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160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

1082

MEMORANDUM

TO: Rachel Loftin, EPA Region IX

FROM: Jim James, Ecology and Environment, Inc. *jmj*

DATE: July 29, 1991

SUBJECT: Completed Work

cc: Marcia Brooks, E & E FIT

Attached is the following completed:

PA ___ PA Review ___ SSI ___ LSI ___ SIRE ___

Other EPIPA

Site Name: Hughes Aircraft Company

EPA ID #: CAD041162124 (3304)

City, County: Canoga Park, Los Angeles County

State Recommendation:
(for Reviews only)

Wony 8/9/91

FOR EPA USE ONLY

CERCLIS Lead: *EPA / PA 1 COMPLETE / "D" 8/9/91*

C99 = E / MPL INDICATOR = N

*Jim James
8/9/91*

je/hughes/cvm-trans

**ENVIRONMENTAL PRIORITIES INITIATIVE
PRELIMINARY ASSESSMENT**

Purpose: RCRA Preliminary Assessment

Site: Hughes Aircraft Company
Missile Systems Group
8433 Fallbrook Avenue
Canoga Park, California
Los Angeles County

Site EPA ID Number: CAD041162124
TDD Number: F9-9105-010
Program Account Number: FCA1769RAA
FIT Investigators: Jennifer Eberle
Rob Easley
Date of Inspection: June 12, 1991
Report Prepared By: Jennifer Eberle *JE*
Report Date: July 29, 1991
Through: Howard Edwards
FIT Review/Concurrence: *James M. James* 7/31/91
Submitted To: Rachel Loftin
Site Assessment Manager
EPA Region IX



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1. INTRODUCTION

As part of its Environmental Priorities Initiative (EPI) program, the U.S. Environmental Protection Agency (EPA) has requested Ecology and Environment, Inc.'s Field Investigation Team (E & E FIT) to conduct a Preliminary Assessment (PA) of Hughes Aircraft, located at 8433 Fallbrook Avenue, Canoga Park, California.

The EPI program integrates the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the 1984 Hazardous and Solid Waste Amendments (HSWA) with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), in order to set priorities for cleanup of the most environmentally significant sites first. The Preliminary Assessment is conducted using CERCLA Hazard Ranking System (HRS) criteria to determine the site's eligibility for inclusion on the National Priorities List and, thus, assists in prioritizing facilities for the RCRA program.

2. SITE DESCRIPTION

2.1 SITE LOCATION AND OWNER/OPERATOR HISTORY

The Hughes Aircraft Company site (Hughes) is located at 8433 Fallbrook Avenue, Canoga Park, California (T. 2N., R. 17 W., San Bernadino Baseline and Meridian; lat. 34°13'25"N., long. 118°37'32"W.) (see Figure 1, Site Location Map) (1). The site is situated on the western fringe of the San Fernando Valley, immediately south of the Chatsworth Reservoir (1). Hughes has operated at the site since 1965 as a research, development, and management facility for advanced military missile systems (2). These operations are conducted in nearly all of the 15 buildings located within the facility (10). Approximately 21 acres of the 85-acre site are comprised of offices and laboratories. The other 64 acres are paved parking lots or landscaped areas (see Figure 2, Facility Map). Approximately 2,000 people are employed at the site (11,16).

The site was used as a setting for filming movies prior to 1959. In 1959, the site was developed by an electrical component design and testing company called Bunker Ramo and was operated as an industrial park. From 1966 to 1976, Hughes was a co-occupant of the site with Rocketdyne, a division of Rockwell International, and Bunker Ramo. Other companies may also have conducted operations at the site in the past. Hughes purchased the entire site in the mid 1970s and became the sole occupant. In the mid 1980s, Hughes became a subsidiary of General Motors (10,16).

2.2 FACILITY PROCESSES/WASTE MANAGEMENT

The research and development programs conducted by Hughes both in the past and at present have focused on guided missiles and related systems design, experimental testing, and prototype production. Various chemicals have been used at the site but the vast majority of the

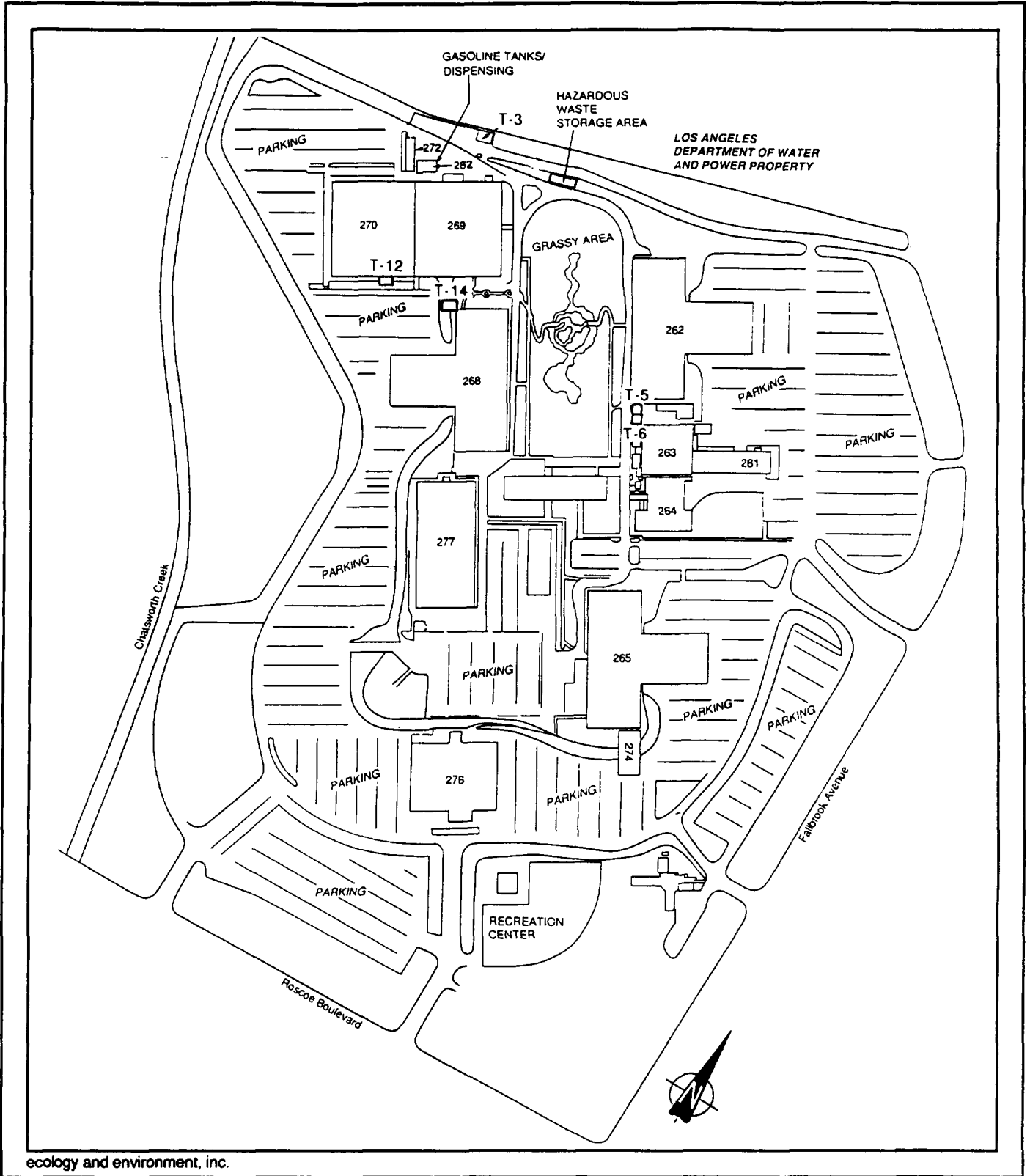


Figure 2
FACILITY MAP
 Hughes Aircraft Company
 8433 Fallbrook Avenue
 Canoga Park, California 91304

chemicals have been used in limited quantities either under laboratory conditions or in prototype manufacturing and testing "clean" rooms employing sophisticated environmental controls. Wastes are accumulated, then transferred to the hazardous waste storage area (10,16).

Hazardous wastes generated at Hughes are generally acidic and alkaline solutions from electroplating, cleaning and etching of metals and printed circuit boards, and from photo processing operations. Other wastes generated include halogenated and organic solvents used in degreasing and cleaning of electronic systems parts, paint sludges and thinners, and waste oils generated in metal working operations and vehicular maintenance (11).

Hazardous wastes including acids, alkalines, flammables, solvents and oil are stored in drums in a hazardous waste storage area. Wastes are also stored in underground storage tanks (USTs) and aboveground storage tanks (ASTs) (16). Oil wastes and organic solvents are shipped to licensed reclamation companies for recycling or incineration (11). Other hazardous wastes are transported off site by either Chemical Waste Management Inc. in Bakersfield (EPA ID# CAT000624056) or by the I.T. Corporation in Wilmington (EPA ID# CAD000057760) to the Kettleman Hills disposal facility located at Kettleman Hills, California. At that locale, the wastes are decanted, solidified and disposed of in landfills (11). Air emissions from one gasoline storage tank, one paint spray booth, four boilers, one chemical milling tank, two fuel oil storage tanks, one natural gas charbroiler, one diesel engine, two stationary non-emergency engines, and five TCA vapor degreasers are regulated by South Coast Air Quality Management District (18).

3. REGULATORY INVOLVEMENT

3.1 U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Hughes submitted a Notification of Hazardous Waste Activity and a Part A of the Hazardous Waste Permit Application on September 18, 1980 (12). The Part B of the Hazardous Waste Permit Application (aka Operations Plan) was requested but not received by EPA (30). As of April 12, 1991, Hughes is listed in the RCRA database as a generator of hazardous wastes and as a Treatment, Storage, and Disposal Facility (TSDF).

3.2 CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS)

DHS issued Hughes an Interim Status Document on April 16, 1981 (29). According to Hughes, the Operations Plan was submitted to DHS in 1983 (14). DHS approved the Operations Plan in June 1985 (2). Hughes was issued a Hazardous Waste Facility Permit for June 28, 1985 to June 28, 1990 (2). Hughes applied for a variance in September 1985 for two clarifier units which utilize an acid-base elementary neutralization system (2). As of February 1989, the variance approval was still pending (2). Hughes submitted a Closure Plan in September 1989 (21). Hughes applied for a renewal of its Hazardous Waste Facility Permit in December 1989.

Hughes has been inspected by DHS several times. DHS conducted annual inspections on April 30, 1984; February 21, 1985; and October 20, 1986. During a follow-up inspection on January 13, 1987, DHS noted two important violations. There were 40 drums of hazardous waste in the storage area instead of the maximum permitted number of 24 drums, and there was storage of hazardous waste in an unpermitted area for more than 90 days. During another follow-up inspection on June 9, 1987, Hughes was found to be in compliance (2). A Compliance Evaluation Inspection (CEI) on February 22, 1989 by DHS revealed some notable violations. Hughes was issued a Corrective Action Order in July 1989 for not notifying DHS at least 180 days in advance of the date a waste UST (designated as T-3 on Figure 2) was expected to undergo removal (2,17,31).

3.3 REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

Small quantities of VOCs have appeared in groundwater under the northwest corner of the site, the southwest corner of building 281, and the recreation center in the far southeast portion of the site. Trichlorofluoromethane (Freon 11) contamination was found in groundwater under the recreation center. Radioactivity was also found in groundwater throughout the site. Hughes claims that the radioactivity is due to high naturally-occurring background levels (14,16,28).

As a result of this contamination, Hughes installed monitoring wells on site. Quarterly reports on groundwater quality monitoring have been submitted to RWQCB since November 1989 (7). RWQCB has been kept informed by Hughes regarding storage and disposal of purge water and drilling muds from the installation and sampling of monitoring wells (25,26). RWQCB is currently working with Hughes on the groundwater contamination problem (7).

Consultants to Hughes have also submitted various reports to RWQCB regarding cleanup levels, excavation, and disposal of contaminated soil from the tank T-3 area (23,24).

3.4 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

Hughes is inspected regularly by SCAQMD. There was a minor violation in 1984. Reportedly, there have been no other violations (16).

3.5 OTHER AGENCY INVOLVEMENT

According to Hughes, the City of Los Angeles Bureau of Sanitation permits the facility for the discharge from three clarifiers to a Publicly-Owned Treatment Works (POTW). This agency cited Hughes for high concentrations of silver in the company's effluent in late 1990 and early 1991 (16,17).

The City of Los Angeles Fire Department supervised the removal of the waste oil UST in 1988 (19,20).

4. DESCRIPTIONS OF INDIVIDUAL SOLID WASTE MANAGEMENT UNITS

Distinct Solid Waste Management Units (SWMUs) have been identified to evaluate potential on-site sources of releases to air, surface water, groundwater and soil. A SWMU is defined as any discernible waste management unit at a facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. As a result of this Preliminary Assessment, FIT has identified three categories of significant SWMUs at the site. It appears that all of these units are RCRA-regulated. Additional SWMUs may exist (see Figure 2, Facility Map).

4.1 UNDERGROUND STORAGE TANKS (USTs)

Unit Description: Hughes stored mixed solvents and waste oils in a 4,000-gallon, fiberglass, nonvaulted UST known as T-3. This UST is located in the northwest portion of the site. It appears to have been regulated under RCRA for storage up to one year (10,16,17). Hughes stored waste oil and sulfuric acid in two 500-gallon, metal, vaulted, glass-lined USTs known as T-5 and T-6. These USTs were located between building 262 and 263 (10).

Date of Start-up: Tank T-3 was installed in 1979 (16). Tanks T-5 and T-6 were installed in 1959 (10).

Date of Closure: Hughes removed tank T-3 in 1988 (16). Tanks T-5 and T-6 ceased accepting wastes in 1984 (10).

Waste Managed: Tank T-3 stored unspecified mixed solvents from 1979 to 1983, and waste oil from 1983 to 1988 (16). Tanks T-5 and T-6 stored waste oils and sulfuric acid (10).

Release Controls: Tank T-3 did not have secondary containment; tanks T-5 and T-6 were placed in concrete vaults.

History of Releases: Soil has been contaminated in the vicinity of tank T-3, but the soil has not yet been removed. Hughes believes this tank is a potential source of groundwater contamination (7,16).

Soil in the vicinity of T-5 and T-6 was sampled in July 1990. VOCs were not detected in soil samples taken 30 and 40 feet below ground surface (bgs) (28). FIT does not know if soil was sampled directly beneath the tanks. See Table 1 for a list of contaminants detected in on-site soils.

4.2 ABOVEGROUND STORAGE TANKS (ASTs)

Unit Description: A 60-gallon AST (T-12) is located south of building 270 (16). An 85-gallon AST (T-14) is located south of building 269 (16). Each AST is dedicated to a particular laboratory. Wastes are generated from the cleaning of electronic components. Tanks T-12 and T-14 do not appear to be RCRA-regulated since they store waste for less than 90 days (16,17).

Date of Start-up: Tanks T-12 and T-14 began operations in 1980 (10).

Date of Closure: Tank T-12 is still active; tank T-14 ceased accepting wastes in 1986 (10).

Waste Managed: Tank T-12 stores and tank T-14 stored spent solvents including acetone, 1,1,1-trichloroethane (TCA), and isopropyl alcohol (10,17).

Release Controls: Both ASTs are located on a paved and diked area (17).

History of Releases: Hughes claims that there have been no known releases from the ASTs (17). No VOCs were detected in soil sampled 30 and 40 feet bgs in the vicinity of tank T-12 in July 1990. No VOCs were detected in groundwater sampled in the vicinity of tank T-12 from March to October 1990. There has been no known sampling of soil or groundwater in the vicinity of tank T-14 (28).

4.3 Hazardous Waste Storage Area

Unit Description: This area is located in the northwest portion of the site. It has a maximum permitted storage capacity of 24 55-gallon drums. Drums containing flammable and nonflammable wastes are stored in the west bay, and drums containing corrosive wastes are stored in the east bay. This area is a shed with partial walls. The north side is comprised of 4-foot-high wall of concrete blocks with metal sheeting above the blocks to the roof. The east and west sides are comprised of 4-foot-high concrete blocks and chain-link entrance doors. The south side is comprised of chain-link fencing (16). This area appears to be RCRA-regulated because wastes are stored for greater than 90 days (17).

Date of Start-up: This area was constructed in 1981 (16).

Date of Closure: This area is currently active (16).

Waste Managed: This area stores a variety of flammable and non-flammable solvents (e.g. TCA), corrosive acids and bases, and miscellaneous lab-pack chemicals (22).

Release Controls: There is a concrete sump under a metal-grated floor. The sump is divided to separate spills from the corrosives and the flammables/nonflammables. The bays are separated by a 4-foot-high wall of concrete blocks (16).

History of Releases: There have been no reported releases or spills from this area. No known soil or groundwater sampling has been conducted under this area (28).

4.4 AREA OF CONCERN

There are three areas of concern at Hughes. The first area is the northwest portion of the site which has historically handled and stored chemicals. The previously mentioned waste UST (T-3) is located in this area. Gasoline USTs are also located in this area; there may be a leak in the fuel delivery system. Soil and groundwater in this area is contaminated with petroleum hydrocarbons and VOCs that include

halogenated compounds (16,28).

The second area is the southwest corner of building 281. A fuel oil UST is located in this area. Soil and groundwater in this area is contaminated with VOCs that include halogenated compounds (16,28).

The third area is the recreation center in the southeast corner of the site. There have never been any buildings in this area. Soil and groundwater in this area are contaminated with Freon 11. Elevated levels of radioactivity also appeared in groundwater in this area. Hughes believes this radioactivity is due to high background levels in the area (16,28).

In addition, there may be another area where hazardous wastes are stored. This area was referred to as a converted garage in a 1989 DHS inspection report (2). Hughes also operates 3 clarifiers whose discharges are reportedly permitted by Los Angeles Bureau of Sanitation (17).

5. HRS FACTORS

The Hazard Ranking System (HRS) is a scoring system used to assess the relative threat associated with actual or potential releases of hazardous substances from sites. It is the principal mechanism EPA uses to place sites on the National Priorities List (NPL). FIT has evaluated the following HRS factors relative to this site.

5.1 WASTE TYPE AND QUANTITY

Hazardous wastes generated at Hughes are generally acidic and alkaline solutions from electroplating, cleaning and etching of metals and printed circuit board, and from photo processing operations. Other wastes generated include halogenated and organic solvents used in degreasing and cleaning of electronic systems parts, paint sludges and thinners, and waste oils generated in metal working operations and vehicular maintenance (11,16). Wastewaters are reportedly discharged via three clarifiers to a POTW (16,17). Asbestos waste was generated from a recent asbestos removal project (14).

In the past, Hughes had a 4,000-gallon UST of waste oil, two 500-gallon USTs of waste oil and sulfuric acid, an 85-gallon AST of spent solvent, and a 60-gallon AST of spent solvent on site. Currently, Hughes has a 60-gallon AST of spent solvent and a hazardous waste storage area with a maximum permitted capacity of 24 55-gallon drums or 1,320 gallons of waste. The waste in the storage area consists of a variety of flammable and non-flammable solvents, corrosive acids and bases, and miscellaneous lab-pack chemicals (16,28). See Section 4 for a detailed description of waste sources. Table 1 lists contaminants found in soil at Hughes (28).

TABLE 1
HIGHEST LEVELS OF SOIL CONTAMINATION
AT HUGHES AIRCRAFT COMPANY

<u>Contaminant</u>	<u>Concentration (ppm)</u>
toluene	33.0
1,1-DCE	0.038
xylenes	170
ethylbenzene	22

The toluene, xylenes, and ethylbenzene found in soil are petroleum fractions which may have originated from a stored petroleum product. Petroleum, including crude oil and refined fractions, is specifically excluded from the definitions of "hazardous substance" and "pollutant or contaminant" in Sections 101(14) and (33) of CERCLA. This exclusion does not apply to waste oil that has been altered by use. Generally, oil that has been used as a lubricant in machinery contains high levels of metals, which qualifies the waste oil as a hazardous substance.

5.2 GROUNDWATER

Hughes is located on the west side of the San Fernando Groundwater Basin. Alluvial deposits in the western portion of the basin consist mostly of fine sediments and clays with low permeability and low water yields. Groundwater is confined or partially confined in this area and contains high levels of total dissolved solids (TDS). Due to low water yields and high TDS levels, no drinking water wells are situated close to the site (27). Groundwater movement in the San Fernando Basin is to the east and southeast toward the Los Angeles River narrows (3).

Groundwater appears to be moving in a southeasterly direction in the vicinity of Hughes. The depth to groundwater beneath the south and east portions of the site is approximately 20 feet. The depth to groundwater beneath the north-central portion of the site may be greater (3). There are no known groundwater wells used for drinking within 4 miles of Hughes (4,5,15).

Groundwater under the site is contaminated with VOCs, Freon 11, and gasoline. Elevated levels of radioactivity are also present in groundwater at the site. See Table 2 for a list of contaminants in groundwater at the site (28). Hughes is working closely with RWQCB on remediation of this problem. There are currently approximately 30 monitoring wells on and off site; more are planned (16). One possible origin of the contamination has been identified as the historic handling and storing of chemicals in the northwest portion of the site. Gasoline tanks and a former waste UST (T-3), which appear to have leaked, are located in this area (16). Although it appears that a release of hazardous substances from the site to groundwater has occurred, no groundwater wells are used for drinking water within 4 miles of Hughes (4,5,15).

