**Appendix DR2-F**

Ventura Compressor Station Modernization Project Electric-Driven Compressor Installation Only Alternative – Noise Technical Memorandum

# MEMORANDUM

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| **To:** | Southern California Gas Company |
| **From:** | Mark Storm, INCE Bd. Cert. (Dudek); Nick Segovia (Dudek) |
| **Subject:** | Ventura Compressor Station Modernization Project (VCM Project)<br>Supplemental Electric-Driven Compressor Installation Only Alternative (Supplemental EDC Alternative) – Noise Technical Memorandum |
| **Date:** | October 25, 2025 |
| **cc:** | Ronelle Candia (Dudek) |
| **Attachments:** | Figure 1 – Proximity of Noise-Sensitive Receivers within 1,000 Feet of Project Site<br>Figure 2 – Isometric View of Supplemental EDC Alternative Prediction Model Space and Onsite Features<br>Figure 3 – Predicted Supplemental EDC Alternative Operation: Two Electric-Driven and Three Engine-Driven Compressors<br>A – Baseline Sound Level Data Collection<br>B – Operation Noise Prediction Model Inputs |

To support the predictive noise assessment of the Supplemental Electric-Driven Compressor Installation Only Alternative (Supplemental EDC Alternative), Dudek has developed an outdoor noise propagation model (with commercially available Datakustik CadnaA software, which is based upon relevant International Organization for Standardization 9613-2 methodology) to evaluate the aggregate noise emission from a potential development scenario associated with installing two electric-driven compressors (EDC) within a separate and new building at the current Ventura Compressor Station (VCS) Site on the western side of N. Olive in the City of Ventura, CA (City).

Previously, and as studied in the Southern California Gas Company's (SoCalGas) Ventura Compressor Station Modernization Project (VCM Project) Proponent's Environmental Assessment (PEA), EDCs installed as part of the VCM Project were contemplated to share space within a new compression station structure that would also enclose a set of new natural-gas fueled engine-driven compressors. The Supplemental EDC Alternative is different, in that this Alternative would retain the existing fossil-fueled engine-driven compressors within their current building and house the new EDCs in a new structure onsite. No new fossil-fueled compressors would be installed as part of the Supplemental EDC Alternative.

For purposes of this operational noise assessment, Dudek assumes that the existing VCS Site features, including the current compressor station building, outdoor-exposed gas coolers, and other ancillary noise-producing systems would remain as-is. The added structure enclosing the two new EDCs as part of the Supplemental EDC Alternative would be connected to existing gas coolers or, as needed, supplementary gas cooling components and other onsite noise-producing or noise-occluding features.

The contents and organization of this memorandum are as follows: Executive Summary, Assessment Framework, Approach and Methodology, Results, and References Cited.

# 1 Executive Summary

Should a new EDC station building be built and operate on the existing VCS site as part of the Supplemental EDC Alternative, unmitigated aggregate noise emission from residual existing and proposed on-site electromechanical systems would not be expected to cause exceedances of applicable local City of Ventura exterior noise thresholds or cause a substantial increase in existing outdoor ambient sound levels.

Existing facility operations noise emission under conditions representing maximum operating capacity (i.e., "full load") were measured in 2021 to be 58 dBA $L_{eq}$ (northern facility boundary) and 55 dBA $L_{eq}$ (southern facility boundary). Aggregate noise levels of the proposed Supplemental EDC Alternative were predicted to be below the measured existing facility operations noise levels and less than 60 dBA $L_{eq}$ at all modeled offsite receptors. Thus, facility operations noise generated from the Supplemental EDC Alternative would be exempt, under Section 10.650.170.D of the City Municipal Code, from the typical exterior noise thresholds established in Section 10.650.130.B.

# 2 Assessment Framework

## 2.1 Acoustical Fundamentals

The following subsections provide the reader a summary of acoustical terminology and concepts that the subsequent analyses would use to evaluate potential noise and vibration impacts associated with the Project.

### Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receptor determine the sound level and characteristics of the noise perceived by the receptor. The field of acoustics deals primarily with the propagation and control of sound.

### Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

### Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (μPa). One μPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 μPa to 100,000,000 μPa. Because of this huge range of values, sound is rarely expressed in terms of μPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dB. The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa.

### Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB—rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

### A-weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000 Hz to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA [A-weighted decibels]) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with environmental noise. Noise levels for environmental noise reports are typically reported in terms of dBA. Table 1 describes typical A-weighted noise levels for various noise sources.

**Table 1. Typical A-Weighted Noise Levels for Common Indoor and Outdoor Sources**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| Diesel truck at 50 feet at 50 mph | 85 | Food blender at 3 feet |
| | 80 | Garbage disposal at 3 feet |
| Noisy urban area, daytime | 75 | — |

## Table 1. Typical A-Weighted Noise Levels for Common Indoor and Outdoor Sources

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| Gas lawn mower, 100 feet | 70 | Vacuum cleaner at 10 feet |
| Commercial area | 65 | Normal speech at 3 feet |
| Heavy traffic at 300 feet | 60 | — |
| | 55 | Large business office |
| Quiet urban daytime | 50 | Dishwasher next room |
| | 45 | — |
| Quiet urban nighttime | 40 | Theater, large conference room (background) |
| Quiet suburban nighttime | 35 | — |
| | 30 | Library |
| Quiet rural nighttime | 25 | Bedroom at night, concert hall (background) |

**Source:** Caltrans 2013.
**Note:** dBA = A-weighted decibels.

### Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3 dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness would usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hz to 8,000 Hz) range (Caltrans 2013). In typical noisy environments, changes in noise of 1 dB to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness (Caltrans 2013). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3 dB increase in sound, would generally be perceived as barely detectable by average healthy human hearing.

### Noise Descriptors

Noise in our daily environment fluctuates over time at varying rates. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors utilized in this analysis.

- **Equivalent Sound Level** ($L_{eq}$): $L_{eq}$ represents an energy average of the sound level occurring over a specified period. The 1-hour A-weighted equivalent sound level ($L_{eq[h]}$) is the energy average of A-weighted sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by Caltrans and the Federal Highway Administration. Note that $L_{eq}$ is not an arithmetic average of varying dB levels over a period of time; $L_{eq}$ uses a logarithmic equation for averaging of the energy levels and therefore accounts for greater sound energy represented by higher decibel contributions.
- **Percentile-Exceeded Sound Level** ($L_{xx}$): $L_{xx}$ represents the sound level exceeded for a given percentage of a specified period (e.g., $L_{10}$ is the sound level exceeded 10 percent of the time, and $L_{90}$ is the sound level exceeded 90 percent of the time).
- **Maximum Sound Level** ($L_{max}$): $L_{max}$ is the highest instantaneous sound level measured during a specified period.

- **Day-Night Level** ($L_{dn}$): $L_{dn}$ is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to each of the A-weighted hourly sound levels ($L_{eq[h]}$) occurring during nighttime hours between 10 p.m. and 7 a.m.
- **Community Noise Equivalent Level** (CNEL): Similar to $L_{dn}$, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to each of the A-weighted hourly sound levels ($L_{eq[h]}$) occurring during the nighttime hours between 10 p.m. and 7 a.m., and a 5 dB penalty applied to each of the A-weighted hourly sound levels ($L_{eq[h]}$) occurring during evening hours between 7 p.m. and 10 p.m.

## Outdoor Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

- **Geometric Spreading:** Sound from a localized source (i.e., an ideal point source) propagates uniformly outward in a spherical pattern (or hemispherical when near a surface). The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roadways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.
- **Ground Absorption:** The propagation path of noise from a sound emission source to a receptor is usually horizontal and proximate to the ground. Under these conditions, noise attenuation from ground absorption and reflective wave canceling can add to the attenuation associated with geometric spreading. For acoustically "hard" paths over which sound may traverse (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or "soft" sites (i.e., those sites with an absorptive ground surface between the source and the receptor, such as fresh-fallen snow, soft dirt, or dense vegetative ground cover), an additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to cylindrical spreading for line source sound propagation, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance.
- **Atmospheric Effects:** Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound pressure levels can also be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects when distances between a source and receptor are large.
- **Shielding by Natural or Human-Made Features:** A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor specifically to reduce noise. A barrier that breaks the line of sight between a source and a receptor would typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. While a line of trees may visually occlude the direct line between a source and a receptor, its actual noise-reducing effect is usually negligible because it does not create a solid barrier. Deep expanses of dense wooded areas, on the other hand, can offer noise reduction under the right conditions.

## 2.2 Environmental Setting

### Noise Sensitive Land Uses

Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas typically are considered noise- and vibration-sensitive receptors and may warrant unique measures for protection from intruding noise.

As described in Section 5.13.1 of the *Ventura Compressor Station Modernization Project Proponent's Environmental Assessment*, the VCS Site (Assessor's Parcel Number 068-0-142-030) is located at 1555 North Olive Street in the City of Ventura (City), slightly east of State Route 33 (CPUC 2023). The VCS Site and adjoining commercial or industrial uses to the north, west, and south are all on Industrial zoned land per the City zoning map (City of Ventura 2020) and would not be considered noise-sensitive land uses. However, there is an existing residence at 1675 North Olive Street on an M-2 zoned parcel that adjoins the northeast corner of the Supplemental EDC Alternative Site. Additionally, the following is a list of other nearby noise-sensitive receivers, with brief descriptions:

- 186 Forbes Lane (an existing single-family residence)
- 181 West McFarlane Drive (an existing single-family residence)
- E.P. Foster Elementary School (western edge of the property adjoins North Olive Street)

There are other single-family homes on the south side of Forbes Lane and other residential receptors that are farther away from the Supplemental EDC Alternative Site, which are depicted in Figure 1, Proximity of Noise-Sensitive Receivers within 1,000 Feet of the Supplemental EDC Alternative Site. However, Supplemental EDC Alternative-attributed noise exposure levels at these more distant locations would tend to be less than those studied at the above five positions on the basis of acoustical principles: sound attenuates with distance-dependent factors that include geometric divergence, air absorption, and ground absorption.

### Measured Outdoor Ambient Sound

Outdoor ambient sound levels in the vicinity of the Project Site were monitored over a 7-week period from June 21, 2021, to August 9, 2021 (Survey), using two American National Standards Institute (ANSI) Type 2 sound level meters (SLM). These were SoftdB "Piccolo II" model SLMs (last four digits of serial numbers: 2101 and 2203) placed within the Project Site near the northern access gate along North Olive Street and the southwest corner of the Project Site.[1] Ambient sound data were collected when on-site construction work unrelated to the Project and permitted by the City of Ventura (permit COMP-2-21-74946 for a new communication shelter, microwave tower, foundation for temporary office and storage containers) (site improvements) was taking place. The existing on-site gas compression system was operating normally while construction activities occurred. Sound level monitors collected data continually so that when construction activities were not occurring, ambient operating noise levels could be collected and assessed, establishing baseline operational noise conditions. Attachment A includes summarized data collection from the first week of this Survey, a plot plan, and a detailed description of the technical

1 Documented GPS coordinates for June 23, 2021, at the northern SLM deployment were latitude 34.297927, longitude −119.299038.

approach to distinguish generally steady Ventura Compressor Station operation noise from the background sound environment and noise from these temporary and intermittent on-site construction activities.

Table 2 shows the range of hourly $L_{eq}$, $L_{max}$, $L_{min}$, $L_{10}$, $L_{50}$, and $L_{90}$ values derived from the collected data at both SLM positions during the first 7 sampled days (June 21, 2021, to June 28, 2021). The highest hourly levels in Table 2 reflects the influence of on-site construction activities and other outdoor acoustical contributors (e.g., vehicle traffic on nearby roadways, non-Project commercial and industrial activities) that varied with time of day. The lower values of the ranges reflect periods of normal gas compression system operation and at hours (e.g., evening and nighttime) when construction was not in progress and other background acoustical contributors would be minimized. In other words, the lower values for $L_{eq}$, $L_{50}$, and $L_{90}$ shown in Table 2 are likely representative of only existing gas compression system operation noise under current typical and steady-state conditions, and can thus be used in subsequent comparisons with predicted operation noise levels associated with the Project.[2]

At the northern SLM position, the measured "low" hourly $L_{eq}$ and statistical $L_{50}$ and $L_{90}$ values fall within a narrow 56–57 dBA range over the displayed 7-day period in Table 2. This similarity of noise magnitudes strongly supports a correlation of the measured outdoor sound with steady-state operation of the nearby existing compressor station. At the southern survey position, measured "low" hourly $L_{eq}$ values fall within a 53–54 dBA range over the displayed 7-day period in Table 2.

## Table 2. Summary of Baseline Outdoor Ambient Sample Sound Levels

| Sampling Period End Date | Measured Hourly Levels and Statistical Values (dBA) June 21, 2021, to June 28, 2021 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L_{eq}$ | | $L_{max}$ | | $L_{min}$ | | $L_{10}$ | | $L_{50}$ | | $L_{90}$ | |
| | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low |
| **Northern Access Gate Sound Level Meter** | | | | | | | | | | | | |
| 06/22/2021 | 63 | 56 | 84 | 64 | 56 | 53 | 65 | 56 | 59 | 56 | 57 | 55 |
| 06/23/2021 | 63 | 57 | 85 | 69 | 57 | 54 | 65 | 58 | 61 | 57 | 60 | 56 |
| 06/24/2021 | 64 | 57 | 92 | 69 | 58 | 55 | 66 | 57 | 62 | 57 | 60 | 56 |
| 06/25/2021 | 75 | 57 | 91 | 70 | 62 | 55 | 75 | 57 | 73 | 57 | 71 | 56 |
| 06/26/2021 | 76 | 57 | 90 | 71 | 61 | 53 | 77 | 58 | 75 | 56 | 73 | 56 |
| 06/27/2021 | 71 | 57 | 94 | 70 | 58 | 54 | 69 | 58 | 67 | 57 | 66 | 56 |
| 06/28/2021 | 70 | 57 | 86 | 70 | 65 | 54 | 71 | 57 | 69 | 56 | 68 | 55 |
| **Southwestern Corner Sound Level Meter** | | | | | | | | | | | | |
| 06/22/2021 | 64 | 53 | 82 | 63 | 52 | 48 | 64 | 53 | 60 | 53 | 58 | 51 |
| 06/23/2021 | 64 | 54 | 87 | 65 | 53 | 47 | 64 | 54 | 59 | 53 | 56 | 51 |
| 06/24/2021 | 61 | 54 | 88 | 67 | 53 | 49 | 64 | 55 | 59 | 53 | 57 | 52 |
| 06/25/2021 | 63 | 54 | 88 | 66 | 53 | 48 | 64 | 55 | 59 | 53 | 57 | 51 |
| 06/26/2021 | 66 | 54 | 86 | 68 | 55 | 46 | 68 | 54 | 65 | 52 | 63 | 50 |
| 06/27/2021 | 63 | 54 | 93 | 67 | 52 | 46 | 62 | 54 | 57 | 51 | 55 | 49 |
| 06/28/2021 | 62 | 53 | 82 | 68 | 52 | 45 | 64 | 54 | 59 | 52 | 56 | 50 |

2 $L_{50}$ and $L_{90}$ are statistical values indicating what dBA was exceeded for 50% and 90% of the measurement period, respectively.

