4.10.1 NOISE

This section describes the existing ambient noise environment and regulatory setting for the proposed Projects. This section also examines the consistency of the proposed Projects with applicable plans and policies in the County of Imperial and describes potential noise impacts from the proposed construction and operation activities.

Scoping Issues Addressed

During the scoping period for the Projects, two public scoping meetings were conducted and written comments were received from agencies and the public. Issues related to noise was raised during the scoping period.

The Yuma Marine Corps Air Station (MCAS) noted that the Project sites is located beneath two military low-level flight routes, Visual Route (VR)-1211 and VR-288 and indicated that the Project site may experience noise, vibrations, and interference from the overflight of low-flying military aircraft that operate in this area.

4.10.1 EXISTING SETTING

Regional Setting

The proposed Projects would be located in County of Imperial, which is situated in the southeasternmost portion of the State of California. The County encompasses an approximately 4,597-square-mile area and is bordered by Riverside County to the north, the State of Arizona on the east, Mexico to the south, and San Diego County to the west. Principal noise sources in County of Imperial are transportation (aircraft, railway lines, and motor vehicles), industrial (rail switching yards, utilities, and manufacturing facilities), and agricultural operations. Existing industrial sources, including geothermal and manufacturing plants, are generally located away from concentrations of sensitive receptors in the County (County of Imperial 1993).

Land uses in the Imperial Valley around the Salton Sea and the Salton Sea Known Geothermal Resource Area (KGRA) reflect the development trends of the County with respect to existing agricultural uses and development of renewable energy projects. In recent years, a number of solar and geothermal energy projects have been proposed for development in the County. Approximately 12% (347,941-acres) of the land area in County of Imperial has been designated by the United States Geological Survey (USGS) as a KGRA. The County of Imperial has several KGRAs. The County of Imperial Geothermal/Alternative Energy and Transmission Element estimates that approximately 1,790 megawatts (MW) of energy from the County's geothermal resources will be developed by 2015 (County of Imperial 2006).

Project Sites

The Project sites are located on private land within the Salton Sea KGRA in the unincorporated area of County of Imperial, California, about 2.3 miles west-southwest of the Town of Niland, and 1.1 mile directly

east of the existing Hudson Ranch I Geothermal Power Plant. The Project sites have been cultivated with alfalfa in the recent past. However, at the time of publication of the NOP, the agricultural fields on the project site were fallow and not being irrigated. The existing IID 230-kilovolt (kV) Transmission Line pruns east to west along the southernmost shoulder of McDonald Road; it then turns southward to bisect the site from north to south.

Adjacent Areas

Neighboring properties north, east, and south of the Project sites consist of IID managed marshlands and irrigated farmland (alfalfa fields). Other land uses located within a 3-mile radius of the Project sites include the Sonny Bono Salton Sea National Wildlife Refuge (NWR) 2.75 miles to the southwest, the Hudson Ranch I Geothermal Power Plant (1.1 mile to the west), the Alamo River (1.4 miles to the southwest), the Red Hill Marina and Red Hill Marina County Park (1.9 and 2.8 miles to west), the Leathers Geothermal Power Plant (1.5 miles to the south), and the Brandt Cattle Company (2.75 miles to the southwest). In addition, a vast system of Imperial Irrigation District (IID) canals, check dams, and pipelines carrying water for agricultural irrigation are located throughout the area and near the Project sites.

The closest public use airport, Cliff Hatfield Memorial Airport (also known as the Calipatria Municipal Airport), is located approximately 4.8 miles southeast of the Project sites. According to the Imperial County Airport Land Use Compatibility Plan (1996), the Project sites are s located outside of the compatibility zones for this airport. And as noted above, the proposed Projects lie beneath two military low -level flight routes, VR-1211 and 288.

Existing Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to be uses that would result in noise exposure that could result in health-related risks to individuals as well as places where quiet is an essential element of their intended purpose. Residential dwellings, including senior housing, are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreational areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places, where low interior noise levels are essential, are also considered noise-sensitive land uses. The County of Imperial General Plan Noise Element also notes that sensitive receptors may also involve non-human species such as riparian bird species (County of Imperial 1993).

The nearest residence is approximately 0.5 mile north-northeast of the Project sites, along English Road. Energy Source LLC, (Hudson Ranch Power II LLC's parent company) owns the home Fall. This residence would be demolished prior to the start of construction of either the HR-2 or SmCP-2 Project. The next closest residence is located 1.4 miles northwest of the Project sites. The commercial algae production facility, located south of the Project sites, includes a mobile home which, at the time of the publication of the NOP, served as a residence for the facility caretaker. The commercial algae facility is no longer in operation.

Other sensitive receptors in the vicinity of the proposed Project sites include the Sonny Bono Salton Sea National Wildlife Refuge (2.75 miles to the southwest) and the Grace Smith Elementary School (2.6 miles to the northeast) (Figure 4.10-1).

Ambient Noise Conditions

In July 2011, noise levels were measured at the Sonny Bono National Wildlife Refuge, the southeast corner of the town of Niland, McDonald Road west of State Route 111, and on State Route 111 directly east of the proposed Projects to obtain a baseline ambient noise level. Results of these measurements were used to calculate the day-night average sound level (L_{dn}) provided in Table 4.10-1.

TABLE 4.10-1 AMBIENT NOISE LEVELS

AMBIENT NOISE MEASUREMENT	AMBIENT NOISE MEASUREMENT LOCATION	DAY/DATE	TIME OF MEASUREMENT	LENGTH OF MEASUREMENT (MINUTES)	NOISE LEVEL (L_{DN}, dBA)
ANL-1	Sonny Bono NWR	Wednesday/July 6 (Day) Thursday / July 7 (Night)	04:08-04:23 21:03-21:18	15	48.5
ANL-2	State Route 111	Wednesday/July 6 (Day) Thursday / July 7 (Night)	04:47-05:02 19:03-19:18	15	68.1
ANL-3	Niland, CA	Wednesday/July 6 (Day) Thursday / July 7 (Night)	05:43-05:58 20:08-20:23	15	76.5
ANL-4	McDonald Road	Wednesday/ July 6 (Day) Thursday / July 7 (Night)	05:14-05:29 19:30-19:46	15	58.2

Source: Ecology & Environment, Inc. July 2011

Key:
Ldn = day-night average sound level
dBA – A-weighted decibels

Due to the location of Grace Smith Elementary School and other residences in relation to the proposed Projects, and the fact that the caretaker mobile home is located within an industrial development for the sole purpose of facilitating the industrial use, the Town of Niland was chosen as the best example of an average location where sensitive receptors are located. The resulting equivalent sound level (L_{eq}) daytime noise level was 67.6 dBA and nighttime noise level was 70.4 dBA over a period of 15 minutes (Ecology and Environment 2011).

The location of the ambient noise measurement areas and sensitive receptors, in relation to the proposed facility site, are presented in Figure 4.10-1.

