

**Naval Facilities Engineering Systems Command Southwest
San Diego, CA**

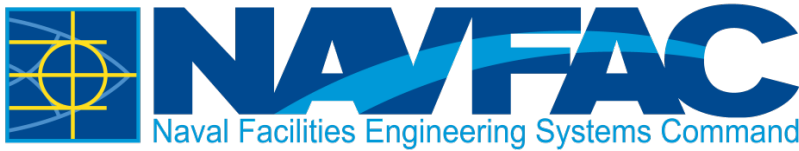
FINAL

**Proposed Plan for Mesa Lease Facility, PMF
Easement and CDA (supporting San Onofre
Nuclear Generating Station) at Marine Corps
Base Camp Pendleton**

**MARINE CORPS BASE CAMP PENDLETON
SAN CLEMENTE, CALIFORNIA**

November 2023

Approved for public release: distribution is unlimited



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November 2023

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Prepared for:

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Department of the Navy Announces the Proposed Plan for Mesa Lease Facility, PMF Easement and CDA (supporting San Onofre Nuclear Generating Station) at Marine Corps Base Camp Pendleton

November 16, 2023

The Department of the Navy (DoN), including the Marine Corps, invites you to comment on this Proposed Plan and its identification of No Action/No Further Action (NA/NFA) as the preferred remedial alternative for groundwater, soil and soil gas at the San Onofre Nuclear Generating Station (SONGS) Mesa Lease Facility, Probable Maximum Flood (PMF) Channel, Berm and Basin Easement (PMF Easement), and Construction Debris Area (CDA) at Marine Corps Base (MCB) Camp Pendleton (Figures 2 and 3). The Mesa Lease Facility provided administrative and support facilities to SONGS and the CDA was used for placement of undocumented fill material during construction of the SONGS Unit 1 sphere enclosure building. The Mesa Lease Facility, PMF Easement and CDA parcels are not part of the U.S. Nuclear Regulatory Commission (NRC) licensed footprint for the nuclear plant. The DoN is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** and Section 300.430(f) (2) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**.

The purpose of this Proposed Plan is to:

- Describe cleanup work already performed at the Mesa Lease Facility, PMF Easement and CDA (collectively Mesa Operable Unit or OU-1), designated as all chemical and radiological contaminants in soil, soil gas and groundwater at the sites, except **per- and polyfluoroalkyl substances (PFAS)** (see brief discussion of the PFAS Investigation on page 12).
- Present the DoN's preliminary recommendation that no further cleanup of the Mesa Operable Unit (OU-1) is necessary and explain the reasons for identifying the preferred alternative for OU-1.
- The Proposed Plan's identification of NA/NFA as the preferred remedial alternative for the Mesa Operable Unit (OU-1) is based on investigations and cleanup work previously performed by Southern California Edison (SCE) under California Department of Toxic Substances Control (DTSC) oversight pursuant to a Voluntary Cleanup Agreement (VCA) and a Standard Voluntary Agreement (SVA), not CERCLA.

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30-Day Public Comment Period November 16 to December 22, 2023

You are invited to review this Proposed Plan and send written comments during the comment period. See page 13 for information on where to find documents related to SCE's cleanup activities at the Mesa Operable Unit (OU-1), and page 15 for information on how to submit comments.

Public Meeting 7:00 to 8:00 pm, Thursday, November 30, 2023 Oceanside Library

This meeting is an opportunity for you to hear more about the NA/NFA alternative evaluated by the DoN, to ask questions, and to give verbal or written comments in person. If any disability accommodations are needed, please contact Bryce Bartelma at (619) 705-5214. Requests should be made as soon as possible, but at least one week prior to the scheduled meeting.

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Although not providing official regulatory oversight of SCE's cleanup activities, the **United States Environmental Protection Agency (USEPA)**, the San Diego Regional Water Quality Control Board (Regional Water Board) and the DoN were provided with the opportunity to review and comment on the cleanup-related documents prepared by SCE.

Location and Background

MCB Camp Pendleton is in northern San Diego County, California, bordered on the west by the Pacific Ocean, and covers approximately 125,000 acres of land. The base is occupied by approximately 70,000 military and civilian personnel during the day, and approximately 38,000 military family members occupy base housing complexes. The Mesa Lease Facility is in the northwestern portion of the base, northeast of El Camino Real, between Mesa Road and Construction Way and is composed of real estate parcels that previously housed support facilities on the opposite side of Interstate 5 (I-5) from the SONGS property (Figure 2), which is currently being decommissioned. The areas addressed by this Proposed Plan include the numbered parcels listed below that comprise the Mesa Operable Unit (OU-1):

- Parcel 5a – Guard house entry into the facility
- Parcel 6 – SONGS operations support facilities
- Parcel 7 – SONGS operations support facilities
- Parcel 10 – Power distribution poles and drainage ditch
- Parcel 11 – Septic system seepage area and drainage ditch
- Parcel 12 – 30-inch reinforced concrete pipe (RCP) stormwater culvert
- Parcel 13 – Potable water and telecommunications utilities
- Parcel 14 – Sewage effluent pipeline utility
- PMF Easement
- CDA

The Mesa Lease Facility was originally comprised of Parcels 5a, 6, and 7 which were developed by SCE in the mid-1970s. Parcels 10 through 14 were later developed to support operations at the facility and

were added to the SCE long-term lease in April 2019. Native material excavated during the construction of SONGS Nuclear Reactor Units 2 and 3 that was used for creation of a berm and for grading across the Mesa Lease Facility, was also investigated as part of the VCA. As a condition of the lease agreement, the Mesa Operable Unit (OU- 1) will be returned to the Marine Corps for unrestricted use by MCB Camp Pendleton.

THE CERCLA CLEANUP PROCESS

The DoN is issuing this Proposed Plan as part of its public participation responsibilities under CERCLA, which is the next step in the remediation process that documents the preferred remedial alternative for NA/NFA at the Mesa Operable Unit (OU-1). The DoN is the lead agency for implementing CERCLA and the USEPA is the lead agency providing regulatory oversight for developing the Proposed Plan and Record of Decision (ROD) to satisfy CERCLA requirements. The flow chart (Figure 1) shows the steps in the CERCLA process and identifies the current status for the Mesa Operable Unit (OU-1).

This Proposed Plan summarizes assessments, investigations, and cleanup actions already undertaken at the Mesa Operable Unit (OU-1) by SCE outside of the CERCLA process (i.e., under the VCA and SVA with DTSC). The Proposed Plan presents the basis for the recommendation that no further cleanup is necessary under CERCLA in relation to the Mesa Operable Unit (OU-1) as cleanup actions previously performed by SCE ensure the protection of human health and the environment. More detailed information on the results of previous investigations and removal actions completed by SCE is contained in the list of investigations and reports, as well as other documents found in the DTSC EnviroStor Records (see page 13 for the EnviroStor database link).