**Notes:** dBA = A-weighted decibel; $L_{eq}$ = energy-equivalent sound level; $L_{max}$ = maximum measured sound level; $L_{min}$ = minimum measured sound level; $L_{10}$, $L_{50}$, and $L_{90}$ are statistical values indicating what dBA was exceeded for a cumulative period of time representing 10%, 50%, and 90% of the measuring period, respectively.

The operation status of the Ventura Compressor Station during the surveyed 7-day period from June 21 to June 28, 2021, was generally two of the three compressor systems activated and operating at nearly full load (on average, 87% of full load). However, the Ventura Compressor Station can and does operate with all three compressor systems active, with each at similar nearly full-load conditions averaging 91%. Under such conditions that would better represent “full load” or maximum operating capacity, and hence the most noise emission due to steady operation of the existing Ventura Compressor Station, the expected noise levels at the baseline noise level monitoring positions would be slightly greater, by approximately 2 decibels (dB). Therefore, for purposes of Project operation noise assessment that uses these greatest potential baseline sound levels, the northern monitoring location $L_{eq}$ value would be 58 dBA (i.e., 56 dBA associated with two operating compressors as shown in Table 2, plus 2 dB for adding the third, equaling 58 dBA). Similarly, the $L_{eq}$ value for assessment at the southern monitoring location would be 55 dBA (the sum of 53 dBA, shown in Table 2, plus 2 dB for the third operating compressor system, equaling 55 dBA).

## Anticipated Peak Noise Event

Gas venting events involving release through the emergency shutdown (ESD) system are uncommon but may be necessary for reliable and safe operation of the facility. These venting events are temporary and short-duration noise-producing events and are typically characterized as one of the loudest events at the compressor station. Planned system testing allows natural gas to be vented into on-site piping that feeds into SoCalGas’s local distribution system. However, unplanned venting may occur through the emergency blowdown stack causing noise.

By way of example, on July 2, 2021, at approximately 3:44 p.m., there was an unplanned release through the ESD that lasted about 2 minutes. Sound level meters picked up the sound from the ESD. This on-site noise-producing event measured 63.4 dBA $L_{eq}$ over the 5-minute interval between 3:40 p.m. and 3:45 p.m., and 78 dBA $L_{max}$ during the same interval at the southern SLM position. However, the $L_{eq}$ and $L_{max}$ values for the interval preceding the blowdown were 59.9 dBA and 69.3 dBA, respectively. Hence, while exhibiting a nearly 9 dB louder $L_{max}$ value, the measured interval containing the blowdown event appeared to only cause a 3.4 dB increase in the 5-minute $L_{eq}$ value.

At the northern access gate survey position, where the successive measurement intervals were one-minute in duration, 66.8 dBA $L_{eq}$ and 79.8 dBA $L_{max}$ were recorded during the 3:44 p.m. to 3:45 p.m. interval. Compared to the 62.7 dBA $L_{eq}$ and 68.2 dBA $L_{max}$ values measured in the immediately preceding 3:43 p.m. to 3:44 p.m. interval, the blowdown event caused an $L_{max}$ value that was more than 11 dB greater, but an $L_{eq}$ value that was only 4.1 dB greater during the one-minute interval.

Although these on-site measurements indicate that a venting occurrence could be a loud event compared to normal compressor station operations, the effect of such a relatively short-duration event (i.e., approximately 2 minutes) on the hourly $L_{eq}$ value is minimal and consistent with acoustical principles: the sound energy of the 2-minute venting event is diluted over the entirety of a 60-minute measurement period.

# 2.3 Regulatory Setting

## Federal Regulations and Guidance

There are no noise regulations at the federal level that would apply to the VCS site with regard to environmental noise assessment of its operations upon completion.

## State Guidance

Apart from California Public Utilities Commission (CPUC) influence, described in the following subsection, there are no noise regulations at the state level that would apply to the VCS site with regard to its environmental noise assessment.

## Local Regulations and Guidance

CPUC decisions, as well as California courts, have confirmed CPUC's preemptory powers over matters of statewide concern, including utility project siting. General Order 177 was adopted in December 2022, reaffirming preemption of local authority. As such, no local discretionary permits would be required because CPUC has preemptive jurisdiction over the siting, construction, maintenance, and operation of natural gas facilities in California. As discussed in Section 2.2, Environmental Setting, the VCS site is entirely within the City. This "Local" section of the Regulatory Setting identifies City regulations specific to noise for informational purposes and to assist with environmental review, although the Project is not subject to local discretionary permitting..

### City of Ventura Municipal Code

Unnecessary, excessive, or annoying noise in Ventura is prohibited by Section 10.650 of the City of Ventura Noise Ordinance (Noise Ordinance; City of Ventura 2025). Exterior noise limits quantified by the Noise Ordinance include the following from Section 10.650.130.B for each of four "noise zones":

- Noise Zone I (noise-sensitive properties) – 50 dBA (7 a.m.–10 p.m.); 45 dBA (10 p.m.–7 a.m.)
- Noise Zone II (residential properties) – 50 dBA (7 a.m.–10 p.m.); 45 dBA (10 p.m.–7 a.m.)
- Noise Zone III (commercial properties) – 60 dBA (7 a.m.–10 p.m.); 55 dBA (10 p.m.–7 a.m.)
- Noise Zone IV (industrial and agricultural properties) – 70 dBA (anytime)

These noise standards above apply to any noise-generating activity that exceeds the applicable level for a cumulative period of more than 30 minutes in any hour. For noise levels of less duration, Section 10.650.130.B.2 allows dB increments of the threshold, but no more than a 20 dB increase for sound less than a minute within the given hour.

#### Section 10.650.170, Exemptions

Because the Project would reasonably be considered akin to "newly constructed or modified public utility facilities," Section 10.650.170.D provides the conditions for a special noise limit with respect to Project compliance and impact significant assessment as follows:

> Newly constructed or modified public utility facilities constructed in an industrial zone in a mixed industrial/residential area shall be exempt from the requirements of this chapter if the facilities result in a lessening of pre-existing noise levels emanating from the public utility site, and if the total noise level emanating from the site does not exceed 60 dBA as measured at any receiving property. Where a project is installed or constructed in stages, the 'pre-existing noise levels emanating from the public utility site,' as used herein, shall mean the noise level existing prior to the commencement of the first stage of such project.

#### City of Ventura General Plan

Chapter 7 of the City's 2005 Ventura General Plan describes policies and expected actions with respect to new residential developments and includes consistency with the California Building Code requirement of 45 dBA CNEL for inhabited rooms. However, the Project consists of an upgrade of an existing industrial facility on M-2 zoned land; therefore, there are no General Plan expectations directly applicable to the Project.

## 2.4 Analyzed Limits

The analysis in this memo is based on the local policies and regulations described in Section 2.3, and are listed below.

- **Project-attributed Stationary Source Noise Emission to the Community:** Proposed VCS operations, that may be a combination of existing engine-driven and new electric-driven compressors, would qualify for exemption under Section 1-.650.170.D of the City code, as a new electric-motor-driven compressor facility built on the existing and operational VCS site would be considered a "newly constructed or modified public utility facility," which shall adhere to 60 dBA as received by the nearest off-site noise-sensitive receptors, which are either residences (Noise Zone II) or schools and hospitals (Noise Zone I).
- **Exposure of Project Workers or Visitors to Excessive Aviation Noise:** Typically, project areas where outdoor workers or visitors may be present that intersects the 65 dBA CNEL aviation noise contour of a public or private airport would be considered a potentially significant noise impact.

# 3 Approach and Methodology

Prediction of aggregate noise exposure levels at the nearest representative noise-sensitive receiver attributed to normal operation of anticipated the Supplemental EDC Alternative Site noise-producing stationary sources involves usage of the Datakustik CadnaA (Computer Aided Noise Abatement) sound propagation model. CadnaA is a commercially available software program for the calculation, presentation, assessment, and prediction of environmental noise based on algorithms and reference data per International Organization of Standardization Standard 9613-2, "Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation" (ISO 2024). Expected sources of noise emission from within the boundary of the Supplemental EDC Alternative Site include a variety of on-site electromechanical equipment. These sources are detailed in Attachment B, Operation Noise Prediction Model Inputs, but can be summarized as follows:

- **New and Existing Compressor Station Building.** Within the new facility there are two electric-motor-driven (electric) compressors; within the existing facility there are three natural-gas-engine-driven (natural gas) compressors. Using building site plans and specifications, these buildings were modeled in CadnaA as solid "Building" elements, on which sound-emitting horizontal area and vertical area planar-type sources were applied as depicted in Figure 2. The magnitude of sound emission from each of these modeled planes or building surfaces was developed using the following mathematical expression from the Edison Electric Institute Electric Power Plant Environmental Noise Guidance document (EEI 1984):

  $$L_{WO} = L_W - A - B + (10*LOG[F]-10) - 6$$

  In the above expression, $L_{WO}$ is the outdoor sound power calculated from the aggregate sound power level ($L_W$) of sources within the enclosed building volume; A is a volume adjustment term that conservatively assumes acoustically "hard" (i.e., highly reflective, such as smooth gypsum or painted concrete) interior surfaces as a default, which in this case accounts for application of acoustically absorptive treatment as required by the Project specifications (i.e., overall 60% of interior surfaces covered by noise reduction coefficient [NRC] 0.7 material); B is the sound transmission loss of the building shell; and F is the area of the radiating wall (in square feet). Assumptions include the following:

  - The sound transmission loss (TL) of the roof and wall shell elements are assumed to be acoustically comparable to values appearing for "R-19 Faced 202-96 (Rev. 2000) insulation over the purlins" in the North American Insulation Manufacturers Association (NAIMA) Bulletin MB305 (NAIMA 2001) and thus consistent with the SoCal Gas specification of sound transmission class (STC) rating 32 minimum.
  - Building shell and roof penetrations for visibility, ventilation, and access are considered separately, using the same expression as the above to determine their contributing $L_{WO}$ values as distinct sources in the three-dimensional (3D) CadnaA model space.

- **Outdoor Noise Sources** are located outside the existing and new compressor station buildings and include the following:

  - Two cooling blowers (88 dBA) for the electric motors
  - Two electrical transformers (95 dBA each)
  - Variable frequency drive (VFD) building (85 dBA)
  - Ten discharge gas air coolers (85 dBA each)
  - Three gas engine water jacket coolers (91 dBA each)
  - Two 5-ton refrigeration capacity HVAC units (87 dBA each) for the new office structure
  - Two vapor recovery units (VRU) at 90 dBA each
  - Filter separation area (80 dBA)
  - Three gas engine exhaust stacks (91 dBA each)

  Figure 2 illustrates (with an isometric view of the rendered 3D model space) the geographic on-site locations of these above-listed outdoor sources. Other equipment are onsite and located external to the existing and new compressor station buildings, but they are not considered acoustically substantial (or would be so designed or properly enclosed) with respect to the above-listed sources. And while gas blowdown or testing of a standby generator may occur, each is not considered a frequent steady-state sound source for purposes of this assessment.

In addition to the above-described sound sources, the following assumptions, features, and parameters are included in this CadnaA-supported stationary noise source assessment:

- All noise sources are assumed to operate in a steady-state or otherwise continuous manner for a full hour, so that the predicted energy-equivalent level ($L_{eq}$) may be compared directly with an $L_{eq}$ standard value for daytime or nighttime periods. Note that if actual Project equipment operation was less than an hour during actual operation, its sound energy would be "diluted" across a full hour of time and result in a lower $L_{eq}$ value. By way of example, and consistent with acoustical principles, if for some reason the Project only operated for half of a full hour, the resulting hourly $L_{eq}$ value would be 3 dB less than that of the $L_{eq}$ representing a full hour of steady-state operation.
- A ground effect acoustical absorption coefficient equal to 0.5 is assumed, which represents a balanced mix of ground types over which Project sound would travel across and beyond the Project Site. Ground types may range from some acoustically absorptive "soft" vegetated ground cover and loose granular aggregate to acoustically "hard" or reflective surfaces such as pavement, hard-packed dirt, or smooth concrete.
- A reflection order of 1 is assumed, which allows for a single reflection of sound paths on encountered structural surfaces such as the new office and warehouse buildings.
- The Project Site and the nearby residential communities to the south and east are, on average, at the same elevation above sea level.
- The model includes a representation of the existing Project boundary walls and proposed new solid walls along the southern and western boundaries, which are expected to have top edges ranging from 8 feet to 12 feet above local grade, respectively.
- Calm meteorological conditions (i.e., no wind) were observed, at 68°F and 70% relative humidity.

