

Environmental Enforcement Order

Section 362 of the *Environmental Protection Act 1994*

Order Ref: STAT-E-100898737

Issued To: Batchfire Callide No. 2 Pty Ltd [ACN 004 784 454]

For the purpose of this Environmental Enforcement Order (EEO), 'you' means the recipient of this EEO or your authorised representative.

Registered Address: Sect 2, Level 11
141 Queen Street
BRISBANE CITY QLD 4000

Site Address: Coal Road MOUNT MURCHISON QLD 4715

Land Reference: Mining Lease (ML) ML80030, ML6993, ML5632, ML80092, ML80093, ML5641, ML80118 (Dunn Creek Mining Leases), ML5654 (The Hut Mining Lease), ML5662, ML5653, ML80122, ML80117, ML700059 (Trap Gully Mining Leases), ML6994, ML5655, ML80107, ML80151, ML80186, ML80115 (Boundary Hill Mining Leases); collective known as Callide Coal Mine (the premises)

Issued By: Cate Puschmann, Manager (Compliance), Department of the Environment, Tourism, Science and Innovation (the department), delegate of the administering authority.



Signed by delegate

Date: 3 July 2025

Relevant Matter/ Enforcement Grounds: *Environmental Protection Act 1994* (the Act) section 359 enforcement grounds:

S359 (c) it is necessary to issue an EEO to secure the person's compliance with the General Environmental Duty (GED). S319 *General Environmental Duty (1)* A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonably practicable measures to prevent or minimise the harm (the general environmental duty).

S359 (e) it is necessary to issue an EEO to secure the person's compliance with (ii) a condition of an environmental authority. Specially, conditions A1, D1 and F12 of environmental authority EPML00720413 dated 26 May 2025.

Service Method Via receipted email

Why are we writing to you?

The delegate reasonably suspects that you have not met the general environmental duty obligations and have contravened sections 430(3) of the Act at the premises. The delegate has issued this Environmental Enforcement Order (EEO) to you under section 362 of the Act to remedy the contravention, avoid further contraventions and keep the department informed.

What are you required to do?

Please read this EEO carefully and carry out all the required actions listed below by the required dates.

Terms used in this Order have the meaning defined in the *Background and Definitions* section of the EEO or, if not defined, in the Act or have their ordinary meaning.



**Queensland
Government**

If you have any questions about this EEO, please contact Principal Environmental Officer, Natalie Wheeler by email natalie.wheeler@detsi.qld.gov.au or telephone (07) 4971 6550.

Required actions

In accordance with this EEO, you are required to do the following:

1. You must submit all reports and documents required by this EEO to the department via email to CWES_Gladstone@detsi.qld.gov.au.
2. By **5:00pm on 25 July 2025**, you must:
 - a) Engage an independent **appropriately qualified person(s)** (AQP) to carry out the requirements of this notice. The AQP must possess demonstrated skills and experience in contamination assessment in accordance with the framework outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (NEPM) and the *PFAS National Environmental Management Plan 3.0* (PFAS NEMP).
 - b) Provide evidence of qualifications and experience of the AQP to the department.
 - c) Engage a Contaminated Land Auditor (CLA) to carry out relevant auditor requirements outlined in Requirements 4, 6, 9 and 11 of this EEO.
 - d) Notify the department of the CLA engaged.

Sample and Analysis Quality Plan (SAQP)