The DoN and USEPA encourage the public to review this Proposed Plan to better understand the Mesa Operable Unit (OU-1) and SCE's investigation and cleanup activities conducted at these facilities. The DoN will review public comments on this Proposed Plan before making a final decision on whether to select the preferred NA/NFA remedial alternative for the Mesa Operable Unit (OU-1).

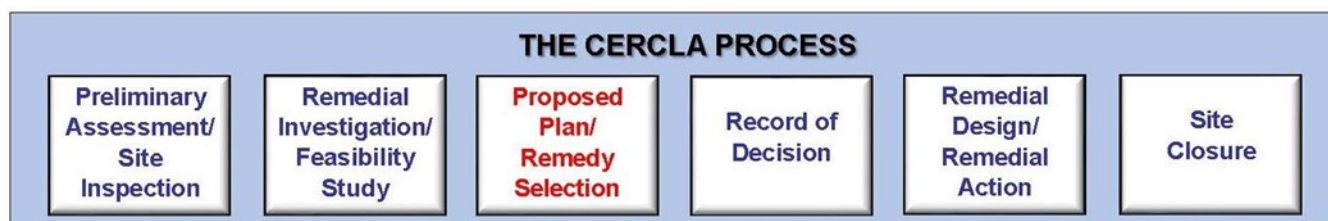


Figure 1– CERCLA Cleanup Process Flow Chart

Responses to public comments will be presented in a responsiveness summary, which will be included in a ROD. The ROD will be the next step in the CERCLA process and will document the selected remedy and the decision process. If the ROD for the Mesa Operable Unit (OU-1) selects NA/NFA as the remedy, the CERCLA process for OU-1 will be complete (although an OU for PFAS will be designated; see brief discussion of the PFAS Investigation on page 12.)

PARCEL DESCRIPTIONS AND HISTORY

The Mesa Lease Facility parcels were undeveloped until the mid-1970s when development started on

Parcels 5a, 6 and 7 with multiple buildings (guard house, laboratories, training facilities, fabrication shops, garages, warehouses, etc.), a fueling facility, vehicle parking areas, a helicopter landing pad, staging/storage yards, a sewage treatment plant (STP), and a recreational vehicle private campground (Camp Mesa). The long-term lease for these original parcels was signed in November 1981. Parcels 10 to 14 were later developed to support facility operations and added to the lease in April 2019. Refer to the detailed descriptions of the parcels in the list below. The Mesa Operable Unit (OU-1) has been returned to the Marine Corps for use by MCB Camp Pendleton.

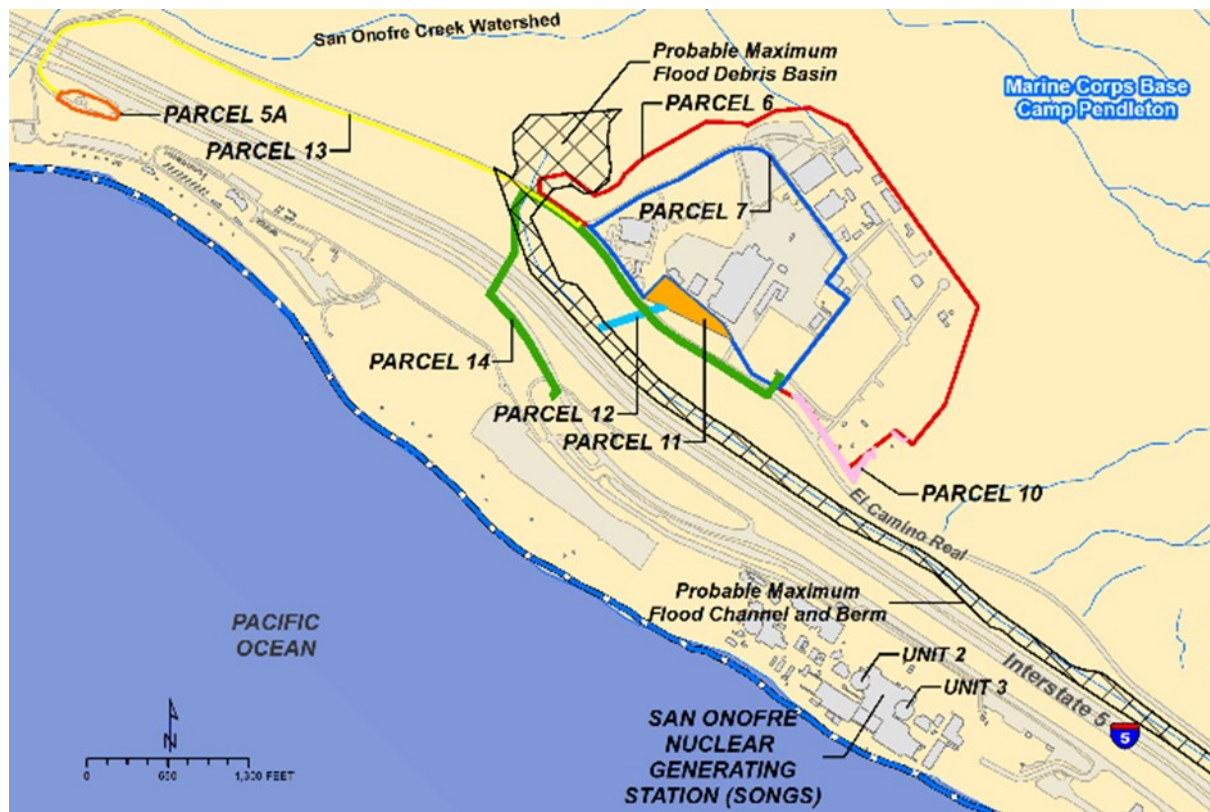


Figure 2. Mesa Lease Facility and PMF Easement location map

The Mesa Lease Facility, PMF Easement and CDA parcels addressed in the Proposed Plan include:

Parcel 5a – a Mesa Lease Facility guard gate, a parking area, and single-story operational guard house occupying 1.27 acres on the west side of I-5 between Pacific Coast Highway and El Camino Real. The parcel also includes a septic system in the central portion of the parcel that was installed in 1969 prior to the SCE property lease. The septic system was abandoned in place in approximately 1984.

Parcel 6 – SONGS operations support facilities occupying 69.3 acres northeast of El Camino Real on the east side of I-5. It surrounds Parcel 7 to the north, east, and south, and consists of paved and unpaved surfaces. Soil from construction operations at Nuclear Reactor Units 2 and 3 was placed on Parcel 6 beginning in 1974. Operations at Parcel 6 largely ceased when SONGS discontinued operations in 2013.

Buildings and infrastructure at Parcel 6 during active operations included:

- Welding shop;
- Storage yard;
- Radiography and hydraulics test labs;
- Fabrication shops and a media blast facility;
- Silkscreen print shop, carpenter shop and painting facility;
- Storage for furniture, fire department, carpenter shop, and heating, ventilation and air conditioning (HVAC) and hazardous materials;
- Vehicle maintenance garage;
- Camp Mesa for private recreational vehicles;
- Seaweed drying yard; and
- Warehouse space, offices, classrooms and training facilities.

