

## Appendix J – Noise Mitigation Plan

Department of Toxic Substances Control

# Noise Mitigation Plan

Offsite Properties within the Exide Preliminary  
Investigation Area

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## 1.0 INTRODUCTION

The Department of Toxic Substances Control (DTSC) has prepared a Master Excavation, Disposal, and Restoration Design Plan (Work Plan) pursuant to the *Removal Action Plan (Cleanup Plan) Offsite Properties within the Exide Preliminary Investigation Area (Cleanup Plan)*, dated July 17, 2017, including any modifications, amendments or addenda thereto subsequently approved by DTSC (Cleanup Plan), and DTSC's *Proven Technologies and Remedies Guidance, Remediation of Metals in Soil (PT&R Guidance)*, dated August 29, 2008. The Work Plan presents the excavation, disposal, and restoration activities required to address the excavation of contaminated soils at sensitive land use properties (residences, daycare and child care centers, parks, and schools) subject to cleanup pursuant to the Cleanup Plan. The properties subject to the Work Plan are located within the Preliminary Investigation Area (PIA). The PIA is the area within an approximately 1.7-mile radius of the former Exide Technologies, Inc. (Exide) lead-acid battery recycling facility in Vernon, California (hereafter, "former Exide Facility"). The past operational activities at the former Exide Facility resulted in releases of lead and other substances to the PIA. The PIA includes portions of the County of Los Angeles, and the Cities of Los Angeles, Commerce, Maywood, Bell and Huntington Park. The PIA encompasses approximately 10,129 sensitive land use properties. The work to implement the Work Plan is anticipated to generate noise and vibrations.

The relevant cleanup activities consist of excavating, loading, transporting, and disposing of the soil from properties with lead above representative soil lead concentration of 80 ppm. After the removal action at each property, the property will be restored. Cleanup activities would occur in the following three stages and are detailed in the subsequent section:

- Pre-excavation activities
- Excavation and management of soil
- Property restoration

Implementation of the Cleanup Plan will involve temporary operation of heavy equipment, typically identified as in the environmental review process as "construction equipment." Once the work under the Cleanup Plan has been completed, there would be no project-related operation or project-related noise generated. Therefore, the project is considered to be "construction" only, with no project "operation" (i.e., no post-cleanup activities).

The Contractor will ensure all cleanup activities will be conducted in accordance with the Final Removal Action Plan (Cleanup Plan), the Work Plan, and the Final Environmental Impact Report (Final EIR) dated July 17, 2017, and any modifications made thereto by DTSC. Further information, analysis, and findings regarding potential noise and vibration impacts, and methods for reducing, avoid, and mitigating those impacts, can be found in DTSC's December 2016 Draft EIR, the Mitigation Monitoring and Reporting Program included with the Final EIR, and DTSC's July 17, 2017, Findings of Fact and Statement of Overriding Considerations, Removal Action Workplan (Cleanup Plan), Offsite Properties Within the Exide Preliminary Investigation Area (Findings of Fact and Statement of Overriding Considerations).

Project Design Features (PDFs) to avoid or reduce the generation of noise and vibrations have been integrated into the Work Plan. DTSC found in its Findings of Fact and Statement of Overriding Considerations that compliance with existing regulations and implementation of the PDFs would reduce noise impacts from cleanup activities. However, without incorporation of mitigation measure NOI-1, the estimated cleanup related noise may exceed the standards of local jurisdictions – both considered alone and in combination with of other sources of noise.

## **2.0 APPLICABLE LOCAL REGULATIONS**

The Contractor will follow all applicable local regulations for noise and vibration, which consist of the municipal general plan noise elements and municipal codes (i.e., noise ordinances) of the following municipalities within the PIA: the County of Los Angeles, and, alphabetically; the cities of Bell, Commerce, Huntington Park, Los Angeles, Maywood, and Vernon. The “construction” noise component of these regulations is applicable to the cleanup project given the short-term, temporary, and periodic nature of the Cleanup Plan, and from the operation of heavy equipment during the earthmoving activities (e.g., excavation, hauling, backfilling, and grading) of the Cleanup Plan and Work Plan.

