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SUBJECT: Noise Assessment for the Demler Manure Processing Facility Major Use Permit PDS2019-MUP-19-004 – County of San Diego CA

This noise letter report provides a focused analysis for the special events operations to adjacent residential properties associated with the construction and operations of the Demler Manure Processing Facility. The purpose of this study is to determine the property line noise levels during construction and operations at the site.

Project Location and Description

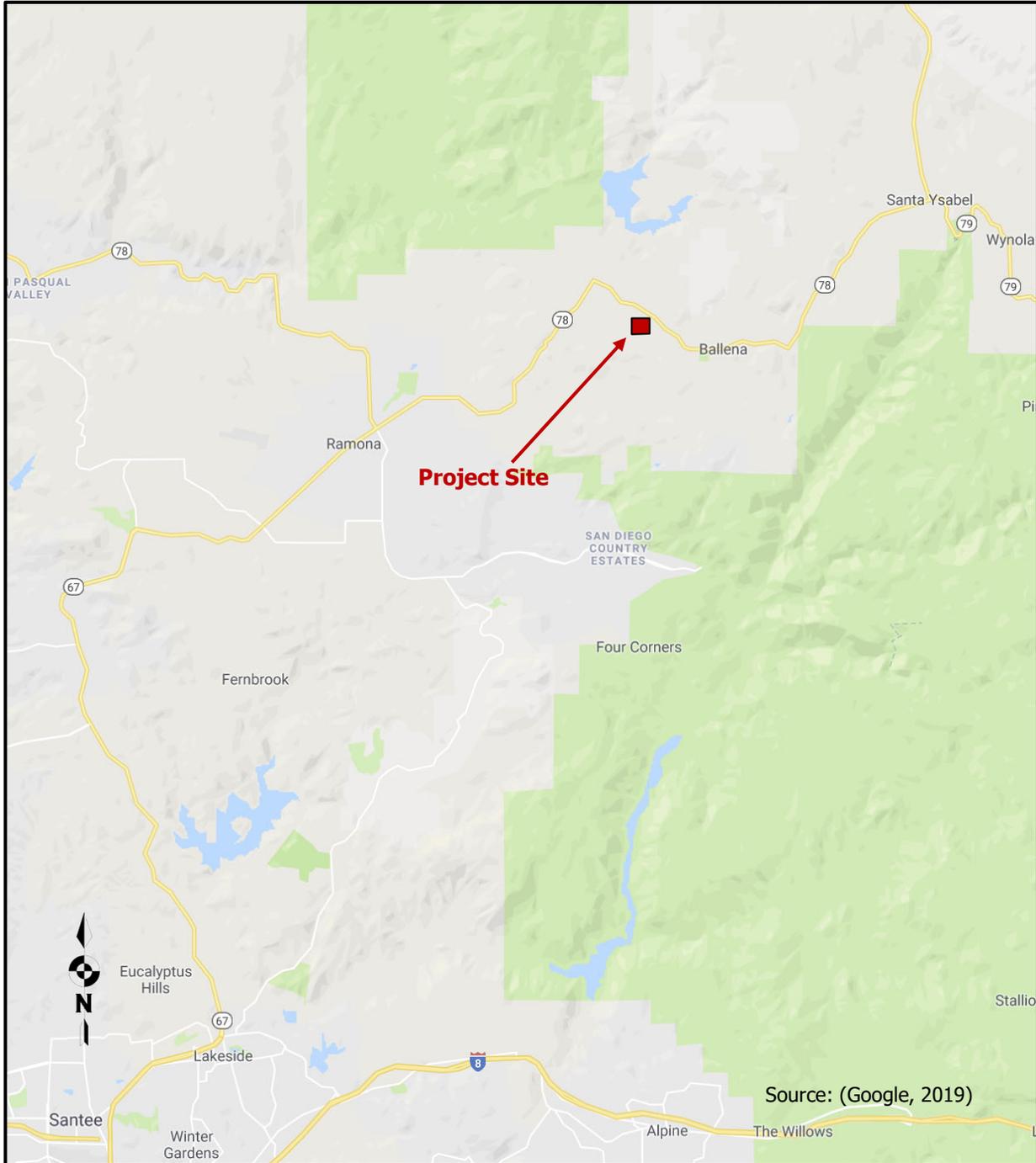
The subject site is located in the Ramona Community Planning Area within unincorporated San Diego County. The project site is located at 25818 State Route 78 (SR 78) (also known as Julian Road) between Rancho Santa Teresa Drive and Casner Road. Access to the site from SR 78 is provided by a private driveway located approximately 1,000 feet west of Rancho Santa Teresa Drive. The overall property on which the existing egg ranch is located spans five contiguous parcels [County Assessor Parcels (APN) 286-030-21, 286-030-22, 286-030-09, 286-031-01, and 286-040-10]. A general project vicinity map is shown in Figure 1.

