

Cornish Lithium Blackwater Project FAQs

Who is Cornish Lithium?

- Cornish Lithium is a private UK-owned innovative mineral exploration and development company aiming to provide some of the raw materials for the energy transition
- 70+ employees, mostly based across Penryn, United Downs and St Dennis
- We have successfully drilled 3 boreholes previously to depths of up to 2,000m (6,561 ft) to analyse the lithium content of geothermal waters below Cornwall at United Downs and Twelveheads
- We are an independent company primarily focussed on lithium. We are separate to other Cornish companies looking at producing geothermal energy from much deeper waters, or producing other resources such as tin

Why do we need lithium?

- Lithium is important for the green energy transition as it is used in batteries. Batteries are used to store energy produced from renewable sources such as solar or wind, instead of burning fossil fuels and producing carbon dioxide, which causes global warming.
- Lithium-ion batteries are used in electric vehicles, grid storage of energy, and electronics like laptops and phones
- There is currently no domestic supply of lithium, so the UK imports everything that we use from across the globe

Why does Cornwall have so much potential for geothermal lithium?

- The granite rock which underlies Cornwall is rich in lithium, which can either be extracted directly from the granite, or found dissolved in the geothermal waters which circulate naturally through the rock beneath our feet
- This granite rock is also relatively hot compared to other rocks beneath the UK. Geothermal means 'heat from the earth'. It's possible to use this renewable heat source by pumping the geothermal waters to surface via boreholes
- From a 1.5-2km deep borehole the water temperature could be around 75-80 °C meaning there is the potential to use this geothermal heat in local businesses or houses
- The extraction of geothermal waters from these depths is not expected to have any adverse impacts on local water supply boreholes to properties, or to have any impacts on historic mine workings in the area

Why is there a need for exploration drilling at Blackwater?

- Blackwater has been identified as a highly prospective area to explore for lithium in geothermal waters from our extensive digital modelling of Cornwall's geology
- The exact location is based on in-depth geological modelling of the subsurface, to increase the likelihood that the drilling intercepts the targets we are aiming for. This site was selected as the most appropriate due to a number of other factors, including land constraints, mineral rights and land access.
- Boreholes are drilled to take samples of the rock from depth which our geologists then interpret, and to enable us to identify geological features where geothermal waters are flowing
- The drilling at Blackwater will provide data to add to that from our previous boreholes, to assess the lithium potential of the waters, and guide the Company's longer-term strategy to produce lithium from a number of relatively small, low-profile production boreholes and associated infrastructure across Cornwall

What would the drilling programme look like?

- The General Permitted Development Order permission lasts for six months, and the drilling will occur in this timeframe
- Equipment on site will include a small drill rig and associated infrastructure, such as water storage bladders and welfare units
- The drill rig is the same rig that we recently used at our Twelveheads site to drill to a depth of 2,000m (6,561ft). This drill rig is capable of drilling to this depth but not much deeper, and is smaller than rigs used by companies who need to drill to depths greater than 2,000m, for example for deep geothermal energy

- The project objective is to sample the lithium content of geothermal waters at depth, building on the knowledge we have gained at our previous exploration sites
- A 4m high wall of straw bales will be placed between the drill rig and Blackwater village to minimise visual and noise impacts, and may use tarpaulin to protect them. They will be dampened down if needs be to minimise fire risk
- Permissions have been granted for drilling to take place between 0700 - 0700 hours on a 24 hour basis, (including weekends and bank holidays) though we will not utilise the option for 24 hour drilling every day within the six month period. Any other operation supporting the mineral exploration drilling programme including the establishment of drill pads, mobilisation of drill rigs, and all site restoration works shall only be carried out during the day shift, between 0700 1900 hours
- Noise limits have been set to not exceed 55 dB for the day time or 40dB for the night time at nearby residences. Continuous noise monitoring will take place, and a noise survey has been conducted by an independent company before drilling with predicted levels to be 0-40dB at nearby receptors. Cornish Lithium has previously completed multiple successful drill programmes within these limits
- One initial borehole is being drilled. If this is completed before the end of the six month period, then we have the option to apply for permission from the Council to drill a second borehole in the remaining time. Ahead of seeking this permission we would undertake further engagement with the community about any further plans and complete new noise and ecology surveys
- An ecological survey has been conducted which has informed project design to minimise any impacts to wildlife. This survey was completed by an independent ecology company and they will provide advice for any work taking place, including groundworks and site reinstatement after the 6 months. This survey considered all wildlife in the area, and can be downloaded from the Council planning portal
- Lighting will be low level and directed inwards to the rig so as not to disturb houses or traffic on the A30
- Traffic management plans are in place for the planned movement of the drill rig onto and off site, at the start and end of the project, which would comprise of only three HGVs for the rig transport. Daily vehicle movements would be light vehicles (i.e. cars, vans and pick-ups) as staff travel to and from the site, which is not expected to impact normal daily traffic. This will be around 3-4 vehicles a day. National Highways are satisfied that this is the case
- The borehole will be around 10cm wide, and we plan to drill to approximately 2,000m (6,000 ft) deep
- As with our previous three exploration boreholes, the extraction of geothermal waters from these depths is not expected to have any impact on historic mine workings in the area as the borehole has been designed to avoid them based on our extensive 3D modelling of the area. Likewise, we will be sampling water from much greater depths than any nearby private water supply boreholes and so there should not be any impact on these either

How will we test the waters?