Typically, general plan noise elements provide noise policies and goals, which are implemented and enforced through the respective municipal codes (i.e., noise ordinance), by establishing hours when construction activities are prohibited, typically, during the evening and night hours (i.e., 7 p.m. to 7 a.m.), when land uses are more sensitive (e.g., for residential, typical sleeping activities). By establishing prohibited hours of construction, the ordinances establish allowable hours of construction; typically, during the daytime hours (7 a.m. to 7 p.m.), when land uses are less sensitive (e.g., for residential, not typical sleeping activities). Some noise ordinances also establish a maximum construction noise level limit, not to be exceeded by construction activities, during the allowable hours of construction. In addition, the municipal noise ordinances include minimum ambient noise level limits for different land use zoning classifications, which are not construction noise level limits. Construction vehicle traffic is typically considered part of construction noise by municipal codes

### **2.1 COUNTY OF LOS ANGELES**

#### **2.1.1 GENERAL PLAN, NOISE ELEMENT**

The Noise Element of the Los Angeles County General Plan includes noise goals and policies that are based on the community noise compatibility guidelines applicable to land uses generally (rather than short-term construction noise) established by the California Department of Health Services (DHS). Specific regulations that implement these guidelines are set forth in the Los Angeles County Municipal Code, as discussed below.

#### **2.1.2 MUNICIPAL CODE**

The County of Los Angeles Municipal Code, Chapter 12.08, Noise Control (i.e., Noise Ordinance), establishes noise standards to control unnecessary, excessive, and annoying noise and vibration in the County. With respect to noise from the operation of construction equipment (including earth-moving equipment) in the County, Section 12.08.440 prohibits the operation of any tools or equipment used between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, that will create a noise disturbance across a residential or commercial real property line. Noise disturbance is defined as an alleged intrusive noise that violates an applicable noise standard established in the Municipal Code. The only exceptions would be emergency work of public service utilities or by variance issued by the health officer. Additionally, both the working hours and maximum levels of equipment and activity noise that are allowable from both mobile (duration less than 10 days) and stationary (duration more than 10 days) construction equipment in the County are defined by land use and shown in Table 1,



County of Los Angeles Construction Noise Standards. Section 12.08.440 requires that “all mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.” Section 12.08.150 defines a stationary or fixed noise source as “a stationary device which creates sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners, and refrigeration equipment.” Section 12.08.220 defines a mobile noise source as “any noise source other than a fixed noise source.” As a conservative approach, equipment which operates in the same area for prolonged periods of time (e.g. remains on the property or cluster of properties being cleaned up all day) will be considered as a stationary source.

<b>TABLE 1 – CURRENT COUNTY OF LOS ANGELES CONSTRUCTION NOISE STANDARDS</b>						
Residential Facilities						
Allowable Work Dates & Hours	Single-Family		Multi-Family		Semi-Residential/Commercial	
	Mobile Equipment <sup>a</sup>	Stationary Equipment <sup>b</sup>	Mobile Equipment <sup>a</sup>	Stationary Equipment <sup>b</sup>	Mobile Equipment <sup>a</sup>	Stationary Equipment <sup>b</sup>
Daily 7:00 a.m. to 8:00 p.m. <sup>c</sup>	75 dBA	60 dBA	80 dBA	65 dBA	85 dBA	70 dBA
Daily 8:00 p.m. to 7:00 a.m. <sup>d</sup>	60 dBA	50 dBA	64 dBA	55 dBA	70 dBA	60 dBA
Business Facilities						
Daily <sup>d</sup>	85 dBA					

a) Represents maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days).

b) Represent maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more).

c) Exception for Sundays and legal holidays.

d) Includes all day Sunday and legal holidays.

SOURCE: County of Los Angeles Ordinance No. 11743, Section 12.08.440.

Additional noise controls are provided in Chapter 12.12 of the Municipal Code, which states that any “person, on any Sunday, or at any other time between the hours of 8:00 p.m. and 6:30 a.m. the following day, shall not perform... any earth excavating, filling or moving, where any of the foregoing entails the use of any air compressors; jackhammers; power-driven drill; riveting machine; excavator, diesel-powered truck, tractor or other earth moving equipment; hand hammers on steel or iron, or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home, or other place of residence.” The construction may be exempted from these limits if the work is performed pursuant to the express written permission of the county engineer to perform such work at these times.

