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N60701.000864  
NWS SEAL BEACH  
SSIC #5090.3

# U.S. Navy

Naval Weapons Station, Seal Beach, Calif.

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## Environmental Programs

The Seal Beach Naval Weapons Station is a major command of the Naval Sea Systems Command. It is responsible for ordnance support to more than two-thirds of the naval combatant ships in the Pacific and operates facilities in Seal Beach, Fallbrook, Pomona, and Norco, Calif., and on Indian Island at Port Hadlock, Wash.

The 5,000 acre Naval Weapons Station was established as the U.S. Naval Ammunition and Net Depot at Seal Beach on March 21, 1944. The installation was redesignated as a Naval Weapons Station in 1962, the same year that NASA, the National Aeronautics and Space Administration, began construction of a facility to build the Saturn S-II rocket stage in cooperation with North American Aviation (now Rockwell).

In 1972, the Seal Beach National Wildlife Refuge was established on approximately 1,000 acres of Weapons Station land, and in 1973, the Saturn Rocket program terminated. Since passage of the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Navy has been investigating and cleaning up past hazardous waste disposal sites on Naval installations like the Weapons Station at Seal Beach.

### Installation Restoration Program

The purpose of the Installation Restoration Program (IRP) at the Seal Beach Naval Weapons Station is to identify, assess, and mitigate (clean up or control) contamination from past hazardous waste disposal operations and hazardous material spills at the 5,000 acre facility. Twenty-five sites of concern were originally identified in the Initial Assessment Study by the Naval Energy and Environmental Support Activity (NEESA) in 1985. The Navy has been involved with or used in everyday operations toxic and hazardous materials for several decades. These materials, if released into the

environment in a careless, uncontrolled fashion, could lead to significant damage of important natural resources upon which people and animals depend.

This potential has been recognized by the Department of Defense, and actions are being taken to ensure against future hazards from existing operations, as well as to clean up previously disposed of materials that pose real threats to the environment.

### Investigations

The Seal Beach Naval Weapons Station is engaged in concurrent Remedial Investigation, Extended Site Investigation, Site Investigation, Wildlife Refuge Study, and preparations for a Preliminary Assessment of locations on the 5,000 acre Seal Beach site. Information on these programs is available in information repositories in Seal Beach and Huntington Beach libraries or from the Public Affairs Office of the Naval Weapons Station.

### Federal Law

The Seal Beach Naval Weapons Station is a Federal Facility under the jurisdiction, custody, or control of the U.S. Department of Defense as defined in the Federal Register 2923 of January 29, 1987. This listing followed the 1986 Superfund Amendments and Reauthorization Act (SARA) which amended the 1980 Comprehensive Environmental Response, Compensation and Liability Act.

One effect of the Superfund bill was to ensure federal agencies compliance with the 1980 law by establishing identical requirements for federal facilities as for nongovernmental agencies. The act further permitted applicable state laws concerning the removal and remediation actions apply to federal facilities which are not listed on the National Priorities List (NPL).

The Seal Beach Naval Weapons Station is not a National Priorities Listed site. Additional federal legislation affecting the Weapons Station are the National Environmental Policy Act sections of 42 U.S. Code and 10 U.S. Code, and the Resource Conservation and Recovery Act of 1976. A Resource Conservation and Recovery Act Facility Assessment Report was completed in 1989.

## **State Law**

The California Health and Safety Code and the California Water Code have sections applicable to the Federal Facility at Seal Beach. Additionally, the Navy has agreed to cooperate with and assist the State of California in complying with the State's obligations under the California Environmental Quality Act (CEQA). By agreeing to assist the State in this manner, the Navy does not concede that California Environmental Quality Act governs Navy activities on the Seal Beach Naval Weapons Station. Additionally, the daily operation and remediation programs at the Weapons Station are affected by the South Coast Air Quality Management District's implementation of the 1990 Clean Air Act and the State of California's implementation of Proposition 65 the Safe Drinking Water and Toxic Enforcement Act.

