Environmental Enforcement Order

NOTICE ID	STAT- E-100718443
Date of issue	7 April 2025
Issued to	Liquid Terminals Australia Pty Ltd [ACN 001 849 805]
Registered address	Level 34, 360 Elizabeth Street, MELBOURNE VIC 3000
Site address (the premises)	200 Tingira Street and 4 Yarra Street, Pinkenba QLD 4008
Land reference	Lot 1102 Plan SL10945 and Lot 1160 Plan SL10945
Administering Authority	Chief Executive of the Department of the Environment, Science and Innovation (the department)
Legal reference	Pursuant to s362 Environmental Protection Act 1994
Service method	☒ Registered post ☐ Hand delivered ☒ Also by email ☐ Orally (s369(2))
Contact	If you have any questions about this EEO, please contact: Leonie Clough, Brisbane Moreton Compliance Centre Email: ESComplianceBrisbaneMoreton@des.qld.gov.au Telephone: (07) 5316 8410

Please read the Information Sheet - Recipient of an Environmental Enforcement Order (desi.qld.gov.au) for further information (search for ESR/2024/6802 on www.desi.qld.gov.au).

*Terms used in this Environmental Enforcement Order (EEO) have their meaning defined in the **Definitions** section in **Appendix A** of the EEO or, if not defined, in* the *Environmental Protection Act 1994* (the Act).

Why the department is issuing this Order to you:

For the purpose of this Notice, "you" means the recipient of this Notice or your authorised representative.

You have a proactive **general environmental duty (GED)** to prevent and minimise any environmental harm. You also have a proactive **duty to restore the environment** if environmental harm has been caused by you.

The department has responsibility for enforcing the Act. The delegate for the department is issuing this EEO to you, pursuant to Pursuant to s362 Environmental Protection Act 1994, to secure compliance with the Act in relation to activities being undertaken at the premises.

This EEO is issued with respect to the activities undertaken at the premises that are in contravention of section(s), s319, s430 and s440ZG of the Act.

This EEO is issued to you under:

1. s359(c) – the department believes you have not met the GED under s319 of the Act and measures are necessary to secure compliance with the GED.
2. s359(e)(ii) - It is necessary to issue an EEO to secure your compliance with a condition of an environmental authority (EA).
3. s 359(f)(iv) - the department believes you have contravened in circumstances that make it likely your contravention will continue or be repeated under section 440ZG of the Act.

Background and relevant matters

1. You were formerly known as Pacific Terminals (Australia) Pty Ltd and have undergone a series of name changes, with the designated Australian Company Number (ACN 001 849 805) remaining the same throughout.
2. Pacific Terminals (Australia) Pty Ltd were issued Environmental Authority EPPR01476813 (the EA) on 24 September 2013, authorising environmentally relevant activities ERA 8-(3) Chemical storage >500m3 class C1 or C2 (combustible liquids) on Lot 1102 Plan SL10945 and Lot 1160 Plan SL10945.
3. You are the current holder of the EA authorising the carrying out of ERA 8-(3) issued on 10 January 2024, following amendment of administrative error(s) identified within the EA.
4. The EA conditions relating to stormwater management and release of contaminants to the environment have remain unchanged since the issuance of the previous EA in 2013.
5. You are the occupier of the premises. You lease the premises and have management and control of the land.

Activity

6. The activity involves the storage of C1 and C2 products, includes product receipt and loading in bulk and operation of ancillary infrastructure including stormwater treatment devices and fire management systems at the premises.
7. You have stored fire-fighting foams at the premises, as observed by authorised officers on several site inspections including 17 March 2022 and 22 October 2024.
8. The department has issued various email correspondence to you regarding per- and polyfluoroalkyl substances (PFAS) sampling requirements and the fire foam system (for example 21 March 2022, 31 October 2022, 21 July 2023, 25 June 2024 and 18 September 2024 and 26 November 2024), including:
    a. Request(s) that you undertake precautionary PFAS sampling in stormwater in open bund at the rear of the premises;
    b. Highlighting concerns associated with fire foam system / foam storage, in particular bleeding the pressurised foam system into unroofed storages / bund compound;
    c. your obligations under the Heads of EPAs Australia and New Zealand (HEPA) PFAS National Environmental Management Plan January version 2.0 2020 (HEPA, 2020);
    d. Informing you of the departments Queensland Government's Firefighting Foam policy located at Operational Policy: Environmental Management of Firefighting Foam: October 2021 (the Firefighting Foam policy);
    e. Seeking confirmation of foams stored / in use at the premises and confirmation of compliance with the Firefighting Foam policy; and

f. Notified you about the detection of PFAS in waterways adjacent to your premises as a result of sampling investigations by the department and others, and requested you monitor stormwater quality released from your premises (to Tingira Street/Yarra Street drain).

9. It is acknowledged that there have been some attempts by you to respond to aspects of the above requests. However, where a response has been provided, it has been insufficient and /or subject to unreasonable delays.

10. The failure to adequately sample stormwater and investigate presence of / sources of PFAS in stormwater, including the taking of reasonably practicable measures to identify sources and prevent potential PFAS releases from the premises are resulting in alleged non-compliance(s) that require you to take action.