TABLE 2
HIGHEST LEVELS OF GROUNDWATER CONTAMINATION
AT HUGHES AIRCRAFT COMPANY

<u>Contaminant</u>	<u>Concentration (ppb)</u>
1,1-DCA	10
1,1-DCE	2,200
1,2-DCE	12
1,1,1-TCA	300
TCE	200
PCE	57
benzene	6,100
toluene	18,000
xylenes	15,000
freon 11	360

5.3 SURFACE WATER

Surface runoff from the site is directed to a storm water drainage system which leads to Chatsworth Creek. Chatsworth Creek is actually an enclosed pipeline at the point where surface runoff enters. This water eventually enters the Los Angeles River, which is a concrete-lined flood control channel (14). Hughes is located approximately 15 miles from Santa Monica Bay and the Pacific Ocean (1). Sensitive environments are unlikely to be present along the surface water migration pathway.

Chatsworth Reservoir, located approximately 500 feet north of the site, was closed in 1971 after damage caused by an earthquake (6). The reservoir is no longer used to store drinking water, and it does not appear to be downslope from the site (6,16). When in use, the Reservoir drained past a spillway on the south side to Lees Lake (also known as Hidden Lake) and Chatsworth Creek (6). There are no other surface water bodies within 2 miles downslope of the site (1). Although the potential may exist for a release of contaminants to surface water, no drinking water intakes or sensitive environments appear to be present within 15 miles downstream from the site (1,14).

5.4 AIR

The SCAQMD permits Hughes for one gasoline storage tank, one paint spray booth, four boilers, one chemical milling tank, two fuel oil storage tanks, one natural gas charbroiler, one diesel engine, two stationary non-emergency engines, and five TCA vapor degreasers (18). Wastes currently on site are contained in sealed drums and an AST. Therefore, the potential to release to air appears to be low (16).

Approximately 165,000 people live within 4 miles of Hughes (8). A residential area known as Hidden Lake is located west of and adjacent to the site. Sensitive environments within 4 miles of Hughes include habitats for Braunton's milk vetch (Astragalus brauntonii), the

many-stemmed dudleya (Dudleya multicaulis), the Santa Susana tarplant (Hemizonia minthornii), and the San Diego horned lizard (Phrynosoma coronatum blainvillii) (9).

5.5 SOIL EXPOSURE

Contaminated soil is present on site in the tank T-3 area (7). It is unknown whether surface soils are contaminated. This soil is not located in an area used by the public (16). The site is fenced and has a 24-hour security system, thus access is limited (16,17). Therefore, the potential for an exposure to contaminated soils appears to be low.

6. SUMMARY OF FIT INVESTIGATIVE ACTIVITIES

6.1 AGENCIES CONTACTED

FIT conducted a file search at DHS in Burbank on May 14, 1991. FIT also conducted a file search at RWQCB in Monterey Park on June 11, 1991. Both agencies maintain voluminous files on the site.

6.2 RECONNAISSANCE OBSERVATIONS

FIT members Jennifer Eberle and Robert Easley conducted a site reconnaissance with Hughes representatives Thomas Boxwell and Cathy Shane on June 12, 1991. An interview was conducted, followed by a facility tour. Information was gathered on site history, facility processes, and waste management. The facility was fenced and had a 24-hour security system (16). Information gathered during the site reconnaissance is presented throughout this report. For additional information, refer to the Site Reconnaissance Interview and Observations Report in Appendix A and the photographs in Appendix B.

7. EMERGENCY RESPONSE CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415(b)(2)] authorizes the Environmental Protection Agency to consider emergency response actions at those sites which pose an imminent threat to human health or the environment.

There is no apparent need for a referral to EPA's Emergency Response Section at this time because the site is adequately secured from public access and the known soil and groundwater contamination is currently undergoing remediation under the direction of RWQCB (7,16).

8. SUMMARY OF HRS CONSIDERATIONS

The Hughes Aircraft Company site (Hughes) is located at 8433 Fallbrook Avenue, Canoga Park, California, on the western edge of the San Fernando Valley. Hughes has been in operation since 1965, conducting research and design of guided missiles and related systems on the 85-acre property.

In the past, Hughes operated a 4,000-gallon waste UST, two 500-gallon waste USTs, a 60-gallon waste AST, and an 85-gallon waste AST. Currently, Hughes has one designated hazardous waste storage area and one

60-gallon aboveground waste storage tank (AST). Hughes is operating as a generator and a Treatment, Storage, and Disposal Facility (TSDF). DHS conducts inspections of Hughes on a regular basis.

Groundwater under the site is contaminated with VOCs, Freon 11, gasoline, and radioactivity. RWQCB is working with Hughes' groundwater remedial investigation program. However, no drinking water wells exist nearby.

Since the site is fenced and patrolled by guards, exposure to contaminated soils is unlikely. There is a low potential to release to air because wastes are contained in sealed drums and an AST. Surface water bodies within 2 miles of the site are utilized only for flood control.

The following are significant Hazard Ranking System factors associated with the Hughes site:

- o Low potential for a release to air and surface water;
- o Low potential for an exposure to contaminated soils; and
- o No drinking water wells are located within 4 miles of the site.

9. EPA RECOMMENDATION

	<u>Initial</u>	<u>Date</u>
No Further Remedial Action Planned under CERCLA	_____	_____
Higher-Priority SSI under CERCLA	_____	_____
Lower-Priority SSI under CERCLA	_____	_____
Defer to Other Authority (e.g., RCRA, TSCA, NRC)	<u>Jm</u>	<u>8/9/91</u>

Notes:

10. REFERENCES

1. U.S. Geological Survey, maps of Calabasas and Canoga Park, California, 7.5-minute quadrangles, 1952 (photorevised 1967).
2. State of California, Department of Health Services (DHS), "Inspection Report, Hughes Aircraft Company, Missile Systems Group, 8433 Fallbrook Avenue, Canoga Park, California 91304", March 27, 1989.
3. Hargis and Associates, Inc., "Preliminary Draft, Proposed Work Plan, Underground Tank Investigation Program for the Hughes Aircraft Company, Missile Systems Group, 8433 Fallbrook Avenue, Canoga Park, California 91304," Tucson, Arizona, October 16, 1984.
4. Vargas, Victor, Los Angeles Department of Water and Power, and Jennifer Eberle, Ecology and Environment, Inc.'s Field Investigation Team (E & E FIT), telephone conversation, May 20, 1991.
5. Chernow, Derrick, Las Virgenes Water District, and Jennifer Eberle, E & E FIT, telephone conversation, May 20, 1991.
6. Powers, Jimmy, Los Angeles Department of Water and Power, and Jennifer Eberle, E & E FIT, telephone conversation, May 21, 1991.
7. Solomon, E.G., State of California, Regional Water Quality Control Board (RWQCB), and Jennifer Eberle, E & E FIT, telephone conversation, May 16, 1991.
8. U.S. Environmental Protection Agency (EPA), Office of Toxic Substances, "Graphical Exposure Modeling System", March 1989.
9. State of California, Department of Fish and Game, Natural Diversity Data Base, "RareFind Report", May 18, 1991.
10. McLaren, Hart, "Potential Source Area Investigation Report for the Hughes Missile Systems Group, Canoga Park, California," November 30, 1989.
11. Hughes Aircraft Company, "Operations Plan," Canoga Park, August 1, 1988.
12. U.S. EPA, "Part A Hazardous Waste Permit Application", for Hughes Aircraft Company, November 4, 1980.
14. Boxwell, Thomas, Hughes Aircraft Company, and Jennifer Eberle, E & E FIT, telephone conversation, May 28, June 4, 6, 18, and July 19, 1991.
15. City of Los Angeles, Department of Water and Power, "ULARA Watermaster Report", map, location of wells and hydrologic facilities.

16. Boxwell, Thomas, and Kathy Shane, Hughes Aircraft Company, and Jennifer Eberle and Robert Easley, E & E FIT, Site Reconnaissance Interview and Observations Report, June 12, 1991.
17. Shane, Kathy, Hughes Aircraft Company, and Jennifer Eberle, E & E FIT, telephone conversation, June 14, 1991.
18. South Coast Air Quality Management District, list of permit renewals, Hughes Aircraft Company, Missile Systems Group, November 19, 1990.
19. Boxwell, Tom, to John Hinton, DHS, letter, September 25, 1989.
20. City of Los Angeles, Fire Department, "Fire/Life Safety Violation", Hughes Aircraft Co., June 16, 1988.
21. Mongero, Anthony, McLaren, Hart, to Ejigu Solomon, RWQCB, letter, January 17, 1990 (Closure Plan of September 19, 1989 attached).
22. Boxwell, Tom, to Jennifer Eberle, letter, June 18, 1991 (with Waste Stream Profiles attached).
23. Lewis, John, RWQCB, to Tom Boxwell, Hughes, letter, March 18, 1991.
24. Boxwell, Tom, Hughes, to Hank Yacoub, RWQCB, letter, February 5, 1991.
25. Patton, Kenneth, McLaren Hart, to Ejigu Solomon, RWQCB, letter, May 14, 1991.
26. Mongero, Anthony, McLaren Hart, to Ejigu Solomon, RWQCB, letter, October 29, 1990.
27. City of Los Angeles, Department of Water and Power, "Groundwater Quality Management Plan, San Fernando Valley Basin," July 1, 1983.
28. McLaren Hart, "Phase One Remedial Investigation at Hughes Missile Systems Group Facility, Canoga Park, California," December 20, 1990.
29. DHS, "Interim Status Document", Hughes Aircraft Company, April 6, 1981.
30. Christiansen, Vern, EPA, and Jennifer Eberle, telephone conversation, June 11, 1991.
31. California Department of Health Services, "Consent Agreement and Order Docket No. HWCA 89/90-001," Hughes Aircraft Company, July 6, 1989.

APPENDIX A

CONTACT LOG AND REPORTS

CONTACT LOG

Facility Name: Hughes Aircraft Company
Facility ID: CAD041162124

Name	Affiliation	Phone #	Date	Information
Satish Gulati	DHS	818-567-3126	5/9/91	DHS has files for Hughes.
Lyn Brooks	LA County Health Dept.	213-744-6751	5/10/91	FIT must write a request for a file search.
E.G. Solomon	RWQCB	213-266-7574	5/16/91	See Contact Report.
Victor Vargas	LA Dept. of Water & Power	213-481-6857	5/20/91	Wells in the quadrants 35, 36, 46, and 47 are not used for potable drinking water. They are used for dewatering, groundwater remediation, or industry (landscaping or cooling towers).
Derrick Chernow	Las Virgenes Water District	818-880-4110	5/20/91	This water company does not operate any groundwater wells.
Linda Aguirre	Los Angeles Bureau of Fire Prevention	213-485-7543	5/21/91	FIT must write a request for a file search.
Secretary	South Coast Air Quality Management Dist.	818-572-2117	5/21/91	FIT must write a request for a file search.
Jimmy Powers	LA Dept. of Water & Power	213-481-6232	5/21/91	The Chatsworth Reservoir was closed in 1971 after damage caused by an earthquake. The Reservoir drained past a spillway into Lees Lake and Chatsworth Creek, which is a flood control channel. Chatsworth Creek flows into the LA River.

Thomas Boxwell	Hughes	818-702-1803	5/28/91 6/4/91 6/6/91 6/18/91 7/19/91	See Contact Report.
Jenny Au	RWQCB	213-266-7579	6/3/91	FIT set up an appointment for a file search for 6/11.
Vern Christiansen	U.S. EPA	415-744-2422	6/11/91	EPA does not have the Part B file for Hughes.
Tom Boxwell Kathy Shane	Hughes	818-702-1803	6/12/91	See Site Reconnaissance Interview & Observations Report.
Kathy Shane	Hughes	818-702-1803	6/14/91	See Contact Report.

CONTACT REPORT

AGENCY/AFFILIATION: California RWQCB		
DEPARTMENT: Underground Storage Tanks		
ADDRESS/CITY: 101 Centre Plaza Dr./Monterey Park		
COUNTY/STATE/ZIP: Los Angeles/CA		
CONTACT(S)	TITLE	PHONE
1. E.G. Solomon	Project Officer	213-266-7574
2.		
E & E PERSON MAKING CONTACT: Jennifer Eberle		DATE: 5/16/91
SUBJECT: agency involvement		
SITE NAME: Hughes Aircraft Company		EPA ID#: CAD041162124

Mr. Solomon is the project officer for Hughes. RWQCB is involved with Hughes due to a leaking UST (T-3). The contaminated soil around T-3 has not yet been removed. Groundwater is contaminated with VOCs but not lead.

Hughes has submitted quarterly reports to RWQCB regarding groundwater monitoring. The latest consultants report is May 1991. There have been approximately 30 consultant's reports between November 1989 and May 1991. Most of these are quarterly reports on groundwater sampling results by McLaren Hart. There are other possible source areas on site. FIT may FAX questions to RWQCB at 213-266-7600.

CONTACT REPORT

AGENCY/AFFILIATION: Hughes Aircraft Company		
DEPARTMENT: Health, Safety, and Environment		
ADDRESS/CITY: 8433 Fallbrook Avenue/Canoga Park		
COUNTY/STATE/ZIP: Los Angeles/CA/91304		
CONTACT(S)	TITLE	PHONE
1. Thomas Boxwell	Manager	818-702-1803
2.		
E & E PERSON MAKING CONTACT: Jennifer Eberle		DATE: 5/28/91 6/4/91 6/6/91 6/18/91 7/19/91
SUBJECT: miscellaneous; site visit date		
SITE NAME: Hughes Aircraft Company		EPA ID#: CAD041162124

5/28/91

The Missile Systems Group is the only group in the Canoga Park location. Hughes' Tucson, Arizona site is home to another Missile Systems Group.

Hughes in Canoga Park wants to drop its Treatment, Storage, and Disposal Facility (TSDF) permit and maintain generator status only. According to Mr. Boxwell, Hughes is actually operating in this manner, unbeknownst to public agencies. Currently hazardous waste is not stored for more than 90 days. Hughes has less employees and less hazardous waste quantity than it did in 1980. An asbestos removal project and groundwater remedial investigation (coordinated with RWQCB) has generated some hazardous wastes. Hughes has no on-site treatment.

The Operation Plan was originally submitted to DHS in 1983. It was recently resubmitted to DHS, but DHS returned it due to lack of personnel. Hughes currently has one hazardous waste storage area with 24 drums of hazardous wastes. This storage area is divided into two separate areas: one side for corrosive wastes, and one side for flammable and non-flammable wastes. Hughes has one aboveground storage tank for hazardous wastes. It stores approximately 50 gallons of solvents (acetone and alcohol). Chemical Waste Management is the primary transporter for Hughes.

The site was built in 1959 and was originally used as an industrial park. A tentative reconnaissance date was set for June 10th at 10:30 am.

6/4/91

The site visit date was changed to 12:00 pm on 6/10/91.

6/6/91

The site visit date was changed to 9:00 am on 6/12/91.

6/18/91

Sealed Baker tanks are used to store wastewater from monitoring well sampling. There is usually 1,000 to 2,000 gallons of wastewater on site. Wastewater samples are analyzed, then Hughes requests RWQCB to discharge the wastewater to the storm drain system. RWQCB has historically approved the requests, except in one instance when the selenium levels were above drinking water standards. Hughes was not allowed to discharge this wastewater; it was taken off site by Chemical Waste Management.

Radioactivity has been detected in groundwater samples throughout the site in levels above drinking water standards.

The 1984 SCAQMD violation had to do with a contractor who was hired to build a laboratory with scrubbers. The contractor did not obtain the proper permits, and Hughes was cited. The laboratory no longer exists.

7/19/91

There is a storm water drainage system surrounding the site which directs runoff water to the southwest portion of the site. Water then flows into the Chatsworth Creek and eventually to the Los Angeles River. The Chatsworth Creek is actually an enclosed pipeline from the point where runoff water enters it (near Roscoe Blvd.) southward towards the Los Angeles River. Chatsworth Creek is an open, concrete-lined channel north of Roscoe Blvd. Mr. Boxwell indicated that the Chatsworth Creek appears to be downgradient from the site.

SITE RECONNAISSANCE INTERVIEW AND OBSERVATIONS REPORT

Ecology and Environment, Inc.		
Field Investigation Team (FIT)		
160 Spear Street, Suite 1400		
San Francisco, California 94105		
(415) 777-2811		
E & E PERSON(S) CONDUCTING INTERVIEW AND MAKING OBSERVATIONS:		
Jennifer Eberle and Rob Easley		
FACILITY REPRESENTATIVE(S):	TITLE:	PHONE:
Thomas Boxwell	Manager	818-702-1803
Kathy Shane	Engineering Specialist	818-702-2628
SITE NAME: Hughes Aircraft Company		DATE: 6/12/91
CITY/STATE: Canoga Park, California		EPA ID#: CAD041162124

The following information was obtained during the interview:

Prior to 1959, the site was used as a movie ranch. In 1959, the site was constructed by Bunker Ramo and was operated as an industrial park. Hughes Aircraft Company Missile Systems Group (Hughes) became a co-occupant of the site in the mid 1960s. Hughes purchased the entire site in the mid 1970s and became the sole occupant. General Motors bought Hughes in the mid 1980s.

The site comprises 85 acres. There have been no changes in property boundaries over time. The Chatsworth Creek is piped underground west of the site.

The Hughes Aircraft Company designs and manufactures guided missiles and related systems. Canoga Park is and has always been the location for research and design. Manufacturing is performed in Tucson, Arizona. Hughes currently has an estimated 2,000 employees. There were 4,000 employees at one time. Hughes has been relocating some operations to Tucson.

All hazardous wastes are shipped off site; with the exception of clarifiers, there is no on-site treatment. Hughes received a TSDF permit in 1985 for storage only. Chemical Waste Management in Azusa California is their primary transporter.

The hazardous waste storage area was constructed in 1981 and is currently active. It has a maximum permitted storage capacity of 24 55-gallon drums. Flammables and non-flammables are stored in the west bay, and corrosives are stored in the east bay.

A waste oil UST (T-3) was installed in 1979 and removed in June 1988. T-3 originally stored mixed solvents and waste oils until 1983, when it stored only waste oils. Hughes is currently working on closure for this unit. Soil under T-3 was contaminated, and has not yet been removed. The surface soils may not be contaminated.

A 60-gallon AST located south of building 270 stores solvent wastes. An 85-gallon AST located south of building 269 stored solvent wastes until 1986.

Hazardous materials used at Hughes include small quantities of common solvents, fluxes, corrosives, adhesives, lubricants, and architectural coatings. The quantities have varied historically, but the chemicals have been the same basic types.

RWQCB is working closely with Hughes to remediate groundwater contamination. Hughes has imposed a remedial investigation upon itself. Small quantities of VOCs have appeared in the groundwater under the northwest corner of the site, the southwest corner of building 281, and the recreation center. There is a UST in the vicinity of building 281 which was historically used for fuel oil. VOC contamination was first found in this area in 1990. Freon contamination was found in the groundwater under the recreation center. There have never been any buildings in this area.

Radioactivity has also appeared in groundwater. Levels are above drinking water standards. The highest levels appear under the recreation center. The radioactivity appears to be due to naturally occurring background levels; Hughes is still investigating the situation. Hughes plans to perform pump tests to determine aquifer capacity.

Reportable quantities of hazardous substance releases were reported to the California Office of Emergency Services. These instances include several gallons of gasoline in 1991 and a leak in the gasoline plumbing.

There are currently approximately 30 monitoring wells on and off site. The off-site wells are not showing any contamination except one well with small concentrations of trichloroethene. Hughes has plans to install more monitoring wells.

Mr. Boxwell stated that there are three potential sources of groundwater contamination at the site. The first is the waste oil tank. It was leak-tight when it was removed. It may have been overfilled. The second is the historic handling and storing of chemicals in the northwest area of the site. The third are the

gasoline tanks located in the northwest portion of the site. There is gasoline contamination in soil and groundwater. Mr. Boxwell believes that there may be a leak in the delivery system.

Hughes is inspected regularly by SCAQMD. There was a minor SCAQMD violation in 1984. DHS cited Hughes for the removal of T-3 without notifying DHS in the required timeframe.

The City of Los Angeles Bureau of Sanitation cited Hughes in late 1990 and early 1991 for high concentrations of silver in Hughes' effluent. Wastes from a photography lab and a metal finishing lab both entered a clarifier. The Clean Water Act mandates that the stricter effluent standard apply in such cases of comingled wastes. Since the silver concentration from the photography lab was higher than the metal finishing lab, there was a problem. Hughes corrected this problem by installing a separate clarifier for the metal finishing lab.

The following observations were made during the site reconnaissance visit:

The hazardous waste storage area is located in the northwest portion of the site. There is a concrete sump under a metal-grated floor. The sump is divided to separate spills from the corrosives and the flammables/non-flammables. The bays are separated by a 4-foot-high concrete block wall. The north side is comprised of a 4-foot-high concrete block wall and metal sheeting above that to the roof. The east and west sides are comprised of 4-foot-high concrete blocks and chain-link entrance doors. The south side is comprised of chain-link fencing.

The immediate area surrounding UST T-3 is exposed soil. The soil is not mounded, but is rather level with the surrounding ground surface.

The Chatsworth Reservoir is upgradient of the site. The site is fenced and patrolled by guards.

CONTACT REPORT

AGENCY/AFFILIATION: Hughes Aircraft Company		
DEPARTMENT: Health, Safety, and Environment		
ADDRESS/CITY: 8433 Fallbrook Avenue/Canoga Park		
COUNTY/STATE/ZIP: Los Angeles/CA/91304		
CONTACT(S)	TITLE	PHONE
1. Kathy Shane	Engineering Specialist	818-702-2628
2.		
E & E PERSON MAKING CONTACT: Jennifer Eberle		DATE: 6/14/91
SUBJECT: miscellaneous		
SITE NAME: Hughes Aircraft Company		EPA ID#: CAD041162124

The site entrances are closed at night after the last shift. There is 24-hour security at the site.

