

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 87-125

REQUIRING THE UNITED STATES DEPARTMENT OF THE NAVY, MOFFETT FIELD NAVAL AIR STATION, MOFFETT FIELD, SANTA CLARA COUNTY, TO CEASE AND DESIST DISCHARGING WASTE IN VIOLATION OF WASTE DISCHARGE REQUIREMENTS, THE CALIFORNIA WATER CODE, PROHIBITIONS OF THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY BASIN, THE FEDERAL SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986, AND FROM THREATENING TO DISCHARGE WASTE IN VIOLATION OF THE CALIFORNIA WATER CODE AND THE TOXICS PIT CLEANUP ACT OF 1984.

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. The United States Department of the Navy, Moffett Field Naval Air Station (hereinafter called the discharger) occupies approximately 4,000 acres of land at Moffett Field, located between the Cities of Sunnyvale and Mountain View, Santa Clara County. The discharger commenced operations at this site in 1933. Since its beginning, the discharger's site has been utilized for a number of Army and Navy operations including assembly, overhaul, repair, fueling, and landing facilities for dirigibles, helicopters, airplanes and jets.
2. The discharger's operations have involved the storage, handling, and disposal of raw and waste product hazardous materials. The hazardous materials used onsite, either currently or historically, include trichloroethene (TCE), 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), polychlorinated biphenyls (PCBs), various pesticides, fuels, oils, and other organic solvents.
3. Subsurface investigations were initiated at two underground solvent tanks in April 1983 and revealed volatile organic compound (VOC) pollution in both soil and groundwater adjacent to one of the tanks.
4. In addition to further groundwater investigations near the solvent tanks, the discharger also began conducting an Initial Assessment Study (IAS) in 1983 to identify possible environmental pollution from past use and disposal of hazardous materials on the entire site. In April 1984, the discharger requested that additional investigations of groundwater pollution be delayed until the Initial Assessment Study was completed and that further investigations be included in the "Confirmation Study," which was to be the next phase of the discharger's investigation program.
5. The Initial Assessment Study was submitted to the Regional Board in May 1984. The study identified nine sites at Moffett Field where potentially hazardous materials were disposed or spilled. The nine sites identified in the IAS are listed below:

<u>Site Number</u>	<u>Description</u>
1	Runway Landfill
2	Golf Course Landfill

- 3 Marriage Road Ditch
- 4 Former Industrial Wastewater Surface Impoundments
- 5 Fuel Farm French Drains
- 6 Runway Apron
- 7 Unpaved Areas Surrounding Hangars 2 and 3
- 8 Waste Oil Transfer Area
- 9 Old Fuel Farm

6. In a report dated April 1986, the discharger identified four active sites at Moffett Field where discharge was occurring in violation of law. These sites are listed below:

<u>Site Number</u>	<u>Description</u>
10	Active Industrial Wastewater Surface Impoundments
11	Engine Test Stand Area
12	Firefighting Training Area
13	Equipment Parking Area - Building 142

7. The discharger has also identified 68 underground tanks and sumps (active, inactive, and abandoned) located throughout Moffett Field which are used to store and/or treat raw and waste product hazardous materials. The tanks/sumps are classified as follows:

<u>Site Number</u>	<u>Description</u>
14	40 Motor Fuel and Diesel Fuel Tanks
15	10 Oil and Waste Oil Tanks, and Oil/Water Separators
16	13 Other Tanks and Tanks of Unknown Previous Use
17	5 Solvent and Other Hazardous Waste Tanks/Sumps

8. Naval Air Station, Moffett Field, is a Federal facility which was listed on the Federal section of the National Priorities List for Uncontrolled Hazardous Waste Sites included in the National Oil and Hazardous Substances Contingency Plan, which was promulgated on 22 July 1987 pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (52 Fed. Reg. 27620).

9. The Board adopted Waste Discharge Requirements, Order No. 85-66, for the nine sites listed in Finding 5, on May 15, 1985. The Order established a compliance schedule for the discharger to define the extent of pollution associated with these sites as well as requiring an interim cleanup plan. The Board has not adopted requirements for sites 10 through 17 listed in Findings 6 and 7.

