# APPENDIX F
Noise Memorandum

February 17, 2022

Mr. Dan Bott
VCS Environmental, Inc.
30900 Rancho Viejo Road, Suite 100
San Juan Capistrano, CA 92675

**SUBJECT: Anita Street Sewer Lift Station Rehabilitation Construction Noise Memorandum, Laguna Beach, CA**

Dear Mr. Bott;

Birdseye Planning Group (BPG) is pleased to submit this memorandum quantifying noise impacts associated the rehabilitation and upgrades to the existing Anita Street Lift Station. The project is intended to improve station maintenance access, reliability, robustness and improve the efficiency of operations and safety. Additionally, the project would replace the existing concrete stairs and enhance the existing public viewing areas to create a more visually appealing beach access to Anita Beach. The Anita Street Sewer Lift Station collects wastewater from residential and commercial areas between St. Ann's Street and Calliope Street, east to Temple Terrace. The lift station also receives additional flow during the summer months from five urban water diversion units servicing an average daily flow of up to 70,000 - 80,000 gallons. The lift station is located along the public beach access stairs to the Anita Street Beach at the west end of Anita Street.

**Project Description**

The proposed project would demolish the existing above ground lift station building which contains the electrical and control systems as well as a backup generator. The facility would be replaced with a below ground pump station wet well, valve vault and generator vault. The wet well and valve vault (built into the pump station's wet well) will be approximately 20-25 feet deep, while the generator vault will be approximately 10 feet deep. The existing reinforced concrete building would be demolished, and the below ground wet well and dry pit will be back filled and abandoned in place.

The wet well building site would be replaced with new cast in place concrete public viewing platforms adjacent to the beach access stairs. Viewing platforms will be constructed in separate phases starting from the bottom of the beach access stairs. The existing beach access stairs will be renovated to increase public safety, ensure ADA compliance and enhance public viewing opportunities. Proposed improvements include removal and replacement of existing handrails, trash cans and curbs. A portion

of the site will be re-graded to accommodate the proposed improvements for the beach access stairs. The existing non-native landscaping surrounding the beach access stairs will be removed along with any associated irrigation piping specified. The removed non-native landscaping would be replaced with California friendly native landscape vegetation.

The project action is comprised of the following phases:

- Phase 1: Underground Utility Verification;
- Phase 2: Bypassing;
- Phase 3: Site Demolition;
- Phase 4: Install Below Ground Pump Station Wet Well, Valve Vault, and Generator Vault;
- Phase 5: Install Precast Vault Components and Sewer Force Mains;
- Phase 6: Install Electrical and Control Improvements;
- Phase 7: Install Site Civil Improvements;
- Phase 8: Install Landscaping Improvements; and
- Phase 9: Startup and Testing.

Noise associated with these improvements are temporary and would occur only during active construction occurring on the site.

**City of Laguna Beach Noise Standards**

Noise standards are provided in Chapter 7.25 of the City of Laguna Beach Municipal Code. Per Section 7.25.040 (A), exterior noise limits for single-family residential properties (Noise Zone I) are 50 A-weighted decibels (dBA) between 10:00 p.m. and 7:00 a.m. and 60 dBA between 7:00 a.m. and 10:00 p.m. The exterior noise standard may not be exceeded for more than 15 minutes.

Construction noise is addressed in Section 7.25.080 and is exempt from the noise ordinance provisions provided it occurs only between 7:30 a.m. and 6:00 p.m. on weekdays. No construction is allowed on weekend days or holidays unless exempted per Section 7.25.080 (D) (1) through (4).

**Project-Related Construction Noise**

The main sources of noise during construction activities would include heavy machinery used during demolition of the existing lift station, site preparation (i.e., removing existing pavement, concrete and subgrade), as well as equipment used for placing shoring structures, excavating the new wet well, valve vault and generator vault and installing the new equipment. Table 1 shows the typical noise levels associated with heavy construction equipment. As shown, average noise levels associated with the use of heavy equipment at construction sites can range from about 81 to 95 dBA at 25 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction. Noise-sensitive uses near the project corridors are primarily single-family residences located along the roadways affected by installation of the new sewer infrastructure. It is assumed site

**Table 1**
**Typical Construction Equipment Noise Levels**

| Equipment Onsite | Typical Level (dBA) 25 Feet from the Source | Typical Level (dBA) 50 Feet from the Source | Typical Level (dBA) 100 Feet from the Source |
|---|---|---|---|
| Air Compressor | 84 | 78 | 72 |
| Backhoe | 84 | 78 | 72 |
| Bobcat Tractor | 84 | 78 | 72 |
| Concrete Mixer | 85 | 79 | 73 |
| Bulldozer | 88 | 82 | 76 |
| Jack Hammer | 95 | 89 | 83 |
| Pavement Roller | 86 | 80 | 74 |
| Street Sweeper | 88 | 82 | 76 |
| Man Lift | 81 | 75 | 69 |
| Dump Truck | 82 | 76 | 70 |
| Compactor | 88 | 82 | 76 |
| Grader | 91 | 85 | 79 |
| Paver | 95 | 89 | 83 |
| Loader | 91 | 85 | 79 |
| Scarifier | 89 | 83 | 77 |

