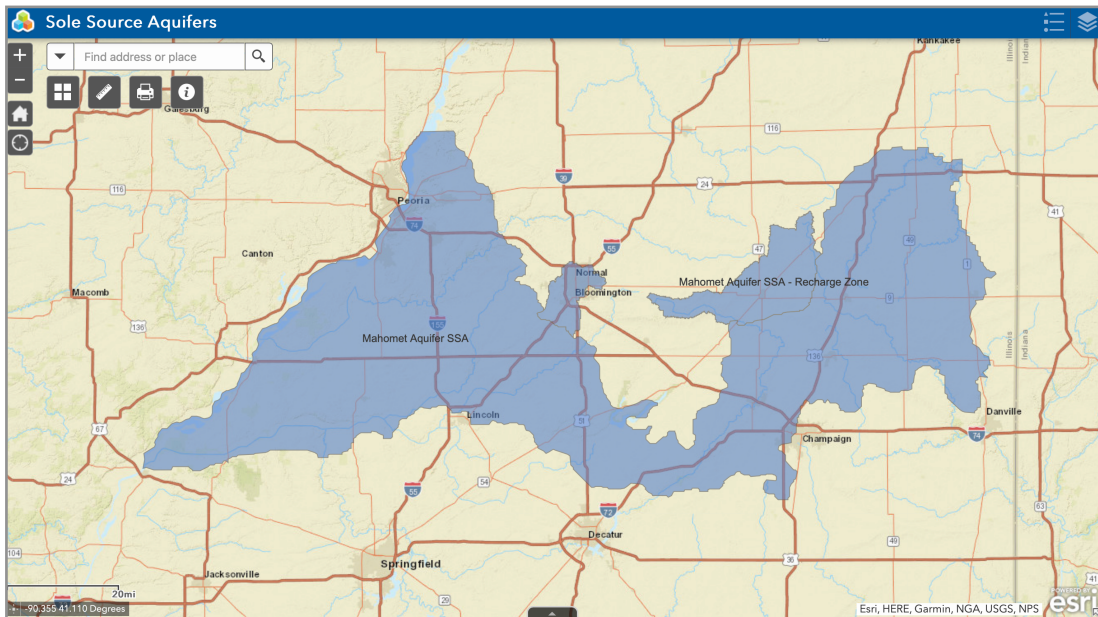


# Oppose Storing CO<sub>2</sub> under the Mahomet Aquifer's Project Review Area

## WHAT IS THE PROJECT REVIEW AREA?

A Project Review Area for a sole-source aquifer includes, by definition, all functional areas that the U.S. Environmental Protection Agency (U.S. EPA) deems important to protecting an aquifer. All sole-source aquifers' Project Review Areas are now [officially mapped](#) by the U.S. EPA and are available in a [Graphic Information System \(GIS\) dataset](#). The Mahomet Aquifer's Project Review Area mapped by the U.S. EPA is based on contour intervals approved when it received its designation as a sole-source aquifer in 2015.

EPA included the streamflow source areas that recharge the Mahomet Aquifer in its designation of the Project Review area. They include tributaries and upstream portions of the Sangamon River in McLean County, Ford County and Champaign County; Sugar Creek; and a tributary to the Middle Fork of the Vermilion River in Ford County and Livingston County. These areas are depicted as recharge zones on the map below.



**Mahomet Aquifer Project Review Area per U.S. EPA**

## RISKS OF STORING CO<sub>2</sub>

CO<sub>2</sub> can leak along injection wells and through existing faults and fractures in the cap rock. Natural or induced earthquakes (caused by injecting large volumes of highly-pressurized CO<sub>2</sub>) can crack well bores and the cap rock, releasing CO<sub>2</sub> into the aquifer. Leakage also can be accelerated through abandoned wells that penetrate the Mahomet Aquifer and its recharge areas.

When CO<sub>2</sub> mixes with water, it forms carbonic acid, which can leach heavy metals from sand and rock formations into the aquifer. These include manganese, cobalt, nickel, uranium, and barium. Heavy metals can cause severe health issues, including cancer, liver damage, and anemia.

