#### **FOCUSED NOISE ANALYSIS**

Green Storage Valley Center Expansion
San Diego County Record ID: PDS2020-STP-03-026W1

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#### **County of San Diego**

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Job #S190714

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#### **GLOSSARY OF TERMS AND ACRONYMS**

**Ambient Sound:** The combination of all near and far sounds in a given environment, none of which is particularly dominant.

Attenuation: The reduction in sound pressure level as sound is transmitted from one point to another.

Average Sound Level ( $L_{EQ}$ ): Also known as equivalent sound level and expressed in dBA. The A-weighted sound level of a steady state sound which has the same sound energy as that contained in the actual time-varying sound being measured over a specific time period.

**A-weighted Sound Level (dBA):** Designed to approximate the response of the human ear to sound. A sound pressure level which has been filtered or weighted to quantitatively reduce the effect of low frequency noise.

**Community Noise Equivalent Level (CNEL):** The 24-hour weighted average noise level calculated as A-weighted sound pressure levels with different weighting factors for the noise levels occurring during the evening and nighttime periods. This weighting is applied to account for an individual's increased sensitivity to noise during these times. Sound levels during evening hours of 7 p.m. to 10 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10 p.m. to 7 a.m. have an added 10 dB weighting.

**Day-Night Average Sound Level (LDM):** A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to the sound levels occurring during nighttime hours (10 p.m. to 7 a.m.).

**Decibel (dB):** The primary unit of sound measurement; used to quantify both sound pressure level and sound power level. In acoustics, equal to ten times the logarithm of the ratio of one sound and a lower-intensity reference sound.

**Frequency:** The number of oscillations per second; generally expressed in hertz (Hz) or cycles per second (cps).

**Sound Level Meter:** An instrument, usually handheld, that is used to measure sound pressure levels with averaging capabilities and standard frequency-weighting.

**Sound Pressure Level (L**, or SPL): The level of sound energy, measured in dB, at a specific location. In order to be meaningful, a sound pressure level measurement must be accompanied by a reference distance at which the sound source was measured.

#### **EXECUTIVE SUMMARY**

The proposed project, Green Storage Valley Center Expansion, consists of the demolition of existing buildings and construction of a new storage building adjacent to an existing storage facility. The project site is located at 28435 Lizard Rocks Road in the Valley Center Community Planning Area, County of San Diego, California.

A project traffic study was conducted to determine the approximate number of vehicle trips that would be added to surrounding roadways as a result of the project. Data from the traffic study was used to determine whether the addition of these trips would have a direct noise impact on traffic noise levels in the vicinity of the project. It was determined that no direct noise impacts would result from additional trips associated with the project.

Noise from proposed mechanical equipment to be located on site has been evaluated to determine whether noise from operation of these sources will exceed the noise standards of the County of San Diego Noise Ordinance. With typical equipment in place, noise impacts from mechanical equipment are expected to comply with the noise limits set within the County of San Diego Noise Ordinance at surrounding property lines during daytime and nighttime hours. No mitigation is required. In the event that significantly louder equipment or different equipment locations are chosen, the exact equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation. Additionally, no direct impacts are expected to result from project-generated traffic.

Temporary construction noise was calculated to determine the impact this activity will have on surrounding occupied properties. Section 36.409 of the County of San Diego Noise Ordinance states it is unlawful to operate construction equipment that exceeds an average sound level of 75 dBA 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. Calculations show that typical construction activities will not exceed the County of San Diego temporary construction noise limit of 75 dBA at worst-case adjacent property lines during the construction activity. General good practice measures should be followed to ensure that noise levels remain below the County of San Diego construction noise limits, including reasonable maintenance of equipment, conservative planning of simultaneous equipment operation, and the use of equipment with effective mufflers. Equipment operation must also be limited to the allowable hours of operation set by the County of San Diego. Additionally, as there is no pile driving or heavy soil compaction anticipated at the project site, construction vibration impacts are expected to be less than significant at off-site receivers.

#### 1.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the acoustical requirements of the County of San Diego for site plan approval. Its purpose is to assess noise impacts from mechanical equipment operation and construction activities to identify project features or requirements necessary to remain in compliance with County of San Diego noise regulations.

All noise level or sound level values presented herein are expressed in terms of decibels, with A-weighting to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol  $L_{EQ}$  for a specified duration. Further explanation can be provided upon request.

#### 1.1 Project Description

The proposed project, Green Storage Valley Center Expansion, consists of the demolition of existing buildings and construction of a new storage building adjacent to an existing storage facility. The total area for the parcel is approximately 1.78 acres. Additional information is provided in the project plans, included as Appendix A.

The subject property is zoned Limited Industrial, M52. All adjacent properties to the south and east are also zoned M52. Properties to the north and west (across Lizard Rocks Road) are zoned commercial.

#### 1.2 Environmental Settings and Existing Conditions

#### 1.2.1 Project Location

The project site is located at 28435 Lizard Rocks Road in the Valley Center Community Planning Area, County of San Diego, California. The Assessor's Parcel Number (APN) for the property is 188-250-15-00. The APN for the existing storage facility to the south is 188-250-41-00. The project location is shown on the Vicinity Map, Figure 1, following this report. An Assessor's Parcel Map, Satellite Aerial Photograph, and Topographic Map are also provided as Figures 2 through 4, respectively.

#### 1.2.2 Measured Noise Level

An on-site inspection was conducted the morning of Tuesday, November 26, 2019. The weather conditions were as follows: winds at 6 mph, sunny skies, low humidity, and temperatures in the mid 60s. The sound level measurement was performed with a sound level meter using A-weighting and a "slow" response time. An ambient noise measurement was taken approximately 18 feet east of the Lizard Rocks Road centerline and approximately 520 feet south of the Valley Center Road centerline for a duration of 15 minutes. The microphone position was approximately five feet above the existing grade. The measured noise level and related weather conditions can be found in Table 1. The primary sources of noise during the measurement were traffic noise on Valley Center Road, noise from mechanical equipment at adjacent properties, noise from children at the nearby preschool, and occasional airplanes in the distance. The short-term measurement location is shown in Figure 3.

Table 1. On-Site Noise Measurement Conditions and Results									
Date	Tuesday, November 26, 2019								
Time	11:17 a.m. – 11:32 a.m.								
Conditions	Sunny skies, winds at 6 mph, temperature in the mid 60s with low humidity								
Measured Noise Level	46.6 dBA L <sub>EQ</sub>								

#### 1.3 Methodology

#### 1.3.1 Cadna Noise Modeling

Modeling of the outdoor noise environment to determine project-related mechanical noise impacts is accomplished using Cadna Version 2019, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed model and uses the most up-to-date calculation standards to predict outdoor noise impacts. Noise standards used by Cadna that are particularly relevant to this analysis include ISO 9613 (Attenuation of sound during propagation outdoors). Cadna provides results that are in line with basic acoustical calculations for distance attenuation and barrier insertion loss.

#### 1.3.2 Formulas and Calculations

The following formulas and calculations have been used in the preparation of this analysis:

#### Decibel Addition

To determine the combined logarithmic noise level of two known noise source levels, the values are converted to the base values, added together, and then converted back to the final logarithmic value, using the following formula:

$$L_C = 10\log(10^{L1/10} + 10^{L2/10} + 10^{LN/10})$$

where  $L_C$  = the combined noise level (dB), and  $L_N$  = the individual noise sources (dB).

This procedure is also valid when used successively for each added noise source beyond the first two. The reverse procedure can be used to estimate the contribution of one source when the contribution of another concurrent source is known and the combined noise level is known. These methods can be used for  $L_{EQ}$  or other metrics (such as  $L_{DN}$  or CNEL), as long as the same metric is used for all components.

#### Sound Power to Sound Pressure

To convert sound power levels to sound pressure levels, the following formula is used:

$$SPL = SWL - 20\log(D) - 0.5$$

where: SPL= Calculated sound pressure level at distance, and D = Distance from source to location of calculated sound pressure level, measured in feet.

Attenuation Due To Distance

Attenuation due to distance is calculated by the equation:

$$SPL_2 = SPL_1 - 20\log(\frac{D_2}{D_1})$$

where  $SPL_1$  = Known sound pressure level at known distance,

 $SPL_2$  = Calculated sound pressure level at distance,

 $D_1$  = Distance from source to location of known sound pressure level, and

 $D_2$  = Distance from source to location of calculated sound pressure level.

This is identical to the more commonly used reference of 6 dB reduction for every doubling of distance. This equation does not take into account reduction in noise due to atmospheric absorption.

Project-Generated Traffic Noise Impacts

Changes in traffic noise levels can be predicted by inputting the ratio of the two scenarios into the following logarithmic equation:

$$\Delta = 10 \log(V2/V1)$$

where:  $\Delta$ = Change in sound energy,

V1 = original or existing traffic volume, and

V2 = future or cumulative traffic volume.

