New York State Department of Environmental Conservation
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Joe Martens
Commissioner

23 July 2012

Kevin Bernstein, Esq.
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One Lincoln Center
Syracuse, New York 13202-1355

Dear Mr. Bernstein:

Re: DEC Facility No. 8-4432-00085
Brine Pond Plans and Reports Review Comments
Finger Lakes, LLC Underground LPG Storage Facility
Town of Reading, Schuyler County

Technical Staff have had an opportunity to review Volume 1, Engineering Report and Volume 2, Geotechnical Evaluation, for the Finger Lakes Storage East and West Brine Ponds; and your 15 June 2012 response to R. Phaneuf's email to R. Wakeman dated 8 June 2012. We have the following comments and require additional information to evaluate the information provided in the above-noted documents.

Underdrain and Leak Detection Systems: The original comments are cited below in italics for clarity in terms of what was originally requested:

1. *(9) Design Related: The plans for the proposed ponds could use more detailed depiction of the pond underdrains and their outfall locations, the details of the leak detection piping and metering vaults should also be provided in more detail. Consideration should be given to coating the internal concrete vault walls with an elastic type waterproofing to ensure against leakage. Vault subbase and backfill material and drainage should be included to reduce potential for infiltration. Pump on and off levels should be identified on the drawings.*

   a. There were two areas of concern raised in the above comment, both concerns focused on the level of site specific detail provided for in the proposed design regarding information needed for staff's review of the underdrain outfall locations and the design details of each of the leak detection metering vaults.

   b. The June 15th reply failed to show in sufficient detail to allow staff to evaluate the adequacy of the proposed underdrain outfalls for both ponds. The plans should provide sufficient detailing to clearly show how these outfalls are proposed to be located and where they would drain to existing drainage channels on both pond sites. These are critical pond design components which will need to be kept clear of obstructions and protected from any impacts from area flooding, future site work or grading and as such they should be prominently designed and detailed so they can be adequately protected, monitored and maintained.

   c. The June 15th reply failed to show sufficient detail of the separate metering vaults for each of the ponds. Understanding the need for daily access of the metering vaults to manually monitor/measure flows from the double-liner system's leak detection system,

this component needed to provide more site specific detail for full assessment of the system's overall operation. Construction detailed drawings need to clearly detail how the system will be monitored. Details were not immediately clear from the drawings as to how the upper liner leakage would be conveyed back to the pond. Sufficient detail for the pipe-in-pipe monitoring should be shown. The cross section indicates that an external drainage pipe on one side of the vault, but fails to provide sufficient detail for where this drainage system will outfall to.

2. *(10) Design Related: The maximum hydraulic design of the leak detection systems for both ponds needs to be provided. The controlling factor for this design needs to be identified to ensure the a confined head condition will not exist for the maximum flow threshold and that the acceptable ALR is established so that it ensures no confined head between the upper and lower liners and that it factors in the drainage outlets for leak detection systems. Based on the information provided leak detection system is drained by a single 6" pipe that is capped with only a 3/4 inch orifice.*

   a. The June 15th response to our comments failed to provide information needed to fully evaluate the design adequacy of the proposed leak detection monitoring system. Critical information that is missing from this analysis is information concerning the maximum flow capacity of the geocomposite drainage layer for each of the ponds. Due to site-specific differences in the size, shape, slopes and maximum flow distances within each of the ponds it may be necessary to prescribe individual maximum and allowable leakage rates for each pond based on the ponds design characteristics.

   b. The leak detection layer maximum flow capacity needs to be defined to ensure that there will be not be a confined flow condition within the geocomposite drainage layer as one of the controlling factors for setting the maximum allowable leakage rates.

   c. The proposed allowable leakage rates for West Pond at 0.47 gpm for the two metering outfalls and the 0.33 gpm for the East Pond appear acceptable, however, these thresholds need to be checked against the maximum flow capacity of the drainage geocomposite to demonstrate the assurance that a confined flow condition will not occur between the upper and lower geomembrane liners.

   d. Based on the design characteristics of East Pond, the upper leakage rate threshold of 25 gpm as proposed appears to be quite high. This threshold (25 gpm) is also as high as the Department would be able to approve for the West Pond, without further technical justification and assurance that exceedences of the threshold would require immediate attention to mitigate the excessive leakage rate. The proposed immediate action threshold of 250 gpm is too high and will likely exceed the capacity of the geocomposite drainage layer.