Contamination of the Mahomet Aquifer System would create a significant hazard to public health for east-central Illinois. It's sole source designation by the U.S. EPA means over 50% of the population in the Mahomet Aquifer System service area would be unable to find either a physically available or an economically feasible alternative source of drinking water, should the aquifer system become contaminated.

## ARCHER DANIELS MIDLAND (ADM) MONITORING WELL LEAKS

Carbon Capture and Sequestration (CCS) is an evolving technology. The ONLY operating Class VI well project in the U.S. that has been permitted by the U.S. EPA is the Illinois Industrial Carbon Capture and Storage Project in Decatur. It leaked. Technology, material, equipment and operator failures on this project demonstrate why allowing the injection of CO<sub>2</sub> through, and storage under, the Project Review Area of the Mahomet Aquifer should be banned.

### **Technology Failure**

- ADM used what it considered to be the best available design for its monitoring wells.
- But sleeve openings in the well above and below the cap rock would not close, allowing CO<sub>2</sub> to travel from the confinement zone to the unauthorized Iron-ton-Galesville formation, above the cap rock.

### **Material Failure**

- ADM used 13 Chrome steel, thought to be the industry standard for all wells.
- But the heavy-gauge steel corroded, due to the corrosive effects of CO<sub>2</sub> and brine, causing the U.S. EPA to alert other applicants across the country that they would no longer approve this material.

### **Equipment and Operator Failure**

- ADM's monitoring well stopped functioning in January 2022 (five years after the injection of CO<sub>2</sub> began).
- ADM detected a leak sometime in 2022 and temporarily plugged the well to stop the leak.
- ADM removed the tubing, plugged the well with cement, and took it out of production in October 2023.
- ADM should have [shut down injection](#) when its well failed per its U.S. EPA-approved emergency response plan, but ADM did not.
- In March 2024, ADM discovered about 8,000 tons of formation fluid (CO<sub>2</sub> and brine) above the cap rock.

### **ADM Discovers Second Well Leak**

- The U.S. EPA issued a Notice of Violation to ADM in mid-August 2024, and a Proposed Administrative Order of Consent (AOC) in September 2024 to determine the scope and extent of the leak, remediate the leak, repair the well, and re-initiate monitoring.
- As ADM was responding to the U.S. EPA's AOC, it discovered its second monitoring well was leaking.
- Now ADM has reported there are 24 wells in proximity to its leaking wells that could serve as pathways for CO<sub>2</sub> to escape, move upwards, and potentially contaminate drinking water.

## **PEOPLE'S GAS METHANE LEAK 2015**

There is **just one** natural gas storage reservoir under the Mahomet ... and it leaked! The People's Gas methane leak is a recent example of how material and operator failure contaminated the Mahomet Aquifer, and taxpayer funds had to be allocated for cleanup. Affected residents still rely on bottled water.

### **Material Failure**

People's Gas [knew as early as 1995](#) that its methane gas injection/withdrawal well under the Mahomet Aquifer was corroding.

### **Operator Failure**

The Company did nothing, until an employee discovered gas bubbling up around the injection well in 2015, ten years later.

### **Cost to Replace Contaminated Water**

- Total estimated cost in 2020: \$10,000,000.
- [\\$3.8 million appropriated by the state](#) in taxpayer funds to cover design costs and initial construction for a new water supply.
- Residents have not yet been connected to a new supply of water, and rely on bottled water nine years after the leak was first reported.

## **WE NEED A LEGISLATIVE BAN**

Illinois passed legislation regulating carbon capture and storage in May of 2024 (the SAFE CCS Act), but the law does not ban the injection of CO<sub>2</sub> through or storage under the Mahomet Aquifer and its recharge areas. This leaves the Mahomet vulnerable to contamination from a CO<sub>2</sub> leak. The only way to protect the Mahomet Aquifer Project Review Area is to pass a legislative sequestration ban.

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