

**Mitigation and Residual Impacts:** Measures CR-1 through CR-3 identified above shall be implemented to reduce potential project-specific and cumulative impacts to any presently unknown ethnic, social or religious associations with the project area including human burials to a less than significant level.

## 11. ENERGY RESOURCES

**Setting:** Energy resources are defined in the County Guidelines as sources of power necessary to operate and maintain human activities. Included resources are solar, petroleum, wind and hydraulic.

**Impact Discussion:** The County Guidelines state that no individual project will have a significant impact because solar, wind and hydraulic energy resources are renewable, and petroleum resources are covered separately (see previous discussion above). Energy would be used in the short-term for the proposed project decommissioning activities. The only anticipated long-term energy use would be associated with any future maintenance activities associated with the decommissioned infrastructure. Energy use for such activities should be less once the infrastructure is decommissioned than at present. Therefore, the proposed project would not significantly impact energy resources on a project-specific and it's impact would be so minor as not to be considered or cumulative considerable.

**Mitigation and Residual Impacts:** Impacts would be less than significant. Therefore, no mitigation is necessary.

## 12. COASTAL BEACHES AND SAND DUNES

**Setting:** Oak Park is located approximately nine miles from the coast.

**Impact Discussion:** The proposed project would not impact coastal beaches and sand dunes. See previous discussion under Biological Resources.

**Mitigation and Residual Impacts:** No impact would result. Therefore, no mitigation is required.

## 13. SEISMIC HAZARDS

### a. Fault Rupture

**Setting:** The State Division of Mines and Geology indicates that on a statewide basis the potential hazard to structures from the surface displacement of faults is low compared to such geologic phenomena as earthquake shaking and landsliding. The greatest potential for fault activity is along any of the faults, which lie within the several major fault systems which transect the County from east to west. Many of the faults in the County are associated with major fault systems extending beyond County boundaries. Several of these faults and fault systems are considered to be active, but a great deal of additional information must be

assembled to determine the potential for, as well as the nature of the activity of most of the faults presently considered to be active.

Based upon County mapping (Earthquake Faults and Earthquake Fault Hazard Zones), no known faults are located directly beneath the project impact areas, nor are these areas located within an Alquist-Priolo Special Study Earthquake Zone, which is a zone that delineates areas of known active faulting that may be subject to surface displacement based on future faulting or County designated Potential Fault Hazard Area. The nearest known active fault site is the Anacapa-Dume Fault. Other nearby faults include the Northridge (E. Oak Ridge), Simi-Santa Rosa and Malibu Coast faults.

**Impact Discussion:** The County Guidelines state that fault rupture hazards primarily exist along pre-existing faults. These faults are considered to pose a hazard if they have moved within a specific period of time. This period depends on the type of project. For almost all projects, the period of interest is the last 11,000 years. For citing of critically hazardous facilities, such as atomic power plants, fault activity over longer periods needs to be considered.

Threshold criteria for determining whether a project is at risk with respect to fault rupture is its location within any of the following areas: 1) a State of California designated Alquist-Priolo Special Fault Study Zone, 2) a County of Ventura designated Fault Hazard Area, 3) a County of Ventura designated Potential Fault Hazard Area.

As discussed above, no faults are known to be located directly under the project site, and the site is not within an Alquist-Priolo Special Study Earthquake Zone or Ventura County designated potential fault hazard area. Further, the project is a decommissioning of inactive water infrastructure and as such is not subject to significant adverse effects from fault rupture. Cumulative impact analysis is not relevant to fault rupture impacts as the issue is site-specific.

**Mitigation and Residual Impacts:** No significant impact would result. Therefore, no mitigation is required.

## **b. Ground Shaking**

**Setting:** The entire southern California region is seismically active, given the numerous faults throughout the region. Setting information provided within Section 13(a) also applies to this Section. "Ground shaking" is the physical movement of the land surface due to earthquakes. The intensity of ground shaking during an earthquake depends in large part on geologic foundation conditions (i.e. the thickness and physical properties of the materials comprising the upper several hundred feet beneath the area). In general, the greatest amplitudes and longest durations of ground shaking usually occur on thick, water-saturated unconsolidated alluvial sediments. Based upon the California Department of Conservation, Division of Mines and Geology Seismic Hazards Evaluation for the Thousand Oaks 7.5-Minute Quadrangle, the estimated horizontal ground acceleration in the project area with a 10 percent probability of exceedance in 50 years (475 year return period) is about 0.45 g (Fugro 2005).

**Impact Discussion:** As previously stated, there are no faults or special study fault zones located beneath the proposed project area. None-the-less, due to the location of the proposed project area within seismically active Southern California, the potential exists for seismic ground shaking events to occur. However, as the project is a decommissioning of obsolete water infrastructure any effects of ground shaking on the decommissioned facilities is not anticipated to result in significant hazard impacts. The decommissioning could result in potentially beneficial impacts in that above-ground structures that could potentially be dislocated and thus present a public hazard would be removed.

**Mitigation and Residual Impacts.** No significant impact would result. Therefore, no mitigation is warranted.

### c. Tsunami

**Setting:** Tsunamis are seismic sea waves. The proposed project area is about nine miles from the coast. Based upon a reading of the Ventura County General Plan Hazards Appendix (2005), the project area is not within a tsunami hazard area since this hazard area generally extends inland one mile from the shore.