# 4 Results

Table 3 tabulates the predicted noise exposure levels attributed to anticipated steady-state operation of the Supplemental EDC Alternative sound-emitting sources at the four nearest off-site receptor positions as shown in Figure 3. The offsite receptor (OR) positions listed in Table 3 are the same as those tagged in the set of modeled receptors appearing in Table 5.13-6 of the VCS Modernization Project Proponent's Environmental Assessment (PEA).

**Table 3. Predicted Project Operational Noise Levels (All Five Compressors)**

| Modeled Receptor (Figure 3 tagged) | Hourly $L_{eq}$ (dBA) |
|---|---|
| OR1 = 186 Forbes Lane (existing single-family home) | 44.5 |
| OR2 = E.P. Foster Elementary School western boundary | 48.3 |
| OR3 = 181 West McFarlane Drive (existing single-family home) | 47.7 |
| OR7 = 1675 N. Olive St. (residence) | 38.6 |

**Notes:** $L_{eq}$ = energy-equivalent sound level; dBA = A-weighted decibel; OR = off-site receptor.
All listed receptor points are assumed to be 5 feet above local grade.

The predicted noise levels appearing in Table 3 for all OR positions are not greater than the measured hourly $L_{eq}$ of current existing compressor station operations of 58 dBA and 55 dBA hourly $L_{eq}$, respectively, at the same locations appearing in in Table 2 of this memorandum. This means that, along with Supplemental EDC Alternative operational noise at all OR positions predicted to be less than 60 dBA, Supplemental EDC Alternative operational noise is expected to satisfy both conditions of City Noise Ordinance 10.650.170.D and would thus be exempt from the exterior noise level thresholds of Section 10.650.130.B. A color-coded plot of predicted Project operational sound emission appears in Figure 3.

Operation of the Supplemental EDC Alternative would not propagate substantial groundborne vibration magnitudes beyond the property line. This is due to the expectation that the compressor operating systems are designed, engineered, and manufactured to be balanced and operate smoothly and reliably for many years under performance criteria and under conditions of regular inspection, testing, and maintenance. Such machines are also mounted on masses or foundations, and may feature, per manufacturer's guidance or requirements, proper means of vibration isolation.

In addition, there are no public airports or private airfields within 2 miles of the Supplemental EDC Alternative Site, and the Supplemental EDC Alternative Site is distant from a mapped aviation traffic noise contour greater than 65 dBA CNEL associated with public airports in the region.

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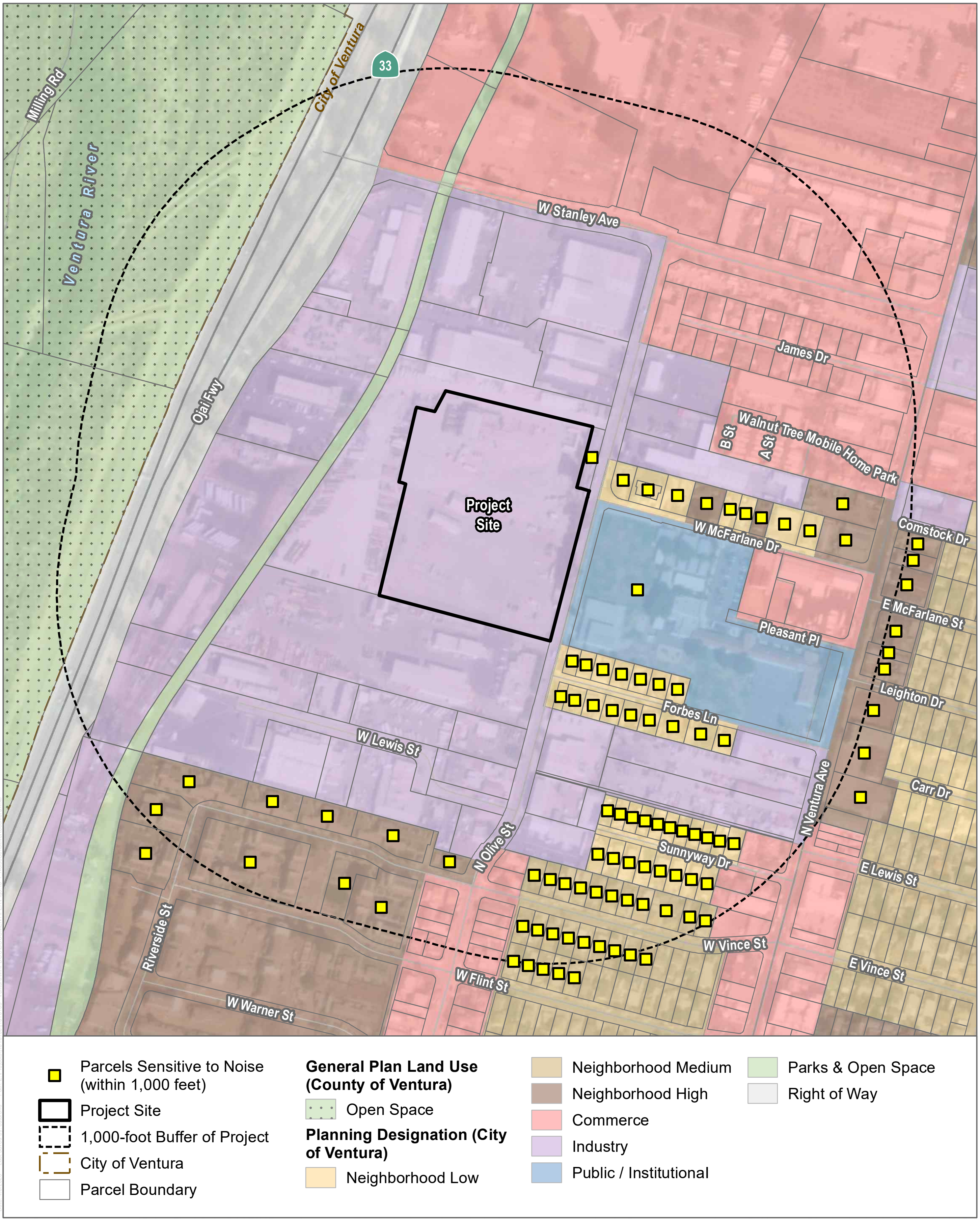