Parcel 7 – SONGS Mesa operations support facilities occupying 49.1 acres northeast of El Camino Real between Mesa Road and Construction Way, and immediately adjacent to Parcel 6 to the west along Industry Drive. Operations at Parcel 7 ceased when SONGS discontinued operations in 2013, except for the 1,000-gallon emergency generator aboveground storage tank, and the 660-gallon generator belly tank at Emergency Operations Facility Building E-50A. Buildings are unoccupied, and select buildings/improvements, building foundations and paved surfaces will remain intact for future MCB Camp Pendleton use at the request of the DoN. Buildings and infrastructure at Parcel 7 during active operations included:

- Mesa Medical Healthcare Center;
- Helipad;
- Water pump house fire suppression facility;
- Mesa Fueling Facility gasoline and diesel fuel dispensing station;
- Sewage treatment plant (STP);
- Welding fabrication facility;
- Open-air compressed gas bottle storage facility;
- Commercial grade item test lab;
- Sheet metal machine shop;
- Chemical storage space; and
- Warehouse space, offices, classrooms and training facilities.

Parcel 10 – Operational power distribution facilities and drainage ditch occupying 0.76 acres adjacent to the Mesa Lease Facility Parcel 6 boundary, inclusive of eight power distribution poles and associated

power lines. Pavement, soil, and vegetation cover the area beneath the power lines and around the poles. The parcel is a source of electricity and provides stormwater drainage for the Mesa Lease Facility.

Parcel 11 – Septic sewage system and drainage ditch occupying 2.4 acres. The parcel includes a former septic system consisting of tanks and distribution lines connected to seepage pits, which were abandoned in-place. Operations ceased when the STP and associated Building W-42 were built around 1984.

Parcel 12 – 30-inch RCP stormwater culvert occupying 0.43 acre that begins on undeveloped land in Parcel 7 southwest of Building W-51 and runs outside and south of Parcel 7, extending west-southwest beneath El Camino Real before terminating at the PMF channel. Parcel 12 operations ceased and the RCP and culvert were abandoned in-place between 1980 and 1982 when Mesa Lease Facility stormwater runoff was diverted to a debris basin via a new below-ground 72-inch storm drain on Parcels 6 and 7. The abandoned stormwater RCP was filled and the ends sealed with concrete slurry and a decision was made to avoid any further removal of features to avoid environmental disturbance.

Parcel 13 – Operational potable water source and telecommunications utilities occupying 3.65 acres, inclusive of a freshwater service main installed beneath El Camino Real. Parcel 13 runs north along El Camino Real, under I-5, and south to Parcel 5a. The water line main is approximately 0.92-miles long and enters Parcel 6 at a location west of the intersection of El Camino Real and Mesa Drive.

Parcel 14 – Sewage effluent pipeline utility occupying 5.2 acres that includes a pipeline that pumps treated sewage wastewater from the Mesa Lease Facility STP to a treatment plant associated with the SONGS facility. The pipeline leaves the STP and enters Parcel 7, ending on the west side of old Pacific Coast Highway, where it enters Parcel 9. The pipeline length is approximately 4,500 linear feet and installation was generally at four feet below ground surface (bgs), except when crossing below I-5, where the depth is understood to be 10 feet bgs. The Parcel 14 boundary extends approximately 25 feet on either side of the pipeline.

Probable Maximum Flood (PMF) Easement – An area occupying 39.6 acres including the PMF debris basin, which is 7 acres. Filter sand was placed at the base of the PMF debris basin during construction to allow for water percolation into the underlying

permeable sand deposits. The PMF debris basin is located at the northern end of the PMF channel northeast of Parcel 6. The PMF berm and channel easement is approximately 2 miles long, running parallel to the northwest-southeast I-5 freeway (Figures 2 and 3). The PMF berm and channel were designed to enhance the capacity of the existing berm and stormwater channel which received stormwater from multiple culverts that drained the I-5 freeway, MCB Camp Pendleton, and the SCE Mesa Facility. Existing berm height was increased and the stormwater channel widened to accommodate excess stormwater volume associated with probable maximum flood conditions.

Construction Debris Area (CDA) – an area occupying 1.6 acres of undeveloped land characterized by two steep-sided arroyos incised into a relatively flat, coastal marine terrace located southeast of the SONGS Mesa Lease Facility between I-5 and El Camino Real (Figure 3). Between 1976 and 1977, excess soil consisting mainly of beach sand and pavement debris from installation of the SONGS Unit 1 sphere enclosure building was placed at the site. SCE does not have a lease or an easement for this property.

PREVIOUS INVESTIGATIONS

As described by the surrender plan between DoN/ Marine Corps and SCE for the termination of the Mesa Lease, SCE is required to return the property for unrestricted use. The investigation and cleanup of any hazardous substances whose release was

caused by a party other than the Marine Corps may be addressed by an agreement between that party and the appropriate regulatory agency(ies), as provided by Section 6.5 of the MCB Camp Pendleton Federal Facility Agreement (FFA). As noted earlier, SCE, a non-FFA party, entered into a VCA (Mesa Lease Facility and PMF Easement) and SVA (CDA) with DTSC to address contamination linked to its use of the Mesa Lease Facility and CDA property parcels. SCE has completed numerous environmental assessments and investigations of potential contamination of groundwater, soil, and soil gas on the parcels under the oversight of DTSC pursuant to the VCA and SVA.

These assessments and investigations have included:

- Testing and analyses of groundwater, soil and soil gas;
- Delineating the nature (what) and extent (where) of contamination; and
- Determining the risk that may be posed to people and the environment (see Risk Assessment section on page 6).

Chemical Contaminant Assessments and Investigations

SCE investigated the Mesa Facility Parcels and CDA for chemical contaminants in soil,