**Impact Discussion:** According to the County Guidelines, most tsunamis and seiches are smaller than the design floods of the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency. Threshold criteria for tsunami hazard is whether the project is located in a mapped area of tsunami hazard as shown on the County General Plan maps and FIRM maps. Because the proposed project is not in a tsunami hazard area no impact would result. This issue is not subject to cumulative analysis as it is site specific.

**Mitigation and Residual Impacts:** No impact would result. Therefore, no mitigation is required.

### d. Seiche

**Setting:** The proposed project area is not located near an enclosed body of water that would create an oscillating wave (seiche) in the event of an earthquake.

**Impact Discussion:** According to the County Guidelines, most tsunamis and seiches are smaller than the design floods of the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency. Areas subject to seiche hazards are those located within 10 feet vertical elevation from an enclosed body of water such as a bay, lake, or reservoir. Because the proposed project area is not located near an enclosed water body, no seiche impact would result. This issue is not subject to cumulative analysis as it is site specific.

**Mitigation and Residual Impacts:** No impacts would result. Therefore, no mitigation is needed.

#### e. Liquefaction

**Setting:** Liquefaction is an unstable ground condition in which water-saturated soils change from a solid to semi-liquid state because of sudden shock or strain. Liquefaction is a phenomenon that occurs when loosely consolidated, saturated, granular soils lose their load bearing capabilities during ground shaking events, and settle or flow in a fluid-like manner. This phenomenon can cause severe damage to overlying structures, resulting in potential injuries to people.

No portion of the proposed project site is located within an area identified as being subject to liquefaction per the County of Ventura Liquefaction Areas Hazards Map (County of Ventura, 2005).

**Impact Discussion:** As the proposed project would not include construction within an identified liquefaction hazard zone, and is limited to decommissioning of existing infrastructure no liquefaction-related impacts would result. This issue is not subject to cumulative analysis as it is site specific.

**Mitigation and Residual Impacts:** No impact has been identified; therefore, no mitigation is required.

### 14. GEOLOGIC HAZARDS

#### a. Subsidence

**Setting:** Subsidence may be defined as the downward movement of a relatively large amount of land caused by the withdrawal of subsurface water and/or petroleum, which creates air space in underlying sediments. The proposed project site area is not mapped by the Ventura County Resources Agency as being within a probable subsidence zone (County of Ventura 2005).

**Impact Discussion:** As stated within the County Guidelines, subsidence hazards are particularly related to project-type. Subsidence studies shall be required on all new water and oil well projects in Ventura County and for all utility and drainage facility projects in the Oxnard Plain. The proposed project is not located within an area known to be subject to subsidence. Additionally, the project is a infrastructure decommissioning project and would not result in the extraction of water. Therefore, the proposed project would not result in any impacts associated with subsidence. This issue is not subject to cumulative analysis as it is site specific.

**Mitigation and Residual Impacts:** No significant impact would result. Therefore, no mitigation is necessary.

#### b. Expansive Soils

**Setting:** Expansive soils are present throughout most areas of Ventura County, including both low-lying and hillside terrain. They are present in some areas in thick

accumulations and in others as thin cover. Beaches, sea cliffs, bare rock, and active stream channels are usually free of expansive soil accumulations. Expansive soils are primarily clay-rich soils subject to changes in volume with changes in moisture content. Expansive soils hazards are assessed and mitigated within the existing regulatory framework of both the Public Works Agency and the Building and Safety Department. An expansive soil hazard is considered to exist where soils with an expansion index greater than 20 are present.

Based upon past testing of Modelo formation in Oak Park and a review of Ventura County maps of expansive soils (November 2006), soils in the project area may have a moderate to high expansion potential. However, any such soils that may have been present under the project infrastructure are expected to have been mitigated through engineering techniques to an acceptable level for the infrastructure constructed at the site.

**Impact Discussion:** As the project is limited to a decommissioning of existing infrastructure, hazards associated with expansive soils are not relevant to the project and no related impacts would result.

**Mitigation and Residual Impacts:** No impact would result; therefore, no mitigation is warranted.

### c. Landslides

**Setting:** Based on a review of the USGS Geological Maps of the Thousand Oaks and Calabasas Quadrangles (Diblee, 1993 and 1992), the proposed project area is almost entirely underlain by Monterey Formation (Tm/Tml) with the exception of creek channels which are comprised of alluvial deposits (Qa) and small areas of landslide debris (Qls). In general, landsliding can be common in the Monterey Formation (also referred to as Modelo Formation). The Lindero Feeder, in two small areas of about 10 feet in length, extends into mapped landslide debris (Qls). One area is just west of Palo Comado Creek and the other area is just west of Cheeseboro Creek. In both of these areas the pipeline is at the toe of the landslide material. There also are areas of the Lindero Feeder alignment that are within steep slopes up to about 50 percent (100 feet vertical rise over 200 feet horizontal run). However, during the field visit of the project infrastructure conducted in 2008, no areas of the pipeline were observed to be exposed. Nor were any areas of substantive erosion observed along the pipeline, at the Palo Comado Pump Station, or the Cheeseboro Tank site.

**Impact Discussion:** The project is the decommissioning of obsolete water infrastructure. As the infrastructure appears to have remained stable since its installation in 1968, any landslide-related risks such as pipeline exposure appear to be less than significant. This impact is site-specific and not subject to cumulative evaluation.

**Mitigation and Residual Impacts:** No significant impact would result. Therefore, no mitigation is required.

## 15. HYDRAULIC HAZARDS

### a. Erosion/Siltation

**Setting:** The erosion potential of soils within the Oak Park Community ranges from moderate to very severe based upon a review of the Soil Erosion Hazard Map for Ventura County, (US Department of Agriculture, Soil Conservation Service, 1970). Soils of the project area within the SMMNRA have a severe to very severe erosion potential.

