

Technical Memorandum

To: EPC Environmental, Inc. Ernest Perea

From: Kevin P. Carr, MS., KPC EHS Consultants

Date: July 9, 2022

Re: Adelanto 35 Development Project – Noise Assessment

1.0 Purpose

The purpose of this memorandum is to document the impacts of construction, mobile, and operational noise as it relates to the potential environmental impacts associated with the construction and operation of the proposed warehouse project on 34.8 acres.

2.0 Project Location & Description

2.1 Project Location: The proposed project site is located in the City of Adelanto, San Bernardino, California on the south side of Rancho Road, west of Adelanto Road, and east of Mesa Linda Road, and is referred to as APN: 3128-291-03-000.

2.2 Description: The Applicant is proposing to develop a 656,910 square foot (sf) warehouse/distribution facility consisting of 646,910 sf warehouse (485,182 sf non-refrigerated warehouse and 161,728 sf cold storage), 10,000 sf office space, 340 automobile parking spaces, and 161 trailer stalls on an approximately 34.8 - acre vacant parcel.

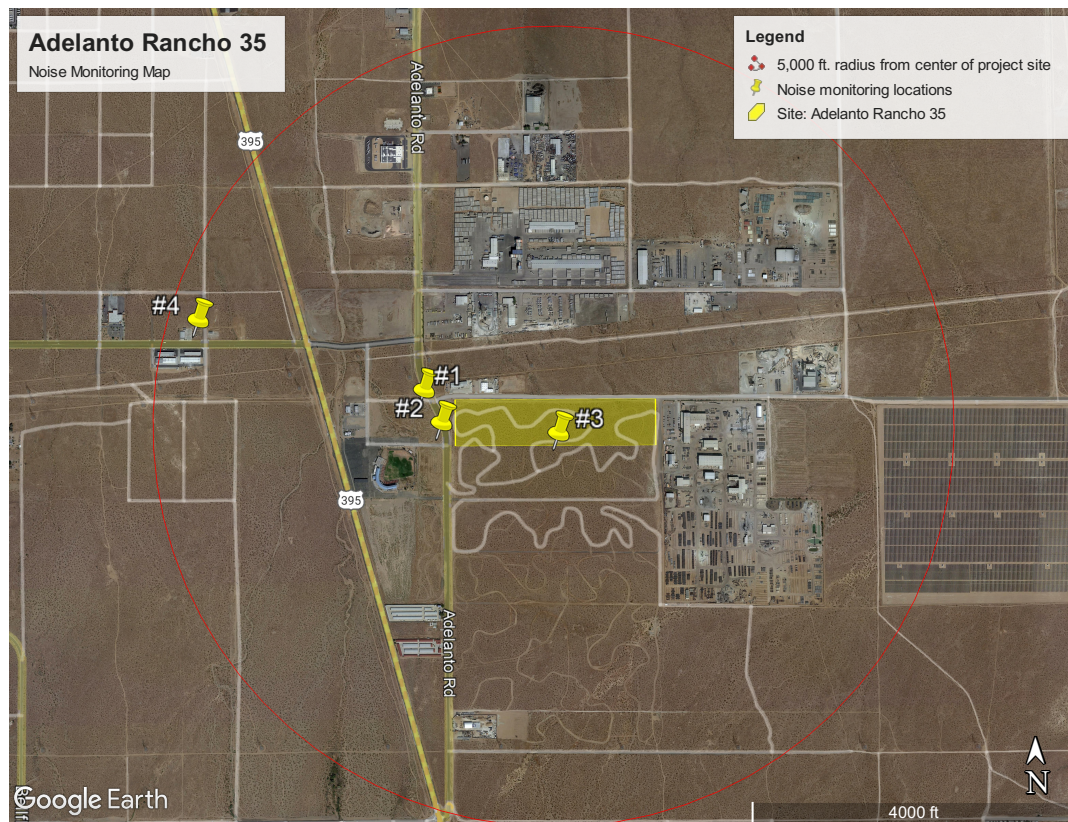
3.0 Noise Impacts

3.1 Ambient Noise: The primary sources for existing ambient noise in the Project area is from traffic and industrial uses. Traffic generated noise is from adjacent Adelanto and Rancho Roads, and Highway 395 which is approximately ¼ mile to the west. The Southern California Logistics Airport is located approximately 1.6 miles northeast. Industrial uses surrounding the Project area are listed in Table 1 below with approximate distance(s) to the site.

Business	Location	Distance
Northwest Pipe Company	Immediately east on Primrose St. and Rancho Rd.	Less than 100 feet from east boundary.
Robertson's Ready Mix and Apex Bulk Commodities	North at Violet Rd. and Adelanto Rd.	Approximately 900 feet north from north boundary.
YRC Freight, Fast Lane Transportation, and View Quality Truck Bodies.	North at Violet Rd. and Adelanto Rd.	Approximately 1,500 feet north from north boundary

3.1.1 Existing Ambient Noise Level Measurements: To assess the existing noise level environment short-term noise measurements were obtained from 4 locations in the Project study area. Exhibit 3-A Noise Monitoring Map, provides the boundaries of the Project site, a 5,000-foot radius from the center of the site, and the locations of the noise level measurements. Table 3.1 Ambient Noise Level Measurements, provides the noise measurements.

Exhibit 3-A Noise Monitoring Map



3.1.2 Sensitive Receptors (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, churches, nursing homes, auditoriums, concert halls, amphitheatres, playgrounds and parks are considered noise-sensitive. The nearest sensitive receptor to the Project site is the Adelanto Medical Clinic located at 11678 Rancho Road, approximately 3,270 feet to the west.

Table 3.1 Ambient Noise Level Measurements

Location	Distance to Project Boundary	Description	Average Noise Level dBA (Leq)	CNEL
#1	450 feet	Old Rancho Road & Adelanto Road	57.3	64.0
#2	300 feet	Stadium Way & Adelanto Road	57.1	63.8
#3	285 N/S – 1,300 E/W	Center of Site	55.7	62.4
#4	3,270 feet	Adelanto Medical Clinic (11678 Rancho Road)	61.0	67.7

3.2 Construction Noise: Construction activities that would create noise include: site preparation, grading, building construction, paving, and architectural coating. Noise levels associated with the construction will vary with the different types of construction equipment, the duration of the activity, and distance from the source. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing levels within the Project vicinity. The nearest sensitive receptor to the Project site is the Adelanto Medical Clinic, located 3,270 feet west of the property western boundary. To estimate the potential impact of construction noise at the nearest sensitive receptor the Adelanto Medical Clinic, as well as nearby commercial and industrial land uses (current and future), equipment that is expected to be used during construction was input into the Federal Highway Administration Roadway Construction Noise Model (RCNM) to generate anticipated noise levels. The RCNM generates the maximum noise levels (Lmax) and the equivalent continuous sound level (Leq). The Leq is a calculation of the anticipated steady sound pressure level which, over a given time period (day, evening, night) has the same total energy as the actual fluctuating noise. The RCNM also uses an acoustical use factor in the noise calculations. The acoustical use factor is the percentage of time each piece of construction equipment is assumed to be operating at the full power level and is used to estimate the Leq values from the Lmax values. For example, typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels will be loudest during the site preparation and grading phases. Table 3.2, *Construction Equipment Noise Levels at the Nearest Receptor*, identifies the level of noise generated by construction equipment.

