



Per- and Poly- Fluoroalkyl Substances (PFAS)

Proactive leaders providing independent PFAS review and expertise

Australian Environmental Auditors (AEA) provides specialist expert advice in contaminated sites, landfill and associated disciplines nationally.

AEA maintains a renowned reputation as high-level, pragmatic, regulatory-appointed auditors specialising in auditing and expert advisory services. With a rich history of projects throughout the country and some of the highest technical expert professionals in the industry, AEA assures a quality service that proudly reflects respectable environmental practices.

Technical Expertise

Our experienced, scientific team has a thorough understanding of the most recent regulatory legislation in all states/territories as well as having technical expertise in one or more science or engineering fields.

We work with a variety of stakeholders and are pragmatic and accomplished in all areas of soil, groundwater, sediment, marine water, and vapour contamination and landfill issues.

PFAS Capability

AEA has experience managing PFAS impacts across Australia, with projects including airports, former firefighting training grounds, landfills and defence sites.

AEA has provided audit services, expert witness and expert advisory services in all states and territories and has thorough knowledge of both the local and national guidance relating to PFAS.

It is important that guidance is followed and an AEA auditor can provide confidence that the process implemented on site is consistent with the most recent guidance.

There are specific quality assurance and quality control requirements for PFAS sampling and this needs to be considered during all investigations.

What are PFAS and why were they used?



PFAS are a group of manufactured chemicals that do not occur naturally in the environment. They have been used for a long time in a wide range of industrial applications, firefighting foams and consumer products.

PFAS have many unique properties. They repel grease, oil and water and are resistant to heat, abrasion and chemicals. They are also thermally stable and durable.

Industries where PFAS may have been used



- Firefighting training sites, including airports and aviation
- Battery use and disposal
- Boating and marine supply
- Chrome/metal plating
- Commercial laundries/dry cleaners
- Manufacturing of chemical, pesticides, fertilizers, personal care products, food packaging, household appliances, textiles, carpets, leather, upholstery, clothing, shoes, sporting gear, safety gear, paints, polishes, coatings, adhesives
- Waste processing and disposal
- Wastewater treatment

Potential Health Effects



PFAS are known to bio accumulate and can bio magnify in a range of species. They have been detected in fish and fish-eating birds. There are several chronic studies and developmental studies showing effects on animals, including eye and nose irritation, liver damage, reduced pup viability and reduced weight gain. Only limited research has been conducted on human health effects.

PFAS have been widely found in human blood, indicating exposure is common. PFAS build up can remain in the body over time. Elimination occurs very slowly and is the only mechanism to reduce toxicity.

Key PFAS Experience

Former Firefighting training ground, Pilbara

WA: The auditor conducted a review of all assessment activities, a literature review to determine site specific criteria, a risk assessment and a site management plan.

Fire Training Centre, WA: Statutory audit of the FESA fire training centre in Perth. This is an operating facility and land, and groundwater has been potentially impacted by the release of fuels and aqueous fire-fighting foams (AFFF) by the site activities. The site includes native bush land. The purpose of the audit is to review the impacts of the past releases of chemicals on the on-going use as a training facility and the adjacent ecosystems.

Shipyard, Henderson WA: The auditor conducted a review of soil, groundwater, sediment, pore water and marine water assessment of a shipyard. This an operational facility with history of AFFF use during firefighting activities. Due to the ongoing operational nature of the site, an integrated site management plan was developed to detail the ongoing management and monitoring requirements.

Airport Facility, Qld: A detailed Preliminary Site Investigation and Detailed Site Investigation were completed at the Archerfield Airport for the Federal Airports Commission. The investigation identified areas of potential concern utilizing historical aerial photographs, records and interviews with RAAF personnel, present during early development of the facility (RAAF and US Air Force were present for several years). A comprehensive soil boring and monitor well program was conducted to assess potential contamination addressing such areas as underground fuel storage, rogue on-site dumps and burials, firefighting training area, etc. This project resulted in the development and implementation of a long-term groundwater monitoring program.

Operational Airport, Perth WA: The auditor conducted a peer review of a PFAS risk assessment, providing advice on the derivation of risk-based criteria and potential reuse of the material onsite.

Hardened Network Army, SA: Project Manager and technical advisor for a \$1.5 million Phase II Environmental Site Assessment of an approximately 250.0 ha site formerly used as an ordnance manufacturing facility in the 1940s and then as an operational military base. The contaminated sites included an acid factory; service stations; radiation stores; pug holes; rifle range; solvent soakage pits; buried asbestos; farm dumps; sheep dips; hazardous waste containment cell, AFFF contaminated soils and groundwater contamination. The investigation involved: a gaps analysis of over 50 previous environmental reports; a site wide intrusive investigation involving over 1,600 soil bores/test pits, installation of 60 groundwater monitoring wells and numerous groundwater monitoring events; vapour assessment of a service station and landfill; health risk assessment of a service station, sulfur pit, widespread ash and cinders and tar coatings; asbestos and hazardous materials audits; remediation options studies; containment cell design; vapour extraction system design; preparation of remediation specifications; and integration of investigation results and remedial works with site redesign.

Technical Advisor for defence sites, NT & NSW: Review of environmental site assessment reports, provided technical advice regarding assessment, contamination delineation and remediation strategies for each of the affected properties.

Operational Airport, VIC: The auditor conducted a peer review of site assessment including a risk assessment, providing advice on the potential reuse of the material onsite.



Our Technical Team

Our independent regulatory-appointed auditors and expert technical specialists help clients successfully overcome their environmental project challenges. We pride ourselves on a responsive, transparent service with unquestionable experience and valuable expert support throughout the whole process.

With majority of our auditors and experts possessing over 20 years' experience, we have encountered varied types of contaminants in all types of industries. This experience together with our technical and regulatory knowledge is a valuable asset for our clients.



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