During this period, existing noise sources in the vicinity of the proposed Projects included vehicular traffic, biological resources, geothermal energy development, and farming equipment. Noise sources associated with biological resources included bird calls and the sounds of crickets and other insects. The existing Leathers geothermal power plant operation was audible near the Sonny Bono NWR measurement location[1]. Peak noise levels increased to approximately 65 to 75 dBA when vehicles/trucks passed by at the Niland and McDonald Road measurement location. Noise was also measured approximately 0.5 miles from the Project sites (at ANL-4 measurement location [see Figure 4.10-1]). The average noise level was about 49.7 dBA, approximately 50 feet from the road, with the dominant noise source being vehicle and truck traffic on State Route 111.

Groundborne Vibration

Operations of the existing geothermal plant, low-flying military aircraft, and vehicle traffic contribute to temporary groundborne vibration in the vicinity of the Project sites. However, vibration wave intensity is attenuated over distance and, perhaps may not be perceived at the closest sensitive receptors which include a residence that is 0.5 miles away that would be demolished prior to construction, and another residence that is 1.4 miles away from the Project sites. The caretaker at the commercial algae facility would not be considered a "sensitive residential receptor" because the mobile home is located within an industrially-zoned development for the sole purpose of facilitating the industrial use.

Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin but typically is almost never annoying to people who are outdoors (FTA 2006). The Federal Transit Administration (FTA) establishes a minimal threshold for vibration human perception (measured as RMS vibration velocity level in decibels) of 70 VdB. Given the fact that the Project sites is located in an open agricultural area and potential sensitive receptors are located more than 1 mile away from the Project sites, vibration levels were not measured as part of the existing setting analysis but were assumed to be less than 70 VdB.

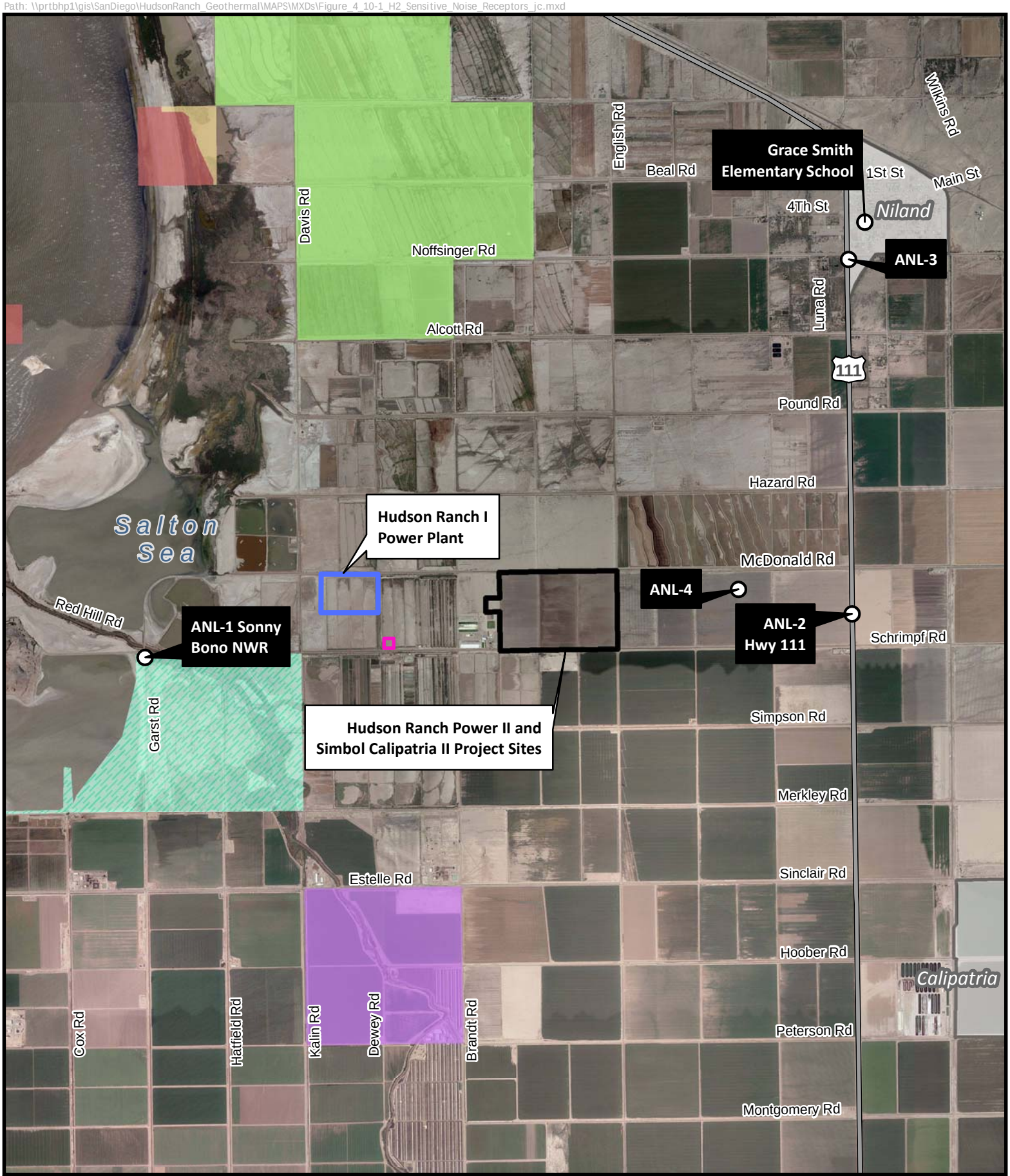
4.10.2 REGULATORY SETTING

FEDERAL AND STATE

There are no federal noise standards that directly regulate environmental or community noise and vibration. Regulating noise is generally a responsibility of local governments. However, several federal agencies have developed technical guidelines and impact criteria for several types of Projects.

[1] By the time background noise measurements were performed, the Hudson Ranch I geothermal plant had not started operations. The closest geothermal facility in operation during measurements at the Sonny Bono NWR was the Leathers Geothermal Power Plant, operated by CalEnergy.

Path: \\prtbhp1\gis\SanDiego\HudsonRanch_Geothermal\MAPS\MXDs\Figure_4_10-1_H2_Sensitive_Noise_Receptors_jc.mxd



- HR-2 and SmCP-2 Project Sites
- HR I Power Plant
- IID Substation
- Noise Receptor/ Measurement Point
- California Dept. of Fish & Game
- State Lands Commission
- US Bureau of Land Management
- US Bureau of Reclamation
- US Fish and Wildlife

Hudson Ranch Power II
CUP #G10-0002 &
Simbol Calipatria II
CUP #12-0005
Sensitive Noise Receptors & Noise Measurement Points

Figure 4.10-1

0 0.5 Miles

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U.S. Environmental Protection Agency Recommended Guidelines

The U.S. Environmental Protection Agency (EPA) published guidelines on recommended maximum noise levels to protect public health and welfare with adequate margins of safety. A noise level of 70 dBA L_{eq} (24) was identified as the level of environmental noise that would prevent any measurable hearing loss over a lifetime (U.S. EPA 1978).

Federal Transit Administration

The Federal Transit Authority (FTA) Transit Noise and Vibration Impact Assessment guidelines identify noise and vibration thresholds and impact methodologies that are commonly used as reference for construction activities, especially if projects involve roadwork and paving activities. The FTA recommends noise thresholds that would not annoy or interfere with activities as 55 dBA L_{dn} outdoors and 45 dBA indoors (FTA 2006).