Hourly L<sub>EQ</sub> Summation

To determine the hourly average noise levels ( $L_{EQ}$ ) when the noise is created for less than the full hour, convert the logarithm values to the base energy value, multiply by the percentage of the hour that the noise occurs, and then convert the sum back to a logarithmic value. This is done with the following formula:

$$L_{EQ} = 10\log(P_H \times 10^{L_P/10})$$

where  $P_H$  = the percent or fraction of the hour noise is created, and  $L_P$  = the partial hour noise level (dB).

#### 1.3.3 Measurement Equipment

Some or all of the following equipment was used at the site to measure existing noise levels:

- Larson Davis Model LxT Type 1 Integrating Sound Level Meter, Serial # 4084
- Larson Davis Model CA250 Type 1 Calibrator, Serial # 2106
- Tripod, microphones, and windscreens

The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterward to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI SI.4). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

#### 2.0 NOISE SENSITIVE USES AFFECTED BY AIRBORNE NOISE

#### 2.1 Guidelines for Determination of Significance

The County of San Diego Noise Report Format and Content Requirements detail the guidelines for the determination of significance for project-generated traffic noise levels. Direct noise impacts can be determined by comparing existing traffic versus existing traffic plus project-generated traffic. If project-generated traffic more than doubles the existing sound energy (an increase of 3 dB), this is considered to be a direct noise impact.

Pertinent sections of the County of San Diego Noise Report Format and Content Requirements are provided in Appendix B.

#### 2.2 Off-Site Direct Impacts

An analysis of the potential change in traffic noise levels to the surrounding area has been evaluated based on traffic projections in the draft Darnell and Associates, Inc. traffic study (see reference). The project's impacts have been evaluated to determine whether a direct noise impact will result. A significant impact is generally expected to be an increase of three decibels.

The proposed project is anticipated to generate approximately 96 Average Daily Trips (ADT) on surrounding roadways, and does not exceed the thresholds above which a detailed traffic impact analysis would be required. For a worst-case analysis of project-generated traffic noise, the anticipated project traffic has been added to the existing traffic volume of Lizard Rocks Road to determine the anticipated increase in noise levels along the roadway resulting from the addition of project traffic. According to the San Diego Association of Governments (SANDAG) Series 13 Transportation Forecast Information Center (see reference), Lizard Rocks Road currently carries a traffic volume of 200 ADT as of the year 2012. This existing traffic volume has been used to determine the anticipated increase in noise levels resulting from project-generated traffic.

Project-generated traffic noise increases are shown in Table 2.

Table 2. Anticipated Traffic Noise Increases with Project-Generated Traffic										
	Traffic Vol	ume (ADT)	Noise Level Increase							
Roadway	Existing	Existing + Project	(dB)							
Lizard Rocks Road	200	296	1.7							

As shown in Table 2, no direct impacts are anticipated to result from project traffic, as the increase in noise levels along Lizard Rocks Road would be less than three decibels. For this reason, project-generated traffic noise levels are therefore less than significant.

#### 3.0 PROJECT-GENERATED AIRBORNE NOISE

#### 3.1 Guidelines for the Determination of Significance

The County of San Diego Noise Ordinance states that noise levels from stationary sources shall not exceed 60 dBA between the hours of 7 a.m. and 10 p.m. and 55 dBA between the hours of 10 p.m. and 7 a.m. at commercially zoned properties, and shall not exceed 70 dBA at any time at properties zoned M52.

Section 36.409 of the County of San Diego Noise Ordinance states that it is unlawful to operate construction equipment that exceeds an average sound level of 75 dBA 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. In addition, according to Section 36.408 of the ordinance, construction activities must be limited to the hours of 7 a.m. to 7 p.m., Monday through Saturday (except legal holidays). No construction activity is permitted on Sunday. Section 36.410 provides noise limits for impulsive noise, which is defined as a high peak noise level of short duration (one second or less). Impulsive activity includes blasting and the use of equipment such as a rock crusher, hoe ram, pile driver, or drill rig. None of this activity is anticipated to take place on the project site; therefore, impulsive activity has not been evaluated in any further depth.

Please refer to Appendix C: Pertinent Sections of the County of San Diego Noise Ordinance.

#### 3.2 Potential Operational Noise Impacts

#### 3.2.1 Potential Build-Out Noise Conditions

Anticipated operational noise sources at the proposed project site will primarily consist of air conditioning units that will serve the two-story building. The HVAC units that will be used on site are proposed to be four 5-ton roof-mounted units. The exact model is currently unknown, but for purposes of this analysis, was assumed to be a Carrier 48VL-A60, or an equivalent.

Sound levels have been provided by the manufacturer as octave-band sound power levels (dBA). The sound power levels for this equipment are shown in Table 3. Manufacturer data sheets have been provided as Appendix C.

Table 3. Estimated Sound Power Levels of Typical Commercial HVAC Unit											
Source		Sound	Power at	Octave B	and Frequen	cy (dB)		Total			
Jource	125	250	500	1K	2K	4K	8K	(dBA)			
48VL-A60	73.5	65.5	68.5	67.5	66.5	62.0	58.0	76			

Noise levels of mechanical equipment operation have been calculated using Cadna at surrounding receivers considering shielding that would be provided by the proposed building structures. Noise impacts have been compared to the more restrictive applicable nighttime noise limits for a worst-case analysis. Results are shown in Table 4. More information is provided in Appendix D: Cadna Analysis Data and Results, and a graphical representation of source/receiver locations are provided as Figure 5.

Table	Table 4. Mechanical Equipment Noise Levels at Surrounding Receivers											
Receiver	Location	Nighttime Noise Limit (dBA)	Equipment Noise Level (dBA)									
R1	West Property Line	62.5	31									
R2	North Property Line	62.5	30									
R3	East Property Line	70.0	31									

#### 3.2.2 Design Considerations and Mitigation Measures

As shown above, noise levels from anticipated mechanical equipment operation on site are expected to meet the noise limits set within the County of San Diego Noise Ordinance at surrounding properties during daytime and nighttime hours. No mitigation is deemed necessary.

In the event that significantly louder equipment or different equipment locations are chosen, the exact equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation.

#### 3.3 Potential General Construction Noise Impacts

#### 3.3.1 Potential Temporary Construction Noise Impacts without Mitigation

According to the County of San Diego Noise Ordinance, temporary construction noise must be adequately controlled at occupied properties. The occupied properties surrounding the site include receivers to the northwest and southeast.

An anticipated construction schedule was formulated using information provided by Neil Kadakia of Greens Global. According to information provided, the anticipated construction will include demolition, grading, utility trenching, foundation, and parking lot construction. This consideration was taken into account when making typical construction phase and equipment assumptions. The anticipated construction activities are shown in Table 5.

Table 5. Anticipated Construction Activity								
Phase	Anticipated Large Equipment							
Demolition/Grading	Excavator, Backhoe, Water Truck, Dozer, Dump Truck							
Utility Trenching	Front End Loader, Flat Bed Truck, Backhoe							
Foundation	Concrete Mixer Truck, Concrete Pump Truck							
Paving	Paver, Roller, Dump Truck							

Please refer to Table 6 for typical noise levels of construction equipment expected to be used on site, as described above. Unless otherwise noted, all noise levels have been provided by the UK Department for Environment, Food and Rural Affairs (DEFRA), and duty cycle information was taken from the Federal Highway Administration (see references).

Table 6. Ty	Table 6. Typical Construction Equipment Noise Levels									
Noise Source	Duty Cycle (%)	Calculated Noise Level (L <sub>MAX</sub> ) at 50 feet (dBA)								
Excavator <sup>1</sup>	40	75								
Backhoe <sup>1</sup>	40	74								
Water Truck <sup>1</sup>	40	77								
Dozer	40	76								
Dump Truck	40	75								
Front End Loader	40	76								
Flat Bed Truck	40	76								
Concrete Mixer Truck	40	76								
Concrete Pump Truck	20	74								
Paver	50	71								
Roller <sup>1</sup>	20	74								

<sup>&</sup>lt;sup>1</sup>Source: Noise measurements made by Eilar Associates on 3/25/2010 for Brutoco Engineering & Construction, Inc. for the Orange Line Extension Project, Metro Contract #C0943, City of Los Angeles.

Noise levels were calculated at the nearest receiver to the west (used as a preschool), as any other potentially noise-sensitive off-site receivers are located at a greater distance from the project site and therefore would be exposed to lesser noise impacts. Construction noise sources were placed near the center of the work area to evaluate typical impacts to this receiver as equipment moves around the property. The approximate center of work is located roughly 365 feet from the nearest sensitive receiver location on the west property. Noise calculations consider typical duty cycles of equipment to account for periods of activity and inactivity.