The hydrologic soil groups in the project area include Group C and Group D (US Department of Agriculture, Soil Conservation Service, 1970). Group C soils are sandy clay loam. They have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine structure. Group D soils are clay loam, silty clay loam, sandy clay or clay. This hydrologic soil group has the highest runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with claypan or clay layer at or near the surface and shallow soils over nearly impervious material.

Natural slopes at the Oak Canyon Reservoir site range from nearly flat in canyon bottoms to about 50 percent.

The proposed project area includes several watercourses including, Palo Comado Creek, Cheeseboro Creek, Las Virgenes Creek as well as tributaries to each of these creeks. The Palo Comado and Las Virgenes Creek areas are within the 100-year flood zone based upon a review of the County of Ventura Oak Park Area Hazards Map (1988 with amendments to November 2005).

**Impact Discussion:** The County Guidelines state that erosion/siltation hazards are ubiquitous throughout Ventura County but has not established special threshold criteria for erosion/siltation hazards because this issue is accommodated by the Ventura County Public Works Agency, Flood Control District Standards and Specifications Design Manual. The effects of flooding hazards are required to be considered within the existing framework of grading and building code ordinances which apply to all sites and projects. However, as a special district, TSD is not subject to the County grading ordinance (Section 6103 of the Ventura County Land Development Manual, 1995). The District is subject to the Building Code and State requirements.

Construction/decommissioning activities can result in short-term erosion events (e.g., erosion of soil piles, erosion of previously covered soil by the removal of significant amounts of pavement, or living ground cover, etc.). Therefore, the proposed project could result in short-term erosion due to decommissioning activities. If disturbed soils are not adequately stabilized, long-term erosion impacts may also result. Any soil disturbances at land uses within the same watershed as the project could contribute to cumulative erosion and siltation impacts. The

projects contribution to cumulative erosion and siltation impacts is considered potentially significant.

**Mitigation and Residual Impacts:** Implementation of mitigation measures GWQ1, V1, V2 and V3 would ensure that potential long-term erosion impacts are reduced to a less than significant level on a project-specific and cumulative basis.

#### **b. Flooding**

**Setting:** See Setting for 15a above.

According to the Ventura County Public Facilities and Services Appendix of the General Plan, the Ventura County Flood Control District defines red line channels as channels over which the Flood Control District exercises regulatory jurisdiction. However, regulatory jurisdiction does not imply ownership, as some of the red line channels are owned by the Flood Control District and some are owned by others. These red line channels can either be improved or unimproved. Based upon a review of Figure 4.6.1b, Flood Control South Half for the of the Public Facilities and Services Appendix, red line channels in the project vicinity include, Palo Comado Creek, Cheeseboro Creek and Las Virgenes Creek.

As required by the California Dam Safety Act, preparation of dam inundation maps showing areas of potential flooding in the event of sudden or total dam failure have been prepared by the Ventura County Sheriff's Department through its Office of Emergency Services (OES). According to Figure 2.11-2 of the Ventura County Hazards Appendix, the project impact area does not lie within an area that is subject to inundation in the event of dam failure.

**Impact Discussion:** The proposed project would not introduce new to construction or population to flooding hazards, nor would the project introduce new areas of impervious surface that would increase runoff during storm events. Therefore, the project would not result in any adverse flooding impacts.

**Mitigation and Residual Impacts:** No significant impact would result. Therefore, no mitigation is required.

## **16. AVIATION HAZARDS**

**Setting:** The proposed project is not located in an area addressed in an Airport Land Use Plan. The proposed project is located approximately 15 miles and more from the closest airport in Camarillo, and is not near any known private airstrip.

**Impact Discussion:** The proposed project area is not identified in an Airport Land Use Plan, and is not located within two miles of a public or private use airport. Therefore, no safety hazards resulting from airport proximity are expected. This project will not contribute to any cumulative aviation hazard impacts.

**Mitigation and Residual Impacts:** No impact would result. Therefore, no mitigation is required.

## 17. FIRE HAZARDS

**Setting:** The project area is located in a high fire hazard area per the Ventura County Planning Department Resource Management Agency fire hazard mapping provided in the General Plan Hazards Appendix - Figure 2-13.2b. Areas with high fuel levels and steep topography present the greatest wildfire risk. Additionally, low humidity and high wind conditions also increase wildfire risks. Critical fire weather conditions are known as Red Flag conditions.

**Impact Discussion:** During the infrastructure decommissioning process, vehicles and construction equipment, would be introduced to an area that depending upon the season of the year may have dry vegetation that could readily combust if in contact with a hot engine or stray spark. Additionally, activities such as torching, if used would have the potential to create sparks that could ignite vegetation.

Over the long term, the proposed project would not create an increase in exposure of people or structures to risks of wildland fires due to the nature of the project which is a decommissioning of water infrastructure.

The project's short-term contribution to cumulative wild fire hazards may also be considered significant.

**Mitigation and Residual Impacts:** The following mitigation measure is required to reduce the project-specific and cumulative short-term wild fire hazard of the project to a less than significant level.