## **Industrial Plant Processes**

The Department of the Navy, like private industry, conducts a number of industrial processing and manufacturing operations which utilize industrial chemicals. Although wastes from our operations were disposed of in the past through commonly accepted practices of the times, we, as a nation, have found that such practices across the country may have resulted in significant risks to public health and the environment.

There have been releases of hazardous substances, pollutants or contaminants at or from the Seal Beach Naval Weapons Station into the environment within the meaning of section 25320 of the California Health and Safety Code and the National Contingency Plan, and discharges of waste within the meaning of Division 7 of the California Water Code.

## **Site Remediation Program**

The Navy's goal is to remediate those past disposal sites in an expedient and cost-effective manner. Full and open cooperation with regulatory agencies and the public is required by the law and is essential to meeting the goal. To that end, the U.S. Navy, the State of California's Environmental Protection Agency, and the

Santa Ana Regional Water Quality Control Board have entered into an historic agreement without trial or adjudication to fully cooperate in accelerating and streamlining the remediation process at the Seal Beach Naval Weapons Station. The September 1991 Federal Facility Site Remediation Agreement (FFSRA) is a formal agreement which integrates the role of State and Federal agencies in the restoration of Seal Beach IRP sites. It provides schedules and obligations under all orders and other statutory requirements of the regional water quality control board.

To ensure a thorough study, the Navy investigates potential locations for a wide variety of contaminants such as metals like: Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Silver, Zinc; Pesticides and PCBs like: 4,4-DDD, 4,4-DDE, 4,4-DDT, Dieldrin, Dioxins (PCDD, PCDF), PCBs, Total Phenols, Pentachlorophenol (PCP), and Tributyltin compounds; Organics such as: Acetone, Benzene, 2-Butanone (MEK), Carbon Tetrachloride, Ethylbenzene, 4-Methyl -1,2 Pentanone (MIBK, Hexone), Methyl Chloride, Tetrachloroethylene (TCE), Trichlorofluoromethane (Freon 11), Toluene, Xylenes; Inorganic Compounds such as: Asbestos; and Explosive By-Products and related materials like: Dinitrotoluene (DNT), Nitrates, Nitrites, Ammonia as Nitrogen, Picric Acid, RDX (Cyclonite), and Otto Fuel (Propylene Glycol Dinitrate).

## **Funding**

Funding for the Seal Beach Naval Weapons Station Installation Restoration Program is provided by the Congress through the Defense Environmental Restoration Account (DERA) as outlined in the 1986 Superfund Amendments and Reauthorization Act.

## **Community Participation**

Representatives of the Naval Weapons Station have made presentations in the communities surrounding the Seal Beach Facility. In 1988, representatives of the Station interviewed members of the community while gathering data to develop the Community Relations Plan (CRP). In 1992, Station representatives and Public Participation specialists from the California Environmental Protection Agency again interviewed local residents, community leaders, and professionals representing surrounding cities while developing a revised Community Relations Plan.

Additionally, information repositories have been placed in public libraries, public hearings have been held, and a Technical Review Committee has held meetings to maintain a dialogue with technically knowledgeable

able people to help ensure that all environmental concerns with the studies and cleanup recommendations have been addressed. Documents placed in the information repositories may be viewed at the Seal Beach Public Library on Electric Avenue, the Los Alamitos-Rossmoor Branch Library on Montecito Road in Seal Beach or the Huntington Beach Public Library on Talbert Street in Huntington Beach.

## **Hydrology and Migration Potential**

Most of the Weapons Station lies on flat alluvial and coastal deposits rising from sea level to approximately 20 feet in elevation. Soils are mostly clay with sand and gravel lenses that are a shallow and unconfined aquifer. Soils are moderately permeable but drain slowly. Water levels range from sea level in the marsh to 10 feet above sea level. Contaminants have the potential to move from disposal or spill sites with shallow ground water flow. Lateral ground water movement in the shallow ground water aquifer is toward the salt marsh and the rate of flow has been estimated at 800 feet per year.