Environmental harm

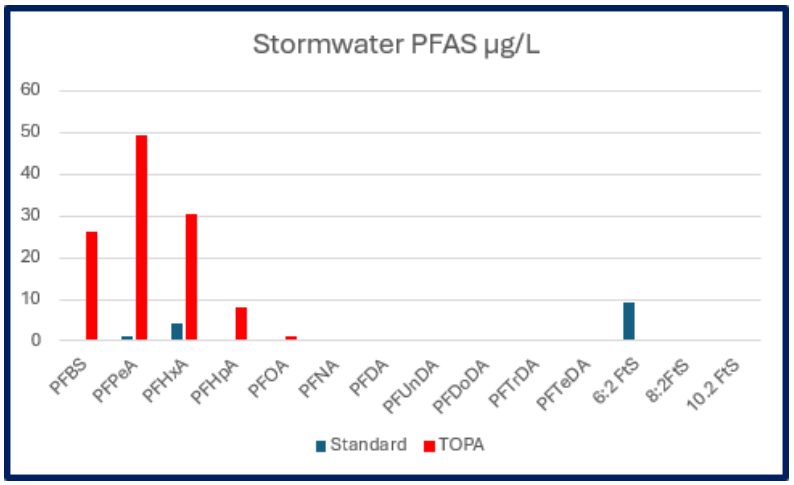
11. Environmental harm, material and serious environmental harm are defined in the Act.

12. The PFAS National Environmental Management Plan, Version 3.0 Heads of EPAs Australia and New Zealand 2025, (HEPA, 2025) recognises that PFAS are a group of manufactured synthetic organic compounds, which do not occur naturally in the environment.

13. On 27 June 2024 the department received email correspondence from you attaching a chain of analysis laboratory (COA) for one PFAS sample dated 21 February 2024 labelled as '200T'. The email correspondence and COA did not describe where the sample at 200 Tingira Steet was collected.

14. On 2 July 2024 the department advised you that the monitoring results are consistent with contamination by n:2 fluorotelomer-based aqueous film forming foam, with a large proportion of C6 compounds and some longer chain homologues. This is evidenced by the large increase in perfluoroalkyl carboxylic acid (PFCA) concentrations following total oxidisable precursor assay (TOP Assay) (HEPA 2020) (See Figure 1) and presence of likely intermediate aerobic transformation products/similar minor components e.g. 6:2 FtS in un-oxidised samples.

Figure 1 – Comparison of standard and TOP Assay results sample dated 21 February 2024 200T



15. The sample results provided for the one stormwater location at the premises on 21 February 2024, reported sum of PFAS (116ug/L) for TOP assay analysis. This level of PFAS contamination identified in the stormwater is impacted by a prescribed water contaminant, the release of which from the premises may be a breach of the Act which was addressed in correspondence to you on 2 July

2024, forms the grounds of this notice and is detailed further in paragraph 39 (background and relevant matters).

16. There was also evidence of minor amounts of perfluoroalkyl sulfonic acid (PFOS) contamination in the one stormwater sample results i.e. PFOS 0.0036 ug/L and perfluorohexane sulfonic acid **(**PFHxS) 0.0017 ug/L.

17. PFOS in excess of the current water quality objective prescribed under the *Environmental Protection (Water* and Wetland Biodiversity) Policy 2019 (Water EPP) of 99% screening value of 0.00023 µg/L and the presence of PFHxS means that further investigation is warranted to identify source, extent of impact and measures to minimise release to prevent harm.

18. Where PFOS is found excess of the ambient concentrations in south-east Queensland estuarine waters, it has also been found to cause bioaccumulation into aquatic organisms e.g. fish, crustaceans, worms at concentrations that exceed the current water quality objectives for mammalian and avian wildlife diet prescribed under the Water EPP and HEPA 2025.

19. Perfluorooctanoic acid (PFOA) has been found in concentrations that exceeded the guidance for protection of mammalian consumers in the HEPA 2025, more particularly as being bioaccumulated into small crustaceans in the Boggy Creek estuary (0.003 ug/L).

20. Monitoring studies evaluating bioaccumulation of fluorotelomersulfonates and perfluoroalkyl acids in marine organisms living in aqueous film-forming foam impacted waters have found that whilst only small amounts of 6:2 fluorotelomer sulfonate (6:2 FtS) have been detected in teleost fish, considerable concentrations have been measured in marine invertebrates, suggesting bioaccumulation of 6:2 fluorotelomers in these forms (Langberg et al. 2019) which supports the requirements to take further action.

21. Noting the extremely high concentrations of PFHxA that was identified in the one stormwater sample, this compound is found to have similar avian oral toxicity to PFOS (Dennis et al 2021) supports the requirements to undertake further action.

22. The PFAS levels in the stormwater sample results released into the environment may result in adverse effects including bioaccumulation associated with wildlife diet and seafood quality.

23. The one stormwater sample indicates that release of contamination at this level, the resultant expenditure to prevent or minimise harm and rehabilitate or restore the environment to its condition before the harm is above the threshold amount that would trigger environmental harm.

24. PFAS contamination can be environmentally significant due to its persistence, mobility and, for some PFAS, toxicity and potential for bioaccumulation in plants and animals (HEPA, 2025) and are therefore capable of causing environmental harm.

Environmental Values

25. An environmental value is defined in section 9 of the Act.

26. Under the EPP Water, all Queensland waters including groundwater and surface waters have prescribed environmental values and water quality objectives.

27. The prescribed environmental values (EV) of groundwater and surface water including the Brisbane River (including the Yarra Street drain and wetland at the rear of the premises) are found in: Environmental values and water quality objectives for these waters are listed in schedule 1 of the EPP Water see:

https://environment.desi.qld.gov.au/__data/assets/pdf_file/0027/273654/wq1431-brisbane-river-estuary.pdf

https://environment.des.qld.gov.au/__data/assets/pdf_file/0026/273626/brisbane-river-estuary-ev-wqo.pdf

28. The management intent for the waters is that of moderately disturbed waters, noting that for contaminants that that bioaccumulate, screening against 99% species protection is required.