*Source: Hanson, Towers and Meister, May 2006*
*Noise levels based on FHWA Roadway Construction Noise Model (2006) Users Guide Table 1.*
*Noise levels based on actual maximum measured noise levels at 50 feet (Lmax).*
*Noise levels assume a noise attenuation rate of 6 dBA per doubling of distance.*

preparation, trenching, backfill placement and paving work would require the use of heavy equipment. Equipment would also be required to deliver materials to the project site and work areas.

Based on EPA noise emissions, empirical data and the amount of equipment needed for construction of the proposed project, worst-case noise levels from the construction equipment occur during site preparation/grading and related activities. The anticipated equipment used would include trucks, a bobcat tractor, an excavator and other common types of equipment. For the purpose of estimating noise levels, if during construction, a backhoe (78 dBA) and a dump truck (76 dBA) were working simultaneously in one area over an 8-hour work day, the 8-hour Leq would be approximately 80 dBA at 50 feet. Cumulative noise levels at 25 feet would be approximately 86.1 dBA.

Construction noise would be audible at residences located adjacent to the construction area throughout the workday; however, it would vary throughout the workday. As referenced, noise is exempt from regulation provided it occurs within the time limit summarized above. However, the following measures can be implemented at the City and contractor's discretion to minimize or reduce construction noise levels at neighboring residences:

> **Measure N1 - Construction Equipment**. Electrical power shall be used to run air compressors and similar power tools. Internal combustion engines should be equipped with a muffler of a type recommended by the manufacturer and in good repair. All diesel equipment should be operated with closed engine doors and should be equipped with factory-recommended mufflers. Construction equipment that continues to generate substantial noise at the project boundaries should be shielded with temporary noise barriers, such as barriers that meet a sound transmission class (STC) rating of 25, sound absorptive panels, or sound blankets on individual pieces of construction equipment. Stationary noise-generating equipment, such as generators and compressors, should be located as far as practically possible from the nearest residential property lines.
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> **Measure N2 - Limit Operations Adjacent to Receivers**. Limit the number of large pieces of equipment (i.e., excavator or dump trucks) operating adjacent to receivers to one at any given time.
>
> **Measure N3 - Neighbor Notification**. Provide notification to residential occupants nearest to the project site at least 24 hours prior to initiation of construction activities that could result in substantial noise levels at outdoor or indoor living areas. This notification should include the anticipated hours and duration of construction and a description of noise reduction measures being implemented at the project site. The notification should include a telephone number for local residents to call to submit complaints associated with construction noise and be easily viewed from adjacent public areas.

**Sewer Lift Station Operation**

Typically, the only continuous noise generated by the sewer lift stations would be operation of the pumps. However, these pumps would be submerged within wet wells approximately 20 feet below the ground surface. Further, the wells are constructed of concrete and covered. Concrete block walls typically have a Sound Transmission Classification (STC) of 48 which would result in a comparable reduction in noise levels between the building interior and exterior. Thus, pump noise and operation of any ancillary equipment inside the building would not be audible outside.

With respect to the generator unit installed in the lift station, the units are commonly 125-kW and installed to ensure adequate electrical power is available to operate the lift station in the event that commercial power is interrupted. As stated, the generator would be located within the wet well approximately 10 feet below grade. All emission control and exhaust systems would be installed per manufacturers specifications to minimize operational noise. However, noise would occur when the generator is operated periodically for testing and during emergency operation associated with an electrical service interruption. The exhaust system would likely generate audible noise outside the building during operation. While the noise may be audible outside the building at neighboring residential properties, Section 7.25.050 (B) of the City of Laguna Beach Municipal Code exempts noise associated with emergency work/operations.

**Conclusion**

As discussed herein, construction noise would be audible periodically during installation of the lift station improvements. Construction noise occurring during the hours defined by the City of Laguna Beach Municipal Code would be exempt from noise regulations. Implementation of measures N1-N3 could reduce temporary construction noise levels if warranted. Operation of the sewer pumps would not be audible outside the lift stations. Temporary noise associated with operation of the emergency generator may be audible outside the lift station building but would be exempt from regulation as an emergency use per Section 7.25.050 (B) of the City of Laguna Beach Municipal Code.

Thank you for the opportunity to assist with this project. Should you have questions or require additional information, please let me know. I can be reached at 760-712-2199 or via e-mail at ryan@birdseyeplanninggroup.com.

Regards,

Ryan Birdseye
Principal