Drilling mud and water generated from the construction and operation of the monitoring wells are stored in closed Baker tanks and transported by Chemical Waste Management to Kettleman Hills.

Both ASTs still exist on site, although one is currently inactive. Both ASTs were dedicated to different laboratories. They both received waste acetone and waste isopropyl alcohol; the active tank still does. These wastes were generated from the cleaning of electronic components. The ASTs are located approximately south of building 270 on a paved and diked area. There have been no known releases from them. The ASTs are permitted for up to 90 days storage.

DHS cited Hughes for the absence of notification for the removal of UST T-3 in 1989. This UST is permitted in the Part B for up to one year of storage.

The Los Angeles Bureau of Sanitation permits Hughes for the discharge from three clarifiers to a POTW.

The hazardous waste storage area is permitted for greater than 90-day storage.

The public does not use the recreation center with the exception of the local Fire Department.

APPENDIX B

PHOTODOCUMENTATION

PHOTOGRAPHY REPORT



DATE: 6/17/01

TIME: 1:45 AM

OPERATOR:

NAME:

AGENCY:

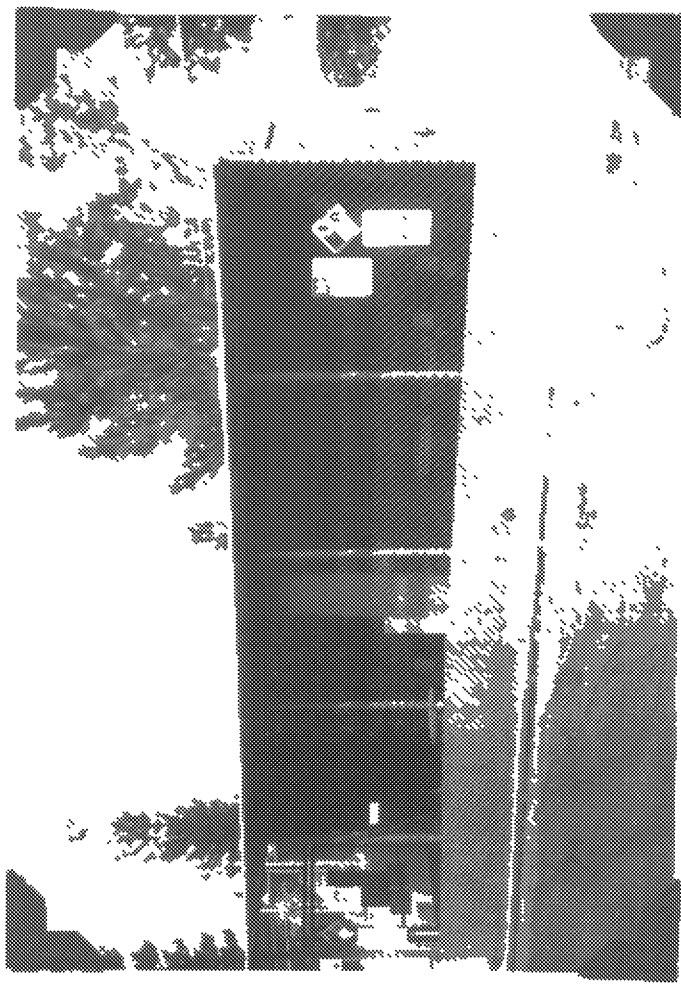
AREA:

PHOTOGRAPHER:

TELEPHONE:

ADDRESS:

This is the location of the former waste oil (WFO) storage tank. It actually contained and awaiting removal.



DATE: 6/17/01

TIME: 10:30 AM

OPERATOR:

NAME:

AGENCY:

AREA:

PHOTOGRAPHER:

TELEPHONE:

ADDRESS:

This is the Hazardous Waste Storage Area

(e/hw/01)

DEPARTMENT OF HEALTH SERVICES

TOXIC SUBSTANCES CONTROL DIVISION (REGION 3)
1405 N. SAN FERNANDO BOULEVARD, SUITE 300
BURBANK, CA 91504



(818) 567-3000

Inspection Report

Hughes Aircraft Company
Missile Systems Group
8433 Fallbrook Avenue
Canoga Park, CA 91304

EPA # CAD041162124

Telephone # 818-702-1803

Inspected by: Cecilia E. Rosana, Hazardous Materials Specialist

Joseph Franz, Associate Hazardous Materials Specialist

Report Prepared by: Cecilia E. Rosana

Date of Inspection: February 22, 1989

Date of Report: March 27, 1989

Ref. # 2

DATE.....2-22-89.....

CA D 041162124

INSPECTOR.....CROSANA.....

I. PURPOSE:

To conduct a Compliance Evaluation Inspection (CEI) of a non-major RCRA storage facility.

II. REPRESENTATIVES PRESENT:

Hughes Aircraft Company-Missile Systems Group :

Thomas Boxwell, Head, Safety, Health and Environmental Affairs Human Resources

Lydia Saenz, Rate and Traffic Assistant

Department of Health Services (DHS), Toxic Substances Control Division (TSCD):

Cecilia Rosana, HMS

Joseph Franz, AHMS

III. OWNER/OPERATOR:

Hughes Aircraft Company - Missile Systems Group (HAC-MSG), 8433 Fallbrook Avenue, Canoga Park, CA 91304 is owned and operated by the same company. The personnel directly responsible for the hazardous wastes management at the facility are Thomas Boxwell and Lydia Saenz.

IV. FACILITY BACKGROUND:

A. General:

HAC-MSG was issued a Hazardous Waste Facility Permit (HWFP) CAD 041162124 for storage on June 28, 1985. The HWFP will expire on June 28, 1990. The Operation Plan (OP) was approved June 4, 1985. The facility applied for a variance on September 19, 1985 for the two units of clarifiers which utilize an acid-base elementary neutralization system. The variance approval is pending final determination by the Facility Permitting Unit.

B. Specific:

February 28, 1983 Steve Lavinger, Surveillance and Enforcement Unit (SEU), Interim Status Document (ISD) compliance inspection. The facility was found to be in compliance with the ISD requirements.

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- April 30, 1984 Steve Lavinger, (SEU), annual inspection. A Notice of Violation (NOV) was issued because the operating record was not available for review during the inspection.
- February 21, 1985 Clarence Berman (SEU), annual inspection. The facility was found to be in compliance.
- October 20, 1986 Ruth Williams (SEU), the following violations were noted during this inspection:
1. Some drums in the storage area were not labeled completely, accumulation dates and waste types were not written on the labels.
 2. The facility OP needed some major changes/updates to reflect the current practices of Missile Systems Group:
 - a.) Training Plan
 - b.) New storage area in the garage building.
 - c.) Closure Plan and Closure Cost.
- January 13, 1987 Ruth Williams (SEU), follow-up inspection. The following violations were found:
1. Lack of aisle space between the drums at the hazardous waste storage area..
 - * 2. There were 40 drums of hazardous waste in the storage area which exceeded the maximum allowable number of 24, according to the permit.
 - * 3. Storage of hazardous waste in an unpermitted area for over 90 days. This area was a garage converted into a storage area.
- February 4, 1987 NOV was sent to the facility regarding the violations noted during the follow-up inspection on January 13, 1987.

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June 9, 1987

Ruth Williams (SEU), follow-up inspection. The facility was found to be in compliance.

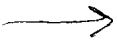
V. GENERAL DESCRIPTION OF FACILITY:

HAC-MSG has been in operation since 1965. The company performs the complete spectrum of activities required for the overall research, development, and management of advanced military missile systems. The facility has approximately 2600 employees.

VI. HAZARDOUS WASTE ACTIVITY DESCRIPTION:

Hazardous Waste Storage Areas:

The hazardous waste storage areas has a capacity of 24, 55-gallon drums. The facility is permitted to store for up to one year in these storage areas. The storage shed is essentially a reinforced concrete base with sides of masonry and pipe frame with chain-link fencing, and a pipe supported tarpaulin roof cover. The shed features a below grade sump designed to contain spillage, surface, and run-off water. The sump floor under the corrosive wastes storage is lined with an acid resistant polypropylene material. A fiber grate floor is installed over the sump floor. The shed is divided by a wall which serves to separate incompatible corrosive and flammable wastes.



The other storage area is a garage converted into a storage area. The materials stored here are acid and alkaline wastes and the other half of the area is used to store raw materials. Here the hazardous waste is allowed to be stored no longer than 90 days. Acids and bases are separated by an aisle of six foot width (minimum).

Types of Hazardous Wastes Generated:

Hazardous wastes are generated from the cleaning, stripping, electroplating and degreasing processes of its operations. These hazardous wastes are stored in a permitted storage shed and a non-permitted storage area.

All hazardous wastes are generated by Missile Systems Group's industrial operations and are typical for the research, development and testing of electronic components. Generated wastes are packaged, identified, labeled and transported from the area of generation to the permitted storage area.

Handwritten notes: 2 Wastes Storage areas

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INSPECTOR...CROSANA.....

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The bulk of hazardous wastes generated are essentially acidic and alkaline solutions from electroplating, cleaning, and etching of metals and printed circuit boards. Other wastes generated include halogenated and organic solvents used in the degreasing and cleaning of electronic systems parts, paint sludges and thinners; and waste oils generated in metal working operations and vehicular maintenance.

Land Disposal Restricted Waste:

- HAC-MSG generates land disposal restricted wastes which are F002, F003, and F005 (F series), spent solvent wastes. These F series wastes are acetone, isopropyl alcohol, methyl ethyl ketone, methanol, toluene and xylene. These are treated/recycled/disposed of at Rho-Chem Corporation, Chemical Waste Management Inc., Rollins environmental Services, Osco, and Great Western Chemical. Waste oil are brought to Osco. The spent cyanide plating bath solution from the electroplating operations is brought to Rollins Environmental Services. Land disposal restriction notifications from the facility accompany the manifests and copies are kept at the facility.

VII. OBSERVATIONS AND DISCUSSION WITH MANAGEMENT:

The first phase of the inspection was the facility walk through. We visited the hazardous storage areas. The permitted storage areas was divided into two sections, for non-flammable (see Attachment 1, Photo # 1) and flammable hazardous (see Attachment 1, Photo # 2). There were 6 drums at the flammable storage section (see Attachment 1, Photos # 3, 4 & 5). At the non-flammable section, there was one 55-gal drum with asbestos waste for analysis; one 5-gallon drum with cyanide which would be sent to Great Western Management; 1 empty tank which was previously used to hold waste solvents; 20 plastic containers of waste from the xerox machines and several lab packs (see Attachment 1, Photos # 6 & 7). At each entrance to the storage area, there was an eyewash, shower and fire extinguisher which were working (see Attachment 1, Photos # 1, 2 & 8). There were warning signs which were readily visible (see Attachment 1, Photos # 9 & 10).

The storage area for corrosives is a garage which was converted to a storage area which holds the acids, bases and raw materials. There were 13 drums of acids, i.e., phosphoric, flouboric, ferric chlorate, chromium sulfate and seven drums of alkaline waste and 1 drum of alkaline waste for recycling. The acids and bases were separated by an aisle of approximately six foot width (minimum). We observed that the accumulation dates on the drums of hazardous wastes were not over 90 days. Boxwell and Saenz informed us that when the accumulation dates approach 90 days the drums are transferred to the permitted storage areas where they can be stored for up to one year. There also was a

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SPECTOR CROSANA

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warning sign at the garage storage area. The raw materials occupied half of the storage area. All of the storage areas were kept locked.

Waste oil is generated at the garage where the vehicles were maintained. There was a 55-gal drum which was properly labeled as hazardous waste with an accumulation date. The waste oil is shipped to Osco, 1740 W. First Street, Azusa, CA 91702.

At the plating section where printed circuit boards are manufactured, there was a 55-gallon drum which was labeled as containing copper sulfate, sulfuric acid, potassium sulfamate and water. This drum serves as a satellite storage for the wastes generated at this section. The wastes generated from the plating shop is shipped to Chemical Waste Management, Inc., 3525 Old Skyline Boulevard, Kettleman City, CA, where the hazardous wastes are recycled.

At the photo processing section, there was one 55-gallon drum for accumulating two-butoxy ethano, potassium carbonate and water. These waste are brought to Chemical Waste Management, Inc or to Great Western Chemical, 808 Southwest Fifteenth Avenue, Portland, Oregon, for recycling. The drum was properly labeled.

During the facility walk through, Franz asked Boxwell about the facility's underground waste oil tank. Boxwell stated that there was no longer an underground tank that was used to store waste oil, it was removed in late 1987 since they were no longer using it. Boxwell stated that time he was employed by another company so he did not have personal knowledge of what happened regarding the removal of the underground waste oil tank. We also asked him if the facility notified the Department 180 days before they began closure of the underground waste oil tank. Boxwell stated that he was not sure, but he knew that the facility notified the local agency specifically the Fire Department since they were in-charge of underground tanks. I mentioned that I read in our facility file that monitoring wells were installed in 1985 near the underground waste oil tank. Boxwell said that the lead agency was the Regional Water Quality Control Board (RWQCB). Boxwell was told to send the Department copies of the notification for the closure of the underground waste oil tank and also any available data from the monitoring wells.

After the facility walk through, the facility records were reviewed. The manifests were properly kept and in order, for the years 1987 to 1989 .

The training records were properly filed and the training found to be adequate.

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INSPECTOR CROSANA

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The inspection logs were found to be inadequate since it did not have the specific inspection time written in the logs, which this was pointed out to Boxwell and Saenz (see Attachment 2).

The Contingency Plan was reviewed and it was part of the operation plan. It was noted that the Emergency Coordinator listed was Fiorino Cinquanta who was no longer employed by the company. The facility was advised to make the necessary changes to update the Contingency Plan. The facility was told to send a copy of the updated emergency coordinators to the local agencies and the Department.

Saenz was told to send the Department copies of the operation logs.

After the inspection, I checked the facility files and found out that there was no notification sent by HAC-MSG to the Department regarding the closure of the underground waste oil tank. This underground waste oil tank is a regulated unit which is identified in the OP (see Attachment 3). This is a violation of its HWFP, Section XIII, Item IV (B), which requires the owner/operator to notify the Department at least 180 days prior to the expected date of closure.

Upon reviewing the OP, I observed that the closure plan needs to be amended to reflect any changes in the facility design or operation. The closure plan on file still includes the underground waste oil tank, which Boxwell stated was removed in the late 1987 (see Attachment 4).

Before ending the inspection, Boxwell and Saenz were informed that the facility should make the necessary amendments of the facility records specifically the Contingency Plan and inspection logs, and they should send to the Department all the pertinent records concerning the closure of the underground waste oil tank.

In several subsequent telephone conversations with Boxwell, it was confirmed that the facility did not send any notification for the closure of the underground waste oil tank. He also informed me that he would be sending to the Department all the records that I asked for. Saenz sent me copies of the operating logs for which I made some comments for additional data to be included in completing the logs, i.e., signature of person transferring the hazardous waste to the storage areas.

VIII. VIOLATIONS:

COUNT 1: Title 22, California Code of Regulations (Title 22, Cal. Code Regs.), Section 67104 (d).

The inspection logs did not have the specific time of inspection.

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COUNT 2: Title 22, Cal. Code Regs., Section 67143 (e).

The list of the emergency coordinators was not updated.

COUNT 3: Title 22, Cal. Code Regs., Section 67212 (d) and HWFP, Section XIII, Item IV (B).

The owner or operator did not notify the Department at least 180 days before the date the underground waste oil tank was expected to undergo closure. The underground tank was removed in late 1987.

COUNT 4: Title 22, Cal. Code Regs., Section 67212 (c) and HWFP, Section XIII, Item IV (A).

The owner or operator and independent engineer registered in California did not amend its closure plan when the facility closed its underground waste oil tank.

COUNT 5: Title 22, Cal. Code Regs., Section 67215.

The owner or operator did not submit to the Department certification that the underground waste oil tank had been closed in accordance with the specifications in the approved closure plan.

IX. ATTACHMENTS:

1. Attachment 1 - Photos of the facility storage areas.
2. Attachment 2 - Inspection Log
3. Attachment 3 - Section of the OP of the HWFP
4. Attachment 4 - Closure plan section of the OP
5. Attachment 5 - Inspection Checklist

XII. SIGNATURES:

Cecilia Rosana
Cecilia Rosana, Haz. Mat. Specialist
Surveillance and Enforcement Unit

3/27/89
Date Submitted

Paul Baranich
Paul Baranich, Program Supervisor
Surveillance and Enforcement Unit

3/27/89
Date of Approval

ATTACHMENT # 3

VI MAJOR WASTE MANAGEMENT DEVICES USED AT THE FACILITY

A. Containers used for storage of hazardous wastes:

1. Description - see below

DESCRIPTION OF HAZARDOUS WASTE CONTAINERS

1. Drums, polyethylene 55-gallon DOT E-6637-55	Acid liquid, NOS	Hazardous waste label DOT Corrosive label
	Alkaline liquid, NOS	Hazardous waste label DOT Corrosive label
2. Drum, metal, 55-gallon DOT 17 E or DOT 17H	Flammable liquids, NOS	Hazardous waste label DOT flammable liquid label
	Combustible liquid, NOS	Hazardous waste label
	ORM-A, NOS	Hazardous waste label DOT appropriate label
3. Drum, metal, open pack DOT approved	As above for consolidation of smaller containers	Hazardous waste label DOT appropriate label

2. Containment Systems

a. Description -

(1) Hazardous Waste Shed -

Containerized wastes are stored in this structure. Hazardous wastes include acids, alkalines, flammables, combustibles, and ORM-A materials. The shed is essentially a reinforced concrete base with sides of masonry and pipe frame with chain-link fencing, and a pipe supported tarpaulin roof cover. The shed features a below grade sump floor designed to contain spillage, surface, and run-off water. The sump floor under the corrosive storage is lined with an acid resistant polypropylene material. A fibergrate floor is installed over the sump floor. The shed is bisected by a masonry wall extending from the surface of the sump to 48" above the floor grating. This wall serves to separate incompatible corrosive and flammable materials. Incompatible acids and bases are separated by an aisle of 6' width (minimum). An eyewash fountain and deluge shower are provided at the extremity of the loading/off loading slabs located at either end of the shed. Appropriate warning signs are attached to the doors and front side of the shed.

Design and construction details are depicted at Exhibit 7.

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(2) Oil Waste Storage Tank

Bulk oil wastes, including metal and wood working machine lubricating oil, coolant, hydraulic oils, and vehicle lubricating oil are stored in the tank.

The tank measures 8 feet in diameter and 15½ feet in length and is installed 4 feet below grade. Fill, drain and vent pipe systems are provided. The tank is of fiberglass construction and is capable of holding 4000 gallons of liquid. A concrete slab, with berms on 3 sides of the slab covers the tank and afford spill containment during tank filling or evacuation operations.

Design and construction details are depicted at Exhibit 7.

b. Spill Management -

Containerized wastes are stored on the fibergrate floor thus providing from 14" to 24" elevation above the sump floor. Contact between containers and standing liquids in the sump floor does not occur (for a period in excess of 1 hour after a spill occurs).

c. Capacity -

The sump floor is designed to contain precipitation from a 24-hour 25 year storm (6.04") plus 10 percent of the total volume of containers stored therein. The sump floor is capable of containing a total of 2,898 gallons of liquid. Total amount of waste liquids stored in the shed is maximum of twenty four 55 gallon drums (1320 gallons).

d. Run-on Water Management -

Most run-on water is prevented from entry into the shed by the retaining wall at the back, and end walls on the slabs which act as barriers. Additionally, the road curbing to the front of the shed prevents entry from that point. Some water drains from the surface of the east slab into the sump floor as does wind blown precipitation which enters through the chain-link wire walls. This normally occurs in the east section of the shed.

Accumulated liquids are pumped into drums to prevent overflow should such a condition develop. The liquids is analyzed to determine if it contains hazardous properties or characteristics. Analysis is accomplished by an accredited chemical analytical laboratory (contracted).

3. Flammable and Incompatible Wastes -

a. Buffer Zone -

CLOSURE PLAN
FOR THE
HAZARDOUS WASTE STORAGE FACILITY

DATE 2-22-89

CA D 041162124

INSPECTOR C. ROSANA

I. Purpose

- A. This closure plan identifies the procedures and standards necessary to effect proper closure of the Facility which consists of the containerized hazardous waste storage shed and the oil storage tank.

It is not anticipated that partial or full closure of the Facility will be necessary in the foreseeable future. However, should operations cease or change to the extent that hazardous wastes are no longer generated, the Facility will be closed.

- B. Closure procedures prescribed herein are designed to:

1. Minimize the need for post closure maintenance and surveillance.
2. Ensure that post closure escape of hazardous wastes, hazardous constituents, and contaminants, precipitation, and waste decomposition products are eliminated, or controlled to the extent that public health and the environment are not endangered.

II. Procedure

- A. Closure of the containerized Hazardous Waste Storage Shed

1. Waste Disposal -

All containerized hazardous wastes stored in the shed at time of closure will be prepared for shipment in accordance with DOT and Department of Health Services regulations and transported by an EPA licensed hauler to an approved TSD facility for disposal.

Empty drums, having previously contained a hazardous waste, will be considered to be a hazardous waste and prepared and disposed of as described above.

2. Decontamination -

The container shed will then be decontaminated.

- a. The sump floor under the corrosives storage, and the fibergrate floor will be decontaminated with a series of neutralizing washes. Water waste and residue generated will be pumped into DOT approved drums for the material and transported to the TSD for disposal as a hazardous waste.
- b. The sump floor underlying the ignitable storage and the fibergrate floor will be decontaminated with a series of solvent washes. The wash wastes and residue generated by this operation will be pumped into approved containers and shipped to the TSD facility for disposal.

3. Waste Inventory -

A maximum of 1320 gallons (twenty four 55 gallon drums) may be in storage in the shed at any given time.