Table 3.2 Construction Equipment Noise Levels at the Nearest Receptor

Source	Approximate Distance to Nearest Receptor ¹ (Property Line to Construction Site) (feet)	Sound Level at Nearest Receptor		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	3,270	41.2	40	37.3
Compactor (ground)	3,270	46.9	20	39.9
Compressor (air)	3,270	41.4	40	37.4
Crane	3,270	44.2	16	36.3
Compactor (ground)	3,270	46.9	20	39.9
Concrete Mixer Truck	3,270	42.5	40	38.5
Dozer	3,270	45.4	40	41.4
Dump Truck	3,270	40.1	40	36.2
Excavator	3,270	44.4	40	40.4
Front End Loader	3,270	42.8	40	38.8
Generator	3,270	44.3	50	41.3
Grader	3,270	48.7	40	44.7
Offroad Forklift	3,270	47.1	40	43.1
Paver	3,270	40.9	50	37.9
Pickup Truck	3,270	38.7	40	34.7
Roller	3,270	43.7	20	36.7
Scraper	3,270	47.3	40	43.3
Welder / Torch	3,270	37.7	40	33.7

1. Nearest Receptor – Adelanto High School.
Source: FHWA – RCNM Version 1.1

The properties immediately adjacent and surrounding the Project site are industrial uses or vacant undeveloped parcels (zoned Mixed Use and Industrial) additionally, the nearest sensitive receptors are located over 1/2 mile away and the Project would be compatible with surrounding land uses and would not adversely impact sensitive receptors.

The City of Adelanto has set restrictions to control noise impacts from construction activities. Section 17.90.020(d)(1) of the Adelanto Municipal Code restricts construction activities between the hours of 7:00 AM to dusk on weekdays, and construction will not occur on weekends or state holidays.

Noise generation related to construction activities is addressed in §17.90.020(d) of the Zoning Ordinance which requires construction projects to list general noise reduction practices as “General Notes” on the construction drawings as part of the Project’s conditions of approval (COA). These mandatory conditions are described as follows:

17.90.020 (d) Construction Practices

To reduce potential noise and air quality nuisances, the following items shall be listed as "General Notes" on the construction drawings:

(1) Construction activity and equipment maintenance is limited to the hours between 7:00 a.m. to dusk on weekdays. Construction may not occur on weekends or State holidays, without prior consent of the Building Official. Non-noise generating activities (e.g., interior painting) are not subject to these restrictions. City and State construction projects, such as road re-building or resurfacing, and any construction activity that is in response to an emergency, shall be exempt from this requirement.

(2) Stationary construction equipment that generates noise in excess of sixty-five (65) dBA at the project boundaries must be acoustically shielded and located at least one hundred feet (100') from occupied residences. The equipment area with appropriate acoustic shielding shall be designated on building and grading plans. Equipment and shielding shall remain in the designated location throughout construction activities.

(3) Construction routes are limited to City of Adelanto designated truck routes.

(4) Water trucks or sprinkler systems shall be used during clearing, grading, earth moving, excavation, or transportation of cut or fill materials to prevent dust from leaving the site and to create a crust after each day's activities cease. At a minimum, this would include wetting down such areas in the later morning and after work is completed for the day and whenever wind exceeds fifteen (15) miles per hour.

(5) A person or persons shall be designated to monitor the dust control program and to order increased watering as necessary to prevent transport of dust off-site. The name and telephone number of such person(s) shall be provided to the City.

(6) All grading equipment shall be kept in good working order per factory specifications.

With implementation of the above standard conditions of approval, construction noise impacts would be less than significant.

While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels. Therefore, to evaluate whether the Project will generate a substantial increase in the short-term noise levels at the offsite sensitive receptors (residences), the construction-related noise level threshold is based on the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL) for occupation noise exposure at 85 dBA, as an 8-hour time-weighted average (85 dBA – 8-hr TWA). Using the equipment from the Air Quality GHG Technical Memorandum CalEEMod data for the Site Preparation and Grading Phases, each piece of equipment operating at the same time in the same location for a full 8-hour period was calculated with results provided in Table 3.3, Worse Case Construction Noise Levels (Site Preparation & Grading)

Table 3.3 Worse Case Construction Noise Levels (Site Preparation & Grading)

Phase	Equipment Type	Number of Units	Leq dBA/unit	Leq dBA Total
Site Preparation	Tractor/Loader/Backhoe	4	58	
Site Preparation	Rubber Tired Dozer	3	62.1	
Site Preparation	Total Noise Level			68.69
Grading	Grader	1	65.5	
Grading	Tractor/Loader/Backhoe	2	58	
Grading	Rubber Tired Dozer	3	62.1	
Grading	Excavator	2	61.2	
Grading	Scrapers	2	64	
Grading	Total Noise Level			72.39

The highest equipment noise level at the nearest sensitive receptor as indicated in Table 3.2 will be at 48.7 dBA (Lmax) and 44.7 dBA (LEQ). During the construction phase the noise levels will be the highest as heavy equipment pass along the Project site boundaries. During the site preparation and grading phases which produce the highest noise levels, equipment will not be stationary, rather equipment will be moving throughout the site and varying speeds and power levels and as a result not operating at the maximum noise level for the entire work day.

The levels of noise at the nearest receptor as indicated in Table 3.2 and 3.3 are all below the NIOSH REL of 85 dBA 8-hour TWA, and would be less than significant. Construction noise is of short-term duration and will not present any long-term impacts on the project site or the surrounding area.

3.3 Operational Noise:

3.3.1 Offsite Traffic Noise Impacts.

Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The primary source of noise generated by the Project will be from the vehicle traffic generated by the vehicle ingress and egress to the Project site. Under existing conditions, the site does not generate any traffic noise that impacts the surrounding area.

According to the Federal Highway Administration, *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, the level of roadway traffic noise depends on three things: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of the traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater numbers of trucks. These factors are discussed below.

- *The Volume of the Traffic*

Upon buildout, the proposed Project is expected to generate approximately 1,126 average daily vehicle trips, from both passenger cars and trucks, of which 231 (20.5 %) will be from trucks. The morning and afternoon peak hour truck traffic is calculated to be 25 ADT and 27 ADT respectively, which will increase the ambient traffic noise levels in the vicinity of the Project site in comparison to the existing site conditions (industrial and vacant land).

The current average daily vehicle trips along Adelanto Drive north of Air Expressway is approximately 1,180 average daily vehicle trips (ADT), assuming all the Project traffic 1,126 ADT take Adelanto Drive, the results would not be a doubling of traffic volume. Additionally, noise analysis performed as part of the Southern California Logistics Airport Lot 44 Distribution Center indicate that noise levels along Adelanto Drive around Air Expressway have been calculated at 51 dBA CNEL 100 feet from the roadway centerline.

According to Caltrans, the human ear is able to begin to detect sound level increases of 3 decibels (dB) in typical noisy environments.¹ A doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dBA increase in sound, would generally be barely detectable. Implementation of the Project will increase traffic volumes in the area occurring along Inland Center Drive and Hillcrest Avenue but not to the extent that traffic volumes will be doubled creating a +3dBA noise increase or result in a perceivable noise increase. Therefore, operational noise impacts would be less than significant.

- *The Speed of Traffic*

Adelanto Road is a 4 lane is classified as a Major Boulevard and has a speed limit of 45 mph. Rancho Road is a generally 2 lane road classified as a Major Arterial Highway and has a speed limit of 45 mph between Emerald and Adelanto Roads. These low levels of speeds do not result in vehicles generating high levels of noise.