### **2.1.3 VIBRATION REGULATION**

With respect to vibration, the County of Los Angeles Noise Ordinance identifies a presumed human perception threshold of 0.01 in/sec peak particle velocity (PPV) over the range of 1 to 100 hertz (Hz). Section 12.08.560 of the County Noise Ordinance prohibits the operation of any device that creates vibration above the vibration perception threshold of any individual at 150 feet (46 meters) from the source, if on a public space or public right-of-way.

## **2.2 CITY OF BELL**

### **2.2.1 GENERAL PLAN, NOISE ELEMENT**

The current Noise Element of the City of Bell 2010 General Plan (City of Bell, 1996) examines the existing and future noise environment in the City and identifies programs for reducing noise levels in the City.

### **2.2.2 MUNICIPAL CODE**

The current City of Bell Municipal Code, Chapter 8.28, Noise, Section 8.28.020, states that it is unlawful for any person to make, cause, or permit any loud or unusual noise to emanate from any activity taking place on property owned or occupied by such person, which has the effect of disturbing the peace and quiet of the neighborhood, or which directly causes an unreasonable interference with the use, enjoyment and/or possession of any real property owned or occupied by any other person.

## **2.3 CITY OF COMMERCE**

### **2.3.1 GENERAL PLAN, NOISE ELEMENT**

The current Noise Element of the City of Commerce 2020 General Plan (City of Commerce, 2008) establishes noise control measures and includes the following policies that are relevant to the Project:

*Health and Safety Objective 1.7:* To establish criteria and enforce standards to control noise levels from both mobile and stationary sources to minimize excessive noise exposure to city residents.

*Safety Policy 6.1:* The City of Commerce will ensure that residents are protected from harmful and irritating noise sources to the greatest extent possible.

*Safety Policy 6.3:* The City of Commerce will continue to enforce the existing city's noise control ordinance.

*Safety Policy 6.9:* The City of Commerce will continue to use the Sheriff's Department or expand the responsibility of the city's Code Enforcement Division to monitor and respond to noise complaints.

### **2.3.2 MUNICIPAL CODE**

The current City of Commerce Municipal Code, Chapter 19 (i.e., noise ordinance) provides sound measurement and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, and hours of operation for certain uses.

Section 19.19.160 prohibits construction activity and repair work, or projects, or operation of any pile driver, steam shovel, pneumatic hammer, derrick, steam, electric hoist, or other construction type device on buildings, structures within any residential zone, or within a radius of five hundred (500) feet of a residential zone between the hours of 10 p.m. and 7 a.m., unless a permit has been obtained from the city. Loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10 p.m. and 7 a.m. in such a manner as to cause noise in excess of the noise standards in any residential zone is also unlawful.

Section 19.19.160(K) of the Municipal Code exempts construction noise from the stationary noise standards provided that construction activities occur between 7 a.m. and 10 p.m. In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the maximum allowed continuous noise levels detailed in Section 19.19.160(L) of the Municipal Code, which limits offsite noise exposure to 90 dBA or less over 8 continuous hours or 110 dB or less for 30 minutes, will be utilized. The maximum allowed continuous noise levels detailed in Section 19.19.160(L) are consistent with the Occupational Safety and Health Administration (OSHA) agency limits for noise exposure, which have been developed based on studies that determined maximum sound exposure levels before health impacts would occur.

## **2.4 CITY OF HUNTINGTON PARK**

### **2.4.1 GENERAL PLAN, NOISE ELEMENT**

The current Noise Element of the City of Huntington Park General Plan (City of Huntington Park, 1991) presents several policies to achieve and maintain environmental noise levels compatible with land use and protect the City from excessive noise. The following policies are relevant to the Project:

- Policy 1.4: Enforce City, State, and federal noise standards, especially those for mufflers and modified exhaust systems.
- Policy 1.5: Monitor noise from buses and other heavy vehicles in residential areas. If necessary, consider alternate circulation routes for those types of vehicles.

- Policy 2.2: Ensure acceptable noise levels near schools, hospitals, convalescent homes, and other noise-sensitive areas, in accordance with Table 4.7-4.
- Policy 5.3: Reduce noise generated by building activities by requiring sound attenuation on construction equipment.