Ground water occurs in three distinct bodies at Seal Beach Naval Weapons Station: a semiperched, unconfined ground water body that occurs in the upper parts of the alluvial deposits of the Recent age, and is essentially continuous from the ocean; the principal body of naturally fresh, confined ground water (the principal freshwater zone) that occurs in the lower division of the alluvial sand, gravel, and clay deposits of recent age, all deposits of Pleistocene age, and a considerable part of the Pico Formation of upper Pliocene age; and confined bodies of saline water that underlie the principal freshwater body.

In the past, several wells in the area of the station tapped the upper zone of semiperched ground water (top 20 to 50 feet). However, this aquifer is no longer used for water supply because of saltwater intrusion, salt increases from irrigation, and uncertain water supplies in dry seasons. Water in this semiperched aquifer is calcium-bicarbonate type with moderate to high total dissolved solids concentrations. In the southwest part of the Station, saltwater intrusion has occurred. Water is sodium chloride type with very high total dissolved solids concentrations. Recharge to the semiperched aquifer is primarily from rainfall and excess irrigation water.

The primary underground water aquifer at Seal Beach is a large, confined freshwater aquifer which lies at a depth of 600 to 1,000 feet and is capped by a 100 to 200 foot thick confining clay layer. This aquifer is artesian and supplies potable and irrigation water for the

Weapons Station and surrounding communities. This freshwater zone lies entirely inland from the Newport-Inglewood Fault zone. Recharge to this aquifer is primarily from rainfall in upgradient areas where the aquifer is unconfined and from rivers that are in hydraulic connection with the aquifer. Contaminant migration from the Station to this aquifer is unlikely because of the thick clay layer separating the deep aquifer from the shallow aquifer. However, engineering reports suggest that downward contaminant migration could occur to the deep aquifer along improperly sealed well casings, or in leaking abandoned wells.

## **Underground Tank Program**

The Seal Beach Naval Weapons Station has a program to inspect, remove, and or replace all underground tanks on the Station. This program is not a part of the Installation Restoration Program, but is required by the Resource Conservation and Recovery Act (RCRA). To date, 34 tanks have been removed, none replaced, and only four locations were found where the tanks leaked. Six additional tanks were tested and found not to have leaked. They will be replaced in the future in accordance with underground tank regulations.

## **BioRemediation Location**

The Naval Weapons Station is the site of a BioRemediation study project operated by the the Orange County Water District. The four BioReactors successfully converted petroleum products released into the ground water at the public works gas station into less harmful compounds. The Water District hopes to convert their anerobic BioReactor into a Vapor Recovery System to continue the successful study program. Funds for the project come from the Naval Civil Engineering Laboratory.

## **National Wildlife Refuge Contaminant Study**

The Weapons Station is conducting a study in the Seal Beach National Wildlife Refuge of potential contamination in the tidal wetlands. Should contamination be found, the study will move into an additional phase to determine the source of the contamination. Should severe contamination be found, remediation measures will be studied and implemented as required. The study is being conducted by a contractor for the Navy with the cooperation and assistance of the U.S. Fish and Wildlife Service.

## Preliminary Results

The preliminary results of the studies indicate the Seal Beach Naval Weapons Station has less of a hazardous waste problem than previously thought. The Navy continues to study locations and takes aggressive action to help make our environment a safe place to live and

work. In 1992, the Station enters Phase 2 of the Installation Restoration Program with the commencement of the Remedial Investigation to evaluate and remediate, if necessary, contamination caused by hazardous substances, pollutants, or contaminants. The first four sites to be studied are the Wastewater settling pond, station landfill, building 241 disposal pit, and oil island.

US NAVY ENVIRONMENTAL PROGRAMS -  
FACT SHEETS

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