



Naval Air Station

Alameda

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To understand the environmental conditions and ongoing cleanup process at Naval Air Station (NAS) Alameda, it is important to understand the history of the Alameda region. By understanding the history of previous industry in the Alameda region, the Navy can more accurately identify and address current environmental problems. The Navy is committed to protecting human health and the environment.

This fact sheet is one in a series of fact sheets that highlight environmental activities and related issues at NAS Alameda. Following is a brief description of the people and industry that came before and that led up to the creation of NAS Alameda.

History Through the Turn of The Century

Prior to the arrival of European settlers, Alameda was a peninsula covered with giant oaks and thick undergrowth, and was inhabited by Native Americans. The peninsula was surrounded by extensive marshlands. In the 1700s, the Spanish government granted the peninsula to a Spanish official who subdivided and sold the land to local settlers. These early settlers cleared the higher land for farming

fruits and vegetables. In 1853, the settled area on the peninsula was descriptively named Alameda, which means "grove of poplar trees" or "tree lined avenue" in Spanish.

Industry in the region began in the mid-19th century as the industrial revolution gained momentum. Railroad yards and rights-of-way for the Southern Pacific and Central Pacific Railroads

Early Industry at NAS Alameda Site:

- **1864:** Railroad yards, stations, and rights-of-way
- **1879 to 1903:** Oil refinery
- **Late 1800s to 1903:** Borax plant