B. Closure of the Waste Oil Storage Tank -

1. Waste Disposal -

The waste oil in the tank will be with drawn by an EPA licensed hauler by use of a vacuum truck. These wastes will then be transported to an approved TSD facility for disposal.

2. Following removal of the oil waste the tank will be steam cleaned. Contaminated water wastes and residues generated will be collected in approved drums. Fill, take-out and vent piping and the concrete slab covering the tank will also be steam cleaned. Water wastes and residues generated will be collected in approved drums and shipped to a TSD for disposal.

3. Waste Inventory -

A maximum of 4000 gallons of oil waste may be stored in the tank at any given time.

III. Estimated Cost of Closure

- A. Hazardous Waste Storage Shed - \$2,000
- B. Waste Oil Storage Tank - \$3,000
- C. Total Cost - \$5,000.

DATE 2-22-84

CA D 041162124

DIRECTOR CROSANA

October 16, 1984

PRELIMINARY DRAFT

PROPOSED WORK PLAN
UNDERGROUND TANK INVESTIGATION PROGRAM
FOR THE HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP
CANOGA PARK, CALIFORNIA

*uses of
USTs, etc.*

*GW contours
Geo-hydrology*



HARGIS+ASSOCIATES, INC.

Consultants in Hydrogeology

Tucson/Phoenix/San Diego

Ref. #3



HARGIS + ASSOCIATES, INC.

Consultants in Hydrogeology

1735 East Fort Lowell Road, Suite 5
Tucson, Arizona 85719
(602) 881-7300

September 17, 1985

Mr. F. A. Cinquanta
Manager, Environmental Health and Safety
HUGHES AIRCRAFT COMPANY
Mail Station 270/041
8433 Fallbrook Avenue
Canoga Park, California 91304

RE: PROPOSED WORK PLAN
UNDERGROUND TANK INVESTIGATION PROGRAM
FOR THE HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP
CANOGA PARK, CALIFORNIA

Dear Mr. Cinquanta:

Pursuant to your request, enclosed are two copies of the "Proposed Work Plan, Underground Tank Investigation Program". As you will note, the Proposed Work Plan is a preliminary draft. Latham & Watkins submitted it to the California Regional Water Quality Control Board (RWQCB) in this format. Revisions were requested by the RWQCB and agreed to by Hughes Aircraft Company. The work plan as revised was approved by the RWQCB. ~~The letters documenting the revisions and the letter of approval from the RWQCB are attached to the "Proposed Work Plan".~~

In addition, Mr. Chuck Dickens, Hargis & Associates, Inc. met with Mr. John Hall, City of Los Angeles Fire Department, to discuss the "Proposed Work Plan". Mr. Hall gave Mr. Dickens verbal authority to proceed with the tank investigation as outlined. Mr. Hall requested that the results of the investigation be submitted to him in a report. Any permits from Mr. Hall's department would be issued after his review of the report.

Please call should you have any questions or require additional information.

Very truly yours,
HARGIS & ASSOCIATES, INC.

Shirley J. Heckman

Shirley J. Heckman
Project Hydrologist

SJH/md
Enclosure



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RWQCB Criteria and Guidelines.....	4
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- 2 **UNDERGROUND TANKS AND PROPOSED MONITOR WELLS**
- 3 **SCHEMATIC WELL CONSTRUCTION**

APPENDIX

Appendix

- A **SAMPLING PROTOCOL**

***in pocket**



**PROPOSED WORK PLAN
UNDERGROUND TANK INVESTIGATIVE PROGRAM
HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP
CANOGA PARK, CALIFORNIA**

INTRODUCTION

This work plan has been formulated to assess subsurface conditions in the vicinity of underground tanks at Hughes Aircraft Company (HAC), Missile Systems Group (the Plant), in Canoga Park, California (Figure 1). The work plan has been prepared in compliance to general monitoring criteria set forth by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region.

The work plan has been formulated to provide a cost-effective approach to evaluating the integrity of underground tanks at the Plant. The shallow depth to groundwater at the Plant dictates that groundwater monitoring wells be constructed and that the chemical character of groundwater collected from these wells be used to evaluate the integrity of the underground tanks.



SUMMARY OF UNDERGROUND TANKS

An inventory of tanks at the Plant has been prepared by the Hughes Aircraft Company. The tank inventory, compiled on RWQCB Standard "Ground-water Protection Program Underground Tank Investigation Forms" was submitted to the RWQCB in a document dated October 20, 1983 (Hughes Aircraft Company, 1983). The following discussion of underground tanks at the Plant has been derived from this document.

Fifteen underground tanks or pits have been inventoried at the Plant (Table 1; Figure 2). Twelve of the tanks or pits are actively used at the Plant and three are abandoned and have never been used by HAC.

The active tanks or pits can be grouped into the following categories according to the types of chemicals stored:

Gasoline.....	2 tanks (T-1 and T-2)
Fuel oil.....	5 tanks (T-7, T-8, T-9, T-10, T-13)
Hydraulic oil.....	1 tank (T-17)
Waste oil.....	1 tank (T-3)
Solvents.....	1 tank (T-12)
Photographic process wastes.....	1 tank (P-1)
Neutralized acids.....	1 tank (P-2)

The three abandoned tanks contained the following materials:

Water.....	1 tank (T-4)
Waste oil/Sulfuric acid.....	2 tanks (T-5, T-6)

Tanks T-11, T-14, T-15, and T-16 are above ground tanks and have not been considered relevant to the underground investigation.



GROUNDWATER CONDITIONS

The Plant is located on the west side of the San Fernando Groundwater Basin. The San Fernando Groundwater Basin is an adjudicated basin and both surface water and groundwater stored within, tributary to, and discharged from the basin are strictly managed. Several recharge basins and extraction wellfields are located on the northeast and east sides of the basin.

Groundwater movement in the San Fernando Basin is to the east and southeast toward major wellfields and the Los Angeles River narrows, between the Elysian and Repetta Hills, where both surface and subsurface discharge of groundwater from the basin occurs (Blevins, 1984). In the vicinity of the Plant, groundwater appears to be moving in a southeasterly direction (**Figure 1**).

The depth to regional groundwater downgradient of the Plant appears to be on the order of about 20 feet (Blevins, 1984). Beneath the south and east portions of the Plant property the depth to groundwater would probably be about 20 feet. The depth to groundwater beneath the north-central portion of the Plant property could be greater.

The nearest actively pumped well, downgradient of the Plant, is located in excess of five miles southeast of the Plant (Blevins, 1984).



PROPOSED SUBSURFACE INVESTIGATION

RWQCB CRITERIA AND GUIDELINES

The shallow depth to groundwater in the vicinity of the Plant, less than 40 feet, predicates that the investigative guidelines promulgated as "Case I" by the RWQCB be adopted as guidelines for formulating the underground tank investigation program. The "Case I" guidelines recommend the construction of a groundwater monitoring well and collection of water samples adjacent to all underground tanks. Each monitor well is to be completed to a depth of about 20 feet below the water table, and constructed of PVC casing. During the drilling of each monitor well, soil samples are to be collected at five-foot intervals from a depth of about five feet below land surface to the water table.

MONITOR WELLS

Based on the tank inventory prepared by HAC (HAC, 1983), and recommended investigative guidelines promulgated by the RWQCB, it is proposed that nine monitor wells be constructed at the Plant (**Figure 2**). Eight of the monitor wells would be located within 10 feet of the tanks or as close downgradient as feasible. One monitor well would be located upgradient of the tanks to define "background" conditions.

Because gasoline tanks T-1 and T-2 are located a few feet apart, one monitor well has been proposed to evaluate subsurface conditions beneath both tanks (**Figure 1**). One monitor well is proposed for monitoring subsurface conditions at tanks T-12 and T-13, which are located only a few feet apart.



Monitor wells would be drilled using the flight auger drilling method to a depth of about 40 feet, which would be about 20 feet below the water table. All wells would be cased with four-inch diameter PVC casing, with PVC screen placed from the water table to the total depth of the borehole. Each well would be gravel packed, and a cement-bentonite seal placed in the well annulus from a depth of about five feet above the water table to one foot below land surface. Each well would be completed below land surface in a concrete utility vault (Figure 3).

WATER SAMPLING AND ANALYSIS

Water samples would be collected from each monitor well using a submersible pump having a pumping capacity of about 5 to 15 gpm (gallons per minute). Water samples would be collected after removing a minimum of five borehole volumes, and after the conductivity, pH, and temperature of the well discharge have stabilized.

Proposed Analyses at Individual Wells

The selection of relevant water quality parameters for analysis for specific wells has been based on the reported contents of each tank or pit located in the vicinity of each proposed monitor well (Table 1). Groundwater samples would be analyzed for common ions, trace metals, EPA priority pollutants, and hydrocarbons. Sampling protocols are discussed in detail in Appendix A. A list of analyses and proposed analytical methods is presented in Appendix A, Table A-1.

Tank no. T-17 is used to store hydraulic oil (Figure 2). Groundwater samples collected from monitor well CM-1, located near tank no. T-17, will be analyzed for hydrocarbons C-20 through C-30 (Table 2).



Tank nos. T-1 and T-2 are used to store gasoline. Groundwater samples collected from monitor well CM-2, located near tanks T-1 and T-2, will be analyzed for the aromatic hydrocarbons (Table 2).

Tank no. T-3 is used to store waste oil. Groundwater samples collected from monitor well CM-3, located near tank no. T-3, will be analyzed for EPA priority pollutants and hydrocarbons C-20 through C-30 (Table 2).

Storage pit no. P-1 is used to store photographic process waste. Groundwater samples collected from monitor well CM-4, located near pit no. P-1, will be analyzed for common ions, and EPA priority pollutants (Table 2).

Storage pit no. P-2 is used to store neutralized acids. Groundwater samples collected from monitor well CM-5, located near pit no. P-2, will be analyzed for common ions and trace metals (Table 2).

Tank nos. T-12 and T-13 are used to store solvent waste and fuel oil, respectively. Groundwater samples collected from monitor well CM-6, located near tanks nos. T-12 and T-13, will be analyzed for EPA priority pollutants, and hydrocarbons C-1 through C-30 (Table 2).

Monitor well CM-7 would be located upgradient of all reported underground tanks. Water samples collected from well CM-7 would be used to determine the "background" chemical character of groundwater beneath the Plant.

Tank no. 10 is used to store fuel oil (Figure 2). Groundwater samples collected from monitor well CM-8, located near tank no. T-10, will be analyzed for hydrocarbons C-1 through C-30 (Table 2).



Tank nos. T-7, T-8, and T-9 are used to store fuel oil. Groundwater samples collected from monitor well CM-9, located near tank nos. T-7, T-8, and T-9, will be analyzed for common ions, and hydrocarbons C-1 through C-30 (Table 2).

SOIL SAMPLING AND ANALYSIS

Soil samples would be collected at five foot intervals (5, 10, 15, and 20 feet) above the water table during the drilling of each monitor well. A composite soil sample for each drillhole would be prepared in the laboratory on an equal volume basis. The proposed analysis schedule for soil samples would be the same as for water samples, with the exception that the common ions would not be analyzed for (Table 2). Sample protocol and proposed analytical methods which would be used to collect and analyze soil samples are summarized in **Appendix A**.

Soil samples will be analyzed after the water samples, and only if chemical compounds are not initially detected in water samples. Exclusions to this recommendation would be those soil samples in which priority volatile organic compounds are to be analyzed. These soil samples would have to be analyzed within 14 days after collection in the field to satisfy EPA protocol.



FINAL REPORT PREPARATION

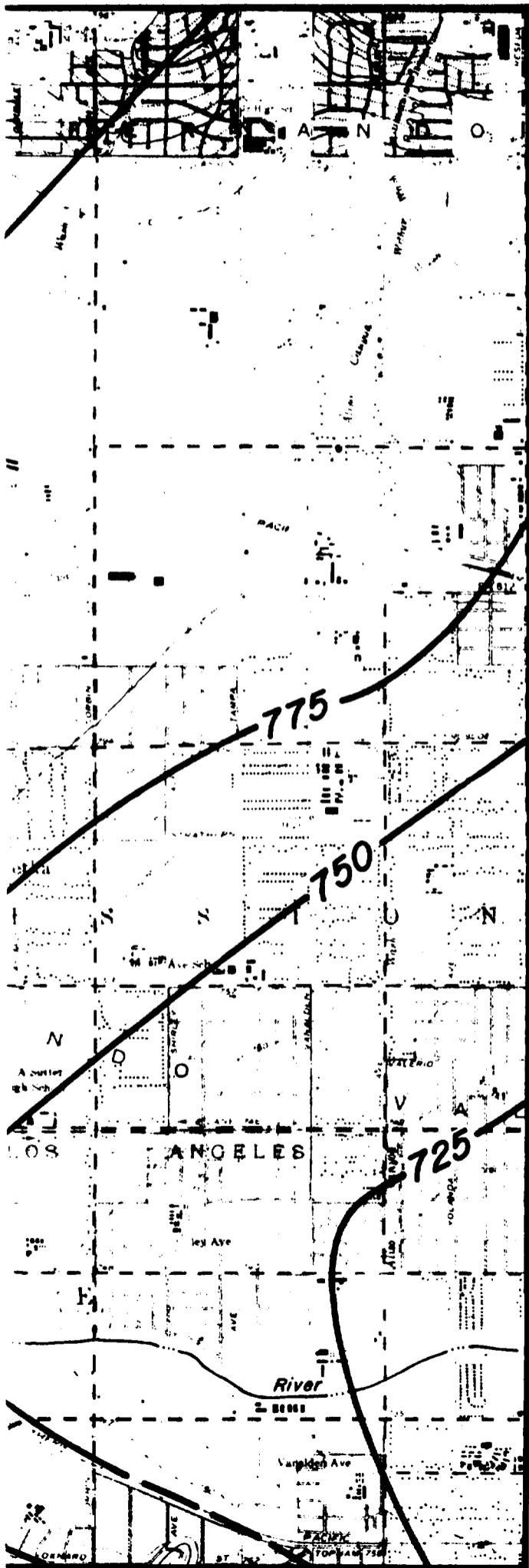
A report would be submitted to the RWQCB following the completion of field work at the Plant and receipt of laboratory results. The report would summarize all field work and laboratory data and discuss regional hydrogeologic conditions.



REFERENCES CITED

Blevins, M.L., 1984. Watermaster Service in the Upper Los Angeles River Area, Los Angeles County, October 1, 1982 - September 30, 1983. Upper Los Angeles River Area Watermaster.

Hughes Aircraft Company, 1983. Summary of Groundwater Protection Program Underground Tank Investigation Form submitted to the Los Angeles Region of the California Regional Water Quality Control Board. Transmitted to RWQCB by P.K. O'Brien on October 20, 1983.



EXPLANATION

————— 800 —————

WATER LEVEL CONTOUR, FEET ABOVE MEAN SEA LEVEL; DASHED WHERE INFERRED

————— X ————— X ————— X

ZONE OF CASCADING GROUNDWATER

————— ? ————— ? ————— ?

POSSIBLE GROUNDWATER RESTRICTION OR CASCADE



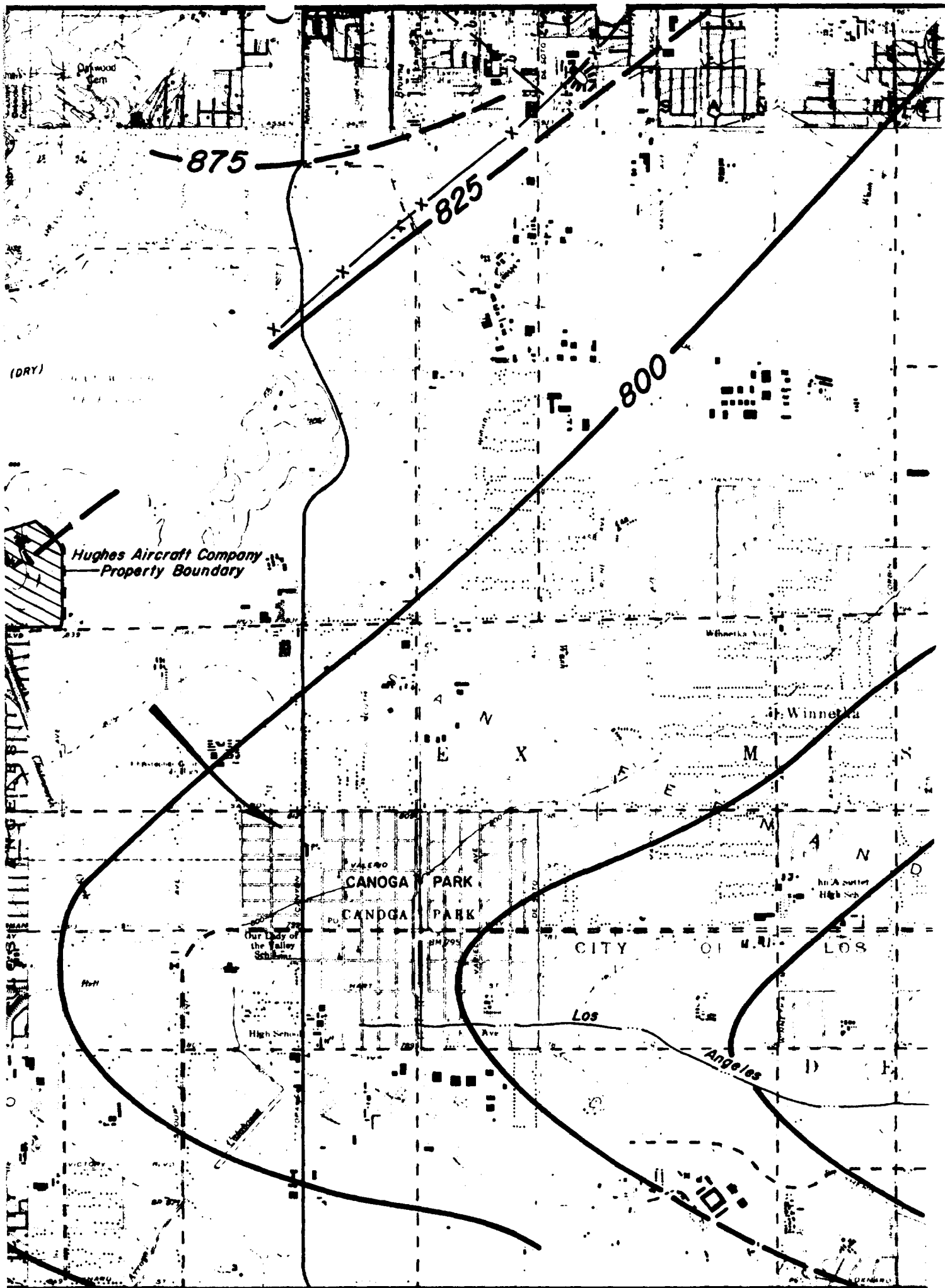
DIRECTION OF GROUNDWATER MOVEMENT

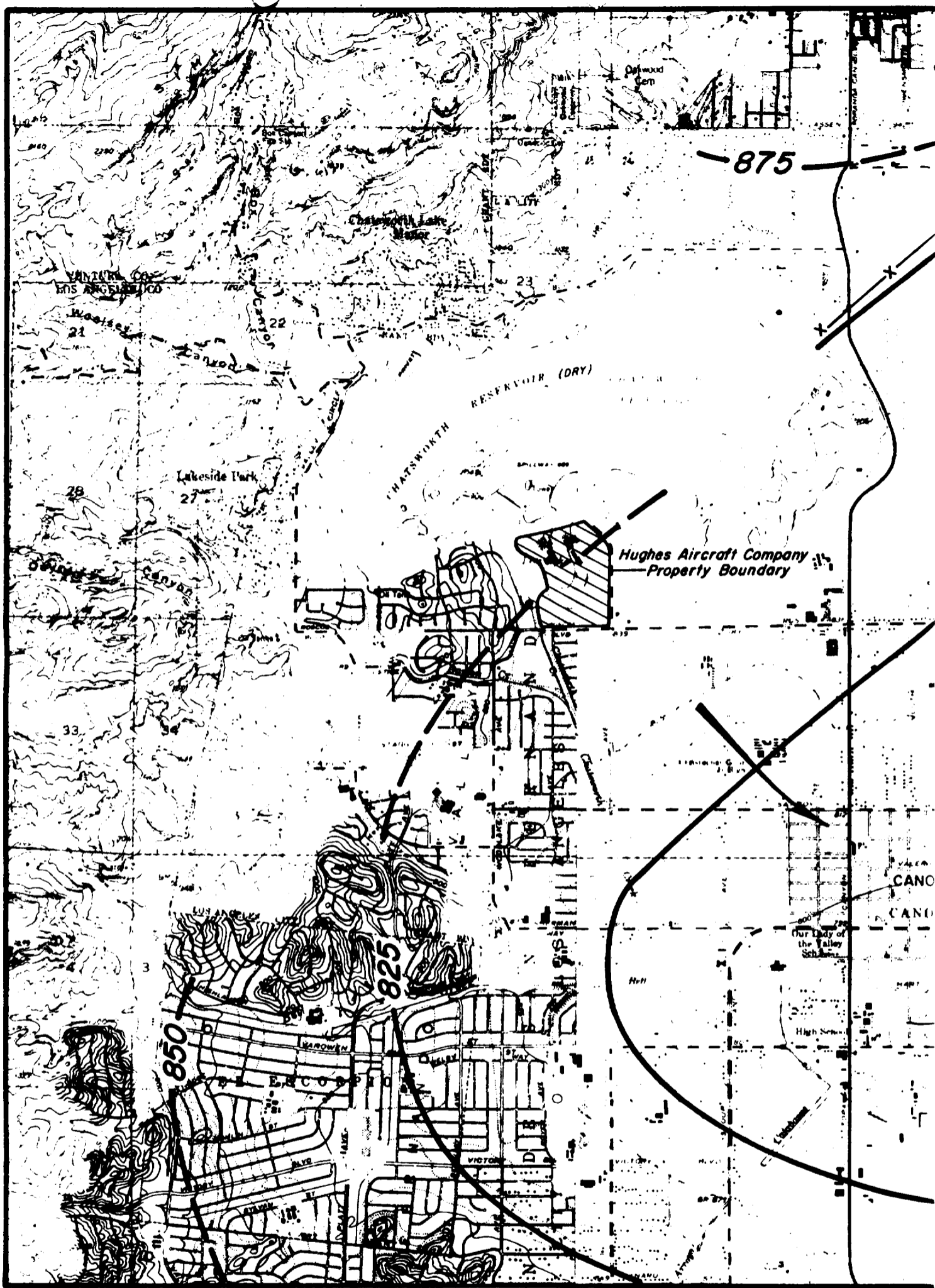
SOURCE: UPPER LOS ANGELES RIVER AREA WATERMASTER REPORT
 "WATERMASTER SERVICE IN THE UPPER LOS ANGELES RIVER AREA, LOS ANGELES COUNTY, OCTOBER 1, 1982 - SEPTEMBER 30, 1983"