Noise levels of construction at the location described above are shown in Table 7. Detailed calculations can be found in Appendix E. Noise source and receiver locations are shown in Figure 6.

Table 7. Worst-Case Temporary Construction Noise Levels at Nearest Sensitive Receiver (West)									
Phase	Equipment	8-Hour Average Noise Level (dBA)							
Demolition/Grading	Excavator, Backhoe, Water Truck, Dozer, Dump Truck	60							
Utility Trenching	Front End Loader, Flat Bed Truck, Backhoe	57							
Foundation	Concrete Mixer Truck, Concrete Pump Truck	54							
Paving	Paver, Roller, Dump Truck	55							

#### 3.3.2 Design Considerations and Temporary Mitigation Measures

As shown above, worst-case noise levels from temporary construction activity are expected to be in compliance with the County of San Diego eight-hour average equivalent noise limit of 75 dBA for on-site activity.

For any project in which construction activity will take place near occupied residential properties, the following "good practice" recommendations should be adhered to whenever possible:

- 1. Turn off equipment when not in use.
- 2. Equipment used in construction should be maintained in proper operating condition, and all loads should be properly secured to prevent rattling and banging.
- 3. Use equipment with effective mufflers.
- 4. Minimize the use of backup alarms.
- 5. Equipment staging areas should be placed at locations away from noise-sensitive (occupied) receivers.

These general recommendations, in addition to limiting construction equipment operation to the allowable hours detailed in the County of San Diego Noise Ordinance, will assist in maintaining the comfort of neighboring sensitive receivers during the construction of this site.

#### 3.4 Potential Impulsive Noise Impacts

There is no anticipated need for impulsive construction activity on site; therefore, this noise source has not been included in this analysis.

#### 4.0 PROJECT-GENERATED GROUNDBORNE NOISE AND VIBRATION

Proposed construction phases for this project are not expected to include any significant vibration inducing equipment, such as pile driving or heavy soil compaction. As these types of equipment will not be present, excessive levels of groundborne vibration and groundborne levels are not expected to be received by any persons. Construction vibration is therefore anticipated to be less than significant from activity at the project site.

#### 5.0 CONCLUSION

A project traffic study was conducted to determine the approximate number of vehicle trips that would be added to surrounding roadways as a result of the project. Data from the traffic study was used to determine whether the addition of these trips would have a direct noise impact on traffic noise levels in the vicinity of the project. It was determined that no direct noise impacts would result from additional trips associated with the project.

Calculations considering typical, anticipated rooftop HVAC equipment show that operational noise impacts are expected to comply with the noise limits set within the County of San Diego Noise Ordinance at surrounding property lines during daytime and nighttime hours. No mitigation is required. In the event that significantly louder equipment or different equipment locations are chosen, the exact equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation.

Additionally, calculations show that typical construction activities are expected to comply with the County of San Diego temporary construction noise limit of 75 dBA at adjacent property lines during the construction activity. General good practice measures should be followed to ensure that noise levels remain below the County of San Diego construction noise limits, including reasonable maintenance of equipment, conservative planning of simultaneous equipment operation, and the use of equipment with effective mufflers. Equipment operation must also be limited to the allowable hours of operation set by the County of San Diego. Additionally, as there is no pile driving or heavy soil compaction anticipated at the project site, construction vibration impacts are expected to be less than significant at off-site receivers.

#### **6.0 CERTIFICATION**

The findings and recommendations of this acoustical analysis report are based on the information available and are a true and factual analysis of the potential acoustical issues associated with the proposed Green Storage Valley Center Expansion project, located at 28435 Lizard Rocks Road in the Valley Center Community Planning Area, County of San Diego, California. This report was prepared by Rachael Cowell and Amy Hool.