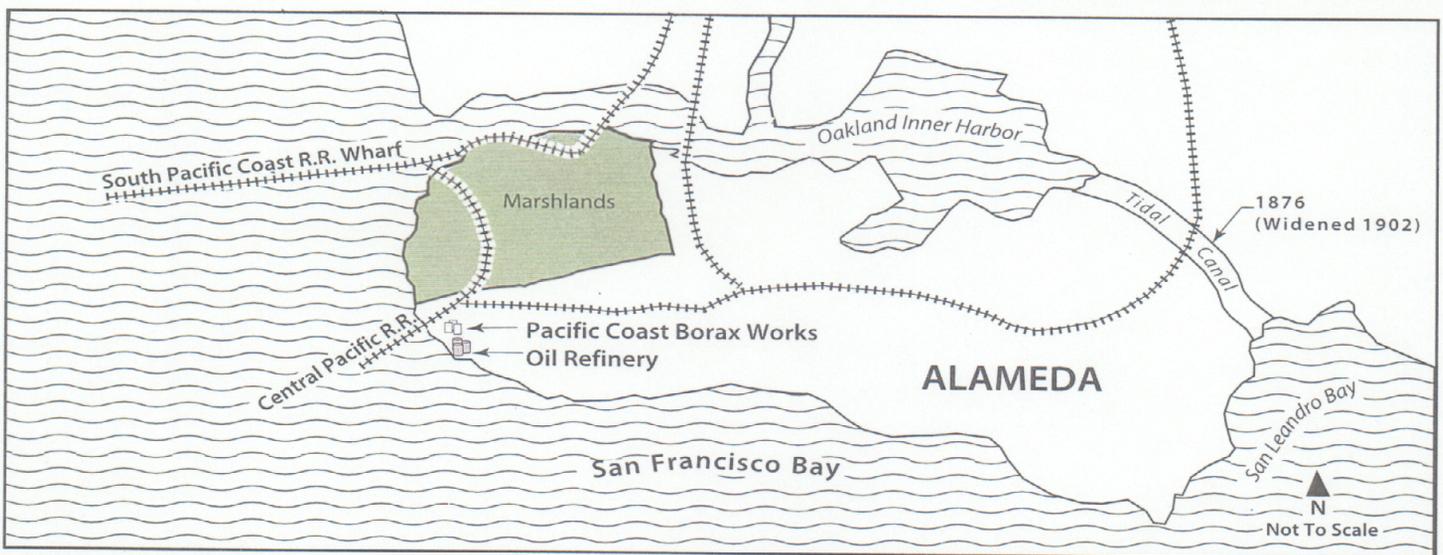


Figure 1 Late 19th Century Alameda

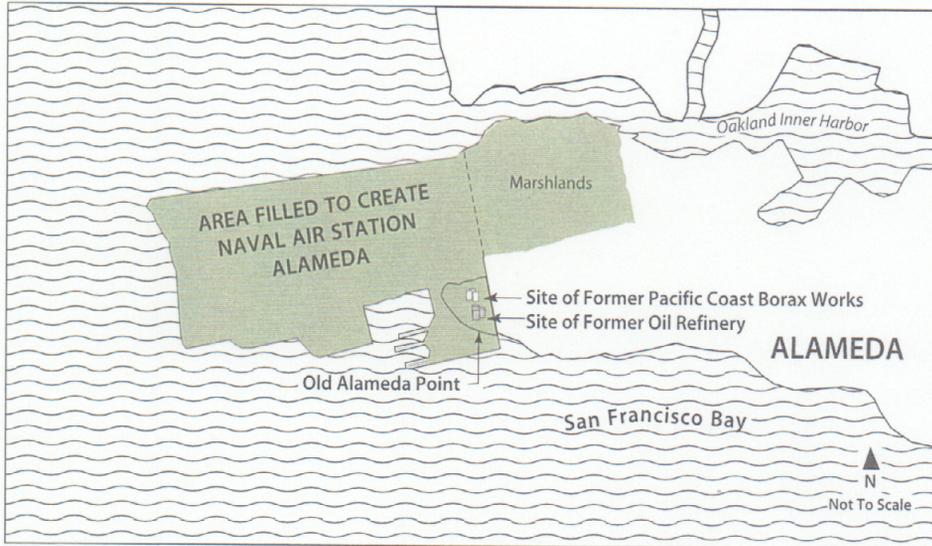


FIGURE 2 The land that is now NAS Alameda was created by filling tidelands and marshlands with material dredged from San Francisco Bay and Oakland Inner Harbor.

were built in 1864. In 1869, the western ending terminal for the Central Pacific Railroad was operated at the southwest corner of the original Alameda peninsula (see Figure 1).

In 1876, Alameda became an island when a channel was cut and dredged to link San Leandro Bay with the Oakland Inner Harbor. In 1879, the Pacific Coast Oil Company constructed and operated an oil refinery at old Alameda Point. The refinery was later purchased by Standard Oil Company, which operated the plant until 1903.

Other industry in the area included Alameda's Pacific Coast Borax Works, a soap plant that operated in the late 1800s through 1903. (Twenty-mule teams hauled raw borax out of Death Valley for railroad shipment to the borax plant.) Both the oil refinery and the borax plant operated in what is now the southeast corner of NAS Alameda. These activities were part of an overall increase in industrial activity in the San Francisco Bay Area that pre-dated the existence of NAS Alameda.



History After The Turn of The Century

In 1911, hinting at the future of the site, pilot Eugene Ely made the first aircraft landing on board a Navy vessel, the USS Pennsylvania anchored in the San Francisco Bay. In 1927, the city of Alameda established an airport on the western tip of the island. Pan American Airways took over the airport in 1935 to provide a link between the United States and Asia.

Between 1900 and 1930, some of the shallow waters and sloughs along the western end of Alameda Island and the south side of the Oakland Inner Harbor were filled with dredge material. The dredge material came from the San Francisco Bay and the Oakland Inner Harbor. This area was filled to extend the Southern Pacific Railroad right-of-way.

In 1930 the U.S. Army acquired a small piece of land at the western tip of the island from the city of Alameda and began construction of roads, utilities, a runway, and a well. In 1936, the Navy acquired the land, and the citizens of Alameda overwhelmingly approved a grant of additional tidelands for the

creation of NAS Alameda. Construction efforts hastened in response to World War II. The island was again expanded using material dredged from the bay (See Figures 2 and 3). In 1940 NAS Alameda was commissioned (opened) at an informal ceremony.

After the December 7, 1941, attack at Pearl Harbor, NAS Alameda immediately shifted to wartime status. To meet the wartime needs, additional land was acquired and larger buildings were constructed. The creation and expansion of NAS Alameda caused the local civilian and military populations to boom. According to the 1940 census, 36,000 people were living in Alameda; the wartime population more than doubled this figure. NAS Alameda was dubbed the "Keystone to the Pacific" and the "Gateway to the Pacific." NAS Alameda served as a critical component during World War II, the Korean War, the Vietnam Conflict, and Operation Desert Storm.

Geology: How NAS Alameda was Created

To understand how activities at NAS Alameda have affected the environment, it is essential to understand the geology of the region. This section describes the geological formation of the NAS Alameda area.

The San Francisco Bay sits in a low area between two mountain ranges. Two active faults run along these mountain ranges: the Hayward fault along the base of the Berkeley hills to the east of the bay, and the San Andreas fault as it passes through the San Francisco peninsula. Over the past 60 million years or more, bedrock was broken by faults, and subsequently uplifted and eroded.