The FTA also has studied human reaction to groundborne vibration levels and groundborne noise, and has also established vibration impact criteria in their publication, Transit Noise and Vibration Noise Impact Assessment (FTA 2006). These criteria are expressed in terms of root-mean-square (RMS) vibration velocity level (Lv) in decibels (VdB)[2]. The FTA identifies acceptable groundborne vibration levels for residential units as a maximum of 78 VdB during the day and 72 VdB during the night. In addition, the FTA identifies a vibration damage threshold criterion of 0.20 inches per second for non-engineered timber and masonry buildings (i.e., fragile buildings) or 0.12 inches per second for buildings extremely susceptible to vibration (i.e., fragile historic buildings).

Occupational Safety and Health Act of 1970

On-site noise levels are regulated by the Occupational Safety and Health Administration (OSHA). This regulation protects workers from the effects of occupational noise exposure. The noise exposure level of workers is regulated at 90 dBA over an 8-hour work shift to protect hearing (29 Code of Regulations [CFR] 1910.95). Employee exposure to levels exceeding 85 dBA requires that employers develop a hearing conservation program. Such programs include adequate warning, the provision of hearing protection devices, and periodic employee testing for hearing loss. OSHA defers implementation and enforcement of noise exposure limits to the California Occupational Safety and Health Administration (CalOSHA).

State of California

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land use compatibility criteria. The State of California General Plan Guidelines (2003), published by the Governor's Office of Planning and Research, also provides guidance for the acceptability of projects

[2] Ground-borne vibration related to human annoyance is generally referred as Lv and measured in VdB.

within specific community noise equivalent level (CNEL)/L_{dn} contours. The guidelines present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. As discussed below under local policies, the County of Imperial has utilized the adjustment factors provided and has modified the state's land use compatibility standards for the purpose of implementing the Noise Element of its General Plan.

California Occupational Safety and Health Administration

The CalOSHA has promulgated Occupational Noise Exposure Regulations (California Code of Regulations, Title 8, Section 5095–5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards. The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land use compatibility criteria.

LOCAL

County of Imperial General Plan Noise Policies

The County of Imperial General Plan Noise Element outlines the goals and objectives for identifying and managing existing and future noise sources in County of Imperial. The Plan Noise Element also contains plans and policies to protect the public from noise intrusion. Table 4.10-2 identifies applicable General Plan policies, goals, and objectives applicable to the Projects' consistency with the General Plan Noise Element.

TABLE 4.10-2 HR-2 AND SMCP-2 PROJECTS' CONSISTENCY WITH APPLICABLE GENERAL PLAN NOISE GOALS AND POLICIES

GENERAL PLAN POLICIES, GOALS AND OBJECTIVES	CONSISTENCY	ANALYSIS
NOISE ELEMENT		
Goal 1: Provide an acceptable noise environment for existing and future residents in County of Imperial. Objective 1.3: Control noise at the source where feasible.	Yes	The proposed Projects' design would incorporate environmental protection measures to control operational noise levels at the source. HR-2 EPM NOI-1 (Prevention of Noise). Mufflers will be utilized on engine-driven equipment during both construction and development operations. SmCP-2 EPM NOI-1 (Prevention of Excessive Noise) The maximum projected noise during construction would be 83 dBA at 50 feet and during operation it would be approximately 81 to 84 dBA at 10 feet from the cooling tower. Mufflers will be utilized on engine-driven equipment during both construction and plant operations.

TABLE 4.10-2 HR-2 AND SMCP-2 PROJECTS' CONSISTENCY WITH APPLICABLE GENERAL PLAN NOISE GOALS AND POLICIES

GENERAL PLAN POLICIES, GOALS AND OBJECTIVES	CONSISTENCY	ANALYSIS
Objective 1.4: Coordinate with airport operators to ensure operations are in conformance with approved Airport Land Use Compatibility Plans.	Yes	The Cliff Hatfield Memorial Airport is located approximately 4.8 miles southeast of the Project site. According to the Imperial County Airport Land Use Compatibility Plan (1996), the Project site is located outside of the Compatibility Zones for this airport.
Goal 2: Review proposed projects for noise impacts and require design which will provide acceptable indoor and outdoor noise environments. Objective 2.1: Adopt criteria delineating projects which should be analyzed for noise impact to sensitive receptors. Objective 2.2: Provide acoustical analysis guidelines which minimize the burden on project proponents and project reviewers. Objective 2.3: Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects as proposed.	Yes	The proposed Projects' noise impact review (as presented in this section) is based on the County acoustical analysis guidelines and the Imperial County Code of Ordinances, Title 9, Division 7 – Noise Abatement and Control. Hudson Ranch Power II, LLC and Simbol, Inc.'s environmental protection measures and proposed mitigation measures for identified impacts have taken into account the County's guidelines for on-site planning, construction, and noise barriers.
NOISE ELEMENT		
Policy 1: Acoustical Analysis of Proposed Projects. The County shall require the analysis of proposed discretionary projects which may be impacted by excessive noise levels.	Yes	Refer to analysis of Goal 2.
Policy 2: Noise/Land Use compatibility. When acoustical analysis of a proposed project is required, the County shall identify and evaluate potential noise/land use conflicts that could result from the implementation of the Project.	Yes	The proposed Projects would be located more than one mile away from existing sensitive receptors, compatible with the existing agricultural and Geothermal Overlay Zone.
Policy 4: Interior Noise Environment. Where acoustical analysis of a proposed project is required, the County shall identify and evaluate projects to ensure compliance to the California (Title 24) interior noise standards and additional requirement of this Element. Prior to the issuance of a building permit, an acoustical analysis, or equivalent documentation, must be submitted that demonstrates compliance with the standard for all buildings to be located in an area of exterior noise level greater than 60 dB CNEL. No formal analysis may be required if the standard can be achieved by the minimum noise reduction indicated in Table 10 of the General Plan Noise Element.	Yes	Refer to analysis of Goal 2.

TABLE 4.10-2 HR-2 AND SMCP-2 PROJECTS' CONSISTENCY WITH APPLICABLE GENERAL PLAN NOISE GOALS AND POLICIES

GENERAL PLAN POLICIES, GOALS AND OBJECTIVES	CONSISTENCY	ANALYSIS
Policy 5: New Noise Generating Projects. The County shall identify and evaluate projects which have the potential to generate noise in excess of the Property Line Noise Limits. An acoustical analysis must be submitted which demonstrates the Project's compliance.	Yes	Refer to analysis of Goal 2.

Source: County of Imperial 1993

While this Draft Environmental Impact Report (EIR) analyzes the Projects' consistency with the County of Imperial General Plan pursuant to CEQA Guidelines, Section 15125(d), the County of Imperial Planning Commission will determine the Projects' consistency with the General Plan.

Noise/Land Use Compatibility Standards

Table 4.10-3 provides the County of Imperial Noise/Land Use Compatibility Guidelines. Land use compatibility defines the acceptability of a land use in a specified noise environment. County requirements specify that when an acoustical analysis is performed, conformance of the proposed Project with the Noise/Land Use Compatibility Guidelines are used to evaluate potential noise impacts and provide criteria for environmental impact findings and conditions for Project approval.