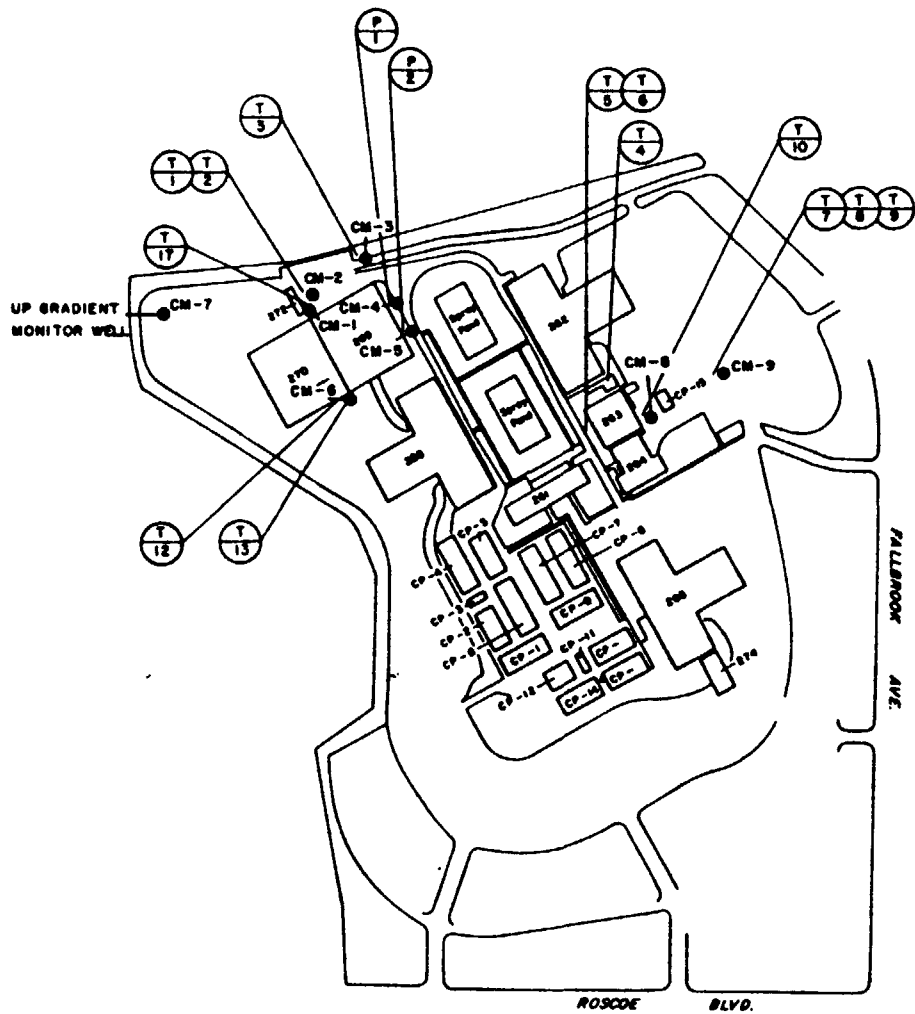


0 2,000 4,000
 FEET

HUGHES AIRCRAFT COMPANY MISSILE SYSTEMS GROUP Canoga Park, California	
<h2>SITE LOCATION MAP</h2>	
HARGIS + ASSOCIATES, INC. Consultants in Hydrogeology Tucson, Arizona	1984 FIGURE 1







EXPLANATION

UNDERGROUND TANKS

- | | |
|--|----------------------|
| (T 1) GASOLINE | (T 9) FUEL OIL |
| (T 2) GASOLINE | (T 10) FUEL OIL |
| (T 3) WASTE OIL | (T 12) SOLVENT WASTE |
| (T 4) WATER (Abandoned) | (T 13) FUEL OIL |
| (T 5) WASTE OIL, SULFURIC ACID (Abandoned) | (T 17) HYDRAULIC OIL |
| (T 6) WASTE OIL, SULFURIC ACID (Abandoned) | |
| (T 7) FUEL OIL | |
| (T 8) FUEL OIL | |

UNDERGROUND PITS

- | |
|----------------------------------|
| (P 1) PHOTOGRAPHIC PROCESS WASTE |
| (P 2) ACID NEUTRALIZATION |

- CM-2
● PROPOSED MONITOR WELL



HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP
Canoga Park, California

UNDERGROUND TANKS AND PROPOSED MONITOR WELLS

Hargis & Associates, Inc.
CONSULTANTS IN HYDROGEOLOGY
TUCSON, ARIZONA

1984

FIGURE 2



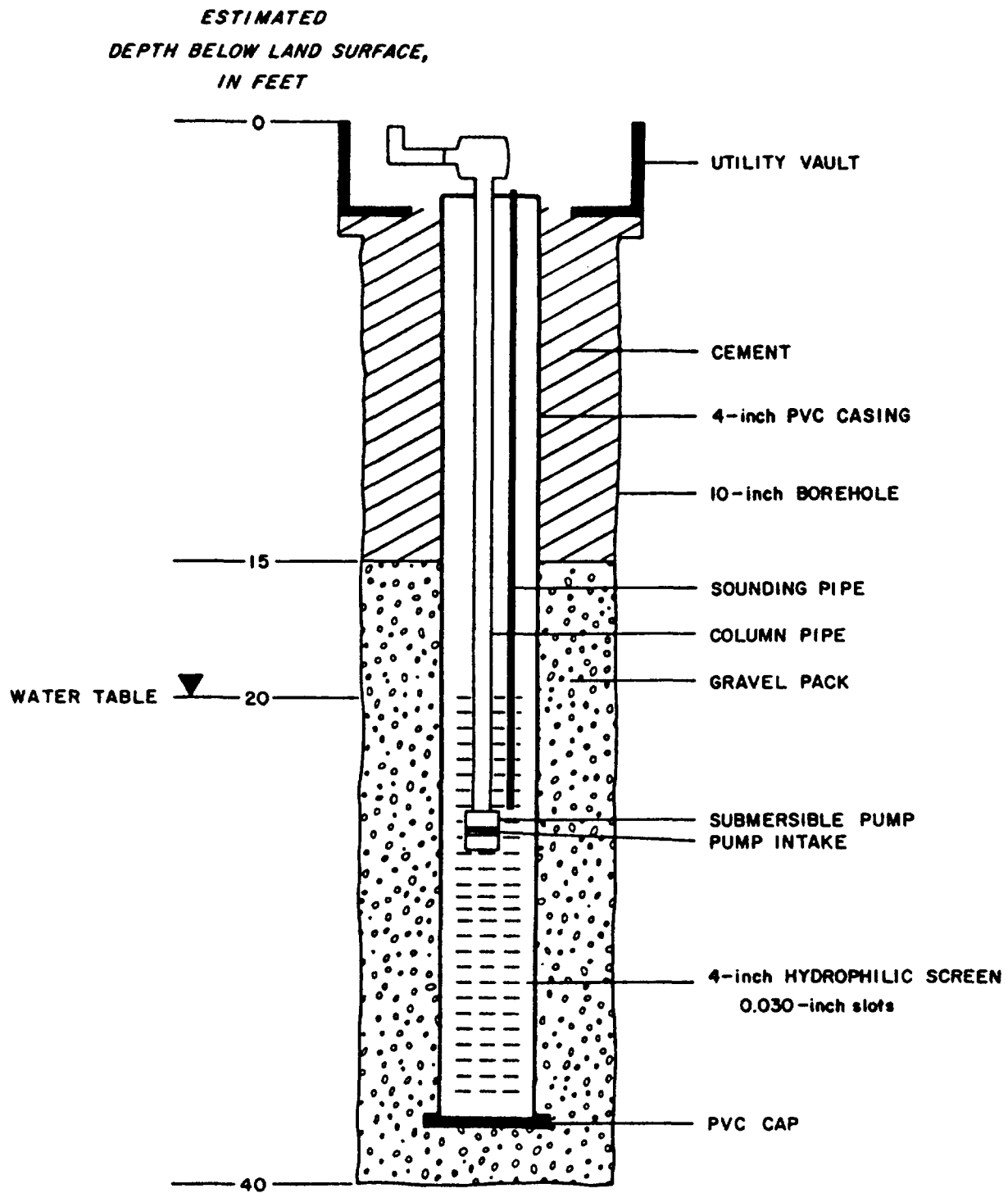


FIGURE 3. SCHEMATIC WELL CONSTRUCTION DIAGRAM



TABLE 1
UNDERGROUND TANK INVENTORY SUMMARY TABLE

TANK OR PIT IDENTIFIER	CAPACITY (GAL)	DATE INSTALLED	TYPE OF CONSTRUCTION	CHEMICALS HELD IN TANK	TANK INTEGRITY PROGRAM	REMARKS
Underground Non-Waste Storage Tanks/Pits						
T-1	12,000	1974	Fiberglass, non-vaulted	Gasoline	Fluid level checked monthly	
T-2	10,000	1975	Fiberglass, non-vaulted	Gasoline	Fluid level checked monthly	
T-7	12,000	1979	Fiberglass, non-vaulted	Fuel oil	Fluid level checked monthly	
T-8	12,000	1979	Fiberglass, non-vaulted	Fuel oil	Fluid level checked monthly	
T-9	12,000	1979	Fiberglass, non-vaulted	Fuel oil	Fluid level checked monthly	
T-10	10,000	1959	Metal, non-vaulted	Fuel oil	Fluid level checked monthly equipped with overflow to main fuel oil tank	
T-13	10,000	1977	Fiberglass, non-vaulted	Fuel oil	Fluid level checked monthly	
T-17	40	1971	Metal, vaulted	Hydraulic oil	Fluid level checked monthly	
P-2		1959	Concrete, lined with polypropylene	Neutralized acids	Closed system, pH monitored	
Underground Waste Storage Tanks/Pits						
T-3	4,000	1979	Fiberglass, non-vaulted	Waste oil	Fluid level checked weekly with results recorded	
T-12	85	1980	Fiberglass, non-vaulted	Solvent waste including: Acetone, 1,1,1-Trichloroethane, and Isopropyl Alcohol	Tank equipped with level sensor and overflow alarm	
P-1	1,683	1981	Concrete; .080" Pro-Lite Polypropylene Welded Liner	Photographic Process Waste	Preclarifier holding tank automatically pumped out and has overflow alarms	Pit near B/269
Abandoned Underground Storage Tanks						
T-4	135,000	1959	Concrete	Water	Tank not used by Hughes Aircraft Company	
T-5	500	1959	Metal, vaulted, glass-lined	Waste oil, and Sulfuric Acid	N/A (abandoned tank)	
T-6	500	1959	Metal, vaulted, glass-lined	Waste oil, and Sulfuric Acid	N/A (abandoned tank)	



TABLE 2
PROPOSED ANALYSES AT INDIVIDUAL MONITOR WELLS

.....TYPE OF ANALYSIS.....

<u>MONITOR WELL</u>	<u>COMMON IONS</u>	<u>TRACE METALS ONLY</u>	<u>.....HYDROCARBONS.....</u>			<u>FIELD MEASUREMENTS EC, PH, TEMP.</u>
			<u>EPA* PRIORITY POLLUTANTS</u>	<u>AROMATICS**</u>	<u>HIGH*** BOILER</u>	
CM-1	X			X	X	X
CM-2				X		X
CM-3			X		X	X
CM-4	X		X			X
CM-5	X	X				X
CM-6			X	X	X	X
CM-7	X	X	X	X		X
CM-8				X	X	X
CM-9	X			X	X	X

* Included volatile, base/neutral, and acid organic compounds, PCB's and trace metals.

** Includes Benzene, Toluene, Xylenes.

*** Includes hydrocarbons C-20 through C-30.





HARGIS + ASSOCIATES, INC.

APPENDIX A

SAMPLING PROTOCOL



APPENDIX A

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Hydrocarbons.....	A-2
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CHAIN-OF-CUSTODY AND SAMPLE INTEGRITY.....	A-4
QUALITY ASSURANCE AND QUALITY CONTROL.....	A-5

TABLES

Table

- A-1 WATER SAMPLE HANDLING, PRESERVATION, AND ANALYTICAL METHODS**

- A-2 SOIL SAMPLE HANDLING, PRESERVATION, AND ANALYTICAL METHODS**

**APPENDIX A****SAMPLING PROTOCOL****WATER SAMPLE HANDLING, PRESERVATION,
AND ANALYTICAL METHODS**

Water samples will be collected from nine monitor wells at the site and analyzed for selected constituents, including: common ions, trace metals, EPA priority pollutants, and hydrocarbons. Laboratory methods which will be used to analyze for each specific compound(s) are listed in **Table A-1**. Temperature, specific electrical conductance, and pH of each sample will be measured in the field at the time of sampling.

COMMON IONS AND TRACE METALS

Water samples will be collected at the wellhead in clean one-liter polyethylene bottles. The bottles will be rinsed with discharge water prior to sample collection. Samples will be filtered and acidified at the laboratory.

EPA PRIORITY POLLUTANTS

Water samples for analysis of the EPA priority volatile organic compounds will be collected in 40-milliliter vials with teflon-lined caps. Samples for analysis of organic base/neutral, acid compounds, and PCBs will be collected in one-gallon glass bottles and sealed with teflon-lined caps. All vials and glass bottles will be completely filled with water and the teflon-lined caps placed on the containers in a manner which expels any residual air (Federal Register, Vol. 44). All water samples will be refrigerated until the analyses are performed.



HYDROCARBONS

Water samples for analysis of hydrocarbons will be collected in 40-milliliter glass vials and one-liter glass bottles with teflon-lined threaded caps. The vials will be completely filled with water and the teflon-lined cap placed on the vial in a manner which expels all air. The samples for hydrocarbon analyses will be refrigerated until analyzed.

Hydrocarbons will be determined by the laboratory using two techniques: aromatic hydrocarbons using EPA Method 602 and high boiler hydrocarbons, C-20 through C-30, using method D-2887 for petroleum products (ASTM, Sec. 5, Vol. 5.02 and 5.03).



**SOIL SAMPLE HANDLING, PRESERVATION,
AND ANALYTICAL METHODS**

Soil samples would be collected using a split-spoon sampler equipped with three six-inch inner brass sleeves. The middle brass sleeve would be capped in the field and the sample appropriately extruded at the laboratory.

All soil samples will be refrigerated until the analyses are performed.

Laboratory methods which will be used to analyze for each specific compound(s) are listed in Table A-2.



CHAIN-OF-CUSTODY AND SAMPLE INTEGRITY

Each water sample will be labeled in the field with the well name or number, date of sampling, sample time, collector's name and company, and the analyses to be performed. Sample container lids will be secured with tape. All pertinent data concerning each sample will be recorded in a field log book.

The sample collection personnel will maintain custody of the samples from the time of collection to the time of shipment. At the end of each sampling day, samples will be transported to the laboratory. The laboratory will preserve the samples according to analytical protocols.

Upon receipt at the laboratory, the sample will be assigned a log number for future reference, and an acknowledgement of sample reception will be issued. Transmittal forms, shipment receipts, and sample acknowledgement forms will be filed to complete the chain-of-custody record.

The chain-of-record documents will comprise the following:

1. Transmittal letter to the laboratory including: an inventory of sample containers shipped, method of shipment, date shipped, signature of sample collector with time and date of release to shipping company, signature of representative of shipping company who receives samples from the collector, signature of laboratory representative with time and date of receipt from shipping company, and observations on integrity of the samples.



2. Analysis schedule, attached to transmittal letter, including: sample identifier, time and date of collection, type of sample, container used, analysis required, and remarks concerning special handling or storage procedures.

3. Record of shipment and/or invoice from shipping company.

QUALITY ASSURANCE AND QUALITY CONTROL

Standard laboratory quality control procedures include duplicate analyses of approximately 20 percent of the samples, spike recoveries on approximately 10 percent of the samples, and daily method blanks. A control sample with a known concentration is analyzed with each set of samples to insure the accuracy of the prepared standard used for the particular analysis. Results of the laboratory control and spike recovery samples are measured against norms established by prior laboratory experience.

TABLE A-1
WATER SAMPLE HANDLING, PRESERVATION, AND ANALYSIS

<u>TYPE OF ANALYSIS</u>	<u>SAMPLE CONTAINER</u>	<u>PRESERVATION</u>	<u>ANALYTICAL METHODS</u>
Common Ions (a)	1-liter polyethylene	Filter, Lab	As cited in <u>Standard Methods</u> and <u>USEPA EMSL</u>
Trace Metals (b)	1-liter polyethylene	Filter and acidify, Lab	As cited in <u>Standard Methods</u> and <u>USEPA EMSL</u>
Volatile Organics (c)	40-ml glass vials with teflon-lined threaded caps	Refrigerate to 4 degrees C	EPA Method 624
Base/Neutrals (c)	1-gallon glass bottle with teflon-lined threaded caps	Refrigerate to 4 degrees C	EPA Method 625
Acids (c)	1-gallon glass bottle with teflon-lined threaded caps	Refrigerate to 4 degrees C	EPA Method 625
PCB's	1-liter glass bottle with teflon-lined threaded caps	Refrigerate to 4 degrees C	EPA Method 608
Aromatic Hydrocarbons	40-ml glass vials with teflon-lined threaded caps	Refrigerate to 4 degrees C	EPA Method 602
High Boiler Hydrocarbons (e)	40-ml glass vials with teflon-lined threaded caps	Refrigerate to 4 degrees C	ASTM Method D-2887

(a) Calcium, Magnesium, Sodium, Potassium, Carbonate, Bicarbonate, Chloride, Sulfate, Nitrate, Fluoride, Silica, Electrical Conductance, Total Dissolved Solids (Residue at 180 degrees C).

(b) Iron, Arsenic, Manganese, Silver, Copper, Mercury, Molybdenum, Selenium, Lead, Zinc, Antimony, Nickel, Beryllium, Thallium, Cadmium, Strontium, Total Chromium, Barium.

(c) Includes EPA Priority Pollutants, excluding pesticides.

(d) Hydrocarbons, Benzene, Toluene, Xylene

(e) Hydrocarbons C-20 through C-30.



TABLE A-2
SOIL SAMPLE HANDLING, PRESERVATION, AND ANALYSIS

<u>TYPE OF ANALYSIS</u>	<u>SAMPLE CONTAINER</u>	<u>PRESERVATION</u>	<u>ANALYTICAL METHODS</u>
Trace Metals (a)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	As cited in <u>Standrad Methods</u> and <u>USEPA EMSL</u>
Volatile Organics (b)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	EPA Method 8240
Base/Neutrals (b)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	EPA Method 8270
Acids (b)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	EPA Method 8270
PCB's	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	EPA Method 8080
Aromatic Hydrocarbons (c)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	EPA Method 8020
High Boiler Hydrocarbons (d)	Sealed brass tube sleeve with teflon-lined threaded cap	Refrigerate to 4 degrees C	ASTM Method D-2887

(a) Iron, Arsenic, Manganese, Silver, Copper, Mercury, Molybdenum, Selenium, Lead, Zinc, Antimony, Nickel, Beryllium, Thallium, Cadmium, Strontium, Total Chromium, Barium.

(b) Includes EPA Priority Pollutants, excluding pesticides.

(c) Hydrocarbons, Benzene, Toluene, Xylene.

(d) Hydrocarbons C-20 through C-30.



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD--
LOS ANGELES REGION107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012-4596
(213) 620-4460

RECEIVED

MAY 29 1985

HARGIS & ASSOCIATES, INC.
FEDERAL EXPRESS

May 7, 1985

Mr. Roger Brodman
Latham & Watkins
Attorneys at Law
555 S. Flower Street
Los Angeles, CA 90071-2466UNDERGROUND TANK LEAK DETECTION PROGRAM - HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP (File No. 83-8) (I.D. #913040352)

Reference is made to your letter dated April 22, 1985, transmitting revisions to the Leak Detection Program Workplan, dated November 19, 1984 for the Hughes Aircraft Company Missile Systems Group located at 8433 Fallbrook Avenue, Canoga Park, California.

The revised Leak Detection Program Workplan meets the minimum criteria as specified in the Regional Board's Leak Detection Program Guidelines for this type of operation. The final report on the results of your Leak Detection Program is due to this Regional Board by June 10, 1985.

Please notify us prior to the date you plan to begin work, so we can schedule an inspector to be present.

If you have any questions concerning this matter, please contact me at (213) 620-5662 or Mr. David Bacharowski at (213) 620-5647.

A handwritten signature in cursive script, reading "Joshua M. Workman".