29. The environmental values for receiving waters include aquatic ecosystems; human consumer; industrial use; secondary recreation; visual recreation and cultural and spiritual values.

30. Ecological health may be adversely affected by a release of PFAS into the environment, including bioaccumulation through the food chains of aquatic and terrestrial organisms.

31. Public amenity and safety are environmental values prescribed under the Act that may be adversely affected by PFAS contaminated surface water (including sediments) and PFAS contaminated biota.

32. Human consumer is a scheduled environmental value that may be adversely affected by the release of PFAS into the environment, including for example contamination of food.

33. Water concentrations of PFAS that would be protective of human consumption of seafood are very low, in the part per billion range. For example, trigger points developed by Food Standards Australia New Zealand for PFOS + PFHxS concentration in fin fish (i.e. 5.2 micrograms /kg) are low and fish have been found to bio-accumulate PFOS from the water column / environment.

34. Quality characteristics conducive to the human consumer is associated with water quality that keeps PFAS concentrations in seafood as low as reasonably achievable.

35. The impact of a deposit of PFAS at the premises and/or a release to the environment from the premises is not trivial or negligible in nature, extent or context.

36. PFAS are persistent and highly resistant to physical, chemical and biological degradation. PFAS have high solubility and may readily leach from concrete and soil to surface water and groundwater, where they can enter waterways and become part of the food chain with potential for multigenerational effects (HEPA 2025).

GED - relevant to Requirements in Part A

37. On 21 March 2022, the department advised you that it had concerns with the fire foam suppression system releasing from the system to the poly tank and intermediate bulk container (IBC) storage in the north west corner of the a large bund as a result of bituminous products not bring impervious to PFAS, and there are risks associated with IBCs deteriorating in the sun. The department recommended that you:
    a. Take a precautionary sample of PFAS in stormwater within the bund and include analysis for Total oxidisable precursor Assay (TOP Assay); and
    b. Review this outdoor fire foam storage and the associated stormwater risks / management, and provided you with a link to the Firefighting Foam policy to assist in this review.

38. On 25 June 2024 the department provided you with information about PFAS levels in the Yarra Street drain (reported by others completing PFAS site investigations). As a stormwater contributor to this drain, you were requested to test your stormwater entering the location marked on map in Appendix B. To date the department has not received any response from you in relation to this request.

39. On 2 July 2024, in response to high PFAS in sampling results (obtained by you on 21 February 2024), the department advised you of the following:

a. Release of PFAS impacted waters at this concentration is at risk of breaching 440ZG of the EP Act;
b. Request to urgently assess PFAS in the interceptor (by the same analytical methods (super trace PFAS 28 suite and TOP Assay) and consult with the department on levels present;
c. Where PFAS is present you need to arrange for PFAS treatment prior to release to the environment and / or remove PFAS to facility that can lawfully receive PFAS;
d. Determine why PFAS is present in the interceptor through investigation of the potential sources of PFAS into the interceptor, including whether there are any leaks into the stormwater system from the fire system or foam storage area(s); and
e. Provide further information about the sample location/s of 21 February 2024 and any future samples obtained).

40. You have not provided any meaningful response(s) to departmental requests detailed in paragraphs 8 - 39 above to discharge your GED obligations to date.

41. A statutory response to conduct investigations into PFAS contamination, review on site practices, inputs, source reduction of PFAS is consistent with the department's approach as with other operators in recent years. The importance is emphasised given the high levels of PFAS (sum of PFAS reported in paragraph 15 above) which is one of the highest values that has been observed in the local area across multiple investigation documents and is of particular concern.

42. Continual research is being undertaken on contamination of concrete and asphalt surrounding PFAS storage areas, fire training pads, runways, concrete paved areas and washdown areas. Rainfall and continued use can lead to PFAS wash-off and leaching with potentially more widespread contamination to soil, surface water and groundwater due to the PFAS composition and high mobility. Due to the composition of concrete, it can be a continual source of PFAS release into the environment.

43. It is unknown whether groundwater at the premises is affected by contaminants (PFAS) as has been reported in stormwater. Groundwater direction and tidal influences are also unknown at the premises. Given the potential PFAS sources at the premises and the history of the premise, the known PFAS presence in a sample undertaken to date, further investigation into potential impacts to groundwater is considered reasonably practicable.

44. To discharge your GED, you are required to undertake all reasonably practicable measures in response to the sampling result indicating stormwater runoff at the premises is contaminated. Reasonably practicable measures include identifying the sources of the contaminants and measures to prevent such releases in future.

GED - relevant to Requirements **Part B**

45. Anyone who handles, transports, disposes, stores, uses, or releases firefighting foams in Queensland must meet the standards set out in the Firefighting Foam policy .

46. The Firefighting Foam policy came into effect initially on 7 July 2016 with amendments on 7 July 2019 and again with the current release approved on 11 October 2021. Section 6 of the Firefighting Foam policy sets expectations on how to comply with the policy.

47. On 1 August 2019, you provided a document titled "Fire foam mitigation plan 105 and 200 Tingira St Terminals, 17/06/19 (FFMP, 2019).

48. Under the FFMP, 2019 your policy for foam management recognised that 'during normal operations and required foam activations (extinguishing fires), foam entering the environment is very likely, all

efforts are to be made to minimise this and contain run off". This is inconsistent with the policy requirements (see ground 68 below)

49. The FFMP, 2019 informed that the fixed foam systems will

- maintain the use of C6 foam concentrate, with modifications to the foam deluge systems to allow regular testing of systems whilst catching foam waste run off in dedicated 1000lt holding tanks plumbed from the deluge valves.
- The 1000 litre foam containment tank fill levels are to be viewed regularly to avoid the tanks overflowing, specifically the tanks that collect the foam waste from the Pressure Relief Valves (PRV), if the tanks reach three quarters full the fire contractor is to be notified to transfer the foam waste to the onsite storage tanks.