#### 2.4.2 MUNICIPAL CODE

The current City of Huntington Park Municipal Code, Article 5, Section 9-3, Noise Standards (i.e., noise ordinance), sets forth hours of operation for construction activities. Section 9-3.506 exempts construction activities from the provisions of the City's Noise Standards. Noise sources associated with construction, repair, remodeling or grading of any real property, are allowable provided the activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or at any time on Sundays or Federal holidays.

### 2.5 CITY OF MAYWOOD

#### 2.5.1 GENERAL PLAN, NOISE ELEMENT

The current Noise Element of the City of Maywood General Plan (City of Maywood, 1989) includes several policies to protect the public from excessive and offensive noises. The following policies are relevant to the Project:

- **Policy 1.2: Control any sounds which exceed community accepted levels at their source** through enforcement.

Policy 1.4: Prevent any increase in acceptable ambient levels of sound in the residential areas of the community by implementing local noise standards.

#### 2.5.2 MUNICIPAL CODE

The current City of Maywood Municipal Code, Chapter 23, Noise Control (i.e., Noise Ordinance), sets forth decibel measurement criteria, designated noise zones, exterior and interior noise standards, and legal remedies for violations. The City's Noise Ordinance prohibits construction, repair, remodeling, or grading of any property between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or at any time on Sunday or a Federal holiday. Such activities must not exceed the noise standard of seventy (70) dBA plus the interior noise standards limits specified in Table 2, City of Maywood Interior and Exterior Noise Standards, as measured on residential property, and do not preclude the construction, operation, maintenance, and repair of equipment, apparatus, or facilities of park and recreation departments, public works projects, and public utilities subject to the regulatory jurisdiction of the Public Utilities Commission of the State.

<b>TABLE 2 – CURRENT CITY OF MAYWOOD INTERIOR AND EXTERIOR NOISE STANDARDS</b>				
Standards	Noise Zone	Type of Land Use (Receptor Property)	Time Interval	Allowable Noise Level
Interior	All	Residential	Any time	45 dBA
Exterior	I	Single-family, double family, or multiple family residential	10:00 p.m.–7:00 a.m.	55 dBA
			7:00 a.m.–10:00 p.m.	60 dBA
Exterior	II	Commercial	10:00 p.m.–7:00 am.	65 dBA
			7:00 am.–10:00 p.m.	70 dBA
Exterior	III	Manufacturing or industrial	Any time	75 dBA

SOURCE: City of Maywood 2016.

## **2.6 CITY OF LOS ANGELES**

### **2.6.1 GENERAL PLAN NOISE ELEMENT**

The current Noise Element of the City of Los Angeles General Plan is intended to identify sources of noise and provide objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. Overall, the City's Noise Element describes the noise environment (including noise sources) in the city; addresses noise mitigation regulations, strategies, and programs; and delineates federal, state, and city jurisdiction relative to rail, automotive, aircraft, and nuisance noise.

The City's noise standards are correlated with land use zoning classifications to maintain identified ambient noise levels and to limit, mitigate, or eliminate intrusive noise that exceeds the ambient noise levels within a specified zone. The City has adopted local guidelines based, in part, on the community noise compatibility guidelines established by the California DHS for use in assessing the compatibility of various land use types with a range of noise levels. The City's noise/land use compatibility guidelines for land uses are shown in Table 3, City of Los Angeles Guidelines for Noise Compatible Land Use. These standards are not directly relevant to the Project because the Cleanup Plan does not involve the development of a sensitive land use, but are included herein for completeness.

<b>TABLE 3 - CURRENT CITY OF LOS ANGELES GUIDELINES FOR NOISE COMPATIBLE LAND USE</b>							
Land Use Category	Day-Night Average Exterior Sound Level (CNEL dBA)						
	50	55	60	65	70	75	80
Residential Single-Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motels, Hotels	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business Commercial, and Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

(A) Normally acceptable: Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

(C) Conditionally acceptable: New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, normally will suffice.

(N) Normally unacceptable: New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

(U) Clearly unacceptable: New construction or development generally should not be undertaken.

SOURCE: City of Los Angeles 1999.

