

Understanding PFAS



What is PFAS?

PFAS (per- and poly-fluoroalkyl substances) are a group of manufactured chemicals that have been used since the 1950s in lots of common products like: non-stick cookware; fabric, furniture and carpet stain protection applications; and food packaging.

Why are these chemicals being phased out?

The manufacture and use of some PFAS are being discontinued or limited through international agreements and voluntary actions primarily because of their persistence in the environment, rather than because of any established health effects. PFAS break down very slowly in the environment under naturally occurring conditions.

Because of this, they tend to accumulate in the food chain and in human tissue. The international scientific community has identified this characteristic as undesirable because of the potential for unforeseen effects resulting from accumulating levels, and the difficulty in removing these chemicals from the environment.

Are there any health affects?

Health experts are still working to fully understand PFAS. There is currently no consistent evidence that PFAS exposure causes adverse human health effects. However, because there is uncertainty and PFAS can accumulate in the body with continued exposure, it is prudent to reduce exposure to PFAS as far as is practicable.

PFAS are found at very low levels in the blood of the general population around the world. The general public is exposed to small amounts of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in everyday life. Levels of PFAS in the blood will decrease over time if exposure is minimised.

Does PFAS affect pregnant women or babies who are being breastfed?

Queensland Health advises there currently no consistent evidence that exposure to PFAS causes poor outcomes in pregnant women or their babies.

If you're concerned please talk to your GP or call Queensland Health on 13 Health (13 43 25 84).

How long does it take for PFAS to leave my system?

The time it takes for PFAS to be excreted from the body is the same for adults and children. In humans, studies suggest that the half-life of PFAS could range from two to nine years.

How are people exposed to PFAS?

The general public are exposed to small amounts of PFAS in everyday life through exposure to dust, indoor and outdoor air, food, water and contact with consumer products that contain these chemicals.

For most people, food is thought to be the major source of exposure. People who work in industries that use PFAS, or use products containing these chemicals, may be exposed to higher levels than the general public.



Timeline of activities



NOV 2020 - JAN 2021

On-site and public land investigations (sampling)



FEB 2021

Public and landholder notification of sampling results



FEB 2021

Start zone 1 sampling



MARCH 2021

Zone 1, 2 and 3 sampling

Notification of zone 1 sampling results



APRIL 2021 - We are here

Complete zone 2 and 3 sampling, ongoing landholder notification of results

Start sampling in zone 4 and 5

Results analysis (ongoing)



MAY 2021

Ongoing public and landholder notification of all sampling results

Undertake any other sampling needed

Desktop study - further define source areas, flow paths, remediation options



MID 2021

Develop ongoing long-term, offsite monitoring program

Evaluate remediation and operational options

Hydrogeological review



LATE 2021

Aquatic biota sampling

Commence onsite remediation



EARLY 2022

Human Health and Ecological Risk Assessment



2022 ONWARDS

Ongoing monitoring and remediation

Ongoing landholder and community engagement

*Anticipated timeline subject to change

What is CS Energy doing?

Testing

CS Energy is conducting a voluntary investigation to understand the potential impacts associated with our historical use of PFAS at Callide Power Station.

Callide's use of firefighting foams containing PFAS was infrequent and in small quantities for training, testing and emergency response purposes. CS Energy removed firefighting foams containing non-compliant levels of PFAS in 2019 as part of a Queensland Government policy to phase out their use.

CS Energy has divided the sampling area near Callide Power Station into geographic zones so that the testing on private landholder property can be carried out efficiently. Results to date are showing a mix of PFAS levels above and below drinking water guidelines. Testing is still under way.

Remediation and monitoring

We are developing an ongoing monitoring program and remediation plan with the Department of Environment and Science (DES). As part of this, we will continue to monitor for PFAS in Callide Creek a number of times a year and report the results to the community.

Communication

We strive for transparency and clear communication with the community. We are speaking directly with affected landholders and proactively updating the broader Biloela community and our employees. We are engaging with the community as a whole and are continuously updating our website with new information as test results come through.

What are the Australian drinking water guidelines?