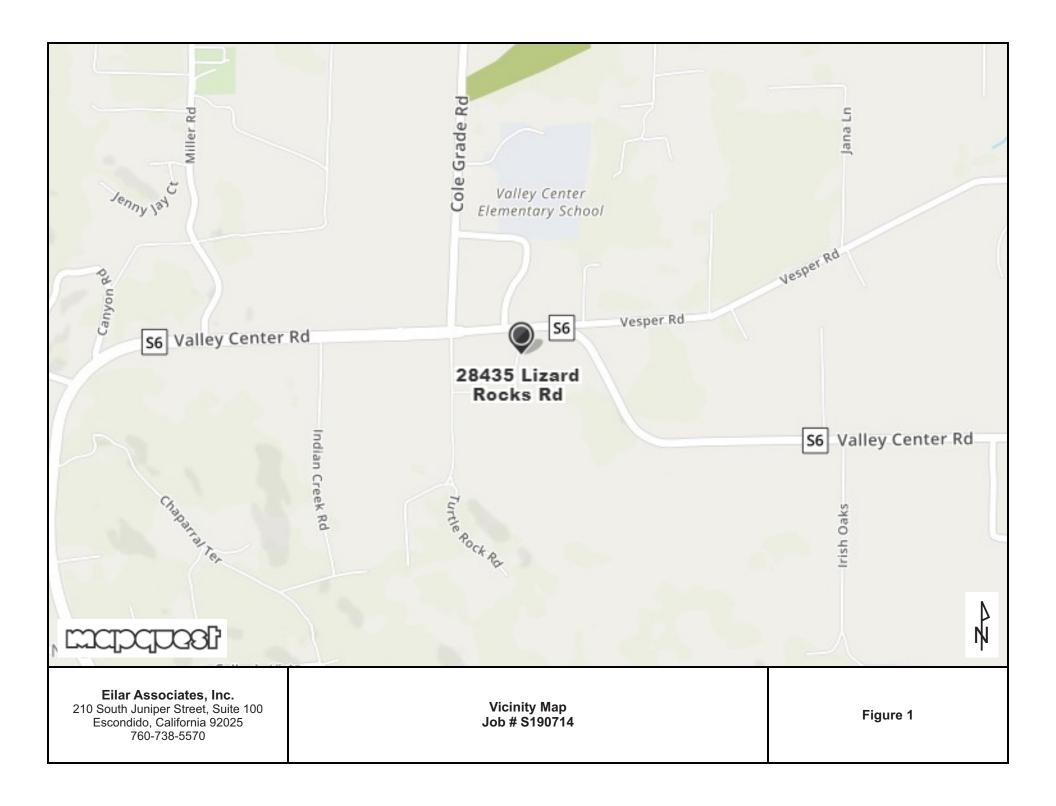
Rachael Cowell, Acoustical Consultant

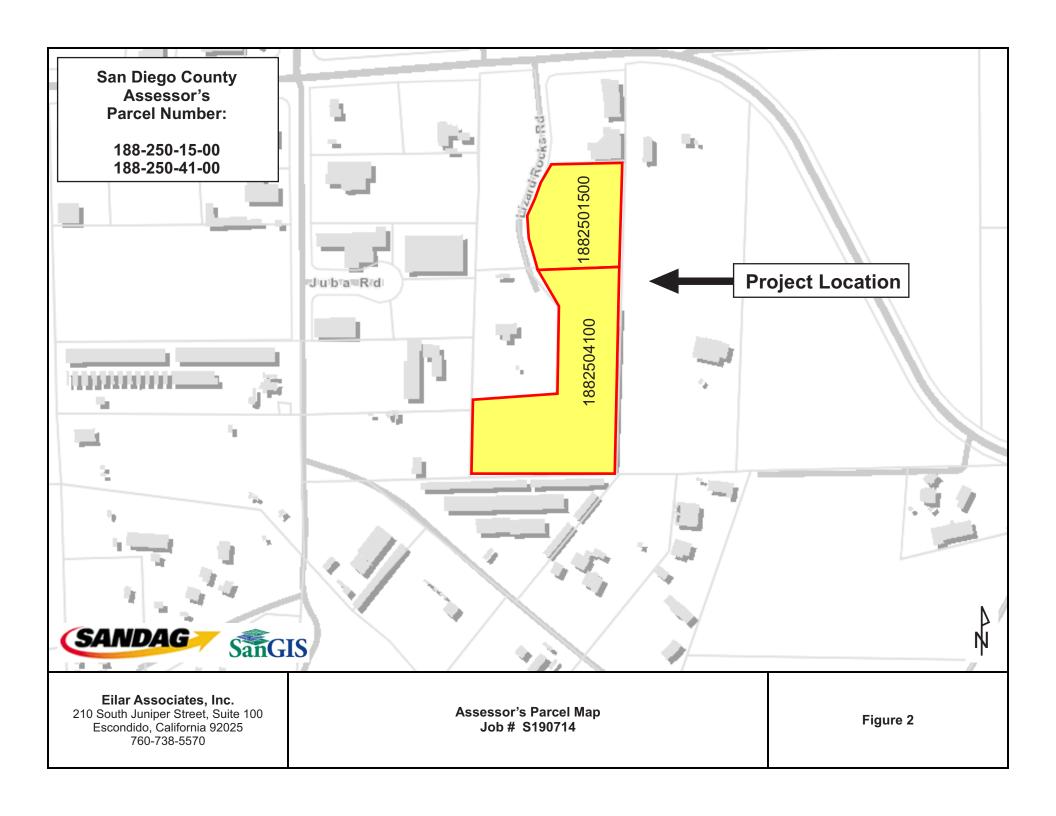
Amy Hool/President/CEC

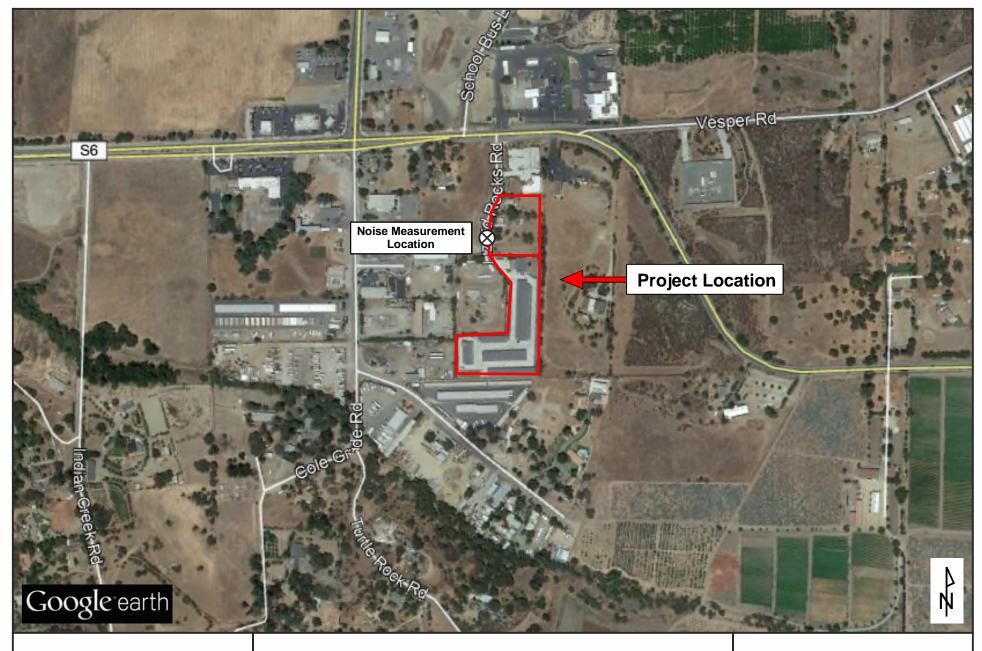
#### 7.0 REFERENCES

- 1. County of San Diego Noise Ordinance.
- 2. DataKustik, CadnaA (Computer Aided Noise Abatement), Version 2019.
- 3. Darnell & Associates, DraftTraffic Analysis for Greens Storage Valley Project, December 2019.
- 1. San Diego Association of Governments (SANDAG) Traffic Forecast Information Center, Series 13, http://tfic.SANDAG.org.
- 4. UK Department for Environment, Food, and Rural Affairs (DEFRA) Construction Noise Database.
- 5. U.S. Department of Transportation Federal Highway Administration, Construction Noise Handbook, Construction Equipment Noise Levels and Ranges.





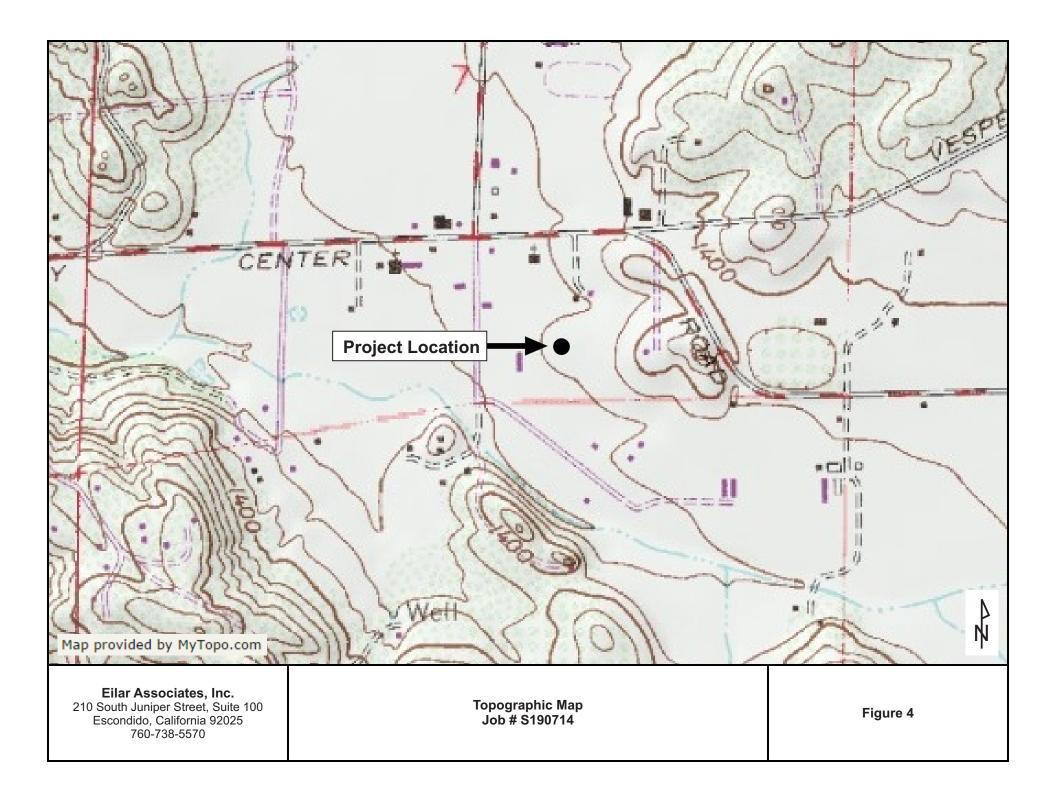


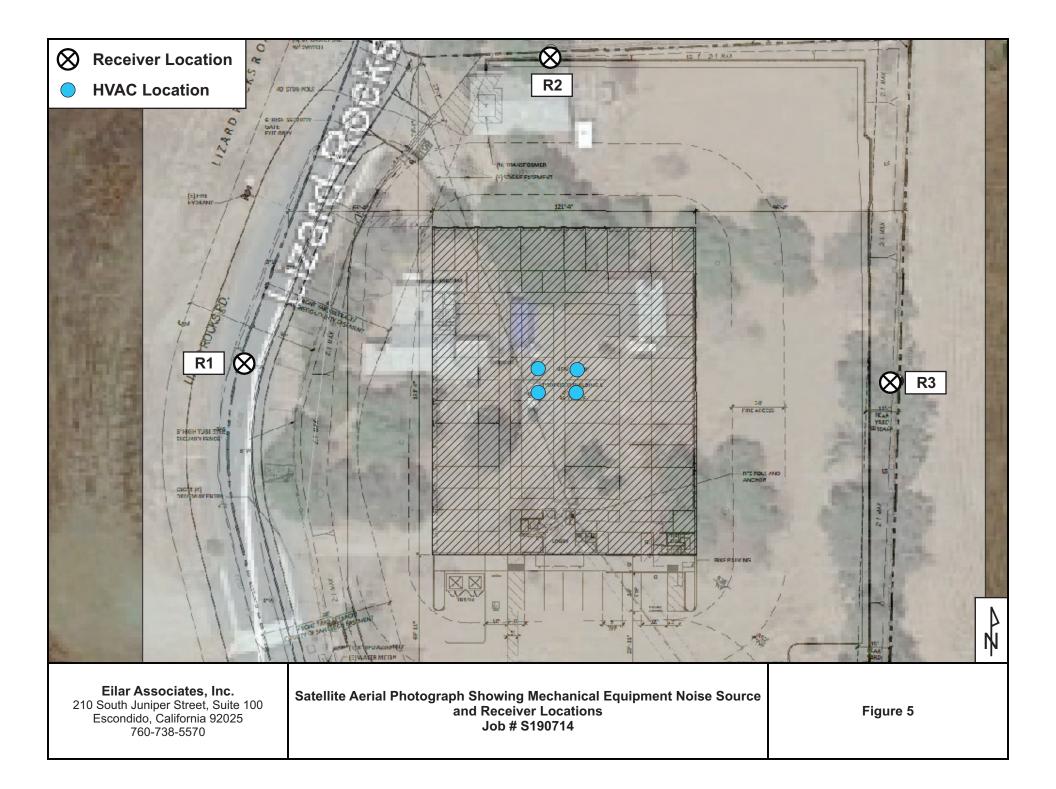


#### Eilar Associates, Inc.

210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570 Satellite Aerial Photograph Showing Short-Term Measurement Location Job # S190714

