

IN RE LINC ENERGY OPERATIONS, Inc.) DOCKET NO. 13-4804

**FINDINGS OF FACT, CONCLUSIONS OF LAW,
AND ORDER**

This matter came before the Environmental Quality Council (Council) upon the objections filed by the Powder River Basin Resources Council (PRBRC), and was heard by the Council on November 14-15, 2013. After hearing the evidence and arguments presented by the Wyoming Department of Environmental Quality (DEQ), the PRBRC and, the applicant, Linc Energy Operations, Inc. (Linc), the Council makes the following findings, conclusions, and order:

FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Linc is a global leader in underground coal gasification (UCG) technology, having demonstrated its technical abilities at its facilities located in Chinchilla, Australia, over the past 14 years. At Chinchilla, Linc has successfully operated five generations of UCG while maintaining full environmental compliance. Linc Ex. 1, p. 13.14-1. In addition, Linc owns a controlling interest in a commercial scale UCG operation located in Uzbekistan which has been producing synthesis gas by UCG for approximately fifty years.

2. According to a 2007 report by GasTech, there are approximately 510 billion tons of coal in the Powder River Basin, 95% of which is situated 500' or greater below the surface, such that it cannot be extracted by conventional mining methods. These resources are, however, available to be extracted by UCG. Linc Ex. 27, p. 1.

3. Linc currently holds some 333 State coal leases in the Powder River basin of northeast Wyoming, consisting of more than 184,000 acres. Linc Ex. 6. Prior to Linc seeking to permit a commercial scale operation, the DEQ directed that Linc first demonstrate its ability to commission, operate, decommission and reclaim a small-scale UCG operation. In order to do so, Linc was required to apply for a research and development license, governed by Wyo. Stat. § 35-11-431. It is this license application which is at issue in this contested case.

4. Linc selected a site for the research and development project in Section 36, T44N, R74W, in Campbell County, Wyoming. Linc refers to the project as "Gasifier 6," because Gasifiers 1 through 5 have been operated at its Chinchilla facility. Gasifier 6 targets the Wyodak coal seam, approximately 1,100' below the surface. Because the Wyodak coal seam is also an aquifer, in order to license the project, the DEQ must first reclassify the groundwater within the aquifer from Class III (suitable for livestock), to Class V (Mineral Commercial), and exempt a

portion of the aquifer from the protections of the Federal Safe Drinking Water Act (SDWA). The area of the aquifer exemption for which Linc seeks the exemption is 80 acres.

5. Since 1983, the State of Wyoming has had enforcement primacy under the Underground Injection Control program pursuant to a Memorandum of Agreement (MOA) between the State and the U.S. Environmental Protection Agency (EPA). Linc Ex. 3, *and see* 40 C.F.R. § 147.2550 Subpart ZZ.

6. Linc submitted its application for the research and development license in April, 2012. Since that time, the DEQ has conducted eight technical reviews of the entire application and four separate technical reviews of the aquifer exemption. After 16 months of review, the DEQ concluded that the application was technically complete, notice was published and interested parties were given the opportunity to comment pursuant to Wyo. Stat. § 35-11-406(k).

7. By transmittal letter dated August 29, 2013, the DEQ provided a copy of the license application, and the “Statement of Basis” for the aquifer reclassification and exemption to the EPA for its review and approval. The DEQ noted that the Statement of Basis reflected the DEQ’s “findings regarding the current use of the affected aquifer as a water source and the presence of commercially producible minerals within that aquifer.” Linc Ex. 2. In particular, the DEQ found that the 80 acre portion of the Wyodak coal seam/aquifer affected by the project should be reclassified and exempted from the SDWA.

8. On October 21, 2013, the PRBRC filed its objections, challenging the aquifer reclassification and exemption. In general, the PRBRC disputes the DEQ’s conclusions regarding the reclassification and exemption of the portion of the aquifer which is affected by the project. In particular, the PRBRC claims that UCG is not without risk; that UCG will cause irreparable harm to a portion of the Fort Union Formation, a primary source of drinking water for the residents of the Powder River Basin; the project does not qualify for an aquifer exemption under Federal law; and that granting the exemption in this case will set a dangerous precedent for other commercial projects in the future.

