

Notice

Environmental Protection Act 1994

Environmental Evaluation

Notice to conduct or commission an environmental evaluation

This notice to conduct or commission an environmental evaluation is issued by the administering authority pursuant to section 326B of the Environmental Protection Act 1994.

Batchfire Callide Pty Ltd and Batchfire Callide No. 2 Pty Ltd
Sect 2, Level 11
141 Queen Street
BRISBANE CITY QLD 4000

Our reference: STAT-E-100078550

Thursday, 16 December 2021

Take notice: that under the *Environmental Protection Act 1994* (the Act) a notice to conduct or commission an environmental investigation is issued to Batchfire Callide Pty Ltd and Batchfire Callide No. 2 Pty Ltd (Batchfire) by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Science (the department).

The notice to conduct or commission an environmental investigation is issued in respect of the activities of Batchfire at Callide Coal Mine on land described as Mining Lease (ML) 80118, ML80093, ML80122, ML80107, ML80151, ML80115, ML80186, ML80117, ML5632, ML5641, ML5653, ML5654, ML5655, ML6993, ML6994, ML80030, ML700059 and ML80092 (Callide Coal Mine). Callide Coal Mine consists of four mining areas: Dunn Creek, The Hut, Trap Gully and Boundary Hill.

A. Grounds

The notice to conduct or commission an environmental investigation is issued on the following grounds:

1. Under section 326BA of the Act, the department is satisfied on reasonable grounds that:
 - a) particulars of the land are recorded in the environmental management register or contaminated land register;
 - b) a hazardous contaminant is contaminating the land, and is in a concentration that has the potential to cause serious environmental harm or material environmental harm; and
 - c) a person, animal or another part of the environment may be exposed to the hazardous contaminant, whether on the land or not.

The facts and circumstances forming the basis for these grounds are:

1. Batchfire holds Environmental Authority (EA) EPML00720413 for operations at Callide Coal Mine, authorising environmentally relevant activities; mining black coal, crushing, milling, grinding or screening and sewage treatment 1.

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2. The Environmental Management Register lists Lot 100 on Plan SP301602, formerly Lot 50 on Plan RP843057, (Dunn Creek Mining Area) for engine reconditioning works and petroleum product or oil storage.
3. Following the release of the Queensland Department of Environment and Science (DES) Operational Policy for the Environmental Management of Firefighting Foam in 2016, Batchfire undertook a review of site operations and identified historical use of PFAS containing Aqueous Film-Forming Foams (AFFF) at Callide Coal Mine. Dunn Creek Mining Area was identified as the location of concern, due to the historical PFAS use at a former fire training area (FFTA) and a warehouse/workshop area (WWA).
4. PFOS, PFHxS and PFOA are the different chemicals which are collectively known as PFAS.
5. Batchfire identified that between 2009 and 2015, approximately 7,122 litres of PFAS containing AFFF was used at Callide Coal Mine.
6. Based on limited sampling at historical use of PFAS areas, in 2019 Batchfire removed 613.08 tonnes of PFAS contaminated soil from the FFTA.
7. In April 2021, Batchfire conducted further onsite sampling, identifying that PFAS contamination remained at Callide Coal Mine.
8. On 26 August 2021, Batchfire notified the department of preliminary PFAS sampling results for the Dunn Creek Mining Area, indicating varying levels of PFAS contamination in soil and sediment and surface water samples.
9. On 13 September 2021, Batchfire provided a report titled *Callide Mine Site Per-and Poly-Fluoroalkyl Substances Preliminary Site Investigation* (report) to the department. This report was limited to PFAS investigations at the Dunn Creek Mining Area. The report identified surface water and groundwater sample results with concentrations of PFOS exceeding PFAS NEMP freshwater values and PFAS NEMP drinking water values:
 - a) Surface water sample taken at WWA on 14 July 2021 identified PFHxS levels of 0.469ug/L, PFOS levels of 0.992ug/L, with the sum of PFOS + PFHxS as 1.46ug/L;
 - b) Groundwater sample taken north of the WWA on 17 August 2021 identified PFHxS levels of 0.604ug/L, PFOS levels of 0.883ug/L, with the sum of PFOS + PFHxS as 1.49ug/L.
10. Dunn Creek Dam (within the Dunn Creek Mining Area), located approximately 880m south-east downgradient to FTA (PFAS historical use area), is a valley-fill catch dam situated in the main channel of Dunn Creek and passively overflows to Callide Creek. Sample results submitted on 13 September 2021 for Dunn Creek Dam identified PFOS concentrations of 0.0176ug/L. However, the sample was dominated by PFCAs (75%), which may indicate significant biotransformation has occurred from the original source (FFTA).
11. PFAS contamination has been detected in a drainage channel, downstream and offsite to Callide Coal Mine's warehouse/workshop area through samples taken as part of a regional investigation into PFAS, including a sample taken on 7 July 2021 with PFOS + PFHxS concentration of 0.359ug/L and Total PFAS 6.6200ug/L.
12. Potential pathways for contamination to migrate offsite, identified in the report provided on 13 September 2021 include:
 - a) Leaching of PFAS from impacted soils into groundwater;