SOURCE: Esri and Digital Globe, Open Street Map

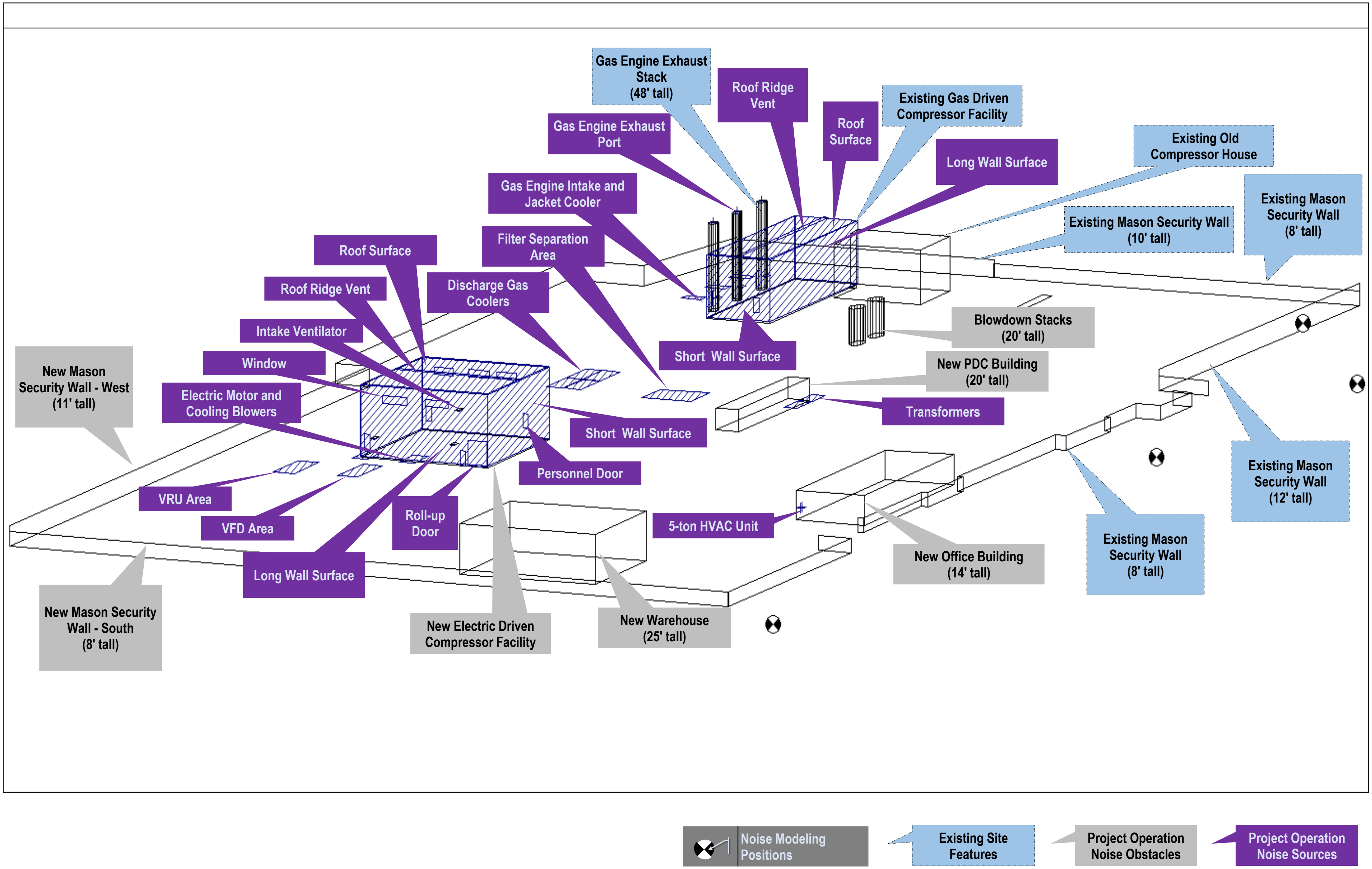
DUDEK

0 195 390 Feet

**FIGURE 1**

Proximity of Noise-Sensitive Receivers within 1,000 feet of Project Site

Ventura Compressor Station Modernization Project



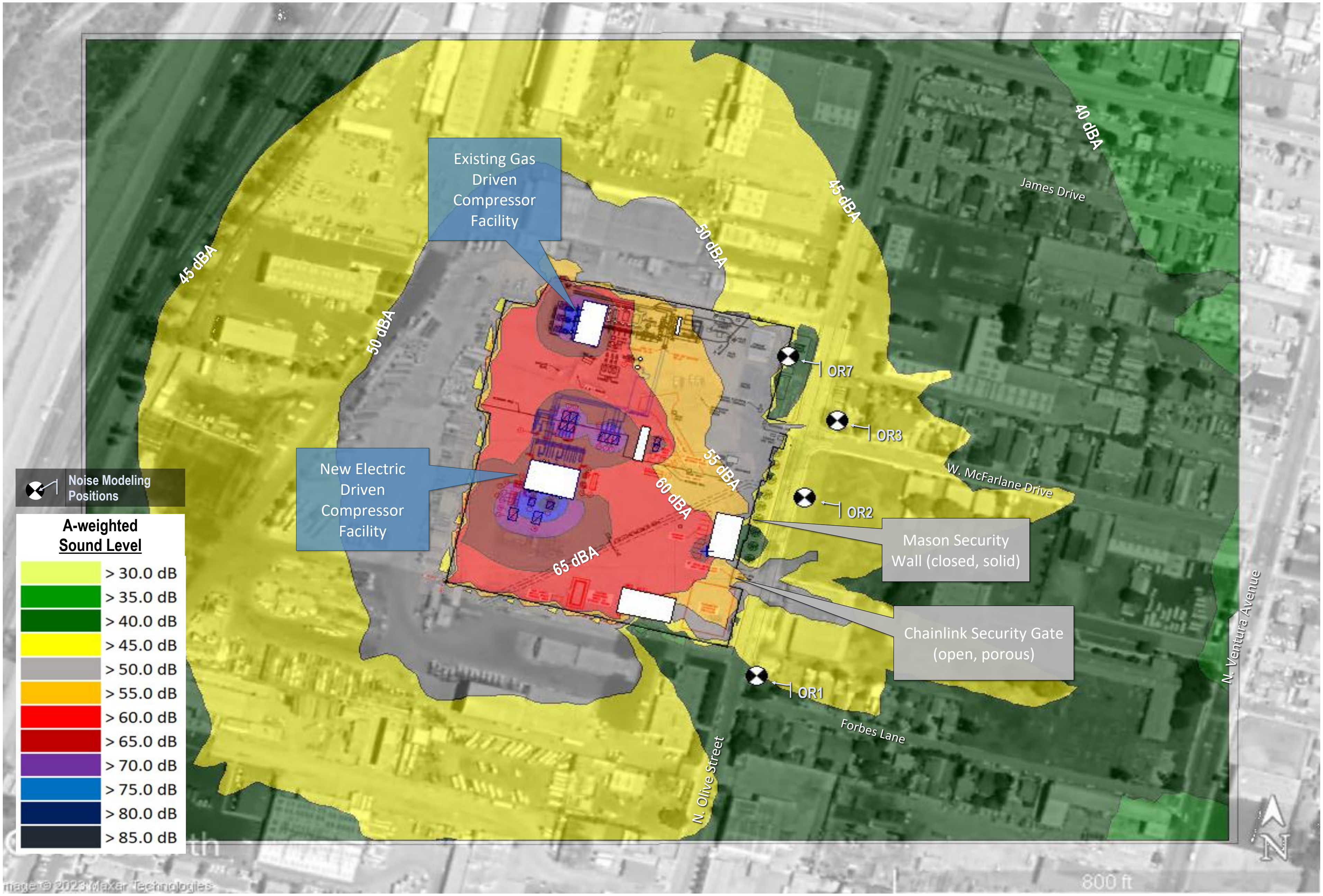

SOURCE: Dudek 2025

DUDEK

**FIGURE 2**

**Isometric View of Supplemental EDC Alternative Prediction Model Space and Onsite Features**

SoCal Gas - Ventura Compressor Station DR.2-2




SOURCE: Google 2025; Dudek 2025

DUDEK

0 102.5 205 Feet

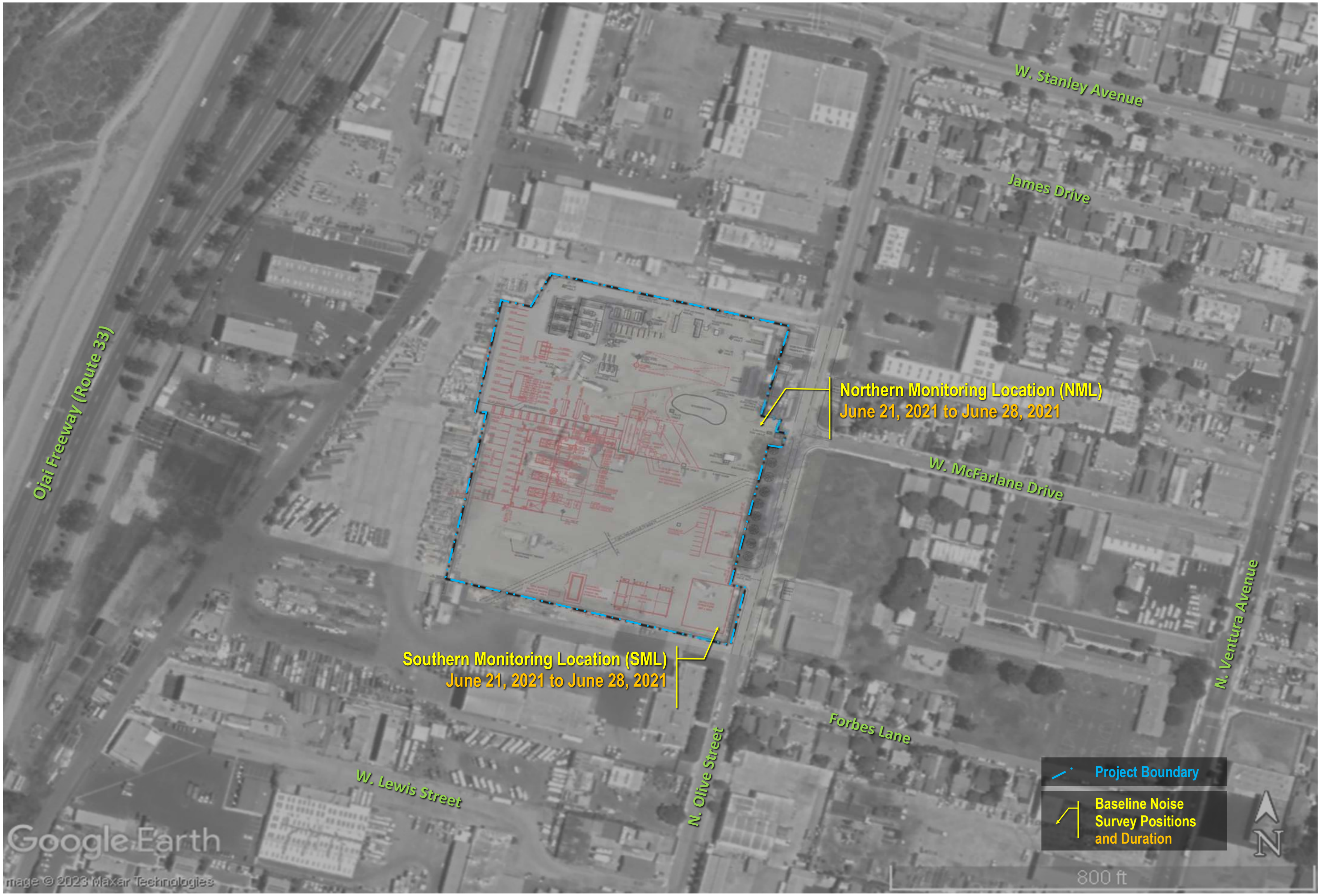
**FIGURE 3**

**Predicted Supplemental EDC Alternative Operation: Two Electric-Driven and Three Engine-Driven Compressors**

SoCal Gas - Ventura Compressor Station Modernization Project

# Attachment A

## Baseline Sound Level Data Collection




SOURCE: Google 2023; Dudek 2023

DUDEK

0 102.5 205 Feet

Attachment A

**Locations of Baseline Outdoor Ambient Sound Level Survey**

SoCal Gas - Ventura Compressor Station Modernization Project PEA

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15:40 | D9 | D9 | 61 | 81 | 53 | 63 | 59 | 57 | 0 | N1 | N1 |
| 16:40 | D10 | D10 | 60 | 82 | 55 | 62 | 58 | 57 | 1 | N2 | N2 |
| 17:40 | D11 | D11 | 60 | 77 | 55 | 62 | 58 | 57 | 2 | N3 | N3 |
| 18:40 | D12 | D12 | 59 | 74 | 53 | 61 | 56 | 55 | 3 | N4 | N4 |
| 19:40 | E1 | D13 | 58 | 75 | 54 | 60 | 56 | 56 | 4 | N5 | N5 |
| 20:40 | E2 | D14 | 59 | 82 | 55 | 61 | 58 | 57 | 5 | N6 | N6 |
| 21:40 | E3 | D15 | 59 | 84 | 55 | 59 | 57 | 56 | 6 | N7 | N7 |
| 22:40 | N8 | N8 | 58 | 69 | 55 | 59 | 57 | 56 | 7 | D1 | D1 |
| 23:40 | N9 | N9 | 57 | 70 | 56 | 58 | 57 | 56 | 8 | D2 | D2 |
| 00:40 | N1 | N1 | 57 | 76 | 55 | 57 | 57 | 56 | 9 | D3 | D3 |
| 01:40 | N2 | N2 | 56 | 64 | 54 | 56 | 56 | 55 | 10 | D4 | D4 |
| 02:40 | N3 | N3 | 57 | 72 | 55 | 57 | 56 | 56 | 11 | D5 | D5 |
| 03:40 | N4 | N4 | 57 | 69 | 55 | 57 | 57 | 56 | 12 | D6 | D6 |
| 04:40 | N5 | N5 | 58 | 70 | 55 | 59 | 57 | 56 | 13 | D7 | D7 |
| 05:40 | N6 | N6 | 60 | 79 | 55 | 62 | 57 | 57 | 14 | D8 | D8 |
| 06:40 | N7 | N7 | 61 | 75 | 56 | 64 | 58 | 57 | 15 | D9 | D9 |
| 07:40 | D1 | D1 | 61 | 77 | 56 | 62 | 59 | 57 | 16 | D10 | D10 |
| 08:40 | D2 | D2 | 63 | 76 | 56 | 65 | 59 | 57 | 17 | D11 | D11 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 18 | D12 | D12 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 19 | E1 | D13 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 20 | E2 | D14 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 21 | E3 | D15 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 22 | N8 | N8 |
| 00:00 | N1 | N1 | 57 | 76 | 56 | 58 | 57 | 56 | 23 | N9 | N9 |
| | | **largest** | **63** | **84** | **56** | **65** | **59** | **57** | | | |
| 1 | | **smallest** | **56** | **64** | **53** | **56** | **56** | **55** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 59 | 84 | 53 | 60 | 57 | 56 |
| Leq day | D | | #N/A | | | | | |
| Leq eve | E | | 59 | | | | | |
| Leq night | N | | 58 | | | | | |
| CNEL | | | #N/A | | | | | |
| | | | | | | | | |
| Leq day | | D | #N/A | | | | | |
| Leq night | | N | 58 | | | | | |
| LDN | | | #N/A | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | D4 | D4 | 61 | 83 | 55 | 62 | 58 | 57 | 0 | N1 | N1 |
| 11:00 | D5 | D5 | 61 | 77 | 56 | 62 | 59 | 58 | 1 | N2 | N2 |
| 12:00 | D6 | D6 | 60 | 75 | 55 | 62 | 58 | 57 | 2 | N3 | N3 |
| 13:00 | D7 | D7 | 62 | 84 | 55 | 64 | 60 | 58 | 3 | N4 | N4 |
| 14:00 | D8 | D8 | 62 | 85 | 54 | 63 | 59 | 57 | 4 | N5 | N5 |
| 15:00 | D9 | D9 | 61 | 76 | 54 | 63 | 58 | 57 | 5 | N6 | N6 |
| 16:00 | D10 | D10 | 60 | 77 | 56 | 62 | 59 | 58 | 6 | N7 | N7 |
| 17:00 | D11 | D11 | 61 | 77 | 55 | 63 | 59 | 57 | 7 | D1 | D1 |
| 18:00 | D12 | D12 | 60 | 76 | 55 | 63 | 58 | 57 | 8 | D2 | D2 |
| 19:00 | E1 | D13 | 60 | 77 | 55 | 61 | 58 | 56 | 9 | D3 | D3 |
| 20:00 | E2 | D14 | 59 | 70 | 54 | 60 | 57 | 57 | 10 | D4 | D4 |
| 21:00 | E3 | D15 | 59 | 76 | 56 | 61 | 58 | 57 | 11 | D5 | D5 |
| 22:00 | N8 | N8 | 58 | 73 | 55 | 59 | 57 | 57 | 12 | D6 | D6 |
| 23:00 | N9 | N9 | 59 | 83 | 56 | 59 | 57 | 57 | 13 | D7 | D7 |
| 00:00 | N1 | N1 | 58 | 69 | 56 | 58 | 57 | 57 | 14 | D8 | D8 |
| 01:00 | N2 | N2 | 57 | 71 | 56 | 58 | 57 | 57 | 15 | D9 | D9 |
| 02:00 | N3 | N3 | 57 | 70 | 56 | 58 | 57 | 57 | 16 | D10 | D10 |
| 03:00 | N4 | N4 | 58 | 78 | 56 | 58 | 57 | 57 | 17 | D11 | D11 |
| 04:00 | N5 | N5 | 58 | 72 | 56 | 58 | 57 | 57 | 18 | D12 | D12 |
| 05:00 | N6 | N6 | 59 | 72 | 56 | 60 | 58 | 57 | 19 | E1 | D13 |
| 06:00 | N7 | N7 | 61 | 73 | 57 | 64 | 59 | 58 | 20 | E2 | D14 |
| 07:00 | D1 | D1 | 63 | 76 | 57 | 65 | 61 | 59 | 21 | E3 | D15 |
| 08:00 | D2 | D2 | 63 | 79 | 57 | 65 | 61 | 60 | 22 | N8 | N8 |
| 00:00 | N1 | N1 | 58 | 69 | 56 | 58 | 57 | 57 | 23 | N9 | N9 |
| | | **largest** | **63** | **85** | **57** | **65** | **61** | **60** | | | |
| 1 | | **smallest** | **57** | **69** | **54** | **58** | **57** | **56** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 60 | 85 | 54 | 61 | 58 | 57 |
| Leq day | D | | #N/A | | | | | |
| Leq eve | E | | 59 | | | | | |
| Leq night | N | | 59 | | | | | |
| CNEL | | | #N/A | | | | | |
| | | | | | | | | |
| Leq day | | D | #N/A | | | | | |
| Leq night | | N | 59 | | | | | |
| LDN | | | #N/A | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | D4 | D4 | 62 | 75 | 56 | 64 | 60 | 59 | 0 | N1 | N1 |
| 11:00 | D5 | D5 | 63 | 82 | 55 | 64 | 60 | 58 | 1 | N2 | N2 |
| 12:00 | D6 | D6 | 61 | 83 | 55 | 62 | 58 | 57 | 2 | N3 | N3 |
| 13:00 | D7 | D7 | 64 | 92 | 58 | 65 | 61 | 60 | 3 | N4 | N4 |
| 14:00 | D8 | D8 | 63 | 79 | 57 | 65 | 61 | 60 | 4 | N5 | N5 |
| 15:00 | D9 | D9 | 62 | 76 | 55 | 64 | 60 | 58 | 5 | N6 | N6 |
| 16:00 | D10 | D10 | 64 | 84 | 56 | 66 | 62 | 59 | 6 | N7 | N7 |
| 17:00 | D11 | D11 | 63 | 81 | 57 | 65 | 62 | 60 | 7 | D1 | D1 |
| 18:00 | D12 | D12 | 63 | 88 | 56 | 65 | 60 | 58 | 8 | D2 | D2 |
| 19:00 | E1 | D13 | 61 | 83 | 55 | 63 | 58 | 57 | 9 | D3 | D3 |
| 20:00 | E2 | D14 | 59 | 77 | 55 | 61 | 58 | 57 | 10 | D4 | D4 |
| 21:00 | E3 | D15 | 59 | 71 | 55 | 60 | 57 | 57 | 11 | D5 | D5 |
| 22:00 | N8 | N8 | 58 | 73 | 55 | 59 | 57 | 56 | 12 | D6 | D6 |
| 23:00 | N9 | N9 | 58 | 74 | 56 | 59 | 57 | 57 | 13 | D7 | D7 |
| 00:00 | N1 | N1 | 57 | 69 | 55 | 58 | 57 | 56 | 14 | D8 | D8 |
| 01:00 | N2 | N2 | 57 | 72 | 56 | 57 | 57 | 56 | 15 | D9 | D9 |
| 02:00 | N3 | N3 | 57 | 70 | 56 | 57 | 57 | 56 | 16 | D10 | D10 |
| 03:00 | N4 | N4 | 57 | 71 | 56 | 57 | 57 | 56 | 17 | D11 | D11 |
| 04:00 | N5 | N5 | 57 | 72 | 55 | 58 | 57 | 56 | 18 | D12 | D12 |
| 05:00 | N6 | N6 | 59 | 79 | 56 | 60 | 57 | 57 | 19 | E1 | D13 |
| 06:00 | N7 | N7 | 62 | 81 | 56 | 64 | 59 | 57 | 20 | E2 | D14 |
| 07:00 | D1 | D1 | 62 | 78 | 56 | 64 | 59 | 58 | 21 | E3 | D15 |
| 08:00 | D2 | D2 | 64 | 77 | 56 | 65 | 61 | 59 | 22 | N8 | N8 |
| 00:00 | N1 | N1 | 57 | 69 | 55 | 58 | 57 | 56 | 23 | N9 | N9 |
| | | **largest** | **64** | **92** | **58** | **66** | **62** | **60** | | | |
| 1 | | **smallest** | **57** | **69** | **55** | **57** | **57** | **56** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 61 | 92 | 55 | 62 | 59 | 58 |
| Leq day | D | | #N/A | | | | | |
| Leq eve | E | | 60 | | | | | |
| Leq night | N | | 58 | | | | | |
| CNEL | | | #N/A | | | | | |
| Leq day | | D | #N/A | | | | | |
| Leq night | | N | 58 | | | | | |
| LDN | | | #N/A | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 09:06 | D3 | D3 | 71 | 84 | 57 | 71 | 69 | 68 | 0 | N1 | N1 |
| 10:06 | D4 | D4 | 72 | 85 | 60 | 72 | 70 | 68 | 1 | N2 | N2 |
| 11:06 | D5 | D5 | 70 | 87 | 59 | 70 | 68 | 67 | 2 | N3 | N3 |
| 12:06 | D6 | D6 | 67 | 86 | 56 | 66 | 63 | 61 | 3 | N4 | N4 |
| 13:06 | D7 | D7 | 71 | 91 | 61 | 72 | 69 | 68 | 4 | N5 | N5 |
| 14:06 | D8 | D8 | 71 | 82 | 56 | 72 | 69 | 68 | 5 | N6 | N6 |
| 15:06 | D9 | D9 | 70 | 85 | 56 | 70 | 67 | 66 | 6 | N7 | N7 |
| 16:06 | D10 | D10 | 64 | 76 | 56 | 66 | 61 | 59 | 7 | D1 | D1 |
| 17:06 | D11 | D11 | 63 | 77 | 57 | 65 | 62 | 60 | 8 | D2 | D2 |
| 18:06 | D12 | D12 | 64 | 83 | 56 | 66 | 62 | 60 | 9 | D3 | D3 |
| 19:06 | E1 | D13 | 60 | 76 | 55 | 62 | 57 | 57 | 10 | D4 | D4 |
| 20:06 | E2 | D14 | 59 | 72 | 56 | 62 | 57 | 56 | 11 | D5 | D5 |
| 21:06 | E3 | D15 | 59 | 75 | 56 | 60 | 58 | 57 | 12 | D6 | D6 |
| 22:06 | N8 | N8 | 59 | 73 | 56 | 59 | 57 | 57 | 13 | D7 | D7 |
| 23:06 | N9 | N9 | 58 | 77 | 56 | 59 | 57 | 57 | 14 | D8 | D8 |
| 00:06 | N1 | N1 | 58 | 80 | 56 | 58 | 57 | 57 | 15 | D9 | D9 |
| 01:06 | N2 | N2 | 57 | 70 | 56 | 57 | 57 | 56 | 16 | D10 | D10 |
| 02:06 | N3 | N3 | 57 | 71 | 56 | 57 | 57 | 56 | 17 | D11 | D11 |
| 03:06 | N4 | N4 | 58 | 72 | 56 | 58 | 57 | 57 | 18 | D12 | D12 |
| 04:06 | N5 | N5 | 58 | 71 | 56 | 59 | 57 | 57 | 19 | E1 | D13 |
| 05:06 | N6 | N6 | 60 | 78 | 56 | 61 | 58 | 57 | 20 | E2 | D14 |
| 06:06 | N7 | N7 | 65 | 77 | 57 | 66 | 62 | 60 | 21 | E3 | D15 |
| 07:06 | D1 | D1 | 72 | 86 | 62 | 73 | 70 | 69 | 22 | N8 | N8 |
| 08:06 | D2 | D2 | 75 | 89 | 57 | 75 | 73 | 71 | 23 | N9 | N9 |
| | | **largest** | **75** | **91** | **62** | **75** | **73** | **71** | | | |
| 1 | | **smallest** | **57** | **70** | **55** | **57** | **57** | **56** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 68 | 91 | 55 | 65 | 62 | 61 |
| Leq day | D | | 71 | | | | | |
| Leq eve | E | | 59 | | | | | |
| Leq night | N | | 60 | | | | | |
| CNEL | | | 70 | | | | | |
| | | | | | | | | |
| Leq day | | D | 70 | | | | | |
| Leq night | | N | 60 | | | | | |
| LDN | | | 70 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 09:11 | D3 | D3 | 74 | 89 | 58 | 72 | 70 | 68 | 0 | N1 | N1 |
| 10:11 | D4 | D4 | 76 | 87 | 61 | 76 | 74 | 72 | 1 | N2 | N2 |
| 11:11 | D5 | D5 | 73 | 89 | 57 | 70 | 67 | 65 | 2 | N3 | N3 |
| 12:11 | D6 | D6 | 73 | 90 | 56 | 69 | 66 | 65 | 3 | N4 | N4 |
| 13:11 | D7 | D7 | 72 | 88 | 55 | 70 | 66 | 64 | 4 | N5 | N5 |
| 14:11 | D8 | D8 | 73 | 88 | 57 | 72 | 68 | 67 | 5 | N6 | N6 |
| 15:11 | D9 | D9 | 75 | 89 | 59 | 74 | 71 | 70 | 6 | N7 | N7 |
| 16:11 | D10 | D10 | 73 | 89 | 56 | 71 | 67 | 66 | 7 | D1 | D1 |
| 17:11 | D11 | D11 | 74 | 90 | 57 | 72 | 69 | 68 | 8 | D2 | D2 |
| 18:11 | D12 | D12 | 67 | 81 | 55 | 67 | 62 | 60 | 9 | D3 | D3 |
| 19:11 | E1 | D13 | 60 | 73 | 55 | 62 | 58 | 57 | 10 | D4 | D4 |
| 20:11 | E2 | D14 | 61 | 87 | 56 | 63 | 58 | 57 | 11 | D5 | D5 |
| 21:11 | E3 | D15 | 59 | 72 | 56 | 61 | 58 | 57 | 12 | D6 | D6 |
| 22:11 | N8 | N8 | 59 | 77 | 55 | 60 | 57 | 56 | 13 | D7 | D7 |
| 23:11 | N9 | N9 | 58 | 71 | 56 | 59 | 57 | 56 | 14 | D8 | D8 |
| 00:11 | N1 | N1 | 58 | 75 | 54 | 58 | 56 | 56 | 15 | D9 | D9 |
| 01:11 | N2 | N2 | 57 | 78 | 53 | 58 | 56 | 56 | 16 | D10 | D10 |
| 02:11 | N3 | N3 | 58 | 71 | 56 | 58 | 57 | 57 | 17 | D11 | D11 |
| 03:11 | N4 | N4 | 57 | 71 | 56 | 58 | 57 | 56 | 18 | D12 | D12 |
| 04:11 | N5 | N5 | 58 | 71 | 56 | 58 | 57 | 57 | 19 | E1 | D13 |
| 05:11 | N6 | N6 | 59 | 74 | 56 | 60 | 58 | 57 | 20 | E2 | D14 |
| 06:11 | N7 | N7 | 61 | 76 | 56 | 63 | 59 | 58 | 21 | E3 | D15 |
| 07:11 | D1 | D1 | 76 | 88 | 59 | 77 | 75 | 73 | 22 | N8 | N8 |
| 08:11 | D2 | D2 | 76 | 88 | 57 | 76 | 74 | 73 | 23 | N9 | N9 |
| | | **largest** | **76** | **90** | **61** | **77** | **75** | **73** | | | |
| 1 | | **smallest** | **57** | **71** | **53** | **58** | **56** | **56** | | | |
| 24-hour | | | 71 | 90 | 53 | 66 | 63 | 62 | | | |
| Leq day | D | | 74 | | | | | | | | |
| Leq eve | E | | 60 | | | | | | | | |
| Leq night | N | | 58 | | | | | | | | |
| CNEL | | | 72 | | | | | | | | |
| Leq day | | D | 73 | | | | | | | | |
| Leq night | | N | 58 | | | | | | | | |
| LDN | | | 72 | | | | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 09:05 | D3 | D3 | 71 | 86 | 55 | 69 | 66 | 65 | 0 | N1 | N1 |
| 10:05 | D4 | D4 | 65 | 81 | 56 | 66 | 64 | 62 | 1 | N2 | N2 |
| 11:05 | D5 | D5 | 64 | 77 | 55 | 65 | 62 | 60 | 2 | N3 | N3 |
| 12:05 | D6 | D6 | 61 | 76 | 54 | 63 | 58 | 56 | 3 | N4 | N4 |
| 13:05 | D7 | D7 | 66 | 79 | 58 | 68 | 64 | 62 | 4 | N5 | N5 |
| 14:05 | D8 | D8 | 64 | 78 | 55 | 66 | 63 | 61 | 5 | N6 | N6 |
| 15:05 | D9 | D9 | 62 | 83 | 54 | 63 | 59 | 58 | 6 | N7 | N7 |