Figure 3







#### Eilar Associates, Inc.

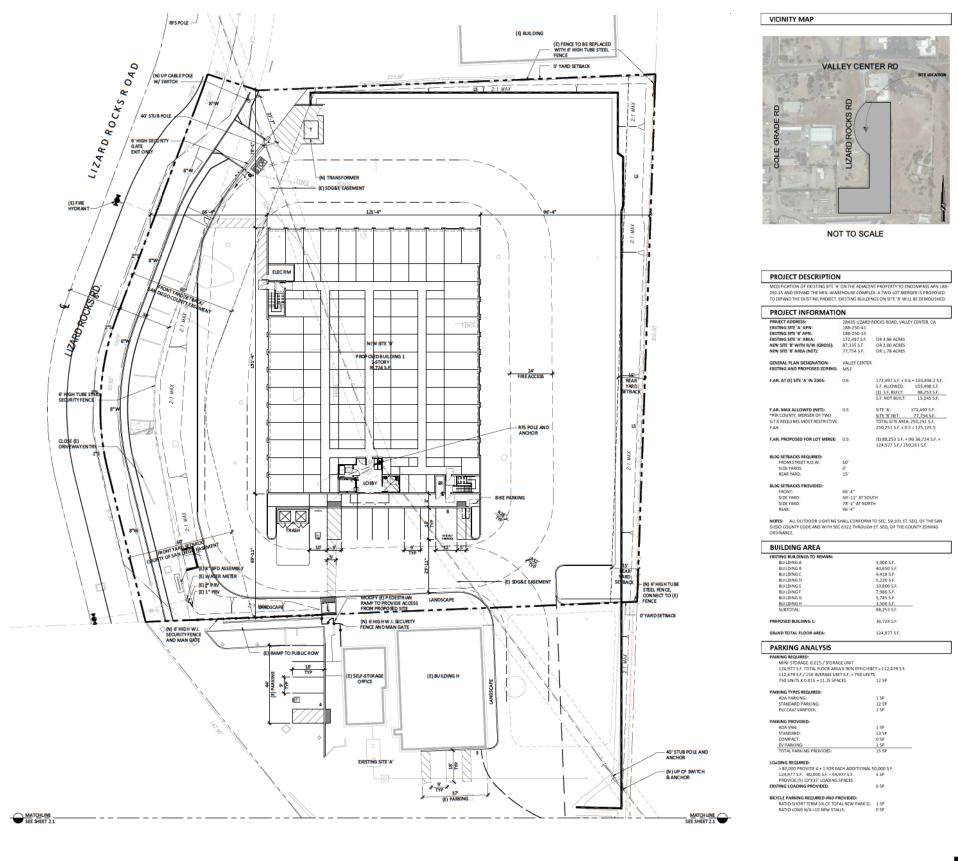
210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570 Satellite Aerial Photograph Showing Construction Noise Source and Receiver Locations

Job # S190714

Figure 6

**APPENDIX A** 

**Project Plans** 









PLOT PLAN

# APPENDIX B Cadna Analysis Data and Results

Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025-4230 Phone: (760) 738-5570 Date: 06 Dec 2019

#### **Calculation Configuration**

Parameter   Value
General   Country   (user defined)
Country         (user defined)           Max. Error (dB)         0.00           Max. Search Radius (#(Unit,LEN))         2000.00           Min. Dist Src to Rcvr         0.00           Partition         0.50           Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Ref. Time Sources         On           Ref. Time         0           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Max. Error (dB)         0.00           Max. Search Radius (#(Unit,LEN))         2000.00           Min. Dist Src to Rcvr         0.00           Partition         0.50           Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Line Sources         On           Ref. Time         0.00           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Max. Search Radius (#(Unit,LEN))         2000.00           Min. Dist Src to Rcvr         0.00           Partition         0.50           Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Line Sources         On           Ref. Time         0.00           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Min. Dist Src to Revr         0.00           Partition         0.50           Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Line Sources         On           Ref. Time         Reference Time Day (min)           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           Search Radius Src         100.00           Search Radius Revr         100.00           Max. Distance Source - Revr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Partition         0.50           Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         Reference Time Day (min)           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Raster Factor         0.50           Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Max. Length of Section (#(Unit,LEN))         1000.00           Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         Reference Time Day (min)           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Min. Length of Section (#(Unit,LEN))         1.00           Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         Reference Time Day (min)           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Min. Length of Section (%)         0.00           Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Proj. Line Sources         On           Proj. Area Sources         On           Ref. Time         960.00           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         5           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Proj. Area Sources         On           Ref. Time         960.00           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         5tandard Height (m)           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Ref. Time         960.00           Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Reference Time Day (min)         960.00           Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Model of Terrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM         Standard Height (m)           Standard Ferrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Recr. Time Penalty (dB)         6.00           Night-time Penalty (dB)         10.00           DTM
Night-time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Model of Terrain         Triangulation           Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Reflection         0           search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
max. Order of Reflection         0           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Max. Distance Source - Rcvr         1000.00 1000.00           Min. Distance Rvcr - Reflector         1.00 1.00
Min. Distance Rvcr - Reflector 1.00 1.00
Min Distance Course Deflector
Min. Distance Source - Reflector 0.10
Industrial (ISO 9613)
Lateral Diffraction some Obj
Obst. within Area Src do not shield On
Screening Excl. Ground Att. over Barrier
Dz with limit (20/25)
Barrier Coefficients C1,2,3 3.0 20.0 0.0
Temperature (#(Unit,TEMP)) 10
rel. Humidity (%) 70
Ground Absorption G 0.30
Wind Speed for Dir. (#(Unit,SPEED)) 3.0
Roads (TNM)
Railways (Schall 03 (1990))
Strictly acc. to Schall 03 / Schall-Transrapid
Aircraft (???)
Strictly acc. to AzB

#### Receivers

Name	M.	ID	Leve	el Lr	Limit.	Value		Land Use Height Coordinate			oordinates		
			Day	Night	Day	Night	Туре	Auto	Noise Type		X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)	(m)	(m)	(m)
R1			31.0	31.0	60.0	55.0				1.52 r	265.64	288.34	1.52
R2			30.1	30.1	60.0	55.0				1.52 r	309.27	331.94	1.52
R3			30.7	30.7	70.0	70.0				1.52 r	357.98	285.55	1.52

#### **Point Sources**

Name	M. ID	R	esult. PW	/L		Lw/L	.i		Correction	1	Soun	d Reduction	Attenuation	Op	erating Ti	me	K0	Freq.	Direct.	Height	Co	oordinates	
		Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					X	Υ	Z
		(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)	(m)	(m)	(m)
		76.6	76.6	76.6	Lw	AC1		0.0	0.0	0.0							0.0		(none)	8.67 r	307.81	287.35	8.67
		76.6	76.6	76.6	Lw	AC1		0.0	0.0	0.0							0.0		(none)	8.62 r	313.48	287.27	8.62
		76.6	76.6	76.6	Lw	AC1		0.0	0.0	0.0							0.0		(none)	8.62 r	313.23	283.85	8.62
		76.6	76.6	76.6	Lw	AC1		0.0	0.0	0.0							0.0		(none)	8.62 r	307.90	284.02	8.62

Buildings

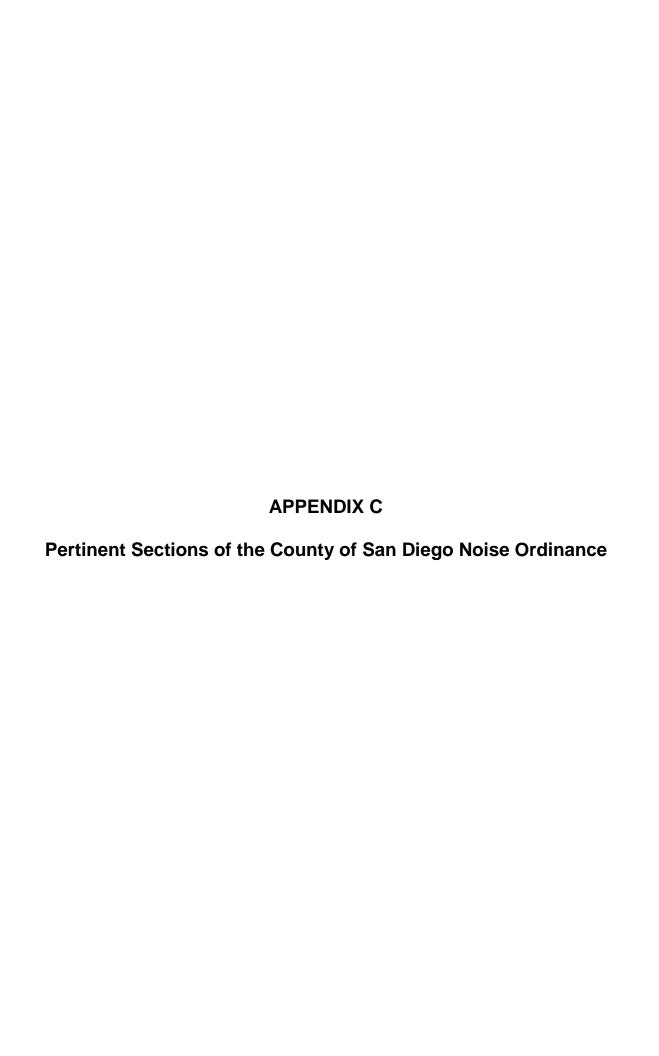
Name	M.	ID	RB	Residents	Absorption	Height	
						Begin	
						(m)	
Building 1			х	0		7.62	r