3. By **5:00pm on 29 August 2025**, you must require the **AQP** to prepare and submit to the department a draft SAQP for investigations that are suitable for accurately characterising and delineating the on-site and off-site contamination of Per- and Poly-Fluoroalkyl Substances (PFAS) and assess the ecological and human health risks posed (both directly and indirectly) from activities that have been undertaken at the premises. The SAQP must, as a minimum:
 - a) Include a data gap analysis that considers all available information and data, including the **Investigation Reports**.
 - b) Be sufficient to investigate data gaps noted in the **Investigation Reports** and in correspondence sent to you from the department dated 24 February 2025.
 - c) Consider the requirements of section 369E of the Act.
 - d) Include sufficient sample locations to adequately delineate the extent of the contamination of PFAS.
 - e) Describe the information that will be collected and reported, including:
 - i) construction and survey details of groundwater monitoring bores;
 - ii) parameters to be monitored at each sample location;
 - iii) the proposed monitoring frequency for each parameter at each monitoring location;
 - iv) justification for selection of the parameters and frequency at each sampling location, based on available data and risk to relevant environmental values; and
 - v) Global Positioning System (GPS) coordinates or survey of the locations where samples are collected and present locations on an appropriately scaled map.
 - f) Include criteria that are appropriate for the assessment of risks to relevant environmental values.
 - g) Describe appropriate field sampling methodology that will be followed.
 - h) Nominate the laboratories that will carry out the analysis using National Association of Testing Authorities (NATA) accredited methods.
 - i) Describe how the results will be reviewed, including a comparison against adopted criteria and assessed for trends that also considers variations such as seasonal fluctuations, migration of PFAS contaminants due to flooding, local extraction of groundwater, etc.
 - j) Describe data assessment, including tabulation of quality-controlled field and analytical results of all monitoring data and attachment of all field sheets, laboratory certificates of analysis, sample receipt notifications and Quality Assurance/Quality Control data.

- k) Describe reporting requirements, including data interpretation and recommendations that consider relevant environmental values for remedial actions, updating management plans (e.g. water management plan – condition C25 of the EA) and any ongoing monitoring.
 - l) Include timeframes for the sampling and reporting milestones. The reporting milestones must include the Remediation Plan in Requirement 8, and updated Human Health and Ecological Risk Assessment (HHERA) in Requirement 12, below.
4. By **5:00pm on 26 September 2025** you must require the CLA to assess the appropriateness of the draft SAQP to meet the requirements of this Order and provide the draft SAQP and a written statement that summarises the findings to the department.
5. By **5:00pm on 24 October 2025**, you must:
- a) Submit the final SAQP to the department and
 - b) Commence implementation of the SAQP.
6. In accordance with the timeframes established in the SAQP, you must carry out the sampling and develop an investigation report that has been reviewed by the CLA and submit it to the department.
7. An investigation report as specified by Requirement 6 must be developed and submitted to the department at the timeframes established in the SAQP.

Remediation Plan

8. By **5:00pm on 11 December 2026**, you must require an AQP to prepare and submit to the department a draft PFAS Remediation Plan (RP). The RP must:
- a) Incorporate all available monitoring data and identify any data gaps that require further investigation.
 - b) Detail works with the objective to restore and ensure ongoing protection of the environmental values of the receiving environment at and beyond the boundary of the premises.
 - c) Identify reasonably practicable best practice options to remove or reduce the risk associated with any on-site and off-site PFAS contamination.
 - d) Consider all actions recommended in the **Investigation Reports**.
 - e) Include a Remediation Options Analysis to assess, select and implement the most appropriate remediation strategies, including the assessment of removal, containment and treatment options for PFAS contamination both on-site and off-site.
 - f) Include plans for the management, treatment and disposal of impacted media (e.g. concrete, soil, sediment, water) extracted from the premises.
 - g) Detail methods for validation and testing requirements and criteria that will be adopted to confirm the effectiveness of each remedial action.
 - h) Include a sampling plan for ongoing monitoring to assess any changes associated with the contamination.
 - i) Include timeframes for remedial actions including details of objectives/targets, milestones for comprehensive reviews and updates as required.
 - j) Include a site suitability statement following the completion of the proposed program of works to remediate the premises with respect to PFAS contamination.
9. By **5:00pm on 25 January 2027**, the CLA must assess the appropriateness of the RP to meet the requirements of this Order and provide a copy of the RP and a written statement that summarises the findings to the department.
10. By **5:00pm on 26 Feb 2027**, you must:
- a) Submit the final RP to the department and
 - b) Commence Implementation of the final RP.
11. In accordance with the timeframes established in the SAQP, you must develop validation reporting that has been reviewed by the CLA and submit it to the department.