The applicant proposes to construct a 16,200 square foot (SF) building to house a poultry manure pelleting system (proposed project) which would allow the existing on-site egg ranch to become more efficient and sustainable. The poultry manure pelleting system would be capable of converting poultry manure into organic fertilizer pellets. Processing the manure on-site and converting the waste into pellets would lower storage and transportation costs, reduce dust and odors generated and allow the Applicant to sell a more valuable product.

The existing General Plan Regional Category for the subject site is Rural and the General Plan land use designation is Rural Lands (RL-40; 1 dwelling unit per 40 acres). The project is an allowed use under the current A-72 (General Agriculture) zone that applies to the property with approval of a Major Use Permit (MUP) from the County of San Diego. The proposed MUP area comprises a 6-acre portion of the overall 362.1-acre existing egg ranch property. Figure 2 shows the Site Development Plan of the project.

SDC PDS RCVD 12-20-21
MUP19-004

Figure 1: Project Vicinity Map



Operational Noise Standards

Section 36.404 of the County of San Diego noise ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation, or stationary, noise source impacts to adjacent properties. The purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life. The sound level limits in Table 36.404 of the County’s Noise Ordinance are provided below in Table 1.

Table 1: Property Line Sound Level Limits in Decibels (dBA)

Zone	Time	One-Hour Average Sound Level Limits (dBA)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92, RV, and RU with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
(2) RRO, RC, RM, S86, V5, RV and RU with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
(3) S94, V4, and all commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
(4) V1, V2	7 a.m. to 7 p.m.	60
V1, V2	7 p.m. to 10 p.m.	55
V1	10 p.m. to 7 a.m.	55
V2	10 p.m. to 7 a.m.	50
V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
(5) M50, M52, and M54	Anytime	70
(6) S82, M56, and M58.	Anytime	75
(7) S88 (see subsection (c) below)		

Source: County of San Diego Noise Ordinance Section 36.404

- a) Except as provided in section 36.409 of this chapter, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the one-hour average sound level limits in Table 36.404, when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise.
- b) Where a noise study has been conducted and the noise mitigation measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those mitigation measures reduce potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.

- c) S88 zones are Specific Planning Areas which allow different uses. The sound level limits in Table 36.404 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 36.404, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.
- d) If the measured ambient noise level exceeds the applicable limit in Table 36.404, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.
- e) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.
- f) A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located.

According to the stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property which causes the noise levels to exceed the exterior noise limits at the property boundary. Additionally, Section 36.404(e) states that the sound level limits at a location on a boundary between two zones are the arithmetic mean of the respective limits for the two zones.

The project site as well as all adjacent land uses are zoned A-72. The applicable hourly property line standards are 45 dBA for the most restrictive nighttime hours of 10 pm to 7 am and 50 dBA during the daytime hours of 7 am and 10 pm at the properties zoned A-72.