The Australian drinking water guidelines for the total PFOS plus PFHxS are 0.07 µg per litre and 0.56 µg per litre for PFOA. PFOS, PFHxS and PFOA are different types of PFAS. The measure µg = micrograms. That is a unit of mass equal to one millionth of a gram.

What are the recreational water guidelines?

The National Health and Medical Research Council also has recreational water guidelines in place for activities like swimming and sprinkler play. These are: the total concentration of PFOS plus PFHxS should not exceed 2 µg/L, and 10µg/L for PFOA. This is calculated on an estimated accidental ingestion of 30 litres per year.





How will the water level readings affect me?



PHOS + PFHxS above drinking water guidelines of 0.07 ug/L

For landholders with levels of PFAS above the drinking water guidelines on their property, how will it impact their daily activity?

To minimise exposure, Queensland Health advises these landowners to stop using the water from the sample point/s that exceed the guideline on their property for the following:

-  Drinking the water
-  Using for cooking
-  Personal hygiene (includes activities such as brushing teeth and showering)
-  Eating produce like meat, veggies or eggs that use water from this sample point on your property.

The Queensland Health advice **only applies to the locations that are non-compliant with the guideline**. They also advise activities such as swimming and sprinkler play are safe if the detection is above the drinking water guideline, but below the recreational water guideline.







Some levels of PFAS found

What about landholders whose results showed some levels of PFAS but they were below the drinking water and recreation guidelines?

The advice from Queensland Health is that you can continue to drink the water. The Department of Agriculture and Fisheries advises you can continue to use the water for irrigating crops and for livestock whether they are above or below drinking water guidelines.

However, we recognise that you may feel uncertain, and may want to limit exposure.

Queensland Health advises you may wish to follow the advice for minimising exposure as a precautionary measure.

-  Avoid drinking the water
-  Avoid using for cooking
-  Avoid using the water for personal hygiene (includes activities such as brushing teeth and showering, but not swimming or sprinkler play)
-  Avoid eating produce like meat, veggies or eggs from your property.

For more information on PFAS visit pfas.gov.au or health.qld.gov.au or call 13 HEALTH (13 43 25 84).

To speak with a Callide Power Station representative contact Brett Smith on 0419 726 550 or bsmith@csenergy.com.au or learn more on our website csenergy.com.au.

Does PFAS affect animals?

For domestic pets like dogs and cats, Department of Agriculture and Fisheries (DAF) says there's no evidence that suggests that PFAS have a detrimental effect on animal or plant health at levels likely to be found in contaminated areas. If you are concerned about your pet, you can choose to give them the same alternative water source as yourself.



Can I still use the water for livestock and crops?

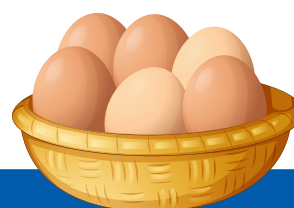
DAF advises you can continue to use the water for irrigating crops and for livestock.

Will PFAS affect the breeding value (genetics) of stud animals or international trade?

The advice from DAF is no. Toxicology data suggests that PFAS are not genotoxic and therefore genetic traits will not be affected. There are currently no standards set for PFAS in agricultural products or food in Australia. Food Standards Australia and New Zealand (FSANZ), the agency responsible for food standards in Australia, has recently completed a review of risks associated with PFAS in human diets and has not recommended any food regulatory measures at this stage.

Are there standards for PFAS levels in agricultural products in Australia?

There are currently no standards set for PFAS in agricultural products or food in Australia. Food Standards Australia and New Zealand (FSANZ), the agency responsible for food standards in Australia, has recently completed a review of risks associated with PFAS in human diets and has not recommended any food regulatory measures at this stage.



I've changed my chickens' drinking water to an alternative supply. When can I start eating their eggs again?

Queensland Health advises that previous studies have shown that PFAS was eliminated from eggs 30 days after changing PFAS-free water. Based on this study, Queensland Health advises people to wait one month before consuming eggs.

Source: Queensland Health and Department of Agriculture and Fisheries (DAF).

For more information on PFAS for primary producers visit daf.qld.gov.au or call 13 25 23.

To speak with a Callide Power Station representative contact Brett Smith on 0419 726 550 or bsmith@csenergy.com.au or learn more on our website csenergy.com.au.