50. The FFMP, 2019 reports that with a load out gantry foam system activation there is little that can be done to control the foam spread of foam from the discharge nozzles, with efforts made to minimise the spread of the foam run off from the site. The FFMP, 2029 notes that "all gantry drains run to the interceptor and would be expected in a gantry system release that most of the foam waste would end up in the interceptor. To ensure any other run off is also captured, sluice valves have been installed on all storm water drains that exit the site, which slam shut when the manual release buttons are pressed".

51. The management information you have provided in the FFMP, 2019 is insufficient in its assessment of management measures required for containment and management measures of testing foam and fire foam containment during incidents and reviewing the effectiveness of any measures currently in place.

52. Undersection 4.2.1 of the Firefighting Foam policy, use of foams containing short-chain PFAS (so-called C6-pure) foam containing fluorotelomers (with C6 or shorter perfluoroalkyl moieties) are permitted to be used, but only if it is found and demonstrated to the satisfaction of the Administering Authority to be the only viable option including consideration of firefighting effectiveness, short and long-term health, safety and environmental risks and property protection, however, the following requirements must be met including:

a. The foam must be C6 purity compliant foam with contamination or impurities less than the limits in Table 4.2A;
b. No releases are permitted directly to the environment (e.g., to unsealed ground, sewers, soakage pits, waterways or uncontrolled drains);
c. All releases must be fully contained on site; and
d. Containment measures such as bunds and ponds must be controlled, impervious and must not allow firewater, wastewater, runoff and other wastes to be released to the environment (e.g., releases to soils, groundwater, waterways stormwater, sewer, unlined ponds, etc.).

53. On 28 November 2023 during a site inspection authorised officer(s) as discussed with your representatives (followed up in email correspondence on 25 June 2024), you were requested to:

a. provide a C6-Purity Statement and supporting laboratory reports from suppliers of all the foam concentrates presently used and stored at the premises (where the laboratory results are obtained from the foam supplier), or results directly from samples taken of the foams; and
b. ensure that these reported C6 purity foams are fully contained at all times, including during storage, testing and deployment in incidents, to prevent any release to stormwater drainage and waters.

54. You have not provided any laboratory reports to confirm the C6 purity of fire fighting foam stored at the premises, nor advices about how these products are fully contained at all times.

55. It is understood that the existing foam line is pressurised under normal operation, and due to the ambient temperature fluctuations, a small amount of dilute C6 foam is released to three collection points as the temperate increases and subsequently transferred to the poly tank in the bund.

56. There are risks associated with the storage of dilute foam at the three collection points and transfer from the storages into the poly tank that are currently not well understood and are a potential source of contamination that requires further investigation. Appendix B depicts in Photograph 1 the poly storage tank and Photograph 2 an example of one of the collection points of foam, located in an unsealed capture vessel with potential to release to the environment.

57. On 19 September 2024 by email correspondence the department reiterated previous advise that, you need to comply with the department's Firefighting Foam policy, requiring either ceasing the use of C6-Pure foam, implementing reasonably practicable measures, and having a disposal plan in place. You were again requested to provide advice about the current system (foam being used, the quantity of product still being stored on site and the storage location(s). In addition the department queried whether you had undertaken any investigation into PFAS contamination given the storage of PFAS containing foams and known PFAS contamination surrounding the premises, which was identified as outstanding from previous departmental correspondence.

58. You have not provided any demonstration to date, despite requests test results of the foam you store and use at the premises to verify it complies with the limits specified in the Firefighting Foam policy (specifically Table 4.2A). Further, you have not provided any demonstration that:

    a. this product is the only viable option available; and
    b. that you are able to meet the other qualifiers as detailed in item 52a) – d) above in compliance with the Firefighting Foam policy.

59. With what is known and has been observed at the premises (operational set up, stormwater catchment, containment, treatment and supporting documentation i.e. FFMP, 2019, it is considered that you would need infrastructure augmentation and/or foam change out in order to demonstrate compliance with the Firefighting Foam policy.

60. As a delegate of the administering authority, I am of the reasonable belief that the requirements of this notice are required for you to take appropriate action to secure your compliance with the GED and in a timely manner.

EA conditions

61. Condition G2 of the EA states "*in carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and /or minimise the likelihood of environmental harm being caused"*.

62. For the reasons outlined in grounds 8 to 44 above, it is alleged you have failed to take all reasonable and practicable measures required by condition G2 to minimise the likelihood of environmental harm.

63. Condition WT1 of the EA states "*the activity must be carried out by such practicable means necessary to prevent and or minimise the release or likelihood of release of contaminated runoff from the approved place to any stormwater drain or waters or the bed or banks of any such waters*".

64. It is alleged that you have not taken the necessary actions to identify sources of contaminated stormwater, or minimise likelihood of release of contaminated runoff, in relation to PFAS identified at

the premises on 21 February 2024 and with respect to investigation of risks posed with the current firefighting system collection and purging, including the measures currently used (Photo 2 of Appendix B).

65. The failure to monitor and act to investigate and remediate PFAS sources has been of an ongoing nature, despite multiple requests for action. Therefore, to secure compliance with the EA, actions contained within this notice are required.