10. Provision C.3.d, of Order 85-66, required the discharger to submit a technical report by June 1, 1986, transmitting the results of an investigation for Sites 1, 2, 5, 8, and 9, to further define A aquifer pollution and to determine whether the groundwater was polluted in the B aquifer.

11. Provision C.4.e, of Order No. 85-66, required the discharger to submit a technical report by June 1, 1986, transmitting the results of an investigation for Sites 3, 4, 6, and 7, to address full definition of pollution in the A and B aquifers and further definition of any C

aquifer pollution identified.

12. The discharger is in violation of Order 85-66, for failing to submit a satisfactory technical report required by the June 1, 1986 compliance date for Provisions C.3.d and C.4.e. The discharger's preliminary technical report dated November 13, 1985 contained initial investigations for sites 1 through 9; however, additional investigations at all nine sites were needed to complete the scope of work required to comply with these Provisions. To date, the discharger has not conducted the necessary additional investigations.
13. Provision C.5. of Order 85-66 required the discharger to conduct an investigation to identify, locate, and collect information on wells with potential to act as conduits for pollution to migrate into deeper aquifers according to the following compliance schedule:
 - a. Provision C.5.a. - Identify private wells, to the extent feasible, in the vicinity of the site with potential to act as conduits for inter-aquifer cross-contamination. Compliance Date: November 1, 1985
 - b. Provision C.5.b. - Locate and collect additional information on private wells identified in Provision C.5.a to assess if the wells may be potential conduits for inter-aquifer cross-contamination. Compliance Date: January 1, 1986
 - c. Provision C.5.c. - Develop a program to respond to any potential conduits and submit a technical report with options for addressing closure. Compliance Date: February 1, 1986
14. The discharger is in violation of Order No. 85-66, for failing to submit satisfactory technical reports required by the January 1, 1986 compliance date for Provision C.5.b. and February 1, 1986 compliance date for Provision C.5.c. The discharger submitted a technical report on November 13, 1985 that identified some active, inactive, and abandoned wells, and submitted a technical report on March 21, 1986 that contained additional data on the active wells. However, these reports were inadequate because the abandoned well search was incomplete, abandoned wells were not field located, and the additional data needed to evaluate the threat posed by the wells was not provided.
15. Provision C.8, of Order No. 85-66, stated that "interim containment of the pollution plume shall commence in areas of known pollution as soon as practicable, but in any event shall not be delayed pending defining the full extent of pollution in any aquifer. The interim cleanup and containment plans, including time schedule, shall be submitted by January 15, 1986."
16. The discharger violated the compliance date for Provision C.8. by submitting the interim cleanup plan on March 21, 1986 - two months later than required. As of July 1987, the discharger had not undertaken any field work to implement the interim cleanup plan since its approval on July 23, 1986. Thus, the discharger has failed to comply with the intent of Provision C.8. by failing to commence interim containment in a timely manner.

17. The Toxic Pits Cleanup Act of 1984 (TPCA) prohibits discharge, including storage, after June 30, 1988, of liquids to hazardous waste surface impoundments which are within one-half mile upgradient of a potential source of drinking water [Section 25208.4(a) of the Health and Safety Code]. The Toxic Pits Cleanup Act also requires the submittal of a hydrogeological assessment report by January 1, 1988 for all subject facilities.
18. Site 10 identified in Finding 6, above, consists of surface impoundments that are within one-half mile upgradient of a potential source of drinking water and which may be subject to the Toxic Pits Cleanup Act. Studies are needed to determine if the surface impoundments are subject to the Toxic Pits Cleanup Act, and if so, a hydrogeological assessment report must be submitted by January 1, 1988. Because of the limited time before the Toxic Pits Cleanup Act deadlines, and the amount of work that must be performed, the discharger is threatening to violate the requirements of the Toxic Pits Cleanup Act.
19. California Administrative Code Title 23, Chapter 3, Subchapter 15 (Subchapter 15) requires the submittal of a report of waste discharge for existing waste management units by January 26, 1985 and the submittal of groundwater monitoring programs by May 26, 1985.
20. California Water Code Section 13260 requires that any person discharging waste that could affect the quality of waters of the State shall file a report of waste discharge, containing such information as may be required by the Board.
21. The Site 10 surface impoundments are subject to regulation under Subchapter 15 and discharges at these sites could affect groundwater quality. Therefore, the discharger is in violation of Subchapter 15 for failing to submit either report referred to in Finding 19 and in violation of Water Code Section 13260 for failing to submit a report of waste discharge.
22. By letter dated July 1, 1987, the discharger has indicated that it is their intention to close the Site 10 surface impoundments. Such an intention does not relieve the discharger of the responsibility to comply with the laws and regulations cited in Findings 17 through 21, above.
23. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan prohibits the discharge of "all conservative toxic and deleterious substances" to waters of the Basin.
24. The discharge of waste to land at Sites 11, 12, and 13 identified in Finding 6, above, threatens to violate the Basin Plan prohibition cited in Finding 23, because of potential migration of pollutants to shallow groundwater and the discharger is in violation of Water Code Section 13260 for failure to file a report of waste discharge for these sites.
25. The tanks and sumps at Sites 14 through 17 constitute a violation and threatened violation to the Basin Plan prohibition cited in Finding 23.