- Water from the borehole will be pumped to the surface and samples will be taken to United Downs for the lithium content to be analysed in our laboratory. The temperature and flow rates will also be measured
- The waters we test will come from deep underground, and will be much deeper than any private water boreholes. The work is not expected to impact private boreholes, and we will monitor local boreholes throughout the programme to ensure that this is the case
- Water will be temporarily stored in bladders at surface on the site until they are discharged back down the same borehole they came out of (with full permission to do so). Nothing is added to these waters, and they will be in the same state as when they were extracted
- If there is excess water in these bladders, some may be taken away and disposed of off site

How will we process the waters to extract the lithium if the project moves to the next phase?

- Lithium can be extracted from geothermal waters using Direct Lithium Extraction (DLE) technology, which just removes the lithium ions from the water
- DLE is a more environmentally responsible way of processing lithium-rich waters as it is highly efficient (creating little to no waste products) and plants have a small footprint compared to other processes

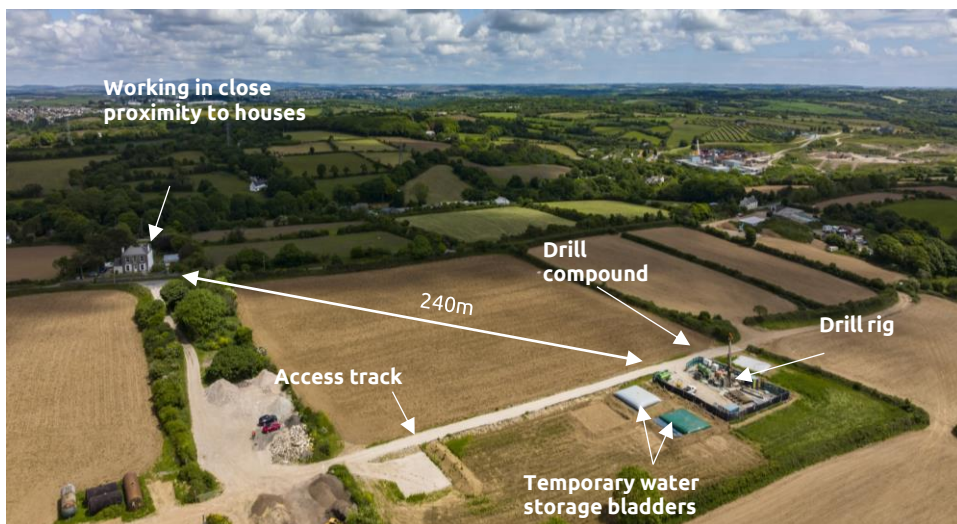
- Our DLE Pilot Plant at United Downs was commissioned in 2022 and our work to date has demonstrated that the technology works on Cornish geothermal waters, making it an exciting opportunity for Cornwall

What groundworks will happen at site and what will happen to the site after?

- The area of the field where the drill site is located in is the end that is nearest to the A30
- The first step of preparing the site to be safely operational will involve groundworks to install a temporary hardstanding, mud mats, gravel and 'herras' style fencing
- The entrance to the field, at the southern edge closest to the A30, will need to be widened temporarily, which will be done under the supervision of an ecological clerk of works and will be fully restored at the end of the programme
- At the end of this drill programme, the site will be reinstated to its previous condition. This will be done under supervision of the ecological clerk of works and will include reseeded of that section of the field
- After completion, the borehole will be either secured under a manhole cover, or buried 1 m underground
- After the reinstatement of the site, our geologists need time to analyse the results from the programme. Any future work would require further planning permissions and consultation with the community

How can you get in touch with us?

- You can contact us via the contact form on our website: <https://cornishlithium.com/contact-details/>
- Via email: blackwaterdrilling@cornishlithium.com
- By phone: 01326 640640
- Or by Post: Cornish Lithium, Tremough Innovation Centre, Penryn, TR10 9TA



2022 Twelveheads drill site – a similar set up to be expected for the Blackwater 6 month exploration programme



Previous borehole at United Downs under a tripod in an existing industrial site



Cornish Lithium's exploration at night without bales