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San Luis Obispo County

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SUBJECT: P66 Rail Spur Project Origin and Use of the SLOAPCD Significance Threshold for Diesel Particulate Matter

In their letter and presentation to the San Luis Obispo County Planning Commission regarding the proposed Rail Spur project, Phillips 66 questioned the validity and application of the diesel particulate matter (DPM) emissions significance threshold adopted by SLOAPCD for projects subject to CEQA review. The following provides background information and clarification on the origin and intended use of the DPM threshold.

APCD Significance Thresholds for CEQA

- The SLOAPCD CEQA Air Quality Handbook, adopted by the APCD Board in December 2009, specifies emissions significance thresholds for criteria pollutants (e.g. Nitrogen Oxides, Reactive Organic Gases, Sulfur Dioxide and PM_{10}) and diesel particulate matter (DPM), a toxic air contaminant.
- SLOAPCD significance thresholds for criteria pollutants are intended to ensure new projects do not:
    - Substantially impact local air quality and/or worsen the County's ambient air quality attainment status; and/or
    - Consume any remaining increment of pollutant emissions that could cause the County's air quality attainment status to deteriorate further, thus limiting other new projects; and/or,
    - Contribute significantly to an existing pollution problem, such as the $PM_{2.5}$ and PM_{10} emissions from the Oceano Dunes currently impacting the South County, and the ozone nonattainment issue in the east county region.
- SLOAPCD significance thresholds for Health Risk Assessments (HRAs) and DPM emissions serve two separate objectives:
    - The HRA threshold is set for the maximum exposed individual to ensure new projects do not result in significant toxic health risks to impacted residents.
    - The separate DPM daily emissions threshold is set to ensure incremental and cumulative toxic impacts to the exposed general population are minimized.

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How the DPM threshold of 1.25lbs/day was derived

- The SLOAPCD criteria pollutant significance threshold of 25 lbs/day is based on District Rule 204, which requires any new source emitting 25 lbs/day or more of any criteria pollutant (e.g. Nitrogen Oxides, Reactive Organic Gases, Sulfur Dioxide and PM_{10}) to apply Best Available Control Technology (BACT).
    - Any source emitting less than 25 lbs/day is required to apply Reasonably Available Control Technology.
    - Any source emitting over 25 tons per year must, in addition to applying BACT, provide emission offsets sufficient to reduce the overall emissions increase to 25 tons/yr or less.
- DPM, in addition to being a toxic air contaminant, is also a fine particle component of PM_{10} and $PM_{2.5}$, both of which are criteria air pollutants; over 95% of DPM is in the more hazardous $PM_{2.5}$ range or smaller.
- The 1.25 lbs/day DPM threshold adopted by the SLOAPCD Board is based on a downward adjustment of the 25 lbs/day criteria pollutant threshold to account for the added toxic impacts of DPM relative to criteria pollutants, and for its contribution to existing $PM_{2.5}$ levels, which causes adverse health effects at emission levels and atmospheric concentrations far below those of PM_{10} and other criteria pollutants.
- The DPM threshold is calculated by dividing the criteria pollutant threshold by a DPM weighting factor of 20, developed by the California Air Resources Board (ARB); thus, 25 lb/day /20 = 1.25 lbs/day.
- The DPM weighting factor of 20 was established in ARB's 2005 Carl Moyer Program guidance. In setting this value, ARB drew from numerous studies and research evaluated in developing their Diesel Risk Management Plan (ARB, Oct 2000; www.arb.ca.gov/diesel/documents/rrpfinal.pdf).
    - ARB found the health benefit of reducing DPM to be 30 times greater than that for reducing ozone precursors. In their final analysis, they defined the 20x DPM weighting factor as a balanced approach to account for both the added health benefits and cost of reducing DPM emissions relative to the health benefits and cost of reducing ozone precursor emissions. ARB continues to use the DPM weighting factor of 20x in the Moyer program today.
- In finalizing the operational emissions thresholds in our 2009 CEQA Air Quality Handbook, the SLOAPCD adopted ARB's approach of acknowledging the more significant impacts of DPM relative to ozone precursors by setting the DPM significance threshold 20 times more stringent than the ozone precursor threshold.

Responses to Specific Issues Raised by P66 in their slide presentation to the Commission:

- In slide 9 of their presentation, P66 questioned the applicability of a DPM emissions threshold if the HRA shows no significant health risk. However, as shown in their excerpt below from page 3-5 of the SLOAPCD CEQA Handbook, the two thresholds are independent of each other.

    *"Projects that emit more than 1.25 lbs/day of DPM need to implement on-site Best Available Control Technology measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment "**may also**" be required"*, meaning in addition to meeting the DPM threshold.

Diesel particulate matter (DPM) is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations. DPM is, however, a toxic air contaminant and carcinogen, and exposure DPM may lead to increased cancer risk and respiratory problems. Certain industrial and commercial projects may emit substantial quantities of DPM through the use of stationary and mobile on-site diesel-powered equipment as well diesel trucks and other vehicles that serve the project.