During the last 2 million years, a variety of younger sediments (sands, silts, and muds) have been deposited

on the older bedrock. Beneath NAS Alameda, the observed younger sediments can be divided into four major units (or layers), as shown in Figure 3. These four layers, from oldest to youngest, are the San Antonio formation, the Merritt Sand, the Bay Mud Sediments, and dredged fill soils used to fill in marshlands that rested on Merritt Sand and Bay Mud Sediments.

Figure 3 shows the history of fill placement under what is now NAS Alameda. The majority of the air station is now above sea level and was created by dredging and pumping sediments from the surrounding bay bottom. The filling process occurred over a 75-year period as shown in Figure 4. Sediments used for fill material are believed to be part of the Merritt Sand and/or Bay Mud Sediments.

During the ongoing environmental investigations at NAS Alameda, hydrocarbon wastes were found in the dredged fill soils. Hydrocarbon wastes

were also found along the contact between the bottom of the fill (the old bay bottom) and the underlying Merritt Sand and Bay Mud sediments. These waste materials are thought to have been deposited along the bay bottom in the vicinity of Alameda Island, as a result of industrial activities prior to the construction of NAS Alameda. The presence of hydrocarbon wastes in the fill soils and underlying sediments, and the manner in which the Navy will address them, will be discussed in a future fact sheet.

The geology at NAS Alameda also influences the presence and extent of water beneath NAS Alameda. Current investigations at NAS Alameda are concentrating on two shallow water zones recognized within the artificial fill and within sandier portions of the Bay Mud Sediments. Most chemical impacts are limited to within the uppermost water zone found in the artificial fill soils and sandier portions of the Bay Mud Sediments. The Navy has investigated these water zones and their

impacts and is assessing appropriate cleanup approaches.

The Navy and regulatory agencies continue to look at the groundwater beneath NAS Alameda to determine if the water may be used for industrial purposes or as a drinking water source. However, the groundwater is not known to have been used for either purpose. East Bay Municipal Utility District (EBMUD) supplies water to NAS Alameda. Issues concerning groundwater will be discussed in a future fact sheet.

For More Information

Call

Hans Petersen
NAS Alameda Environmental Office
(510)263-3726

Or Visit

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Information Repository
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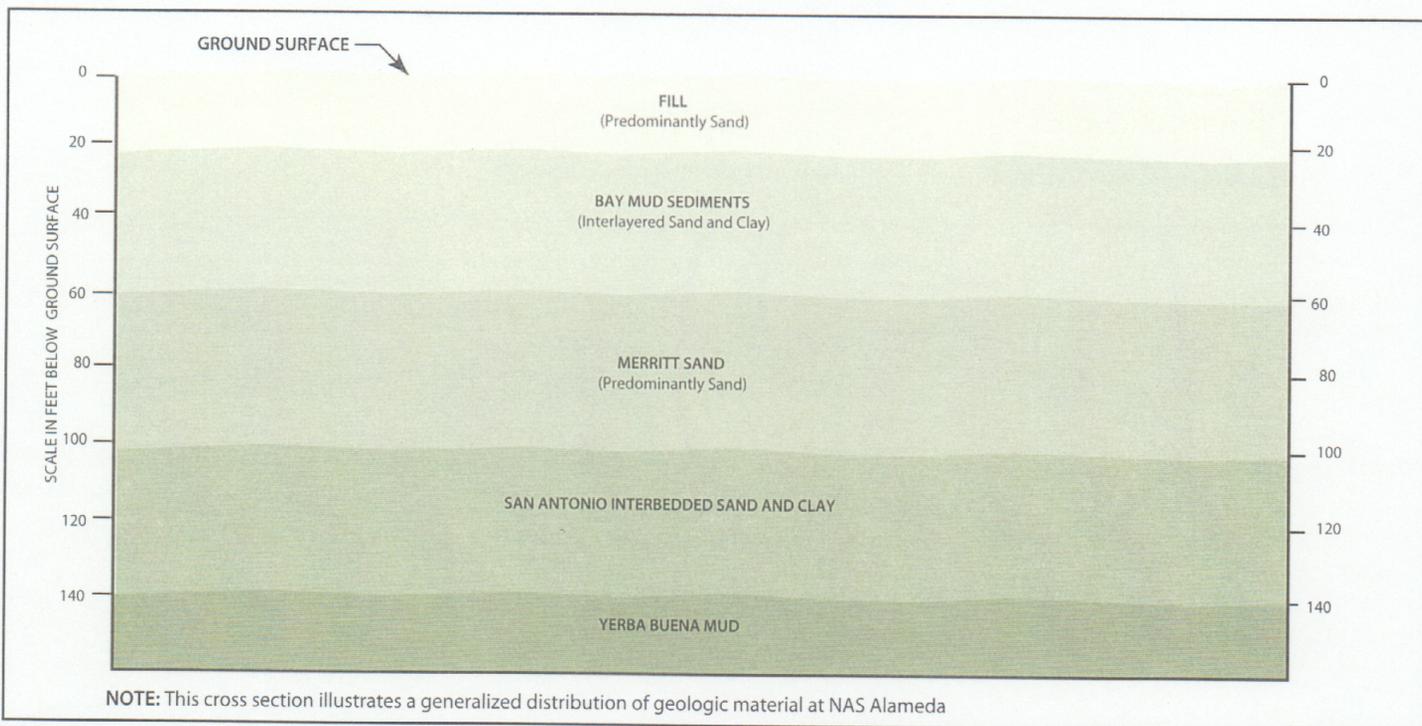