TABLE 4.10-3 NOISE/LAND USE COMPATIBILITY GUIDELINES

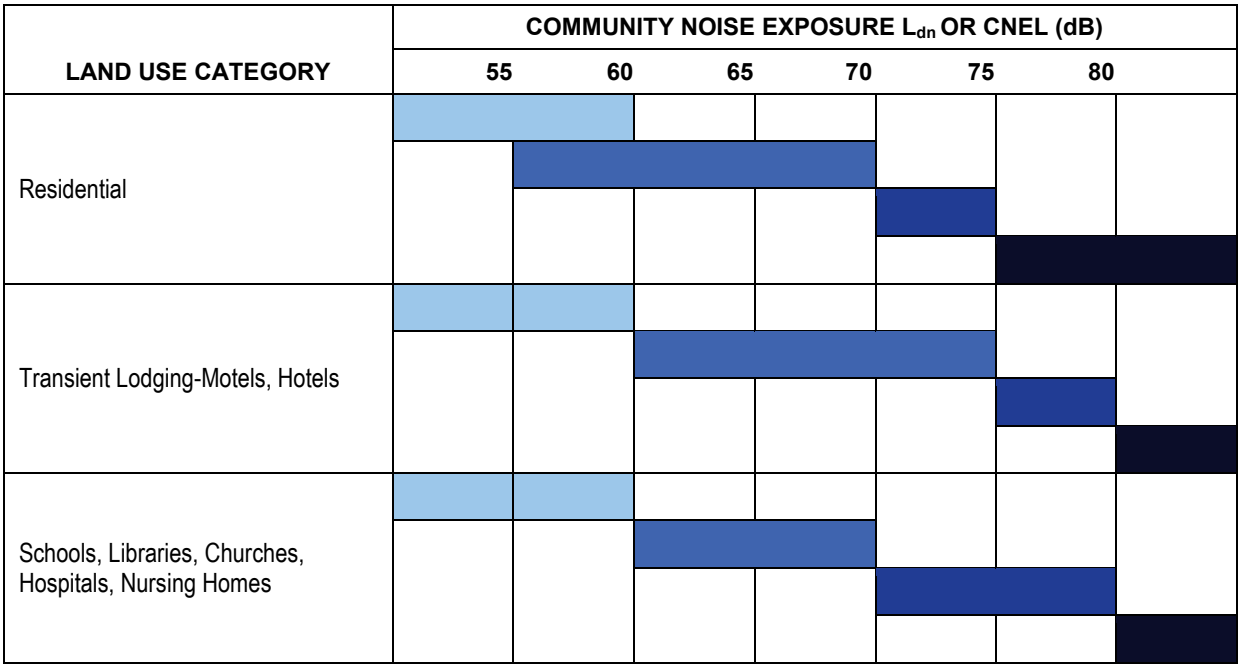

TABLE 4.10-3 NOISE/LAND USE COMPATIBILITY GUIDELINES

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L_{dn} OR CNEL (dB)						
	55	60	65	70	75	80	
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial Manufacturing Utilities, Agriculture							

Clearly Unacceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features are included in the design.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Source: County of Imperial 1993

Noise Impact Zone

A noise impact zone is an area that is likely to be exposed to significant noise. The County of Imperial defines a Noise Impact Zone as an area that may be exposed to noise greater than 60 dB CNEL or 75 dB L_{eq}. The purpose of the noise impact zone is to define areas and properties where an acoustical analysis of a proposed Project is required to demonstrate Project compliance with land use compatibility requirements and other applicable environmental noise standards. The County of Imperial Noise Element defines any property meeting one of the following criteria as being in a noise impact zone:

- Within the noise impact zone distances to classified roadways, as indicated in Table 4.10-4.
- Within 1,000 feet of the boundary of any railroad switching yard.
- Within the existing or projected 60 dB CNEL contour of any airport, as shown in the County of Imperial Airport Land Use Compatibility Plan (ALUCP) or an approved airport master plan which supersedes the ALUCP. Note: Land use compatibility analysis, which may include an acoustical analysis, is required for Projects proposed within the "airport vicinity" of each airport, as defined on the Compatibility Maps shown in the ALUCP. This may encompass a much larger area than the 60 dB CNEL contour.
- Within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone.

TABLE 4.10-4 ROADWAY NOISE IMPACT ZONES

ROADWAY CLASSIFICATION	DISTANCE FROM CENTERLINE (FEET)
Interstate Highway	1,500
State Highway or Prime Arterial	1,100
Major Arterial	750
Secondary Arterial	450
Minor Collector	150

Source: County of Imperial 1993

The Project site is located on existing farmland that is within an agricultural zone and is within 150 feet of a minor collector road. Therefore, the proposed Projects would be located within a noise impact zone.

County of Imperial Construction Noise Standards

The County of Imperial General Plan Noise Element requires that construction noise from a single piece of equipment or a combination of equipment shall not exceed 75 dB L_{eq}, when averaged over an 8- hour period and measured at the nearest sensitive receptor. This standard assumes a construction period of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a 1-hour period.

The standards prescribed in the County Noise Element also establish that construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday, unless the County Planning and Development Services Director authorizes otherwise. No commercial construction operations are permitted on Sunday or holidays.

County of Imperial Noise Ordinance

Noise-generating sources in County of Imperial are regulated under the County of Imperial Codified Ordinances, Title 9, Division 7 (Noise Abatement and Control). Noise limits are established in Chapter 2 of this ordinance. Under Section 90702.00(A) of this rule, 70 dB is the normally acceptable limit for the industrial, manufacturing, utilities, and agricultural category of land use on or beyond the boundaries of the property on which the noise is produced at any location in the County.

County of Imperial Property Line Noise Standards

The property line noise limits listed in Table 4.10-5 apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise. These standards are intended to be enforced through the County's code enforcement program on the basis of complaints received from persons impacted by excessive noise. It must be acknowledged that a noise nuisance may occur even though an objective measurement with a sound level meter is not available. In such cases, the County may act to restrict disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

TABLE 4.10-5 PROPERTY LINE NOISE LIMITS

ZONE	TIME	APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (DB)
Residential Zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-Residential Zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

Source: County of Imperial 1993

Note: When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the property line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB L_{eq}.

New Noise-Generating Projects

The County shall identify and evaluate projects that have the potential to generate noise in excess of the property line noise limits specified in Table 4.10-5. An acoustical analysis must be submitted that demonstrates the projects' compliance with the property line noise limits and/or required mitigation measures to reduce noise to acceptable levels. Mitigation may include a greater property line setback than required by the Land Use Ordinance, use of solid building walls without openings, noise- attenuation walls and/or landscaped earth berms, alternative construction materials or design, alternative traffic patterns, or other noise-reduction techniques.

Agricultural Noise/Right to Farm Ordinance

In recognition of the role of agriculture in the County, the Board of Supervisors has adopted a Right to Farm Ordinance (No. 1031). This ordinance requires a disclosure to owners and purchasers of property that is near agricultural lands or operations or included in an area zoned for agricultural purposes. The disclosure advises persons that discomfort and inconvenience from machinery and aircraft noise resulting from conforming and accepted agricultural operations are a normal and necessary aspect of living in the agricultural areas of the County.

