



Southwest Division
Naval Facilities Engineering Command

Environmental Photo Gallery

Welcome to the Environmental Photo Gallery. The photographs in this gallery show various aspects of Southwest Division Environmental Department environmental projects. Photographs displayed include investigation and cleanup at various Navy and Marine Corps installations.

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Southwest Division Naval Facilities Engineering Command

Stabilization/Solidification Treatment

Civilian Contractors from OHM Remediation Services, Southwest Division's remedial action contractor, process pesticide-contaminated soil as it comes out of a stabilization and solidification treatment plant. The Navy is employing an innovative design mix that includes powdered carbon to effectively stabilize the organic contamination. This operation is being performed on a Superfund site at a Marine Corps Base in Southern California. The site will be restored with clean soil and preserved as a riparian wetland habitat for endangered species on the base.



(U. S. Navy Photo, Jerry Dunaway)

Environmental Cleanup



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Treated Soil Discharged from Stabilization/Solidification System

Civilian contractors use soil stabilization and solidification treatment system to stabilize soil at a Marine Corps Base in Southern California. Soil loads into a hopper, at the far end, and mixes with powdered carbon and fly ash. The silo on the left stores fly ash. The conveyor belt discharges the output. OHM Remediation Services fabricated the treatment system. OHM Remediation Services is the remedial action contractor for Southwest Division Naval Facilities Engineering Command.



(U. S. Navy Photo, Jerry Dunaway)

Environmental Cleanup



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Removing Debris

Two civilian contractors from OHM Remediation Services work in tyvec suits and level III safety gear to cut rebar from concrete to expedite removal of debris. OHM Remediation Services is the remedial action contractor for Southwest Division Naval Facilities Engineering Command.



(U. S. Navy Photo, Gary Simon)

Long Beach Naval Complex



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Tracked Excavator Removes Debris During UST Excavation

Concrete breaker in foreground is mounted on a tracked excavator while backhoe removes debris from the excavation of three underground storage tanks.



(U. S. Navy Photo, Gary Simon)

Long Beach Naval Complex



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Site Safety Overview

Site superintendent provides guidance to civilian contractors in the excavation of an underground storage tank site while the site safety technician observes the excavation.



(U. S. Navy Photo, Gary Simon)

Long Beach Naval Complex



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Collecting Water Sample from Monitoring Well

Navy civilian contractors collect a water sample from a monitoring well. The water will be analyzed for fuel to determine if the fuel spill has affected the groundwater.



(U.S. Navy Photo, Chris Kyburg)

Marine Corps Air Ground Combat Center Twentynine Palms



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Hollow Stem Auger Drill Rig Operation

The drill rig is a hollow stem auger and allows for easy sampling through the interior of the drill. The man on the platform is operating the drill. The man to the right will attach additional sections of drill as needed. This is a typical drilling operation for soil sample acquisition.



(U.S. Navy Photo, Chris Kyburg)

Marine Corps Air Ground Combat Center Twentynine Palms



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Soil Gas Probe

The colored hoses are attached to soil gas probes at different depths below the ground surface. Gas samples are extracted and analyzed for fuel, carbon dioxide, and oxygen. Scientists and engineers can monitor an innovative cleanup method known as bio-venting. Bio-venting is a process where air is slowly pumped into the ground to stimulate naturally occurring microorganisms in the soil. When provided with air, the microorganisms will use the fuel as a source of fuel and turn it into carbon dioxide just as other animals do as they breath.