Placement of the proposed project on the subject site would adhere to the required 1,000-foot setback from the nearest pool, tennis court, public playground or residential dwelling units, as outlined under San Diego County Zoning Ordinance Section 6902, Animal Waste Processing Setback. In addition to the setback, the MUP would limit operation of the proposed manure processing system to the hours of 6:00 a.m. to 10:00 p.m. (16 hours a day) every day of the year (with exception of holidays), thereby reducing potential noise effects on nearby residents.

Operational Noise Levels

This section examines the potential stationary noise source impacts associated with the development and operation of the proposed project. To predict the worst-case future noise environment, continuous reference noise levels were used to represent the mechanical ventilation system. Even though the mechanical ventilation system will cycle on and off throughout the day, this approach presents the worst-case noise condition. In addition, these

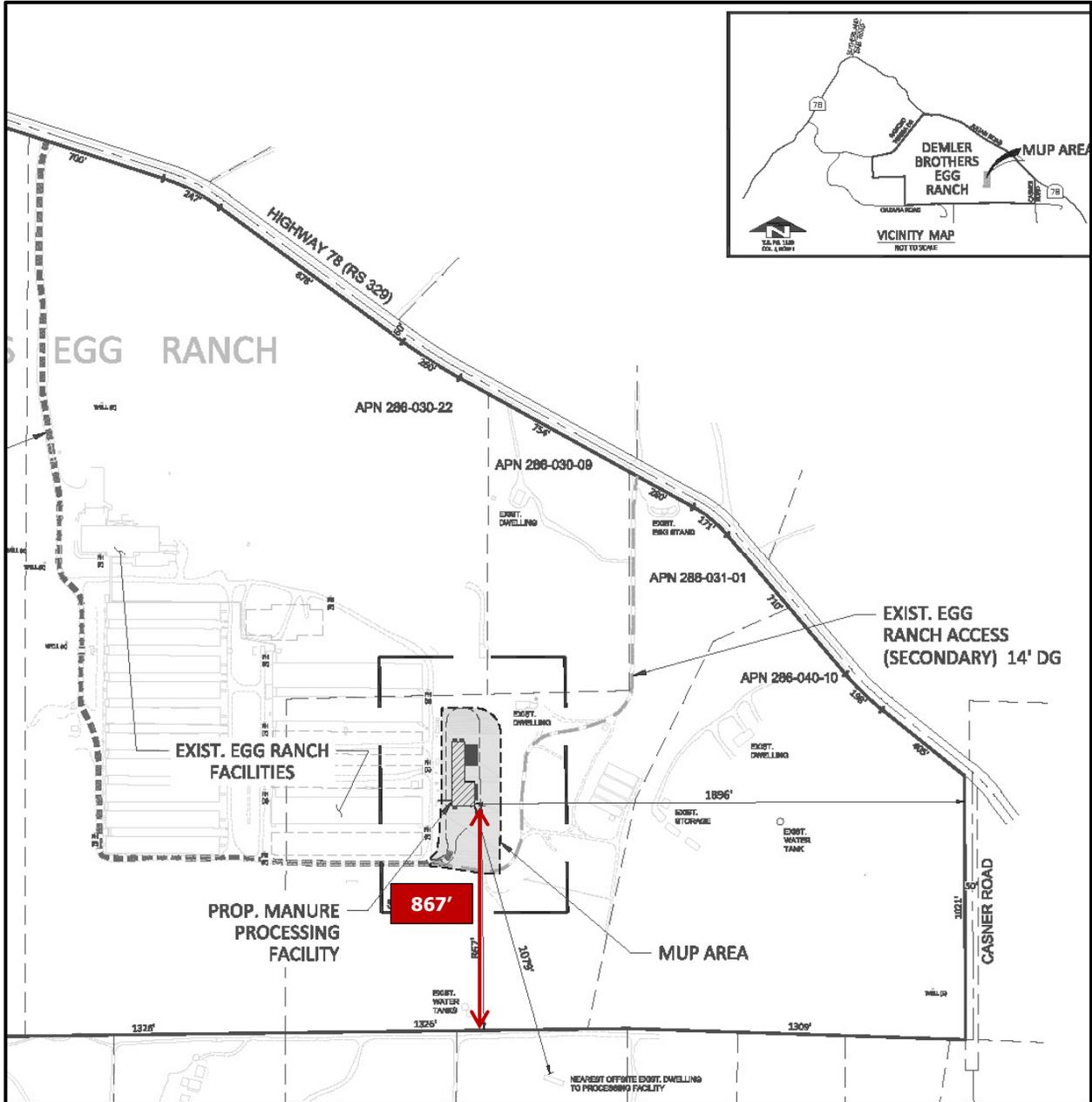
units have been designed to provide cooling during the peak summer daytime periods, and it is unlikely that all the units will be operating continuously throughout the noise sensitive nighttime periods. To assess the mechanical equipment noise impacts the worst-case nighttime standard of 45 dBA was utilized.