If any residential or other noise-sensitive land use is proposed within one-quarter mile (1,320 feet) of existing farmland that is in an agricultural zone, such proposed Project shall be required to prepare an acoustical analysis to evaluate potential noise impacts from farm operations on the proposed Project. This may include an analysis of impact of operating farm machinery or trucks hauling farm products on public roads.

County of Imperial Land Use Ordinance Drilling Standards Applicable to Geothermal Projects

The County of Imperial Land Use Ordinance includes general drilling standards specific to geothermal projects (Division 17). This ordinance requires the implementation of County-specified noise control measures, including:

1. The drilling operator shall limit drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary. This level may be exceeded by 10% if the noise is intermittent and during daylight hours (Land Use Ordinance 91702.01(B)).

2. Diesel equipment used for drilling within 300 feet of any residence shall have hospital-type mufflers. Well-venting and testing at these wells shall be accompanied by the use of an effective muffling device or silencer (Land Use Ordinance 91702.01(D)).

3. Heavy truck traffic, well site preparation, pipe stacking, and hydroblasting (used for descaling operations) shall be limited to the hours between 7:00 a.m. and 7:00 p.m. for any wells within 300

feet of any residence. Exceptions may be made where soundproofing is provided or during summer hours to minimize effects of heat with notice to the planning director and approval thereof (Land Use Ordinance 91702.01(I and M)).

4. Impulse noises such as sudden steam venting shall be controlled by discharge through a muffler other sound-attenuating system, as appropriate (Land Use Ordinance 91702.01(O)).

5. Drilling may be on a 24-hour basis provided the standards above are met (Land Use Ordinance 91702.01(S)).

4.10.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, Appendix G. An impact is considered significant if the Projects would:

1. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

2. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.

3. Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

4. Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

5. Expose to excessive noise levels people residing or working in a Project area where an airport has been identified in a land use plan, or where such a plan has not been adopted, or where the Project is located within 2 miles of a public airport or public-use airport.

6. Expose to excessive noise levels people residing or working in an area where a Project is within the vicinity of a private airstrip.

ENVIRONMENTAL PROTECTION MEASURES

Chapter 3 provides a complete list and description of environmental protection measures (EPMs) that Hudson Ranch Power II, LLC and Simbol, Inc. have incorporated into their respective Projects to avoid or minimize impacts on all resources.

The following EPMs are included as part of the proposed HR-2 Project to minimize or avoid noise impacts:

- HR-2 EPM NOI-1: Prevention of Noise. To abate noise pollution, mufflers will be utilized on engine-driven equipment during both construction and development operations.

- EPM AQ-3Exhaust Emissions Control Program. This plan will provide a detailed list of control measures to minimize exhaust emissions during project construction, including, but not limited to, fuel use, engine maintenance, and procedures.

The following EPMs are included as part of the proposed SmCP-2 Project to minimize or avoid noise quality impacts:

- SmCP-2 EPM NOI–1: Prevention of Excessive Noise. The maximum projected noise sources during Project construction would be from heavy construction equipment, which are projected to be 83 dBA at 50 feet. Similarly, the maximum projected noise source during operations would be the cooling tower, which is projected to be 86 dBA at 5 feet. To abate noise pollution, mufflers will be used on engine-driven equipment during both construction and plant operations.

- EPM AQ-2: Exhaust Emissions Control Program. This plan will provide a detailed list of control measures to minimize exhaust emissions during project construction, including, but not limited to, fuel use, engine maintenance, and procedures.

METHODOLOGY

Noise levels resulting from proposed construction activities were obtained from the Hudson Ranch Power II, LLC and Simbol, Inc.'s equipment lists and process descriptions, reports prepared by the FTA and the Federal Highway Administration (FHWA), satellite imagery from the site, and field data from files. Operational noise levels for the geothermal plant and operating wells were obtained at the Hudson Ranch I Geothermal Project on May 2012. (Energy Source 2012). The noise impact assessment used criteria established in the County of Imperial General Plan Noise Element and the County of Imperial Noise Ordinance.

HR-2 IMPACTS AND MITIGATION MEASURES

Impact NOI-1: The HR-2 Project would not result in exposure of persons to or generation of noise levels in excess of standards established in local plans or ordinances, after implementation of mitigation measures.

Construction and Drilling Noise Impacts

On-site noise-generating activities associated with the HR-2 Project would include short-term construction noise, mechanical equipment noise related to geothermal drilling, installation and testing of flash power plant equipment, and associated

vehicles. Well-testing and construction of the proposed power plant and interconnection line would involve the short-term use of heavy equipment. Estimations made based on the proposed equipment list result in composite noise from well pad grading of 85 dBA Leq(h) at 50 feet and 83 dBA Leq(h) for drill rig assembly, well drilling, and testing. It is expected that well drilling average noise would be 85dBA at 50 feet.

Major noise sources during construction of the HR-2 Project would include the diesel engines on the construction equipment, operation of the drilling rig, and noise associated with the movement of pipes and casing. Drilling is anticipated to take 16 months; construction of the power plant and interconnection line is anticipated to last a total of 28 months. Construction noise is usually made up of intermittent noise peaks and continuous lower levels of noise from equipment cycling through use. Noise levels associated with individual pieces of equipment can generally range between 70 and 90 dBA (FTA 2006). Based on the proposed construction equipment list and industry-wide noise reference levels, the estimated maximum composite construction noise level for the HR-2 Project is 93 dBA at a distance of 50 feet from the building, mechanical, and electrical work sites (EMA 2012a, FHWA 2006). Additionally, noise from trucks, commuter vehicles, and other on-road equipment, which would mainly be along streets and access roads, would produce peak levels of approximately 88 dBA at 50 feet from the source (FTA 2006).

During a typical day, equipment would not be operated continuously at peak levels. While the average noise levels on-site could exceed the 75 dBA L_{eq} construction noise standard established by County of Imperial for General Industrial Zones, noise would attenuate to levels below the threshold with increasing distance until it reaches the nearest sensitive receptors. To abate noise pollution, the applicant would install mufflers on engine-driven equipment during both construction and development operations (HR-2 EPM NOI-1). Additionally, the applicant would implement an exhaust emissions control program during Project construction (HR-2 EPM AQ-3), which would include, but not limited to, engine maintenance, and procedures to minimize emissions that would assist in reducing noise. Generally, exhaust emission control programs include the minimization of unnecessary vehicle and equipment idling time either by shutting equipment off when not in use or reducing idling time. Therefore, it is anticipated that construction noise would be reduced from the estimated peak levels.

Once construction/operations commence, the nearest sensitive noise receptors to the proposed HR-2 site would be the Sonny Bono Salton Sea National Wildlife Refuge (2.75 miles to the southwest of the site boundary), a residence located 1.4

miles northwest from the Project site boundary, and the Grace Smith Elementary School (2.6 miles to the northeast of the site boundary). The caretaker at the commercial algae facility would not be considered a "sensitive residential receptor" because the mobile home is located within an industrially-zoned development for the sole purpose of facilitating the industrial use.