- F1** The District shall ensure that the project contractor develops and implements a Fire Prevention Plan (FPP) for the proposed project. The FPP shall be reviewed and approved by the District and NPS prior to commencement of decommissioning activities. The FPP shall include but not be limited to the following:
- a) Identification of safe work procedures;
  - b) Fire management awareness training for all project staff;
  - c) Fire response equipment to be maintained within immediate access of all decommissioning activities that include any fire risk;
  - d) No decommission activities that present a fire risk shall be conducted during Red Flag conditions;
  - e) Fire incident response procedures ; and
  - f) Obtain any necessary Hot Work Permits.

In addition to the measure above, the NPS Fire Management Officer has discretion to assign additional fire prevention measures for work with the SMMNRA.

## 18. HAZARDOUS MATERIALS/WASTE

### a. Above-ground Hazardous Materials

The following section is based mainly upon the *Phase I Environmental Site Assessment for the Lindero Feeder Right of Way*, Ventura County, California prepared for Triunfo Sanitation District on June 13, 2008, by Versar and is hereby incorporated by reference. This document is available for review in its entirety at the District's office located at 1001 Partridge Drive, Suite 150, Ventura, CA 93003-0704.

**Setting:** By definition, hazardous material is any substance that, if improperly handled, can be damaging to the health and well being of humans. A hazardous material becomes hazardous waste when the material has been used for its original intended purpose and is going to be discarded or recycled.

Versar performed a Phase I Environmental Site Assessment of approximately 5 miles of water pipeline right-of-way (Lindero Feeder to be obtained by the District including the segment proposed for decommissioning), an above ground water tank (Cheeseboro Tank) and a pump station (Palo Comado Pump Station). The scope of work included: visual inspection of the site, performed on May 28, 2008; review of pertinent background and historical information; contact with appropriate regulatory agencies; prior ownership review; review of chemical and waste handling, and storage and disposal practices; observation of land use on adjacent properties; and review of regulatory database reports and photographic documentation of the site.

Based upon historical information gathered through topographic maps, aerial photos and from the current owner of the site, the water distribution pipeline was installed in 1966 while the pump station and reservoir were constructed in 1968. Prior to these constructions, the site consisted of public rights-of-way (streets and sidewalks), ranch land and undeveloped open space. The water infrastructure was constructed for a planned development that never occurred. The pump station was used only once as a backup for the Oak Park community around 2000-2001. The pipeline was used for about two weeks during the same time period.

According to the Environmental Data Resources (EDR) report, the site is not identified on any federal or state databases. No releases from facilities within 0.25 mile of the site were identified. Based upon Versar's review of the state and federal databases, a low potential exists for future contamination off-site and migration of those contaminants on-site.

The herbicide glyphosate has been used by the NPS to control the growth of tumble weed in the project area southeast of the pump station and south of the water reservoir. The NPS Restoration Ecologist ensures that the herbicide is being applied per industry standards.

During the course of the Phase I Site investigation, Versar was unable to access the interior of the pump station due to the entry points being welded shut by the site owner for

security reasons. The pump station was constructed in 1968, before the United States Environmental Protection Agency (USEPA) began banning many products that contain asbestos. Therefore, it is possible that asbestos-containing material (ACMs) are present within the pump station. Furthermore, without interior access, Versar could not confirm if any hazardous chemicals or petroleum products exist within the building, or if a release had potentially occurred.

The exterior of the water tank has been tested by Tank Industry Consultants and confirmed to be lead-based paint, (328,000 milligrams per kilogram [mg/kg]). The tested sample had a 32 percent lead concentration. Lead-based paint is defined by the Consumer Product Safety Commission (CPSC) as paint containing lead at the level of at least 0.06 percent by weight or 600 parts per million (ppm). As part of the Site Assessment, Versar obtained four soil samples and assessed the surficial soils adjacent to the tank and at the site's stormwater discharge point for elevated lead concentrations. The highest concentration of lead in the four soil samples analyzed was 120 mg/kg which is below the NPS-acceptable level of 160 mg/kg.

**Impact Discussion:** The County of Ventura Guidelines state that the significance of hazardous materials is determined on a case-by-case basis and depends on:

1. Individual or cumulative physical hazard of material or materials.
2. Amounts of materials on-site, either in use or in storage.
3. Proximity of hazardous materials to populated areas and compatibility of materials with neighboring facilities.
4. Federal, State and local laws, ad ordinances governing the storage and use of hazardous materials.
5. Potential for spill or release.
6. Proximity of hazardous material to receiving waters or other significant environmental resource.

Because the contents of the pump station are unknown, there is a potential for hazardous materials to be present. If such materials are present and are not appropriately handled during the decommissioning activities, workers or the public could be exposed to a health hazard. Additionally, the tank is coated with lead-based paint. Without proper implementation of appropriate precautions as required by the Lead in Construction Standard, CAL/OSHA Title 8, CCR Section 1532.1, workers may be exposed to hazardous amounts of lead. During the decommissioning of the tank if this material is not appropriately handled, workers or the public could be exposed to a health hazard. This is a potentially significant project impact.

The District proposes to test soils at three locations to be selected by the NPS at the Cheeseboro Tank site after tank demolition activities are completed. In the event that any soil

sample shows more than 160 kg/mg of lead, the District shall remove soils from the site until lead levels below the 160 mg/kg threshold have been reached. Unless the soil is disposed of as appropriate for the lead level that is identified, significant environmental or health impacts could result. Depending upon the concentration of lead in the soil, it may be considered a hazardous waste.