Sound from a small localized source (a "point" source) radiates uniformly outward as it travels away from the source. The sound level attenuates or drops-off at a rate of 6 dBA for each doubling of distance. A drop-off rate of 6 dBA per doubling of distance was used for this piece of equipment.

The proposed project would continue to use the existing manure collection methods within their hen houses. Currently, the egg ranch has one method for manure collection for both the older and newer hen houses on-site. Conveyor belts inside the hen houses transports the manure into semi-truck trailers, which then haul the manure off-site. However, manure from the older hen houses must be stored in on-site dry wells then transported to the loading area near the new houses by on-site trucks. Instead, manure would be collected and transported to the proposed pelleting system on-site. The newer hen houses, immediately adjacent to the proposed project, would have covered conveyor belts that would transport the manure from the hen houses to the proposed manure pelleting building. On the way to the pelleting building, the conveyor belts would pass through a drying system that is heated from hot air blown out from the existing fans of the henhouses. The conveyor belts would be self-automated and run on a set schedule. Manure from the older hen houses would first be collected in existing on-site dry wells then transported to the proposed manure processing facility via existing on-site trucks. The proposed system would operate using three (3) 100 horsepower electric motors and the remainder of the equipment. All the proposed noise producing equipment will be located within the proposed building.

Based on measurements of similar electric motors taken at a warehouse in the City of El Cajon, the electric motors produce noise levels of 70-74 dBA at a distance of 3 feet. The nearest residential property line to the proposed MUP equipment is located to the south at a distance of 867 feet as can be seen in Figure 3. Utilizing a 6 dBA decrease per doubling of distance, noise levels from the proposed MUP equipment would be reduced 49.2 decibels without shielding, when using a source distance 3 feet. The proposed equipment would also consist of up to five drying fans that would have similar noise levels of 70-74 dBA at a distance of 3 feet. The site may also have up to two trucks onsite. The operational noise levels and anticipated property line noise levels at the nearest offsite receptors is provided in Table 2 on the following page.

Figure 3: Overall Layout



The facility would also have one to two trucks onsite at any given time. The trucks would only operate onsite while traveling along the access road to enter or leave the site are would be traveling at speeds of 20 MPH or less. Larger trucks typically have noise levels of 75 dBA at a distance of 25 feet when traveling at lower speeds. The trucks are only anticipated to operate for 5 minutes in any given hour while onsite as they enter and leave the site. The limited operational time would reduce the hourly noise level by 10.8 dBA, resulting in a noise level of 64.2 at 25 feet for a single truck.