Updated Human Health and Ecological Risk Assessment (HHERA)

12. At the timeframe established in the SAQP, you must require an AQP to prepare and submit to the department an updated HHERA. The HHERA must incorporate all available monitoring data and information included in the **Investigation Reports**.

General requirements

13. All requirements must be conducted in accordance with:
 - a) the Act;
 - b) Environmental Protection Regulation 2019;
 - c) Environmental Protection (Water) Policy 2009 (Water EPP);
 - d) PFAS National Environmental Management Plan Version 3.0 (NEMP), Heads of EPA Australia and New Zealand 2025 (HEPA 2025); and
 - e) National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM).

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.

14. All investigations required by this Order must be carried out in accordance with appropriate **Legislation and Guidance**.
15. Reporting must include an assessment of deviations from the **Legislation and Guidance** and the resulting implications. The RP must also include an assessment of deviations from the SAQP and resulting implications.
16. This EEO takes effect from the date of service and remains in force until stayed, amended, revoked or finalised.

Background and definitions

1. The department is the administering authority and has responsibility for enforcing the Act.
2. You hold EA EPML00720413, authorising activities including, but not limited to, mining black coal and chemical storage, to be carried out at/on the premises.
3. In 2019, the Queensland Government implemented a *Firefighting Foam Policy* as a guide to properly manage the use of fluorinated firefighting foams, that containing PFAS. PFOS, PFHxS and PFOA are some of the different chemicals which are collectively known as PFAS.
4. In response, you proactively undertook a review of your operations at the premises, identifying historical use and storage of firefighting foams, containing PFAS. PFAS source areas were identified as the Former Training Areas (FTA) and the warehouse and maintenance workshops, at both the Boundary Hill and Southern Operations.
5. On 13 September 2021, you provided the department with a *PFAS Preliminary Site Investigation Report*, identifying surface water and groundwater sample results with concentrations of PFOS exceeding PFAS NEMP freshwater values and PFAS NEMP drinking water values.
6. On 16 December 2021, the department issued you with a notice to conduct an environmental investigation, to determine the nature and extent of impact arising from any direct or indirect release of PFAS contaminants, from the premises.
7. On 5 October 2023, the department received a *Duty to Notify of Environmental Harm* from you, for the presence of PFAS on/at the premises. This notification was made in accordance with section 320 of the Act, related to the presence of, or happening of an event that involves a hazardous contaminant (PFAS), causing (or reasonably likely to cause) serious or material environmental harm.
8. On 31 May 2024, the department received a *Detailed Site Investigation Report* (DSI) from you, for both the Southern Operations and the Boundary Hill Operations, in relation to the environmental investigation.

9. On 28 June 2024, the department received an environmental report from you, in relation to the environmental investigation. With subsequent further information received in October and November 2024, including an offsite HHERA.
10. On 24 February 2025, the department sent you a letter detailing the information gaps that remain in relation to the environmental investigation.
11. Lot and plans 153/RN1431, 100/SP301602, 23/SP129150 and 4/SP103557 are on the Environmental Management Register for the notifiable activity of petroleum product or oil storage.