JOSHUA M. WORKMAN
Senior Water Resource
Control Engineer

DAB:gw

cc: Hughes Aircraft Company
Attn: Mr. NabbLos Angeles City Fire Department
Attn: Inspector John Hall

LATHAM & WATKINS

ATTORNEYS AT LAW

555 SOUTH FLOWER STREET

LOS ANGELES, CALIFORNIA 90071-2466

TELEPHONE (213) 485-1234

CABLE ADDRESS LATHWAT

TWX 910 321-3733

TELECOPIER (213) 680-2098

PAUL R. WATKINS (1899-1973)
DANA LATHAM (1898-1974)

CHICAGO OFFICE

SEARS TOWER, SUITE 6900
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 876-7700
TELECOPIER (312) 993-9767
TWX 910 221-0355

NEWPORT BEACH OFFICE

660 NEWPORT CENTER DRIVE, SUITE 1400
NEWPORT BEACH, CALIFORNIA 92660
TELEPHONE (714) 752-9100
TELECOPIER (714) 759-8891

NEW YORK OFFICE

437 MADISON AVENUE, SUITE 1400
NEW YORK, NEW YORK 10022
TELEPHONE (212) 319-2570
TELECOPIER (212) 751-4864
TELEX TRT 177-128
TWX 910 100-0655

SAN DIEGO OFFICE

701 "B" STREET, SUITE 2100
SAN DIEGO, CALIFORNIA 92101-8197
TELEPHONE (619) 236-1234
TELECOPIER (619) 696-8281

WASHINGTON, D.C. OFFICE

1333 NEW HAMPSHIRE AVE., N.W., SUITE 1200
WASHINGTON, D.C. 20036-1594
TELEPHONE (202) 828-4400
TELECOPIER (202) 828-4415
TWX 710 822-9375

April 22, 1985

Mr. David Bacharowski
California Regional Water Quality
Control Board
Los Angeles Region
107 South Broadway, Suite 4027
Los Angeles, California 90012-4596

Re: Underground Tank and Leak Detection
Program, Hughes Aircraft Missile
Systems Group (File 83-8)

Dear Mr. Bacharowski:

As we have previously discussed, Hughes Missile Systems Group agrees to the following conditions as listed in your March 26, 1985 letter:

1. Soil samples from the vadose zone will be composited and tested pursuant to the protocol listed in Appendix A of the report filed on November 18, 1984.
2. All groundwater monitoring wells will be drilled to a minimum depth of 20 feet below the upper limit of the zone of saturation. However, such wells will not penetrate a competent clay layer (approximately five feet thick) below the zone of saturation.
3. All groundwater monitoring wells will be slotted from a point approximately 15 feet below the ground surface.
4. All sampling and drilling equipment will be decontaminated before any well is developed.

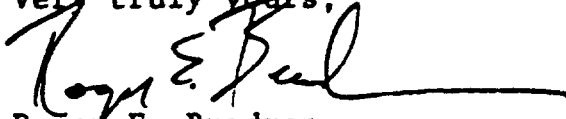
Mr. David Bacharowski
April 22, 1985
Page 2

5. All drill cuttings and water from groundwater will be properly contained and handled.

Pursuant to the above-listed conditions, it is my understanding that you will send me written confirmation that the Hughes Missile Systems Group Leak Detection Workplan is acceptable to the Regional Board. Upon receipt of your letter, we will submit a copy of your letter and the Leak Detection Workplan to the City of Los Angeles for their review.

After the plan is reviewed by the City of Los Angeles, we would like to begin implementing the program as soon as possible. We will furnish you at least five days' advance notice of any drilling.

Very truly yours,



Roger E. Brodman
of LATHAM & WATKINS

bcc: Bryant C. Danner, Esq.
Steven G. Hoover, Esq.
Ms. Patricia Davies
Mr. Chuck Dickens

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION**

107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012-4596
(213) 620-4460



March 26, 1985

Mr. Roger Brodman
Latham & Watkins
555 South Flower Street
Los Angeles, CA 90071-2466

UNDERGROUND TANK LEAK DETECTION PROGRAM
Hughes Aircraft Company Missile Systems Group
(File 83-8) (ID #913040352)

Reference is made to your letter dated November 19, 1984 and January 24, 1985, transmitting the Leak Detection Program Workplan for the Hughes Aircraft Company Missile System Group located at 8433 Fallbrook Avenue, Canoga Park, CA.

Reference is also made to the telephone conversation on March 19, 1985, between you and Mr. Bacharowski of this Regional Board regarding revisions to the Leak Detection Program Workplan.

The areas of concern to the Regional Board and discussed at that time, are as follows:

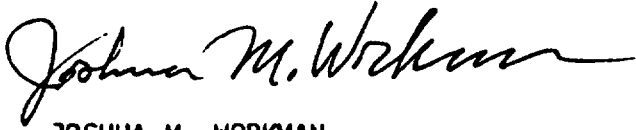
1. Soil samples obtained for analysis from each test bore within the vadose zone must all be analyzed. Compositing of soil samples, on an equal volume basis, in the laboratory, is acceptable.
2. Each groundwater monitoring well should be drilled to a minimum depth of 20 feet below the upper limit of the zone of saturation. However, they shall not penetrate a competent clay layer (approximately 5 feet thick) below the zone of saturation.
3. The groundwater monitoring well must be slotted above the zone of saturation, to allow for seasonal fluctuations.
4. Appropriate procedures are implemented, to decontaminate all sampling and drilling equipment between each well developed.
5. All drill cuttings and waters from groundwater well development are properly contained and handled on site.

In addition, the appropriate permits must be obtained from the L.A. City Fire Department-Fire prevention Bureau for the planned removal of tank T-12.

With the above revisions, your Leak Detection Program Workplan would be acceptable to the Regional Board. Please provide us with the above listed information by April 9, 1985, to enable us to complete our evaluation.

Mr. Roger Brodman
Page 2

If you have any questions concerning this matter, please contact me at
(213) 620-5662 or Mr. Bacharowski at (213) 620-5647.



JOSHUA M. WORKMAN
Senior Water Resource
Control Engineer

cc: Hughes Aircraft Company, Mr. Nabb,
Facilities Design & Construction
L.A. City Fire Department,
Inspector John Hall



August 1, 1988

Mr. John A. Hinton
California Department of Health Services
107 South Broadway, Room 7011
Los Angeles, CA 90012

Dear Mr. Hinton:

REFERENCE: Hughes Aircraft Company, Missile Systems
Group's Hazardous Waste Storage Facility, Operation
Plan, Permit No. CAD 041162124.

The attached proposed revision of our Plan referenced above, is submitted for your review and approval. This revision deals with the removal of the oil waste tank, which was an element of the Facility, and minor operational changes.

As you know, we had previously submitted to you for review and approval, two other revisions of the Plan dated 8 January 1987 and 28 September 1987. We have yet to learn from you whether or not the revisions have been approved. Several telephone calls were made by me to you and Mr. Plaza regarding the delay in processing these revisions. I was informed that action would be taken as soon as possible to process the revisions.

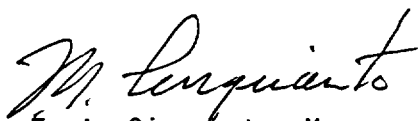
Of immediate concern is our January revision in which requested modification of the Facility permit to include the addition of a hazardous waste storage building. This building stores the bulk of our hazardous wastes. Not being permitted at this time, storage therein is limited to 90 days.

Ref. # 11

Any interruption of service by our contracted TSD facilities would cause a backup of storage which would exceed the 90 day limit and result in violation of the conditions of the permit. Prompt approval of our revisions and modification of the permit will alleviate appreciably our waste storage problems, and enhance our hazardous waste compliance and management programs.

Your assistance is requested to expedite the processing of these revisions and modification of our permit.

Very truly yours,



F. A. Cinquanta, Manager
Safety, Health & Environmental Affairs

cc: D. E. Gilbertson

FAC/dp

ATTACHMENT

REVISION OF HAC, MISSILE SYSTEMS GROUP'S
OPERATION PLAN FOR HAZARDOUS WASTE
STORAGE FACILITY

1 AUGUST 1988

This revision contains corrections and/or additions affecting the MSG
Operation Plan for Hazardous Waste Storage Facility. Please remove old pages
of the Plan and insert new pages as indicated.

Remove Old Page

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Exhibit 6 -- Remove Photograph
of Oil Waste Tank Pad

Exhibit 7 -- Remove Drawing
of Waste Oil Tank

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LIST OF EXHIBITS

EXHIBITS

TITLE

- | | |
|-----|---|
| 1 | Topographic Map and Aerial Photograph
of Plant Site |
| 2 | Master Site Plan and 5' Contour Map |
| 3 | Wind Velocity Rose |
| 4 | Map - Legal Property Boundaries and
Legal Description |
| 5 | Fencing |
| * 6 | Photograph, Hazardous Waste Storage Facility
(Shed, Bldg. 272) |
| * 7 | Design Drawings - Hazardous Waste Storage
Facility (Shed, Bldg. 272) |

LIST APPENDICES

<u>APPENDIX</u>	<u>TITLE</u>
A	Hazardous Waste Profile
B	Hazardous Waste Analysis Plan
C	Hazardous Materials Management Procedures
* D	Facility SOP Access and Manifesting
* E	Facility Inspection - Schedule and Log
F	Hazardous Materials Training Program - Outline
G	Hazardous Waste Handlers - Job Descriptions
* H	Contingency Plan
I	Environmental Permits
* J	Closure Plan
K	Financial Statements

1 AUGUST 1988

* REVISED ~~28 SEPTEMBER 1987~~

INTRODUCTION

Hughes Aircraft Company - Missile Systems Group occupies 920,177 square feet of research and development offices and laboratories at Canoga Park, California. The Group employs approximately 3000 personnel, and performs the complete spectrum of activities required for the overall research, development and management of advanced military missile systems. *21 acres*

- * The Missile Systems Group's Hazardous Waste Storage Facility, hereinafter referred to as the "Facility" consists of a hazardous waste storage shed, a chemical storage building. The Facility is located within the property boundaries and security perimeter of the Hughes Aircraft Company - Missile Systems Group which is located at 8433 Fallbrook Avenue, Canoga Park, California. A storage shed and a chemical storage structure, Building (Bldg.) 272 provide for the safe storage and containment of containerized hazardous waste materials. Each facility is provided with containment structures such as sump floor, containment walls and berms.

All hazardous wastes are generated by Missile Systems Group's industrial operations and are typical for the research, development and testing of electronic components. Generated wastes are packaged, identified, labeled and transported from the area of generation to the Facility for storage. Transport of these materials is over Company roadways within the plantsite property boundaries.

Hazardous wastes are collected and temporarily stored at the Facility pending accumulation of an economical load for shipment to an approved treatment, storage and disposal facility (TSD). Transport of these materials from the point of generation, to the Facility and thence to the TSD site is accomplished in accordance with State Health and Safety Regulations and DOT Regulations as appropriate.

The bulk of hazardous wastes generated at the plantsite are essentially acidic and alkaline solutions from electroplating, cleaning and etching of metals and printed circuit boards, and from photo processing operations. Other wastes generated include halogenated and organic solvents used in degreasing and cleaning of electronic systems parts; paint sludges and thinners; and waste oils generated in metal working operations and vehicular maintenance.

- * Hazardous wastes including acids, alkalines, flammables, solvents and oil are stored in DOT approved drums or carboys as appropriate, and transported by either Chemical Waste Management, Inc. or the I.T. Company to the Kettleman Hills TSD facility located at Kettleman Hills, California. At that locale, the waste products are decanted, solidified and landfilled. Oil wastes and organic solvents are shipped to licensed reclamation companies for recycling or incineration as appropriate.

OPERATION PLAN

I. FACILITY IDENTIFICATION:

A. EPA Identification

Number : CAD 041162124
Name : Hughes Aircraft Company - Missile Systems Group

* Type of Facility : The hazardous waste storage facility consists of a chemical storage building and a waste storage shed for the storage of containerized (55 gallon drums or carboys) waste. The wastes are transported by EPA registered hazardous waste haulers to approved TSD-facilities for disposal or to reclamation companies for incineration or recycling. Hazardous wastes generated at this plantsite are typical of electronic components manufacturing. The bulk of hazardous wastes generated are acidic and alkaline solutions from electroplating, cleaning and etching of metals and printed circuit boards, and waste generated by photo processing.

Other wastes generated include halogenated and non-halogenated solvents used in degreasing and cleaning of electronic parts; paint sludges and thinners; and waste oils generated by metal working and vehicular maintenance. Generated wastes are identified, packaged, labeled, and transported from the area of generation to the storage facility. Transport of these materials is over roadways within the plantsite property boundaries. The mode of transportation is by fork lift, pallet jack, tug and carts.

Mailing Address : 8433 Fallbrook Avenue
Canoga Park
Los Angeles County
California
91304

Location : Same as above

Telephone Number : (818) 702-2628

SIC Code : 3761 Military Missile Research and Development

B. Operator : Hughes Aircraft Company
Missile Systems Group

Mailing Address : Same as Facility

The terrain of the plantsite is relatively level and drains slightly to the southeast. Soil test borings of up to 32 feet in depth encountered no evidence of ground water (Soils Investigation Report, dated 21 September 1982, prepared by the T. K. Engineering Corporation of Alhambra, California for Hughes Aircraft Company, Canoga Park, California).

- c. Location of surface waters
- d. Prevailing wind velocity rose (Exhibit 3)
- e. Land uses and zoning. Land upon which the facility is located is zoned A1-1 agriculture. Pursuant to letter from Los Angeles City to Ramo Wooldridge Corporation, dated 12 September 1958, a Conditional Use Permit as defined by the aforementioned letter grants industrial use of land. See City Plan Case #9268, Chatsworth District. (Exhibit 4).

3. Facility Characteristics

- a. Legal boundaries of plantsite facility (Exhibit 4).
- b. Locations of permanent access roads (Exhibit 2).
- c. Location of permanent internal roads (Exhibit 2).
- d. Locations of control signals (signs) (Exhibit 2).
- e. Locations of security fencing (Exhibit 5).
- f. Access control (Refer to Section VII, C).
- * g. Names, locations and dimensions of Waste Storage areas are described below, and are also depicted on the Master Site Plan Map (Exhibit 2) and photographs (Exhibit 6) and drawings (Exhibit 7).

(1) Hazardous waste storage shed -

Containerized waste storage; dimensions are 28' x 11' 10" with 10' 8" x 6' concrete loading/unloading slabs at either end of the shed. Pipe/chain link wire fencing and a tarpaulin roof encloses the shed.

* (2) Chemical storage Building 272

* Containerized waste storage; dimensions 86' 8" x 25' 4" x 12' 4". Concrete floor, concrete block wall, wood frame roof.

* REVISED 1 AUGUST 1988

(3.) Containment Structures -

Containment structures are located at each storage area. See Sections VI A.2 and VI B.2 for detailed descriptions.

(4.) Buffer Zones -

Containerized non-flammable wastes are stored in the eastern half of the shed. Containerized flammable wastes are stored in the western half of the shed and separated from the non-flammable wastes by a masonry wall extending from the surface of the sump floor to 4 feet above the shed's floor grating.

The shed is located 85 feet from the north property boundary.

The Hazardous Materials Storage, Bldg. 272, is located 100 feet from the north property boundary. Material storage is in rooms which are provisioned with a system of berms which are designed to contain spillage.

(5.) Sewerage Systems -

Refer to Map, Exhibit 2 for layout of sanitary sewer and storm drain systems.

* h. Location and Types of -

(1) Environmental monitoring stations at the Hazardous Waste Storage Facility -- None.

* (2.) Provisions for controlling surface drainage -

Provisions for controlling surface drainage of the waste storage Facility are discussed in Section VI, A.2.

i. Associated Information -

(1.) Legal description of property - (Exhibit 4)

Portions of Sections 26 and 36, Township 2 North,

O.F. May 1, 1983

III GEOLOGY OF THE SITE

Not applicable to this Facility.

IV RELATIONSHIP OF THE FACILITY TO THE 100-YEAR FLOOD PLAIN

The Facility does not lie within a 100-year flood plain.
Information provided by Mr. E. Dingman, Hydrology Department,
Los Angeles Flood Control District, Los Angeles, California.

R
PROVIDE MAP

V. CHARACTERISTICS OF HAZARDOUS WASTES HANDLED AT THE FACILITY

A. Identification of Hazardous Wastes -

1. Each container of hazardous waste stored at the facility is identified by an attached Hazardous Waste form (HAC #16291A) and an appropriate hazardous material pressure sensitive warning label conforming to the recommendation of the Manufacturing Chemists Association as a minimum. (See Attachments B and C, Environmental Health and Safety Bulletin #83.01 "Hazardous Waste Disposal" Appendix C).
- * 2. Each form consists of the following information:
 - a. Name and organization of generator
 - b. Accumulation start date
 - c. Quantity of waste and unit of measure
 - d. Generating process
 - e. List of components, concentration range and units of measure
 - f. Waste properties
 - g. Physical state
 - h. Handling instructions

B. Methods for Identification of Hazardous Waste

1. Methods -

- a. Identification of each hazardous waste component is accomplished by reference to the Material Safety Data Sheet (MSDS) published for the material, consultation with the cognizant process engineer, and if necessary, consultation with the manufacturer of the material. In this manner, data concerning the physical properties and characteristics of the material is obtained and the material adequately identified. From the data obtained, a "Waste Stream Profile" is developed which lists and describes all hazardous wastes which are routinely generated by operational activities and processes. The Hazardous Waste Profile is provided at Appendix A.

The following information is provided for each hazardous waste component:

- (1) Waste code from Part 261, Title 40 CFR
- (2) Type of waste by name
- (3) Estimated annual quantities produced and units of measure

b. Spill Management -

(1) Hazardous Waste Shed -

Containerized wastes are stored on the fibergrate floor, thus providing from 14" to 24" elevation above the sump floor. Contact between containers and standing liquids in the sump floor does not occur.

(2) Hazardous Materials Storage, Bldg. 272 -

Containerized wastes are stored on the concrete floor. Non-compatible wastes are separated by a 4" x 6" concrete berm system. The structure's concrete block walls complete the system, thus ensuring containment of spillage as well as separation of incompatible materials.

c. Capacity -

(1) Hazardous Waste Shed -

The sump floor is designed to contain precipitation from a 24-hour 25 year storm (6.04"), plus 10 percent of the total volume of containers stored therein. This sump floor is capable of containing a total of 2,898 gallons of liquid. Total amount of waste liquids stored in the shed is maximum of thirty-six 55 gallon drums (1980 gallons).

(2) Hazardous Materials Storage, Bldg. 272 -

The building is enclosed. Rain water is collected in roof gutters and discharged to the road surfaces. The floor area is capable of storing a maximum of 77 drums/carboys (55 gal.), or 4235 gallons of hazardous wastes. The bermed floor area will contain 40% of this amount in event of a catastrophic spill.

d. Run-on Water Management -

(1) Hazardous Waste Shed -

Most run-on water is prevented from entry into the shed by the retaining wall at the back, and end walls on the slabs which act as barriers. Additionally, the road curbing to the front of the shed prevents entry from that point. Some water drains from the surface of the east slab into the sump floor, as does wind-blown precipitation which enters through the chain-link wire walls. This normally occurs in the east section of the shed.

Accumulated liquids are pumped into drums to prevent overflow should such a condition develop. The liquids are analyzed to determine if they contain hazardous properties of characteristics. Analysis is accomplished by an accredited chemical analytical laboratory (contracted).

(2) Hazardous Material Storage, Bldg. 272 -

Run-on water is prevented from entry into the hazardous waste storage area by enclosing concrete walls, and overhead roof, and an internal system of floor mounted 4" high berms. Run-on water and/or wind blown water is prevented from entering the area by berms at each door.

Should a spill occur, accumulated liquids are pumped from the bermed floor area into appropriate drums/carboys. Liquids are analyzed, identified by an accredited analytical laboratory, and then packaged and disposed of as a hazardous waste.

3. Flammable and Incompatible Wastes -

a. Buffer Zone -

(1) Hazardous Waste Shed

Containerized flammable wastes are stored in the west section of the hazardous waste storage shed which is 85 feet from the plantsite northern property boundary line, and approximately 60 feet from the nearest building. Containerized non-flammable wastes are stored in the east section. The sections are separated by a 48" masonry wall.

(2) Hazardous materials storage area, Bldg. 272 -

A series of floor berms and separate dedicated rooms provide buffers between chemicals. The waste storage area is 100' from the north property line.

b. Incompatible Waste Storage -

(1) Hazardous Waste Shed -

Containerized ignitables are stored in the western half of the shed and are separated from combustibles and non-igniteable waste by a 48" high 8" thick masonry wall.

Exhibit 7 provides a detailed engineering drawing of the hazardous waste storage shed and Bldg. 272.

4. Polychlorinated Biphenyls (PCB's) -

Does not apply

5. Design and Construction Approval -

Mr. Gordon W. MacDonald, an Architectural Engineer, California Registration Number C4317, a member of the Missile Systems Group Facilities Engineering Section, approved the design and construction of the storage shed. The hazardous materials storage Bldg. 272 was designed by Ernest H. Lee, a Structural Engineer, Reg. Cal. No. 566, for Ramo Woolridge Co. Floor plan was subsequently modified by Wm. T. Bauer of MSG Hughes Aircraft Co.

B. Tanks Used for Storage of Hazardous Waste - None

VII. FACILITY EQUIPMENT AND DEVICES

A. Waste Handling Equipment -

* 1. Waste handling equipment is limited to that equipment necessary for the transportation of containerized waste from the point of generation to the hazardous waste storage facility (waste storage shed and Building 272), and for loading containerized wastes onto the contractor hauler's flat-bed truck trailer. This equipment includes fork lifts, pallet jacks and mule-train type tugs, carts.