(U.S. Navy Photo, Chris Kyburg)

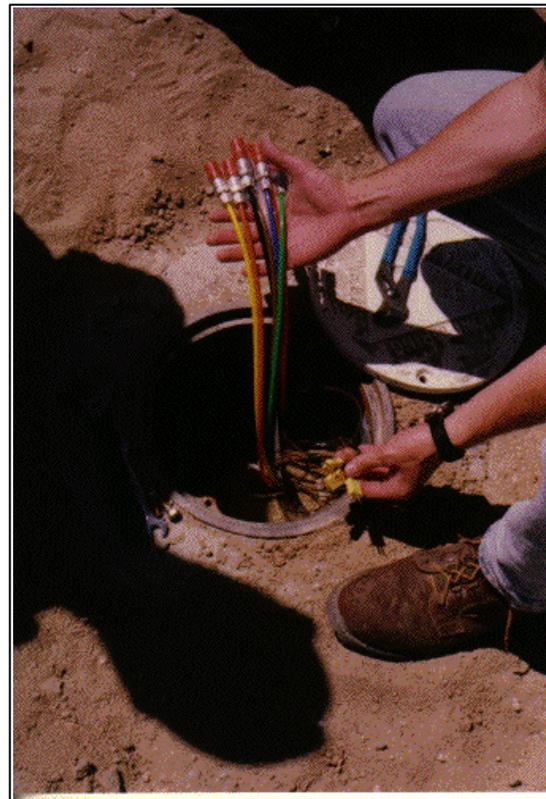
Marine Corps Air Ground Combat Center Twentynine Palms



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Soil Vapor Monitoring Grid

The small hoses are part of a soil vapor monitoring grid. Each hose has a vapor probe at its end and the colors indicate the depth.



(U.S. Navy Photo, Chris Kyburg)

Marine Corps Air Ground Combat Center Twentynine Palms



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Excavation and Backfill

Remediation of a former underground storage tank site removes petroleum contaminated soil and ground water. An on base thermal desorption unit treats the contaminated soil. A carbon treatment system processes the groundwater for decontamination and recycling on base.



(U.S. Navy Photo)

Marine Corps Air Facility Tustin



Southwest Division Naval Facilities Engineering Command

Oil Water Separator

A hose connected to a vacuum truck pumps contaminated sludge from an oil separator unit placed at the opening of the drain. The petroleum and solvent contaminated sludge is sampled and analyzed. A thermal desorption unit treats the sludge. On base sites use the treated soil as backfill.



(U.S. Navy Photo)

Marine Corps Air Facility Tustin



Southwest Division Naval Facilities Engineering Command

Wrapping Asbestos Covered Piping

Civilian contractors prepare asbestos piping for off-site disposal. The piping was uncovered during excavation of JP-5 contaminated soil at a former helicopter fueling apron. The \$7 million remediation project has treated 70,000 tons of contaminated soil and 1.5 million gallons of contaminated ground water.



(U.S. Navy Photo)

Marine Corps Air Facility Tustin



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In-Situ Groundwater Sampling

CLEAN II field team collects groundwater sample from a hydropunch located at an installation restoration site southside of Hangar 2 at Marine Corps Air Facility (MCAF) Tustin. The CLEAN II field team consists of civilian contractors from Bechtel National, Inc. (BNI) and two subcontractors Kleinfelder and Brown & Caldwell. The CLEAN II (Comprehensive Long-term Environmental Action Navy) contractors provide a broad spectrum of environmental technical services including conducting environmental assessments, investigations, and studies. The groundwater sampling is part of a remedial investigation to determine the extent of groundwater contamination.



(U.S. Navy Photo)