General Environmental Duty and Conditions of EA EPML00720413

12. The general environmental duty is detailed in section 319 of the Act which states, '*A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonably practicable measures to prevent or minimise the harm (the general environmental duty).*'
13. Section 430(3) of the Act states, '*Contravention of condition of environmental authority - The person must not contravene a condition of the authority.*'
14. Condition A1 of EA EPML00720413 states, '*All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by the activities authorised by this environmental authority.*'
15. Condition D1 of EA EPML00720413 states, '*The holder of this environmental authority must not release contaminants to groundwater.*'
16. Condition F12 of EA EPML00720413 states, '*Minimise the potential for contamination of land by hazardous contaminants.*'
17. The **Investigation Reports** identified that historical firefighting activities, that used fluorinated foams containing PFAS, was the likely cause of the PFAS contamination identified at the premises.
18. The conceptual site model (CSM) provided within the DSI identified that PFAS contamination at the premises was present in the environmental media of soil, sediment, concrete, surface water and groundwater. The key migration pathways identified were leaching of PFAS impacted soil from the source zones into either a deeper soil profile and eventually into groundwater, or runoff in rainfall. Furthermore, at the:

Southern Operations

- a) PFAS contamination was detected in soil up to 5.0 meters (m) BGL, at the former Fire Training Area (FTA). The highest PFAS concentrations were identified in the sub-surface soils at the FTA, with PFAS concentrations greater than the ecological (indirect exposure) criteria. During the investigation period, you removed the top 0.3m of contaminated soil and covered the area with a 0.3m layer of clean fill. PFAS compounds however remain in deeper soils, between 0.3m to 5.0m, at the former FTA. PFAS contaminated soil has not been fully delineated in some locations, mainly due to site use restrictions.
- b) The highest concentrations of PFAS in surface water was reported at the Southern Holding Pond (SHP), with a total PFAS in surface water at 6.09µg/L (CM_SW04), exceeding the NEMP Freshwater – high conservation value systems (99%) and NEMP drinking water criteria. The SHP is a static dam, which collects surface water runoff from the southern side of the workshop area. When the SHP overflows, water flows southwest and offsite. After you undertook proactive desilting of the SHP, the PFAS contamination level reduced; however, sample readings still exceeded the NEMP Freshwater – high conservation value systems (99%).

The environmental report identified concentration of PFOS in the surface water of Dunn Creek Dam, that exceeded the PFAS NEMP 99% freshwater criteria. Dunn Creek Dam discharges via authorised release point RP1 (EA EPML00720413) and flows to Callide Dam.

- c) PFAS concentrations exceeded the PFAS NEMP 99% and 95% freshwater criteria at ephemeral drainage lines southwest of the workshop area (CM_SW13, CM_SW16 and CM_SW26). The second highest PFAS exceedance reading was from pooled water at CM_SW26, with a PFHxS and PFOS reading of 0.767µg/L. CM_SW26 is an ephemeral flow path that flows southwest of the workshop area and offsite. During the environmental investigation, the drainage line was rock lined. However, no further sampling occurred of surface water further downstream in these drainage lines due to it being outside the mining lease.
- d) Groundwater - PFAS was detected in the *Callide Coal Measures* groundwater aquifer, exceeding the site criteria for NEMP drinking water criteria, NEMP Freshwater - high conservation value systems (99%), and NEMP Freshwater - slightly to moderately disturbed systems (95%) criteria.

