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April 2, 2018

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Region III Ground Water & Enforcement 3WP22
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RE: PENNECO ENVIRONMENTAL SOLUTIONS, LLC
UIC Permit No. PAS2D701BALL

Ladies & Gentlemen:

Enclosed herein please find PETITION FOR REVIEW OF UIC PERMIT FOR PENNECO ENVIRONMENTAL SOLUTIONS ISSUED BY REGION III in regard to the above captioned matter.

Very truly yours,
Bruce E. Dice & Associates, P.C.

Dayne F. Dice, Esquire

DFD/arp
Enclosure

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BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	NAME OF PLEADING: PETITION FOR REVIEW OF UIC PERMIT FOR PENNECO ENVIRONMENTAL SOLUTIONS ISSUED BY REGION III
Penneco Environmental Solutions, LLC	
UIC Permit No. PAS2D701BALL	FILED ON BEHALF OF: Borough of Plum

COUNSEL OF RECORD:

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PETITION FOR REVIEW OF UIC PERMIT
FOR PENNECO ENVIRONMENTAL SOLUTIONS ISSUED BY REGION III

INTRODUCTION

Pursuant to 40 C.F.R. § 124.19, the Borough of Plum ("Petitioner"), on behalf of the individual councilmembers and former mayor who gave public comment, respectfully petition for review of the conditions of UIC Class II-D Permit No. PAS2D701BALL ("the Permit"), which was issued to Penneco Environmental Solutions, LLC ("Permittee") on March 7, 2018 by the Environmental Protection Agency Region III ("EPA"). The permit at issue in this proceeding authorizes Permittee to operate a Class II-D injection well at the proposed site in Plum Borough, Allegheny County, Pennsylvania. Petitioner contends that certain permit conditions are based on clearly erroneous findings of fact and conclusions of law or an exercise of discretion, or an important policy consideration which the Environmental Appeals Board ("Board") should review.

Specifically, Petitioner challenges the following permit conditions:

(1) The permit allows for the injection of materials that cause an increase in seismic activity which directly threatens underground sources of drinking water, without the permit requiring proper safeguards and monitoring of seismic activity.

FACTUAL BACKGROUND

On March 9, 2016, the EPA received an application for a Class II Underground Injection Control (UIC) permit submitted by Permittee. Permittee intends to reinject recovered brine from oil and gas operations, for the purposes of disposal, into the proposed injection well. On June 22, 2017 the EPA publicly advertised a notice and request for comment in the Pittsburgh Tribune-Review. The EPA's public notice allowed for comments from concerned residents, and made a public hearing available if so requested. A public hearing was requested, and thusly a public hearing was held on July 26, 2017. The public comment period was extended by the EPA to August 9, 2017. The EPA received over 400 comments from over 120 people. On March 7, 2018, the EPA issued a final permit to authorize the Permittee to dispose of waste materials, specifically brine, into the proposed injection well. The permit authorized Permittee to convert an existing Sedat #3A into a Class II-D commercial brine disposal injection well. The coordinates for the injection well are: Latitude 40° 31' 38.5" and Longitude -79° 42' 48.5".

Permittee proposes to use the at issue injection well to meet the following objectives:

• Disposal of brine from oil and gas operations.

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner satisfies the threshold requirements for filing a petition for review under Part 124. Petitioner has standing to petition for review of the permit decision because Petitioner is submitting a comment based on previously raised points. *See* 40 C.F.R. § 124.19(a). Further, Petitioner participated in the EPA's July 26, 2017 public hearing, as councilmember Dave Odom and former mayor Richard Hrivnak both publicly participated and gave comment. The issues raised by Petitioner in this petition were either raised with the EPA during the public comment period, and therefore are preserved for review, or arise from significant changes from the draft permit to the final permit.

ARGUMENTS

Petitioner makes the following arguments with respect to the permit conditions imposed on Permittee:

(1) As per comment ten (10) and eleven (11) in EPA's "Response to Comments for The Issuance of an Underground Injection Control (UIC) Permit for Penneco Environmental Solutions, LLC," injection wells may cause an increase in seismic activity, and the effect of such increased seismic activity can impact underground sources of drinking water (USDWs).

ARGUMENT (1)

Class II disposal wells are limited to the disposal of fluids associated with conventional oil and natural gas production, or natural gas storage operations. *See Drinking Water Treatment*

Residual Injection Wells: Technical Recommendations. Federal regulations require that the well adequately confine injected fluids to the authorized injection site to prevent the migration of fluids into USDWs. Area of recovery (AOR) evaluations are required for new Class II wells (based on a ¼ mile radius or on the "radius of endangerment"). The injection wells are drilled and constructed using the same techniques as those for Class I injection wells, with steel pipe cemented in place to prevent the migration of fluids into or between USDWs. The overall well system for injection is then evaluated to make sure all the components are properly constructed. Id.

Under federal regulations (40 CFR § 144.12), injection well operations may not cause the movement of fluids/substances that cause a contamination of any sources of underground drinking water, or otherwise adversely affect public health via pollution of USDWs. In addition, movement of injected materials into USDWs may cause violations of state ground water quality standards or ground water antidegradation standards.

Examples of such movement of injected material are numerous. In 2010 contaminants from underground injection wells caused hazardous materials and waste to rise to the surface and pollute a public park in Los Angeles. *See* Abraham Lustgarten, *Injection Wells: The Poison Beneath Us*, ProPublica (2012). Similar incidents have taken place in Oklahoma and Louisiana. Further, public drinking water was directly impacted by injection well malfunction in the Miami area of south Florida. Id.