Brine Pond Construction and Stability:

3. Please provide calculations for the soil mass balance for both brine ponds. Existing soils should be segregated by type including topsoil, silts, demolition debris, glacial tills and sands. It should be clearly stated how each soils type is to be managed and where

additional soils would be obtained to replace any soils deemed to be unsuitable for construction of the brine pond berms.

4. Please provide a thorough discussion of the locations and geotechnical properties of the sand underlying the west brine pond footprint. This discussion should be of at least the same level as that provided for the glacial tills found in the geotechnical report and elsewhere in the application.

5. The presence of loose saturated sands in the area of the eastern berm of the western brine pond is of great concern. Additional stability analysis needs to be provided for the construction of this area. Specifically, both drained and un-drained load cases need to be provided for every ten feet of berm constructed. Also, the location of the trench for the three 10 inch pipelines shall be included as a tension crack in these analyses.

6. The stability analysis for the southern berm of the western brine pond needs to clearly show and analyze the presence of the existing ravine.

7. The outlet pipe for both the east and west brine ponds underdrains will likely be the discharge point for the bulk of the groundwater seepage and stormwater to be managed within the brine ponds during construction. The outfalls of these pipes need to be designed with stormwater and sediment retention sufficient to prevent the release of sediment laden water to the local drainageways.

8. The lone significant sediment management feature proposed for the west brine pond site is located at the northeast corner of the site on the proposed 33% berm slope and on the alignment of the triple ten inch pipeline trench. It would seem there should be a more practical location.

Groundwater Monitoring Plan:

9. The construction of the monitoring well must be completed to ensure that the wells maintain integrity for the life of the brine ponds. The monitoring well completion logs show the lack of a surface seal around the well casing, any protective casing and security.

10. Many of the monitoring wells are not constructed to isolate the top of bedrock aquifer. Although the well screen straddles the top of rock zone, the sand pack above the well screen extends into the sand horizon in some wells.

11. The groundwater monitoring plan must to include the underdrain discharge.

12. Background groundwater quality needs to capture seasonal high and low groundwater levels.

13. Monitoring well decommissioning needs to clarify that overdrilling and removal of all well construction media and tremie grouting from total depth to surface will be completed.

14. The possible sources of elevated sodium identified in two groundwater monitoring wells need further explanation. Specific sources of possible 'ongoing salt processing' must be

evaluated to determine potential impacts to the groundwater in the area of the east brine pond.

15. Identification, location and description of potable water supply wells at residential locations have not been provided.

The information requested above raises substantive concerns about the suitability of brine pond location and design, and it is critical to the Department's review and key to our ability to prepare positive findings at the completion of the SEQR process.

Comments regarding Revision 3 dated 30 May 2012 to the SWPPP will be forthcoming. Additionally, staff have not had an opportunity to thoroughly review your comments provided in a letter to me dated 18 July 2012, and we will be responding, as appropriate, at a later date.

Based on the project plans and information provided to date, the Department has determined that the activities authorized by the US Army Corps of Engineers on 18 May 2012 under the NWP program is also covered by the Department's blanket water quality certification and an individual permit will not be required. This determination may be subject to change, given the close proximity of federally-regulated wetlands and streams to the construction proposed on this site, and the possibility that plans may yet be revised to address the above comments, as well as forthcoming comments related to the SWPPP.

Please contact me at 315-426-7440 or email at dlbimber@gw.dec.state.ny.us if you have any questions relating to the status of the transfer applications or the information discussed in this letter. Thank you for your time and assistance in this matter.

Sincerely,

David L. Bimber
Regional Permit Administrator
Division of Environmental Permits

ecc: S. Jones, Bureau of Habitat
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