According to the law, generators<sup>1</sup> must evaluate wastes to determine if they are hazardous waste (Cal. Code Regs., Title 22, § 66260.200(c)). If these wastes have one or more of the hazardous waste characteristics (ignitable, corrosive, toxic, or reactive), or are specifically listed as a hazardous waste (Cal. Code Regs., Title 22, § 66261.3), they are hazardous wastes. Hazardous waste must be handled according to the requirements of the California Health & Safety Code, Division 20, Chapter 6.5, and the implementing regulations in Title 22 of the California Code of Regulations, Division 4.5.

Because of the nature of the project, no long-term use of hazardous materials is proposed. Additionally, with decommissioning of the project as proposed and the implementation of the measures as described below for the mitigation of short-term hazardous material impacts, all identified hazardous materials would be appropriately removed from the site. This would eliminate a future potential hazard presented by the obsolete infrastructure since it would weather over time and be subject to vandalism which could result in environmental and human health hazards.

Because hazardous materials are ubiquitous in the environment, the project's hazardous materials impact associated with decommissioning activities may be considered cumulatively significant. However, since the project would result in a beneficial long-term hazardous materials impact, it would not contribute to long-term cumulatively significant impacts.

**Mitigation and Residual Impacts.** To reduce hazardous material related impacts on a project-specific and cumulative basis to a less than significant level the following mitigation is required.

- H1** Prior to initiation of project construction, the District shall have the pump station building interior surveyed for asbestos containing material and any other hazardous substances. The survey program shall be prepared and implemented by a qualified Registered Environmental Assessor and a report produced. The District shall implement any recommendations of the study for appropriate remediation of any identified hazard(s) as necessary in accordance with all local, state and federal regulations prior to or in conjunction with demolition as appropriate for mitigation of the hazard of concern. Such remediation recommendations may include but are not necessarily limited to: appropriate measures for the safe removal and disposal of any asbestos-containing material

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<sup>1</sup> A "generator" is by definition "any person, by site, whose act or process produces hazardous waste ... or whose act first causes a hazardous waste to become subject to regulation." (Cal. Code Regs. title 22, section 66260.10). In some cases, in addition to the owner, agents of the owner, such as a restoration company, may also be considered a generator because they are the person whose act first causes the hazardous waste to become subject to regulation.

pursuant to National Emission Standards for Hazardous Pollutants (NESHAP) and Ventura County Air Pollution Control District (VCAPCD) Rule 62.7.

- H2** The District shall retain a state-licensed and certified abatement contractor who is trained and experienced in removal of steel tanks that have lead-based paint. Prior to and during demolition of the tank, the contractor will abide by the Lead in Construction Standard, CAL/OSHA Title 8, CCR Section 1532.1. This is to ensure the safety of the public, workers and environment, and to prevent the creation of a soil contamination issue (which could result in the case of improper tank removal wherein paint chips are allowed to fall onto the soil).
- H3** The District will sample soil at the Cheeseboro Tank site after tank demolition activities. Soil that exceeds 160 mg/kg lead will be removed. All soil removed from the site shall be disposed of as appropriate based upon classification as a non-hazardous waste or hazardous waste as determined by application of the appropriate standards in place at the time as determined by the California Department of Toxic Substances Control and County of Ventura Environmental Health Division.

**b. Hazardous Materials**

See the discussion under a. Above-ground Hazardous Materials.

**c. Hazardous Waste**

See the discussion under a. Above-ground Hazardous Materials.

**19. NOISE AND VIBRATION**

**General Characteristics and Regulation of Noise.** Noise is defined as unwanted or objectionable sound. Measurement of sound involves determining three variables: 1) magnitude; 2) frequency; and 3) duration. The magnitude of variations in air pressure associated with sound waves results in the quality commonly referred to as loudness. Human ears respond to a very wide range of sound pressures producing numbers of awkward size when sound pressures are related on an arithmetic (1,2,3...) scale. It has therefore become customary to express sound pressure level in decibels (dB) which are logarithmic (1, 10, 100...) ratios comparing sound pressures to a reference pressure. The reference pressure commonly used in noise measurement is 20 micro-pascals, which is considered to be the quietest sound a normal young adult human ear can hear in the frequency range that the ear is most sensitive to. This sound level is assigned the value 0 dB. A multiplication of sound pressure by a factor of 10 corresponds to an increase in sound pressure level of 20 dB. A doubling of any value of sound pressure corresponds to an increase in sound pressure level of 6 dB. As a rule of thumb, a 1 dB change in sound level requires close attention to notice a change in loudness, whereas a 3 dB change is clearly noticeable; and a 10 dB change will be nearly twice (or one-half) as loud. Some sample typical sound pressure levels for common sounds are: rustle of leaves - 10 dB; ordinary conversation at 3 feet – 60 dB; power mower at 5 feet – 100 dB.

Because decibels are logarithmic ratios they cannot be manipulated in the same way as arithmetic numbers. Addition of decibels produces results such as  $70 \text{ dB} + 70 \text{ dB} = 73 \text{ dB}$ . When the difference between two sound levels is greater than about 10 decibels, the lesser sound is negligible in terms of affecting the total level.

Sound level diminishes as distance from the source increases. For a “point” source of sound in free space, the rate at which the sound attenuates is inversely proportional to the square of the distance from the source. This means the sound level will drop 6 dB each time the distance from the source is doubled. A stream of vehicles on a busy highway represents a “line” source of sound and the attenuation rate is only about 3 dB for each doubling of distance.