Stefan Finsterle, a hydrogeologist at the Lawrence Berkeley National Laboratory who specializes in understanding the properties of rock layers, and modeling how fluid runs through such layers, has stated, "There is no certainty at all in any of this, and whoever tells you the opposite is not telling you the truth." Id.

A review of well records, case histories, and government summaries, conducted by ProPublica investigative writer Abraham Lustgarten, revealed that structural failures inside injection wells are routine. Id. For example, in September 2013 an underground injection well designed for the disposal of brine waste water seeped to the surface in the Chico, Texas area. Id. A Class II well, designed for the injection and retention of brine, is the current use proposed by Permittee.

Further, cases exist in which well failures may have led directly to the contamination of public sources of drinking water. Id. Between 2008 and 2011, there were investigations into 150 separate incidents of alleged contamination of public drinking water. Twenty-five of the incidents were a caused by waste from Class II wells. Id.

Indeed, scientific evidence exists to show that brine injection wells can lead to the seepage of injected brine into the surrounding underground area. *See* Jeffrey G. Pain, Alan R. Dutton, and Martina U. Blum, *Using Airborne Geophysics to Identify Salinization in West Texas*, Bureau of Economic Geology at The University of Texas at Austin.

The above enumerated instances of mishaps involving Class II wells stem merely from the existence of such wells. A more pressing issue posed to public drinking water is the potential for increased seismic activity created by underground injection wells, including Class II wells.

Comments 10 and 11 of the EPA's "Response to Comments for The Issuance of an Underground Injection (UIC) Permit for Penneco Environmental Solutions" responds to commenter questions about increased seismic activity, and the potential for earthquakes, by citing to the lack of fault lines or fractures near Permittees proposed injection well site. However, this analysis is inherently suspect. Scientific research has shown that there exists limited capability to predict human-caused earthquakes for a number of reasons, including uncertainty in knowing the

state of stress in the earth, rudimentary knowledge of how injected fluids flow underground after injection, poor knowledge of faults that could potentially slip and cause earthquakes, and limited networks of seismometers. *See* Peter Folger and Mary Tiemann, *Human-Induced Earthquakes from Deep-Well Injection: A Brief Overview*, Congressional Research Service (2015). Thusly, attempts to assuage the danger to underground sources of public drinking water by citing to a lack of known fault lines is without merit.

The linkage between injection wells and increased seismic activity has become less speculative and more well established as a growing number of states (including Oklahoma, Texas, Arkansas, Ohio, Colorado) have experienced the seismic fallout created by injection wells. Id.

Seismologists concur that injection wells are to blame for an increase in seismicity in the areas where wells are present. *See* John Quigley, *Managing Induced Seismicity From Wastewater Injection Wells in Pennsylvania*, Kleinman Center for Energy Policy. These instances of increased seismicity are so prevalent that regulators in Oklahoma have ordered operators of injection wells to decrease the volume of waste materials injected. Id. In an even more drastic step, Oklahoma has ordered several injection wells to be shut down entirely. Id. Regulators in Texas and Ohio have also taken measures to curb the seismic activity created by injection wells. Id.

Although the Safe Drinking Water Act (SDWA) does not mention seismicity specifically, the UIC provisions of the SDWA authorize the EPA to regulate underground injection to prevent the endangerment of underground sources of drinking water. Id. It cannot be disputed that seismicity has the potential to impact drinking water by damaging the integrity of wells, and creating new fractures that allow injected fluids to reach groundwater. Id.

The EPA is specifically charged with administering and regulating underground injection wells under the SDWA in order to protect subsurface sources of drinking water. The Safe Drinking

Water Act of 1974; UIC provisions are contained in SDWA Part C, §§ 1421-1426; 42 U.S.C. §§300(h)-300(h)(5).

These enumerated sections of the SDWA enable the EPA to set reasonable and necessary restrictions on underground injection wells to protect USDWs. The proposal put forth by John Quigley of the Kleinman Center for Energy Policy at the University of Pennsylvania is a requirement that all developers install state owned and operated seismometers at new injection wells. *See* John Quigley, *Managing Induced Seismicity From Wastewater Injection Wells in Pennsylvania*, Kleinman Center for Energy Policy. Despite, the well-established dangers of increased seismic activities from injection wells, the permit issued by the EPA at UIC Permit No. PAS2D701BALL contains no requirement that the Permittee take any steps to monitor seismicity at the proposed well site.

CONCLUSION

Petitioner, the Borough of Plum, respectfully requests that the Board remand the Permit to the EPA for a more thorough evaluation of the potential seismic activity implications, or in the alternate to make the following modifications:

(1) Add a permit condition requiring Penneco Environmental Solutions, LLC to install seismometers at the proposed injection well site.

(2) Add a permit requirement requiring Penneco Environmental Solutions, LLC to post a bond for the maintenance of the seismometers.

(3) Require Penneco Environmental Solutions, LLC to keep the seismometer in a state of good working order.

(4) Require Penneco Environmental Solutions, LLC to submit the records of the seismometer to the EPA, DEP, and Petitioner on a quarterly basis.

Respectfully submitted on April 2nd, 2018

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CERTIFICATE OF SERVICE

I, BRUCE E. DICE, ESQUIRE, hereby certify that a true and correct copy of this **Petition for Review of UIC Permit for Penneco Environmental Solutions Issued by Region III** was mailed First-Class, postage prepaid to the following addresses on the 2nd day of April, 2018, to the address listed below:

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Environmental Appeals Board
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Respectfully Submitted,

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