### 2.6.2 MUNICIPAL CODE

The current City of Los Angeles Municipal Code (LAMC), Chapter XI (i.e., Noise Ordinance), sets forth sound measurement and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain uses, standards for determining when noise is deemed to be a disturbance, and legal remedies for violations.

Section 41.40 of the LAMC prohibits construction activity and repair work where the use of any power tool, device, or equipment would disturb persons occupying sleeping quarters in any dwelling, hotel, apartment, or other place of residence between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. on Saturday. All such activities are also prohibited on Sundays and all federal holidays. Construction hours may be extended with approval from the Executive Director of the Board of Police Commissioners.

Section 112.05 of the LAMC prohibits the operation of any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at 50 feet from the source of the noise between the hours of 7:00 a.m. and 10:00 p.m., when the source is located within 500 feet of a residential zone:

- 75 dBA for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors, and pneumatic or other powered equipment;
- 75 dBA for powered equipment of 20 horsepower or less intended for infrequent use in residential areas, including chain saws, log chippers, and powered hand tools.

The 75 dBA noise level limit presented under Items (a) and (b) would be applicable to the Project's cleanup activities. However, none of the noise limitations identified would apply where compliance is deemed to be technically infeasible, which means that the noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction device or techniques during the operation of the equipment. The aforementioned limitations apply only to uses in residential zones or within 500 feet thereof.

## **2.7 CITY OF VERNON**

### **2.7.1 GENERAL PLAN NOISE ELEMENT**

The current City of Vernon General Plan presents several policies in the Noise Element to address compatibility among neighboring businesses and industries, and to work with adjacent communities to resolve any conflicts that may be associated with individual businesses along Vernon's municipal boundary.

### **2.7.2 MUNICIPAL CODE**

The current City of Vernon Municipal Code, Zoning Ordinance, Section 26.4.1-6.b.2 establishes allowable exterior noise for all lots in the City of 75 dBA, except for lots located within one tenth (1/10) of a mile of any residence or school located in the City or abutting communities. Those lots are limited to 65 dBA between 7:00 a.m. and 10:00 p.m. and 60 dBA between 10:00 p.m. and 7:00 a.m.

### 3.0 IMPLEMENTATION OF PROJECT DESIGN FEATURES

Three Project Design Features (PDFs) are provided in the MMRP. They are part of the project design, as described in the Work Plan, and are not mitigation measures. The PDFs included in Table 4 are being implemented as a requirement in the Cleanup Plan and the final EIR. In addition, DTSC is including, in this Plan, more robust PDF requirements to help further reduce or avoid potential noise impacts to noise-sensitive receptor locations<sup>1</sup>.

PDFs NOI-1, NOI-2, and NOI-3 will be implemented throughout the duration of cleanup activities in the manner described in the subsequent sections.

#### 3.1.1 PDF NOI-1: IMPLEMENT NOISE COMPLAINT REPORTING

- During cleanup at a property, a sign will be placed at the front that will display appropriate contact information and a toll-free hotline for use by the public to report significant adverse noise conditions related to the cleanup project. The hotline number is 1-844-225-3887. From 8:00 a.m. to 5:00 p.m., the hotline will be answered by a bilingual representative who will collect caller information and forward the inquiry to the appropriate DTSC representative. During non-business hours, calls to the hotline will be directed to voicemail, which is checked daily during normal business hours.
- The Contractor will notify residents of schedules and provide information during the pre-construction meeting to discuss noise concerns.
- The Contractor will provide notices in English and Spanish to the surrounding community using a template provided by DTSC. The notices will state the cleanup schedule and information on the toll-free hotline, which can be used to discuss noise concerns.
- The Contractor will coordinate with local jurisdictions and develop a plan, subject to approval by DTSC, to minimize impacts to schools to the extent feasible.
- The Contractor will regularly train its employees to be sensitive to noise impact problems and will discuss noise control methods to help ensure operators and supervisors are aware of any cleanup site noise problems and will implement methods of improving the conditions.
- The Contractor will monitor, in real-time, noise levels at the property and at nearby noise-sensitive receptor locations whenever noise producing equipment<sup>2</sup> is used. The proposed location of noise monitors will be provided in the Property-Specific Excavation, Disposal, Restoration Design Plan for each property. The Contractor shall provide monitoring criteria to DTSC, for its review and approval, including: performance standards for monitoring equipment, the minimum qualifications for the operators of the equipment, and any other criteria deemed necessary by DTSC. In addition, the Contractor shall provide a protocol to DTSC, for its review and approval, for the following: data collection; data quality assurance/quality control (QA/QC), and any other protocol DTSC deems necessary.