Another characteristic of sound which must be considered is frequency. The unit of measurement of frequency is Hertz (Hz). One vibration per second equals one Hz. The human ear responds to sounds in the frequency range from 20 Hz to 20,000 Hz. While loudness depends primarily on sound pressure, it is also affected by frequency, and while pitch is closely related to frequency, it also depends on sound pressure. Thus a 2,000 Hz tone at 5 dB sound pressure level sounds just as loud as a 20 Hz tone at 70 dB sound pressure level. A 20 Hz sound at 70 dB is quiet to the ear while a 2,000 Hz sound at 70 dB is quite loud. Because of these variations systems have been developed to relate physical measurements of sound to human response. Presently, the most widely used measure of loudness for community noise evaluation is the A-weighted sound level. Sound levels using this system are referred to as dB(A).

The duration of noise and the time period at which it occurs are important factors in determining the human response to sound. For example noise induced hearing loss is directly related to the magnitude, frequency and duration of exposure. Annoyance due to noise is also associated with how often noise is present and how long it persists. One approach to quantifying time-varying noise levels is to calculate the Energy Equivalent Sound Level (Leq) for the time period of interest. The Leq represents a sound level which, if continuous would contain the same total acoustical energy as the actual time-varying noise which occurs during the observation period.

In a residential or other noise sensitive environment, noise is more disturbing at night than during the day. Thus, noise indices have been developed to account for the differences in intrusiveness between daytime and nighttime noise. The Community Noise Level Equivalent (CNEL) and the Day-Night Average Level (DNL or Ldn) are such indices. CNEL and Ldn values result from the averaging of hourly Leqs for a 24-hour period, with a weighting factor applied to the nighttime Leq values (and the evening values for CNEL). The CNEL penalizes noise levels during the night (10 pm to 7 am) by 10 dB to account for the increased sensitivity of people to noise after dark. Evening noise levels (7 pm to 10 pm) are penalized 5 dB by the CNEL. The Ldn also penalizes nighttime noise levels by 10 dB, but does not penalize evening levels. These two indices are generally equivalent.

In general, the CNEL may be thought qualitatively as an accumulation of the noise associated with individual events occurring throughout a 24-hour period. The noise of each

individual event is accounted for in a separate, discrete measurement that integrates the changing sound level over time as, for example, when an aircraft approaches, flies overhead, then continues off into the distance. These integrated sound levels for individual operations are referred to as Sound Exposure Levels or SELs. The accumulation of the SELs from each individual operation during a 24-hour period determines the CNEL for the day.

To limit population exposure to physically and/or psychologically significant noise levels, the State of California, various County governments, and most cities in the state have established guidelines and ordinances to control noise. Based upon the County of Ventura General Plan Hazards Appendix, an exterior noise level of 60 to 65 dBA CNEL is considered "normally acceptable" for residential uses. A noise level of 70 dBA CNEL is considered to be "conditionally acceptable" and a noise level of greater than 75 dBA CNEL is considered "clearly unacceptable" for residences. The 70 dBA CNEL noise level is considered to be the upper limit of "normally acceptable" noise levels for other sensitive uses such as schools, libraries, hospitals, nursing homes, churches, and parks. These noise criteria are based upon the California Office of Noise Control land use compatibility guidelines.

The Ventura County General Plan (Section 2.16.2-1 of the Goals, Policies and Programs) also establishes policies pertaining to noise. These policies are reflected in the Initial Study Assessment Guidelines, threshold criteria for noise as presented below in the impact analysis section of this noise discussion and in the County of Ventura Construction Noise Threshold Criteria and Control Measures.

The County of Ventura has one existing Noise Ordinance (Article 11 - Loud or Raucous Nighttime Noise in Residential Zones, Ord. #4124). The ordinance states that no person shall create within a residential zone of the County of Ventura any loud or raucous noise which is audible to the human ear during the hours of 9:00 pm to 7:00 am of the following day, at a distance of 50 feet from the property line of the noise source or 50 feet from any such noise source if the noise source is in public right-of-way.

**Site-Specific Setting:** According to the County's General Plan (Hazards Appendix, November 15, 2005), noise in Ventura County is attributed to motor vehicle traffic, aircraft, railroad traffic, industrial operations, agricultural operations, and miscellaneous sources. The primary existing sources of noise in the Oak Park area is vehicular traffic. However, most of the project site is within the SMMNRA where there is very limited traffic (restricted to NPS and other authorized vehicles). Other noise sources are the wind, overhead aircraft, recreationists, birds and other wildlife.

Parkland is considered a noise sensitive environment, thus the majority of the project site can be considered noise sensitive. Other project area sensitive land uses include residential uses adjacent to the pipeline alignment in the Oak Park community.

Traffic counts were taken by Associated Transportation Engineers in February of 2007 on Doubletree Road south of Oak Springs Drive. Based on these counts the estimated VPD is 1,500. Using this value, noise modeling provides a noise estimate of 57.9 dBA CNEL at 50 feet from the centerline of the road. A short-term, 15-minute noise sample measurement taken by

Padre personnel on February 15, 2007, at 10:00 AM adjacent to the Doubletree Connector (trail) and 20 feet from the centerline of Doubletree Road using a Larson Davis DSP 80 noise meter, yielded a reading of 57.7 dBA Leq. These noise estimates are still considered adequate for 2009 conditions since the community of Oak Park is built-out and traffic volumes are expected to be essentially the same as in 2007.

An ambient noise measurement taken along the Lindero Feeder segment within Rancho Simi Recreation and Park District open space and adjacent to the SMMNRA by Padre personnel on February 15, 2007 at 10:20 AM, using a Larson Davis DSP 80 noise meter yielded a reading of 43.6 dBA Leq. Similar ambient noise conditions can be expected at the project infrastructure within the SMMNRA.