Boundary Hill Operations

- a) The main PFAS contamination was in the sub-surface soil (0.5-0.6m BGL) below the former FTA, with soil bore BH_MB05 recording the highest PFAS concentration and exceeding PFAS NEMP criteria for direct ecological exposure. Soil bore BH_MB05 was reported to be the likely migration route of the PFAS into the groundwater. No soil has been removed at this location. Soil impact was not delineated beyond 2m BGL.
 - b) The groundwater aquifer *Biloela Formation* beneath the former FTA was contaminated with PFAS. Groundwater bore BH_MB05 recorded a similar PFAS signature to soil bore BH_MB05, above, with exceedances of the PFAS NEMP Freshwater 99%, 95% and drinking water criteria.
 - c) All surface water bodies recorded exceedances of NEMP Freshwater high conservation criteria (99%) for PFOS, except two sites (upstream from the identified source zones). Surface water samples also reported exceedances of the PFAS NEMP Freshwater 95% criteria and/or drinking water criteria. All surface water ultimately flows to and is retained in Lake Gasteen. Lake Gasteen discharges via authorised release point RP3 (EA EPML00720413) and flows to Callide Creek catchment. Furthermore, an unnamed dam on Gate Creek (below Lake Gasteen), and bordering the premises boundary, exceeded the drinking water guideline for PFHxS and PFOS, with sampling reading of 0.107µg/L at BH_SW22.
 - d) Sediment exceeded the PFAS NEMP criteria for PFOS for indirect exposure at one sample location (BH-SED03) at Sediment Dam 2.
19. Environmental harm is defined in section 14 of the Act as, *'any adverse effect, or potential adverse effect on an environmental value.'*
 20. An environmental value, defined in section 9 of the Act, *'is a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety.'*
 21. Under the Water EPP, all Queensland waters, including groundwater and surface waters, have prescribed environmental values and water quality objectives. Environmental values and water quality objectives for these waters are listed in Schedule 1 of the Water EPP.
 22. The premises is located within the Callide Creek catchment of the Callide Basin in the upper Fitzroy Basin. The groundwater and surface environmental values which apply to the Callide Creek Catchment include drinking water, irrigation, farm water supply, aquatic ecosystem protection, stock water, primary recreation, industrial use, and cultural and spiritual values.
 23. Callide Creek is a regionally significant watercourse located approximately 4km south and 9km west of the Callide Coal Mine and is used by landholders for drinking, domestic, irrigation, farm water supply and stock watering. Callide Creek flows into Callide Dam. Callide Dam is used for recreational, agricultural and drinking water purposes.
 24. Ecological health is an additional environmental value prescribed by the Act that may be adversely affected by the release of PFAS into the environment, through bioaccumulation in aquatic and terrestrial organisms. PFAS contamination can be environmentally significant due to its persistence, mobility and, for some PFAS, toxicity and potential bioaccumulation in plants and animals (*NEMP*).
 25. PFAS contamination has the potential to negatively impact environmental values by a variety of mechanisms, including via concentration and accumulation in food stuff, drinking water, contact, ingestion and product usage.
 26. In Queensland, PFAS compounds perfluorooctane sulfonic acid and its salts, and perfluorooctane sulfonyl fluoride are listed under Schedule 19, Part 1, section 5 of the Environmental Protection Regulation 2019 as a persistent organic pollutant.
 27. In response to the PFAS contamination identified in the environmental evaluation, the department acknowledges you have proactively undertaken some remediation actions to date.
 28. However, the department considered the remaining PFAS contamination, as well as the unknown extent of harm (remaining information gaps identified in the **Investigation Reports**), at the premises has the potential to cause adverse effects on the groundwater and surface environmental values (Callide Creek Catchment), if contaminants migrate beyond the boundary of the premises.
 29. In summary, the department considers further monitoring and remediation of the identified contamination at the premises, in accordance with best practice principles prescribed by HEPA 2025, to be a reasonably practical measure to prevent or minimise potential environmental harm.

30. The delegate has considered the circumstances (including human rights) and determined that the required actions are reasonable to remedy or otherwise address the relevant matters.

Definitions that apply to this Order:

Authorised representative is a representative that has been nominated by the person this Order relates to, for acting on their behalf when dealing with the Queensland Government to manage matters. For more information, read the guideline *Authorisation letter to nominate an Authorised Holder Representative* (available at www.qld.gov.au using the publication number ESR/2019/5168 as a search term).

Appropriately Qualified Person (AQP) means a person or persons who:

- possesses demonstrated skills and experience in technical fields such as soil, surface water and groundwater contamination assessment in accordance with the framework outlined the NEPM;
- has demonstrated professional qualifications, training, skills and experience consistent with the NEPM Schedule B9 competencies for environmental consultants; and
- can provide authoritative assessment, advice and analysis relative to environmental assessment and remediation using the relevant legislation, protocols, standards, methods and/or literature.