- *The Number of Trucks in the Flow of the Traffic*

The Project is a warehouse development in an industrial area and although it will generate noise from large trucks, the site is located in an industrial area with similar truck and traffic uses. The total number of daily trips from both passenger cars and trucks is calculated to be 1,126 ADT, of which 231 (20.5 %) will be from trucks. The morning and afternoon peak hour truck traffic is calculated to be 25 ADT and 27 ADT respectively.

Truck traffic will also be required to use the City's designated truck routes which include Adelanto Road and Highway 395 for North/South traffic, and Rancho Road, Holly Road, and Air Expressway for East/West traffic. The use of the truck routes will also decrease the impacts on sensitive receptors such as residential uses.

3.3.2 Facility Operations (Stationary Noise).

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: roof-top heating ventilation and air conditioning units (HVAC), refrigeration units, idling trucks, truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational (stationary-source) activities at the Project site.

¹ Caltrans, Traffic Noise Analysis Protocol, April 2020, p.7-1.

Table 3.4 Reference Noise Level Measurements

Noise Source	Reference Distance (feet)	Reference Noise Level (dBA)	Distance to Receptor (feet)	Noise Level (dBA)
Rooftop HVAC ¹	1 '	88	300 '	38.5
Truck Loading Dock Activity ²	50 '	63.6	300 '	48.0
Truck Backup Alarm ²	50 '	75.0	300 '	59.0
Parking Lot Activity ²	25 '	54.4	300 '	33.0

¹ Reference Level Lennox 10-ton air handler unit (AHU) manufacturer specifications.

² Reference Level collected at Amazon Fulfillment Center ONT-6 (24208 San Michele Rd., Moreno Valley)

The proposed warehouse structure would include dock doors for truck loading and unloading. To determine the noise level impacts of the Project short-term reference noise level measurements were collected at the Amazon Fulfillment Center located at 24208 San Michele Road in the City of Moreno Valley. The noise measurements represent a typical weekday warehouse loading/unloading operation on a large single building distribution center, approximately 1.2 million square feet with 200 trailer parking spaces and 90 docks. Operations during the noise measurements included multiple trucks being loaded/unloaded, forklift and truck/trailer movement.

The loading/unloading operations noise measurements were taken over a 15 – minute period taken from an area approximately at the center of the docking stations at 50' feet from the building. The reference noise measurement obtained was 63.6 dBA L_{eq} and calculated attenuation for 300- foot distance at 48 dBA L_{eq} . No attenuation for shielding from buildings or walls was calculated as no detailed information on boundary walls/fencing.

Trucks at the Project site would utilize backup alarms during the loading/unloading activities, which according to ECCO the first manufacturer of backup alarms, depending on the model typically produce a noise level of 87 to 112 dBA at 1 foot² at 300 feet with no sound barriers (walls or buildings) the noise level would be between 37.5 to 62.5 dBA. Reference noise level measurements taken at 50 feet during truck movement and backup alarm operation were measured at 75 dBA_{max} which would result in a 59.0 dBA noise level at 300 feet with no perimeter walls or buildings as shielding.

Parking lot areas for passenger vehicles are located on the north, west, and east sides of the proposed structure, whereas all trailer parking stalls are located on the south side. Traffic associated with parking lots is typically not at a sufficient level to exceed the community noise standards. The total parking spaces estimated for the Project is 215 stalls, the reference noise levels were taken at a parking lot that can accommodate approximately 1,000 stalls. The Project's parking lots are substantially smaller and no significant noise impacts offsite from the parking lot use would be anticipated.

² ECCO Backup alarm manufacturer resources:

<https://www.eccoesg.com/us/en/SearchResults?searchText=backup+alarm+noise+levels> accessed July 7, 2022.

The USEPA identifies noise levels affecting health and welfare as exposure levels over 70 dBA over a 24-hour period. Noise levels for various levels are identified according to the use of the area. Levels of 45 dbA are associated with indoor residential areas, hospitals, and schools, whereas 55 dBA is identified for outdoor areas where typical residential human activity takes place. According to the USEPA levels of 55 dbA outdoors and 45 dbA indoors are identified as levels of noise considered to permit spoken conversation and other activities such as sleeping, working, and recreation, which are part of the daily human condition.³ Levels exceeding 55 dbA in a residential setting are normally short in duration and not significant in affecting health and welfare of residents. As the Project site is located in an industrialized area that is zoned and planned for future industrial development, the nearest existing sensitive receptor is and the nearest potential future sensitive receptors would be in the Mixed-Use zoned properties to the west (greater than 300 feet from the site), no significant noise impacts are expected.

3.4 Vibration

During construction the operation and movement of heavy equipment create seismic waves that radiate along the ground-surface in all directions. These waves are felt as ground vibrations. Vibrations from construction can result in effects ranging from annoyance to people to structure damage. Vibration levels are impacted by geology, distance, and frequencies. According to the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018³⁷, while ground vibrations from construction activities do not often reach the levels that can damage structures, construction vibration may result in building damage or prolonged annoyance from activities such as blasting, piledriving, vibratory compaction, demolition, and drilling or excavation near sensitive structures. The Project does not require these types of construction activities.

Vibration amplitude and impact decreases with distance and perceptible groundborne vibration is generally limited to areas within one to two hundred feet of the construction activity.

The vibration standard used for the City is that no ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the subject property line, nor will any vibration be permitted that produces a particle velocity greater than or equal to two-tenths of an inch per second measured at or beyond the lot line.

Table 3.6 Vibration Source Levels for Construction Equipment

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, September 2018.

³ USEPA "EPA Identifies Noise Levels Affecting Health and Welfare" <https://archive.epa.gov/epa/aboutepa/epa-identifies-noise-levels-affecting-health-and-welfare.html> accessed July 7, 2022.

³⁷ <https://www.transit.dot.gov/research-innovation/transit-noise-and-vibration-impact-assessment-manual-report-0123>.

The closest sensitive receptor to the Project property line is minimally 3,270 feet from the property line. The estimated construction vibration level from a large bulldozer (worst case scenario) measured at 15-feet would create a vibration level of 0.191 in/sec which does not exceed the 0.2 in/sec threshold. Therefore, the vibrations at the nearest sensitive receptor will remain well below the strongly perceptible annoyance criteria and potential residential vibration damage criteria thresholds listed in the City of Adelanto Municipal Code Section 17.90.030 (vibration). This threshold requires that no vibration greater than 0.2 PPV be felt at or beyond the lot line. The proposed Project therefore is not considered to result in exposure of people to excessive ground vibration.

During operations of the Project following construction the primary source of vibration would be from vehicle traffic, primarily truck traffic. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels from heavy truck activity at normal traffic speeds are in the order of 0.004 in/sec PPV at 25 feet based on the FTA's Transit Noise Impact and Vibration Assessment (2018). Trucks once on site will be travelling at very low speeds and it is expected that truck vibration impacts off site would not exceed the 0.2 in/sec PPV threshold.

Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that would cause annoyance to people or damage to buildings in the vicinity.

4.0 Conclusion

Based on the assessment in Section 3.0 through compliance with mandatory City requirements and ordinances to reduce noise during construction, the Project's construction noise impacts will not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project. In addition, the Project's operational noise would be less than significant for mobile and operational noise and as such impacts to the environment for Noise are less than significant.