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<sup>1</sup> Noise-sensitive receptors include, but are not necessarily limited to, those receptors identified in the "Noise-Sensitive Receptors," section in the Draft EIR, found on page 4.7-15.

<sup>2</sup> Noise producing equipment includes but is not limited to the equipment identified in Table 4.7-7 of the Draft EIR.



### 3.1.2 PDF NOI-2: IMPLEMENT BEST MANAGEMENT CONSTRUCTION PRACTICES

- The Contractor will adjust all audible back-up alarms downward in sound level to the extent allowable for their intended safety purposes, reflecting vicinities that have expected lower background level, while still maintaining adequate signal-to-noise ratio for alarm effectiveness.
- If monitoring data indicate noise levels associated with cleanup activities are exceeding applicable thresholds, the Contractor will evaluate alternatives to high-amplitude sonic alarms, including the use of signal persons, strobe lights, or alternative safety equipment and/or processes as allowed.
- Stationary noise sources, such as generators and air compressors, will be placed on the property away from affected noise-sensitive receivers.
- The Contractor will ensure that all field conferences, meetings, and other group discussions will take place away from residents.
- The Contractor will not allow the use of personal noise generating devices, such as personal radios, in the field.
- The Contractor will ensure that noise producing equipment is turned off when not in use, and not left idling.

### 3.1.3 PDF NOI-3: IMPLEMENT EQUIPMENT NOISE REDUCTION MEASURES

- The Contractor will ensure that if pneumatic impact tools and equipment are used at a property, they will have intake and exhaust mufflers recommended by the manufacturers thereof, to meet all relevant noise limitations.
- The Contractor will equip noise-generating equipment operated at a property with the most effective noise control devices (i.e., mufflers, lagging, and/or motor enclosures).
- The Contractor will properly maintain all equipment to assure that no additional noise, due to worn or improperly maintained parts, will be generated.
- The Contractor will schedule cleanup activities to avoid operating numerous pieces of noise-generating equipment simultaneously near the boundary of properties or clusters that are under active cleanup.
- The Contractor will use noise attenuating curtains, shields, shrouds, or portable barriers or enclosures, to reduce noise impacts from the operation of noise producing equipment to reduce operating noise. The noise attenuating apparatus used will be made of a solid and dense enough material to demonstrate acoustical transmission loss that is at least 10 dBA greater than the estimated noise reduction effect. The noise attenuating apparatus will be placed in a location that will ensure that potentially significant noise impacts to noise-sensitive receptors are sufficiently reduced or avoided.
- The Contractor will line or cover truck beds and storage bins with sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces).
- The Contractor will utilize upgraded mufflers, acoustical lining, or acoustical paneling for other noisy equipment, including internal combustion engines.
- The Contractor will use alternative procedures of construction and select a combination of techniques that generate the least overall noise and vibration.
- When possible, the contractor will use construction equipment manufactured or modified to reduce noise and vibration emissions, such as:

- Electric instead of diesel-powered equipment; and
- Hydraulic tools instead of pneumatic tools.