66. The department is satisfied that you were the entity operating prior to, and at the time of the monitoring and are responsible for the construction, operation, and maintenance of stormwater management measures under the EA.

Section 440ZG Depositing prescribed water contaminants in waters and related matters

67. PFAS compounds are included as "prescribed water contaminants" under item 1 of Schedule 10 of the *Environmental Protection Regulation 2019*.

68. Item 1 includes a chemical, or chemical waste containing a chemical. Examples provided include per and poly-fluoroalkyl substances (PFAS).

69. A person must not–

(a) unlawfully deposit a prescribed water contaminant–

(i) in waters; or

(ii) in a roadside gutter or stormwater drainage; or

(iii) at another place, and in a way, so that the contaminant could reasonably be expected to wash, blow, fall or otherwise move into waters, a roadside gutter or stormwater drainage; or

(b) unlawfully release stormwater run-off into waters, a roadside gutter or stormwater drainage that results in the build-up of earth in waters, a roadside gutter or stormwater drainage.

70. Section 440ZE of the Act defines "deposit" as – A person deposits a contaminant in waters or at another place if the person– (a) drops, places or throws the contaminant in the waters or onto the place; or (b) releases the contaminant, or otherwise causes it to move, into the waters or onto the place.

71. Release of a contaminant is defined in Schedule 4 of the Act and includes (b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and (c) to fail to prevent the contaminant from being deposited, discharged, emitted or disturbed; and (d) to allow the contaminant to escape.

72. Waters is defined in the Water EPP as (a) includes the bed and banks of waters; and (b) without limiting the *Acts Interpretation Act 1954*, Schedule 1, definition Queensland waters, includes– (i) surface water; and (ii) groundwater.

73. Breach of section 440ZG of the Act occurs where contaminants are placed where they could reasonably be expected to wash or otherwise move into waters. Stormwater which contains very large concentrations of total PFAS (116 µg/L) if discharged (including failed to be prevented) from escaping to any stormwater drainage at the premises, seeps into any groundwater or is discharged into any surface water or wetland.

74. From the information provided to date, you have not undertaken any intervention which treats and/or intercepts PFAS impacted stormwaters before leaving the premises, including being released to groundwater. It is therefore considered that you have not prevented from release

known PFAS impacted stormwater. In addition there has been insufficient investigation into the potential sources of PFAS to identify and prevent any ongoing release, including to groundwater.

75. By failing to take reasonably practicable measures to prevent the release of prescribed water contaminants, it is considered that you are in breach of 440ZG of the Act and that you have contravened in circumstances that make it likely your contravention will continue or be repeated.

76. As a delegate of the administering authority, I am of the reasonable belief that the requirements of this notice are required for you to take appropriate action to remedy the alleged contraventions and to secure your compliance with the GED and in a timely manner.

Required actions:

The required actions listed below are to be remedied in full by the required dates.

Requirements in Part A take effect from the date of service and remain in force until this Order is amended, repealed, finalised or stayed.

1. By **5pm on 5 May 2025** you must engage the following to carry out the requirements of this EEO:

   a. suitably qualified person/s (SQP) for requirements 2, 3, 4, 9, 5-8 (where triggered) and preparing the reports under requirements 11B, 11D and 11C (where required); and

   b. appropriately qualified person (AQP) for requirement 10 and preparing the report under requirement 11E.

Part A – Monitoring and pathway assessment

Monitoring PFAS in stormwater

2. By **5pm on 5 May 2025 and ongoing until four rounds obtained** you must ensure a SQP monitors the quality of water at each of the monitoring locations, for the quality characteristics and at the frequency stated in Table 1 below.

Table 1

QUALITY CHARACTERISTIC DETERMINATION	MONITORING LOCATIONS	FREQUENCY
Per and polyfluoroalkyl Substances (ng/L) (in accord with requirements 13, 15 and 16)	A. Post treatment stormwater sampling pit, marked 'take water sample here" described in document PIN-OPS-805 – Operation of 200 Interceptor 09/02/2024. B. Any other stormwater release points (including bypass) to the environment excepting A above.	Once each calendar week when stormwaters are released until monitoring data is obtained for a minimum of 4 monitoring rounds.

Stormwater contaminant source and pathway investigation

<u>Stage 1 Stormwater monitoring</u>

3. By **5pm on 6 October 2025**, you must ensure the SQP completes investigations and reports on PFAS levels in stormwater released from the premises (directly and indirectly) to the environment, including but not limited to:-

a. Identifies all stormwater release points from the premises (to be informed by approved site plumbing plans, stormwater management plans, stormwater release records, relevant site procedures and observations made during and following rainfall); and
b. Develop and implement a stormwater monitoring plan to determine PFAS levels at all stormwater release point(s), in accordance with requirement 2. This must include but not be limited to:-
   i. Monitoring of all stormwater release points at the premises; and
   ii. Monitoring of stormwater quality within each bund compound; and
   iii. Where any first flush stormwater system is in operation you must sample releases to the environment (once first flush capacity is exceeded).