| 16:05 | D10 | D10 | 61 | 78 | 55 | 63 | 59 | 58 | 7 | D1 | D1 |
| 17:05 | D11 | D11 | 64 | 75 | 54 | 65 | 62 | 60 | 8 | D2 | D2 |
| 18:05 | D12 | D12 | 62 | 83 | 54 | 64 | 59 | 57 | 9 | D3 | D3 |
| 19:05 | E1 | D13 | 59 | 75 | 54 | 61 | 57 | 56 | 10 | D4 | D4 |
| 20:05 | E2 | D14 | 59 | 78 | 55 | 61 | 57 | 56 | 11 | D5 | D5 |
| 21:05 | E3 | D15 | 64 | 94 | 56 | 61 | 58 | 57 | 12 | D6 | D6 |
| 22:05 | N8 | N8 | 59 | 73 | 56 | 61 | 58 | 57 | 13 | D7 | D7 |
| 23:05 | N9 | N9 | 58 | 71 | 55 | 59 | 57 | 57 | 14 | D8 | D8 |
| 00:05 | N1 | N1 | 58 | 76 | 55 | 58 | 57 | 56 | 15 | D9 | D9 |
| 01:05 | N2 | N2 | 57 | 70 | 55 | 58 | 57 | 56 | 16 | D10 | D10 |
| 02:05 | N3 | N3 | 57 | 71 | 56 | 58 | 57 | 57 | 17 | D11 | D11 |
| 03:05 | N4 | N4 | 57 | 70 | 56 | 58 | 57 | 57 | 18 | D12 | D12 |
| 04:05 | N5 | N5 | 57 | 72 | 56 | 58 | 57 | 57 | 19 | E1 | D13 |
| 05:05 | N6 | N6 | 58 | 71 | 56 | 59 | 57 | 57 | 20 | E2 | D14 |
| 06:05 | N7 | N7 | 59 | 78 | 56 | 60 | 58 | 57 | 21 | E3 | D15 |
| 07:05 | D1 | D1 | 65 | 82 | 57 | 66 | 63 | 61 | 22 | N8 | N8 |
| 08:05 | D2 | D2 | 70 | 88 | 57 | 69 | 67 | 66 | 23 | N9 | N9 |
| | | **largest** | **71** | **94** | **58** | **69** | **67** | **66** | | | |
| 1 | | **smallest** | **57** | **70** | **54** | **58** | **57** | **56** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 64 | 94 | 54 | 62 | 60 | 59 |
| Leq day | D | | 66 | | | | | |
| Leq eve | E | | 61 | | | | | |
| Leq night | N | | 58 | | | | | |
| CNEL | | | 67 | | | | | |
| Leq day | | D | 65 | | | | | |
| Leq night | | N | 58 | | | | | |
| LDN | | | 67 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:45 | D8 | D8 | 61 | 80 | 51 | 62 | 58 | 55 | 0 | N1 | N1 |
| 15:45 | D9 | D9 | 58 | 79 | 48 | 61 | 56 | 53 | 1 | N2 | N2 |
| 16:45 | D10 | D10 | 58 | 82 | 50 | 60 | 55 | 53 | 2 | N3 | N3 |
| 17:45 | D11 | D11 | 57 | 69 | 50 | 60 | 54 | 52 | 3 | N4 | N4 |
| 18:45 | D12 | D12 | 57 | 79 | 49 | 59 | 53 | 51 | 4 | N5 | N5 |
| 19:45 | E1 | D13 | 56 | 70 | 50 | 58 | 53 | 52 | 5 | N6 | N6 |
| 20:45 | E2 | D14 | 57 | 82 | 51 | 59 | 53 | 52 | 6 | N7 | N7 |
| 21:45 | E3 | D15 | 56 | 75 | 51 | 58 | 53 | 53 | 7 | D1 | D1 |
| 22:45 | N8 | N8 | 54 | 69 | 51 | 56 | 53 | 52 | 8 | D2 | D2 |
| 23:45 | N9 | N9 | 55 | 75 | 52 | 56 | 54 | 53 | 9 | D3 | D3 |
| 00:45 | N1 | N1 | 54 | 66 | 52 | 54 | 53 | 53 | 10 | D4 | D4 |
| 01:45 | N2 | N2 | 53 | 63 | 50 | 53 | 53 | 52 | 11 | D5 | D5 |
| 02:45 | N3 | N3 | 54 | 75 | 51 | 55 | 53 | 53 | 12 | D6 | D6 |
| 03:45 | N4 | N4 | 54 | 67 | 52 | 55 | 53 | 53 | 13 | D7 | D7 |
| 04:45 | N5 | N5 | 56 | 69 | 52 | 57 | 54 | 53 | 14 | D8 | D8 |
| 05:45 | N6 | N6 | 58 | 69 | 52 | 61 | 56 | 54 | 15 | D9 | D9 |
| 06:45 | N7 | N7 | 60 | 80 | 52 | 63 | 57 | 55 | 16 | D10 | D10 |
| 07:45 | D1 | D1 | 59 | 71 | 51 | 61 | 56 | 54 | 17 | D11 | D11 |
| 08:45 | D2 | D2 | 58 | 75 | 50 | 61 | 54 | 52 | 18 | D12 | D12 |
| 09:45 | D3 | D3 | 60 | 79 | 49 | 61 | 55 | 53 | 19 | E1 | D13 |
| 10:45 | D4 | D4 | 64 | 80 | 51 | 64 | 60 | 58 | 20 | E2 | D14 |
| 11:45 | D5 | D5 | 59 | 81 | 49 | 61 | 55 | 52 | 21 | E3 | D15 |
| 12:45 | D6 | D6 | 60 | 79 | 49 | 62 | 55 | 53 | 22 | N8 | N8 |
| 13:45 | D7 | D7 | 60 | 78 | 49 | 62 | 57 | 54 | 23 | N9 | N9 |
| | | **largest** | **64** | **82** | **52** | **64** | **60** | **58** | | | |
| 1 | | **smallest** | **53** | **63** | **48** | **53** | **53** | **51** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 58 | 82 | 48 | 59 | 55 | 53 |
| Leq day | D | | 60 | | | | | |
| Leq eve | E | | 56 | | | | | |
| Leq night | N | | 56 | | | | | |
| CNEL | | | 63 | | | | | |
| Leq day | | D | 59 | | | | | |
| Leq night | | N | 56 | | | | | |
| LDN | | | 63 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:52 | D10 | D10 | 58 | 71 | 50 | 61 | 56 | 53 | 0 | N1 | N1 |
| 17:52 | D11 | D11 | 59 | 78 | 49 | 62 | 56 | 52 | 1 | N2 | N2 |
| 18:52 | D12 | D12 | 58 | 72 | 50 | 61 | 55 | 53 | 2 | N3 | N3 |
| 19:52 | E1 | D13 | 56 | 72 | 48 | 58 | 53 | 52 | 3 | N4 | N4 |
| 20:52 | E2 | D14 | 56 | 69 | 51 | 58 | 53 | 53 | 4 | N5 | N5 |
| 21:52 | E3 | D15 | 55 | 68 | 51 | 57 | 53 | 53 | 5 | N6 | N6 |
| 22:52 | N8 | N8 | 55 | 77 | 52 | 56 | 54 | 53 | 6 | N7 | N7 |
| 23:52 | N9 | N9 | 54 | 66 | 52 | 55 | 54 | 54 | 7 | D1 | D1 |
| 00:52 | N1 | N1 | 56 | 70 | 52 | 56 | 55 | 55 | 8 | D2 | D2 |
| 01:52 | N2 | N2 | 54 | 65 | 52 | 54 | 54 | 53 | 9 | D3 | D3 |
| 02:52 | N3 | N3 | 55 | 72 | 52 | 55 | 54 | 54 | 10 | D4 | D4 |
| 03:52 | N4 | N4 | 55 | 73 | 52 | 56 | 53 | 53 | 11 | D5 | D5 |
| 04:52 | N5 | N5 | 56 | 70 | 52 | 58 | 54 | 54 | 12 | D6 | D6 |
| 05:52 | N6 | N6 | 61 | 82 | 53 | 62 | 57 | 55 | 13 | D7 | D7 |
| 06:52 | N7 | N7 | 60 | 77 | 52 | 63 | 57 | 55 | 14 | D8 | D8 |
| 07:52 | D1 | D1 | 59 | 76 | 49 | 61 | 56 | 53 | 15 | D9 | D9 |
| 08:52 | D2 | D2 | 57 | 73 | 48 | 59 | 54 | 51 | 16 | D10 | D10 |
| 09:52 | D3 | D3 | 57 | 78 | 48 | 60 | 54 | 51 | 17 | D11 | D11 |
| 10:52 | D4 | D4 | 59 | 80 | 47 | 61 | 54 | 51 | 18 | D12 | D12 |
| 11:52 | D5 | D5 | 57 | 70 | 48 | 60 | 55 | 52 | 19 | E1 | D13 |
| 12:52 | D6 | D6 | 62 | 78 | 51 | 63 | 59 | 56 | 20 | E2 | D14 |
| 13:52 | D7 | D7 | 59 | 74 | 53 | 61 | 58 | 56 | 21 | E3 | D15 |
| 14:52 | D8 | D8 | 60 | 73 | 50 | 62 | 58 | 55 | 22 | N8 | N8 |
| 15:52 | D9 | D9 | 64 | 87 | 50 | 64 | 59 | 56 | 23 | N9 | N9 |
| | | **largest** | **64** | **87** | **53** | **64** | **59** | **56** | | | |
| 1 | | **smallest** | **54** | **65** | **47** | **54** | **53** | **51** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 58 | 87 | 47 | 59 | 55 | 53 |
| Leq day | D | | 60 | | | | | |
| Leq eve | E | | 56 | | | | | |
| Leq night | N | | 57 | | | | | |
| CNEL | | | 64 | | | | | |
| Leq day | | D | 59 | | | | | |
| Leq night | | N | 57 | | | | | |
| LDN | | | 64 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17:37 | D11 | D11 | 61 | 88 | 52 | 62 | 58 | 56 | 0 | N1 | N1 |
| 18:37 | D12 | D12 | 58 | 75 | 51 | 61 | 56 | 54 | 1 | N2 | N2 |
| 19:37 | E1 | D13 | 57 | 74 | 52 | 60 | 55 | 53 | 2 | N3 | N3 |
| 20:37 | E2 | D14 | 56 | 69 | 50 | 58 | 53 | 52 | 3 | N4 | N4 |
| 21:37 | E3 | D15 | 56 | 77 | 50 | 57 | 53 | 52 | 4 | N5 | N5 |
| 22:37 | N8 | N8 | 55 | 67 | 51 | 57 | 54 | 53 | 5 | N6 | N6 |
| 23:37 | N9 | N9 | 56 | 75 | 52 | 56 | 54 | 54 | 6 | N7 | N7 |
| 00:37 | N1 | N1 | 55 | 69 | 53 | 56 | 55 | 54 | 7 | D1 | D1 |
| 01:37 | N2 | N2 | 55 | 67 | 52 | 55 | 54 | 54 | 8 | D2 | D2 |
| 02:37 | N3 | N3 | 55 | 73 | 52 | 55 | 54 | 53 | 9 | D3 | D3 |
| 03:37 | N4 | N4 | 54 | 73 | 51 | 55 | 53 | 52 | 10 | D4 | D4 |
| 04:37 | N5 | N5 | 56 | 77 | 52 | 57 | 53 | 53 | 11 | D5 | D5 |
| 05:37 | N6 | N6 | 58 | 71 | 52 | 61 | 56 | 54 | 12 | D6 | D6 |
| 06:37 | N7 | N7 | 61 | 82 | 52 | 64 | 58 | 55 | 13 | D7 | D7 |
| 07:37 | D1 | D1 | 61 | 77 | 51 | 63 | 57 | 54 | 14 | D8 | D8 |
| 08:37 | D2 | D2 | 60 | 72 | 51 | 62 | 58 | 56 | 15 | D9 | D9 |
| 09:37 | D3 | D3 | 61 | 75 | 51 | 63 | 58 | 56 | 16 | D10 | D10 |
| 10:37 | D4 | D4 | 60 | 78 | 52 | 62 | 58 | 55 | 17 | D11 | D11 |
| 11:37 | D5 | D5 | 58 | 72 | 50 | 60 | 56 | 53 | 18 | D12 | D12 |
| 12:37 | D6 | D6 | 60 | 75 | 50 | 62 | 57 | 55 | 19 | E1 | D13 |
| 13:37 | D7 | D7 | 60 | 83 | 50 | 62 | 57 | 54 | 20 | E2 | D14 |
| 14:37 | D8 | D8 | 60 | 79 | 49 | 62 | 57 | 54 | 21 | E3 | D15 |
| 15:37 | D9 | D9 | 61 | 73 | 52 | 63 | 59 | 57 | 22 | N8 | N8 |
| 16:37 | D10 | D10 | 59 | 68 | 51 | 62 | 58 | 55 | 23 | N9 | N9 |
| | | **largest** | **61** | **88** | **53** | **64** | **59** | **57** | | | |
| 1 | | **smallest** | **54** | **67** | **49** | **55** | **53** | **52** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 59 | 88 | 49 | 60 | 56 | 54 |
| Leq day | D | | 60 | | | | | |
| Leq eve | E | | 56 | | | | | |
| Leq night | N | | 57 | | | | | |
| CNEL | | | 64 | | | | | |
| Leq day | | D | 59 | | | | | |
| Leq night | | N | 57 | | | | | |
| LDN | | | 64 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17:09 | D11 | D11 | 60 | 75 | 53 | 62 | 59 | 57 | 0 | N1 | N1 |
| 18:15 | D12 | D12 | 63 | 82 | 52 | 64 | 59 | 57 | 1 | N2 | N2 |
| 19:15 | E1 | D13 | 57 | 76 | 48 | 60 | 54 | 52 | 2 | N3 | N3 |
| 20:15 | E2 | D14 | 56 | 70 | 49 | 59 | 53 | 51 | 3 | N4 | N4 |
| 21:15 | E3 | D15 | 56 | 71 | 50 | 58 | 53 | 52 | 4 | N5 | N5 |
| 22:15 | N8 | N8 | 56 | 72 | 50 | 57 | 53 | 53 | 5 | N6 | N6 |
| 23:15 | N9 | N9 | 59 | 88 | 53 | 57 | 54 | 54 | 6 | N7 | N7 |
| 00:15 | N1 | N1 | 55 | 70 | 52 | 56 | 54 | 54 | 7 | D1 | D1 |
| 01:15 | N2 | N2 | 54 | 66 | 52 | 55 | 54 | 54 | 8 | D2 | D2 |
| 02:15 | N3 | N3 | 54 | 74 | 52 | 55 | 54 | 53 | 9 | D3 | D3 |
| 03:15 | N4 | N4 | 56 | 74 | 52 | 57 | 55 | 55 | 10 | D4 | D4 |
| 04:15 | N5 | N5 | 56 | 71 | 52 | 57 | 55 | 54 | 11 | D5 | D5 |
| 05:15 | N6 | N6 | 61 | 88 | 53 | 61 | 56 | 55 | 12 | D6 | D6 |
| 06:15 | N7 | N7 | 61 | 82 | 52 | 63 | 58 | 56 | 13 | D7 | D7 |
| 07:15 | D1 | D1 | 60 | 73 | 49 | 62 | 58 | 55 | 14 | D8 | D8 |
| 08:15 | D2 | D2 | 61 | 72 | 53 | 63 | 59 | 57 | 15 | D9 | D9 |
| 09:15 | D3 | D3 | 59 | 73 | 49 | 60 | 56 | 54 | 16 | D10 | D10 |
| 10:15 | D4 | D4 | 58 | 73 | 48 | 61 | 56 | 53 | 17 | D11 | D11 |
| 11:15 | D5 | D5 | 58 | 69 | 50 | 60 | 56 | 53 | 18 | D12 | D12 |
| 12:15 | D6 | D6 | 61 | 80 | 50 | 62 | 58 | 56 | 19 | E1 | D13 |
| 13:15 | D7 | D7 | 59 | 75 | 48 | 61 | 56 | 52 | 20 | E2 | D14 |
| 14:15 | D8 | D8 | 61 | 78 | 49 | 62 | 58 | 55 | 21 | E3 | D15 |
| 15:15 | D9 | D9 | 61 | 81 | 52 | 64 | 59 | 56 | 22 | N8 | N8 |
| 16:15 | D10 | D10 | 59 | 71 | 50 | 62 | 57 | 54 | 23 | N9 | N9 |
| | | **largest** | **63** | **88** | **53** | **64** | **59** | **57** | | | |
| 1 | | **smallest** | **54** | **66** | **48** | **55** | **53** | **51** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 59 | 88 | 48 | 60 | 56 | 54 |
| Leq day | D | | 60 | | | | | |
| Leq eve | E | | 56 | | | | | |
| Leq night | N | | 58 | | | | | |
| CNEL | | | 65 | | | | | |
| Leq day | | D | 60 | | | | | |
| Leq night | | N | 58 | | | | | |
| LDN | | | 64 | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:58 | D10 | D10 | 59 | 76 | 49 | 61 | 56 | 54 | 0 | N1 | N1 |
| 17:58 | D11 | D11 | 58 | 73 | 48 | 61 | 55 | 52 | 1 | N2 | N2 |
| 18:58 | D12 | D12 | 56 | 74 | 47 | 59 | 53 | 50 | 2 | N3 | N3 |
| 19:58 | E1 | D13 | 56 | 71 | 49 | 59 | 53 | 51 | 3 | N4 | N4 |
| 20:58 | E2 | D14 | 56 | 75 | 50 | 59 | 53 | 51 | 4 | N5 | N5 |
| 21:58 | E3 | D15 | 56 | 79 | 51 | 58 | 54 | 53 | 5 | N6 | N6 |
| 22:58 | N8 | N8 | 55 | 70 | 51 | 56 | 53 | 53 | 6 | N7 | N7 |
| 23:58 | N9 | N9 | 55 | 71 | 51 | 57 | 54 | 53 | 7 | D1 | D1 |
| 00:58 | N1 | N1 | 54 | 72 | 48 | 55 | 52 | 51 | 8 | D2 | D2 |
| 01:58 | N2 | N2 | 54 | 68 | 49 | 55 | 53 | 52 | 9 | D3 | D3 |
| 02:58 | N3 | N3 | 54 | 69 | 51 | 54 | 53 | 52 | 10 | D4 | D4 |
| 03:58 | N4 | N4 | 55 | 74 | 52 | 55 | 53 | 53 | 11 | D5 | D5 |
| 04:58 | N5 | N5 | 57 | 77 | 52 | 58 | 54 | 53 | 12 | D6 | D6 |
| 05:58 | N6 | N6 | 61 | 86 | 52 | 61 | 56 | 55 | 13 | D7 | D7 |
| 07:01 | D1 | D1 | 66 | 76 | 55 | 68 | 65 | 63 | 14 | D8 | D8 |
| 08:01 | D2 | D2 | 64 | 78 | 55 | 65 | 62 | 60 | 15 | D9 | D9 |
| 09:01 | D3 | D3 | 58 | 81 | 46 | 60 | 54 | 52 | 16 | D10 | D10 |
| 10:01 | D4 | D4 | 58 | 76 | 48 | 60 | 55 | 52 | 17 | D11 | D11 |
| 11:01 | D5 | D5 | 56 | 69 | 48 | 59 | 53 | 51 | 18 | D12 | D12 |
| 12:01 | D6 | D6 | 57 | 73 | 47 | 60 | 54 | 51 | 19 | E1 | D13 |
| 13:01 | D7 | D7 | 58 | 72 | 49 | 61 | 56 | 53 | 20 | E2 | D14 |
| 14:01 | D8 | D8 | 58 | 77 | 49 | 60 | 54 | 52 | 21 | E3 | D15 |
| 15:01 | D9 | D9 | 57 | 75 | 46 | 60 | 53 | 50 | 22 | N8 | N8 |
| 16:01 | D10 | D10 | 57 | 74 | 47 | 60 | 54 | 51 | 23 | N9 | N9 |
| | | **largest** | **66** | **86** | **55** | **68** | **65** | **63** | | | |
| 1 | | **smallest** | **54** | **68** | **46** | **54** | **52** | **50** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 59 | 86 | 46 | 59 | 55 | 53 |
| Leq day | D | | 60 | | | | | |
| Leq eve | E | | 56 | | | | | |
| Leq night | N | | #N/A | | | | | |
| CNEL | | | #N/A | | | | | |
| Leq day | | D | 59 | | | | | |
| Leq night | | N | #N/A | | | | | |
| LDN | | | #N/A | | | | | |