**Impact Discussion:** The County Guidelines establish the following noise thresholds criteria (from General Plan Section 2.16.2-1 of the Goals, Policies, and Programs), above which significant noise impacts would be anticipated:

Permanent noise generators proposed to be located near any noise sensitive use shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise receptor, measured at the exterior wall of the building does not exceed the following standards:

- a. Leq1H of 55 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 6:00 am to 7:00 pm
- b. Leq1H of 50 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 7:00 pm to 10:00 pm
- c. Leq1H of 45 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 10:00 pm to 6:00 am

However, this criteria is not applicable to increased traffic noise identified along any of the roads identified within the 2020 Regional Roadway Network (Figure 4.2.3 of the Public Facilities Appendix of the Ventura County General Plan, [Kanan Road in the Oak Park area is included]). In addition, State and Federal highways, all railroad line operations, aircraft in flight, and public utility facilities are noise generators having Federal and State Regulations that preempt local regulations.

General Plan Policy 2.16.2-1 further states that construction noise shall be evaluated and, if necessary, mitigated in accordance with the County Construction Noise Threshold Criteria and Control Plan.

General Plan Policy 2.16.2-2 states that discretionary development which would be impacted by noise or generate project related noise which cannot be reduced to meet the standards prescribed in Policy 2.16.2-1, shall be prohibited. This policy does not apply to noise generated during construction.

Construction noise threshold criteria are provided in the County of Ventura Construction Noise Threshold Criteria and Control Measures (2005) and are presented below.

*During daytime hours, construction work should comply with the County of Ventura construction noise threshold criteria (NTC), defined hereafter. Normally, no evening or nighttime construction activity is permitted in areas having noise-sensitive receptors. However, in the event such activity is deemed necessary and is permitted, reduced noise threshold criteria are provided for construction that must occur during evening and/or nighttime hours. Emergency construction work is exempt from these construction noise thresholds.*

*Daytime Construction - Daytime (7:00 a.m. to 7:00 p.m. Monday through Friday, and from 9:00 a.m. to 7:00 p.m. Saturday, Sunday and local holidays) generally means any time period not specifically defined as a more noise-sensitive time period. The daytime construction noise threshold criteria are given below. Depending on project duration, the daytime noise threshold criteria shall be the greater of the fixed  $L_{eq}(h)$  limit (which includes non-construction evening and nighttime noise) or the measured ambient  $L_{eq}(h)$  plus 3 dB.*

*Evening Construction - Evening hours (7:00 p.m. to 10:00 p.m.) are more noise-sensitive time periods. Therefore, evening construction noise threshold criteria differ from the daytime criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed below, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.*

*Nighttime Construction - Nighttime hours (10:00 p.m. to 7:00 a.m. Monday through Friday, and from 10:00 p.m. to 9:00 a.m. Saturday, Sunday and local holidays) are the most noise-sensitive time periods. Therefore, nighttime and holiday construction noise threshold criteria differ from the daytime and evening criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed below, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.*

*Maximum Construction Noise - In addition, the construction-related, slow response, instantaneous maximum noise ( $L_{max}$ ) shall not exceed the noise threshold criteria by 20 dBA more than eight times per daytime hour, more than six times per evening hour and more than four times per nighttime hour.*

*Determination of Compliance - The construction noise at sensitive receptor locations for each construction phase is due to the contributions of each piece of noise producing equipment used in each construction phase. The resulting construction phase noise must be compared to the construction noise threshold criteria to determine whether noise mitigation measures are required. The construction noise monitoring methods are discussed in Appendix C (of the County of Ventura Construction Noise Threshold Criteria and Control Measures) and typical noise mitigation measures are given in Appendix D. During periods of greater construction noise activity, the construction noise shall be monitored by a designated person trained in the use of a sound meter in accordance with the methods of Appendix C (of the County of Ventura Construction Noise Threshold Criteria and Control Measures). When construction noise fails to comply with the appropriate noise threshold criteria, or falls out of compliance during use, the designated noise monitor shall immediately identify the non-compliant activity or equipment. Either the non-compliant activity must be stopped and the equipment*

removed from service or effective remedial action must be taken, similar to the noise mitigation measures of Appendix D (of the County of Ventura Construction Noise Threshold Criteria and Control Measures), to restore compliance with the respective noise threshold criteria.

**Daytime Construction Activity Noise Threshold Criteria**

Construction Duration Affecting Noise-sensitive Receptors	Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1,2</sup>
0 to 3 days	75	Ambient Leq(h) + 3 dB
4 to 7 days	70	Ambient Leq(h) + 3 dB
1 to 2 weeks	65	Ambient Leq(h) + 3 dB
2 to 8 weeks	60	Ambient Leq(h) + 3 dB
Longer than 8 weeks	55	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.

Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to project work.

**Evening Construction Activity Noise Threshold Criteria**

Receptor Location	Evening Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1,2</sup>
Residential	50	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 6 times per evening hour.

Note 2. Hourly evening local ambient noise measurements shall be made on a typical mid-week evening prior to project work.

**Nighttime Construction Activity Noise Threshold Criteria**

Receptor Location	Nighttime Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA, <sup>1,2</sup>
Resident, Live-in Institutional	45	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 4 times per nighttime hour.

Note 2. Hourly nighttime local ambient noise measurements shall be made on a typical mid-week night prior to project work.