APPENDIX – A

Noise Measurements

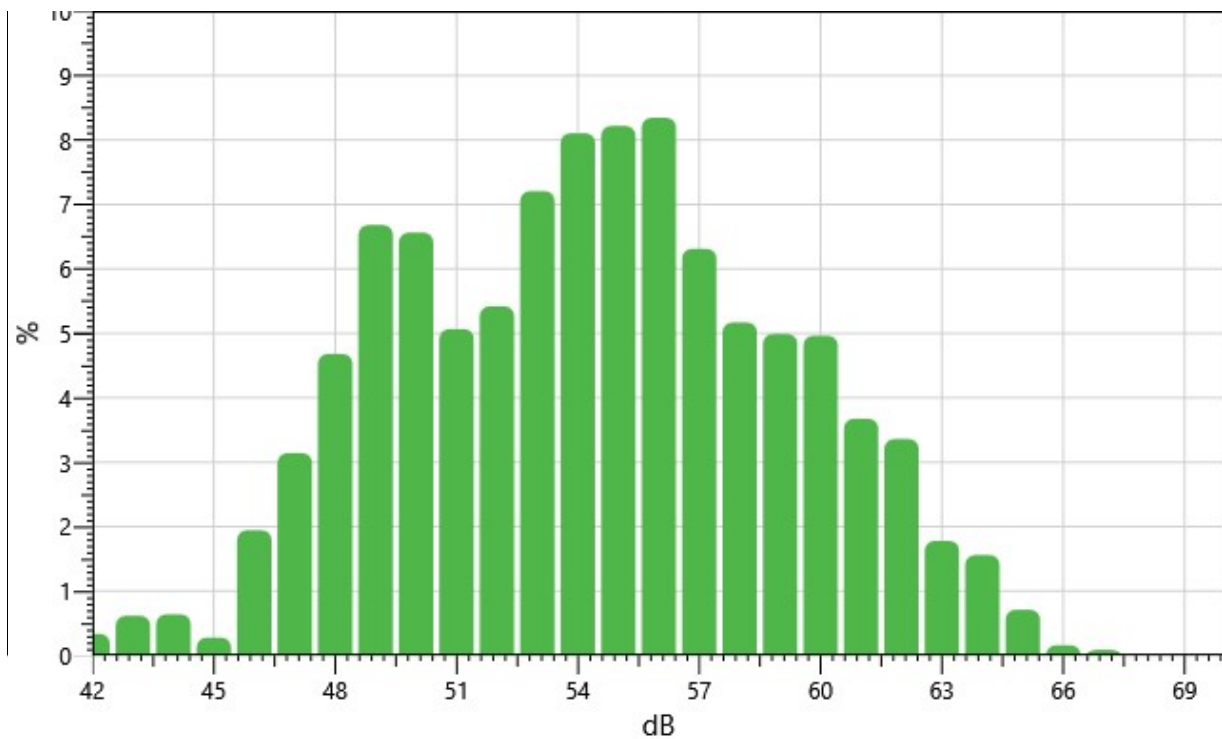
Noise Measurement #1

Information Panel

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Stop Time	6/21/2022 12:13:10 PM
Device Name	BIJ050019
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Statistics Chart

S010_BIJ050019_22062022_215743: Statistics Chart



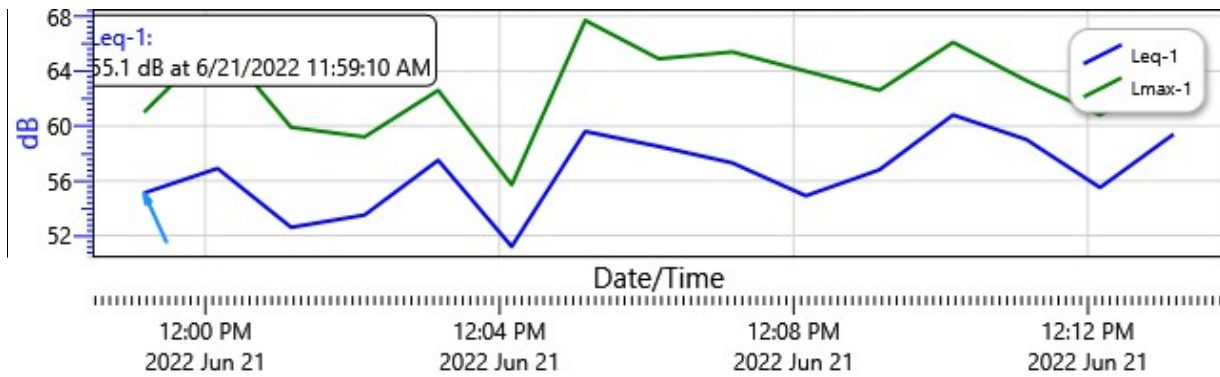
Statistics Table

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43:	0.06	0.05	0.06	0.06	0.10	0.06	0.05	0.06	0.05	0.07	0.62
44:	0.09	0.11	0.13	0.07	0.10	0.08	0.02	0.02	0.01	0.01	0.64
45:	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.02	0.02	0.06	0.28

46:	0.07	0.08	0.24	0.25	0.32	0.24	0.18	0.16	0.18	0.22	1.94
47:	0.22	0.22	0.27	0.29	0.30	0.29	0.34	0.35	0.33	0.55	3.14
48:	0.69	0.45	0.28	0.44	0.51	0.42	0.58	0.45	0.43	0.44	4.68
49:	0.50	0.60	0.76	0.81	0.69	0.78	0.53	0.59	0.70	0.72	6.68
50:	0.75	0.69	0.55	0.57	0.74	0.90	0.64	0.64	0.62	0.46	6.56
51:	0.46	0.58	0.35	0.53	0.53	0.53	0.59	0.52	0.49	0.50	5.07
52:	0.34	0.50	0.57	0.43	0.50	0.58	0.55	0.52	0.57	0.86	5.42
53:	0.74	0.76	0.79	0.73	0.66	0.66	0.62	0.60	0.67	0.97	7.21
54:	1.01	0.78	0.52	0.91	0.79	0.75	0.81	0.84	0.82	0.89	8.11
55:	0.87	0.77	0.75	0.79	0.85	0.78	0.80	0.88	0.86	0.86	8.22
56:	0.87	0.93	0.84	0.69	0.85	0.89	0.98	0.86	0.77	0.68	8.34
57:	0.72	0.69	0.48	0.60	0.65	0.61	0.58	0.74	0.70	0.54	6.31
58:	0.56	0.56	0.51	0.52	0.51	0.52	0.57	0.57	0.44	0.41	5.17
59:	0.43	0.45	0.47	0.49	0.56	0.59	0.47	0.41	0.56	0.55	4.99
60:	0.58	0.58	0.49	0.58	0.53	0.52	0.45	0.36	0.41	0.45	4.96
61:	0.51	0.35	0.32	0.30	0.33	0.32	0.39	0.32	0.38	0.47	3.67
62:	0.38	0.37	0.37	0.49	0.42	0.36	0.30	0.31	0.19	0.16	3.36
63:	0.15	0.19	0.17	0.18	0.15	0.21	0.19	0.15	0.19	0.20	1.78
64:	0.21	0.14	0.15	0.20	0.21	0.17	0.14	0.09	0.15	0.10	1.56
65:	0.10	0.09	0.13	0.12	0.10	0.02	0.04	0.02	0.06	0.03	0.71
66:	0.04	0.07	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.16
67:	0.00	0.00	0.01	0.01	0.01	0.01	0.03	0.03	0.00	0.00	0.09

Logged Data Chart

S010_BIJ050019_22062022_215743: Logged Data Chart



Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	57.3 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Exchange Rate	2	5 dB	Weighting	2	A
Response	2	FAST			

