

To Thomas E. Donohue, P.G. TD 4/14/20
Professional Geologist Manager
Office of Oil & Gas Management
Southwest District Office

From Kevin W. Maskol KM 4/13/2020
Environmental Protection Specialist
Bureau of Investigations
Southwest Regional Office

Date April 13, 2020

RE Technical Review
Control and Disposal Plan
Penneco Environmental Solutions, LLC EPA UIC Permit # - PAS2D701BALL
Sedat #3A Project
37-003-21223
Plum Borough, Allegheny County

Remarks:

There have been several rounds of submissions and comments on Penneco's Control and Disposal plan for the Sedat #3A Underground Injection Permit Application. I reviewed the June 12, 2018 supplemental submittal and provided comments on September 28, 2018. DEP prepared a deficiency letter November 19, 2018 that incorporated my comments along with those of April Weiland and Sam Steingrabe.

I reviewed Penneco's supplemental materials received January 24, 2019 and provided comments on March 26, 2019. DEP prepared a deficiency letter dated March 28, 2019 that incorporated my comments along with those of April Weiland and Sam Steingrabe.

I reviewed Penneco's supplemental materials received May 15, 2019.

Penneco also submitted supplemental materials related to the Control and Disposal plan that were received by DEP on October 18, 2019 and October 28, 2019.

The following summarizes my review:

- Penneco provided a revised full-size drawing dated 4/12/19 for the Water Supply Survey prepared by Fox and Fox, Inc. of Clarion, PA and received on 5/15/19. Along with the drawing, Penneco provided a revised spreadsheet. The drawing and spreadsheet are color coded according to the type of water supply and identify the water wells and springs within the ¼ mile radius of the proposed Sedat #3A underground injection control well. The final Sedat #3A Water Purveyor Map shows four private water wells and one spring:
 - Parcels 1234-B-00254 and 1234-B-00258 David A. & Stephanie Plance – water well
 - Parcel 1234-F-00159 Daniel S. Cooper – water well

- Parcel 1234-K-0022 Theodore & Virginia Smolenski – water well
 - Parcel 1234-J-00087 Frank Choltko III – water well
 - Parcel 1234-K-00185 Frank T. & Marcia Marie Smolenski – spring
- The Sedat #3A 4-10-10 Final Water Purveyor Details (also received 5/15/19) spreadsheet incorrectly lists Parcel 1234-F-00159 owned by Daniel S. Cooper as presumed public. This spreadsheet is missing a column with well details that is included on the Sedat #3A – Water Supply Worksheet included with the original application. Water well details were not provided for the Cooper Parcel #1234-F-00159 and the Plance Parcels #1234-B-00254 and 1234-B-00258.
- In an email dated March 27, 2020, Penneco was recommended to revise the Final Water Purveyor Details dated 4-10-19 to correctly identify the Cooper Parcel 1234-F-00159 and include the well details.
 - On March 27, 2020, Penneco provided a response via email. This response included a revised Final Water Purveyor Details spreadsheet. In a separate email on the same date, Penneco provided a Pre-Drill Survey for the Cooper water well. This survey contained well details such as depth, age, casing size and treatment.
- A table with contact information for the owners of private water supplies within ¼ mile of the Sedat #3A UIC Well is included in Penneco’s PPC Plan.
- Penneco contracted Tetra Tech, Inc. to conduct a review of the Pennsylvania Groundwater Information System (PAGWIS). A letter summarizing the results of this review was included.
- Penneco developed a Radiation Protection Plan and included a copy of the Plan. I forwarded a copy of the plan to Ben Seiber in the Bureau of Radiation Protection in Central Office for review via email on July 15, 2019. Mr. Seiber reviews Radiation Protection Action Plans submitted by Oil and Gas operators in PA.
 - Seiber provided draft comments on the plan to Maskol via email on September 9, 2019.
 - Maskol edited the comments and provided them to Marc Jacobs via email on September 25, 2019.
- Penneco provided a revised Radiation Protection Plan that was received on October 18, 2019.
 - Seiber provided two additional comments on the Plan on October 25, 2019.
- Penneco provided a second revised Radiation Protection Plan that was received October 28, 2019 that addresses all Seiber’s comments. Ben Seiber determined that the Plan was adequate via email on October 29, 2019.
- Penneco provided a copy of an estimate from Hygiene, Safety and Training (HST), a division of McCutcheon Enterprises, for a 2-day 10 Hour OSHA and TENORM training class for up to 5 attendees. Penneco states that its environmental staff will be required to attend this training. Penneco is recommended to provide this training to any of its employees that will be handling waste at the facility and to keep records of the training after it has been completed.
 - This recommendation was provided to Penneco via email on March 25, 2020. On March 26, 2020 Penneco provided a response stating: “Per our Radiation Protection Plan, any Penneco employee with the potential to manage, monitor, navigate, or handle facility waste will be required to attend TENORM training. In fact, we have our first training scheduled for Thursday, April 30th at Applied Health Physics in Bethel Park.”

