A message from CS Energy

PFAS hydrogeological review and latest map

Hi

Over the past few months CS Energy has been progressing several different activities as we continue to respond to the legacy use of PFAS at Callide Power Station.

These activities were:

- Hydrogeological modelling to further understand PFAS and its movement in groundwater and surface water.
- Resampling groundwater bores on landholder properties.
- Technical sampling in strategic locations on a quarterly basis.
- Planning for soil remediation at the power station.

As these activities are almost complete, I am writing to give you an update, and outline what our next steps are.

We have also produced an updated map, showing the inferred concentrations of PFAS through our investigation area. You can find this on our website:
https://www.csenergy.com.au/environment/pfas-monitoring/callide-pfas-monitoring

Community walk in sessions

A reminder that CS Energy is hosting two community walk in information sessions. If you have questions about the work we have done to date you are welcome to attend:

Wednesday 22 June – 3pm to 7pm
OR
Thursday 23 June – 7am to 10am
Venue: Hotel Settlers conference room

There is no presentation or set time to attend. The sessions have been designed so you can drop in when it suits you to talk to representatives from CS Energy, Epic Environmental, Queensland Health, Department of Environment and Science, Department of Agriculture and Fisheries, Banana Shire Council and Batchfire Resources.

Please rsvp to energyinfo@csenergy.com.au to help us run a COVID safe event.

Hydrogeological Review

CS Energy engaged two hydrogeologists to do some modelling to help us understand the geology of the aquifer and how water and PFAS are moving through it.

A report has been produced that summarises the finding of this work. You can find the report, named Callide Power Station – PFAS Investigation – Hydrogeological Review on our website https://www.csenergy.com.au/environment/pfas-monitoring/callide-pfas-monitoring

Here are a few key findings from the Hydrogeological Review, prepared by Epic Environmental:

Source of PFAS

- The hydrogeological review links PFAS in the groundwater and surface water near Callide Power Station to CS Energy.
- PFAS in surface waters sampled along the northern boundary (during and after rainfall events) of Callide Power Station property was also potentially linked to Batchfire Resources, and is the subject of ongoing investigation.
- Both CS Energy and Batchfire are working with the Department of Environment and Science under an Environmental Evaluation framework to undertake our own studies and sampling.
- The main identified source of PFAS onsite at Callide Power Station is at the fuel oil tanks and the fire training ground areas. It's estimated CS Energy has used less than 1,000L of AFFF (Aqueous Film-Forming Foam) concentrate historically at Callide Power Station.

Pathways off Callide Power Station

- The review has found the primary way that PFAS is leaving the power station site is in groundwater seepage at the southern end of the site, at an estimated 0.01kg a year. Recovery bores are currently capturing approximately 75 per cent of seepage and returning it to the Ash Dam on site.
- Surface water flows onto Callide Power Station from north of the site through a diversion channel and exits at the south-western end of the site.

What is important is that we stop further PFAS coming into the system. We are doing that through a variety of ways:

- Soil remediation project at the primary source contamination areas on Callide site.
- Managing water differently in our operations onsite to minimise surface water leaving site.
- Investigating scope for a project to increase the capacity of our seepage recovery. We already have seepage recovery in place that is proving effective. However, we are looking at increasing locations of recovery bores.

PFAS movement once off site

- Modelling shows a continuous layer of sand and gravel at the bottom of the Callide aquifer. Because of this layer, water generally moves at an even rate downstream. The studies found that groundwater moves at a rate of approximately 4m a day.
- Since 1988, when Callide B was commissioned, groundwater may have moved up to 17km west of the power station site.
- Water molecules move faster than PFAS, so at this stage, we estimate that PFAS from the Callide site would not have moved any further than 17km downstream.
- To date, CS Energy has sampled 12km downstream of the power station (to Jambin Dakenba Road). The sampling undertaken and hydrogeological studies indicate it is unlikely that PFAS levels will be above the drinking water guidelines past Jambin Dakenba Road.

- PFAS concentrations are greater along the northern and southern margins of the aquifer. You can see this represented in the darker purple shading of the Inferred Groundwater PFOS + PFHxS concentration map.
- The hydrogeologists' view is that releases of surface water from Callide Dam have diluted the PFAS concentration through the middle of the aquifer.

Landholder and technical sampling

- We have completed a second round of sampling for landholders. As a whole, second round results were consistent with previous sampling. Some individual landholders saw a slight change in their results, with some concentrations going up, and others down.
- We have also completed three rounds of the quarterly technical sampling program. This has included a broader snapshot across areas on and off site. A fourth round will be completed in July 2022.

Soil remediation project

- We have been working through a comprehensive tender process to appoint an expert in soil remediation to undertake this specialist work.
- In addition, we have been investigating known source areas on site to make sure the scope for the remediation work is correct.
- The fire training ground and fuel oil tank areas are the primary PFAS source areas on site.
- We have tested 82 samples within these areas to assess the level of PFAS and which areas need to be remediated.
- This specialist has now been appointed, and this work will kick off soon and is expected to be completed in early to mid-2023.

What's next

- We will continue to work through the actions required under the Environmental Evaluation.
- CS Energy will be submitting a response to the Environmental Evaluation when it is due in September 2022. The response will include recommendations about the need for future monitoring of PFAS movement in the environment, if required.
- Following the Environmental Evaluation submission, CS Energy will evaluate if sampling is required further west of Jambin Dakenba Road.
- A fourth technical sampling round is expected to will take place in July.

- We will continue our sampling program for landholders in our current investigation zones, with the timing likely to be later in 2022, following submission of the Environmental Evaluation report to DES.

- Other work coming up in the future includes planning for aquatic biota sampling and a Human Health and Ecological Risk Assessment, before these activities occur in 2023.

- We will continue to engage with landholders and the community.

More information

If you have questions, please phone me on **0477 957 116 or email stapsall@csenergy.com.au**

You can also visit our website csenergy.com.au/environment/pfasmonitoring

If you have any health concerns or questions, Queensland Health advises people to talk to their GP or call **13HEALTH on 13 43 25 84**. You can also call the Central Queensland Public Health Unit on **07 4920 6989**.

If you have questions about livestock or agriculture, we recommend speaking with the Department of Agriculture and Fisheries (DAF) on **13 25 23**.

Steve Tapsall
PFAS Stakeholder Engagement Manager