Healthy People. Healthy Communities

October 6, 2021

Mr. Daniel Mallett
Environmental Manager
New-Indy Catawba LLC
PO Box 7
Catawba, SC 29704

Re: Corrective Action Plan Air Dispersion Modeling Analysis

Dear Mr. Mallett,

SCDHEC has reviewed the New-Indy corrective action plan air dispersion modeling analysis (modeling) that was submitted to the Bureau of Air Quality on August 30, 2021. We provided some initial comments to this modeling by email on September 10 after a conference call we had on that day, as well as some follow up comments by email on September 14 and September 17. As noted in the response New-Indy provided to these comments on September 17, EPA has also been reviewing this modeling. We have been in consultation with EPA and are providing the following comments to address both SCDHEC and EPA concerns. These comments should encompass all our concerns at this time, but we reserve the right to ask additional questions should other issues come to our attention.

1. **Section 3.2 and Appendix A, TRS and H_2S Emissions:** The following excepts from the New-Indy Modeling Report provide a brief, general description of how the emissions used in the modeling were calculated:

   > "The emissions from each test were divided by the pulp production during the test to establish the emissions factor in pounds of H_2S and TRS (as H_2S) per ton of pulp production. The average emissions factor from the June 2021 tests was multiplied by the future production rates in the February 2021 Title V permit modification request to incorporate Construction Permit DF.
   >
   > The July 2021 liquid sample results are coupled with the National Council for Air and Stream Improvement (NCASI) wastewater Hydrogen Sulfide Emissions Simulator (H2SSIM) emissions model for H_2S emissions from the primary clarifier and the aeration stabilization basin (ASB) and the U.S. EPA WATER9 air emissions model for other sources. The post aeration basin H_2S emissions were measured at the outlet of the vent covering the basin. The average emissions from the wastewater treatment system were divided by the average pulp production during the July 2021 tests and multiplied by the future pulp production rate in the February 2021 Title V permit modification request to incorporate Construction Permit DF."

   We have been unable to replicate or find calculation examples of the highlighted description above for H_2S. We have verified that the maximum emissions listed in the table on page A-243 were used in the air dispersion model.

- Please provide example calculations to calculate the average and maximum emissions for all the sources.
- Please provide the detailed calculations, spreadsheets, assumptions, supporting documentation, factor derivations, NCASI references and document, justifications as to why the factor is appropriate for the source, etc., for the wastewater fugitives sources on the summary page A-243 of the modeling submittal document. Note that this should also include information on the ditch missing in the modeling that connects the equalization basin (EQLBASIN) with the ditch that empties into the aeration stabilization basin (DITCH1). Note also there appear to be discrepancies between the area used in the emissions calculations and the area of the area sources in the modeling for Ditch0+Splitter, Ditch1, and Ditch2. In addition, the emission rates obtained for Ditch 1 and Ditch 2, using the information provided on pages A-362 and A-364, result in rates that are higher than presented. Please explain all these discrepancies.
- Please provide a spreadsheet and example calculation detailing how the actual and maximum H_2S emissions were calculated for the following sources:
  - Recovery Furnace No. 2 and 3
  - Smelt Dissolving Tank No. 2 and 3
  - Lime Kiln No. 2
  - Weak Black liquor Storage Tanks
  - Strong Black Liquor Storage Tanks
  - White Liquor Storage Tank
  - Precipitator Mix Tanks
  - Causticizing Area
  - Holding Pond
- Please justify the emission factor used to estimate emissions from the Holding Pond. This emission factor is referenced as coming from NCASI TB 956, Table 9.12. However:
  - This factor is based on a 62-acre pond. Are any corrections necessary since New-Indy's Holding Pond is about twice the size at 123.62 acres?
  - The TB explains the derivation of the emission factor. Two of the eleven basins sampled had detections. Mill B's basin had issues with solids and the basin level during the sampling and resulted in a factor of 0.04 g/s and was noted as being lower than expected. Mill T had foul condensates hard piped to ASB#2, somewhat similar to New-Indy. The sampling results yielded an emission factor of 1.0 g/s. Thus, is 0.04 g/s an adequate emission factor to use for the New-Indy Holding Pond?
- Please also provide information detailing how the dimensions of the surface areas were determined and how the areas for the sources in Table 5-4 of the Modeling Report (plus the missing ditch) were calculated. Also, please provide a figure showing each of the area sources, their vertices and dimensions used in the air dispersion model.

2. **Section 5.3, Air Quality Modeling Results:** No maps or diagrams are provided to show where the maximum modeled concentrations are occurring.
   - Please provide maps showing isopleths of the modeling outputs for the SO_2, H_2S, and TRS modeling results. The maps should clearly show the locations of maximum modeled concentrations.

3. **Section 5.3.2: South Carolina Standard No. 8 Results:** For the H_2S Modeling, the AERMOD modeling results are only provided for 24-hr average concentrations and compared to the SCDHEC MAAC air toxics standard. For evaluating the ambient H_2S monitoring data being collected at the New-Indy Fence line, EPA's action levels are 600 ppb/837 ug/m^3 (30-minute) and 70 ppb/98 ug/m^3 (7-day rolling average). EPA's regulatory version of AERMOD is not able to provide output for either 30-minute or 7-day rolling averages. However, we request that, in addition to the maximum 24-hr results, AERMOD modeling be provided to compare maximum 1-hour modeled concentrations to the 30-minute action level.
4. **Emission rates for test results below the method detection limit (MDL):** The emission rates for several sources included in the H_2S and TRS modeling are based on stack tests where test runs resulted in values that were below the MDL. SCDHEC and EPA both agree that using a value of zero in the calculations for these situations is inappropriate. We also agree that an appropriate approach is to use an emission rate in the modeling that is derived from the full MDL and request that New-Indy update both the H_2S and TRS modeling based on this more conservative approach.

Please provide responses to these comments and revised modeling to address both these and the comments previously provided to New-Indy in September. We request that New-Indy submit this information by October 27, 2021. Please contact me if you have any questions about this request.

Sincerely,

John P. Glass, Jr.
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BAQ Modeling Section Manager