- Penneco provided an “incomprehensive list” of potential destination facilities for waste that is generated at the facility. I recommend they develop a comprehensive list of potential disposal facilities before any waste is generated. The facilities currently listed are:
 - Buckeye Brine Treatment and Disposal in Uhrichsville, OH
 - US Ecology in Belleville Michigan
 - Waste Management Energy Services in Vickery, OH

This recommendation was provided to Penneco via email on March 25, 2020. On March 26, 2020 Penneco provided a list of additional disposal facilities:

- US Ecology in Grand View, Idaho
 - Energy Solutions in Clive, Utah
 - Waste Control and Storage in Andrews, TX
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- Penneco provided a chemical analysis of produced fluids from a vertical Marcellus well. The well name is the R Sleppy 1-86.6 API #063-36534, located in Cherryhill Township, Indiana County. The sample was analyzed for parameters specified in the instructions for the Form 26R (Annual Chemical Analysis of Waste), including Radium 226 and Radium 228. The results were reviewed with Environmental Chemist Robert Popichak. The level of Barium in the sample was notably high, 3270 mg/L.
 - Penneco provided Safety Data Sheets (SDS) for bleach and biocide and included those SDS in a revised copy of the PPC plan.
 - Penneco described the “60 Mil Leak Detection Liner Under Pit” as descriptive, blueprint carry-over from an application in a warmer climate. “According to the design engineer, an underlying leak detection system is not recommended in colder climates. In colder climates, condensation can mimic a leak and register a false positive.” A detailed engineering review was not conducted. Although not required by regulation, I would recommend a leak detection zone. Leak detection zones are used in colder climates in applications such as landfills and centralized oil and gas wastewater impoundments.
 - The secondary containment calculations provided by Penneco were reviewed along with various site plans and drawings submitted with the June 12, 2018 supplemental information. The final plan set was sealed by a licensed professional engineer. The calculations consider the volume of all concrete storage areas as containment. Penneco accounted for the concrete tank pads but does not appear to have subtracted the volume of the settling tanks at 3’, the volume of the oil tank at 28”, and the volume of the gun barrel tanks at 28”.
 - This issue was discussed directly with Penneco’s design consultant, Lynn Goldston via telephone on July 18, 2019.
 - A draft of the revised containment calculations was submitted via email on July 26, 2019. I provided one additional comment via email on the same day.
 - The final revised containment calculations were received on October 18, 2019. The proposed secondary containment appears to have sufficient volume to contain 100% of the largest tank or series of tanks manifolded together plus 10% to allow for precipitation.

Summary/ Recommendations:

I conducted a review of the Control and Disposal Plan submitted by Penneco Environmental Solutions, LLC for the proposed Sedat #3A UIC well. The review was performed using the Department's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" document. The review found that the revised Control and Disposal Plan meets the requirements set forth in this document, as well as all associated regulatory requirements. No further revision of the Plan is requested or required.