Stage 2 - Stormwater contaminant source investigations

4. Stage 2 stormwater contaminant source investigations in requirements 5 – 8 below, are only enlivened in the circumstance that any of the stormwater monitoring results (including TOP Assay) obtained under requirements 3b. and requirement 2 above exceed “PFAS contaminated stormwater” levels (see definition Appendix A in this EEO).
5. By **5pm on 5 November 2025** you must ensure the SQP develops a sampling and analysis plan (SAQP) to investigate potential PFAS sources in stormwater identified in Stage 1 stormwater contaminant sampling, and seek feedback from the department on the SAQP (with departmental feedback to be provided within 14 days of submission).
6. The SAQP must consider the following investigation approaches (where relevant):
   a. Flushing test(s) of interceptor using potable water with sampling and analysis of water at start of test and following 3 days residence time within the interceptor; and
   b. Water washdown tests of hardstand area(s) to identify leaching of PFAS; and
   c. Leachability testing of concrete / asphalt infrastructure to assist in identifying PFAS sources and remedial options.
7. You must ensure the SQP reviews the relevant site procedures for stormwater management and avoidance of stormwater contamination, including management of stormwater in bund(s) unloading areas, records about fire foam system tests, or any spills and spill management associated fire foam storage and distribution system; the interceptor(s) and the sampling investigation results to prioritise stormwater catchments / site infrastructure risks in generating contaminated stormwater giving regard to PFAS concentrations and catchment size associated with source zones identified at the premises.
8. By **5pm on 27 February 2026** you must ensure the SQP provides a report on the stage 2 investigations and provide recommendations on reasonably practicable measures to prevent and / or minimise PFAS releases via stormwater from the premises (and indirect releases to groundwater), including areas of further investigation, and remedial measures for contaminated areas and/or infrastructure.

Groundwater monitoring / pathway assessment

9. By **5pm on 5 June 2026** you must ensure the SQP installs groundwater monitoring bores (targeting the upper aquifer) and carries out groundwater monitoring in accord with the following requirements: -
   a. Install a minimum of three (3) groundwater bores targeting source areas with potential to indirectly release contaminants to groundwater at the premises;
   b. One (1) of the three (3) bores must be located adjacent to the northwest site boundary, near the PFAS poly tank / IBC storages at the rear of the premises;
   c. Groundwater must be sampled and analysed for at least PFAS in accordance with requirements 13, 15 and 16, pH, electrical conductivity and the major cation and anion composition of the groundwater within the potentially impacted aquifers to capture wet and dry period(s); and

d. Prepare a report on groundwater quality and contaminants present from the monitoring undertaken. The report must include;

   i. The location and coordinates of all monitoring bores overlayed on a map of the site;

   ii. Screening depth of each monitoring bore and a description of the geological unit and aquifer; and

   iii. Standing water levels in metres must be measured and recorded on each occasion that samples are obtained. Such measurement must be undertaken prior to any disturbance by sampling and must be reported as the depth in metres from the top edge of the casing collar to the water surface within the bore with respect to Australian Height Datum; and

   iv. Determine the presence of / levels of PFAS in soils, during well installation (including leachability testing).

Part B – Fire Foam Audit

Requirements in Part B take effect from the date of service and remain in force until the date specified, unless this Order is amended, repealed, finalised or stayed beforehand.

10. By **5pm on 5 November 2025** you must ensure an AQP carries out an audit of the fire foam storage and distribution system against requirements of the Act, including compliance with the Firefighting Foam policy. The audit must include but not be limited to: -

a. Complete a foam inventory for all foams at the premises including bund compounds and loading unloading area(s);

b. Report on firefighting foam systems on the premises and foam in use in each system including sampling of foams to verify:

   i. whether any fluorine free foams (if in use) comply with the Table 4.2A and/or Table 4.1B of the Firefighting Foam policy; and

   ii. C6 purity foams comply with Table 4.2A of the Firefighting Foam policy;

   Note while the manufacturer may be able to provide testing results for product supplied however in accordance with GED it is responsibility of the user to ensure that the product is compliant with the policy.

c. Audit the foam storages and systems in place at the premises against the requirements of the policy for C6 purity foams (where in use) including but not limited to:

   i.

   ii. Review of material safety data sheets, safety testing, training certification and maintenance activities at the premises;

   iii. fire water containment systems and emergency response plans including an assessment of the likely effectiveness of the controls and systems in place to contain fire water at the premises, in the event of any incident; and

d. Report on measures to minimise potential for causing pollution or environment harm with consideration of the Firefighting Foam policy

   i. C6 purity foams Section 4.2

   ii. review of material safety data sheets, safety testing, training certification and maintenance activities at the premises;

   iii. review the design of the fire foam e.g. is it a pressurised system and determine the potential for any leaks;

iv. fire water containment systems and emergency response plans including an assessment of the adequacy of controls and system in place to contain fire water.at the premises, in the event of any incident; and

v. determine whether the current systems and management measures comply with the Firefighting Foam policy, and report on any areas of non-compliance with the requirements stated in section 4.2.1 of the policy;

vi. the reporting of the audit and conclusions must include:-
- documenting evidence relied on for the audit including attaching any relevant fire system design drawings, photographs, and any other relevant site documents and records relied on / referenced, including any anecdotal information relied on for the audit; and
- recommendations of measures (including site improvements) that can be reasonably practicably implemented to prevent fire fighting foams from being released or potentially released to the environment (including in a fire incident scenario).

