



MEMO

TO Eric Gustafson *EG 5/25/17*
District Manager
Southwest District Oil and Gas Office
District Oil and Gas Operations

FROM Thomas Donohue, PG *TD*
Professional Geologist Manager
Southwest District Oil and Gas Office
District Oil and Gas Operations

DATE May 25, 2017

RE Sammy-Mar, LLC - Povlik #1 (API #033-27257)
Disposal Well application to inject waste into an underground formation
Huston Township, Clearfield County

I. Background

On May 10, 2016, Sammy-Mar submitted an application to drill and operate a disposal well, named the Povlik #1. In accordance with 25 Pa. Code Ch. 78.18, the application consists of a well permit application (DOW), Erosion and Sedimentation Control (E&S) Plan, Control and Disposal (C&D) Plan, the Class II Injection Disposal well application submitted to the U.S. Environmental Protection Agency's (EPA) Underground Injection Control (UIC) Program, and the issued EPA UIC permit. On June 28, 2016, the Department held a public hearing in Penfield, PA to solicit comments related to Sammy-Mar's application, and received comments from 17 commentors that were considered in the application review and incorporated into a comment-response document.

II. Application Review

Sammy-Mar's Povlik #1 application was reviewed with consideration of, among other things, applicable sections in the 2012 Pennsylvania Oil & Gas Act, the Oil & Gas Conservation Law, 25 Pa. Code Ch. 78, 91, 102, 105, and "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" program manual.

This document summarizes the primary portions of the Departments's review, specifically, a DOW review, E&S review, C&D review, geologic review and mechanical integrity review.

- DOW Review:
 - The DOW application consists of operator-answered questions, a Well Location Plat, notifications to interested parties and a Pennsylvania Natural Diversity Inventory (PNDI) search receipt. The application was reviewed by a DEP Licensed Professional Geologist who reviewed and analyzed answers to the operator-answered questions, reviewed the Well Location Plat, reviewed the PNDI, and confirmed information in the application against DEP's records. The application is complete and is in accordance with all applicable statutes and regulations in the 2012 Oil & Gas Act, the Oil and Gas Conservation Law and Pa. Code Ch. 78.

- E&S Review:
 - The E&S Plan conforms with applicable regulations in 25 Pa. Code Ch. 102 and 105. The plan demonstrates that when implemented, it will be adequate to minimize accelerated erosion and potential sediment impacts to surface waters. See attached "Review of E&S and C&D Plans for Sammy-Mar, LLC" memorandum for additional detail.

- C&D Review:
 - The C&D Plan conforms with the Department's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" manual and applicable regulations in 25 Pa. Code Ch. 78. The plan identifies the control and disposal practices used by the well operator. The application also identifies pressure barriers to be used during identified operations. A pressure barrier is a physical or operational element incorporated into the well design to provide integrity throughout the life of the well (see Mechanical Integrity Review for additional pressure barrier details). See attached "Review of E&S and C&D Plans for Sammy-Mar, LLC" memorandum for additional detail.

- Geologic Review:
 - The Department performed a geologic review in accordance with 25 Pa. Code Ch. 91.51 that considered stratigraphy and geologic structures as mechanisms to eliminate potential pathways (coal mines, gas storage fields, other wells that penetrate the Oriskany and transmissive faults) for injected fluid to reach water supplies and the basement rock. Fluid injected into or proximate to basement rock is considered to be the mechanism that induced seismic events recently in Oklahoma and Ohio. The Department's geologic review in this case revealed no evidence that potential pathways exist for injected fluid to reach water supplies or basement rock, and it is improbable that injection of fluids would be prejudicial to the public interest. For the reasons set forth in the Department's geologic review memorandum, the Department concludes that the location of the

proposed well makes it a suitable candidate to handle injection of fluids and recommends well permit conditions to address monitoring of seismicity in an abundance of caution. See attached "Geologic Review of Proposed Injection/Disposal Well" memorandum for additional detail.

- Mechanical Integrity Review:
 - The Department performed a mechanical integrity review of the proposed Povlik well and considered, among other items, proposed operating data, proposed construction procedures and details, proposed injection procedures, plans for well failures and proposed monitoring. The mechanical integrity of the proposed Povlik well will be adequate to meet the Department's regulations for an underground injection well. With the implementation of the Department's conditions (attached to the permit), the mechanical integrity will be monitored and subject to notification requirements. See attached "Sammy-Mar, LLC Clearfield Co. – Povlik #1 Mechanical Integrity Review" memorandum for additional detail.

III. Summary

The Department has determined that the application/project meets all applicable statutes, regulations and guidance manuals related to the permitting of a disposal well in Pennsylvania. The Department concludes that underground disposal into the proposed Povlik well would be for an abatement of pollution by providing a lawful alternative to other disposal options. Sammy-Mar's proposed operation is sufficient to protect surface water and water supplies, and it is improbable that disposal into the proposed Povlik well would be prejudicial to the public interest.

I recommend issuance of API #033-27257, located in Huston Township, Clearfield County with special conditions attached to the permit. Attached to this memorandum are the Povlik Comment-Response document and E&S, C&D, Geologic and Mechanical Integrity review memoranda. All documents related to this application and review will be kept in the well permit file #033-27257.

Attached: Povlik #1 Comment-Response
Review of E&S and C&D Plans for Sammy-Mar, LLC memorandum
Geologic Review of Proposed Injection/Disposal Well memorandum
Sammy-Mar, LLC Clearfield Co. – Povlik #1 Mechanical Integrity Review memorandum