2. Safety Features -

- a. Safety windshields (tugs)
- b. Rollover guard on fork lifts
- c. Safety chains on mule-train tug
- d. Fire extinguishers mounted on fork lift and tug
- e. Horns and back up bells

B. Safety and Emergency Equipment -

1. Protective Clothing/Equipment -

- a. Disposable chemical/acid resistant coveralls and smocks
- b. Neoprene gloves
- c. Face shields
- d. Chemical splash goggles
- e. Half or full-face respirator with appropriate cartridges or canisters (provided by the Safety office as required).
- f. Self-contained breathing apparatus and air-line type respirators are available from Fire Prevention and Maintenance Departments and Chemical Spill Response Supply Truck.
- g. Material Safety Data Sheets for waste components (available at Safety office and Material Control).
- h. Various monitoring instruments - provided and operated by Safety office, as required.
- i. Fire extinguisher. One extinguisher is mounted at west end of the storage shed. At Bldg. 272, one extinguisher is mounted on the west interior wall of the waste storage area, and one extinguisher is mounted on the south exterior wall of the building.

2. Emergency Equipment -

- a. Communications - A telephone is located in the guard post thirty feet distance from the Shed. A telephone is located in the garage office, 30' from the hazardous material storage, Bldg. 272.

- b. Two eyewash fountains and two deluge showers are provided, one each at either gate of the containerized waste storage shed.

One eyewash fountain is located inside Bldg. 272, and one eyewash fountain and one deluge shower is located on the north exterior wall of Bldg. 272.

c. First Aid -

A first Aid Station is located in Building 270, Room 2300, the nearest building to the Facility. The Station is manned by two registered nurses. Hours of operation are 07:30 A.M. to 05:00 P.M. Monday through Friday. Emergency alarm procedures are established and provide for first aid services to all points within the plantsite premises within two minutes from time of alert notification. Emergency first aid on other than first shift is provided by Plant Protection/Security officers and nearby West Park and West Hills Hospitals.

C. Security -

1. Access Control and Fencing

An outer perimeter chain link wire fence surrounds the entire plantsite facility.

An inner security perimeter system consisting of a system of chain link wire fencing and major buildings is established. Entry through the security perimeter to the plantsite proper is through designated gates and building lobbies which are manned by Plant Security officers during first shift. Entry thereafter is through key lobbies controlled by Closed Circuit T. V. from the Security Control Center.

The hazardous waste storage facility is situated within the Security perimeter. Hours of operation are during the hours of first shift only 07:30 A.M. to 04:30 P.M. Both gates of the Shed and all doors of Bldg. 272 are locked. Access is controlled by the Head, Material Control and the Manager, Environmental Health and Safety. Only authorized personnel be established to assure security of the Facility and access control. (Appendix D).

A 24-hour, 7 day DETEX patrol of the entire plantsite facility is conducted by Plant Protection/Security to assure safety and security of the facility.

* 2. Warning Signs -

Warning signs legible from a distance of 25 feet are posted on the entrance gates at both ends of the hazardous waste storage shed, and on the doors of Bldg. 272. These signs are in English and Spanish and read, "Caution - Hazardous Wastes Storage Area - unauthorized Persons Keep Out" , and "Cuidado - Zona del Residuos Peligrosos - Prohibida la Entrada a Personas No Autorizadas." Appropriate warning signs indicating the nature of the hazardous materials stored are also posted on the doors.

VII. OPERATIONAL PROCEDURES

A. Control of Hazardous Waste in General

The operational procedures used at the plantsite and within the Facility, which assure compliance with the Hazardous Waste Control Regulations, are found in Missile Systems Group Environmental Health and Safety Bulletin #83.01 "Hazardous Waste Disposal" (Appendix C).

1. Operation Procedure - Description -

- a. Wastes are placed in the proper (placarded) areas of the Facility for storage. Storage is supervised by the Head, Material Control and monitored by a qualified Safety Engineer of the Environmental Health and Safety office.
 - * b. All personnel handling hazardous wastes are properly trained, and instructed in the use of protective clothing and equipment. Special handling requirements are prescribed on each Hazardous Waste tag which is affixed to the container and compliance mandatory. Personnel are trained in accordance with the Hazardous Material Training Program - (See Section IX) and applicable regulatory requirements.
 - * c. Storage or depositing of wastes in open containers is strictly forbidden. The production of hazardous gases and mists is prevented. Transfer or combining of compatible wastes is by use of pump.
 - d. Equipment (pumps) are decontaminated as necessary. Wash water used in this process is collected in an approved container or combined with a compatible material in an approved container, and shipped as a hazardous waste to a TSD.
 - e. Sufficient aisle space is maintained in the shed and Building 272 to facilitate access to and safe movement of containers with pallet jack or hand truck, and for emergency situations. A maximum of 1980 gallons of hazardous wastes in D.O.T. approved containers may be stored in the storage shed. A maximum of 4235 gallons of hazardous wastes in D.O.T. approved containers may be stored in the hazardous waste storage room in Building 272.
2. Chance of fire or explosion is prevented by supervised and proper segregation of incompatible waste materials, daily inspections by supervision and Security Patrol, and enforcement of good housekeeping practices. Containers of flammable wastes are electro-statically grounded, and bonded when necessary.

B. Control of Hazardous Wastes Handled in Specific Ways

1. Containers -

* REVISED 1 AUGUST 1988

- a. Only containers in good condition are used to store hazardous waste. Should a container become damaged or leak while in storage, the wastes are transferred (pumped) to another container.
- b. Containers or their liners are compatible with wastes contained.
- c. Containers are kept closed (bungs tight) except when wastes are added or removed. If necessary to relieve pressure, bungs may be momentarily "cracked" then retightened.
- d. Containers of wastes are handled in such a manner as to prevent damage or leakage.
- e. Containers are inspected at least weekly for condition.
- f. Containers of ignitable or reactive wastes are stored 85 feet from property line.
- g. Incompatible wastes are not placed in the same container. Any combining of waste materials is supervised by an Engineer from Environmental Health and Safety office to assure compatibility of waste.
- * h. Wastes are not placed in an unwashed container which previously held an incompatible material. Wastes are placed in only those containers which held a compatible waste or have been triple rinsed. Administrative controls are designed to keep empty drums to a minimum. New unused drums are provided as necessary. Empty drums having contained hazardous waste and excess to needs are stored and handled as hazardous waste.
- i. Incompatible wastes are separated by a masonry wall or concrete berms.
- j. Containers subject to deterioration from weather are stored under cover and therefore protected.
- k. Containers holding PCB's or devices containing PCB's shall be managed in accordance with Part 761, Title 40, Code of Federal Regulations. Survey of operations reveals no PCB's on the site. Administrative (procurement) procedures provides for screening and approval of all hazardous materials purchases. Highly toxic materials such as PCB containing materials are not approved for purchase.

* REVISED 1 AUGUST 1988

C. Facility Inspection -

1. Inspection Check List - Description -

The facility is inspected weekly by the Supervisor or Head of Material Control and the Manager, Environmental Health and Safety.

2. Refer to Appendix E for Hazardous Waste Facility Inspection and Inspection Log.

D. Access to the Facility - Control -

Refer to Standard Operation Procedure for Access to Hazardous Waste Storage Facility - Appendix D.

X. EMERGENCY PROCEDURES

* A. Contingency Plan - (Chemical Emergency Response - SOP).

- * 1. The purpose of the Contingency Plan shall be to minimize hazards to human health or the environment from fire, explosion, or the sudden or non-sudden release of hazardous materials or wastes into the air, soil or waters.

The Contingency Plan for the Hazardous Waste Storage Facility and the plantsite is included at Appendix H.

B. Administrative Procedures -

1. Copies of the Plan are distributed to the following:

- a. Los Angeles (City) Fire Department
- b. Los Angeles Police Department
- c. West Hills Hospital
- d. West Park Hospital
- e. Members, Emergency Response Team
- f. Selected supervisors
- g. Plant Protection/Security
- h. Fire Prevention

2. Amendments -

The Plan will be amended if any of the following occur:

- a. Facility permit is revised

- b. Plan is found deficient
- c. Facility changes substantially in design or construction
- d. Change of Emergency Response Team members
- e. Emergency equipment changes
- f. Participants in Primary and/or Secondary Alarm systems change

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- e. Emergency equipment changes
- f. Participants in Primary and/or Secondary Alarm Systems change

REVISED 1 AUGUST 1988

XI. ENVIRONMENTAL CONTROL PERMITS

- A. Los Angeles City - Land Use Permit -
Refer to paragraph A, 5 Section II and Exhibit 4.
- B. Regional Air Quality Management District -
Refer to Appendix I.
- C. Regional Water Quality Control Board
Waste Discharge Requirements -

Refer to Appendix I.

XII. RECORDS AND REPORTS

A. Operating Records -

The Hazardous Waste Manifests file is prepared and maintained by the Head, Material Control. The Manifest file is used in lieu of the Operating Record.

- * A log, recording daily additions of wastes to the shed and, Bldg. 272, is maintained. The log is prepared by the Head, Material Control and maintained with the Manifest file.

B. Accident Reports -

Reports of accidents or incidents which could result in a hazard to public health and safety, domestic livestock or wildlife or result in a discharge of hazardous waste outside the boundaries of the Hazardous Waste Facility are reported by the Manager, Environmental Health and Safety to the Department of Health Services by telephone within 24 hours after occurrence. In event of chemical release or threatened release, the Manager will immediately report same to the Office of Emergency Services.

C. Waste Analysis -

Records of hazardous waste analysis reports are maintained by the Manager, Environmental Health and Safety and reviewed by the Head, Material Control.

D. Surveys -

Records of environmental surveys are prepared and maintained by the Manager, Environmental Health and Safety.

E. Inspections -

Facility inspection reports are prepared and maintained by the Head, Material Control.

F. Annual Reports -

Annual reports are prepared jointly by the Manager, Environmental Health and Safety, and Head, Material Control.

XV. CORRECTIVE ACTION

Hughes Aircraft Company, located at 8433 Fallbrook Avenue, Canoga Park, CA, is currently involved in a groundwater "Remedial Investigation" under the direction of the Regional Water Quality Board. The technical details of this investigation can be found in Appendix J. The approved work plan for the investigation can be found in Appendix K.

As part of the Remedial Investigation, Hughes is closing a former waste oil tank. The Remedial Action Plan for this closure can be found in Appendix L. Closure is expected prior to the renewal of this permit. A certificate of closure will be submitted to the Department upon completion of the project.

In addition, Hughes has completed a preliminary historical review of activities at the plantsite. This history can be found in Appendix M. The history has identified five other potential source areas in addition to the waste oil tank. Hughes is currently developing plans to further investigate these sources.

**HAZARDOUS WASTE PROFILE LIST
HUGHES AIRCRAFT COMPANY
MISSILE SYSTEMS GROUP**

III. Sampling Methods

Sampling methods used to obtain representative samples of all wastes will be in accordance with Appendix 1, Part 261, Title 40, Code of Federal Regulations.

IV. Frequency

- * A. Hazardous Waste Storage Shed and Hazardous Waste Storage, Bldg. 272 (Containerized Waste).

Containerized waste shall be analyzed physically and chemically whenever analysis cannot be accomplished adequately by reference to Material Safety Data Sheet information method. Analysis in this event will be performed by a contracted accredited analytical chemical laboratory.

V. Record Keeping

- * A. Containerized Waste

Records of waste analysis shall be maintained by Transportation for a period of at least 30 years. This includes all analysis performed in-house and by outside laboratories. Environmental Health and Safety will inspect analytical laboratories to ensure compliance.

VI. Currency of Plan

The Head, Environmental Health and Safety will review this Plan during the month of April of each year or more frequently, as necessary, to ensure currency and compliance with governing regulations and in-plant procedural changes.

* REVISED 1 AUGUST 1988

STANDARD OPERATION PROCEDURE
FOR
ACCESS TO HAZARDOUS WASTE STORAGE FACILITY

- 1.0 The hazardous waste storage Facility is operated and controlled by the Head, Material Control Section of the Material Operation Dept.
- 2.0 Access to the Facility is limited to those personnel authorized and having valid business at the Facility. Personnel desiring access to the Facility, other than those authorized, contact the Head, Material Control.
- 3.0 Keys to the Facility are controlled by Security Lock and Key. Keys are issued only to the Head, Material Control Waste Storage Shed and Waste Storage area, Bldg. 272, and the Manager EH&S (Waste Shed - Bldg. 272). The Chief, Fire Prevention and Supervisor Plant Protection/Security are authorized access for fire/security inspections/emergencies and utilize "Master Keys."
- 4.0 A list of personnel authorized access to the Facility is maintained by the Head, Material Control. These personnel must have been instructed and trained in the hazards of hazardous materials and protective measures before access is permitted.
- 5.0 Warning signs shall be posted at the entrance to the Facility and will read in English and Spanish, "Caution - Hazardous Waste Storage Area - Unauthorized Persons Keep Out."
- 6.0 Authorized personnel desiring access to the Facility contacts Material Control on extension 1227. Reason for access must be stated, and time of entry and departure specified.

HUGHES AIRCRAFT COMPANY
CANOGA PARK
HAZARDOUS WASTE STORAGE FACILITY
WEEKLY INSPECTION REPORT

	<u>Yes</u>	<u>No</u>
1. Is storage of materials segregated by compatible groups?	_____	_____
2. Are non-compatible groups separated by wall or at least 6' aisle space?	_____	_____
3. Are containers in good condition free from leaks, corrosion, cracks, etc.?	_____	_____
4. Are containers properly marked to indicate contents (DOT markings)?	_____	_____
5. If required, has gas buildups in containers been relieved?	_____	_____
6. Is a Hazardous Waste Disposal tag attached to each container? Complete? Is the start date of storage indicated?	_____	_____
7. Are containers DOT approved for storage and shipping of contents?	_____	_____
8. Are flammable liquid containers properly grounded?	_____	_____
9. Does emergency equipment operate satisfactorily (telephone, eyewash, deluge shower - fire extinguisher inspected)?	_____	_____
10. Is personal protective equipment available and used (face shield, apron, rubber gloves, respirator when necessary)?	_____	_____
10. Is personal protective equipment available and used (face shield, apron, rubber gloves, respirator when necessary)?	_____	_____
11. Are provisions made to contain and neutralize spills?	_____	_____
12. Are warning signs installed and visible from approaches?	_____	_____
13. Is the facility maintained in an orderly, workmanlike manner? Is housekeeping satisfactory?	_____	_____
14. Are floors, berms, walls in good repair free from cracks, spawls?	_____	_____
15. Has a file of shipping manifests been established?	_____	_____
16. Are come-back copies of manifests signed by the TSD facility?	_____	_____
17. Are copies of signed manifests promptly sent to California Department of Health Services?	_____	_____
18. Has an annual report been submitted?	_____	_____
19. Have persons been trained to handle hazardous materials?	_____	_____

- 20. Is the facility secured? Is access barred to all except authorized personnel? _____
- 21. Has a contingency plan been established to handle emergencies (spills, injuries, fire, etc.)? _____
- 22. Are deficiencies entered in the Inspection Log? Are corrective actions promptly taken and logged-in? _____
- 23. Is the amount of storage within permit limits? (Shed, not more than 36 drums, 18 in each Bay, not over 1 year--- Bldg. 272, not more than 77 drums, storage not over 90 days). _____
- 24. Are recent hazardous waste shipments reflected in the Log Books? _____

If any items require correction, list below the dates corrective action was or will be completed for each deficient item. Send a copy of this form to the Environmental Health and Safety office within 48 hours.

INSPECTOR, MATERIAL CONTROL

DATE OF INSPECTION

ENVIRONMENTAL HEALTH AND SAFETY CONCURRENCE

empty drums, having previously contained a hazardous waste, will be considered to be a hazardous waste and prepared and disposed of as described above.

2. Decontamination -

The container shed will then be decontaminated.

- a. The sump floor under the non-igniteable storage, and the fibergrate floor will be decontaminated with a series of solvent washes. The wash wastes and residue generated by this operation will be pumped into approved containers and shipped to the TSD facility for disposal.

3. Waste Inventory -

A maximum of 1980 gallons (thirty-six 55 gallon drums) may be in storage in the shed at any given time.

B. Closure of the Hazardous Waste Storage Area, Bldg. 272 -

1. Waste Disposal -

All containerized hazardous wastes stored in the area will be prepared for shipment in accordance with DOT and Department of Health Services regulations, and transported by an EPA licensed hauler to an approved TSD facility for disposal. Empty drums, having previously contained a hazardous waste, will be considered to be a hazardous waste and prepared and disposed of as described above. Where feasible, drums may be triple rinsed and re-used.

2. Decontamination -

The waste storage area will then be decontaminated as follows:

- a. The floor area and associated berms will be decontaminated with a series of neutralizing washes. Water wastes and residues generated will be pumped into DOT approved drums for the material, and transported to the TSD for disposal as a hazardous waste.

3. Waste Inventory -

A maximum of 4,235 gallons of waste (eighty 77 gallon drums) may be stored in the area at any given time.

III. Estimated Cost of Closure

- A. Hazardous Waste Storage Shed - \$20,000
B. Hazardous Waste Storage Area, Bldg. 272 - \$20,000
C. Total Cost, Bldg. 272 - \$40,000

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

PLEASE PLACE LABEL IN THIS SPACE

18 NOV 1980

EPA I.D. NUMBER

FCAD 0411621245D

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X'			SPECIFIC QUESTIONS	MARK 'X'		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP HUGHES AIRCRAFT COMPANY

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title) CINGUANTA F.A. HEAD ENUR Health+Safety

B. PHONE (area code & no.) 213 702 2102

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX 8433 FALLBROOK AVENUE

B. CITY OR TOWN CANOGA PARK

C. STATE CA

D. ZIP CODE 91304

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER 8433 FALLBROOK AVENUE

B. COUNTY NAME LOS ANGELES

C. CITY OR TOWN CANOGA PARK

D. STATE CA

E. ZIP CODE 91304

F. COUNTY CODE (if known) 53

Ref. #12

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)			
A. FIRST		B. SECOND	
7	376	7	
MISSILE RESEARCH AND DEVELOPMENT			
C. THIRD		D. FOURTH	
7		7	

VIII. OPERATOR INFORMATION			
A. NAME			B. Is the name listed in Item VIII-A also the owner?
HUGHES AIRCRAFT COMPANY			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)		D. PHONE (area code & no.)	
F - FEDERAL S - STATE P - PRIVATE	M - PUBLIC (other than federal or state) O - OTHER (specify)	P	213 702 1000
E. STREET OR P.O. BOX		IX. INDIAN LAND	
843 FALLBROOK AVENUE		Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
F. CITY OR TOWN		G. STATE	H. ZIP CODE
B CANOGA PARK		CA	91304

X. EXISTING ENVIRONMENTAL PERMITS			
A. PDES (Discharges to Surface Water)		D. PSD (Air Emissions from Proposed Sources)	
CA 885 4846		P-27359	
B. UIC (Underground Injection of Fluids)		E. OTHER (specify)	
P-56896		M W 34282 (specify) Industrial Waste Self Monitoring Program, City of L.A Bureau of Sanitation	
C. RCRA (Hazardous Wastes)		E. OTHER (specify)	
P-63957		P-53216 (specify)	

XI. MAP Attach to F7-55 a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

L. NATURE OF BUSINESS (provide a brief description) F7-55
 MISSILE RESEARCH AND DEVELOPMENT.

XIII. CERTIFICATION (see instructions)		
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.		
A. NAME & OFFICIAL TITLE (Type or print)	B. SIGNATURE	C. DATE SIGNED
MALCOLM R. CURRIE, Vice President and Group Executive	<i>Malcolm R. Currie</i>	4 November 1980

COMMENTS FOR OFFICIAL USE ONLY	
recycled paper	

Please print or type in the unshaded areas (fill-in areas are spaced for elite type, i.e., character/inch).

Part A

Form Approved OMB No. 158-S80004

FORM 3 RCRA



ENVIRONMENTAL PROTECTION AGENCY
HAZARDOUS WASTE PERMIT APPLICATION
Consolidated Permits Program
(This information is required under Section 3005 of RCRA.)

EPA I.D. NUMBER

F	C	A	D	0	4	1	1	6	2	1	2	4	TOTAL
													13

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)

COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate date)

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below.)