**TABLE 4 - NOISE AND VIBRATION PROJECT DESIGN FEATURES**

Project Design Features	Method of Verification	Enforcement Agency	Work Plan Section	Timing of Implementation/Monitoring Frequency	Verification/Approval Party	
					Initials	Date
<p><b>PDF NOI-1:</b> Implement Noise Complaint Reporting:</p> <ul style="list-style-type: none"> <li>Project. This hot-line telephone number will be posted at the property during cleanup in a manner visible to passersby. This telephone number will be maintained until the Project has been completed.</li> <li>Notify residents of schedules and provide a place for them to discuss noise concerns.</li> <li>Include a plan to coordinate with schools and possibly residents to minimize noise impacts on students and teachers to the extent feasible.</li> <li>Educate contractors and their employees to be sensitive to noise impact problems and noise control methods to help operators and supervisors become more aware of the construction site noise problem and to implement the various methods of improving the conditions. A training program for equipment operators is recommended to instruct them in methods of operating their equipment to minimize noise impacts.</li> </ul>	<p>Conduct a test of hot-line to ensure it is enabled; Training conducted for contractors.</p>	DTSC	Section 5.1; 6.4	All contractors are trained prior to commencement of cleanup activities.		
<p><b>PDF NOI-2:</b> Implement Best Management Construction Practices:</p> <ul style="list-style-type: none"> <li>Adjust all audible back-up alarms downward in sound level to the extent allowable for their intended safety purposes, reflecting vicinities that have expected lower background level, while still maintaining adequate signal-to-noise ratio for alarm effectiveness.</li> <li>Consider signal persons, strobe lights, or alternative safety equipment and/or processes as allowed, for reducing reliance on high- amplitude sonic alarms.</li> <li>Place stationary noise sources, such as generators and air compressors, on the property away from affected noise-sensitive receivers.</li> </ul>	<p>Included in contractors' scopes of work and agreements. Inspection of properties during cleanup activities.</p>	DTSC	Section 6.4	<p>Contractor to implement during cleanup activities. Ongoing by Contractor during cleanup activities within the PIA. Compliance summaries shall be forwarded to DTSC as part of the contractors' periodic reporting requirements, which DTSC shall review within 1 week of receipt.</p>		
<p><b>PDF NOI-3:</b> Implement Equipment Noise Reduction Measures:</p> <ul style="list-style-type: none"> <li>Place stationary noise generators as far from sensitive receptors as possible.</li> <li>Ensure pneumatic impact tools and equipment used at the property will have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.</li> <li>Equip noise-generating equipment operated at a property with the most effective noise control devices, i.e., mufflers, lagging, and/or motor enclosures.</li> <li>Properly maintain all equipment to assure that no additional noise, due to worn or improperly maintained parts, will be generated.</li> <li>Schedule cleanup activities so as to avoid operating numerous pieces of noise-generating equipment simultaneously in close proximity to the boundary of properties or clusters under active cleanup.</li> <li>Provide impact noise producing equipment with noise attenuating shields, shrouds, or portable barriers or enclosures, to reduce operating noise.</li> <li>Line or cover truck beds and storage bins with sound-deadening material.</li> </ul>	<p>Included in contractors' scopes of work and agreements.</p>	DTSC	Section 6.4;	<p>Contractor to implement during cleanup activities. Ongoing by Contractor during cleanup activities within the PIA. Compliance summaries shall be forwarded to DTSC as part of the contractors' periodic reporting requirements, which DTSC shall review within 1 week of receipt.</p>		

