# Leaving It Better Than We Found It

## Deep well injection will safely manage non-hazardous wastewater at Campbell site

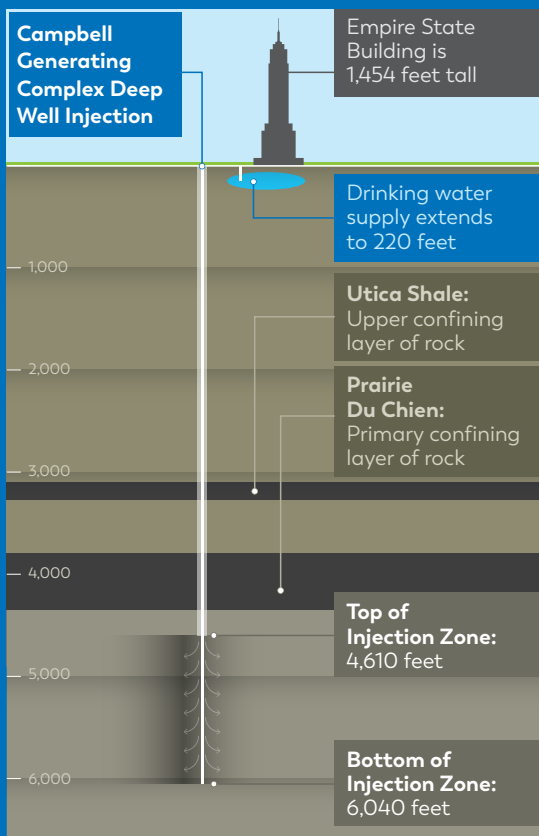
In 2025, we will retire the Campbell Generating Complex near Holland as part of our Clean Energy Plan to eliminate coal and protect Michigan's environment.

When the Campbell units stop running, we'll need a new process to manage non-hazardous wastewater at the site. Deep well injection is a safe, proven and commonly used technique to effectively dispose of non-hazardous wastewater, and the process is permitted and regulated by state and federal agencies.

With regulatory approval, we plan to drill a deep well and inject non-hazardous wastewater into rock formations thousands of feet below the surface — well below underground sources of drinking water.

Start to finish, you can count on us to fulfill our environmental responsibilities at the plant site. Safe nt than protecting our neighbors, co-workers, customers and the planet we all cherish.

***See the back*** *for frequently asked questions.*




The Campbell Generating Complex well will inject non-hazardous wastewater into rock formations thousands of feet below the surface.

Consumers Energy Count on Us®

# Answers to your questions about our plans to manage non-hazardous wastewater at the Campbell Generating Complex

## What's happening?

Non-hazardous wastewater, primarily liquid run-off from our coal ash storage facilities, currently is mixed with cooling water from Campbell's operating generating units for safe discharge into Lake Michigan in compliance with state and federal environmental requirements. When the generating units stop running in 2025, we'll need a new wastewater management process to meet environmental regulations. After exploring alternatives, our environmental experts suggest deep well injection, a safe, proven and commonly used process.

## What is in the wastewater and is it hazardous?

The wastewater is primarily liquid that percolates through a landfill and has picked up certain constituents from the coal ash. The wastewater is much like coffee: water that has percolated down through the ground coffee. The wastewater we need to manage is not hazardous. We have performed extensive testing of this water to confirm it is non-hazardous and will continue to regularly monitor the water quality throughout the life of the proposed injection wells.

## What is a deep injection well and how does it work?

Deep injection wells are constructed of multiple layers of high-integrity, continuous protective steel and concrete casings, which are embedded into the dense protective confining-layer rock formations. The deeper injection formations, which lie beneath these confining layers, provide enormous volumes of capacity to accept and safely isolate the injected liquids from the environment. The liquid is injected through tubing which runs through the center of the protective casings. A pressurized fluid surrounds the injection tubing between the inner casing, providing another layer of protection and integrity monitoring. The spaces around each steel casing are cemented from the bottom to ground surface, providing protection for drinking water.

## Are deep injection wells commonly used?

Yes. We are seeking permits from the U.S. Environmental Protection Agency (EPA) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for two Class I, non-hazardous injection wells, with plans to drill one now. Class I injection wells are typically drilled thousands of feet below the lowermost underground source of drinking water (USDW). The geologies of the Gulf Coast and the Great Lakes areas are best suited for these types of wells. This mature technology has been in practice for nearly 100 years and has been widely approved by state and federal agencies for use in Michigan. There are over 30 active Class I Waste Disposal Well permits in Michigan and approximately 800 in the United States, according to EGLE.

## Will this affect our drinking water?

The drinking water will remain safe. Class I injection wells allow injection far below the lowermost underground source of drinking water (USDW). Injection zones typically range from 1,700 to more than 10,000 feet in depth. Our target injection interval is nearly one mile below ground surface. The injection zone is below and separated from USDWs by an impermeable "cap" rock called the confining layer. The confining layer may be associated with additional layers of permeable and impermeable rock and sediment to separate the injection zone from the USDW. Pressurized seals in-between the casing and the injection tubing to ensure the wastewater is injected into the designated formation. Pressure is monitored for well performance and permit compliance. Class I injection wells are constructed with redundant physical and operational measures to protect the drinking water.

Safety is our top priority, and nothing is more important than protecting our neighbors, co-workers, customers and the planet.

## How much non-hazardous wastewater do you need to manage?

We are seeking permission to discharge up to 400 gallons of wastewater per minute but may expect to inject far less at any given time. With regulatory approval, we would begin using this technique to manage wastewater as soon as late 2025.

## Were other disposal options considered?

Yes, we evaluated several treatment and disposal options for long-term wastewater management after closing and decommissioning of the Campbell Generating Complex. Deep well injection emerged as the most viable and environmentally safe choice, aligning with our commitment to environmental stewardship and community safety. The well will stay in place as long as the landfill is present or until another method for safe disposal is identified.

## How can we ensure there will not be issues with the well?

Every Class I injection well in Michigan operates under a permit from the EPA and EGLE. Each permit is valid for up to 10 years and can be renewed as long as the facility meets applicable requirements. Owners and operators of Class I injection wells must meet specific requirements to obtain a permit. These requirements address the siting, construction, operation, monitoring and testing, reporting and record keeping, and abandonment of Class I injection wells.

## For more details about:

**Deep injection wells:**
EPA.gov or Michigan.gov/egle
(search for Oil, Gas, and Minerals Division)

**Our Clean Energy Plan:**
ConsumersEnergy.com/Change

**The Campbell Generating Complex retirement process:**
ConsumersEnergy.com/CampbellRetirement

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