Documented releases to groundwater have occurred at 6 of the 31 tanks/sumps that have been investigated and therefore are in violation of the Basin Plan. An additional 6 of 31 tanks/sumps investigated have failed pressure testing of the piping or tank, which indicates a leak has occurred. Also, there remain 37 tanks and sumps which have not been investigated. Some of these tanks may be leaking - based on the high percentage (12 of 31) of investigated tanks found to be leaking and the similarity in age and composition of these compared to the uninvestigated tanks. Therefore, they constitute a threatened violation of the Basin Plan prohibition. In addition, the discharger is in violation of Water Code Section 13260 for failure to file a report of waste discharge for the documented releases.

26. The discharger is required to submit a Solid Waste Assessment Test (SWAT) report pursuant to Section 13273 of the California Water Code for Sites 1 and 2 landfills by July 1, 1988. The discharger has not submitted a plan to perform the required test.
27. The discharger has caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.
28. Onsite and offsite interim containment and cleanup measures need to be implemented to alleviate the threat to the environment posed by the continued migration of pollutants and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.
29. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
30. The Board has notified the discharger and interested agencies and persons of its intent under California Water Code Section 13301 to issue this Order and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
31. The Board, in a public hearing, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13301 of the California Water Code, that the discharger Cease and Desist from discharging waste in violation of Waste Discharge Requirements, the California Water Code, the prohibitions of the Water Quality Control Plan for the San Francisco Bay Basin, the Federal Superfund Amendments and Reauthorization Act of 1986, and from threatening to discharge waste in violation of the California Water Code and the Toxics Pit Cleanup Act of 1984 as described in Findings 3 through 26, above. Compliance shall be achieved as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.
2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

B. PROVISIONS

1. The discharger shall comply with Prohibitions A.1. and A.2., above, and the Specifications and Provisions specified in Order 85-66, in accordance with the following time schedule and tasks:

a. Site Characterization

(1) **INITIATE FURTHER INVESTIGATIONS:** Initiate investigations to further define the extent of pollution at sites 3 through 9, and 17 (solvent tanks/sumps #2, 43, 61, 66, and 69), in accordance with an approved Sampling Plan and Quality Assurance Project Plan (QAPP).

COMPLIANCE DATE: March 15, 1988

(2) **SUBMIT TECHNICAL PROPOSAL:** Submit a technical report acceptable to the Executive Officer containing a proposal to determine the vertical and lateral extent of soil and groundwater pollution at sites 11 through 16. The investigation proposal should be in accordance with an approved Sampling Plan and Quality Assurance Project Plan, including a map showing the locations of any soil borings and monitoring wells to be installed.

COMPLIANCE DATE: December 15, 1987

(3) **INITIATE INVESTIGATION FOR SITES 11 THROUGH 16:** Initiate the investigations to comply with Provision 1.a.(2), above.

COMPLIANCE DATE: March 15, 1988

(4) **COMPLETION OF IDENTIFICATION AND CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical reports submitted for Provisions 1.a.(1) and 1.a.(2), above.

