June 20, 2025
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MEMORANDUM

TO: Jeffrey G. Condit– Miller Nash LLP

FROM: Jeff Leadford, P.E. – SCS Engineers

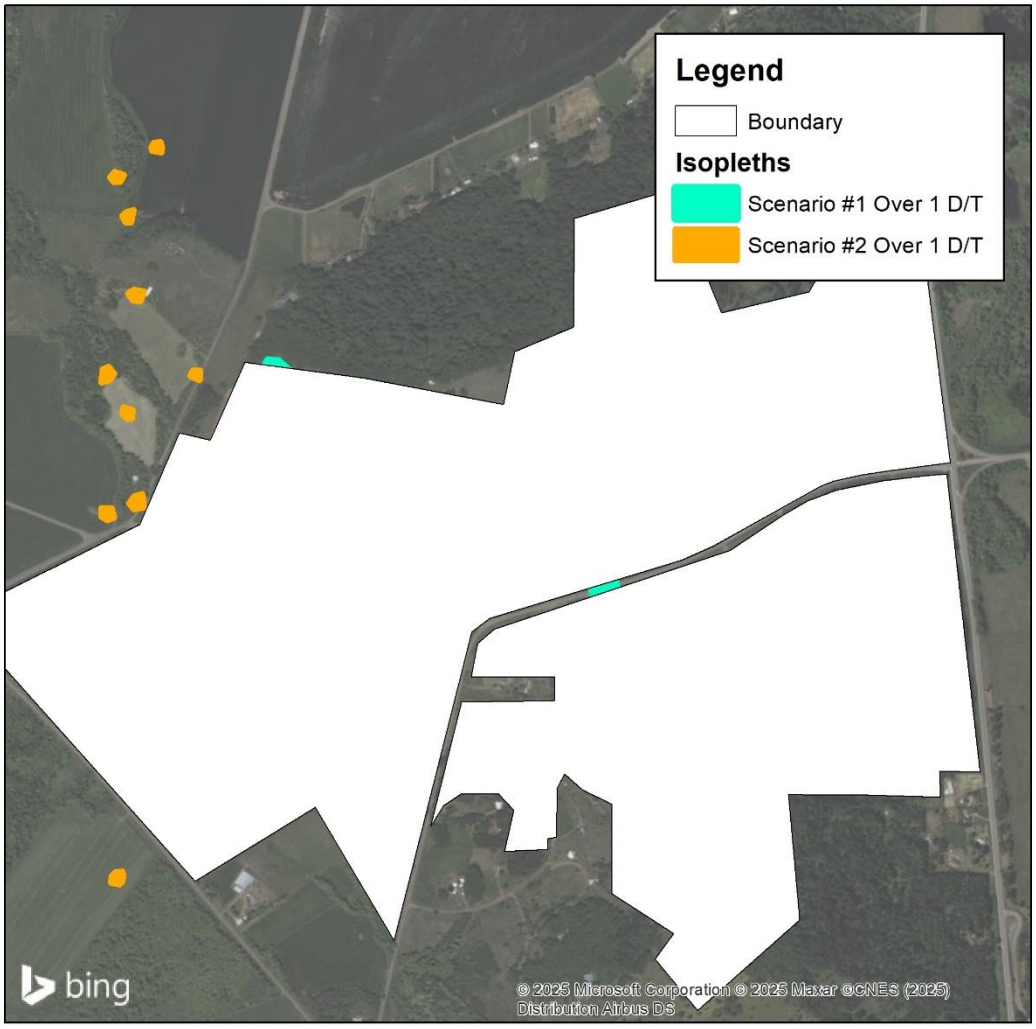
SUBJECT: Coffin Butte Landfill 2024 Expansion Application Odor Dispersion Modeling Study Supplemental Information

This memo provides a brief supplement to the June 6, 2025 update to the Coffin Butte Landfill 2024 Expansion Application Odor Dispersion Modeling Study ("June 2025 Model").

For purposes of the June 2025 Model, each modeling scenario was shown in units of micrograms per meter cubed (ug/m3) at peak, off-site, 1-hour pollutant concentrations. Each pollutant impact was then compared to its odor threshold via it's D/T (i.e., maximum impact divided by odor threshold). A D/T ratio of one indicates that roughly half of people can detect an odor at a given location for a given hour. A D/T of 7 is expected to result in a odor "nuisance" in most states, though this number is variable and not quantified in Oregon.

Figure 1 provides a further illustration of odor dispersion modeling in the June 2025 Model as requested by Maul Foster and Alongi upon their review of the study. In Figure 1 below, the green shows the extent of odor detection of hydrogen sulfide outside the property boundary. As shown in the Table 6 of the June 2025 Model, this pollutant had the highest dilution to threshold ratio (D/T) and thus was most likely to be detected offsite. The yellow shows the extent of odor detection of dimethyl sulfide, which has the highest D/T per Table 7 in the June 2025 Model.

Figure 1: Odor Modeling Over 1 D/T



As explained in the June 2025 Model, namely Sections 4.0 and 5.3, a variety of factors influence odors relative to the D/T measurements in the model. There are a few factors that make odor modeling somewhat subjective for odors on a given day. As explained in the June 2025 Model's uncertainty analysis (Section 5.3), the air modeling program has limitations at low wind speeds and is not able to model thermal inversions which could be present around Coffin Butte. These conditions could increase or decrease odor levels. In addition, certain landfill activities may temporarily increase odor. Such activities are addressed in detail in Jeff Condit's April 29, 2025 letter to the Planning Commission.

Setting a specific odor detection threshold is also highly variable as each person detects odors subjectively.

If you have any questions, please contact Jeff Leadford at jleadford@scsengineers.com or 720-272-0172.

Sincerely,

Jeff Leadford, PE
Senior Project Professional
SCS ENGINEERS