As shown on Table 4.10-6, construction noise levels would attenuate from 93 dBA at 50 feet from the source to 50 dBA at the closest residential receptor due to geometric spreading of sound energy. Therefore, all calculated noise levels would fall within the normally acceptable range of the guidance set forth in the County of Imperial General Plan Noise Element.

TABLE 4.10-6 PROJECTED CONSTRUCTION AND WELL DRILLING NOISE LEVELS AT NEAREST SENSITIVE RECEPTORS

NOISE SENSITIVE RECEPTOR	APPROXIMATE DISTANCE TO PROJECT SITE PROPERTY LINE	PROJECTED CONSTRUCTION SOUND LEVEL AT THE RECEPTOR PROPERTY LINE (1, 3)	PROJECTED DRILLING SOUND LEVEL AT THE RECEPTOR PROPERTY LINE (1, 2,3)
Sonny Bono Salton Sea National Wildlife Refuge	2.75 miles southwest	44 dBA	36 dBA
Residence	1.4 miles northwest	50 dBA	42 dBA
Grace Smith Elementary School	2.6 miles northeast	44 dBA	36 dBA

Notes:
(1) Excludes background noise.
(2) Reference noise level during drilling has been assumed as 85 dBA at 50 feet from the source, per levels measured during exploratory drilling at the HR-2 Project site.
(3) Projected sound level methodology based on geometric spreading of sound energy, per FTA (2006).

The HR-2 geothermal well drilling and some power plant construction activities would take more time than those established by the County of Imperial construction noise standards. Drilling operations would occur 24 hours a day, 7 days a week. However, the Imperial County Land Use Ordinance (Division 17) includes general drilling standards specific to geothermal projects. This ordinance allows for drilling on a 24-hour basis, provided the County-specified noise control measures (Land Use Ordinance 91702.01, Sections B, D, M, O, and S) are implemented. Hudson Ranch Power II, LLC will be required to implement these measures in order to comply with the local applicable standards.

The HR-2 power plant construction schedule is based on a 10-hour/day, 6-days/week basis. This implies that the proposed HR-2 Project may exceed the County Noise Element's construction limits for construction on Saturdays, when

the allowed construction time is limited to 8 hours. Implementation of MM NOI-1 (see below) will be required in order to comply with the applicable local standard.

The proposed HR-2 Project will be required to comply with all applicable noise control measures contained in the County General Plan Noise Element and Noise Abatement and Control Ordinance. In addition, the Project will be required to comply with the standards of Division 17 (Geothermal) of the County's Land Use Ordinance, which include specific noise control measures associated with geothermal well drilling. This impact is potentially significant.

MM NOI-1.1: **Restricted Work Hours on Saturdays**

HR-2 project construction activities would be restricted to daytime hours from 9:00 a.m. to 5:00 p.m. on Saturdays, in compliance with County of Imperial Construction Noise Standards, as established in the General Plan Noise Element.

Timing/Implementation: During construction.

Enforcement/Monitoring: Imperial County Department of Public Works and Department of Planning and Development Services.

Significance after Mitigation: Compliance with existing regulations, implementation of the EPM NOI-1 (Prevention of Excessive Noise) to abate noise pollution from engine-driven equipment during construction, and implementation of MM NOI-1.1 would ensure that noise levels do not exceed applicable standards. Upon implementation of mitigation measures MM NOI-1.1 all of these regulations and measures, impacts from noise would be less than significant.

Operational Noise Impacts

Primary noise sources at the geothermal power plant would include turbine operations, cooling towers, and associated Project vehicles. Typically, the loudest components at geothermal power plant operations are the cooling tower(s) and the non-condensed gas (NCG) facility. Operational noise measured during operation at the Hudson Ranch I geothermal power plant at a distance of 50 feet from the cooling tower resulted in a noise level of 77 dBA. Noise levels measured during operation at the Hudson Ranch I geothermal power plant at a distance of 50 feet from the NCG facility resulted in a noise level of 78 dBA (Energy Source 2012b). Based on noise levels measured on May 8, 2012 during the operation of production wells 13-2 and 13-3 at the HR-1 Project, the average maximum

operational noise level from production wells would be approximately 58 dBA at 50 feet (Energy Source 2012a).

Assuming a similar noise levels for the HR-2 operations, the combined noise level for the simultaneous operation of the cooling towers and the NCG facility would be approximately 81 dBA at 50 feet. This would result in a combined noise level at the closest receptor of approximately 38 dBA, which would be below the County Property Line Noise Standards.

Additionally, HR-2 will be required to comply with the County Land Use Ordinance 91702.01(B), which limits drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary. This level may be exceeded by 10% if the noise is intermittent and during daylight hours.

Table 4.10-7 provides an estimate of the projected noise levels from the proposed HR-2 Project operations at the nearest sensitive receptors. As presented in the table, operating sound levels from the HR-2 Project are estimated to range from 32 to 38 dBA at these closest sensitive receptors.

TABLE 4.10-7 HR-2 OPERATIONAL NOISE AT CLOSEST SENSITIVE RECEPTORS

NOISE-SENSITIVE RECEPTOR	APPROXIMATE DISTANCE TO PROJECT SITE PROPERTY LINE	PROJECTED SOUND LEVEL AT THE RECEPTOR PROPERTY LINE (1, 2)
Sonny Bono Salton Sea National Wildlife Refuge	2.75 miles southwest	32
Residence	1.4 miles northwest	38
Grace Smith Elementary School	2.6 miles northeast	32

Notes:
(1) Excludes background noise.
(2) Projected sound level methodology based on geometric spreading of sound energy, per FTA (2006).

Implementation of the HR-2 Project would not result in a substantial increase in ambient noise levels at off-site noise-sensitive receptors or exceed the County of Imperial Property Line Noise Standards (70 dBA anytime for Light Industrial/Industrial Park Zones) and the applicable Noise/Land Use Compatibility criteria. Based on reported noise levels from similar operations, it is anticipated that noise levels would not exceed the County property line noise limits at the closest sensitive receptors. Therefore, operational noise impacts would be less than significant.

Mitigation Measures: None required.

Impact NOI-2: The HR-2 Project would not result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

The equipment and vehicles associated with construction of the HR-2 Project would generate vibration ranging from 60 to 87 VdB at 25 feet from the source during short-term construction activities, restricted to daytime hours. The highest vibration levels are anticipated during site clearing and grading when bulldozers and drilling rigs would be used. These vibration levels would exceed the human perception threshold (70 VdB) in the immediate vicinity of these sources. However, vibration energy attenuates over distance, depending on soil conditions. The closest potentially vibration-sensitive structures would be a residence that is located 0.5 miles away but would be demolished prior to construction and a another residence that is 1.4 miles away from the construction site. The caretaker at the commercial algae facility would not be considered a "sensitive residential receptor" because the mobile home is located within an industrially-zoned development for the sole purpose of facilitating the industrial use.

Typically vibrations due to construction activities would be imperceptible at distances greater than 1,500 feet. Therefore, it is anticipated that typical drilling and/or construction activities associated with the proposed HR-2 Project would not result in perceptible, excessive, ground-borne vibration or ground-borne noise levels to any sensitive receptors located at distances greater than 1,500 feet. Ground-borne vibration impacts would be less than significant.

Mitigation Measures: None required.