| | CNEL | DNL | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 | | CNEL | DNL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:56 | D10 | D10 | 57 | 69 | 47 | 60 | 54 | 51 | 0 | N1 | N1 |
| 17:56 | D11 | D11 | 58 | 72 | 47 | 61 | 55 | 52 | 1 | N2 | N2 |
| 18:56 | D12 | D12 | 56 | 79 | 47 | 59 | 51 | 49 | 2 | N3 | N3 |
| 19:56 | E1 | D13 | 57 | 76 | 47 | 60 | 53 | 50 | 3 | N4 | N4 |
| 20:56 | E2 | D14 | 63 | 93 | 49 | 59 | 53 | 52 | 4 | N5 | N5 |
| 21:56 | E3 | D15 | 57 | 76 | 51 | 59 | 54 | 53 | 5 | N6 | N6 |
| 22:56 | N8 | N8 | 55 | 69 | 51 | 57 | 53 | 52 | 6 | N7 | N7 |
| 23:56 | N9 | N9 | 57 | 85 | 52 | 57 | 54 | 53 | 7 | D1 | D1 |
| 00:56 | N1 | N1 | 55 | 73 | 51 | 55 | 53 | 53 | 8 | D2 | D2 |
| 01:56 | N2 | N2 | 54 | 70 | 52 | 55 | 53 | 53 | 9 | D3 | D3 |
| 02:56 | N3 | N3 | 54 | 67 | 51 | 54 | 53 | 53 | 10 | D4 | D4 |
| 03:56 | N4 | N4 | 54 | 70 | 52 | 54 | 53 | 53 | 11 | D5 | D5 |
| 04:56 | N5 | N5 | 55 | 72 | 51 | 56 | 53 | 53 | 12 | D6 | D6 |
| 05:56 | N6 | N6 | 56 | 69 | 51 | 57 | 54 | 53 | 13 | D7 | D7 |
| 06:56 | N7 | N7 | 61 | 79 | 52 | 62 | 57 | 55 | 14 | D8 | D8 |
| 07:56 | D1 | D1 | 60 | 77 | 48 | 61 | 56 | 54 | 15 | D9 | D9 |
| 08:56 | D2 | D2 | 58 | 75 | 46 | 60 | 55 | 52 | 16 | D10 | D10 |
| 09:56 | D3 | D3 | 57 | 73 | 46 | 59 | 53 | 51 | 17 | D11 | D11 |
| 10:56 | D4 | D4 | 58 | 75 | 48 | 60 | 55 | 52 | 18 | D12 | D12 |
| 11:56 | D5 | D5 | 57 | 73 | 49 | 60 | 55 | 52 | 19 | E1 | D13 |
| 12:56 | D6 | D6 | 57 | 72 | 49 | 60 | 54 | 52 | 20 | E2 | D14 |
| 13:56 | D7 | D7 | 58 | 75 | 49 | 60 | 55 | 52 | 21 | E3 | D15 |
| 14:56 | D8 | D8 | 58 | 77 | 46 | 60 | 54 | 51 | 22 | N8 | N8 |
| 15:56 | D9 | D9 | 59 | 82 | 46 | 61 | 55 | 52 | 23 | N9 | N9 |
| | | **largest** | **63** | **93** | **52** | **62** | **57** | **55** | | | |
| 1 | | **smallest** | **54** | **67** | **46** | **54** | **51** | **49** | | | |