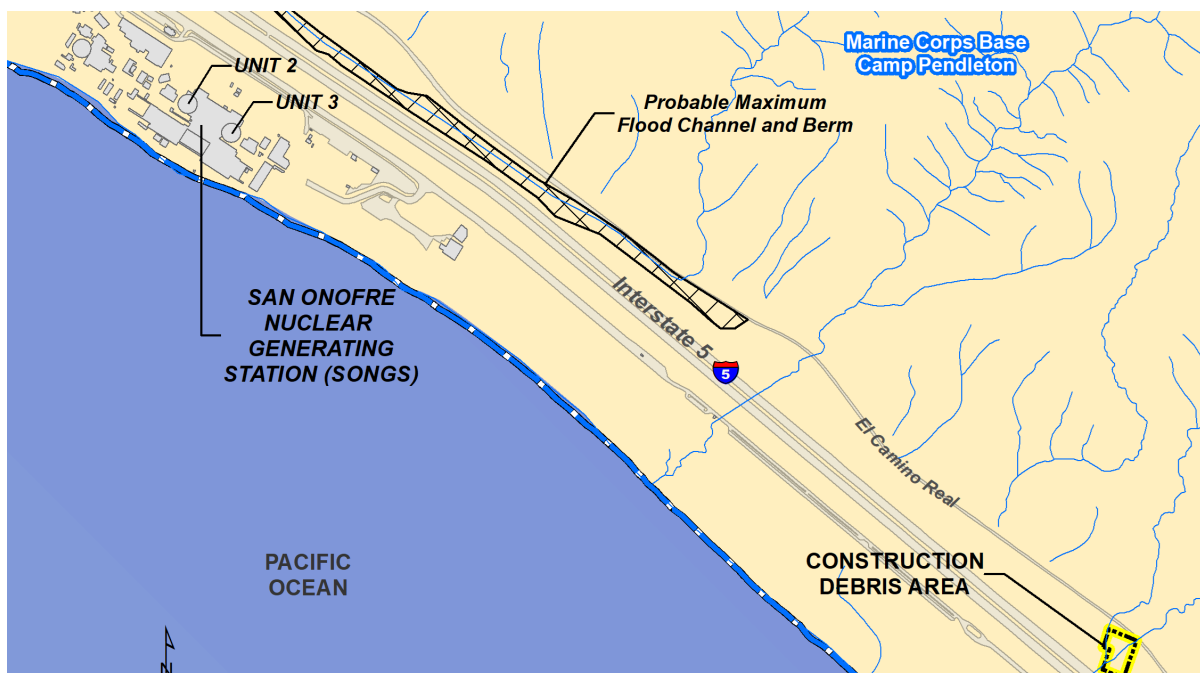


Figure 3. PMF Easement and Construction Debris Area Site Location Map

groundwater and soil gas under the oversight of DTSC. In addition response actions for soil and soil gas were completed for Parcels 6 and 14 and the PMF Easement. Table 1 on pages 7, 8, and 9 provides additional details on the reports developed that document the assessments and investigations conducted, and response actions completed by SCE.

Radiological Investigations

Based on document reviews, several radiological events took place at the Mesa Lease Facility during the 1980s; however, the NRC has affirmed SCE appropriately addressed these events. Low levels of radioactive contamination primarily consisting of fixed contamination (not loose) on tools and equipment inappropriately transferred to the Mesa do not pose a contamination transfer potential to the property. The tools and equipment were completely removed from the Mesa and returned to SONGS, and surveys were conducted to ensure there was no remaining radiological contamination. Additionally, approximately 100 cubic yards (CY) of Unit 1 soil placed at the Mesa was appropriately addressed by complete removal and offsite disposal, as documented in a December 1, 2015 NRC letter that includes a 1981 NRC inspection report. Finally, noncontaminated concrete and soil from near Unit 1 was deposited in a ravine that is referred to as the CDA.

Before pursuing termination of the lease agreement with the DoN, SCE performed a radiological survey of the Mesa Lease Facility and CDA in 2014 that showed no residual radioactivity above regulatory limits set forth in NRC regulation 10 CFR 20.1402. In a March 19, 2020 letter the NRC referenced is previous 2015 letter and indicated its continued affirmation that SCE appropriately addressed and remediated all events involving minor radiological contamination and concluded the Mesa properties are suitable for unrestricted site use (see NRC March 19, 2020 letter listed in Table 1).

In addition, the California Department of Public Health, Radiological Health Branch reviewed the radiological assessments prepared by SCE, and confirmed acceptance of the NRC's unrestricted release criteria as applied at the Mesa facility.

RISK ASSESSMENT

SCE prepared a risk assessment using sampling data collected at the Mesa Operable Unit (OU-1) to determine the need for a response action to achieve the cleanup level necessary for the use designation

unlimited use/unrestricted exposure. A **human health risk assessment (HHRA)** examines two types of negative or adverse health risk: cancer risk and non-cancer hazard. Ecological risk is evaluated to determine the potential for negative effects to site-specific ecological receptors, such as plants and animals, from exposure to site contaminants.

Cancer risk is expressed in terms of the probability that an individual or group of individuals would have an increased chance of contracting cancer over a lifetime period of 70 years. For example, a risk of 1×10^{-6} means an exposed person would have an increased likelihood of 1 in a million to develop cancer. If the increased cancer risk posed by a site is greater than 1×10^{-6} , but less than 1×10^{-4} (1 in 10,000), the site falls within the range that the USEPA refers to as a risk management range, and further evaluation is conducted to determine whether response action is necessary. If the site risk is greater than 1×10^{-4} , response action is generally warranted (Figure 4).

Non-cancer health effects are evaluated using a hazard index (HI) that reflects the adverse health effects caused by specific chemicals. A HI of 1 is used as a benchmark level to indicate whether adverse health effects are likely to occur as a result of exposures to contaminants at the site, with HIs greater than 1 indicating that adverse health effects may occur, and HIs less than 1 indicating no adverse health effects.

Human health and ecological risks were evaluated on all property parcels of the Mesa Operable Unit (OU-1) to determine the need for response action under the VCA and SVA. The results of the HHRA and **ecological risk assessment (ERA)** for all non-PFAS-related soil and soil gas were all within acceptable levels for Parcels 5a, 7, 10, 11, 12 and 13 and the CDA, so no response action was required for these parcels to meet unrestricted site use criteria for all non-PFAS-related soil and soil gas.

For Parcels 6, 14 and the PMF Easement, the results of the HHRA for non-PFAS-related soil and soil gas were above the cancer risk management range and above 1 for the non-cancer risk, so response actions were performed for these parcels. The HHRA results at Parcels 6, 14 and the PMF Easement after the response actions were all within acceptable levels. The ERA results for Parcels 6, 14 and the PMF Easement did not identify any unacceptable ecological risks. Consequently, these parcels meet unrestricted site use criteria.

The groundwater ingestion exposure pathway was evaluated for parcels 5a, 6 and 7, but reported non-PFAS-related contaminant concentrations did not exceed **maximum contaminant levels** (i.e., drinking water standards) and further evaluation was not warranted. For parcels 10 through 14, groundwater occurs at approximately 87 feet bgs and is not considered a media of concern, results of SCE's historical soil and soil gas investigations did not warrant further investigation of groundwater.

PREVIOUS CLEANUP ACTIONS

Based on risk assessment results, cleanup actions were conducted for Parcels 6, 14 and the PMF Easement. The Parcel 6 cleanup action took place April 29 to August 13, 2020, and included demolition, erosion control and stormwater

protection, contaminated soil removal and offsite disposal of approximately 15,000 CY of soil, as well as asphalt and concrete debris from two excavation areas, backfill and compaction, and site restoration. The Parcel 14 cleanup action took place October 3, 2022 to January 31, 2023, and included excavation and offsite disposal of approximately 380 CY of soil from two excavation areas, backfill and compaction, and site restoration. Conveyance piping associated with the sewer effluent line was also cut and capped at the tetrachloroethene (PCE) excavation area boundary. The PMF Easement cleanup action took place March 11 to May 11, 2023, and included hardscape demolition, contaminated soil removal and offsite disposal of 2,000 tons of soil from two excavation areas, backfill/compaction, and site restoration. Table 1 below provides additional details on the cleanup actions for the parcels.