Figure 3 The land that is now NAS Alameda was created by filling shallow tidelands with material from San Francisco Bay and Oakland Inner Harbor. Dredged fill materials rest on top of bay sediments.

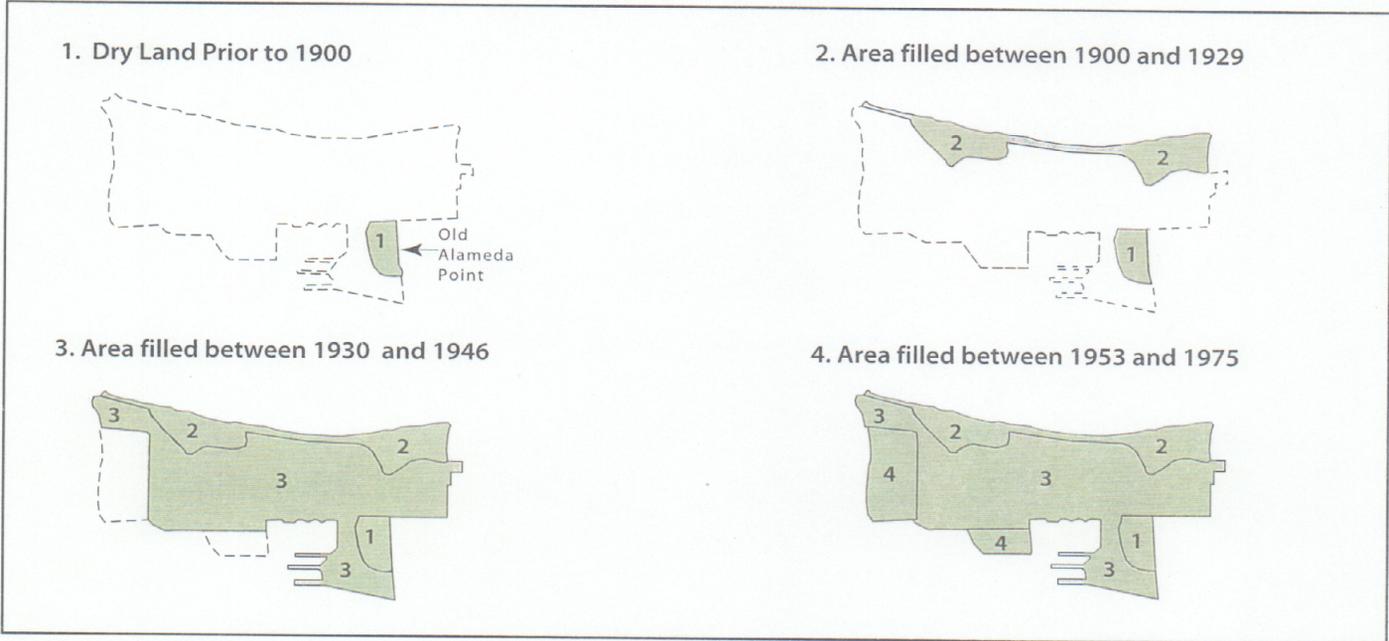


Figure 4 Progression of area filled at what is now NAS Alameda between 1900 and 1975. The land that is now NAS Alameda was created by a phased filling of shallow tidelands with material dredged from San Francisco Bay and Oakland Inner Harbor over a period of 75 years.

Naval Air Station Alameda
 Environmental Office
 250 Mall Square, Building 1
 Alameda, CA 94502-5000