| | | | LAeq | LASmax | LASmin | LA10 | LA50 | LA90 |
|---|---|---|---|---|---|---|---|---|
| 24-hour | | | 58 | 93 | 46 | 59 | 54 | 52 |
| Leq day | D | | 58 | | | | | |
| Leq eve | E | | 60 | | | | | |
| Leq night | N | | 56 | | | | | |
| CNEL | | | 64 | | | | | |
| Leq day | | D | 58 | | | | | |
| Leq night | | N | 56 | | | | | |
| LDN | | | 63 | | | | | |

## Baseline Noise Level Methodology

### Outdoor Ambient Sound Level Survey

Outdoor ambient sound pressure levels (SPL) were collected at successive one-minute intervals with a deployed stationary American National Standards Institute (ANSI) Type 2 sound level meter (SLM) at each of two Ventura Compressor Station (VCS) onsite locations as depicted in Figure M-1. The SLM at the northern monitoring location (NML) was a SoftdB "Piccolo II" model integrating SLM (with last four digits of serial number [SN] = 2101); and, the SLM at the southern monitoring location (SML) was also a Piccolo II model (SN=2203). Exhibit M-5.1 displays a sample photograph of the SLM deployed at the NML position.

**Exhibit 1** – Sample photograph, looking north, of the deployed sound level meter (encircled with yellow dashes) at the northern monitoring location (NML) onsite near the Ventura Compressor Station (VCS) access gate during the June 2021 field survey

The collection of SPL data, with its corresponding acoustical metrics (e.g., $L_{eq}$, $L_{max}$, $L_{min}$) and statistical values (e.g., $L_{10}$, $L_{50}$, $L_{90}$, etc.), was performed at one-minute intervals to help provide analysis granularity and help identify particular noise-producing events, such as distinguishing a short-duration onsite operational valve blowdown from onsite construction activities. Values from these intervals were then mathematically consolidated to arrive at hourly values as depicted in the summarized data tables appearing in this Appendix M. These tables present the hourly results (the aforementioned three acoustical metrics and three statistical values) of the identified 24-hour period that was monitored, as well as largest and smallest values of each.

Because onsite construction activity did not occur during nighttime hours, the smallest hourly $L_{eq}$ value over the course of a monitored 24-hour period, typically occurring a nighttime hour (i.e., associated with a timeframe tagged as one of the nine nighttime hours "N1" through "N9" in the summary table), would identify a period of time during which generally steady-state or continuous operation noise from the Ventura Compressor Station compressor systems would be—in the absence of construction noise and roadway traffic noise that reflects heavier volumes during daytime hours—the dominant contributor to the measurable outdoor ambient sound environment. Such $L_{eq}$ values during these nighttime hours are also, within 3 dB or less and as shown in Table 5.13-1 of the PEA, very comparable to the "low" $L_{90}$ values, which further supports that these low $L_{eq}$ values during these nighttime periods indeed represent operating VCS compressor systems. In other words, small differences between $L_{eq}$ and $L_{90}$ values mean that measured noise varies only slightly over a period of time, which is characteristic of a steady-state or continuously operating electro-mechanical equipment such as the compressors.

## Correction to Full Load Operations

Compressor load data was provided by SoCal Gas at hourly intervals for each of the three operating compressors during the June 21, 2021 through June 28, 2021 baseline outdoor ambient sound level survey. During this period, only up to two of the three compressors were active at any one time during the 192 successive hours and each active compressor operated at a load averaging at 87%. Aside from only two hours on June 24$^{th}$ (12 noon to 2 p.m.) when just one compressor was active, and thirteen hours on June 28$^{th}$ (11 a.m. to 12 a.m.) when no compressors were active, two compressors were active and operating at these 87% average loads for a total of 177 hours (or 92% of the survey period).

SoCal Gas also provided data for a more recent operation period, two years after that of the preceding survey: June 21, 2023 to June 28, 2023. During this later time, it was documented that up to all three compressors were operating and each at a load averaging 91%. Aside from nine hours when only two compressors were active, three hours when just one compressor was active, and three hours when no compressors were active, three compressors were active and operating at these 91% average loads for a total of 177 hours (or 92% of the survey period).

The preceding subsection has established that low measured $L_{eq}$ values during nighttime hours that are comparable to statistically low $L_{90}$ values from the outdoor ambient sound level survey measurement data represent existing VCS operations noise. Therefore, since compressor activity logs during the survey period indicate that only two of three VCS compressors were operating at nearly full load, then one would reasonably expect that operation of all three VCS compressors at similar load conditions would result in higher $L_{eq}$ values at the survey locations and offsite as sound propagates beyond the VCS boundary into the surrounding commercial and residential neighborhoods. This higher $L_{eq}$ value can be reasonably estimated based on the following acoustical principles and mathematical derivation:

- Operation noise generated by a VCS compressor includes not only the compressor machinery housed within the existing station building but associated indoor and outdoor acoustical contributors such as air intakes, exhausts, and so on that in aggregate represents a noise-producing system. The aggregate noise level from such an operating compressor system would thus depend on its load conditions, resulting in some net sound level "X" dBA associated with that load condition.
- If there are two operating compressor systems sharing the same equipment and other features, and are operating under comparable load conditions, then one can reasonably conclude that each system would yield X dBA. In acoustical combination and with respect to a receiver position in the same direction and distance from these two sound-emitting systems, the result would be X+3 dBA on the basis of logarithmically adding two identical sound sources: X+10*LOG(2).
- Since the $L_{eq}$ values represent the noise level of two VCS compressors operating at nearly full load conditions and thus with a net noise level of X+3 dBA, one can estimate the effect of logarithmically adding noise of a third compressor system, which has the same features as the other two and operating at comparable load conditions, with the following expressions:
  - Noise level from two compressors = X+10*LOG(2) = X+3
  - Noise level from three compressors = X+10*LOG(3) = X+4.8
  - The dB difference between three operating compressors and two operating compressors is thus 4.8-3 = 1.8 dB.

Hence, to accurately estimate the $L_{eq}$ value for three operating existing VCS compressor systems, and thus better represent "full load" operating conditions from the facility, one adds 1.8 dB to the empirically based result for two operating systems. This upward adjustment is reflected in PEA Section 5.13 and informs the noise assessment.