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- b) Suspension/transportation of PFAS impacted soil to surface waters and drainage channels during rainfall events and runoff from impacted surfaces (e.g. exposed PFAS soil in the former FTA area or WWA);
 - c) Migration of PFAS impacted water downgradient between surface water bodies via drainage channels; and
 - d) Groundwater migration downgradient, potentially discharging into surface water bodies such as Dunn Creek Dam or Callide Dam.
- 13. On 13 September 2021, Batchfire provided the department with preliminary PFAS sampling results for the Boundary Hill Mining Area. Results indicating varying levels of PFAS contamination in soil and surface water.
 - 14. PFAS compounds, including PFOS, are prescribed water contaminants under Schedule 10 of the Environmental Protection Regulation 2019.
 - 15. Environmental harm is defined by section 14 of the Act as any adverse effect, or potential adverse effect on an environmental value.
 - 16. 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.
 - 17. Under the Environmental Protection (Water) Policy 2009 (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.
 - 18. Callide Coal Mine 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.
 - 19. Callide Creek is a regionally significant watercourse located approximately 4km south and 9km west of the 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.
 - 20. 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 (HEPA 2020).
 - 21. Based on the facts and circumstances above, the department is satisfied that the PFAS contamination to land and waters at Callide Coal Mine has the potential to cause environmental harm through migration offsite and contribute to PFAS contamination of waters that are used for drinking water and agriculture purposes.

B. Requirements

The report on the environmental investigation must address the following relevant matters:

- 1) By **5:00pm on 31 December 2021**, Batchfire must engage an independent suitably qualified person/s (SQP) under the *Environmental Protection Act 1994* (the Act) to carry out the requirements of this notice.

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The SQP must demonstrate skills and experience in technical fields such as soil and groundwater contamination assessment and with particular skills relevant to AFFF firefighting foams containing PFAS.

- 2) By **5:00pm on 25 February 2022**, Batchfire must engage an approved contaminated land auditor to undertake an auditor's function as outlined in Section 568(b) of the Act, to oversee the SQP carrying out the requirements of this notice.
- 3) In the event that monitoring of the affected environment identifies a risk of public exposure to PFAS at concentrations greater than the relevant human health guideline value, Batchfire must notify the department of the results and findings within 24 hours of becoming aware of the risk.
- 4) By **5:00pm on 29 April 2022**, Batchfire must develop and submit a preliminary site investigation (**PSI**) report prepared in accordance with the *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (ASC NEPM). Notwithstanding ASC NEPM, the report must include:
 - a) Identification of current and historical activities undertaken at the premises which has involved the use, storage (including volume), handling, foam types and potential release of PFAS containing material;
 - b) Identification of all contaminant source zones and potential pathways into the environment;
 - c) Identification of the relevant environmental values, including an evaluation of the uses of land and waters, and any potential impact and risks to the users as a result of potential PFAS contamination;
 - d) Identification of the Data Quality Objectives (DQOs) as defined in Schedule B2 of the ASC NEPM;
 - e) A summary of the monitoring results completed prior to 29 April 2022; and
 - f) Preliminary Conceptual Site Model (CSM).
- 5) By **5:00pm on 27 May 2022**, Batchfire must develop and submit a Work Plan outlining the overall investigation strategy for the Detailed Site Investigation, inclusive of a sampling, analysis and quality plan (**SAQP**).
 - a) The SAQP may include a staged approach, such as Sampling Phase 1 to characterise the source, cause and extent of contamination at the premises for the purpose of preparing a site investigation report as defined in section 387 of the Act. Followed by Sampling Phase 2 if required for supplementary sampling based on remaining information gaps.
 - b) This SAQP must be prepared by a SQP and consented to by a contaminated land auditor.