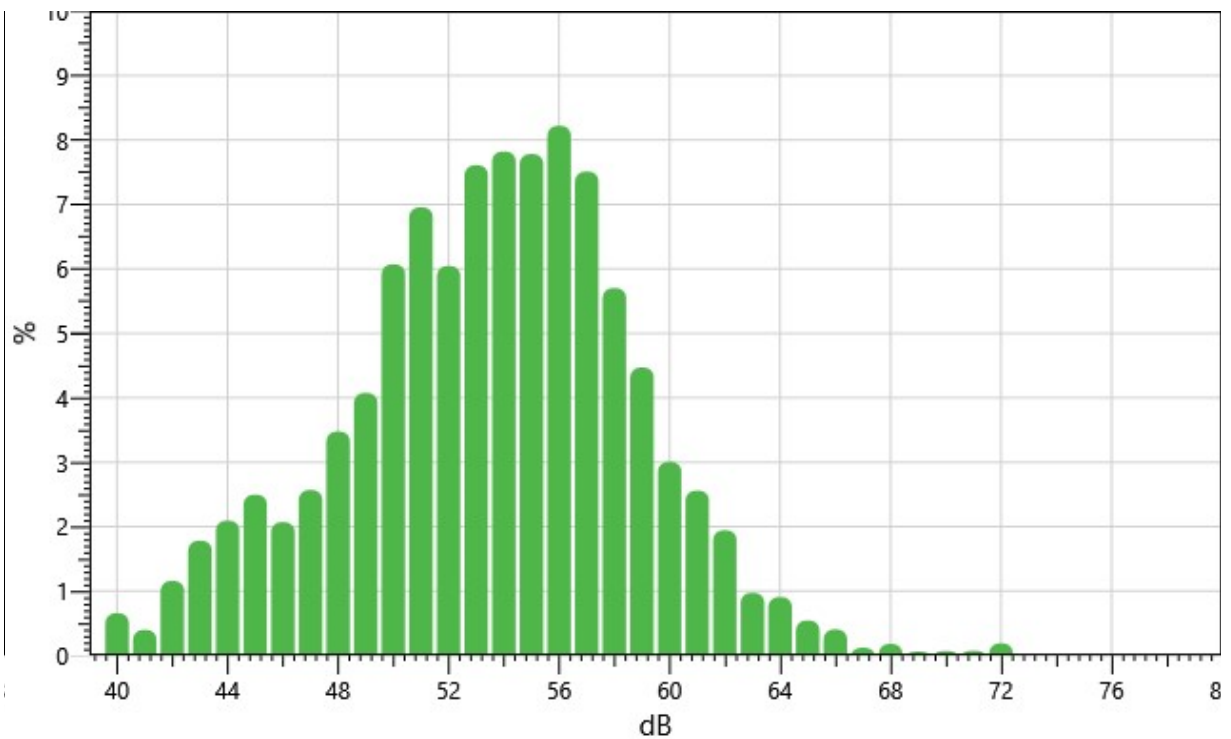
Noise Measurement #2

Information Panel

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Stop Time	6/21/2022 12:33:01 PM
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Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Statistics Chart

S011_BIJ050019_22062022_215744: Statistics Chart



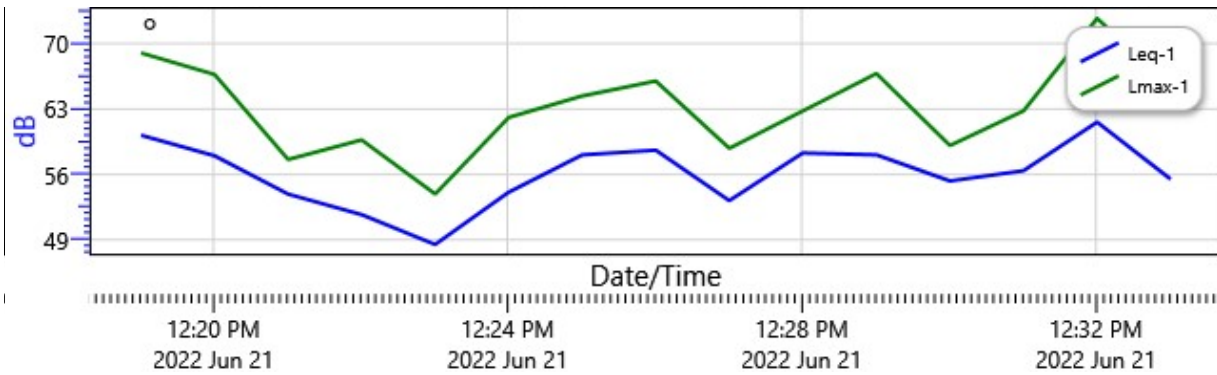
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
39:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
40:	0.08	0.07	0.07	0.09	0.09	0.09	0.04	0.04	0.06	0.03	0.66
41:	0.03	0.02	0.05	0.04	0.04	0.05	0.03	0.04	0.05	0.06	0.40
42:	0.06	0.07	0.06	0.14	0.17	0.20	0.12	0.12	0.10	0.11	1.16

43:	0.10	0.09	0.08	0.14	0.14	0.22	0.27	0.25	0.28	0.21	1.78
44:	0.17	0.20	0.21	0.21	0.18	0.19	0.24	0.21	0.25	0.23	2.09
45:	0.23	0.22	0.20	0.21	0.22	0.29	0.29	0.29	0.30	0.25	2.50
46:	0.31	0.18	0.18	0.17	0.15	0.19	0.23	0.22	0.23	0.21	2.07
47:	0.23	0.22	0.26	0.29	0.24	0.27	0.24	0.23	0.29	0.30	2.57
48:	0.36	0.32	0.17	0.30	0.34	0.34	0.43	0.40	0.41	0.39	3.48
49:	0.36	0.42	0.41	0.39	0.38	0.43	0.41	0.38	0.43	0.48	4.07
50:	0.52	0.62	0.61	0.57	0.53	0.59	0.60	0.54	0.70	0.78	6.07
51:	0.88	0.85	0.48	0.58	0.82	0.71	0.69	0.66	0.63	0.65	6.95
52:	0.54	0.52	0.55	0.79	0.57	0.57	0.60	0.55	0.65	0.70	6.04
53:	0.65	0.67	0.75	0.84	0.79	0.82	0.74	0.66	0.80	0.90	7.61
54:	0.80	0.83	0.57	0.87	0.89	0.83	0.78	0.65	0.81	0.79	7.82
55:	0.70	0.71	0.74	0.69	0.74	0.80	0.83	0.82	0.81	0.93	7.78
56:	0.88	0.88	0.77	0.75	0.83	0.77	0.90	0.86	0.85	0.74	8.22
57:	0.82	0.92	0.56	0.90	0.83	0.78	0.71	0.70	0.68	0.61	7.51
58:	0.63	0.64	0.64	0.54	0.60	0.58	0.61	0.52	0.44	0.51	5.70
59:	0.58	0.50	0.47	0.47	0.41	0.43	0.43	0.36	0.38	0.44	4.47
60:	0.40	0.43	0.23	0.30	0.33	0.33	0.27	0.25	0.24	0.23	3.01
61:	0.27	0.26	0.25	0.25	0.27	0.18	0.28	0.25	0.29	0.26	2.56
62:	0.25	0.22	0.19	0.22	0.19	0.18	0.21	0.19	0.14	0.16	1.94
63:	0.13	0.14	0.08	0.11	0.08	0.08	0.07	0.07	0.10	0.11	0.97
64:	0.11	0.14	0.11	0.08	0.09	0.08	0.07	0.09	0.07	0.06	0.91
65:	0.06	0.05	0.05	0.04	0.06	0.05	0.06	0.05	0.07	0.06	0.55
66:	0.06	0.08	0.03	0.05	0.05	0.05	0.03	0.04	0.02	0.01	0.41
67:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.12
68:	0.01	0.01	0.01	0.03	0.02	0.03	0.02	0.01	0.02	0.02	0.18
69:	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.06
70:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.07
71:	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.07
72:	0.01	0.01	0.01	0.01	0.03	0.04	0.04	0.04	0.00	0.00	0.19