Table 2: Operational Noise Levels

Source	Source Distance (Feet)	Noise Level (dBA)	Quantity	Combined Noise Level (dBA)	Distance to Nearest Property Line (Feet)	Reduction from Distance (dBA)	Resultant Noise Level (dBA)
Electric Motors	3	74	3	78.8	867	-49.2	29.6
Drying Fans	3	74	5	81.0	857	-49.2	31.8
Trucks	25	64.2*	2	67.2	867	-30.8	36.4
Cumulative Noise Level							38.3
*Reduced Noise Level due to limited operations							

As can be seen in Table 2, the cumulative noise levels would be less than the most restrictive noise threshold of 45 dBA at the nearest property line. This would represent the worst-case scenario as the proposed building would further reduce the noise levels. Based upon the property line noise levels, the proposed noise sources would not exceed the most restrictive nighttime property line standards at the property lines. Therefore, the proposed project would be in compliance with the County’s Noise Element of the General Plan and the Noise Ordinance.

Construction Noise Standards

Construction Noise: Noise generated by construction activities related to the project will exceed the standards listed in San Diego County Code Sections as follows.

SEC. 36.408: HOURS OF OPERATION OF CONSTRUCTION EQUIPMENT

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

- a. Between 7 p.m. and 7 a.m.

b. On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410.

SEC. 36.409: SOUND LEVEL LIMITATIONS ON CONSTRUCTION EQUIPMENT

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

SEC. 36.410: SOUND LEVEL LIMITATIONS ON IMPULSIVE NOISE

In addition to the general limitations on sound levels in section 36.404 and the limitations on construction equipment in section 36.409, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410A (provided below), when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410A are as described in the County Zoning Ordinance.

TABLE 36.410A: MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS (dBA)

OCCUPIED PROPERTY USE	DECIBELS (dBA)
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410B, when

measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410B are as described in the County Zoning Ordinance.

TABLE 36.410B: MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS (dBA) FOR PUBLIC ROAD PROJECTS

OCCUPIED PROPERTY USE	dB(A)
Residential, village zoning or civic use	85
Agricultural, commercial or industrial use	90

(c) The minimum measurement period for any measurements conducted under this section shall be one hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

Construction Noise Levels

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment includes haul trucks, water trucks, graders, dozers, loaders and scrapers can reach relatively high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

Using a point-source noise prediction model, calculations of the expected construction noise impacts were completed. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day, also referred to as the duty-cycle and any transmission loss from topography or barriers.

Based empirical data and the amount of equipment needed, worst case noise impacts from this construction equipment would occur during the grading operations. In order to determine the worst case scenario for the construction activities all the equipment was place in a common location,

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which is not physically possible. As can be seen in Table 3-1, even if all the equipment were placed together the cumulative grading activities noise levels would be 78.9 dBA and would attenuate 6.0 dBA at a distance of 100-feet from the point source noise and would be at or below the 75 dBA threshold. It should be noted: the nearest property line is approximately 400 feet from the construction activities and the noise levels would drop -18 dBA as shown in Table 3. At distances over 400-feet the grading activities are anticipated not to exceed the County's 75-dBA standard and would not require any mitigation measures.

Table 3: Construction Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA) ¹	Duty Cycle (Hours/Day)	Cumulative Noise Level @ 50-Feet (dBA)
Dozer - D8	1	74	8	74.0
Tractor/Backhoe	2	72	8	75.0
Loader/Grader	1	73	8	73.0
Cumulative Levels @ 50 Feet				78.9
Distance to Property Line (Feet)				400
Noise Reduction Due to Distance				-18.0
NEAREST PROPERTY LINE NOISE LEVEL				60.9
¹ Source: U.S. Environmental Protection Agency (U.S. EPA) and Empirical Data				

No blasting or rock crushing is anticipated during the grading operations. Therefore, no impulsive noise sources are expected and the Project is anticipated to comply with Section 36.410 of the County Noise Ordinance and no further analysis is required.

If you have any questions, please contact me directly at (760) 473-1253 or jlouden@ldnconsulting.net.

Sincerely,
Ldn Consulting, Inc.



Jeremy Loudon, Principal