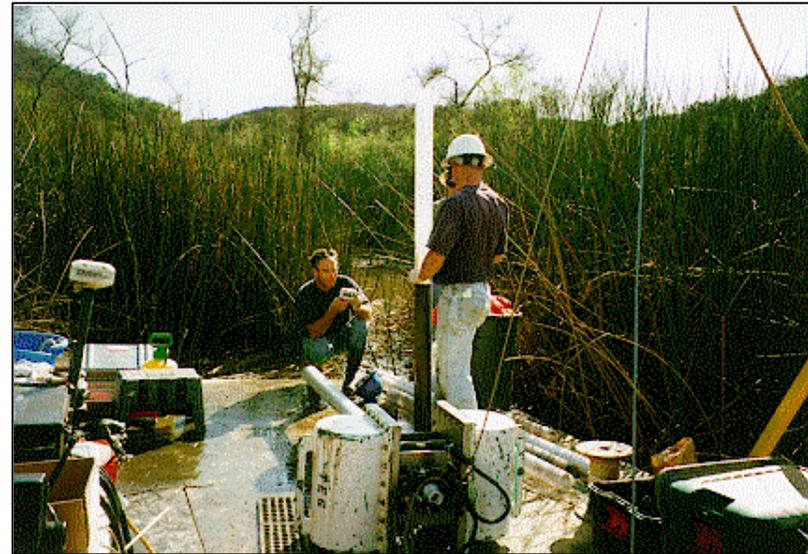
Marine Corps Air Facility Tustin



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Fish Pond Remedial Site Evaluation

Civilian contractors prepare a vibracore instrument for sampling sediment during a remedial site evaluation in a fish pond at Naval Air Station Miramar. The vibracore is lowered vertically into the pond's sediment. Weights and vibration provide penetration into the sediment. A coring tube collects the sediment sample. Test results of the sediment help determine risks to human health and the environment caused by contaminants and the necessary remediation for reopening the fish pond for recreational fishing.



(U.S. Navy Photo)

Naval Air Station Miramar



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Photo Ionization Detector

A portable Photo Ionization Detector is used to determine if organic vapors are being emitted into the air.



(U.S. Navy Photo, Kim Ostrowski)

Naval Submarine Base San Diego



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Hand Auger Drilling Method

Navy contractor uses a hand auger as a drilling method while conducting an environmental study. The hand auger is turned in a clockwise direction to create a borhole to collect subsurface soil samples. Hand augers can be used to collect samples at depths exceeding 15 feet depending on the geologic conditions.



(U.S. Navy Photo, Kim Ostrowski)

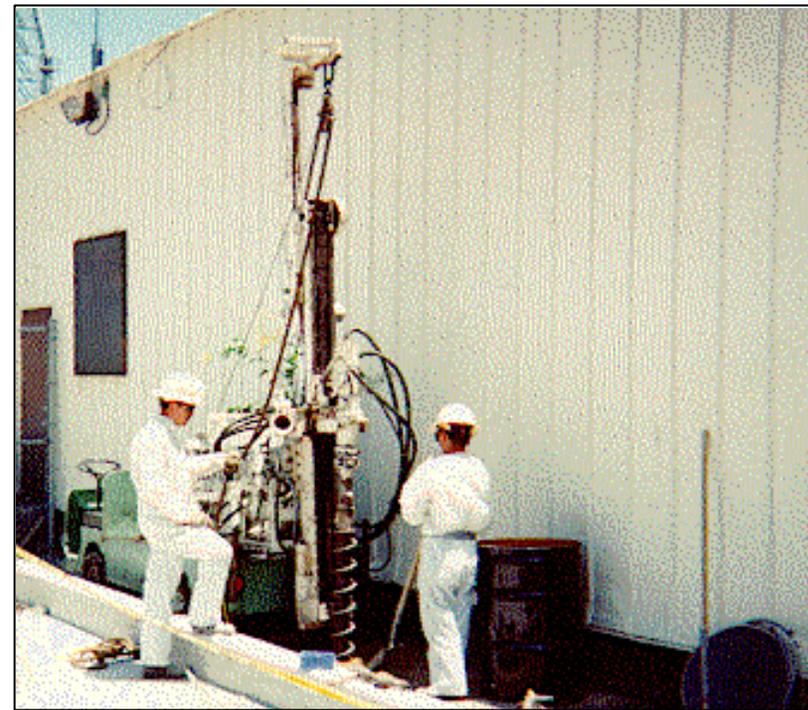
Naval Submarine Base San Diego



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Small Cart Mounted Drill Rig

Small cart mounted drill rig is used to advance soil borings in areas where access is limited.



(U.S. Navy Photo, Kim Ostrowski)

Naval Submarine Base San Diego



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Soil Sampling Tube

Soil samples are collected in brass or stainless steel sampling tubes, capped at both ends and placed in sealed plastic bags to insure the samples integrity. The samples are placed in a cooler and transported to a laboratory for analysis.