Cancer Risk

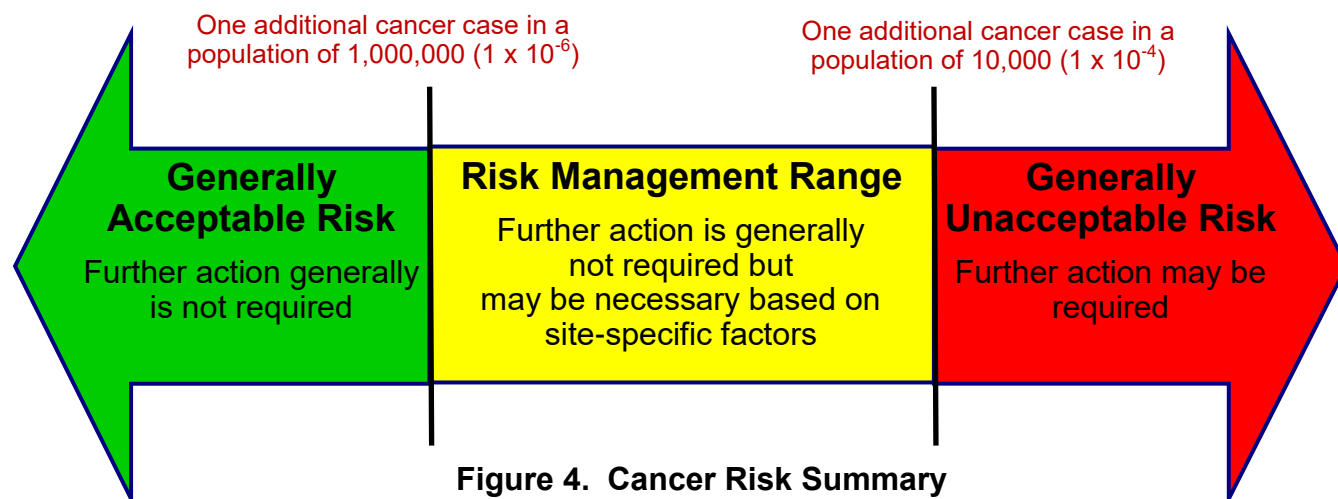


Figure 4. Cancer Risk Summary

Table 1. Summary of Assessments, Investigations and Removal Actions for Mesa Lease Facility, PMF Easement and CDA (Mesa Operable Unit [OU-1]) Under the VCA and SVA*

Parcel 5a

- 2015 Revised Phase II Environmental Site Assessment Report (Parcels 5, 6, 7) (revised from 2014 report).
- 2017 Revised Supplemental Site Investigation Completion Report Parcel 5, Area A (revised from 2016 report).
- Chemicals of potential concern (COPCs) were investigated based on parcel operations and were all below levels that required additional assessment or remedial action, so no chemicals of concern (COCs) were identified.
- Based on site characterization data and conclusions presented in the 2017 Revised Supplemental Site Investigation, additional site assessment was not warranted, and Parcel 5a met criteria for unrestricted site use.
- April 24, 2017: DTSC "concur with the no further action recommendation".

Table 1. Summary of Assessments, Investigations and Removal Actions for Mesa Lease Facility, PMF Easement and CDA (Mesa Operable Unit [OU-1]) Under the VCA and SVA* (cont'd)**Parcels 6 and 7**

- 2014 Phase I Environmental Site Assessment Report (Parcels 6, 7).
- 2015 Phase II Environmental Site Assessment Report (Parcels 5, 6, 7) (Revised from 2015 report).
- March 19, 2020 NRC Letter: *"NRC staff continues to affirm that SCE appropriately addressed and remediated these events,"* referring to *"minor radiological contamination events that took place in the Mesa area during the 1980s."*
- 2019 Final Comprehensive Site Characterization Report (Parcels 6 and 7) (Revised from June 2019 report).
- 2020 Remedial Design and Implementation Plan for Parcel 6 (Revised from March 2020 report).
- Response Action: April 29 – August 13, 2020, including demolition, erosion control and stormwater protection, contaminated soil removal and offsite disposal that included 15,000 CY of soil, as well as asphalt and concrete debris from two excavation areas, backfill and compaction, and site restoration.
- 2020 **Removal Action Completion Report (RACR)**, Parcels 6 and 7 (Revised from September 2020 report).
- 2022 Technical Memorandum, SONGS Unit 2 and 3 Soil Disposition.
- COPCs were investigated based on parcel operations and COCs identified were hexavalent chromium and lead in soil, and tetrachloroethene (PCE) in soil gas, addressed during the above referenced removal action.
- The RACR found that Parcel 6 meets no further action and unrestricted site use criteria; Parcel 7 found no removal action was warranted for the parcel.
- January 6, 2021: DTSC *"approves the RACR and concurs the cleanup goals were met and Parcel 6&7 is suitable for unrestricted use."*

Parcels 10-13

- 2020 **Preliminary Endangerment Assessment (PEA)** Report, Parcels 10-14 (revised from September and December 2019 and February 2020 reports)
- 2022 Technical Memorandum, SONGS Unit 2 and 3 Soil Disposition
- COPCs were investigated based on parcel operations and COCs identified were polycyclic aromatic hydrocarbons (PAHs) and **organochlorine pesticides (OCPs)** at Parcel 10, in a limited area and pose a de minimis ecological risk.
- Based on 2019 PEA site characterization data and conclusions, additional site assessment was not warranted, and Parcels 10-13 met the criteria for unrestricted site use criteria.
- November 4, 2020: DTSC *"concurs that no further action is warranted for Parcels 10, 11, 12 and 13 (approximately 7.2 acres) and they are suitable for unrestricted use."*

Parcel 14

- 2020 Preliminary Endangerment Assessment Report Parcels 10-14 (revised from 2019 and February 2020 reports).
- 2021 Supplemental Site Investigation Report, Parcel 14 (revised from 2020 report).
- 2022 Technical Memorandum, SONGS Unit 2 and 3 Soil Disposition.
- Removal Action: October 3, 2022, to January 31, 2023, that included excavation and offsite disposal of approximately 380 CY of soil from the PCE excavation area along El Camino Real and excavation of approximately 100 CY of soil, backfill/compaction, and site restoration at the lead excavation area along Old Pacific Coast Highway. Conveyance piping associated with the sewer effluent line was also cut and capped at the PCE excavation area boundary.

