

Exploratory drilling phase set to commence June 2022

What is the groundwater project about?

From 2018 to 2020 Uralla and surrounding areas experienced the worst drought since records began. Severe water restrictions were imposed and Uralla's sole water supply dam on Kentucky Creek fell below 25% of capacity. What water remained had levels of arsenic above the Australian Drinking Water Guidelines and so bottled water was provided to the community for an extended period of time. Council modified the water treatment plant process to remove arsenic and testing shows the treated water meets consumption guidelines. Since January 2021, rainfall patterns have improved, storage levels in Kentucky Dam levels have been high, and arsenic concentration in the dam has been low. Water supplied continues to meet the drinking water guidelines.

This extreme drought coupled with earlier studies show that Uralla cannot rely just on Kentucky Creek Dam for its future water needs. Put simply, another bad drought will occur and when that happens Uralla will need a backup water supply to augment the supply from Kentucky Creek Dam.

The NSW Government has provided Uralla Shire Council with a grant of \$1.5M to investigate and develop an alternative water supply source. The initial focus of this grant is to see if there is a viable source of groundwater nearby to Uralla.

Why look for groundwater?

The key to getting through a period of drought is to have access to a big enough storage of water to meet demand until the drought ends. Groundwater is widely used for irrigation, stock and town water supply across Australia. If a source of groundwater suitable for town water use can be found in proximity to Uralla, this will provide a supply to back up the water from Kentucky Dam and save costs on expensive transfer pumps and pipelines to bring water from more remote locations.

What does the groundwater project involve?

For groundwater to be a viable town water supply, it needs to be available in sufficient volumes and flow rates to meet demand and of suitable quality that it can be treated to meet drinking water standards. The groundwater source also needs to be close to Uralla to keep the cost of transfer of transfer pipelines low. Finding viable groundwater resources in the granite country like Uralla is not a certainty, and so the project follows a phased approach:

Phase 1 - Review of groundwater information (Complete)

Council's hydrogeological consultant reviewed the available information on geology and groundwater surrounding Uralla. Geological maps and logs of existing bores as well as mining records were examined to determine if there are plausible sources of groundwater near Uralla. This stage identified the locations for further investigation that are the best prospects for finding groundwater near to Uralla.

Phase 2 - Test bore drilling (commencing June 2022)

As the available geological information is incomplete, drilling test bores is needed to improve knowledge on underlying geology and water-bearing strata. The test drilling will give a much greater understanding as to whether groundwater near Uralla is viable in terms of available volumes, achievable flow rates, and water quality. Test drilling will also help to understand the long-term impacts of drawing groundwater on the environment and existing bores.

Phase 2 Uralla Groundwater Project Update – May 2022

Council’s consultant has recommended drilling 12 test bores to better understand the local geology with most of these bores to be located just north of Uralla. Sites north of Uralla were chosen because geological maps show this is where ancient basalt sits over the top of underlying granites and the ‘interface’ between these rocks is considered to be the best prospects to find groundwater. The drilling may also show there are multiple water-bearing strata (also known as ‘aquifers’) at different depths below ground. Refer to the map for proposed drilling locations.

Uralla Groundwater Project – Conceptual Geological Strata and Water Bearing Zones



Council has been approved by the NSW Government’s Natural Resource Access Regulator (NRAR) to drill these test bores with depths from 50 to 150m depth. Council has worked closely with NRAR to ensure the test bores will be a long distance from existing stock & domestic bores so as not to impact on existing wells. The test bores will be drilled in Council-controlled land such as road reserves. Each bore will take 3-5 days to drill depending on depth.

The drilling equipment for the test bores is a small stand-alone rig with a small footprint (see photos.) Each test bore will be 150mm in diameter and the environmental impact from the drilling will be minimal.



After the bores are drilled, test pumping will be used to determine the ‘yield’ (flow rate) of the bore and to collect samples to test the water quality. Environmental impacts of the test bore drilling will be limited and drilling sites will be restored on completion of the works. Once the test pumping is finished no further water needs to be drawn.

Phase 2 Uralla Groundwater Project Update – May 2022

On completion of the drilling and test pumping Council's hydrogeological consultant will prepare a detailed report for consideration by Council and the NSW Government. This report will include assessment of the impact of any production bores on adjoining groundwater users.

Phase 3 - Production Bore drilling

Should test drilling in Phase 2 show that groundwater is a viable water supply, then – subject to endorsement from Council and the NSW Government – Phase 3 is to develop a water supply scheme to collect, treat and transfer groundwater to the Uralla water reticulation system. In this phase select test bores will be converted to 'production' bores by drilling a larger diameter bore and installing permanent well screen and casing. Depending on available flow rates, additional bores may need to be drilled to give enough flow to meet town water demand. A concept design will be developed for the full scheme including power supply, pumps, pipelines, treatment and monitoring equipment. Development of production bores and access to groundwater for town water supply cannot proceed without approval from NSW Government's Natural Resource Access Regulator. NRAR will consider the potential impacts of production well drilling and extraction of groundwater and rules of the Water Sharing Plans for the *NSW Murray Darling Basin Fractured Rock Groundwater Sources (New England Fold Belt MDB Groundwater Source)* and the *North Coast Fractured and Porous Rock Groundwater Sources (2016) – New England Fold Belt Coast*.

Uralla Groundwater Project Frequently Asked Questions

What about the bore Council drilled in Alma Park?

With grant funding Council installed a bore in Alma Park in 2020 to provide emergency water supply for parkland vegetation. This bore can only produce a small flow of water, insufficient for town supply. This is typical of bores drilled in tight granite-type rock.

How is this project being funded?

The project is 100% funded by the NSW Government.

Where will the test bores be drilled?

The locations of test bores are shown on the map which can be download from Council's website: <https://www.uralla.nsw.gov.au/Council-Services/Major-Projects/Uralla-Groundwater-Project>. Drilling locations are on road reserves, Crown land or other Council-controlled land.

Most of the bores are north of Uralla where the remains of ancient basalt rock sits over the top of granite rock, since the basalt is a better chance of yielding good groundwater. Other sites for test bores to the south and east of Uralla were chosen to check if large cracks or 'faults' in the granite are present that could hold good groundwater.

The locations are spread apart to learn as much as possible about the local geology and water-bearing strata.

Council worked closely with NSW Government agencies to make sure the test drilling sites are a long way from existing stock & domestic bores.

When will drilling commence?

Drilling will commence in early June 2022. Set up, drilling and clean up at each site will typically be 3 to 5 days at each drilling site.

Drilling all 12 test bores is expected to take 6 weeks.

What if we don't find a good source of groundwater?

If drilling, water testing and hydrogeological modelling show that local groundwater is not viable as a backup water source Council will need to consider alternative water sources to augment supply from Kentucky Creek Dam. Council will continue to promote water conservation by residents and business to conserve this precious resource.