Geometry - Buildings

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates					
						Begin		Begin		x	у	Z	Ground
						(m)		(m)	(m)	(m)	(m)		
Building 1			х	0		7.62	r	292.59	307.20	7.62	0.00		
								329.64	307.20	7.62	0.00		
								329.73	261.06	7.62	0.00		
								292.59	261.10	7.62	0.00		

**Sound Level Spectra** 

Name	ID	Туре		Oktave Spectrum (dB)							Source				
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	Α	lin	
Carrier 48VL-A-60	AC1	Lw	Α			73.5	65.5	68.5	67.5	66.5	62.0	58.0	76.6	89.8	Manufacturer



Cross reference(s)--Definitions, § 12.101 et seq.

#### SEC. 36.403. SOUND LEVEL MEASUREMENT.

- (a) A sound level measurement made pursuant to this chapter shall be measured with a sound level meter using A-weighting and a "slow" response time, as these terms are used in ANSI S1.1-1994 or its latest revision.
- (b) Each measurement shall be conducted at the boundary line of the property on which the noise source is located or any place on the affected property, but no closer than five feet from the noise source.
- (c) The sound level meter shall be calibrated and adjusted by means of an acoustical calibrator of the coupler-type to assure meter accuracy within the tolerances in the ANSI specifications for sound level meters, ANSI S1.4-1983 or its latest revision. The sound level meter shall be used as provided in the manufacturer's instructions.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.404. GENERAL SOUND LEVEL LIMITS.

(a) Except as provided in section <u>36.409</u> 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 <u>Table 36.404</u>, 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.

TABLE 36.404 SOUND LEVEL LIMITS IN DECIBELS (dBA)

ZONE	TIME	ONE-HOUR AVERAGE SOUND LEVEL LIMITS (dBA)		
(1) RS, RD, RR, RMH, A70, A72,	7 a.m. to 10 p.m.	50		
S80, S81, S90, S92, RV, and RU with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre.	10 p.m. to 7 a.m.	45		
(2) RRO, RC, RM, S86, V5, RV	7 a.m. to 10 p.m.	55		
and RU with a General Plan Land Use Designation density of 10.9 or more dwelling units per acre.	10 p.m. to 7 a.m.	50		
(3) S94, V4, and all commercial	7 a.m. to 10 p.m.	60		
zones.	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)		

- (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 <u>Table</u> 36.404 above that apply in an S88 zone depend on the use being made of the property. The limits in <u>Table</u> 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 <u>Table 36.404</u>, 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.

(Amended by Ord. No. 7094 (N.S.), effective 3-25-86; amended by Ord. No. 9478 (N.S.), effective 7-19-02; amended by Ord. No. 9621 (N.S.), effective 1-9-04; amended by Ord. No. 9962 (N.S.), effective 1-9-09; amended by Ord. No. 10211 (N.S.), effective 6-1-12)

#### SEC. 36.405. REPAIRING, REBUILDING OR TESTING MOTOR VEHICLES.

It shall be unlawful for any person to repair, rebuild or test any motor vehicle in such a manner as to cause a disturbing, excessive or offensive noise as defined in section <u>36.402</u> of this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.406. POWERED MODEL VEHICLES.

It shall be unlawful for any person to operate a powered model vehicle between 9 p.m. and 7 a.m. A powered model vehicle operated in a County park shall meet the daytime sound level standards for an RS zone measured at a point 100 feet from the park property line or 100 feet from where the model vehicle is being operated, whichever is less.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

## SEC. 36.407. REFUSE VEHICLES & PARKING LOT SWEEPERS.

No person shall operate or allow to be operated, a refuse compacting, processing, or collection vehicle or a parking lot sweeper between the hours of 10 p.m. to 6 a.m., in or within 100 feet of a residential zone.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### 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.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### 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.

(Amended by Ord. No. 9700 (N.S.), effective 2-4-05; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.410. SOUND LEVEL LIMITATIONS ON IMPULSIVE NOISE.

In addition to the general limitations on sound levels in section <u>36.404</u> and the limitations on construction equipment in section <u>36.409</u>, 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 <u>Table 36.410A</u>, 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 <u>Table 36.410A</u> 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 <u>Table 36.410B</u>, 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 <u>Table 36.410B</u> are as described in the County Zoning Ordinance.

the tires, operating without a muffler, altering the muffler or any other action that causes a disturbing, excessive or offensive noise.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.415. BURGLAR ALARMS.

- (a) No person shall install or operate a burglar alarm in a residence or any other building that is not equipped with a functioning automatic cutoff device that terminates any noise emanating from the alarm within 15 minutes from the time the alarm is activated.
- (b) No motor vehicle owner shall install or have in his or her possession a motor vehicle that is not equipped with a functioning automatic cutoff device that terminates any noise emanating from the alarm within 15 minutes from the time the alarm is activated.
- (c) Notwithstanding the requirements of this section, a law enforcement officer may deactivate a building or motor vehicle alarm after the alarm is activated.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.416. NOISE FROM OFF-ROAD RECREATIONAL VEHICLES.

In addition to the general limitations on sound levels in section <u>36.404</u>, no person shall operate or allow the operation of an off-road recreational vehicle on private property that produces a noise 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, that at any time exceeds the following maximum sound levels: 82 decibels between the hours of 7 a.m. and 7 p.m., 77 decibels between the hours of 10 p.m. and 55 decibels between the hours of 10 p.m. and 7 a.m.

(Added by Ord. No. 9962 (N.S.), effective 1-9-09)

## SEC. 36.417. EXEMPTIONS.

- (a) This chapter shall not apply to:
- (1) Emergency work, as defined in this chapter, provided that (A) the person performing the work notifies noise control officer in advance, or as soon as practicable after the emergency and (B) any vehicle, device, apparatus or equipment used, related to or connected with the emergency work is designed, modified or equipped to reduce noise produced to the lowest possible level consistent with effective operation of the vehicle, device, apparatus or equipment.
- (2) Noise reasonably related to authorized school: (A) bands, (B) athletic activities and (C) entertainments events.
- (3) Sporting, entertainment and public events which are conducted pursuant to a license or permit issued by the County, within the scope of the license or permit. This section is not intended to excuse the act of an individual not participating in the event who violates this chapter.
- (4) The operation of an emergency generator after a power failure, by an employee or agent of a law enforcement agency, fire department, hospital or other medical or surgical facility that is providing emergency medical services.
- (5) The reasonable testing of an emergency generator by any person provided that the testing is conducted between the hours of 7 a.m. and 7 p.m.

- (6) Any activity preempted by State or federal law.
- (b) Section <u>36.404</u> shall not apply to:
- (1) Noise associated with routine property maintenance used either in part or in whole for residential purposes, provided activity takes place between 7 a.m. and 8 p.m. on any day except Sunday or between 10 a.m. and 8 p.m. on Sunday.
- (2) Equipment associated with agricultural operations, provided that each piece of equipment and machinery powered by an internal-combustion engine is equipped with an appropriate muffler and air intake silencer in good working order and one of the following applies:
  - (A) Operations do not take place between 7 p.m. and 7 a.m. of the following day.
- (B) The operations and equipment are utilized for the preparation, planting, harvesting, protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.
- (C) The operations and equipment are used for agricultural pest control in accordance with regulations and procedures administered by the County Department of Agriculture.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.418. RESPONSIBILITY FOR ENFORCEMENT.

The Sheriff shall have primary responsibility for enforcing sections 36.405, 36.407, 36.411, 36.412, 36.413, 36.414 and 36.415. When this chapter requires measurements to enforce these sections, the noise control officer shall assist the Sheriff. The noise control officer shall have primary responsibility for enforcing all other sections of this chapter. Pursuant to Penal Code section 836.5, a person authorized to enforce this chapter may arrest a person without a warrant if he or she has reasonable cause to believe that the person has committed a misdemeanor in his or her presence that violates this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

**State law reference(s)--**Arrest without warrant, Penal Code, § 836.5.

## SEC. 36.419. ADDITIONAL REMEDIES.

The noise control officer may order a person to cease violating any section of this chapter that the noise control officer enforces. The noise control officer may, in addition to using any remedy provided in section 11.121 of this code, summarily abate a public nuisance caused by any act that violates this chapter if the noise control officer determines there is an immediate threat to the health or safety of any person.