COMPLIANCE DATE: November 15, 1988

(5) **SUBMIT TECHNICAL PROPOSAL:** Submit a technical report acceptable to the Executive Officer containing a proposal to further define the vertical and lateral extent of soil and groundwater pollution at sites 3 through 9, and 11 through 17. The investigation proposal should be in accordance with an approved Sampling Plan and Quality Assurance Project Plan,

including a map showing the locations of any soil borings and monitoring wells to be installed.

COMPLIANCE DATE: November 30, 1988

(6) **COMPLETION OF CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Provision 1.a(5), above.

COMPLIANCE DATE: July 15, 1989

(7) **SUBMIT TECHNICAL PROPOSAL:** Submit a technical report acceptable to the Executive Officer containing a proposal to complete definition of the vertical and lateral extent of soil and groundwater pollution at all sites. The investigation proposal should be in accordance with an approved Sampling Plan and Quality Assurance Project Plan, including a map showing the locations of any soil borings and monitoring wells to be installed.

COMPLIANCE DATE: July 30, 1989

b. Potential Conduit Investigation, Evaluation, and Closure

(1) **IDENTIFICATION OF POTENTIAL CONDUITS:** Submit a technical report acceptable to the Executive Officer which summarizes the results of a record search, aerial photography search, and interviews conducted to identify any private and public wells which may act as vertical conduits for pollution to migrate from shallow to deep aquifers.

COMPLIANCE DATE: January 15, 1988

(2) **EVALUATION OF POTENTIAL CONDUITS:** Submit a technical report acceptable to the Executive Officer which summarizes the results of field work conducted to evaluate potential conduits identified in the technical report submitted to comply with Provision 1.b(1), above. The field work shall include, at a minimum, the results of any sampling, geophysical techniques, and television inspections, conducted to locate and evaluate potential conduits.

COMPLIANCE DATE: June 30, 1988

(3) **POTENTIAL CONDUIT CLOSURE REPORT:** Submit a technical report acceptable to the Executive Officer which describes well sealing or other effective measures which will be taken to prevent migration of pollutants to lower aquifers via any potential conduits identified in the technical report submitted to comply with Provision 1.b(2), above.

COMPLIANCE DATE: July 30, 1988

c. Interim Cleanup Plans

(1) **INITIAL INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer which contains an evaluation of interim remedial alternatives at solvent tank #43, located at the northeast corner of hangar 3, a recommended plan for interim remediation, and an implementation time schedule. This report shall include an evaluation of: the removal of the tank, excavation and/or cleanup of polluted soils, and alternative hydraulic control systems to contain and cleanup polluted groundwater. The report shall also include a completed NPDES application to discharge to surface waters, if such discharge is an element of the plan.

COMPLIANCE DATE: August 15, 1988

(2) **COMPLETION OF INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Provision 1.c.(1), above.

COMPLIANCE DATE: August 15, 1989

(3) **ADDITIONAL INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer which contains an evaluation of interim remedial alternatives, based on the results of the technical report submitted to comply with Provision 1.a.(4), above. The report shall include a recommended plan for interim remediation, and an implementation time schedule. This report shall evaluate: the removal of tanks, excavation and/or cleanup of polluted soils, and an evaluation of alternative hydraulic control systems to contain and cleanup polluted groundwater. The report shall also include a completed NPDES application to discharge to surface waters, if such discharge is an element of the plan.

COMPLIANCE DATE: December 30, 1988

(4) **COMPLETION OF ADDITIONAL INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Provision 1.c.(3), above.

COMPLIANCE DATE: December 30, 1989

2. Surface Impoundments

a. Toxics Pit Cleanup Act (TPCA)

(1) **SUBMIT HYDROGEOLOGICAL ASSESSMENT REPORT (HAR):** Submit a Hydrogeological Assessment Report (HAR) acceptable to the Executive Officer in accordance with Section 25208.8 of the Health and Safety Code.

COMPLIANCE DATE: January 1, 1988

(2) **REMOVE LIQUID HAZARDOUS WASTES:** Remove all liquid hazardous waste or hazardous material containing free liquids from the Site 10 surface impoundments.

COMPLIANCE DATE: June 30, 1988

b. Subchapter 15 Requirements

(1) **REPORT OF WASTE DISCHARGE:** Submit a Report of Waste Discharge acceptable to the Executive Officer in accordance with Subchapter 15 for the Site 10 surface impoundments.