# Attachment B

## Operation Noise Prediction Model Inputs

**Sound Levels (local)**

| Name | ID | Type | 1/3 Oktave Spectrum (dB) Weight. | 25 | 31.5 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 | A | lin | Source |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| new EDC bldg long wall panel | EDCBLWP | Lw | A | | 72 | | | 79 | | | 83 | | | 86 | | | 75 | | | 67 | | | 59 | | | 54 | | | 50 | | 88.6 | 112.6 | calcd |
| old VCS bldg long wall panel | VCSBLWP | Lw | A | | 73 | | | 81 | | | 85 | | | 87 | | | 76 | | | 68 | | | 60 | | | 56 | | | 52 | | 90 | 113.9 | calcd |
| new EDC bldg short wall panel | EDCBSWP | Lw | A | | 71 | | | 78 | | | 72 | | | 84 | | | 74 | | | 66 | | | 57 | | | 53 | | | 49 | | 85.7 | 111.4 | calcd |
| old VCS bldg short wall panel | VCSBSWP | Lw | A | | 71 | | | 79 | | | 83 | | | 85 | | | 75 | | | 66 | | | 58 | | | 54 | | | 50 | | 88.1 | 111.9 | calcd |
| new EDC bldg roof panel | EDCBRP | Lw | A | | 75 | | | 82 | | | 86 | | | 89 | | | 78 | | | 70 | | | 61 | | | 57 | | | 53 | | 91.6 | 115.6 | calcd |
| old VCS bldg roof panel | VCSBRP | Lw | A | | 74 | | | 82 | | | 86 | | | 88 | | | 78 | | | 69 | | | 61 | | | 57 | | | 53 | | 91.1 | 114.9 | calcd |
| new EDC bldg pers access door | EDCBPAD | Lw | A | | 39 | | | 46 | | | 49 | | | 59 | | | 56 | | | 55 | | | 54 | | | 44 | | | 40 | | 62.8 | 79.8 | calcd |
| old VCS bldg pers access door | VCSBPAD | Lw | A | | 41 | | | 49 | | | 52 | | | 61 | | | 58 | | | 57 | | | 57 | | | 47 | | | 43 | | 65.1 | 82.1 | calcd |
| new EDC bldg roll-up door | EDCBRUD | Lw | A | | 51 | | | 58 | | | 62 | | | 71 | | | 69 | | | 65 | | | 51 | | | 43 | | | 39 | | 74.2 | 91.9 | calcd |
| old VCS bldg roll-up door | VCSBRUD | Lw | A | | 53 | | | 61 | | | 65 | | | 73 | | | 71 | | | 67 | | | 54 | | | 46 | | | 42 | | 76.3 | 94.1 | calcd |
| new EDC bldg window | EDCBWIN | Lw | A | | 41 | | | 48 | | | 52 | | | 58 | | | 54 | | | 55 | | | 54 | | | 39 | | | 35 | | 62.3 | 81.7 | calcd |
| old VCS bldg window | VCSBWIN | Lw | A | | 43 | | | 51 | | | 55 | | | 60 | | | 57 | | | 57 | | | 56 | | | 42 | | | 38 | | 64.6 | 83.9 | calcd |
| new EDC bldg vent fan port | EDCBVFP | Lw | A | | 46 | | | 53 | | | 62 | | | 69 | | | 63 | | | 60 | | | 61 | | | 61 | | | 62 | | 72.3 | 87.5 | calcd |
| old VCS bldg vent fan port | VCSBVFP | Lw | A | | 48 | | | 56 | | | 65 | | | 71 | | | 66 | | | 62 | | | 63 | | | 64 | | | 65 | | 74.7 | 89.8 | calcd |
| new EDC bldg acoustic ridge vent | EDCBARV | Lw | A | | 45 | | | 58 | | | 65 | | | 75 | | | 72 | | | 77 | | | 76 | | | 75 | | | 75 | | 83.1 | 90.3 | calcd |
| old VCS bldg acoustic ridge vent | VCSBARV | Lw | A | | 45 | | | 59 | | | 65 | | | 74 | | | 72 | | | 76 | | | 76 | | | 75 | | | 75 | | 82.7 | 90.4 | calcd |
| compressor electric motor | CEM | Lw | A | | 49 | | | 64 | | | 76 | | | 84 | | | 90 | | | 93 | | | 99 | | | 89 | | | 80 | | 100.8 | 102.1 | ENC 2nd ed. |
| substation transformer | SUBT | Lw | A | | 43 | | | 62 | | | 74 | | | 76 | | | 82 | | | 79 | | | 75 | | | 70 | | | 61 | | 85.4 | 94.1 | EEI EPPENG 4.2.5 |
| discharge gas air cooler | DGAC | Lw | A | | 46 | | | 72 | | | 80 | | | 84 | | | 87 | | | 87 | | | 85 | | | 81 | | | 74 | | 92.6 | 101.7 | client data |
| comp electric motor blower inlet | CEMBI | Lw | A | | 50 | | | 63 | | | 71 | | | 84 | | | 83 | | | 84 | | | 85 | | | 83 | | | 73 | | 91 | 97.1 | client data |
| comp electric motor blower outlet | CEMBO | Lw | A | | 57 | | | 70 | | | 75 | | | 87 | | | 87 | | | 88 | | | 86 | | | 84 | | | 73 | | 93.7 | 101.9 | client data |
| gas engine exhaust (silenced) | GEXH | Lw | A | | 37 | | | 68 | | | 79 | | | 88 | | | 90 | | | 93 | | | 94 | | | 92 | | | 80 | | 99 | 102.5 | client data |
| gas engine jacket water cooler | GEJWC | Lw | | | 83 | | | 96 | | | 94 | | | 91 | | | 88 | | | 85 | | | 82 | | | 78 | | | 73 | | 90.7 | 99.6 | client data |
| air-cooled condenser (chiller) 5-ton | ACC5 | Lw | | | 61.7 | | | 61.7 | | | 61.7 | | | 65.6 | | | 68.1 | | | 65.8 | | | 59.8 | | | 58.4 | | | 56.1 | | 69.9 | 73.1 | Bryant BH16-060 no sound blanket |

**Point Sources**

| Name | Sel. | M. | ID | Result. PWL Day (dBA) | Evening (dBA) | Night (dBA) | Lw / Li Type | Value | norm. dB(A) | Correction Day dB(A) | Evening dB(A) | Night dB(A) | Sound Reduction R | Area (ft²) | Attenuatio | Operating Time Day (min) | Special (min) | Night (min) | K0 (dB) | Freq. (Hz) | Direct. | Height (ft) | Coordinates X (ft) | Y (ft) | Z (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gas engine exhaust stack terminus | | | GEXT | 99 | 99 | 99 | Lw | GEXH | | 0 | 0 | 0 | | | | | | | 0 | | Chimney (\ | 0.25 g | 1081.05 | 1219.92 | 48.25 |
| gas engine exhaust stack terminus | | | GEXT | 99 | 99 | 99 | Lw | GEXH | | 0 | 0 | 0 | | | | | | | 0 | | Chimney (\ | 0.25 g | 1075.09 | 1196.04 | 48.25 |
| gas engine exhaust stack terminus | | | GEXT | 99 | 99 | 99 | Lw | GEXH | | 0 | 0 | 0 | | | | | | | 0 | | Chimney (\ | 0.25 g | 1069.73 | 1172.95 | 48.25 |
| Trane 5-ton HVAC unit | | | ACC1 | 87 | 87 | 87 | Lw | ACC5 | | 0 | 0 | 0 | | | -17.1 | | | | 0 | | (none) | 5 r | 1323.1 | 718.95 | 5 |
| Trane 5-ton HVAC unit | | | ACC1 | 87 | 87 | 87 | Lw | ACC5 | | 0 | 0 | 0 | | | -17.1 | | | | 0 | | (none) | 5 r | 1323.39 | 720.58 | 5 |

**Area Sources**

| Name | Sel. | M. | ID | Result. PWL Day (dBA) | Evening (dBA) | Night (dBA) | Result. PWL'' Day (dBA) | Evening (dBA) | Night (dBA) | Lw / Li Type | Value | norm. dB(A) | Correction Day dB(A) | Evening dB(A) | Night dB(A) | Sound Reduction R | Area (ft²) | Attenuatio | Operating Time Day (min) | Special (min) | Night (min) | K0 (dB) | Freq. (Hz) | Direct. | Moving Pt. Src Number Day | Evening | Night |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| new EDC bldg roof | | | EDCBR | 91.6 | 91.6 | 91.6 | 64.4 | 64.4 | 64.4 | Lw | EDCBRP | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new EDC bldg ridge vent | | | EDCBRV | 83.1 | 83.1 | 83.1 | 69.5 | 69.5 | 69.5 | Lw | EDCBARV | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| filter separation area | | | FSA | 97.5 | 97.5 | 97.5 | 79.4 | 79.4 | 79.4 | Lw | 88 | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| VRU area | | | VRUA | 93 | 93 | 93 | 77.3 | 77.3 | 77.3 | Lw | 80.5 | | 0 | 0 | 0 | | | -3 | | | | 0 | | (none) | | | |
| new EDC bldg fan port | | | EDCBFP | 72.3 | 72.3 | 72.3 | 71.7 | 71.7 | 71.7 | Lw | EDCBVFP | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new EDCp bldg fan port | | | EDCBFP | 72.3 | 72.3 | 72.3 | 71.7 | 71.7 | 71.7 | Lw | EDCBVFP | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new EDC bldg fan port | | | EDCBFP | 72.3 | 72.3 | 72.3 | 71.7 | 71.7 | 71.7 | Lw | EDCBVFP | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas discharge cooler | | | GDC | 92.6 | 92.6 | 92.6 | 79.1 | 79.1 | 79.1 | Lw | DGAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| VFD building | | | VFDB | 85 | 85 | 85 | 69.5 | 69.5 | 69.5 | Lw | 75.5 | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| electric motor and blower inlet and outlet | | | EMBIO | 102 | 102 | 102 | 90.1 | 90.1 | 90.1 | Lw | CEMBI++CEMBO++CE | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| transformer | | | XMFR | 85.4 | 85.4 | 85.4 | 74.9 | 74.9 | 74.9 | Lw | SUBT | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| transformer | | | XMFR | 85.4 | 85.4 | 85.4 | 74.9 | 74.9 | 74.9 | Lw | SUBT | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| electric motor and blower inlet and outlet | | | EMBIO | 102 | 102 | 102 | 90.1 | 90.1 | 90.1 | Lw | CEMBI++CEMBO++CE | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas discharge cooler | | | GDC | 92.6 | 92.6 | 92.6 | 79.1 | 79.1 | 79.1 | Lw | DGAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas discharge cooler | | | GDC | 92.6 | 92.6 | 92.6 | 79.1 | 79.1 | 79.1 | Lw | DGAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas discharge cooler | | | GDC | 92.6 | 92.6 | 92.6 | 79.1 | 79.1 | 79.1 | Lw | DGAC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| old VCS bldg ridge vent | | | VCSBRV | 82.7 | 82.7 | 82.7 | 68.9 | 68.9 | 68.9 | Lw | VCSBARV | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| old VCS bldg roof | | | VCSBR | 91.1 | 91.1 | 91.1 | 65.4 | 65.4 | 65.4 | Lw | VCSBRP | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new comp gas engine air intake (silenced) | | | NCGEAI | 91 | 91 | 91 | 90.5 | 90.5 | 90.5 | Lw | 81.5 | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new comp gas engine air intake (silenced) | | | NCGEAI | 91 | 91 | 91 | 90.5 | 90.5 | 90.5 | Lw | 81.5 | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| new comp gas engine air intake (silenced) | | | NCGEAI | 91 | 91 | 91 | 90.5 | 90.5 | 90.5 | Lw | 81.5 | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas compressor engine cooler | | | GCEC | 90.7 | 90.7 | 90.7 | 81.9 | 81.9 | 81.9 | Lw | GEJWC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas compressor engine cooler | | | GCEC | 90.7 | 90.7 | 90.7 | 81.9 | 81.9 | 81.9 | Lw | GEJWC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |
| gas compressor engine cooler | | | GCEC | 90.7 | 90.7 | 90.7 | 81.9 | 81.9 | 81.9 | Lw | GEJWC | | 0 | 0 | 0 | | | | | | | 0 | | (none) | | | |

**Vertical Area Sources**

| Name | Sel. | M. | ID | Result. PWL Day (dBA) | Evening (dBA) | Night (dBA) | Result. PWL'' Day (dBA) | Evening (dBA) | Night (dBA) | Lw / Li Type | Value | norm. dB(A) | Correction Day dB(A) | Evening dB(A) | Night dB(A) | Sound Reduction R | Area (ft²) | Attenuatio | Operating Time Day (min) | Special (min) | Night (min) | K0 (dB) | Freq. (Hz) | Direct. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| new EDC bldg roll-up door | | | EDCBRD | 74.2 | 74.2 | 74.2 | 61.5 | 61.5 | 61.5 | Lw | EDCBRUD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg pers door | | | EDCBPD | 62.8 | 62.8 | 62.8 | 58.2 | 58.2 | 58.2 | Lw | EDCBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg pers door on stairs | | | EDCBPDOS | 62.8 | 62.8 | 62.8 | 58.5 | 58.5 | 58.5 | Lw | EDCBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg pers door on stairs | | | EDCBPDOS | 62.8 | 62.8 | 62.8 | 57.9 | 57.9 | 57.9 | Lw | EDCBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg window | | | EDCBW | 62.3 | 62.3 | 62.3 | 55 | 55 | 55 | Lw | EDCBWIN | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg window | | | EDCBW | 62.3 | 62.3 | 62.3 | 54.7 | 54.7 | 54.7 | Lw | EDCBWIN | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg window | | | EDCBW | 62.3 | 62.3 | 62.3 | 55.2 | 55.2 | 55.2 | Lw | EDCBWIN | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg window | | | EDCBW | 62.3 | 62.3 | 62.3 | 54.2 | 54.2 | 54.2 | Lw | EDCBWIN | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg window | | | EDCBW | 62.3 | 62.3 | 62.3 | 54 | 54 | 54 | Lw | EDCBWIN | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg long wall | | | EDCBLW | 88.6 | 88.6 | 88.6 | 63.3 | 63.3 | 63.3 | Lw | EDCBLWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg long wall | | | EDCBLW | 88.6 | 88.6 | 88.6 | 63.3 | 63.3 | 63.3 | Lw | EDCBLWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg short wall | | | EDCBSW | 85.7 | 85.7 | 85.7 | 62.2 | 62.2 | 62.2 | Lw | EDCBSWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg short wall | | | EDCBSW | 85.7 | 85.7 | 85.7 | 62.3 | 62.3 | 62.3 | Lw | EDCBSWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| new EDC bldg pers door on stairs | | | EDCBPDOS | 62.8 | 62.8 | 62.8 | 57.6 | 57.6 | 57.6 | Lw | EDCBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg long wall | | | VCSBLW | 90 | 90 | 90 | 65.6 | 65.6 | 65.6 | Lw | VCSBLWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg short wall | | | VCSBSW | 88.1 | 88.1 | 88.1 | 66.4 | 66.4 | 66.4 | Lw | VCSBSWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg short wall | | | VCSBSW | 88.1 | 88.1 | 88.1 | 66.4 | 66.4 | 66.4 | Lw | VCSBSWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg long wall | | | VCSBLW | 90 | 90 | 90 | 65.6 | 65.6 | 65.6 | Lw | VCSBLWP | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg pers door on stairs | | | VCSBPDOS | 65.1 | 65.1 | 65.1 | 59.9 | 59.9 | 59.9 | Lw | VCSBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg pers door on stairs | | | VCSBPDOS | 65.1 | 65.1 | 65.1 | 60.2 | 60.2 | 60.2 | Lw | VCSBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |
| old VCS bldg pers door on stairs | | | VCSBPDOS | 65.1 | 65.1 | 65.1 | 60 | 60 | 60 | Lw | VCSBPAD | | 0 | 0 | 0 | | | | | | | 3 | | (none) |