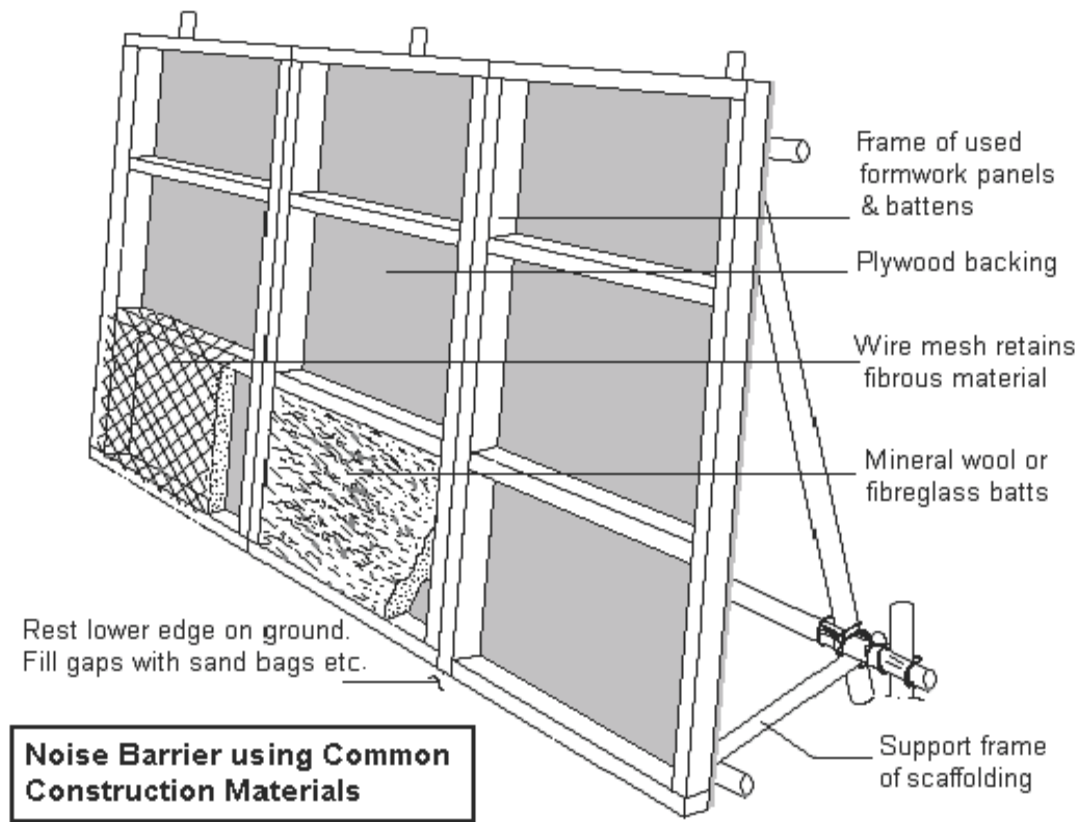
## 4.0 MITIGATION MEASURE

Cleanup-related noise has the potential to result in significant impacts to noise-sensitive receptors, even with the implementation of the PDFs as described in the MMRP. As a result, DTSC is requiring, in this Plan, more robust actions to address potential noise impacts. These more robust actions include use of higher performance criteria for the noise attenuating apparatus required by PDF NOI-3. They also include a requirement for a real-time monitoring of noise levels, as part of PDF NOI-1, to ensure that prompt action is taken if cleanup related noise exceeds the thresholds set by the relevant jurisdiction. If the monitoring data show that a noise exceedance has occurred at a property or where noise-sensitive receptors are located, work will stop and Mitigation Measure NOI-1 will be implemented to the extent feasible. DTSC has determined that this more robust actions will meet or exceed the standards and objectives set out in MMRP related to noise impacts.

### Mitigation Measure NOI-1: Implement Temporary Noise Barriers

If feasible, the Contractor will implement field-erected temporary noise barriers, including but not limited to, sound blankets on existing fences and walls, or freestanding portable sound walls, to block the line-of-sight between construction equipment and noise-sensitive receptors during Project implementation. Noise barriers should be a minimum of 8-feet tall and continuous between the source of noise and adjacent or nearby noise-sensitive receptors. Noise barriers are most effective when placed directly adjacent to either the noise source or receptor. Place sound barriers around stationary sources and near windows, where feasible.

Barrier construction may include, but is not necessarily limited to, using appropriately thick wooden panel walls (at least ½ inch thick), as shown in EIR Figure 4.7-2



*Copy of EIR Figure 4.7-2 (Temporary Noise Wall Barrier Construction)*

Temporary Noise Wall Barrier Construction, which are tall enough to block the line-of-sight between the dominant construction noise source(s) and the noise-sensitive receptor. Such barriers can reduce construction noise by 5 to 15 dBA at nearby noise-sensitive receptor locations, depending on barrier height and length and the distance between the barrier and the noise-producing equipment or activity. Alternately, field-erected noise curtain assemblies could be installed around specific equipment sites or zones of anticipated mobile or stationary activity, resembling the sample shown in EIR Figure 4.7-3.



*Copy of EIR Figure 4.7-3 (Curtain-Type Noise Barrier)*

These techniques are most effective and practical when the construction activity noise source is stationary (e.g., generator operation), and the specific source locations of noise emission are near the ground and can be placed as close to the equipment/activity facing side of the noise barrier as possible. Barrier layout and other implementation details would vary by property due to unique conditions at each property.

The barrier material is assumed to be solid and dense enough to demonstrate acoustical transmission loss that is at least 10 dBA greater than the estimated noise reduction effect. These suggested barrier types do not represent the only ways to achieve the indicated noise reduction in dBA; they represent examples of how such noise attenuation might be attained by an implemented measure under the right conditions.