(Amended by Ord. No. 7141 (N.S.), effective 6-26-86; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.420. FALSE STATEMENT.

No person shall knowingly provide false information, either orally or in writing, to the noise control officer related to any matter within the noise control officer's jurisdiction.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

#### SEC. 36.421. REPRODUCTION OR ALTERATION OF DOCUMENTS.

		Exterior Noise Level (CNEL)								
	Land Use Category		55	60	6	5	70	75	75 80	
А	Residential—single family residences, mobile homes, senior housing, convalescent homes									
В	Residential—multi-family residences, mixed-use (commercial/residential)									
С	Transient lodging—motels, hotels, resorts									
D*	Schools, churches, hospitals, nursing homes, child care facilities									
E*	Passive recreational parks, nature preserves, contemplative spaces, cemeteries									
F*	Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation									
G*	Office\professional, government, medical\dental, commercial, retail, laboratories									
H*	Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair									
	ACCEPTABLE—Specified land use is satisfac construction, without any special noise insu				ion that	any buil	dings involv	ved are of n	ormal	
	CONDITIONALLY ACCEPTABLE—New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table N-2, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate county decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.									

<sup>\*</sup> Denotes facilities used for part of the day; therefore, an hourly standard would be used rather than CNEL (refer to Table N-2).

Note: For projects located within an Airport Influence Area of an adopted Airport Land Use Compatibility Plan (ALUCP), additional Noise Compatibility Criteria restrictions may apply as specified in the ALUCP.



## Table N-2 Noise Standards Note

- 1. The exterior noise level (as defined in Item 3) standard for Category A shall be 60 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
- 2. The exterior noise level standard for Categories B and C shall be 65 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
- 3. The exterior noise level standard for Categories D and G shall be 65 CNEL and the interior noise level standard shall be 50 dBA L<sub>eq</sub> (one hour average).
- 4. For single-family detached dwelling units, "exterior noise level" is defined as the noise level measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum net lot area: (i) for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet, (ii) for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area; (iii) for lots over 10 acres in area, the exterior area shall include 1 acre.
- 5. For all other residential land uses, "exterior noise level" is defined as noise measured at exterior areas which are provided for private or group usable open space purposes. "Private Usable Open Space" is defined as usable open space intended for use of occupants of one dwelling unit, normally including yards, decks, and balconies. When the noise limit for Private Usable Open Space cannot be met, then a Group Usable Open Space that meets the exterior noise level standard shall be provided. "Group Usable Open Space" is defined as usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways.
- 6. For non-residential noise sensitive land uses, exterior noise level is defined as noise measured at the exterior area provided for public use.
- 7. For noise sensitive land uses where people normally do not sleep at night, the exterior and interior noise standard may be measured using either CNEL or the one-hour average noise level determined at the loudest hour during the period when the facility is normally occupied.
- 8. The exterior noise standard does not apply for land uses where no exterior use area is proposed or necessary, such as a library.
- 9. For Categories E and F the exterior noise level standard shall not exceed the limit defined as "Acceptable" in Table N-1 or an equivalent one-hour noise standard.

Note: Exterior Noise Level compatibility guidelines for Land Use Categories A-H are identified in Table N-1, Noise Compatibility Guidelines.

In addition, the County has adopted community noise control standards as part of the County's Noise Abatement and Control Ordinance (County Code of Regulatory Ordinances, Title 3, Division 6, Chapter 4) and provides guidance for implementation of the County's noise policies and ordinance in the County's *California Environmental Quality Act* (CEQA) Guidelines for Determining Significance for Noise. The Noise Ordinance defines limits for activities that generate excessive noise and sets noise level limits for land uses. The County's CEQA significance guidelines provide guidance on the use of the General Plan Noise Element and the County Noise Abatement and Control Ordinance when considering the environmental impact of noise exposure to high or excessive noise levels.

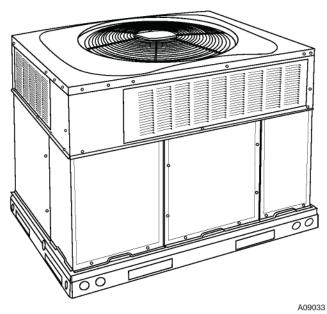
# APPENDIX D

**Manufacturer Data Sheets** 

48VL-A
Performance™ 14 SEER Single-Packaged Air
Conditioner and Gas Furnace System with Puron®
(R-410A) Refrigerant
Single and Three Phase



## **Product Data**



2 to 5 Nominal Tons (Sizes 24-60)

Fig. 1 - Unit 48VL-A

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- 14.2 to 14.5 SEER
- 12.0 EER
- Up to 80.4% AFUE
- · Factory-Installed TXV
- · ECM Motor-Standard
- · Direct Spark Ignition
- · Low Sound Levels
- Dehumidification Feature

#### FEATURES/BENEFITS

One-piece heating and cooling units with low sound levels, easy installation, low maintenance, and dependable performance.

**Puron Environmentally Sound Refrigerant** is Carrier's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. The most important advantage of Puron refrigerant is that it has not been banned in future air conditioning systems as the traditional refrigerant R-22 has been. Puron refrigerant is in service in millions of systems proving highly reliable, environmentally sound performance.

#### Easy Installation

Factory-assembled package is a compact, fully self-contained, combination gas heating/electric cooling unit that is prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard and optional heating/ cooling size combinations with voltage options to meet

residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite base eliminates rust problems associated with ground level applications.

#### Innovative Unit Base Design

On the inside a high-tech composite material will not rust and incorporates a sloped drain pan which improves drainage and helps inhibit mold, algae and bacterial growth. On the outside metal base rails provide added stability as well as easier handling and rigging.

#### Convertible duct configuration

Unit is designed for use in either downflow or horizontal applications. Each unit is converted from horizontal to downflow and includes two horizontal duct covers. Downflow operation is provided in the field to allow vertical ductwork connections. The basepan seals on the bottom openings to ensure a positive seal in the vertical airflow mode.

**Efficient operation High-efficiency design** offers SEER (Seasonal Energy Efficiency Ratios) of 14.2 to 14.5, 12.0 EER, and AFUE (Annual Fuel Utilization Efficiency) ratings as high as 80.4%.

**Energy-saving, direct spark ignition** saves gas by operating only when the room thermostat calls for heating. Standard units are furnished with natural gas controls. A low-cost field installed kit for propane conversion is available for all units.

**48VLN-A units are dedicated Low NOx units** designed for California installations. These models meet the California maximum oxides of nitrogen (NOx) emissions requirement of 40 nanograms/joule or less as shipped from the factory and MUST be installed in California Air Quality Management Districts and wherever a Low NOx rule exists.

**Durable, dependable components Compressors** are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

**Monoport inshot burners** produce precise air-to-gas mixture, which provides for clean and efficient combustion. The large monoport on the inshot (or injection type) burners seldom, if ever, requires cleaning. All gas furnace components are accessible in one compartment.

Turbo-tubular™ heat exchangers are constructed of aluminized steel for corrosion resistance and optimum heat transfer for improved efficiency. The tubular design permits hot gases to make multiple passes across the path of the supply air.

In addition, dimples located on the heat exchanger walls force the hot gases to stay in close contact with the walls, improving heat transfer.

ECM Motor is standard on all 48VL-A models.

**Direct-drive PSC (Permanent Split Capacitor) condenser-fan motors** are designed to help reduce energy consumption and provide for cooing operation down to 40°F (4.4°C) outdoor

#### **AHRI\* CAPACITIES**

#### **Cooling Capacities and Efficiencies**

48VL-A	NOMINAL TONS	STANDARD CFM	COOLING CAPACITY	EER	SEER
24	2	800	23600	12.0	14.5
30	2.5	1000	28600	12.0	14.5
36	3	1200	34200	12.0	14.5
42	3.5	1400	41000	12.0	14.5
48	4	1600	47000	12.0	14.2
60	5	1750	57000	12.0	14.2

LEGEND

dB-Sound Levels (decibels)
db-Dry Bulb

SEER—Seasonal Energy Efficiency Ratio
wb—Wet Bulb

\*Air Conditioning, Heating & Refrigeration Institute.

\*At "A" conditions—80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.

† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or AHRI Standards 210/240.

#### Notes:

Ratings are net values, reflecting the effects of circulating fan heat.

1. Hattings are net values, renecting the enects of cheataing fact risks.

Ratings are based on:

Cooling Standard: 80°F (26.7°C) db, 67°F wb (19.4°C) indoor entering—air temperature and 95°F db (35°C) outdoor entering—air temperature.