Impact NOI-3: The HR-2 Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

As shown in Table 4.10-7, the proposed HR-2 Project would result in permanent noise levels of 32 to 38 dBA at nearest sensitive receptors. This would not result in a substantial increase over the existing ambient noise levels, measured as 48.5 dBA L_{dn} at the closest receptor. Additionally, HR-2 Project will implement EPM NOI-1 (Prevention of Excessive Noise) to abate noise pollution from engine-driven equipment during both construction and development operations and will be required to implement measures per County Land Use Ordinance (Title 17) 91702.01(B), which limits drilling noise to a sound level equivalent to CNEL 60 dBA as measured at the nearest human receptor location outside the parcel boundary, reducing the potential for significant noise levels during drilling. The predicted levels, in addition to potential additional reduction from implementation

of noise abatement and control measures included as EPMs, would not result in a substantial permanent increase in ambient noise levels. Therefore, this impact would be less than significant.

Mitigation Measures: None required.

Impact NOI-4: The HR-2 Project would not result in a substantial temporary or periodic increase in ambient noise levels at the closest sensitive receptors above levels existing without the Project.

As shown in Table 4.10-6, construction of the proposed HR-2 Project would result in noise levels up to 50 dBA at the closest sensitive receptors. Additionally, Hudson Ranch Power II, LLC will implement HR-2 EPM NOI-1 to abate noise pollution from engine-driven equipment during both construction and development operations and will be required to implement measures required in the County Land Use Ordinance (Title 17). Likewise, HR-2 EPM AQ-3 proposes the implementation of engine exhaust control measures, which would assist in noise reduction. The predicted level, in addition to potential additional reduction from the implementation of the noise abatement and control measures HR-2 EMP NOI-1 and HR-2 EPM AQ-3would not represent a substantial increase over the existing ambient noise, reported as 48.5 dBA and 58.2 dBA, L_{dn} at the closest receptors. Therefore, this impact would be less than significant.

Mitigation Measures: None required.

Impact NOI-5: The HR-2 Project is not in an area where an airport has been identified in a land use plan or where such a plan has been adopted, nor is it within 2 miles of a public airport or public use airport.

The closest public use airport is located approximately 4.8 miles southeast of the proposed HR-2 Project site. According to the Imperial County Airport Land Use Compatibility Plan (Imperial County ALUCP, 1996), the Project site is located outside of the Compatibility Zones for this airport.

U.S. Marine Corps Air Station Yuma operates low-flying military aircraft in the vicinity of the Project site. Noise events at the Project site are similar to noise events experienced throughout the Project area. Construction and operation of the proposed Project would not expose people residing or working in the Project area to excessive noise levels. Therefore, this would be a less than significant impact.

Mitigation Measures: None required.

Impact NOI-6: The HR-2 Project would not expose people residing or working within the vicinity of a private airstrip to excessive noise levels.

The HR-2 Project is not within the vicinity of a private airport. The nearest private airport, O'Connell Brothers Airport, is located 16.3 miles south of the Project site. Therefore there would be no impact under this criterion.

Mitigation Measures: None required.

SMCP-2 IMPACTS AND MITIGATION MEASURES

Impact NOI-1: The SmCP-2 Project would not result in exposure of persons to or generation of noise levels in excess of standards established in local plans or ordinances.

Construction Noise Impacts

On-site noise-generating activities associated with the SmCP-2 Project would include temporary noise associated with the use of heavy duty off-road equipment, installation and testing of mineral extraction equipment, and vehicle use. Construction of the SmCP-2 plant and related facilities is anticipated to last 21 months.

Noise levels associated with individual pieces of equipment can generally range between 70 and 90 dBA (FTA 2006). Simbol, Inc. has projected a maximum noise level of 83 dBA at 50 feet from heavy construction equipment (Simbol, Inc. 2012). Based on the proposed construction equipment list and usage, the maximum composite noise level during construction would be 93 dBA Leq (h) at 50 feet from the building construction sites (EMA 2012b, FHWA 2006). Additionally, the SmCP-2 Project would require an average of 25 daily truck trips during construction and 44 trucks per day during normal operations. Noise from trucks, commuter vehicles, and other on-road equipment, which would mainly be along streets and access roads, would produce peak levels of approximately 88 dBA at 50 feet from the source (FTA 2006).

During a typical day, equipment would not be operated continuously at peak levels. While the average noise levels on-site could exceed the 75 dBA L_{eq} construction noise standard established by County of Imperial, noise would attenuate to levels below the threshold with increasing distance until it reaches the nearest sensitive receptors. Simbol, Inc. also proposes to implement noise pollution abatement measures such as using mufflers on engine-driven equipment (SmCP-2 EPM NOI-1) and an Exhaust Emission Control Program (SmCP-2 EPM AQ-2) during construction, which would assist in noise reduction. Therefore, it is

anticipated that construction noise would be reduced from the predicted peak level.

Peak noise levels and distance to nearest sensitive noise receptors from the proposed SmCP-2 Project during construction would be the same as those identified for HR-2. As shown on Table 4.10-6, construction noise levels would attenuate from 83 dBA at 50 feet from the source to up to 50 dBA at the closest receptor due to geometric spreading of sound energy. The caretaker at the commercial algae facility would not be considered a "sensitive residential receptor" because the mobile home is located within an industrially-zoned development for the sole purpose of facilitating the industrial use. Therefore, all calculated noise levels would fall within the normally acceptable range of the guidance set forth in the County of Imperial General Plan Noise Element.

The SmCP-2 plant construction would take place over approximately 18 months, based on a single-shift, 10 hour-day and six-day workweek. This implies that the proposed SmCP-2 Project would exceed the County Noise Element's construction limits for construction on Saturdays, when the allowed construction time is limited to 8 hours; between 9:00 a.m. and 5:00 p.m. Implementation of MM NOI-1 (see below) will be required in order to comply with the applicable standard.

The proposed SmCP-2 Project will be required to comply with all applicable noise control measures contained in the County General Plan Noise Element and the Noise Abatement and Control Ordinance, as well as implementation of protection measures to abate noise pollution from engine-driven equipment during construction (SmCP-2 EPM NOI-1 [Prevention of Excessive Noise] and SmCP-2 EPM AQ-2 [Exhaust Emission Control Program]. This impact is potentially significant.

MM NOI-1.1: **Restricted Work Hours on Saturdays**

SmCP-2's project construction activities would be restricted to daytime hours from 9:00 a.m. to 5:00 p.m. on Saturdays, in compliance with County of Imperial Construction Noise Standards, as established in the General Plan Noise Element.

Timing/Implementation: During construction.

Enforcement/Monitoring: Imperial County Department of Public Works and Department of Planning and Development Services.

Operational Noise Impacts

Primary noise sources at the proposed mineral extraction plant would be cooling towers, drying and packaging equipment, and Project vehicles. Simbol, Inc. has noted that the maximum projected noise source during operations would be the cooling tower – projected to be 86 dBA at 5 feet. Table 4.10-8 provides projected noise levels from the SmCP-2 Project operations at the nearest sensitive receptors. Operational noise from the SmCP-2 site is expected to occur simultaneously with the HR-2 power plant. It is anticipated that at any receptor the dominant noise would correspond to the HR-2 plant operations.