Logged Data Chart

S011_BIJ050019_22062022_215744: Logged Data Chart



Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	57.1 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Exchange Rate	2	5 dB	Weighting	2	A
Response	2	FAST			

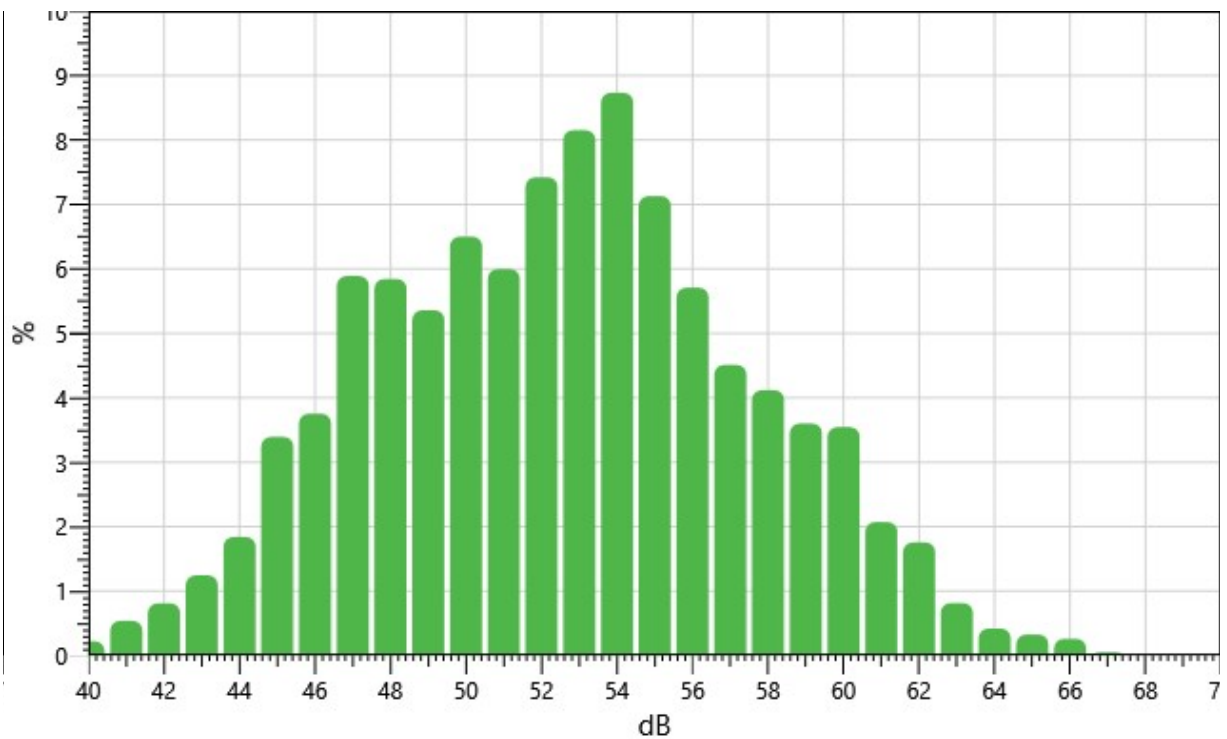
Noise Measurement #3

Information Panel

Name	S012_BIJ050019_22062022_215745
Start Time	6/21/2022 12:36:24 PM
Stop Time	6/21/2022 12:51:24 PM
Device Name	BIJ050019
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Statistics Chart

S012_BIJ050019_22062022_215745: Statistics Chart



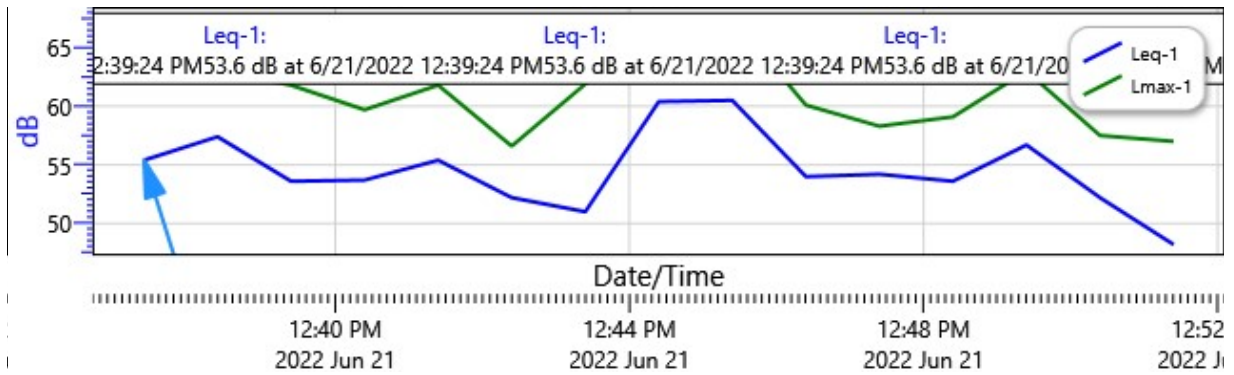
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40:	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.07	0.07	0.22
41:	0.10	0.05	0.02	0.04	0.05	0.03	0.05	0.06	0.09	0.05	0.54
42:	0.06	0.04	0.04	0.07	0.09	0.07	0.10	0.09	0.12	0.13	0.81
43:	0.11	0.11	0.13	0.11	0.12	0.21	0.19	0.08	0.07	0.11	1.24

44:	0.07	0.10	0.10	0.11	0.19	0.25	0.26	0.22	0.27	0.27	1.84
45:	0.32	0.24	0.24	0.33	0.40	0.34	0.33	0.40	0.38	0.41	3.39
46:	0.38	0.39	0.42	0.41	0.40	0.39	0.30	0.32	0.33	0.41	3.75
47:	0.46	0.45	0.40	0.58	0.62	0.62	0.67	0.73	0.66	0.70	5.89
48:	0.61	0.59	0.37	0.56	0.61	0.64	0.65	0.63	0.62	0.56	5.84
49:	0.58	0.52	0.54	0.56	0.51	0.56	0.56	0.47	0.49	0.56	5.36
50:	0.61	0.70	0.82	0.79	0.64	0.70	0.61	0.57	0.53	0.54	6.50
51:	0.67	0.63	0.37	0.65	0.62	0.55	0.56	0.60	0.69	0.65	6.00
52:	0.78	0.76	0.69	0.75	0.69	0.70	0.75	0.76	0.72	0.82	7.42
53:	0.69	0.72	0.72	0.73	0.78	0.80	0.77	0.88	1.07	1.00	8.15
54:	0.96	1.11	0.69	0.97	0.98	0.87	0.88	0.78	0.78	0.71	8.73
55:	0.81	0.83	0.77	0.75	0.76	0.70	0.60	0.60	0.68	0.64	7.13
56:	0.61	0.57	0.50	0.55	0.50	0.53	0.64	0.64	0.63	0.53	5.71
57:	0.53	0.51	0.38	0.47	0.42	0.49	0.45	0.40	0.44	0.41	4.51
58:	0.42	0.36	0.45	0.50	0.48	0.42	0.41	0.40	0.30	0.36	4.12
59:	0.36	0.38	0.38	0.35	0.36	0.40	0.32	0.34	0.36	0.36	3.60
60:	0.41	0.48	0.26	0.36	0.39	0.38	0.37	0.32	0.32	0.26	3.55
61:	0.34	0.24	0.25	0.23	0.22	0.18	0.13	0.14	0.16	0.19	2.07
62:	0.16	0.19	0.16	0.17	0.16	0.18	0.13	0.17	0.25	0.18	1.76
63:	0.16	0.10	0.09	0.09	0.09	0.09	0.06	0.04	0.06	0.04	0.81
64:	0.04	0.05	0.02	0.02	0.02	0.03	0.06	0.08	0.05	0.05	0.42
65:	0.02	0.03	0.05	0.05	0.04	0.02	0.01	0.02	0.03	0.05	0.33
66:	0.04	0.04	0.02	0.01	0.03	0.03	0.02	0.03	0.03	0.01	0.26
67:	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05