9. The Council has subject matter jurisdiction over this matter pursuant to Wyo. Stat. § 35-11-406(k), incorporated by reference into Wyo. Stat. § 35-11-431(a)(vi). This section provides for notice and the filing of objections to a research and development license, and a contested case hearing before the Council, if requested. These requirements have been met.

10. In this matter, the burden of proof is on the protestant, the PRBRC, to show that the DEQ acted erroneously.

11. The State of Wyoming’s underground injection control (UIC) was approved by the EPA in 1983. *See* Linc Ex. 3, and 40 C.F.R. § 147.2550 Subpart ZZ. Since that time, the Wyoming DEQ has had primary regulatory authority over the UIC program.

12. For aquifer exemptions, the State first identifies the aquifer, and approves the exemption subject to ultimate review and approval by the EPA. *Western Nebraska Resource Council v. EPA*, 793 F.2d 194, 196 (8th Cir. 1986); *Goliad County, Texas v. Uranium Corp.*, 2009 WL 1586688, at *2 (S.D. Tex. 2009). Pursuant to the Memorandum of Agreement

between the State and the EPA, the EPA has provided an “interim response” pending review of the results of the public participation process. Linc Ex. 5.

13. Aquifer exemptions may be granted if the requirements of 40 C.F.R. § 146.4 are met. First, it must be shown that the aquifer, or portion thereof, does not currently serve as a source of drinking water. Second, it must be shown that it will not in the future serve as source of drinking water due to one of four reasons. In this case, the applicable provision is that the aquifer “is mineral...producing, or it can be demonstrated by a permit applicant as a part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.” 40 C.F.R. § 144.4(b)(1).

14. The EPA has issued “Guidelines for Reviewing Aquifer Exemption Requests.” PRBRC Ex. 14, Attachment 3.

15. Pursuant to these Guidelines, applicants must provide both general and specific information. The general information includes: a topographic map of the proposed exempted area; a written description of the proposed exempted aquifer including, the name of the formation or aquifer; the subsurface depth or elevation of zone; the vertical confinement from other underground sources of drinking water; the thickness of the proposed exempted aquifer; the area of the exemption; and a water quality analysis of the horizon to be exempted. In addition, to demonstrate that the aquifer, or portion thereof, does not currently serve as a source of drinking water, the applicant should survey the proposed exempted area to identify any water supply wells that tap the proposed exempted aquifer, as well as a buffer zone extending a minimum of ¼ mile from the boundary of the exempted area. *Id.*, at p. 2. Linc has provided all of this information in its Application. DEQ Ex. 1.

16. An applicant for an aquifer exemption to allow new in-situ mining must demonstrate that the aquifer is “expected to contain commercially producible quantities of minerals.” PRBRC Ex. 14, Attachment 3, p. 3. This may be shown by providing specific information including: a summary of logging which indicates that commercially producible quantities of minerals are present; a description of the mining method to be used; general information on the mineralogy and geochemistry of the mining zone; and a development timetable. *Id.* Linc has provided all of this information in its Application. DEQ Ex. 1.

17. In the context of a research and development license, the fact that the applicant does not intend to produce the mineral on a commercial scale – and in this case, Linc proposes to flare the synthesis gas at the site – does not demonstrate the absence of commercially producible quantities of minerals. *See* PRBRC Ex. 14, Attachment 3, p. 3. (Noting that the “information to be discussed would include the results of any R & D pilot project.” This language presumes that research and development pilot projects may be conducted to prove up the presence of minerals in commercial quantities.)

18. Similar requirements are set out in the DEQ’s guidelines. Linc Ex. 26, Reference Document 7: Groundwater Reclassification to Class V (Mineral Commercial) and Aquifer Exemption Process, pp. 3-5. Linc has satisfied each of these requirements.

19. It should also be noted that the DEQ will require, as a condition of the license, that Linc restore the Wyodak aquifer to pre-project baseline water quality or class of use.

20. The protestant, PRBRC, has failed to meet its burden of proof to demonstrate that the DEQ’s approval of Linc’s application for a research and development license, including the requisite

aquifer reclassification and exemption, was erroneous. On the contrary, the Council concludes that Linc's application meets all applicable legal requirements, and that the DEQ's action should be affirmed.

ORDER

It is therefore ordered that Linc's application for a research and development license pursuant to Wyo. Stat. § 35-11-431 be granted.

Dated this ____ day of _____, 2014.

Wyoming Environmental Quality Council,

By: _____
Chairman