TABLE 4.10-8 SMCP-2 OPERATIONAL NOISE AT CLOSEST SENSITIVE RECEPTORS

	PROJECTED SOUND LEVEL AT THE RECEPTOR PROPERTY LINE (1, 2)	
NOISE SENSITIVE RECEPTOR	SMCP-2	HR-2 AND SMCP-2
Sonny Bono Salton Sea National Wildlife Refuge	28	32
Residence	23	38
Grace Smith Elementary School	17	32

Notes:
(1) Excludes background noise.
(2) Projected sound level methodology based on geometric spreading of sound energy, per FTA (2006). It is anticipated that noise from combined HR-2 and SmCP-2 operations would be dominated by the HR-2 plant operations, since projected noise levels at 50 feet from the source would be over 3 dBA higher than projected levels for the SmCP-2 operations.

Noise projections show that implementation of the proposed SmCP-2 Project would not result in a substantial increase in ambient noise levels at off-site noise-sensitive receptors or exceed the County of Imperial standards for property line noise limits (70 dBA anytime at the nearest receptor property line). Therefore, operational noise impacts would be less than significant.

Mitigation Measures: None required.

Impact NOI-2: The SmCP-2 Project would not result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

The heavy-duty equipment and vehicles associated with the SmCP-2 Project would generate vibration at a range between 60 to 87 VdB at 25 feet from the source during short-term construction activities, restricted to daytime hours. Highest vibration levels are anticipated for site clearing and grading equipment (e.g., bulldozers). These vibration levels would exceed the human perception

threshold (70 VdB) in the immediate vicinity of these sources. However, vibration energy attenuates over distance, depending on soil conditions. Typically vibrations due to construction activities would be imperceptible at distances greater than 1,500 feet. The closest potential vibration-sensitive structures would be a residence that is located 0.5 miles but would be demolished prior to construction and another residence that is 1.4 miles away from the construction site. The caretaker at the commercial algae facility would not be considered a "sensitive residential receptor" because the mobile home is located within an industrially-zoned development for the sole purpose of facilitating the industrial use. Therefore, it is anticipated that typical construction activities associated with the proposed SmCP-2 Project would not result in perceptible, excessive, ground-borne vibration or ground-borne noise levels to any sensitive receptors at distances greater than 1,500 feet. Ground-borne vibration impacts would be less than significant.

Mitigation Measures: None required.

Impact NOI-3: The SmCP-2 Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

As shown in Table 4.10-8, the proposed SmCP-2 Project would result in permanent noise levels below 30 dBA at nearest sensitive receptors. Concurrent operations with HR-2 would increase projected noise levels to 43 dBA at the closest receptor. Even on a cumulative basis, the projected levels would not result in a substantial increase over the existing ambient noise, measured as 48.5 dBA L_{dn} at the wildlife refuge and 58.2 at the closest residence. Additionally, Simbol, Inc. would implement SmCP-2 EPM NOI-1 to abate noise pollution from engine-driven equipment during both construction and development operations. Based on the predicted levels and the potential additional reduction from implementation of noise abatement and control measures, the Project would not result in a substantial permanent increase in ambient noise levels. Therefore, this impact would be less than significant.

Mitigation Measures: None required.

Impact NOI-4: The SmCP-2 Project would not result in a substantial temporary or periodic increase in ambient noise levels at the closest sensitive receptors above levels existing without the Project.

As shown in Table 4.10-6, construction of the proposed SmCP-2 Project would result in noise levels up to 50 dBA at the closest sensitive receptors. Additionally,

Simbol, Inc. would implement SmCP-2 EPM NOI-1 to abate noise pollution from engine-driven equipment during both construction and development operations. Additionally, the applicant would implement an Exhaust Emission Control Program (SmCP-2 EPM AQ-2), which would also assist in noise reduction. Based on the predicted construction noise level, with the additional reduction from SmCP-2 EMP NOI-1 and SmCP-2 EPM AQ-2, the Project would not result in an increase over the existing ambient noise, reported at 48.5 and 58.2 dBA, L_{dn} at the closest receptors. Therefore, this impact would be less than significant.

Mitigation Measures: None required.

Impact NOI-5: The SmCP-2 Project is not in an area where an airport has been identified in a land use plan or where such a plan has been adopted, nor is it within 2 miles of a public airport or public use airport.

The closest public use airport is located approximately 4.8 miles southeast of the proposed SmCP-2 Project site. According to the Imperial County Airport Land Use Compatibility Plan (1996), the Project site is located outside of the Compatibility Zones for this airport.

U.S. Marine Corps Air Station Yuma operates low-flying military aircraft in the vicinity of the Project site. Noise events at the Project site are similar to noise events experienced throughout the Project area. Construction and operation of the proposed Project would not expose people residing or working in the Project area to excessive noise levels. Therefore, this would be a less than significant impact.

Mitigation Measures: None required.

Impact NOI-6: The SmCP-2 Project would not expose people residing or working within the vicinity of a private airstrip to excessive noise levels.

The SmCP-2 Project is not within the vicinity of a private airport. The nearest private airport, O'Connell Brothers Airport, is located 16.3 miles south of the Project site. Therefore there would be no impact under this criterion.

Mitigation Measures: None required.

4.10.5 REFERENCES

Caltrans. 2001. State Route 78/111 Brawley Bypass, Draft Environmental Impact Report.

County of Imperial. 2008. Imperial County Land Use Ordinance, Title 9, Division 17-Geothermal Projects. 91702.01. Online at: http://library.municode.com/index.aspx?clientId=16410&stateId=5&stateName=California. Accessed May 12, 2011.

_____. 2006. General Plan Geothermal/Alternative Energy and Transmission Element. October.

_____. 1993. General Plan Noise Element.

Ecology and Environment, Inc. 2011. Background noise measurements for the Hudson Ranch II EIR. July.

Energy Source. 2012. Operational noise measurements for wells and plant facilities at the Hudson Ranch I facility. Personal Communication between J. Heuberger and K. Zuppiger at Ecology and Environment Inc., May 8, 2012.

Environmental Management Associates (EMA). 2012a. Air Pollutant Emission Estimates for Construction of the Hudson Ranch Power II Geothermal Project, Imperial County, California. Appendix A: Supplemental Project Description. Prepared for Hudson Ranch Power II LLC. April.

_____. 2012b. Air Pollutant Emission Estimates for the Simbol Calipatria Plant II, Imperial County, California. Appendix A: Supplemental Project Description. Prepared for Simbol, Inc. April.

Federal Highway Administration (FHWA). 2006. Roadway Construction Noise Model User's Guide. A. Washington, D.C.

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. May.

Imperial County Airport Land Use Commission and Planning and Building Department. 1996. Airport Land Use Compatibility Plan. Imperial County Airports. Page 8. Online at: http://www.icpds.com/?pid=2202. Accessed May 19, 2011.

Simbol, Inc. 2012. Simbol Calipatria Plant II. Project Description. March.

State of California. 2003. General Plan Guidelines. Governor's Office of Planning and Research. October.

U.S. Environmental Protection Agency (USEPA). 1978. Protective Noise Levels. Condensed Version of EPA Levels Document. EPA 500/9-79-100. November.