Parcel 14 (cont'd)

- 2023 RACR, Parcel 14 (revised from February 2023 report).
- COPCs were investigated based on parcel operations and COCs identified were lead in soil, and PCE and chloroform in soil gas, which were addressed during the above referenced removal action.
- The RACR found that Parcel 14 currently meets no further action and unrestricted land use criteria.
- March 24, 2023: DTSC *"PCE and other Site-related VOC concentrations in soil gas left in place after remedial excavations did not pose a significant health risk and were acceptable for unrestricted use."*

PMF Easement

- 2020 Preliminary Endangerment Assessment Report, Probable Maximum Flood Channel, Berm, and Basin Area, USMC Easement (revised from February 2020 report).
- 2022 Supplemental Site Investigation Report, Probable Maximum Flood Channel, Berm, and Basin Area, USMC Easement (revised from December 2020 and June 2022 reports).
- 2022 Technical Memorandum, Revised Removal Action Work Plan Addendum, Probable Maximum Flood Channel, Berm, and Basin Area, USMC Easement (revised from June 2022 addendum).
- Removal Action: March 11, 2023 to May 11, 2023, that included hardscape demolition, excavation and offsite disposal of soil, backfill/compaction, and site restoration from the total petroleum hydrocarbon (TPH) excavation area and the lead excavation area resulting in removal of approximately 2,000 tons of soil.
- 2023 RACR, Probable Maximum Flood Channel, Berm, and Basin Area, USMC Easement.
- COPCs were investigated based on operations and COCs identified were TPH and lead in soil, which were addressed during the above referenced removal action.
- The RACR found that the PMF Easement currently meets no further action and unrestricted land use criteria.
- August 25, 2023: DTSC *"concurs that the cleanup goals were met and the Site is suitable for unrestricted use....."*

Construction Debris Area

- March 19, 2020 NRC Letter: *"NRC staff continues to affirm that SCE appropriately addressed and remediated these events,"* referring to *"minor radiological contamination events that took place in the Mesa area during the 1980s."*
- 2021 Revised Phase I Environmental Site Assessment Report (revised from February 2021 report).
- 2023 Revised Preliminary Endangerment Assessment Report (revised from January and October 2022 reports).
- COPCs were investigated based on parcel operations and were all below levels that required additional assessment or remedial action, so no COCs were identified.
- February 16, 2023: DTSC *"agrees with the conclusions of the Report (2022 PEA report) that the Site is suitable for unrestricted use and no further action is warranted."*

*References to "no further action" and "unrestricted site use" in Table 1 are determinations made by DTSC pursuant to the VCA and SVA, not CERCLA, and they apply only to non-PFAS soil, soil gas and groundwater chemical and radiological contaminants. As previously noted, PFAS in soil and groundwater is being investigated as a separate operable unit (see brief discussion of the PFAS Investigation on page 12).

Table 2. Mesa Lease Facility, PMF Easement and CDA (Mesa Operable Unit [OU-1]) Human Health and Ecological Risks

Parcel	Media	Cancer Risk ¹	Non-Cancer HI ¹	Ecological
Parcel 5a	Soil	4×10^{-8}	0.5	No unacceptable ecological risk. Chemical concentrations at the parcel did not exceed ecological screening levels for ecological receptors (plants, invertebrates, birds, and mammals), except for a few metals, which were in line with background concentrations for the area.
	Soil Gas (5.5 feet bgs)	1×10^{-7}	0.004	
	Soil Gas (14.5 feet bgs)	4×10^{-8}	0.001	
Parcels 6 and 7	Soil Metals (Sitewide)	8×10^{-7}	0.2	No unacceptable ecological risk. Chemical concentrations at the parcels did not exceed ecological screening levels except for a few metals, which were in line with background concentrations for the area.
	Soil Metals (G-40 Metals Unit) pre-response action	8×10^{-5}	2.0	
	Soil Metals (G-40 Metals Unit) post-response action	1×10^{-6}	0.2 ^a	
	Soil Gas (former buildings G-40 and G-50 Parcel 6) pre-response action	30 of 136 samples exceed 1×10^{-6}	HI's all less than 1	
	Soil Gas (former buildings G-40 and G-50 Parcel 6) post-response action	1×10^{-6}	Less than 1 ^b	
Parcel 10	Soil	6×10^{-6c}	0.1	Soil concentrations in areas around the treated wooden power poles exceeded the HI of 1 for a few metals, DDT, PAHs and OCPs. No unacceptable ecological risk was identified as impact is expected to be limited for receptors inhabiting a much larger territory. Low-level soil gas concentrations did not have an HI that exceeded 1.
	Soil Gas	N/A ^d	N/A ^d	
Parcels 11	Soil	2×10^{-8}	0.01	No unacceptable ecological risk. Chemical concentrations at the parcels did not exceed ecological screening levels except for a few metals, which were in line with background concentrations for the area.
	Soil Gas	5×10^{-7}	0.03	
Parcels 12	Soil	N/A ^d	0.02	
	Soil Gas	7×10^{-7}	0.009	
Parcels 13	Soil	N/A ^d	N/A ^d	
	Soil Gas	4×10^{-7}	0.008	
Parcel 14	Soil – pre response action	1×10^{-6e}	1 ^e	Soil concentrations in areas adjacent to existing roadways exceeded the HI of 1 for lead. No unacceptable ecological risk was identified as impact is expected to be limited for receptors that inhabit a much larger territory. Low-level soil gas concentrations did not have an HI that exceeded 1.
	Soil Gas – pre-response action	7×10^{-6}	0.09	
	Soil – post response action	1×10^{-6}	1	
	Soil Gas – post response action	7×10^{-6f}	0.09 ^f	

Table 2. Mesa Lease Facility, PMF Easement and CDA (Mesa Operable Unit [OU-1]) Human Health and Ecological Risks (cont'd)

Parcel	Media	Cancer Risk ¹	Non-Cancer HI ¹	Ecological
PMF Easement	Soil (Debris Basin)	8×10^{-7}	0.4	No unacceptable ecological risk. Chemical concentrations in the upper one foot of soil that presented hazard quotients above 1 represent limited or de minimis exposure areas and were not likely to significantly impact ecological receptors.
	Soil (Berm Channel)	4×10^{-7}	4	
	Soil – (Berm Channel, excluding BC1, BC5, BC6, and BC10) ^g	5×10^{-8} ^g	0.6 ^h	
Construction Debris Area	Soil	1×10^{-6} ⁱ	1 ^j	No unacceptable ecological risk. Chemical concentrations at the CDA did not exceed ecological screening levels except for a few metals, which were in line with background concentrations for the area, and OCPs in one boring location (considered de minimis).