11. **Reporting requirements** You must submit the following notifications and reports by the dates against each requirement in Table 2 below: -

Table 2 – Reporting requirements

Requirement 11 A Appointment SQP and AQP	By **5pm on 5 May 2025** you must: a. notify the department of who you have appointed at requirement 1 as SQP to complete nominated requirements of this EEO; b. the AQP to complete nominated requirements of this EEO; and The notification must include: • a copy of the SQP and AQP's resume(s) identifying their academic qualifications; • details of any relevant professional memberships, and • experience relevant to the relevant requirement for example investigation of and resolving PFAS water and groundwater contamination issues or firefighting foam distribution systems etc.
Requirement 11B **Stage 1 Stormwater**	By **5pm on 6 October 2025** you must submit a report on PFAS contaminant investigations prepared by the appointed SQP, in accord with the submission requirements in requirement 22.
Requirement 11C **Stormwater Stage 2 (where required)**	A. By **5pm on 5 November 2025** you must ensure the SQP develops a sampling and analysis plan (SAQP) and submits to the department for comments, in accord with the submission requirements in requirement 22; and B. By **5pm on 27 February 2026** you must submit a report on the Stage 2 PFAS stormwater contaminant investigations (where enlivened) and reasonably practicable measures to prevent PFAS releases into the environment, prepared by the appointed SQP, in accord with the submission requirements in requirement 22.
Requirement 11D	A. By **5pm on 5 June 2026** you must submit a report detailing groundwater monitoring at the premises, prepared by the appointed SQP, in accord with the submission requirements in requirement 22; and

Groundwater monitoring	
Requirements 11E **Firefighting foam audit**	By **5pm on 5 November 2025** you must submit to the department a report on the Fire Foam Audit that meets requirement 10 of this notice, prepared by the appointed AQP, in accord with the submission requirements in requirement 22.

Quality Assurance – From the date of this notice and ongoing until the notice requirements are met:

12. Investigations and reporting must be in accordance with relevant legislation and guidelines including but not limited to:

    a. The Act; and

    b. *Environmental Protection Regulation 2019*; and

    c. Water EPP; and

    d. HEPA 2025; and

    e. National Environmental Protection (Assessment of Site Contamination) Measure 1999 (NEPM) — see http://nepc.gov.au/nepms/assessment-site-contamination ; and

    f. Monitoring and Sampling Manual Environmental Protection (Water) Policy 2009, Version 2 see https://environment.desi.qld.gov.au/__data/assets/pdf_file/0031/89914/monitoring-sampling-manual-2018.pdf

    g. Operational Policy Environmental Management of Firefighting Foam October 2021, department of Environment and Science https://www.qld.gov.au/__data/assets/pdf_file/0025/68470/firefighting-foam-policy.pdf and explanatory notes https://www.qld.gov.au/__data/assets/pdf_file/0034/68776/firefighting-foam-policy-notes.pdf

    Where any potential conflict exists, the Act and subordinate legislation takes precedence. If there is conflict and uncertainty with respect to the hierarchy of the remaining documents, you should document that conflict, list the uncertainty, and consult with the department with respect to the issue.

13. PFAS analysis must be undertaken using paired standard analysis and TOP Assay.

14. All determinations of the quality of contaminants released must be performed by a person possessing appropriate experience and qualifications to perform the required measurements.

15. For environmental samples (for example tidal drains and groundwater), analytical data on all media must include PFAS analyses for the suite of 28 standard fluorinated organic compounds by liquid -chromatography – mass spectrometry (LC/MS/MS [super trace level]);[1]

16. To assess the presence of precursors in media and allow comparison with standard assessment techniques, the following must be included in the assessment with analysis being undertaken TOP Assay followed by liquid -chromatography – mass spectrometry (LC/MS/MS [trace level].

    Note: Sample volumes collected, and analysis submission must aim to achieve the lowest practical Limit of Reporting (LOR). It is recognised that for some samples, the sample matrix may unavoidably result in interference and a consequent need to raise the LOR.

[1] Sample volumes collected and analysis submission must aim to achieve the lowest practical Limit of Reporting (LOR). It is recognised that for some samples, the sample matrix may unavoidably result in interference and a consequent need to raise the LOR

17. Where TOP Assay is performed, quality assurance checks must be undertaken in accordance with the remeasures stated in section 19 of the HEPA 2025, including that oxidant exhaustion has not occurred (e.g. reanalysis to determine presence of fluorotelemer).
18. Wherever practical, all samples must be analysed by a NATA accredited laboratory.
19. Records must be kept of the results of all determinations and monitoring carried out under this EEO for a period of at least seven (7) years; and
20. At least 1 week prior to submitting samples to the analysing laboratory, provide sample ids, matrix details, purpose of monitoring location/bore, coordinates for each groundwater sample and bore logs to ESComplianceBrisbaneMoreton@des.qld.gov au for the purpose of entry into the ESdat system.
21. All sample chain of custody (COC) forms are to include a direction to send sample results via email to desiqld@esdat.net.
22. Submissions must be made in writing via email: ESComplianceBrisbaneMoreton@des.qld.gov.au

    or

    Environmental Services and Regulation – Brisbane/Moreton Compliance

    Department of the Environment, Tourism, Science and Innovation

    PO BOX 808 Caboolture Queensland 4510.

Issued by

Leonie Clough
Principal Environmental Officer
Delegate of the Administering Authority

Department of the Environment, Tourism, Science and Innovation
PO Box 808
Caboolture QLD 4510

Considerations

The standard criteria, principles of environmental protection, and human rights were considered prior to issuing this EEO.