Logged Data Chart

S012_BIJ050019_22062022_215745: Logged Data Chart



Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	55.7 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Exchange Rate	2	5 dB	Weighting	2	A
Response	2	FAST			

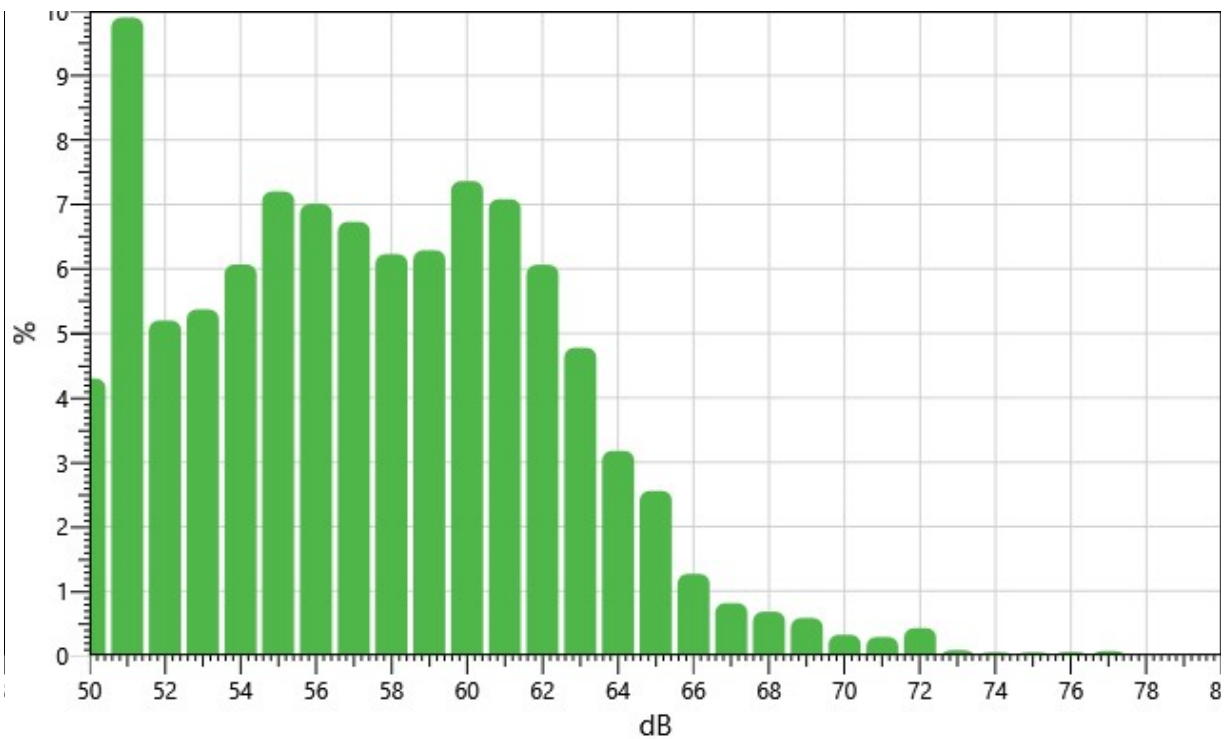
Noise Measurement #4

Information Panel

Name	S013_BIJ050019_22062022_215745
Start Time	6/21/2022 1:00:05 PM
Stop Time	6/21/2022 1:15:05 PM
Device Name	BIJ050019
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Statistics Chart

S013_BIJ050019_22062022_215745: Statistics Chart



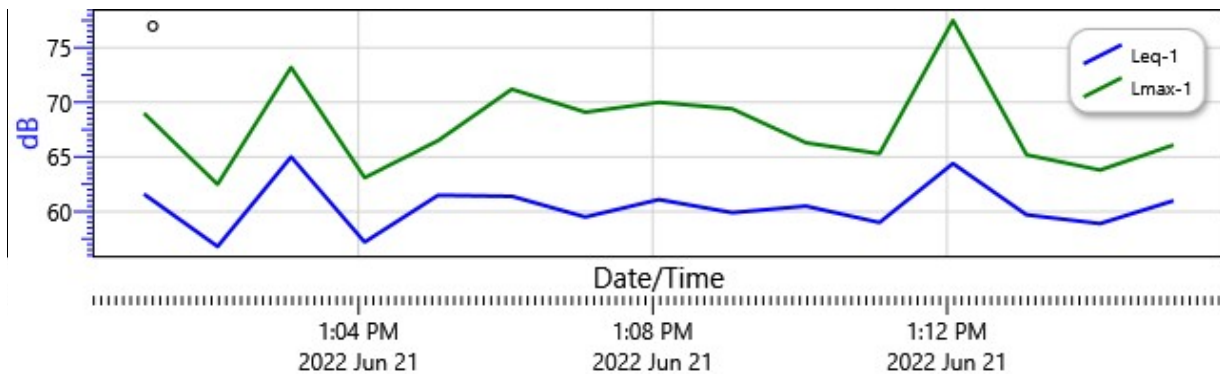
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50:	0.00	0.00	0.00	0.00	0.00	0.10	0.44	0.64	1.34	1.78	4.30
51:	1.51	1.26	0.67	0.94	0.85	0.94	0.95	1.03	1.05	0.71	9.90
52:	0.71	0.46	0.64	0.48	0.44	0.41	0.54	0.49	0.54	0.48	5.20
53:	0.52	0.55	0.41	0.40	0.53	0.53	0.70	0.55	0.62	0.58	5.37