(U.S. Navy Photo, Kim Ostrowski)

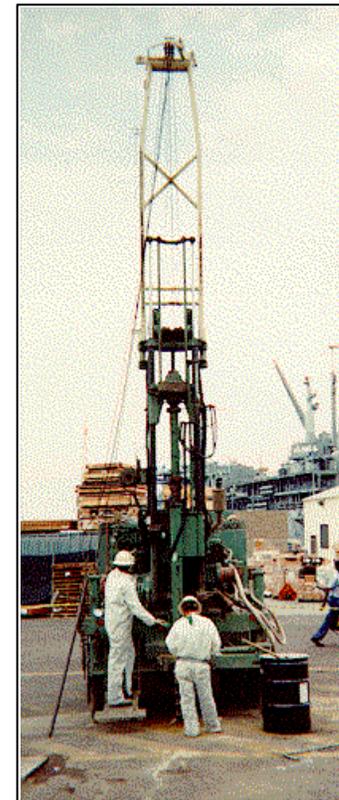
Naval Submarine Base San Diego



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Drill Rig with Hollow Stem Auger

A drill rig with a hollow stem auger is being used to advance a soil boring for the purpose of installing a groundwater monitoring well. Drill rigs of this size can be to drill to hundreds of feet below ground surface.



(U.S. Navy Photo, Kim Ostrowski)

Naval Submarine Base San Diego



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Direct-Push Type Rig

Civilian contractor operates a direct-push type rig to obtain soil samples from an underground storage tank site at Naval Training Center San Diego. The rig uses hydraulics to directly push a 1.5 inch probe downward through the ground surface.



(U.S. Navy Photo, Thomas Macchiarella)

Naval Training Center San Diego



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Investigation Utilizing Cone Penetrometer Testing and Hydropunch Vehicle

Navy Subcontractors utilize cone penetrometer testing and hydropunch vehicle to investigate a landfill site at Naval Training Center, San Diego, Calif. One operator is deploying a push probe penetrometer to determine stratigraphic conditions. The other operator is analyzing the continuous data that includes pore pressure, conductivity, and temperature measurements.



(U.S. Navy Photo, Kurt Baer)

Naval Training Center San Diego



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Landfill Well Installation

Navy Subcontractors apply grout to the top of the well between the hollow stem auger and well casing. The well is used to monitor ground water at a site in the Camp Nimitz area of Naval Training Center, San Diego.



(U.S. Navy Photo, Kurt Baer)

Naval Training Center San Diego



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Oil/Water Interface Probe

An oil/water interface probe enters a 4" diameter groundwater monitoring well. The interface probe measures the elevation of the groundwater table and the thickness of free-products such as gasoline on the ground water table.



(U.S. Navy Photo, Thomas Macchiarella)

Naval Training Center San Diego



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Volatile Organic Analyzer

A volatile organic analyzer measures the air for concentrations of volatile organic compounds such as benzene in an underground storage tank site at Naval Training Center San Diego. Measurements are obtained to ensure the safety of on-site workers.



(U.S. Navy Photo, Thomas Macchiarella)

Naval Training Center San Diego



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Pigging the Pipeline

Civilian contractors from Foster Wheeler Environmental Corporation cleaning underground pipeline at Naval Weapons Station Seal Beach by a method called pigging. The four photographs depict the end of the pigging process when the pig is removed from the pipeline. Pigging involves the excavation of two locations of the pipeline. A civilian contractor inserts a yellow cylindrical sponge called a pig into the line at one of the excavated points. Suction applied through a hose at the second excavated location pulls the pig through the line. The pig cleans liquid and sludge as suction pulls it through the line. The pigged pipeline is flushed with water and repigged. The contractor caps one end of the pipeline and pulls a vacuum from the other end. The pipeline must hold a vacuum for two hours to ensure there are no leaks or breaks in the line.



(U.S. Navy Photo)

Naval Weapons Station Seal Beach