COMPLIANCE DATE: March 1, 1988

(2) **CLOSURE PLAN:** Submit a closure plan acceptable to the Executive Officer in accordance with Subchapter 15 for the Site 10 surface impoundments.

COMPLIANCE DATE: March 1, 1988

3. Landfills

a. **SOLID WASTE ASSESSMENT TEST PROPOSAL:** Submit a technical report acceptable to the Executive Officer outlining the program for conducting a Solid Waste Assessment Test for Sites 1 and 2 landfills.

COMPLIANCE DATE: December 15, 1987

b. **SUBMIT SOLID WASTE ASSESSMENT TEST REPORT:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Provision 3.a., above.

COMPLIANCE DATE: July 1, 1988

4. **COMPLETION OF INVESTIGATION DEFINING THE VERTICAL AND LATERAL EXTENT OF POLLUTION IN SOILS, GROUNDWATER AND SHALLOW SEDIMENTS OF RECEIVING WATERS AT AND FROM ALL SITES:** The discharger shall submit a final Remedial Investigation (RI) report acceptable to the Executive Officer completely defining the extent of soil and groundwater pollution associated with all sites at Moffett Field. The report shall be consistent with guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), as amended; the Superfund Amendments and Reauthorization Act of 1986; Section 25356.1(c) of the California Health and Safety Code; and CERCLA guidance documents with reference to Remedial Investigations.

COMPLIANCE DATE: May 15, 1990

5. **PROPOSED FINAL CLEANUP OBJECTIVES AND ACTIONS:** Submit a Feasibility Study (FS) technical report acceptable to the Executive Officer containing an evaluation of the installed interim remedial measures; an evaluation of alternative final remedial measures; the recom-

mended measures necessary to achieve final cleanup objectives; and the tasks and time schedule necessary to implement the recommended final remedial measures.

COMPLIANCE DATE: October 30, 1990

6. **COMMITMENT TO COMPLY:** The discharger shall submit a report acceptable to the Executive Officer, indicating the discharger's commitment to comply with the terms of this Order by the specified due dates, including a schedule of tasks relative to budgeting, contracting, and other administrative arrangements necessary to secure needed funding and technical resources.

COMPLIANCE DATE: October 30, 1987

7. The discharger shall provide immediate notification to the Regional Board regarding any leakage of hazardous waste, including fuels and oil, from underground facilities (tanks, sumps, separators, etc.). This applies to any failed tank test (pressure or precision), any monitoring device installed (vapor or groundwater) which detects a leak, or any spill. A full written report shall be transmitted by the discharger within five working days of the occurrence of the release.
8. The submittal of technical reports evaluating immediate, interim, and final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), as amended; the Superfund Amendments and Reauthorization Act of 1986; Section 25356.1(c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California."
9. Technical reports on compliance with the Prohibitions and Provisions of this Order shall be submitted monthly to the Board commencing on October 30, 1987, and covering the previous month. On a monthly basis thereafter, these reports shall consist of a letter report that, (1) summarizes work completed since the submittal of the previous report, and work projected to be completed by the time of the next report, (2) identifies any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles, and (3) includes, in the event of non-compliance with Provision C.2. or any other Provision, Specification, or Prohibition of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

On a quarterly basis, commencing with the monthly report due on June 15, 1988, the monthly reports shall include, but need not be limited to, updated water table and piezometric surface maps for all affected water bearing zones, cross-sectional geologic maps describing the hydrogeologic setting of the site, and appropriately scaled and detailed base maps showing the location of all monitoring wells, piezometers, and extraction wells, and identifying adjacent facilities and structures.

10. All hydrogeologic plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.
11. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
12. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions and Provisions of this Order shall be provided to the following agencies:
 - a. Santa Clara Valley Water District
 - b. Santa Clara County Health Department
 - c. City of Mountain View
 - d. State Department of Health Services/TSCD
 - e. State Water Resources Control Board
 - f. U. S. Environmental Protection Agency, Region 9

The Executive Officer may additionally require copies of correspondence, reports and documents pertaining to compliance with this Order to be provided to a local repository for public use.

13. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.
14. The Board will review this Order periodically and may revise the requirements when necessary.

I, Roger B. James, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 16, 1987.



Roger B. James
Executive Officer