Contaminated land auditor (CLA) means a person approved as an auditor in accordance with Chapter 12, Part 3A, Division 2 of the Act. The CLA is engaged to carry out relevant requirements outlined in requirements of this Order. *The CLA is not engaged to undertake a regulatory function under section 389 of the Act.*

Environmental Authority (EA) means EPML00720413, dated 26 May 2025.

Investigation Reports refers to:

- ERM Batchfire Callide Coal Mine (Southern Operations), Coal Road, Biloela, Queensland, Callide Mine Site Per- and Poly-Fluoroalkyl Substances Detailed Site Investigation (2022-2023) Part A (Southern Operations), 29 May 2024, Version 7.0; 27 June 2024, Version 7.2; and 7 January 2025, Version 8.
- ERM Batchfire Callide Coal Mine, Coal Road, Biloela, Queensland, Boundary Hill Mine Site, Per- and Poly-Fluoroalkyl Substances Detailed Site Investigation (2022-2023) (Boundary Hill Site) Part B, 29 May 2024, Version 6.1; 27 June 2024, Version 6.2; and 7 January 2025, Version 7.
- ERM Final Environmental Report for Batchfire Callide Mine, Response to EEN – Final Report, 26 June 2024.
- Grounded Environmental Batchfire Callide Coal Mine, Coal Road, Biloela, Queensland Callide Mine Site & Boundary Hill Mine Site, Per- and Poly-Fluoroalkyl Substances Detailed Site Investigation (2022-2023) Review, 6 June 2024.
- ERM Off-Site Human Health and Ecological Risk Assessment, 2 October 2024 and ERM Final Environmental Report for Batchfire Callide Mine, 26 June 2024.
- ERM Further Information Response (Additional Source-pathway-receptor Analysis and Summary of site remediation actions), 31 October 2024.

Legislation and Guidance means investigation (including sampling design, sampling methodology, sample analysis, data assessment and reporting) is undertaken in accordance with the Act and subordinate legislation, including Water EPPs, Queensland Monitoring and Sampling Manual, NEPM, PFAS NEMP, Australian Standards, National Remediation Framework 2019 and additional relevant guidance and industry best practice.

Warnings and information about this EEO

A person who is bound by this EEO and who fails to comply with this EEO, without a reasonable excuse, commits an offence under the Act.

- The maximum penalty for wilfully contravening an EEO is 1,655 penalty units, totalling \$276,219.50 for an individual or \$1,381,097.50 for a corporation.
- The maximum penalty for contravening an EEO is 600 penalty units, totalling \$100,140.00 for an individual, or \$500,700.00 for a corporation.

If you propose to dispose of the premises or business to which the EEO relates, you must advise the buyer of the existence of this EEO. Failure to provide written notice to the buyer of the existence of the Order is an offence under section 369C of the Act with a maximum penalty of 50 penalty units, totalling \$8,345.00 for an individual, or \$41,725.00 for a corporation.

Further information about EEOs can be found on the department's website.

Review and appeal rights

Under Chapter 11, Part 3 of the Act, a dissatisfied person may apply for a review of this EEO within 10 business days of receiving this EEO, and a dissatisfied person who is dissatisfied with the review decision may appeal against the decision to the Court. Please note that EEOs issued under section 362(2)(a) of the Act are excluded from internal review.

A request for review is to be made using the approved form *Application for review of original decision* (available on the [department's website](#)). Applications for reviews are to be sent to Permits and Licensing, Department of the Environment, Tourism, Science and Innovation via email at palm@detsi.qld.gov.au, or by mail to the following address: GPO Box 2454, BRISBANE QLD 4001.

If an application is made for internal review of an original decision, mentioned above, you may also apply to the relevant court for a stay of the decision under section 539A of the Act.

A person whose interests are or would be adversely affected by a decision of the department may be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

You may have other legal rights or obligations and should seek your own 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. 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@detsi.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](#).