Short-term noise impacts associated with the proposed project would result from decommissioning activities. Generally, a change in ambient noise level of 3 dBA is noticeable. The County's Hazard Appendix states that an intruding noise of more than approximately 5 dB

in the background level is likely to be perceived as a degradation of environmental quality. Because of the nature of the proposed decommissioning activities, noise levels associated with the project will vary depending on the activities taking place at any given time.

Short-term noise impacts of the project are described as follows. The decommissioning of the Palo Comado Pump Station would take place about 200 feet from the closest recreational trail (Ranch Center Connector) and about 225 feet from the intersection of the Palo Comado Canyon and Ranch Center Trails. Taking into account the equipment expected to be in operation during construction, the anticipated 8-hour daytime construction schedule, and the distance to the closest trail, a computer-modeling program was used to estimate short-term noise levels that would result from decommissioning activities at the pump station. It is estimated that worst case noise levels would be about 76 dBA Leq and 71 dBA CNEL at the closest point on the trail. This would be about 32 dBA Leq higher than the ambient conditions. Using a similar methodology as previously described, the decommissioning of the Cheeseboro Tank site, which is located about 110 feet from the Cheeseboro Ridge Trail, is expected to result in noise levels of about 71 dBA Leq or 75 dBA CNEL. This is about 27 dBA over ambient conditions. Decommissioning of the appurtenant structures along the pipeline alignment is not expected to require heavy equipment and would not result in substantial noise level increases. Increased noise levels associated with the decommissioning of the Palo Comado Pump Station and Cheeseboro Reservoir would likely be considered a substantial nuisance to trail users who may be in the area. However, trail users are expected to pass by the work areas within a relatively short period. Also, there are other trails available for recreationists to use within the SMMNRA and adjacent RSRPD lands which would allow them to avoid the decommissioning area, should they be informed and choose to do so. Further, to mitigate potential safety impacts to SMMNRA visitors during the decommissioning project, the NPS would close trails that would be used as project haul routes to the public during days of construction (U.S. Department of the Interior, NPS, 2009). Thus trail use within the project area would be limited to non-haul routes. Any individual receptor is expected to be exposed to noise for less than three days, as such the County threshold of significance is 75 dBA. (The District as an independent agency does not need to apply County thresholds, but is using them for reference purposes in this environmental document.) Considering the factors described above, the noise impact associated with these temporary activities is considered to be adverse, but less than significant. (See also discussion of recreational impacts in Section C. 30 below.)

Slurrying activities associated with the decommissioning of the portion of the Lindero Feeder with public roads that would not be used by the District would require the use of heavy equipment specifically concrete trucks. It is anticipated that 12 trucks of slurry mix will be needed at a rate of one per hour. Pipe filling would take two days to complete. Set up and clean up make take up to an additional two days total. Ambient noise along Doubletree Road is estimated to be about 58 dBA (Leq). Concrete mixers and pumps have noise levels of about 85 and 82 dBA at 50 feet respectively. Living areas of homes on Doubletree Road are generally set back 30 feet or more from the edge of the road. Therefore, assuming use of a concrete mixer and pump for an 8 hour work period, exterior noise levels at the closest residence would be 91 dBA Leq. Typical residential construction offers about 15-20 dBA of noise reduction with windows closed. As indicated by the data presented, noise levels during the slurrying process

would be elevated for sensitive receptors, and would be above the County's 75 dBA threshold and are therefore considered significant.

The NPS has identified one potential cumulative project that would have the potential to result in cumulative noise impacts for recreationists utilizing the trails in the project area. The project is the proposed Cheeseboro Canyon trailhead improvements. While the project has the potential to compound temporary noise impacts for visitors to the SMMNRA, due to the type of use and temporary nature of the impacts and distance between the respective projects, this cumulative effect is also considered adverse, but less than significant. The proposed project is not expected to occur simultaneously with the rehabilitation of Doubletree Road as these activities would be incompatible. However, in the event that these projects took place sequentially, a potentially significant cumulative noise impact of duration would result.

**Mitigation and Residual Impacts:** The following mitigation measures are proposed to reduce short-term construction-related impacts to a less than significant level and further reduce the adverse effects.

- N1** Noise-generating construction activities shall be limited to the hours between 7:00 am and 5:00 pm, Monday through Friday. No construction shall occur on State or Federal holidays.
- N2** Any stationary equipment that may be used at the site that generates a noise level of 65 dBA or more at 50 feet shall be shielded to reduce noise.
- N3** The District shall notify property occupants of properties located within 160 feet of pipeline slurry operations at least two weeks prior to initiation of slurry operations of the proposed activity and schedule including anticipated beginning and end dates and, days and hours of operation. Notification shall include a contact for noise complaints.
- N4** The District shall post a public notice of project activities at all public parks and open space in which project decommissioning activities will take place or be located adjacent to at least two weeks prior to commencement of decommissioning. The notice shall include a brief description of the proposed activities, schedule (including schedule including anticipated beginning and end dates and, days and hours of operation), and contact for noise complaints. This effort shall be coordinated with the NPS and RSRPD.

While the above measures would not reduce construction-related noise to less than the threshold criteria provided above, implementation of these measures represent a best practicable effort at minimizing adverse effects of construction noise of the type proposed by avoiding time periods when sensitive receptors are more likely to be impacted and by giving advanced notification so that potentially impacted persons can make modifications to their schedule and activities should they choose to do so. Additionally, construction noise would be temporary. Therefore, the District considers residual impacts to be less than significant.