

EPA Seeks Comments on Injection Well Permits

You are invited

The EPA will hold an open house and a formal public hearing on all injection wells proposed by Michigan Potash at:

Reed City High School
225 Church Avenue
Reed City, Michigan 49677

Wednesday January 4, 2017

Open House and Q&A, 6 – 7:30 p.m.

Public Hearing, 7:30 – 9 p.m.

EPA will provide a summary of its proposed decision and will answer questions during the open house. Oral and written comments will be recorded or accepted at the hearing.

How to comment

In addition to accepting comments at the public hearing, EPA will accept written comments until January 6, 2017 (midnight postmark). Comments can be sent to Allan Batka or Janette Hansen via mail or email as noted below:

Class I Wells:

Allan Batka

Email: batka.allan@epa.gov

Phone: 312-353-7316

Class III Wells:

Janette Hansen, L.P.G.

Email: hansen.janette@epa.gov

Phone: 312-886-0241

U.S. EPA, Water Division
UIC Branch (WU-16J)
77 W. Jackson Blvd.
Chicago, IL 60604-3590

To learn more about EPA's Underground Injection Control program, or to join our mailing list visit <http://go.usa.gov/3JwFP>

Michigan Potash Operating

Osceola and Mecosta Counties, Michigan

December 2016



This map shows where the proposed injection wells would be. The three Class I injection wells are identified by the green circles. The Class III permit area is identified as the area contained by the red box.

The U.S. Environmental Protection Agency proposes to approve permits to allow Michigan Potash Operating, LLC to conduct solution mining and dispose of nonhazardous liquid waste from its solution mining operations. The company's operations would be located near 120th Avenue and Schofield Road in Osceola and Mecosta Counties, Michigan (see map above). EPA is accepting comments on the draft permits.

There are two types of proposed injection well permits. There is one proposed Class III area permit that would contain eight injection wells. These Class III injection wells would be used to conduct solution mining of salt and potash. There are also three proposed Class I injection well permits, each for a single well. The Class I injection wells would be used to dispose of nonhazardous liquid waste from the solution mining operations.

The Class I injection well draft permits were previously announced by EPA in May 2016. The comment period for these draft permits has been extended and a public hearing has been scheduled. At the same time, EPA is announcing a draft permit with a comment period and public hearing for the Class III wells. EPA will hold one Open House and Q&A session for both the proposed Class I and Class III wells, followed by one Public Hearing for all four proposed injection well permits (see box at left). The comment period for all four proposed injection well permits will be open until January 6, 2017. (midnight postmark).

Permit requirements

Federal regulations for underground injection wells list standards for construction, geology, and location (siting). They also establish operating conditions and record keeping requirements. The goal of the regulations is to protect Underground Sources of Drinking Water (USDWs) from contamination caused by injection wells.

A USDW is any aquifer or portion of an aquifer that contains less than 10,000 milligrams per liter of total dissolved solids and which can be used as a source of drinking water. An aquifer is an underground layer of water-bearing rock or sand from which water can be extracted by a well.

EPA's preliminary review of the permit applications for these eleven wells concluded they would have no significant environmental impact.

What happens next in the permit process?

EPA will review and consider all public comments received during the comment period and at the public hearing before making a final decision on whether or not to grant the permits. The Agency will respond to all significant comments on the draft permits.

If EPA decides to issue final permits, Michigan Potash would be allowed to drill the proposed wells.

Information Repository

You may see the draft permits at:

Reed City Public Library
829 South Chestnut Street
Reed City, Michigan 49677
Or at <http://go.usa.gov/3JwFP>

Administrative Record

You may see the full administrative record, including all data submitted by Michigan Potash Operating, LLC, at the EPA's Chicago regional office, weekdays from 9am to 4pm. For an appointment to see the files, contact the individuals identified on the first page of this notice.

On the Web

For more information about the Michigan Potash project:
<http://go.usa.gov/3JwFP>

Legal Notice

To preserve your right to appeal any final permit decision, you must either participate in the public hearing or send in written comments on the draft permit decision by the end of the comment period. The first appeal must be made to EPA's Environmental Appeals Board; only after all EPA review procedures have been exhausted may you file an action in the appropriate Circuit Court of Appeals.

Technical background and details of the Michigan Potash project

Class III Injection Wells

Underground Source of Drinking Water (USDW):

In the case of the Michigan Potash proposed wells, the base of the lowermost USDW sits at a depth of 620 feet. This water-bearing formation is the Glacial Drift.

Site geology: The injection zone for the proposed wells is the Salina A-1 Evaporite, the Ruff Formation (also known as the Salina A-1 Carbonate), and portions of the Salina A-2 Evaporite from approximately 7,180 to 7,940 feet deep. This is approximately 6,560 feet below the lowest point of the underground drinking water source. The immediate overlying confining zone would be the Salina A-2 Carbonate between approximately 6,920 feet and 7,180 feet deep, and is composed of tight carbonates. Additional confining layers exist between the injection zone and the base of the lowermost underground source of drinking water.

Area of review (AOR): The AOR is the permitted area (see map on page 1) plus an additional quarter mile. EPA analyzed the AOR to identify wells that might allow fluid to move out of the injection zone. In the AOR for the area permit, there are two producing wells, 0 injection, 0 temporarily abandoned, and 20 plugged and abandoned wells that penetrate the injection zone. These wells meet construction standards and will not allow fluid to move out of the injection zone for the proposed wells.

Maximum injection pressure: EPA proposes an injection pressure limit that will prevent the injection formation from fracturing due to the pressure. The proposed maximum injection pressure (MIP) for these wells is limited to 2,372 pounds per square inch gauge (psig) as long as the specific gravity of the injectate is no greater than 1.03. When the specific gravity of the injectate is greater than 1.03 but no more than the permitted maximum of 1.20, the MIP is 1,843 psig.

Financial assurance: Michigan Potash Operating LLC has demonstrated adequate financial resources to close, plug and abandon these underground injection wells. State bonds for \$36,200 have been established for each well with the State of Michigan.

Class I Injection Wells

Underground Source of Drinking Water (USDW):

In the case of the Michigan Potash proposed wells, the base of the lowermost USDW sits at a depth of 620 feet. This water-bearing formation is the Glacial Drift.

Site geology: The injection zone for the proposed wells is the Amherstburg formation, Sylvania Sandstone, Bois Blanc formation, and Bass Island Group from approximately 4,962 feet to 5,550 feet deep. This is 4,342 feet below the lowest point of the underground drinking water source. The immediate overlying confining zone would be the upper portion of the Detroit River Group between approximately 4,170 and 4,962 feet deep, which is composed of tight carbonates. Additional confining layers exist between the injection zone formation and the base of the lowermost underground source of drinking water.

Area of review (AOR): The AOR is the area within a two-mile radius of each injection well. EPA analyzed the AOR to identify wells that might allow fluid to move out of the injection zone. In the AOR for the three proposed wells, there is one producing well, 12 injection, 0 temporarily abandoned, and 23 plugged and abandoned wells that penetrate the confining zone. These wells meet construction standards and will not allow fluid to move out of the injection zone for the proposed wells.

Maximum injection pressure: EPA proposes an injection pressure limit that will prevent the injection formation from fracturing due to the pressure. The proposed maximum injection pressure is limited to 1,269 pounds per square inch gauge for each well.

Financial assurance: Michigan Potash Operating LLC has demonstrated adequate financial resources to close, plug and abandon these underground injection wells. State bonds for \$33,000 have been established for each well with the State of Michigan.