Offences

Failure to comply with this EEO is an offence unless you have a reasonable excuse. The maximum penalties are significant and are provided in s369A of the Act

Appendix A: Definitions used in this Order (that are not exactly as the Act defines or implies them)

Appropriately qualified person(s)	means a person or persons who has professional qualifications, training, skills and experience relevant to requirement 10 of this EEO, including the design, operation and testing of fire foam systems.
Suitably qualified person (SQP)	means (a) For assessment of land that is contaminated or is suspected of being contaminated, the person must be a SQP pursuant to Section 549 of the EP Act; and (b) a person or persons who has demonstrated professional qualifications, training, skills or experience relevant to PFAS and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.
PFAS contaminated stormwater	means any analysis result standard suite test or TOP Assay where PFOS exceeds 0.002 µg/ l and sum of PFAS exceeds 0.005 µg / L. These definitions are informed by • The department's collection of water samples under its PFAS ambient monitoring program, which includes a lower estuary location mid river at 6.4 km from the Brisbane river mouth. • The department found that higher PFAS concentrations were in this location were generally associated with wet periods, indicating that stormwater discharges were a likely contributor to elevated concentrations. • The total PFAS concentrations outside wet periods were approximately 5 nanograms per litre. This highlights the need for persons who may potentially have PFAS contaminated stormwater to implement measures to prevent or minimise such releases.
Leachability testing	means using an unbuffered solution of pH 7, as prepared under the Australian Standard Leaching Procedure.
Measures	have the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency.
NATA	means National Association of Testing Authorities
Waters	includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial water course, bed and bank of any waters, dams, non-tidal, or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater runoff, and groundwater and any part thereof.
PFAS	means per and polyfluoralkyl substances and includes perfluoroalkyl acid precursor compounds and their intermediates
HEPA 2020	means HEPA 2020 'PFAS National Environmental Management Plan 2.0', Heads of EPA Australia and New Zealand, February 2020,.

HEPA 2025	means the ‘ HEPA 2025, PFAS National Environmental Management Plan Version 3.0, Heads of EPA Australia and New Zealand 2025.
Records	include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of EEO and the Act

References

Dennis, N. M., Hossain, F., Subbiah, S., Karnjanapiboonwong, A., Dennis, M. L., McCarthy, C., Heron, C. G., Jackson, W. A., Crago, J. P., Field, J. A., Salice, C. J., & Anderson, T. A. 2021 ‘Chronic reproductive toxicity thresholds for Northern bobwhite quail (Colinus virginianus) exposed to PFHxA and a mixture of PFOS and PFHxA’. Environmental Toxicology and Chemistry, 40, 2601–2614.

Langberg HA, Breedveld GD, Grønning HM, Kvennås M, Jenssen BM, Hale SE. 2019 ‘Bioaccumulation of fluorotelomersulfonates and perfluoroalkyl acids in marine organisms living in aqueous film-forming foam impacted waters’ Environ. Sci. Technol.2019, 53, 10951−10960.

Weiner, B.; Yeung, L. W. Y.; Marchington, E. B.; D’Agostino, L. A.; Mabury, S. A. 2013 ‘Organic Fluorine Content in Aqueous Film Forming Foams (AFFFs) and Biodegradation of the Foam Component 6:2 Fluorotelomercaptoalkylamido Sulfonate (6:2 FTSAS).’ Environ. Chem. 2013, 10, 486−493.

Appendix B:

Stormwater outlet recorded on stormwater infrastructure plans to Tingira street sent to Liquid terminals via email correspondence on 25 June 2024, requesting sampling of PFAS from the premises, directed to the Tingira Street stormwater drainage system.

Photograph 1: Poly tank in NW corner of bund where dilute foam transferred from three (3) collection points at site inspection on 22 October 2024 by Authorised officers

Photograph 2: collection container for bleeding off dilute foam from pressurised foam system in outdoor storage with tarpaulin cover not completely covering at observed by Authorised officers at site inspection on 22 October 2024

Penalties and obligations

It is important that you know the impact to you personally as an individual or as a corporation for not meeting your obligations.

- If you propose to dispose of the place or business to which the EEO relates, you must advise the buyer of the existence of this EEO. **Failure to provide a written notice to the buyer of the existence of the order is an offence.** The maximum penalty is provided in s369C of the Act.
- If you cease to carry out the activity to which this EEO relates, you must give written notice of ceasing to carry out the activity to the department within 10 days of ceasing the activity. **Failure to provide written notice to the department within 10 business days of ceasing the activity to which an EEO relates is an offence.** The maximum penalty is provided in s369D of the Act.

Right of review and appeal

The provisions regarding reviews of decisions and appeals are found in s519 to s539 of the Act.

A person who is dissatisfied with an original decision made by the department may apply to have that decision internally reviewed. Information about initiating an appeal in relation to this notice is contained within the Internal Reviews and Appeals Information Sheet (available at www.qld.gov.au using the publication number ESR/2015/1742 as a search term). A request for review or appeal is to be made using the approved form Application for review of original decision (available at www.qld.gov.au using the publication number ESR/2015/1573 as a search term).

Applications for reviews are to be sent to Permit and Licence Management, Department of Environment, Science and Innovation via email at palm@des.qld.gov.au, or by mail to the following address: GPO Box 2454, BRISBANE QLD 4001.

Where an application has been made for a decision to be reviewed, the applicant may also apply to the relevant court for a stay of the decision to secure the effectiveness of the review.

Once the original decision has been reviewed, a person who is dissatisfied with the review decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the review decision.

For a decision that is not an original decision, there are no formal review and appeal rights for a person who is dissatisfied with the decision made by the administering authority. The person may have other legal rights and may wish to seek legal advice.

Privacy statement

Section 540 of the Act requires the department to maintain a register of certain documents and information authorised under the Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts or copies of the documents from the register.

Documents that are required to be kept on the register are published in their entirety unless redaction in part is required by the Act. There is no general discretion allowing the department to withhold documents or information required to be kept on the public register.

For more information on the department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters, please email privacy@des.qld.gov.au or telephone 13 74 68.

Accessibility

Contact us if you need this information in an accessible format such as large print or audio.

Interpreter assistance

If you need interpreter assistance or want this document translated, please contact us and advise your preferred language. If you are deaf, or have a hearing or speech impairment, contact us through the National Relay Service