Notes:

- 1 Based on USEPA and DTSC guidelines using conservative methods, models, and assumptions for Residential Exposure.
- a Post remedy – calculated based on 95UCL for COCs at G-40 Metals Unit.
- b Less than 1 for all sampling locations calculated using default soil gas to indoor air attenuation factor of 0.001.
- c Soil affected by COCs (benzo(b)fluoranthene and pentachlorophenol) is limited to areas around the treated wooden power poles in Parcel 10 and poses a de minimis risk.
- d N/A indicates that soil gas samples were not collected and analyzed for this parcel.
- e Post excavation soil samples indicate final in place soil concentrations did not exceed USEPA Regional Screening Levels or DTSC Screening Levels for VOCs in the PCE excavation area or 80 milligrams per kilogram (mg/kg) for lead in the lead excavation area.
- f The updated VIRE from the Site 14 Removal Action Workplan Addendum confirmed that VOC concentrations in soil gas left in place after remedial excavations did not pose a significant health risk and were acceptable for unrestricted use
- g Lead- and TPH-impacted soils around the locations BC1, BC5, BC6, and BC10 were removed during the Removal Action (see Table 1)
- h Calculated based on exposure point concentration of 95UCL for TPH.
- i Calculated based on exposure point concentration of 95UCL for hexavalent chromium.
- j Maximum calculated non-cancer HI slightly exceeds DTSC's acceptable HI of 1 with main contributor cobalt. Cobalt concentrations appear representative of ambient-like conditions, and the HI based on 95UCL cobalt concentration does not exceed 1.

Acronyms and Abbreviations:

95UCL 95% upper confidence limit

bgs Below ground surface

CDA Construction Debris Area

COC Chemicals of concern

DDT Dichloro-diphenyl-trichloroethane

DTSC Department of Toxic Substances Control

HI Hazard index

N/A Not applicable

OCP

PAH

PCE

PMF

TPH

USEPA

VIRE

VOC

Organochlorine pesticides

Polycyclic aromatic hydrocarbons

Tetrachloroethene

Probable Maximum Flood

Total petroleum hydrocarbons

United States Environmental Protection Agency

Vapor intrusion risk evaluation

Volatile organic compounds

PREFERRED ALTERNATIVE

Sampling results and risk assessments for residential exposure scenarios resulted in total excess cancer risk estimates below the acceptable level of 1×10^{-6} or total HIs below 1 for Mesa Operable Unit (OU-1) on Parcels 5a, 7, 10, 11, 12, 13 and the CDA indicating that No Action is required to meet unrestricted site use criteria. Sampling results and risk estimates for residential exposure scenarios calculated for Parcels 6, 14 and the PMF Easement indicated response actions were required. Risk estimates were updated based on confirmation sampling following completion of response actions indicating that No Further Action is required to meet unrestricted site use criteria for Mesa Operable Unit Mesa Operable Unit (OU-1). The NA/NFA alternative does not include PFAS, which will be addressed in a separate OU (see Table 1 for response action details and Table 2 for risk results).

Table 1 summarizes the results of Mesa Operable Unit (OU-1), including assessments, investigations, and response actions for chemical contaminants performed by SCE pursuant to the VCA and SVA. The identification of NA/NFA as the preferred remedial alternative for Mesa Operable Unit (OU-1) is based on investigations and cleanup work previously performed by SCE under California DTSC oversight pursuant to a VCA and an SVA. The DoN will document its remedy selection decision for Mesa Operable Unit (OU-1) in an upcoming ROD after it reviews and responds to public comments on the DoN preferred alternative of NA/NFA.

COMMUNITY PARTICIPATION

This Proposed Plan provides the public with the DoN's rationale for its preferred alternative of NA/NFA for the Mesa Operable Unit (OU-1), and to solicit public comments to be considered in a responsiveness summary included in the upcoming ROD. Public participation requirements of CERCLA § 117(a), and the requirements of the NCP at 40 CFR § 300.430 (f)(2)(i) through (iv) are fulfilled as well. The public can provide input by submitting comments to the DoN during a 30-day public comment period, or by submitting written or oral comments to the DoN at a public meeting addressing the proposed remedy.

COMMENT PERIOD AND PUBLIC MEETING

The public comment period for this Proposed Plan

begins on November 16, 2023 and ends on December 22, 2023, and offers you an opportunity to provide input to the process for determining the remedy for the Mesa Operable Unit (OU-1). A public meeting will be held at the Oceanside Library on November 30, 2023, from 7:00 pm to 8:00 pm.

To attend the public meeting: from I-5 North, take the 53 exit for Mission Avenue, keep left at the fork and merge onto Mission Avenue. Turn right onto Highway S21 and the library will be on the right.

From I-5 South, take the 54B exit toward Coast Highway. Make a slight right onto San Luis Rey Mission Expressway, turn left on County Highway S2 and the library will be on the right.

All interested parties are encouraged to attend the meeting to learn more about the proposed path forward for the Mesa Operable Unit (OU-1). The meeting will provide an additional opportunity for the public to submit comments to the DoN on this Proposed Plan.

RECORD OF DECISION

This Proposed Plan presents the DoN's rationale for its preferred alternative of NA/NFA for Mesa Operable Unit (OU-1). Comments received from the public on the Proposed Plan are part of the process of selecting a remedy in the ROD per CERCLA 117 (b) and 40 CFR 300.430(f)(3) and (4). The DoN will review all public comments received, respond to significant comments and will reassess its initial determination regarding the preferred alternative in selecting a remedy. All public comments will be addressed in a responsiveness summary included in the ROD. Once issued, the ROD will be available at the Oceanside Public Library and will be posted to the DTSC EnviroStor Data Management System for public review and the DoN's Administrative Record (see page 13 "Where you can find the Cleanup Plan and Other Documents").

PFAS INVESTIGATION

SCE may have historically used PFAS-containing **aqueous film forming foam (AFFF)** for training and fire suppression purposes supporting SONGS operations. PFAS are an emerging contaminant currently being investigated by regulatory agencies to determine their effect on human health and the environment. PFAS chemicals are an environmental concern due to their persistence in the environment and organisms, migration potential in aqueous systems such as groundwater, and possible health effects at low exposure levels.

At the Mesa Lease Facility, PFAS in soil and groundwater are being investigated as a separate **operable unit (OU)**. A facility-wide preliminary assessment (PA) for PFAS was completed by SCE and a report was finalized on July 20, 2023. The PA recommended additional evaluation for areas of interest where PFAS-containing materials may have been released to the environment. A potential response action to address PFAS will be decided at a future time following regulatory agency publication of a final rule, that establishes PFAS as a hazardous substance.



WHO TO CONTACT FOR MORE INFORMATION

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WHERE YOU CAN FIND THE CLEANUP PLAN AND OTHER DOCUMENTS

Documents relating to the Mesa Operable Unit (OU-1), including this Proposed Plan and the upcoming ROD, will be available for public review at the following information repositories:

DTSC EnviroStor Data Management System:

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002258

Click or enter the link above to navigate to the main SONGS Mesa Facility webpage. In the row of blue links click on "Site/Facility Docs". A list of documents used to develop the PP and ROD will open. Click on the blue links in the "TITLE/ DESCRIPTION" column to open a window to the listed document and any related communications and approvals. Click on the blue link in the window to open, view and download any of the listed documents in PDF format.

