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Northwest District Oil and Gas Operations

From: Randall Kresge, P.G.
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Date: March 8, 2021

Re: ROD UIC Class II Disposal Well Application
Kendra II (Bear Lake Properties)
Bitteringer #3, API 37-123-33945
Warren County PA, Columbus Township

Background – Bitteringer 3 Gas Well Conversion to Injection Disposal Well

On October 13, 2020, Kendra II, on behalf of Bear Lake Properties, LLC (BLP, or Applicant), submitted an application to the Pennsylvania Department of Environmental Protection (DEP, or Department) to change the use of the Bitteringer 3 well, API Permit Number 37-123-33945, from a conventional gas production well to a Class II-D commercial brine disposal injection well (Injection Well). In accordance with 25 Pa. Code § 78.18, the Injection Well application consists of a well permit application to drill and operate a conventional well (CDOW); an Erosion and Sedimentation Control (E&S) Plan; a Control and Disposal (C&D) Plan, otherwise named Preparedness, Prevention, and Contingency (PPC) Plan; a Seismic Monitoring and Mitigation (SMM) Plan; the application submitted to the U.S. Environmental Protection Agency (EPA) for a Class II-D Underground Injection Control (UIC) Permit; and the issued EPA UIC Permit Number PAS2D218BWAR.

The location of the existing well is in Columbus Township, Warren County, Pennsylvania. Location coordinates for the Injection Well are: Latitude 41° 59' 45.52" and Longitude -79° 31' 42.33", with a 911 address of 1655 Cornish Hill Road, Bear Lake, PA, 16402. Todd J. Walker is the surface landowner; BLP is the well operator. The Applicant proposes to alter the use of the well from the production of gas, originating in the Grimsby, Power Glen, and Whirlpool sandstones of the Medina Group, to disposal of fluid produced by oil and gas operations into the

same formations, at a subsurface interval between approximately 4260 and 4439 feet below surface elevation.

Application Review

The application for BLP's Bittinger 3 well was reviewed with consideration of applicable sections of the 2012 Pennsylvania Oil & Gas Act; the Oil & Gas Conservation Law; 25 Pa. Code Chapters 78, 91, 102, and 105; "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" program manual; and other relevant sources.

This document summarizes the primary portions of the Department's review, including review of the CDOW; the E&S Plan; the C&D Plan; a geologic review, including the SMM Plan; and mechanical integrity review.

CDOW Review:

The CDOW application consists of operator-answered questions, notifications to interested parties, a Well Location Plat, a Pennsylvania Natural Diversity Index (PNDI) search receipt, and a non-coal justification. Also included with the CDOW application is the Well Record.

The application was reviewed by DEP Licensed Professional Geologists who reviewed and analyzed answers to the operator-answered questions; reviewed the notifications to interested parties, the Well Location Plat, the PNDI, and the non-coal justification; and confirmed all information with Department records.

The CDOW application is complete and is in accordance with all applicable statutes and regulations in the 2012 Pennsylvania Oil & Gas Act, the Oil & Gas Conservation Law, and 25 Pa. Code Chapter 78.

Erosion and Sedimentation (E&S) Plan Review:

The E&S Plan conforms with applicable regulations in 25 Pa. Code and Chapter 102; Chapter 105 is unrelated to activities at this site. The plan was reviewed by a DEP Water Quality Specialist (WQS), who determined the plan, when implemented, will be adequate to minimize accelerated erosion and potential sediment impacts to surface waters of the Commonwealth. The WQS recommends weekly E&S inspections, and consistent notation of such, within the monthly site inspection reports conducted as part of the PPC Plan, Appendix C.

Control and Disposal (C&D) Plan Review:

The C&D Plan, otherwise named Preparedness, Prevention, and Contingency (PPC) 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, Chapter 78. The plan was reviewed by a DEP Water Quality Specialist.

Geologic Review and SMM Plan:

The Department conducted a geologic review in accordance with 25 Pa. Code, Chapter 91.51, which considered stratigraphy and geologic structures to investigate potential pathways for injected fluids to reach water supplies or basement rock. The Department's geologic review revealed no evidence of potential pathways for injected fluid to reach water supplies or basement rock, and it is improbable injection of fluids would be prejudicial to the public interest. Additionally, no underground coal mines or gas storage areas exist within the area of review. For reasons set forth in the Department's geologic review memorandum, the Department concludes the location of the proposed disposal well makes it a suitable candidate to handle injection fluids. Well permit conditions will address seismic monitoring and mitigation.

Mechanical Integrity Review:

A DEP Oil & Gas Inspector performed a physical inspection and a mechanical integrity assessment of the of the existing well and found no mechanical deficiencies. The current well requires reworking prior to the EPA injectivity test. Review of the proposed Injection Well considered proposed operating data, proposed construction procedures and details, proposed injection procedures, proposed monitoring, and plans for well failures. The mechanical integrity of the proposed well will be adequate to meet the Department's regulations for an underground disposal well. With implementation of the Department's well permit conditions, mechanical integrity will be monitored and subject to notification requirements.

USEPA Class II-D UIC Permit Application and Issued Permit Review:

The EPA application and issued permit were reviewed for completeness and consistency with applicable Pennsylvania laws and regulations. The issued EPA Class II-D UIC Permit Number PAS2D218BWAR was effective as of October 31, 2016, and expires October 31, 2026.

Summary

The Department has determined the application and project meets all applicable statutes, regulations, and guidance manuals relating to permitting of a disposal well in Pennsylvania. The Department concludes that underground disposal into the Bear Lake Properties, LLC, Bittinger 3 well would be for an abatement of pollution by providing a lawful alternative to other disposal options. BLP's proposed operation is sufficient to protect surface water and water supplies, and it is improbable that disposal into the Bittinger 3 well would be prejudicial to the public interest.