2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

ciency information available from your retailer.

### Gas Heating Capacities and Efficiencies

UNIT 48VL-A	HEATING INPUT (Btuh)	OUTPUT CAPACITY (Btuh)	TEMPERATURE RISE RANGE °F (°C)	AFUE (%)
24040 30040	40,000	32,000	30-60 (17-33)	80.0
24060 30060 36060 42060	60,000	48,000 48,000 48,000 47,000	25-55 (14-31)	80.0 80.0 80.0 78.5
36090 42090 48090 60090	90,000	72,000 73,000 73,000 73,000	35-65 (19-36)	79.3 80.4 80.4 80.4
48115 60115	115,000	93,000	30-60 (17-33)	80.3
48130 60130	130,000	103,000	35-65 (19-36)	78.9

LEGEND

AFUE—Annual Fuel Utilization Efficiency

NOTE: Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

### A-Weighted Sound Power Level (dBA)

		,	,						
MODEL	SOUND		TYPICAL OCTAVE BAND SPECTRUM (without tone adjustment)						
48VL-A	RATING	125	250	500	1000	2000	4000	8000	
24	76	58.0	65.5	71.5	71.0	65.5	60.5	53.0	
30	73	62.0	64.0	67.5	67.5	65.0	60.0	54.5	
36	76	64.5	66.5	70.0	70.0	67.5	61.0	54.0	
42	77	70.5	68.0	70.5	70.5	68.0	62.5	58.0	
48	77	71.5	65.0	71.0	67.5	67.5	63.0	57.5	
60	77	73.5	65.5	68.5	67.5	66.5	62.0	58.0	

NOTE: Tested in accordance with AHRI Standard 270 (not listed in AHRI).

## **APPENDIX E**

**Temporary Construction Noise Calculations** 

#### **Noise Attenuation by Distance Calculation** Job: **Greens Storage** Job #: S190714 Date: 12/3/2019 Source: Excavator Receiver: C1 Demo **Noise Source** Noise Level (dBA) 75 at 50 feet Distances Source Elevation feet above grade feet feet above grade Receiver Elevation: feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: **365** feet Sound Pressure Level 57.7 365 feet Hours of Use: 8 Duty Cycle (%): 40 Level During 12 Hour day: 52.0 Summation Number of Sources: 5 Level during 12 hour day: 59.5

## **Noise Attenuation by Distance Calculation**

Job: Greens Storage
Job #: S190714
Date: 12/3/2019
Source: Backhoe
Receiver: C1

Noise Source					
	Noise Level (dBA)	74	at -	50	feet

Distances					
Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	365	feet			_
Source to Receiver Distance.	303	_ 1661			

Path Calculation		
Source to Receiver Direct Path Distance:	365	feet

Sound Pressure Level	56.7	at	365	feet
Hours of Use:	8	<u> </u>		
Duty Cycle (%):	40	<u> </u>		
Level During 12 Hour day:	51.0	<del>_</del>		
_		<del>_</del>		

#### **Noise Attenuation by Distance Calculation** Job: Greens Storage Job #: S190714 Date: 12/3/2019 Source: Water Truck Receiver: C1 **Noise Source** Noise Level (dBA) 77 50 feet at Distances Source Elevation feet feet above grade at feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: 365 feet Sound Pressure Level 59.7 365 at feet

8

40

54.0

Hours of Use:

Duty Cycle (%):

Level During 12 Hour day:

## **Noise Attenuation by Distance Calculation**

Job: Greens Storage Job #: S190714 Date: 12/3/2019 Source: Dozer Receiver: C1 **Noise Source** Noise Level (dBA) 76 50 feet at Distances Source Elevation feet feet above grade at feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet Path Calculation

365

feet

 Sound Pressure Level
 58.7
 at
 365
 feet

 Hours of Use:
 8
 40

 Duty Cycle (%):
 40
 40

 Level During 12 Hour day:
 53.0

Source to Receiver Direct Path Distance:

### **Noise Attenuation by Distance Calculation**

Job: Greens Storage Job #: S190714 Date: 12/3/2019 **Dump Truck** Source: Receiver: C1 **Noise Source** Noise Level (dBA) 75 50 feet at Distances feet above grade Source Elevation feet feet above grade Receiver Elevation: feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: 365 feet Sound Pressure Level 57.7 365 at feet Hours of Use: 8 Duty Cycle (%): 40 Level During 12 Hour day: 52.0

### **Noise Attenuation by Distance Calculation** Job: **Greens Storage** Job #: S190714 Date: 12/3/2019 Front End Loader Source: Receiver: C1 Utilities **Noise Source** Noise Level (dBA) 76 at 50 feet Distances Source Elevation feet above grade feet feet above grade Receiver Elevation: feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: **365** Sound Pressure Level 58.7 365 feet Hours of Use: 8 Duty Cycle (%): 40 Level During 12 Hour day: 53.0 Summation Number of Sources: 3

Level during 12 hour day: 57.2

### **Noise Attenuation by Distance Calculation**

Job: Greens Storage Job #: S190714 Date: 12/3/2019 Source: Flat Bed Truck Receiver: C1 **Noise Source** Noise Level (dBA) 76 50 feet at Distances feet above grade Source Elevation feet at feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet Path Calculation

365

feet

 Sound Pressure Level
 58.7
 at
 365
 feet

 Hours of Use:
 8
 40

 Level During 12 Hour day:
 53.0

Source to Receiver Direct Path Distance:

#### **Noise Attenuation by Distance Calculation** Job: Greens Storage Job #: S190714 Date: 12/3/2019 Source: Backhoe Receiver: C1 **Noise Source** Noise Level (dBA) 74 50 feet at Distances Source Elevation feet feet above grade at feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: 365 feet

56.7

8

40

51.0

Hours of Use:

Duty Cycle (%):

Level During 12 Hour day:

365

feet

at

Sound Pressure Level

### **Noise Attenuation by Distance Calculation** Job: **Greens Storage** Job #: S190714 Date: 12/3/2019 Source: Concrete Mixer Truck Receiver: C1 Foundation **Noise Source** Noise Level (dBA) 76 at 50 feet Distances Source Elevation feet above grade feet feet above grade Receiver Elevation: feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: **365 Sound Pressure Level** 58.7 365 feet Hours of Use: 8 Duty Cycle (%): Level During 12 Hour day: 53.0 Summation Number of Sources: 2 Level during 12 hour day: 54.2

## **Noise Attenuation by Distance Calculation**

Job: Greens Storage Job #: S190714 Date: 12/3/2019 Concrete Pump Truck Source: Receiver: C1 **Noise Source** Noise Level (dBA) 74 50 feet at Distances feet above grade Source Elevation feet feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: 365 feet Sound Pressure Level 56.7 365 at feet Hours of Use: 8 Duty Cycle (%): 20 Level During 12 Hour day:

48.0

#### **Noise Attenuation by Distance Calculation** Job: **Greens Storage** Job #: S190714 Date: 12/3/2019 Source: Paver Receiver: C1 Paving **Noise Source** Noise Level (dBA) 71 at 50 feet Distances Source Elevation feet above grade feet feet above grade Receiver Elevation: feet Source to Receiver Distance: 365 feet Path Calculation Source to Receiver Direct Path Distance: **365** feet Sound Pressure Level 53.7 365 feet Hours of Use: 8 Duty Cycle (%): 50 Level During 12 Hour day: 49.0 Summation Number of Sources: 3

Level during 12 hour day: 54.8

## **Noise Attenuation by Distance Calculation**

Job: **Greens Storage** Job #: S190714 Date: 12/3/2019 Source: Roller Receiver: C1 **Noise Source** Noise Level (dBA) 74 50 feet at Distances feet above grade Source Elevation feet at feet above grade Receiver Elevation: 0 feet Source to Receiver Distance: 365 feet

 Sound Pressure Level
 56.7
 at
 365
 feet

 Hours of Use:
 8

 Duty Cycle (%):
 20

 Level During 12 Hour day:
 48.0

### Job: Greens Storage Job #: S190714 Date: 12/3/2019 **Dump Truck** Source: Receiver: C1 Noise Source Noise Level (dBA) \_\_\_\_75\_\_\_ at 50 feet Distances feet above grade

ı	Receiver Elevation:	0	feet	at	5	_feet above grade	
ı	Source to Receiver Distance:	365	feet				
L							
					<b>-</b> 1		
ı	Path Calculation						

feet

Path Calculation		
Source to Receiver Direct Path Distance:	365	_ feet

Source Elevation 0

**Noise Attenuation by Distance Calculation** 

Sound Pressure Level	57.7	at	365	feet
Hours of Use:	8	•		
Duty Cycle (%):	40	•		
Level During 12 Hour day:	52.0	•		
-		•		