

Acoustics
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Subject: **Walt Ranch EIR, Napa County, CA**
Peer Review
CSA Project: 14-0636

Dear Ms. Mansfield-Howlett:

The residential community at Circle Oaks Drive has expressed concern over noise from the potential development of new vineyards adjacent to their property. A draft impact report (DEIR), including a noise and vibration analysis, was prepared for the subject project. You hired us to review and comment on the noise and vibration findings of the DEIR. This letter summarizes our comments.

In summary, we find the DEIR noise and vibration section lacks evidence to support the DEIR conclusion of "less than significant" impact. This letter summarizes our reasons.

1. The report does not accurately represent the existing noise levels

A. Page 4.8-6 – *"Due to the rural nature of the property, the ambient noise level is estimated to be 57 dBA, Leq along State Route 121, in the vicinity of the project site (Napa County 2008)."*

The DEIR does not include actual noise measurements around the project site. Based on four days of noise measurements, daytime noise levels in Circle Oaks residential community can range from 32 dBA to 53 dBA. At the quietest daytime hour, the measured noise level is more than four times quieter than the DEIR estimates. Spot measurements along State Route 121 indicate that actual noise levels can be significantly less than the DEIR estimate. Over a 15-minute period, we measured a 15-minute Leq of 48 dBA at 30 feet from the centerline of the road. This noise is about half as loud as the DEIR estimate.

B. Page 4.8-6 – *"It is expected to increase to 62 dBA, Leq by the year 2030 (Napa County, 2008)."*

The future noise projection relies on a steady increase to the volume of cars on the road. The current noise conditions along State Route 121 are less than the DEIR estimate. Therefore, the future noise levels should be less as well.

2. The report does not adequately address all of the significance criteria established by CEQA, specifically the fourth bullet point:

A. Page 4.8-9 – *"Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project."*

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The DEIR does not compare projected construction noise (including truck traffic) to existing ambient noise levels. "Impact 4.8-1: Construction" discusses construction noise only in terms of absolute levels stating that so long as construction noise does not exceed 75 dBA at the nearest noise-sensitive receiver, this noise is a less than significant impact.

- B. On Page 4.8-4, *"a change in ambient sound of 5 dBA can begin to create concern and that a change in sound of 7 to 10 dBA typically elicits extreme concern and/or anger."*

The projected 74 dBA is 40 decibels louder than the measured ambient. Each 10 decibel increase is a perceived doubling of loudness. A 40-decibel increase would be 16 times louder than the background noise level in Circle Oaks.

- C. Page 4.8-10 – *"Traffic volumes related to the Proposed Project were compared to existing traffic volumes. Caltrans noise guidelines were used to determine traffic noise level increase along Hwy-121 attributable to the Proposed Project (Caltrans 2009). The existing noise levels were added to the increased noise attributed to the Proposed Project and was compared to applicable significance thresholds."*

The DEIR incorrectly compares project generated noise to the highway noise. The majority of residences affected by construction traffic are significantly shielded from highway noise and are exposed to much lower background noise levels. Construction generated traffic should be compared with traffic on local streets (i.e. Circle Oaks Drive).

In addition, the project proposes to route construction vehicles on Circle Oaks Drive, the main roadway serving the Circle Oaks residential community. The DEIR does not compare construction traffic noise with regular residential traffic noise. During our measurements, we observed that a standard sedan generated 60 dBA at 20 feet and that the once a week garbage truck generated 90 dBA at 20 feet due to the upgrade. Using the garbage truck as a model noise, we projected that 14 truck trips¹ (7 trucks in and out of the project site) could increase the background noise level by 10 decibels. This 10-decibel increase is a perceived doubling of loudness. Restated from Page 4.8-4, a change in sound of 7 to 10 dBA typically elicits extreme concern and/or anger.

3. The report over estimates the noise reduction provided by noise barriers.

- A. Page 4.8-12 – *"Sound walls, which reduce noise by a minimum of 15 dBA, Leq, would reduce construction noises from 89 dBA, Leq, to 74 dBA, Leq, which is below the County's standard."*

This section concludes by stating that a noise barrier will reduce noise a minimum of 15 decibels to 74 dBA at the nearest residence. In our experience, the most a noise barrier can practically reduce noise is 15 decibels. A noise barrier is more likely to provide 6 to 8 decibels of shielding depending on the height of the source noise in relation to the height of the receiver and the height and location of the barrier. To better understand attenuation provided

¹ 14 trips is an estimated number of trips based on the 5.9% projected traffic increase along Highway 121. We assumed that all of these trips would be to and from the project site.

by a barrier, we present the following data based on calculations and our 40 years of experience:

A barrier that breaks line of sight between the source noise and receiver reduces the noise five decibels. Each additional foot of height reduces noise one decibel more. Therefore to achieve a 15-decibel noise reduction, the barrier would need to be 10 feet taller than the highest source noise (most likely diesel exhaust stacks from construction equipment, which can be over 10 feet tall).

4. The report does not establish a minimum safe distance for blasting.

- A. Page 4.8-5 – *"Structural damage can occur when PPV values are 0.5 inches per second or greater."*
- B. Page 4.8-5 – *"blasting would have a PPV of 3.980 inches/second at 75 feet and 17.24 inches/second at 30 feet."*
- C. Page 4.8-6 – *"The nearest sensitive noise receptor is a residence 30 feet south of the property."*
- D. Page 4.8-11 – *"Excessive groundborne vibrations are defined as those that exceed 0.1 PPV experienced at the nearest residence (Caltrans, 2004)."*

Caltrans has determined that blasting outside of a 775-foot radius would limit a receptor exposure to less than 0.1 PPV. The DEIR does not state exactly how close blasting may occur to the residences.

Hypothetically, the DEIR states that if blasting occurs at 30 feet, it exceeds the significance thresholds and proposes the Mitigation Measures 4.8-2. However, the DEIR does not mention that structural damage to residences may occur at a PPV of 2.0 inches per second² nor does it list a minimum safe distance from the blast.

This concludes our current comments on the subject project. Please contact us if you have any questions.

Sincerely,

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² Nicholls, H.R., Johnson, C.F., & Duvall, W.I.,(1971), *Blasting Vibrations and Their Effects on Structures* , Bureau of Mines Bulletin 656.

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2013-11-17 (11-0480) Venetia Valley Post Construction Test Results

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