54:	0.59	0.65	0.42	0.63	0.65	0.77	0.61	0.52	0.52	0.71	6.07
55:	0.77	0.66	0.71	0.73	0.61	0.82	0.77	0.80	0.66	0.67	7.20
56:	0.67	0.70	0.72	0.83	0.73	0.60	0.61	0.72	0.71	0.71	7.01
57:	0.72	0.65	0.44	0.59	0.64	0.65	0.78	0.78	0.78	0.68	6.73
58:	0.75	0.65	0.71	0.64	0.55	0.61	0.68	0.50	0.52	0.61	6.23
59:	0.58	0.68	0.63	0.59	0.49	0.60	0.58	0.63	0.67	0.85	6.29
60:	0.95	0.86	0.59	0.74	0.67	0.64	0.68	0.78	0.75	0.69	7.36
61:	0.60	0.65	0.71	0.76	0.72	0.82	0.87	0.82	0.65	0.48	7.08
62:	0.49	0.46	0.50	0.47	0.52	0.49	0.64	0.83	0.74	0.92	6.06
63:	0.80	0.68	0.44	0.52	0.48	0.47	0.45	0.36	0.26	0.31	4.78
64:	0.30	0.32	0.30	0.25	0.31	0.32	0.34	0.31	0.32	0.41	3.18
65:	0.43	0.36	0.25	0.20	0.27	0.24	0.21	0.22	0.20	0.18	2.56
66:	0.22	0.16	0.12	0.12	0.16	0.16	0.07	0.08	0.07	0.10	1.27
67:	0.09	0.11	0.10	0.09	0.10	0.09	0.05	0.06	0.06	0.06	0.81
68:	0.06	0.06	0.06	0.06	0.06	0.06	0.09	0.08	0.07	0.07	0.68
69:	0.06	0.06	0.04	0.06	0.07	0.05	0.06	0.06	0.07	0.06	0.58
70:	0.04	0.03	0.02	0.02	0.05	0.02	0.02	0.03	0.06	0.03	0.32
71:	0.04	0.05	0.02	0.01	0.03	0.02	0.02	0.03	0.02	0.05	0.29
72:	0.04	0.04	0.04	0.02	0.05	0.05	0.07	0.05	0.03	0.03	0.43
73:	0.02	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.08
74:	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.05
75:	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.05
76:	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
77:	0.01	0.01	0.01	0.01	0.01	0.03	0.00	0.00	0.00	0.00	0.07

Logged Data Chart

S013_BIJ050019_22062022_215745: Logged Data Chart



Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	61 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Exchange Rate	2	5 dB	Weighting	2	A
Response	2	FAST			

APPENDIX – B
FHWA - RCNM

Roadway Construction Noise Model

(RCNM), Version 1.1

Report date:

07/07/2022

Case Description:

Adelanto 35 Warehouse Project

**** Receptor #1 ****

Description Night ----- -----	Land Use -----	Baselines (dBA)	
		Daytime -----	Evening -----
Old Rancho & Adelanto Roads 50.0	Commercial	57.3	55.0

Estimated Shielding Description (dBA) ----- -----	Impact Device -----	Usage (%) -----	Equipment -----		Receptor Distance (feet) -----
			Spec Lmax (dBA) -----	Actual Lmax (dBA) -----	
Backhoe 0.0	No	40		77.6	450.0
Dozer 0.0	No	40		81.7	450.0
Scraper 0.0	No	40		83.6	450.0
Excavator 0.0	No	40		80.7	450.0
Grader 0.0	No	40	85.0		450.0
Scraper 0.0	No	40		83.6	450.0
Crane 0.0	No	16		80.6	450.0
Gradall 0.0	No	40		83.4	450.0
Generator 0.0	No	50		80.6	450.0
Welder / Torch 0.0	No	40		74.0	450.0
Compressor (air) 0.0	No	40		77.7	450.0
Paver 0.0	No	50		77.2	450.0

Roller 0.0	No	20	80.0	450.0
Pickup Truck 0.0	No	40	75.0	450.0
Compactor (ground) 0.0	No	20	83.2	450.0
Concrete Mixer Truck 0.0	No	40	78.8	450.0
Dump Truck 0.0	No	40	76.5	450.0
Front End Loader 0.0	No	40	79.1	450.0

Results

Limits (dBA)			Noise Limit Exceedance (dBA)						
			Calculated (dBA)		Day		Evening		
Night			Day	Evening	Night				
Equipment			Lmax	Leq	Lmax	Leq	Lmax	Leq	
Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Backhoe			58.5	54.5	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dozer			62.6	58.6	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Scraper			64.5	60.5	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Excavator			61.6	57.6	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Grader			65.9	61.9	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Scraper			64.5	60.5	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane			61.5	53.5	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Gradall			64.3	60.3	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Generator			61.5	58.5	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Welder / Torch			54.9	50.9	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Compressor (air)			58.6	54.6	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver			58.1	55.1	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller			60.9	53.9	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck			55.9	51.9	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)			64.1	57.2	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck			59.7	55.7	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck			57.4	53.4	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader			60.0	56.0	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Total	65.9	70.0	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description Night	Land Use	Baselines (dBA)	
		Daytime	Evening
-----	-----	-----	-----

Stadium Way & Adelanto Road 50.0	Commercial	57.1	55.0

0.0				
Crane	No	16	80.6	300.0
0.0				
Gradall	No	40	83.4	300.0
0.0				
Generator	No	50	80.6	300.0
0.0				
Welder / Torch	No	40	74.0	300.0
0.0				
Compressor (air)	No	40	77.7	300.0
0.0				
Paver	No	50	77.2	300.0
0.0				
Roller	No	20	80.0	300.0
0.0				
Pickup Truck	No	40	75.0	300.0
0.0				
Compactor (ground)	No	20	83.2	300.0
0.0				
Concrete Mixer Truck	No	40	78.8	300.0
0.0				
Dump Truck	No	40	76.5	300.0
0.0				
Front End Loader	No	40	79.1	300.0
0.0				

Results

Limits (dBA)			Noise Limit Exceedance (dBA)						
			Calculated (dBA)		Day		Evening		Night
			Evening		Night				

N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader			69.4	65.5	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper			68.0	64.0	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane			65.0	57.0	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall			67.8	63.9	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator			65.1	62.1	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch			58.4	54.5	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)			62.1	58.1	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver			61.7	58.6	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller			64.4	57.4	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck			59.4	55.5	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)			67.7	60.7	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck			63.2	59.3	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck			60.9	56.9	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader			63.5	59.6	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Total	69.4	73.6	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA)			
		Daytime	Evening	Night	
Adelanto Medical Clinic	Residential	61.0	59.0	54.0	
Equipment					
Estimated		Spec	Actual	Receptor	
Shielding	Impact	Usage	Lmax	Lmax	Distance
Description (dBA)	Device	(%)	(dBA)	(dBA)	(feet)
Backhoe	No	40	77.6	3270.0	

0.0					
Dozer	No	40		81.7	3270.0
0.0					
Scraper	No	40		83.6	3270.0
0.0					
Excavator	No	40		80.7	3270.0
0.0					
Grader	No	40	85.0		3270.0
0.0					
Scraper	No	40		83.6	3270.0
0.0					
Crane	No	16		80.6	3270.0
0.0					
Gradall	No	40		83.4	3270.0
0.0					
Generator	No	50		80.6	3270.0
0.0					
Welder / Torch	No	40		74.0	3270.0
0.0					
Compressor (air)	No	40		77.7	3270.0
0.0					
Paver	No	50		77.2	3270.0
0.0					
Roller	No	20		80.0	3270.0
0.0					
Pickup Truck	No	40		75.0	3270.0
0.0					
Compactor (ground)	No	20		83.2	3270.0
0.0					
Concrete Mixer Truck	No	40		78.8	3270.0
0.0					
Dump Truck	No	40		76.5	3270.0
0.0					
Front End Loader	No	40		79.1	3270.0
0.0					

Results

Limits (dBA)			Noise Limit Exceedance (dBA)						
			Calculated (dBA)		Day		Night		Evening
Night			Day		Evening		Night		
</									

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