raised during the meeting. Key community concerns raised related to the KEIP, Quibray Bay wetland dieback, and the use of the former Western Right of Way. Suggestions for consideration as a part of the KEIP VPA were also highlighted. While these |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| | | | matters were discussed during the meeting, they fall outside the scope of the proposed modification. |
| The Holt Estate | 27 February 2026 | In person meeting | Ampol attended a meeting with the Holt Estate on 27 February 2026.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report.<br><br>Ampol also discussed key concerns raised during the meeting. Key community concerns raised related the proposed modification included contamination and the proposed remediation methodology.<br><br>Concerns were also raised related to the KEIP including potential safety, noise, amenity and welling impacts associated with the development of the BESS and subdivision of the Site. While these matters were discussed during the meeting, they fall outside the scope of the proposed modification. |
| Kurnell Men's Shed | 27 February 2026 | In person meeting | Ampol attended a meeting with the Men's Shed members on 27 February 2026. Seven community members were present.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report.<br><br>Ampol also discussed key concerns raised during the meeting. Key community concerns raised related to the proposed modification included amenity, the proposed remediation approach and removal of capping.<br><br>Suggestions for consideration as a part of the KEIP VPA were also highlighted. While these matters were discussed during the meeting, they fall outside the scope of the proposed modification. |

| Stakeholder | Date | Method | Summary |
|---|---|---|---|
| Kurnell Public School | 27 February 2026 | In person meeting | Ampol attended a meeting with the Kurnell Public School on 27 February 2026. Seven teachers / education staff members attended the meeting.<br><br>Ampol provided an update on the progress of the proposed modification planning application, including refinements to the scope of the proposed modification, updates to the associated technical assessments, and key issues raised by the community during the exhibition of the Modification Report.<br><br>Ampol also discussed key concerns raised during the meeting. Key community concerns raised related to the proposed modification included contamination, the proposed remediation approach and removal of capping.<br><br>Concerns were also raised related to the KEIP including potential safety, fire and traffic impacts associated with the development of the BESS and subdivision of the Site. While these matters were discussed during the meeting, they fall outside the scope of the proposed modification. |
| Kurnell community residents | 11 March 2026 | Drop-in session | Ampol facilitated a drop-in style event on the 11 March 2026 at Marton Community Hall in Kurnell. Members of the community were able to read posters placed around the room and have one-on-one discussions with Project team members from Ampol and AECOM.<br><br>A total of 13 people attended the event. All attendees were members of the community, no representatives from media or businesses attended. Attendees of note included members of the Kurnell Progress & Precinct Residents Association (KPPRA), including the Secretary, President and Vice President.<br><br>Concerns or questions on the proposed modification included:<br><br>• Remediation, the independent Audit process, and what self-auditing Ampol undertakes<br>• Noise impacts during construction<br>• Management of dust and odours during construction<br>• Impacts to fauna and whether the mitigation measures are sufficient<br>• Increase in construction traffic, safety concerns, and the condition of local roads<br>• The development application process, including the Independent Planning Commission (IPC) process and what the next steps are. |