Projects that emit more than **1.25 lbs/day** of DPM need to implement on-site Best Available Control Technology measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment (HRA) may also be required. Sections 3.5.1 and 3.6.4 of this Handbook provide more background on HRAs in conjunction with CEQA review. Guidance on the preparation of a HRA may be

The DPM threshold always applies in determining significance, but an HRA may also be required if emissions are high enough to warrant the additional analysis. The daily DPM threshold is important because, even if a project HRA shows no significant health risk, the DPM emissions from that project will add to whatever baseline health risks are currently present from existing emission sources in the area, which is not accounted for in the project HRA. Thus, the daily DPM threshold addresses both project and cumulative health risks.

- In slides 10 & 11 (shown below), P66 focuses specifically on the results of the HRA for the alternative project, which indicates a less than significant health risk from 3 trains/week compared to the proposed project of 5 trains/week.

3.6.1 Toxic Air Contaminants

Health Risk Assessments

If a project has the potential to emit toxic or hazardous air pollutants, or is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at a very low level of emissions. Such projects may be required to prepare a risk assessment to determine the potential level of risk associated with their operations. The SLO County APCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants.

Impacts AQ.4 (Toxic Air Emissions at the SMR) would be reduced to less than significant with mitigation (Class II). Figure 5-7 shows the cancer health risk contours or the reduced rail delivery alternative with partial mitigation (no Tier 4 locomotives). The cancer risk would be below the threshold established by the SLOCAPCD. Table 5.9 provides a summary of the cancer risk for this alternative for various receptor locations. Mitigation measures associated with impact AQ.4 for the Rail Spur Project would apply to this alternative.

As shown in Table 5.9, the cancer risk at the maximally exposed individual resident would be less than 10 in a million for both the mitigation and partial mitigation cases. The partial mitigation case does not include Tier 4 locomotives since the County may be preempted by Federal law from implementing this measure. However, even without the use of Tier 4 engines, the cancer risk with partial mitigation would be less than significant with mitigation. Mitigation measures associated with impact AQ.4 for the Rail Spur Project would apply to this alternative.

In this slide, AQ.4 has been taken out of context. As mentioned above, the significance thresholds for daily DPM emissions and health risks are independently applied. The AQ.4 cited in this slide for the alternative project is specifically referring to the HRA threshold of 10 in a million. Not mentioned, however, is the additional FEIR discussion of the DPM threshold as a separate impact from the HRA. The FEIR (page 5-53) states the following:

> *"The County could apply the mitigation to all of the ROG and NOx emissions within the SMR site. DPM emissions would remain significant (Class I) since the SLOAPCD does not have an emission reduction program for DPM and there is insufficient DPM reductions that could occur at the existing SMR operations to offset the Rail Spur DPM emissions."*

As stated in the FEIR, exceedance of the DPM threshold remains a significant Class I impact if unmitigated.

- In slide 12 (shown below), P66 highlights a section of page 4.3-53 from the FEIR which concludes that rail spur emissions would not contribute to additional exceedances of the PM

standards in that region because the emissions would occur during periods of high winds that would disperse the DPM emissions.

> As the area is currently impacted by fugitive dust emissions from the dunes areas, causing exceedances of the PM standard at area stations (such as the CDF station, see Table 4.3.2), additional emissions of particulate matter from the project site might cause additional days of exceedance. However, as per the SLOCAPCD Annual Report in 2013, the days which cause impacts from the dunes are associated with strong winds out of the northwest, with the strong winds generating high levels of dune dust and causing PM impacts. These periods would produce substantial dispersion of the diesel PM emissions from the project site and would not correlate with the same meteorological conditions that would be associated with maximum impacts from the rail spur operations. Therefore, rail spur operations are not anticipated to contribute to additional exceedances of the PM standard.

SLOAPCD strongly disagrees with that conclusion. Any additional PM emissions occurring in that region will add to the existing PM pollution problem, including contributing to additional exceedances of state and federal health standards. Good dispersion does not eliminate emissions or their impacts, it just reduces their ambient concentration. Thus, the impact may be reduced but is not eliminated; the DPM emissions are still additive, even if diluted by dispersion, and could contribute to exceedances of health standards in that area. Relative to this point, the following facts are also important:

- SLO County already exceeds the state and federal PM_{10} standards in the project area, and it now appears we also exceed the federal annual $PM_{2.5}$ standard there. This may result in SLO County being designated by USEPA as nonattainment for either or both health standards, which could result in significant regulatory impacts to existing businesses countywide to comply with EPA's state implementation plan requirements.
- The maximum residential health risk from the project is also the approximate location of the highest $PM_{2.5}$ & PM_{10} concentrations measured on the Nipomo Mesa. Thus, residents in the neighborhood, currently exposed to the most significant health risks from dust blowing off the Oceano Dunes, would also be subject to the highest potential health risks from DPM emissions generated by this project.
- Currently any new development project located in the dunes dust impact zones is required to include all additional PM mitigation measures available, above and beyond the mitigation required in areas outside those zones.

To summarize, the SLOAPCD air quality significance thresholds for CEQA are in place to ensure new projects do not create, or contribute significantly to, air pollution problems. Residents downwind of the refinery currently face a significant health burden from existing exposure to substantial PM emissions caused by off-road vehicle activity on the Oceano Dunes. While those existing impacts are not caused by the refinery, any new PM emissions to the impacted area, like those from the proposed P66 rail spur project, will exacerbate the problem. Thus, meeting the SLOAPCD Board-adopted DPM threshold of 1.25 lbs/day is important to protect public health in the project area.

If you have any questions or comments, please contact our office at 805-781-5912.

Sincerely,

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