Comments provided to Batchfire by the department by **5:00pm on 17 June 2022** (if any) must be incorporated in the sampling, analysis and quality plan prior to implementing the plan.

- 6) By **5:00pm on 26 July 2022**, Batchfire must commence sampling and analysis in accordance with the SAQP required by Requirement 5 to determine the nature and extent of impact arising from any direct or indirect release of PFAS and any other contaminants of potential concern identified in the PSI in relation to the premises.

This investigation must, as a minimum:

- a) evaluate the nature and extent of contamination likely to have been caused by any direct or indirect release from the premises to soil quality, water quality, groundwater and sediments., Biota sampling must be included as part of the investigation if there are shown to be potentially complete Source Pathway Receptor linkages as per the CSM;

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- b) identify pathways including, but not limited to, the premises, surface waters, drainage lines, stormwater infrastructure and groundwater in the vicinity of the premises;
 - c) assess the nature of the connectivity/completeness of those pathways by assessing groundwater levels versus surface water levels and connectivity, hydraulic conductivity and groundwater velocity, and evaluate the potential for contaminant migration offsite and into Callide Dam during heavy rainfall events
 - d) the sampling analysis must include all requirements stated in **Requirement 9**.
- 7) By **5:00pm on 28 July 2023**, Batchfire must submit a contaminated land investigation document (**CLID**) that is a detailed site investigation (DSI) report detailing the findings of the sampling, analysis and quality plan to determine the nature and extent of impact arising from any direct or indirect release of any hazardous contaminants.
- 8) The investigations required by this notice must meet the requirements for a CLID for the land in accordance with section 389 and 390 of the Act. A CLID must be prepared by a SQP as required by and in accordance with Chapter 12, Part 3 of the Act and be accompanied by an auditor certification that the CLID complies with section 389(1) and (2) of the Act.

Note: Where existing investigations have been completed, and are relevant to addressing the requirements of this notice, you may use these investigations to address relevant parts of this notice, pending agreement by the SQP and the auditor.

- 9) Batchfire must ensure that the following requirements, to the extent that they are applicable and specified requirements are not otherwise referred to, are met when conducting the investigation and preparing the report:
- a. The investigation is conducted in accordance with the following:
 - i. the Act – see <https://www.legislation.qld.gov.au/view/pdf/inforce/current/act-1994-062>;
 - ii. The Policy – see <https://www.legislation.qld.gov.au/view/pdf/inforce/current/sl-2019-0156>;
 - iii. Queensland Water Quality Guidelines (2009) – see <https://environment.des.qld.gov.au/management/water/quality-guidelines>;
 - iv. Monitoring and Sampling Manual 2009 Environmental Protection (Water) Policy 2009 Version 2 September 2010 see - <http://www.ehp.qld.gov.au/water/pdf/monitoring-man-2009-v2.pdf>;
 - v. National Environmental Protection (Assessment of Site Contamination) Measure 1999 – see <http://nepc.gov.au/nepms/assessment-site-contamination>;
 - vi. Guidelines for Contaminated Land Professionals – see <https://www.qld.gov.au/environment/pollution/management/contaminated-land>;
 - vii. Assessment of impact of human health considering the Tolerable Daily Intakes for PFOS, PFOA, and PFHxS recommended by Food Standards Australia New Zealand (FSANZ);
 - viii. Where PFAS are encountered in water bodies at the premise which are accessible to fauna such as birds and mammals, qualitative consideration of water to animal bioaccumulation factors reported in research publications concerning those contaminants in evaluating potential environmental harm to such animals; and