Copies of the Proposed Plan and the upcoming ROD will be available at the link above and at the following location:

Oceanside Public Library

330 N Coast Hwy, Oceanside, CA 92054
Monday through Thursday 9 am to 7 pm
Friday and Saturday 9 am to 6 pm
(760) 435-5600

The DoN is in the process of incorporating the SONGS Mesa Lease Facility documents completed by SCE during previous investigations and cleanup activities into the MCB Camp Pendleton Administrative Record (AR) and expects to have this completed by early Fall 2023. The link below is to the home page for MCB Camp Pendleton. The AR can be accessed by clicking "Administrative Record" in the second blue ribbon on the webpage.

<https://www.navfac.navy.mil/Business-Lines/Environmental/Products-and-Services/Environmental-Restoration/Southwest/Camp-Pendleton-MCB/>



GLOSSARY OF TECHNICAL TERMS

Aqueous film forming form (AFFF) is a fire suppressant used to extinguish flammable liquid fires.

California Environmental Protection Agency Department of Toxic Substances Control (DTSC) is a state agency that regulates the generation, handling treatment and disposal of hazardous waste in California. DTSC provided regulatory oversight of SCE's investigations and cleanup activities at the Mesa Lease Facility under a voluntary cleanup agreement. (VCA) and standard voluntary agreement (SVA).

Chemical of Concern (COC) is a chemical that contributes to human health risk or hazard above acceptable levels that may require cleanup or action to prevent human exposure to the chemical.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, is a federal law that regulates environmental investigation and cleanup of sites identified as potentially posing a risk to human health and/or the environment.

Ecological Risk Assessment is an evaluation of the likelihood that ecological receptors (plants and animals) exposed to contaminants at a site may suffer harm.

Federal Facility Agreement is a legal agreement which defines the requirements for performance of response activities and how cleanup will proceed, as well as penalties for noncompliance. The FFA also defines the roles of the Navy, the US EPA, and state of California regulatory agencies.

Hazard Index (HI) is the sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways. The hazard index is calculated separately for chronic, sub chronic, and shorter-duration exposures.

Human Health Risk Assessment is an evaluation of the likelihood that humans exposed to contaminants at a site would suffer harm.

Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water established by the Safe Drinking Water Act.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) is a federal regulation that provides the organizational structure and procedures for government responses to oil and hazardous substance spills, releases and sites where materials have been released.

Operable Unit (OU) is a discrete area that groups a number of distinct sites, depending on the complexity of the issues associated with a site during cleanup to address geographic areas of a site, specific site issues, or areas where a specific action is required.

Organochlorine Pesticides (OCPs) are hazardous chlorinated organic compounds widely used worldwide as insecticides and fungicides until the 1960s, when they were banned in most countries.

Per- and polyfluoroalkyl substances (PFAS) are hazardous substances used to make coatings and products that resist heat, oil, stains, grease and water, and that contain a strong carbon-fluorine bond that allows them to accumulate over time in the environment and in the bodies of animals and people, posing health risks.

Polychlorinated Biphenyls (PCBs) are hazardous substances typically found in fluids in electrical transformers.

Preliminary Endangerment Assessment (PEA) is a process to determine if there has been a release of a hazardous substance that presents a risk to human health or the environment that results in a report that provides the results of and makes conclusions about PEA data.

Proposed Plan is the document that summarizes the remedial alternatives presented in the Feasibility Study. It presents the recommended alternative and solicits comments from the community.

Radionuclide of Concern (ROC) is a radionuclide that contributes to human health risk or hazard above acceptable levels that may require cleanup or action to prevent human exposure to the radionuclide.

Receptors are humans, animals, or plants that may be exposed to contaminants related to a given site.

Record of Decision (ROD) is a decision document that identifies the remedial alternatives chosen for implementation at a CERCLA site; the ROD is based on information from previous reports, the Proposed Plan, and on public comments and community concerns.

Removal Action Completion Report (RACR) is a report that demonstrates a response action was completed in accordance with a work plan and all removal objectives and any other requirements have been achieved. For the Mesa Operable Unit (OU-1), these reports were developed by SCE as part of the VCA and SVA with DTSC oversight.

Response action is an action taken to clean up or prevent exposure to contamination before final cleanup decisions for the site have been made. For the Mesa Operable Unit (OU-1), response actions were conducted by SCE as part of the VCA and SVA with DTSC oversight.

Soil Gas is the gas present in the air spaces between individual soil particles, or pore spaces. Soil gas can include oxygen, nitrogen, carbon dioxide, and contaminants, such as VOCs.

Tetrachloroethene (PCE) is a colorless hazardous liquid used as a solvent (also called perchloroethylene).

U.S. Environmental Protection Agency (USEPA) is the federal agency that is charged with protecting human health and the environment. The USEPA is providing regulatory oversight for the CERCLA process for the Mesa Operable Unit (OU-1).

Volatile Organic Compounds (VOCs) are organic compounds that have high vapor pressures and easily form vapors at normal temperatures and pressure. The term is generally applied to organic solvents, fuels, petroleum distillates, dry cleaning products, and many other industrial and consumer products ranging from office supplies to building materials.

SONGS MESA LEASE FACILITY, PMF EASEMENT AND CDA (MESA OPERABLE UNIT)

**PUBLIC MEETING
NOVEMBER 30, 2023
7:00 PM**

A public meeting to present the Proposed Plan will be held on November 30, 2023 at the Oceanside Library, 330 N Coast Hwy, Oceanside, CA, from 7:00 pm to 8:00 pm. If you cannot attend in person, there are 2 ways to join the public meeting virtually:

- (1) by computer - download the Microsoft Teams App to your desktop, phone, or tablet OR
(2) by phone - use the call-in phone number and meeting ID below

To join using your computer, click the meeting link: [Click here to join the meeting](#)

If prompted, enter the Meeting ID: 248 989 566 831; Password: pqWc53

Or Click or Type in: <https://tinyurl.com/MESAPPNOV2023>

To join using your phone, call in: Toll Free: 1-833-258-6146, and enter Meeting ID: 571 246 40#

The public comment period for the Proposed Plan is from November 16 through December 22, 2023. You may provide your comments verbally at the public meeting where your comments will be recorded by a court reporter. Alternatively, you may provide written comments in the space provided below or on your own stationery. **All written comments must be postmarked no later than December 22, 2023.** After completing your comments and your contact information, please mail this form to the address provided on the reverse side. Comments are also being accepted by e-mail to Mr. Bryce Bartelma at bryce.j.bartelma.civ@us.navy.mil.

Name: _____

Representing (optional): _____

Phone Number (optional): _____

Address (optional):

[illegible]

**SONGS MESA LEASE FACILITY, PMF EASEMENT
AND CDA (MESA OPERABLE UNIT)
PUBLIC MEETING
NOVEMBER 30, 2023
7:00 PM**

Naval Facilities Engineering Command
Southwest
Attn: Mr. Bryce Bartelma
937 North Harbor Drive Building 1,
Third Floor
San Diego, CA 92132

*Place
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