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- ix. Assessment of contamination considering guidance provided in the PFAS NEMP – see <https://www.qld.gov.au/environment/pollution/management/disasters/investigation-pfas/management-plan>.
 - b. An assessment of edible portions (biota) must be used in estimating risks of exceeding the tolerable daily intakes, being consistent with the Queensland Health Guideline for sampling and analysis of seafood suitable for human health risk assessments of PFAS contamination (see https://www.qld.gov.au/data/assets/pdf_file/0032/68684/pfas-fish-sampling-protocol.pdf) and adopting portion sizes recommended by Food Standards Australia New Zealand (FSANZ) in addition to assessment of whole species (biota) to evaluate bioaccumulation risk; and
 - c. Wherever practical, all samples must be analysed by a NATA accredited laboratory (it is noted that in biota sampling this may not be applicable); and
 - d. The analytical data on all media (soil, sediment, water, groundwater and biota) must include results for sampling to determine total organic fluorine, total oxidisable precursor (TOP) assay, and the suite of 20 to 28 standard fluorinated organic compounds by liquid chromatography-mass spectrometry (LC/MS/MS) available from commercial laboratories reported as the analyses for the resulting perfluorinated carboxylates for C4 to C14 carbon chain length (TOP C4-C14); and
 - e. Note that as analytical and instrumental improvements are made regarding the analysis for PFAS it is understood that some laboratories are increasing the standard suite which may assist you in distinguishing between the premises sources of PFAS and other potential sources; and
 - f. Where TOP Assay is performed, quality assurance checks must include that oxidant exhaustion has not occurred (e.g. reanalysis to determine presence of fluorotelomer); and
 - g. Groundwater bores are constructed in accordance with the Minimum Construction Requirements for Water Bores in Australia (3rd edition); and
 - h. Where comparisons are to be made of PFAS sediment concentrations between locations, incorporate determination on the < 63 micron size fraction and organic carbon content to allow standardisation.
- 10) By 5:00pm on 1 September 2023**, Batchfire must submit a **final environmental report** to the administering authority that demonstrates that the requirements of this environmental evaluation have been completed.

The environmental investigation must be carried out, and the environmental report prepared by a suitably qualified person. A suitably qualified person is defined as 'a person who has professional qualifications, training, skills or experience relevant to the Environmental Evaluation requirements, and can give authoritative assessment, advice and analysis in relation to the Environmental Evaluation using relative relevant protocols, standards, methods or literature'.

As the recipient of this notice, Batchfire are also required to provide a statutory declaration in the form attached, to accompany the environmental report submitted to the department.

The suitably qualified person who prepares the environmental report must also provide a statutory declaration in the form attached to the environmental report submitted to the department.

Copies of the template statutory declarations can also be accessed from the Queensland Government website at www.qld.gov.au, using the publication number as a search term:

1. Statutory declaration environmental evaluation for recipient ([ESR/2016/1997](#))

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2. Statutory declaration for suitably qualified person ([ESR/2016/2266](#))

Take notice:

1. The requirements of the notice to conduct or commission an environmental investigation take effect immediately upon service of this notice;
2. This notice remains in force until further notice from the department; and
3. Batchfire are responsible for meeting the costs of conducting or commissioning the environmental evaluation, preparing the environmental report and providing any further information as requested by the department.

C. Reviews and appeals

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the Act.

A person who is dissatisfied with certain decisions of the department, may be able to apply to have the department review that original decision.

Generally, a request to have a decision reviewed must:

- be made within 10 business days of the decision being notified to the person;
- be supported by enough information to enable the department to decide the application for review; and
- be made using the application form, Application for review of original decision ([ESR/2015/1573](#)) available on the Queensland Government website at www.qld.gov.au, using the publication number (ESR/2015/1573) as a search term.

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.

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

For further information about reviews and appeals see the information sheet, Internal review and appeals ([ESR/2015/1742](#)) available on the Queensland Government website at www.qld.gov.au, using the publication number (ESR/2015/1742) as a search term.

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You may have other legal rights or obligations and should seek your own legal advice.

D. Penalty

Failure to comply with a notice to conduct or commission an environmental evaluation is an offence.

1. The maximum penalty for an individual is 300 penalty units.
2. The maximum penalty for a corporation is 1500 penalty units.

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Should you have any queries in relation to this notice, please contact Natalie Wheeler, Senior Environmental Officer on (07) 4971 6550 or email cwes_gladstone@des.qld.gov.au.



Signature



Date

Aimee Maxwell
Manager, Compliance
Delegate of the Chief Executive
Department of Environment and Science
Environmental Protection Act 1994