YR.	MO.	DAY
8	6	01

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

YR.	MO.	DAY

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION (place an "X" below and complete item I above)

1. FACILITY HAS INTERIM STATUS

2. FACILITY HAS A RCRA PERMIT

III. PROCESSES - CODES AND DESIGN CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the form (Item III-C).

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

- AMOUNT - Enter the amount.
- UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:			Treatment:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
Disposal:					
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1. AMOUNT	2. UNIT OF MEASURE (enter code)	
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 1	1320	G		7				
					8				
					9				
					10				

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

NONE

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

<u>ENGLISH UNIT OF MEASURE</u>	<u>CODE</u>	<u>METRIC UNIT OF MEASURE</u>	<u>CODE</u>
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)		D. PROCESSES							
					1. PROCESS CODES (enter)			2. PROCESS DESCRIPTION (if a code is not entered in D(1))				
X-1	K 0 5 4	900	P		T	0	3	D	8	0		
X-2	D 0 0 2	400	P		T	0	3	D	8	0		
X-3	D 0 0 1	100	P		T	0	3	D	8	0		
X-4	D 0 0 2	recycled paper									included with above ecology and environment	

IV. DESCRIPTION OF HAZARDOUS WASTE.

.nued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

F	C	A	D	0	4	1	1	6	2	1	2	4	6
---	---	---	---	---	---	---	---	---	---	---	---	---	---

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)

3	4	1	3	0	1	5
---	---	---	---	---	---	---

LONGITUDE (degrees, minutes, & seconds)

1	1	8	3	7	0	3	0
---	---	---	---	---	---	---	---

VIII. FACILITY OWNER

 A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER

2. PHONE NO. (area code & no.)

E	HUGHES AIRCRAFT COMPANY
---	-------------------------

2	1	3	7	0	2	1	0	0	0
---	---	---	---	---	---	---	---	---	---

3. STREET OR P.O. BOX

4. CITY OR TOWN

5. ST.

6. ZIP CODE

F	8433 Fallbrook Avenue
---	-----------------------

G	Canoga Park
---	-------------

C	A
---	---

9	1	3	0	4
---	---	---	---	---

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)

B. SIGNATURE

C. DATE SIGNED

MALCOLM R. CURRIE,
VICE PRESIDENT AND GROUP EXECUTIVE



4 November 1980

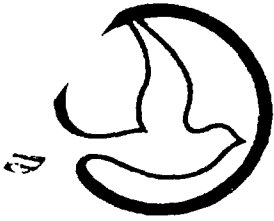
X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)

B. SIGNATURE

C. DATE SIGNED



South Coast
AIR QUALITY MANAGEMENT DISTRICT

HEADQUARTERS, 9150 FLAIR DR., EL MONTE, CA 91731

NOVEMBER 19, 1990

HUGHES AIRCRAFT CO, MISSILE SYSTEMS GRP ID - 017018
8433 FALLBROOK AVE
CANOGA PARK CA 91304

PERMIT RENEWALS

PERMIT NUMBER	DESCRIPTION	APPLIC NUMBER	EXPIRATION DATE
M43274	✓ BOILER OTH COMB G-0 PS-200	100022	11/16/91
M29280	✓ DEGREASER 1,1,1 TRICHLOROETHANE (>1LB/D)	102135	11/16/91
M37629	✓ DEGREASER 1,1,1 TRICHLOROETHANE (>1LB/D)	107332	11/16/91
M80316	✓ STORAGE TANK GASOLINE	114134	11/16/91
M45310	✓ TANK CHEMICAL MILLING	117103	11/16/91
M460579	✓ DEGREASER 1,1,1 TRICHLOROETHANE (>1LB/D)	152551	11/16/91
D13007	✓ DIESEL ENGINE ← →	188407	11/16/91
D13008	✓ BOILER, NATURAL GAS	188408	11/16/91
D14621	✓ STATIONARY NON EMERGENCY IC ENGINE →	188409	11/16/91
D14622	✓ STATIONARY NON EMERGENCY IC ENGINE ← →	188410	11/16/91
D28549	✓ STORAGE TANK FUEL OIL	188411	11/16/91
728548	✓ STORAGE TANK FUEL OIL	188412	11/16/91
D26775	✓ CHARBROILER - NATURAL GAS	188668	11/16/91
008738	✓ SPRAY BOOTH PAINT AND SOLVENT	191460	11/16/91
M15282	✓ DEGREASER 1,1,1 TRICHLOROETHANE (>1LB/D)	C30107	11/16/91
M22782	✓ DEGREASER 1,1,1 TRICHLOROETHANE (>1LB/D)	C34894	11/16/91
D37748	✓ Boiler	212761	
D37749	✓ Boiler	212755	
D 32117	F ₂ Cl ₂ ETCH (268/2280)		
D33802	FOAM DISPENSER (#NAS D16518)		

Ref. 3118

HUGHES

AIRCRAFT COMPANY

MISSILE SYSTEMS GROUP

September 25, 1989

Mr. John Hinton
California Department of Health Services
1405 San Fernando Road, Suite 300
Burbank, CA 91504

Dear Mr. Hinton:

As you may know, Hughes Aircraft Company, Missile Systems Group was inspected by the Department of Health Services on 22 February, 1989. As a result of that inspection, the Department directed Hughes to revise the closure plan for its hazardous waste storage facility. The plan includes remediation at a former waste oil tank location. This tank was removed in 1988 under the supervision of the Los Angeles City Fire Department. Remedial action at this particular source is part of a larger groundwater remediation project, which is being directed by the Regional Water Quality Control Board. Hughes will inform the Department when final approval for this groundwater remediation project is obtained. Upon completion of the project, a certification of closure of the waste oil tank in accordance with the requirements of the revised closure plan will be submitted to the Department.

Sincerely,



T. P. Boxwell, Manager
Safety, Health & Environmental Affairs

TPB/dp

Ref. # 19

Candga Park, CA 91304-0445
(813) 702-1000

FIRE/LIFE SAFETY VIOLATION

OCCUPANCY	DISTRICT 161	BLOCK NO.	MAP BOOK	PAGE	PARCEL	DATE 6-16-88
TO: (Name) (Title) JACK A. ZUBER, PLANT FAC. MGR			FIRM OR D.B.A. HUGHES AIRCRAFT			
ADDRESS: (Street) 8433 FALLBROOK AV., LANDHA PARK, CA		(City) LANDHA PARK, CA	(State) CA	(Zip Code) 91304	PHONE 818 702-5117	
ADDRESS OF VIOLATION: (Street) (City) (State) (Zip Code) SAME AS ABOVE						
COMPLY WITH REQUIREMENTS AS NOTED						
57.31.38						
Provide a site assessment performed by a professional geologist, civil engineer, or an engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. (GATE 9A, TANK 3) <i>MSD</i>						
This report shall include, but not limited to, extent of contamination, location of groundwater, direction of underground water flow, clean-up recommendations, and any other information that may be required by the Chief. This report shall be forwarded, in triplicate, to the Los Angeles City Fire Department, Fire Prevention Bureau, 14555 Sylvan St., Van Nuys, CA 91411.						
57.31.50						
Secure the area from unauthorized entry.						
ADDITIONAL INFORMATION ON <input type="checkbox"/> BACK OF THIS FORM <input type="checkbox"/> ATTACHED SHEET(S)						
FAILURE ON YOUR PART TO COMPLY WITH THIS NOTICE ON OR BEFORE <u>FORTHWITH</u> WILL SUBJECT YOU TO PENALTIES PRESCRIBED BY SAID ORDINANCE. A REINSPECTION OF THE PREMISES SHALL BE MADE FOR FULL COMPLIANCE.						
RECEIVED BY <i>[Signature]</i>			TITLE <u>ENV. HEALTH & SAFETY ENGINEER</u>			
FOR ADDITIONAL INFORMATION PHONE: 818/989-8561	DATE COMPLETED	BY ORDER OF THE CHIEF ENGINEER AND GENERAL MANAGER William S. Waite VICU				
	INSPECTOR	BY <i>[Signature]</i>		ASSIGNMENT		
		SIGNATURE <i>[Signature]</i>				

Ref. # 20

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.
REPORT DATE 01/11/85	CASE # 14555	SIGNED _____ DATE _____

REPORTED BY	NAME OF INDIVIDUAL FILING REPORT WILLIAM E. WHITE	PHONE (818) 959-6511	SIGNATURE 	
	REPRESENTING <input checked="" type="checkbox"/> LOCAL AGENCY <input type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> OTHER	COMPANY OR AGENCY NAME LOS ANGELES CITY FIRE DEPT		
	ADDRESS 14555 SYLVAN ST. CITY VAN NUYS STATE CA ZIP 91411			

RESPONSIBLE PARTY	NAME <input type="checkbox"/> UNKNOWN	CONTACT PERSON ()	PHONE ()
	ADDRESS 8433 FALLBROOK AV CITY CANOGA PARK STATE CA ZIP 91304		

SITE LOCATION	FACILITY NAME (IF APPLICABLE) HUGHES AIRCRAFT	OPERATOR (714) 1014	PHONE (714) 1014	
	ADDRESS 8433 FALLBROOK AV CITY CANOGA PARK COUNTY L.A. ZIP 91304			
	CROSS STREET ROCKEFELLER BLVD		TYPE OF AREA <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER	

IMPLEMENTING AGENCIES	LOCAL AGENCY AGENCY NAME CONTACT PERSON PHONE ()	REGIONAL BOARD PHONE ()
-----------------------	---	--------------------------------

SUBSTANCES INVOLVED	(1) NAME WASTE OIL	QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> UNKNOWN
	(2) _____ <input type="checkbox"/> UNKNOWN	

DISCOVERY/ABATEMENT	DATE DISCOVERED 01/11/85	HOW DISCOVERED <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> OTHER
	DATE DISCHARGE BEGAN UNKNOWN	METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input checked="" type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input type="checkbox"/> OTHER
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE _____	

SOURCE/CAUSE	SOURCE OF DISCHARGE <input type="checkbox"/> TANK LEAK <input checked="" type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER	TANKS ONLY/CAPACITY 4,000 GAL AGE 2 YRS <input type="checkbox"/> UNKNOWN	MATERIAL <input checked="" type="checkbox"/> FIBERGLASS <input type="checkbox"/> STEEL <input type="checkbox"/> OTHER	CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input type="checkbox"/> CORROSION <input type="checkbox"/> UNKNOWN <input type="checkbox"/> SPILL <input type="checkbox"/> OTHER
--------------	---	---	--	--

CASE TYPE	CHECK ONE ONLY <input type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)
-----------	---

CURRENT STATUS	CHECK ONE ONLY <input checked="" type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES
----------------	---

REMEDIAL ACTION	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS) <input type="checkbox"/> CAP SITE (CD) <input type="checkbox"/> EXCAVATE & DISPOSE (ED) <input type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT) <input type="checkbox"/> CONTAINMENT BARRIER (CB) <input type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS) <input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT)
-----------------	--

COMMENTS	_____ _____ _____
----------	-------------------------

INSTRUCTIONS

EMERGENCY

Indicate whether emergency response personnel and equipment were involved at any time. If so, a Hazardous Material Incident Report should be filed with the State Office of Emergency Services (OES) at 2800 Meadowview Road, Sacramento, CA 95832. Copies of the OES report form may be obtained at your local underground storage tank permitting agency. Indicate whether the OES report has been filed as of the date of this report.

LOCAL AGENCY ONLY

To avoid duplicate notification pursuant to Health and Safety Code Section 25180.7, a designated government employee should sign and date the form in this block. A signature here does not mean that the leak has been determined to pose a significant threat to human health or safety, only that notification procedures have been followed if required.

REPORTED BY

Enter your name, telephone number, and address. Indicate which party you represent and provide company or agency name.

RESPONSIBLE PARTY

Enter name, telephone number, contact person, and address of the party responsible for the leak. The responsible party would normally be the tank owner.

SITE LOCATION

Enter information regarding the tank facility and surrounding area. At a minimum, you must provide the facility name and full address.

IMPLEMENTING AGENCIES

Enter names of the local agency and Regional Water Quality Control Board involved.

SUBSTANCES INVOLVED

Enter the name and quantity lost of the hazardous substance involved. Room is provided for information on two substances if appropriate. If more than two substances leaked, list the two of most concern for cleanup.

DISCOVERY/ABATEMENT

Provide information regarding the discovery and abatement of the leak.

SOURCE/CAUSE

Indicate source(s) of leak. Provide details on tank age, capacity and material if known. Check box(es) indicating cause of leak.

CASE TYPE

Indicate the case type category for this leak. Check one box only. Case type is based on the most sensitive resource affected. For example, if both soil and ground water have been affected, case type will be "Ground Water". Indicate "Drinking Water" only if one or more municipal or domestic water wells have actually been affected. A "Ground Water" designation does not imply that the affected water cannot be, or is not, used for drinking water, but only that water wells have not yet been affected. It is understood that case type may change upon further investigation.

CURRENT STATUS

Indicate the Category which best describes the current status of the case. Check one box only. The response should be relative to the case type. For example, if case type is "Ground Water", then "Current Status" should refer to the status of the ground water investigation or cleanup, as opposed to that of soil.

IMPORTANT: THE INFORMATION PROVIDED ON THIS FORM IS INTENDED FOR GENERAL STATISTICAL PURPOSES ONLY AND IS NOT TO BE CONSTRUED AS REPRESENTING THE OFFICIAL POSITION OF ANY GOVERNMENTAL AGENCY.

REMEDIAL ACTION

Indicate which actions have been used to cleanup or remediate the leak. Descriptions of options follow:

- Cap Site - install horizontal impermeable layer to reduce rainfall infiltration.
- Containment Barrier - install vertical dike to block horizontal movement of contaminant.
- Excavate and Dispose - remove contaminated soil and dispose in approved site.
- Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming).
- Remove Free Product - remove floating product from water table.
- Pump and Treat Groundwater - generally employed to remove dissolved contaminants.
- Enhanced Biodegradation - use of any available technology to promote bacterial decomposition of contaminants.
- Replace Supply - provide alternative water supply to affected parties.
- Treatment at Hookup - install water treatment devices at each dwelling or other place of use.
- No Action Required - incident is minor, requiring no remedial action.

COMMENTS - Use this space to elaborate on any aspects of the incident.

SIGNATURE - Sign the form in the space provided.

DISTRIBUTION

If the form is completed by the tank owner or his agent, retain the last copy and forward the remaining copies in tact to your local tank permitting agency for distribution.

1. Original - Local Tank Permitting Agency
2. State Water Resources Control Board, Division of Water Quality, Underground Tank Program, P. O. Box 100, Sacramento, CA 95801
3. Regional Water Quality Control Board
4. County Board of Supervisors or designee to receive Proposition 65 notifications.
5. Owner/responsible party.

**CALSCIENCE ENGINEERING & LABORATORIES, INC.**ENVIRONMENTAL ENGINEERING & TESTING
GENERAL CONTRACTOR [A520351]June 20, 1988
File P20988Mr. Robert A. Rankin
Hughes Aircraft Company
Missile Systems Group
Building 265, M/S P-18
8433 Fallbrook Avenue
Canoga Park, CA 91304References: (a) CAC, Title 23, Chapter 3, Subchapter 16,
California Underground Storage Tank (UST)
Regulations

(b) City of Los Angeles, UST Regulations

Enclosures: (1) Project Unit Cost Data

(2) Project Exclusions

Subject: Contaminated Soil Remediation

Dear Mr. Rankin:

Calscience Engineering & Laboratories, Inc. (CEL) recently removed two(2) USTs under HAC P.O. SK-875286-SU9. Levels of petroleum hydrocarbons requiring remediation were detected in both excavation pits below tank bottom(s). As initial action, HAC has elected to effect remediation by excavation and off-site landfilling of contaminated soil. Due to the probable required depth of excavation and the unstable nature of the excavation pits, specialized equipment, not normally needed, is required. Since the extent of contamination in the excavation pits is unknown, the quantity of soil requiring excavation and off-site landfilling is also unknown. This necessitates providing project cost data on a unit cost basis. CEL is pleased to provide the enclosed unit costs for the conduct of the subject work.

Site remediation will be accomplished by excavation and off-site landfilling of contaminated soil at Casmalia Resources, Inc., Casmalia, CA. The following general procedures will be utilized for said remediation:

- o Excavation will be performed with a tracked excavator capable of digging to 22' below grade. A tracked excavator is considered necessary because:



- Machine load is distributed over a larger surface area compared to rubber tired excavation machines; and
- Greater vertical digging depth.
- o Upon reaching excavation depths whereby an on-site engineer and geologist concur by observation that all contaminated soil has been removed, soil sampling will be conducted. For soil sampling operations, the City of Los Angeles Bureau of Fire Prevention will be notified of sampling times and afforded an opportunity to witness sampling.
- o Soil samples will be submitted on a 24 hour turn around basis to a State of California DOHS certified laboratory for Total Recoverable Petroleum Hydrocarbon (EPA Method 418.1) analyses.
- o Upon verification, by the analytical results, that all contaminated soil has been excavated, backfilling and compaction operations will commence.
- o Upon completion of backfill and compaction operations, the above outlined operations will be similarly conducted on the remaining site.

Due to the presence/susceptibility of subsurface piping systems and the probable limited extent of contamination in excavation T-13, the above operations will be conducted on this excavation first.

Upon completion of the above outlined operations, a comprehensive report will be prepared and submitted to the City of Los Angeles Fire Prevention Bureau detailing the actions undertaken.

All work associated with the subject project will be conducted in accordance with references (a), (b) and sound engineering practices. CEL will maintain an engineer on-site during all operations to provide on-site decision making capability and interface with HAC Management.

Tracked excavators can damage asphalt surfaces. CEL will limit, to the maximum extent possible, the movement of the excavator on asphalt surfaces. However, since some asphalt damage is probable, Hughes will be billed at cost + 10% for necessary repairs.

CEL

Project unit costs (including overhead) associated with the subject project are attached as enclosure (1). Additionally, one example (assumes 100 tons of soil removed and 4 project days) is detailed providing costs. Billing procedures are provided in Attachment A.

Please do not hesitate to contact the undersigned or Patrick Galvin should you require additional information or clarification. We look forward to the conduct of the subject project.

Sincerely,



Calscience Engineering &
Laboratories, Inc. by
Steven L. Lane
Engineering Director

SLL:ssc

Enclosures
Attachment



mw
1/19

January 17, 1990

Mr. Ejigu G. Solomon
Water Resource Control Engineer
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Dear Mr. Solomon:

HUGHES MISSILE SYSTEMS GROUP, CANOGA PARK, CALIFORNIA

Pursuant with your request, I have enclosed a copy of the Hughes Missile Systems Group "Revised Closure Plan for the Hazardous Waste Storage Facility," dated September 19, 1989. A copy of this plan has been provided to the California Department of Health Services.

If you have any questions or require additional information regarding this plan please call me.

Sincerely,

Anthony Mongero
Supervising Hydrogeologist

B1:070/bar

Enclosure (1)

- 1. Results of the soil borings
- * Does closure report wait for results to know if plume definition warrants soil excavation
- 2. YP 3 ⇒ soil investigation

Ref. # 21

CLOSURE PLAN
FOR THE
HAZARDOUS WASTE STORAGE FACILITY
REVISED SEPTEMBER 19, 1989

I. Purpose

- A. This Closure Plan identifies the procedures and standards necessary to effect proper closure of the Facility which consists of the containerized hazardous waste storage shed and the former underground waste oil storage tank.

This plan has been revised to allow for a phased closure of the facility. Phase 1 of the closure applies to the former underground waste oil storage tank, and Phase 2 applies to the remaining containerized hazardous waste storage shed.

A certificate attesting to the compliance with the Closure Plan shall be obtained from an independent engineer, registered in the State of California. A letter report with a copy of this certification shall be provided to the California Department of Health Services (DHS) within five days after closure.

- B. Closure procedures prescribed herein are designed to:
1. Minimize the need for post closure maintenance and surveillance.
 2. Ensure that both prior and/or post closure escape of hazardous wastes, hazardous constituents, and contaminants, precipitation, and waste decomposition products are eliminated, or controlled to the extent that public health and the environment are not endangered.

II. Procedure

- A. Phase 1 - Closure of the Former Waste Oil Storage Tank
1. Tank Removal

The former underground waste oil storage tank (T-3) was removed during June 15, 1988, in accordance with Los Angeles City Fire Department (LACFD) Permit Number 60097. A copy of the permit is included in Section XV. T-3 was removed because no further use of the tank was foreseen.

W:9.19.89

At the time of removal the tank was in good condition. Precision testing of the tank was most recently conducted during October 1987, by both the Petrolite and Horner tank integrity testing methods. The tank passed both tests. Testing was conducted by A and A Tank Testing of Bakersfield, California, under the direction of Hargis & Associates, Inc.

2. Waste Disposal

All wastes contained in T-3 were removed on June 15, 1988, prior to excavation. A total of 175 gallons of fuel product were removed by Crosby and Overton (C&O) of Los Angeles, California, an EPA licensed waste hauler (EPA License Number CAD 047448270) under the direction of Cal-Science Engineering (CSE) using a vacuum truck. The waste materials were transported under manifest (SMD No. 87944596) to the Petroleum Recycling Company (PRC) in Signal Hill, California (EPA No. CAT080011059). A copy of the hazardous waste manifest is included in Section XV.

3. Decontamination

Following waste material removal, the interior of T-3 was steam cleaned and triple rinsed to remove any residual contamination. All rinsate generated during tank cleaning (\approx 325 gallons) were removed by C&O and transported as hazardous material to the PRC facility in Signal Hill (see SMD No. 87944596, Section XV). Following tank rinsate removal, dry ice was placed within the tank to purge all residual vapors and ensure that the atmosphere within the tank was rendered non-explosive. A Certified Marine Chemist was on-site during all tank cleaning operations to verify the adequacy of the decontamination program. The certificate of tank decontamination is included in Section XV. Inspector William S. Waite of the LACFD was present to witness the tank removal.

Following decontamination all loose soil and debris were removed from the exterior of the tank and the tank was transported to American Metal Recycling of Ontario, California. Copies of the tank hazardous waste manifest and certification of destruction are presented in Section XV.

4. Soil Sampling

Visual observation and olfactory sensation made after the tank was removed indicated that chemical compounds were present in the backfill at the base of the excavation. Two soil samples from the base of the excavation were collected by CSE on June 16, 1988, and analyzed for total

petroleum hydrocarbons (TPHs) by modified EPA Method 8015. The results of the sample analyses indicated that the soil beneath both ends of the former tank was contaminated with TPHs at a concentrations of 737 parts per billion (ppb) in Sample T3-1 (east end of tank) and 8,500 ppb in Sample T3-2 (west end of tank). After tank removal and sampling were completed, the soil that had been removed were placed back in the excavation (along with soils from the excavation of tank T-13).

A soil boring program was subsequently initiated to determine the extent of contamination beneath and adjacent to the former tank. A total of six borings (B-2 through B-7) were drilled in and adjacent to the former underground tank excavation. A map showing the locations of the six borings is presented in Figure 1. Soil Boring B-2 was drilled in the western end of the former excavation to a total depth of approximately 35 feet below grade.

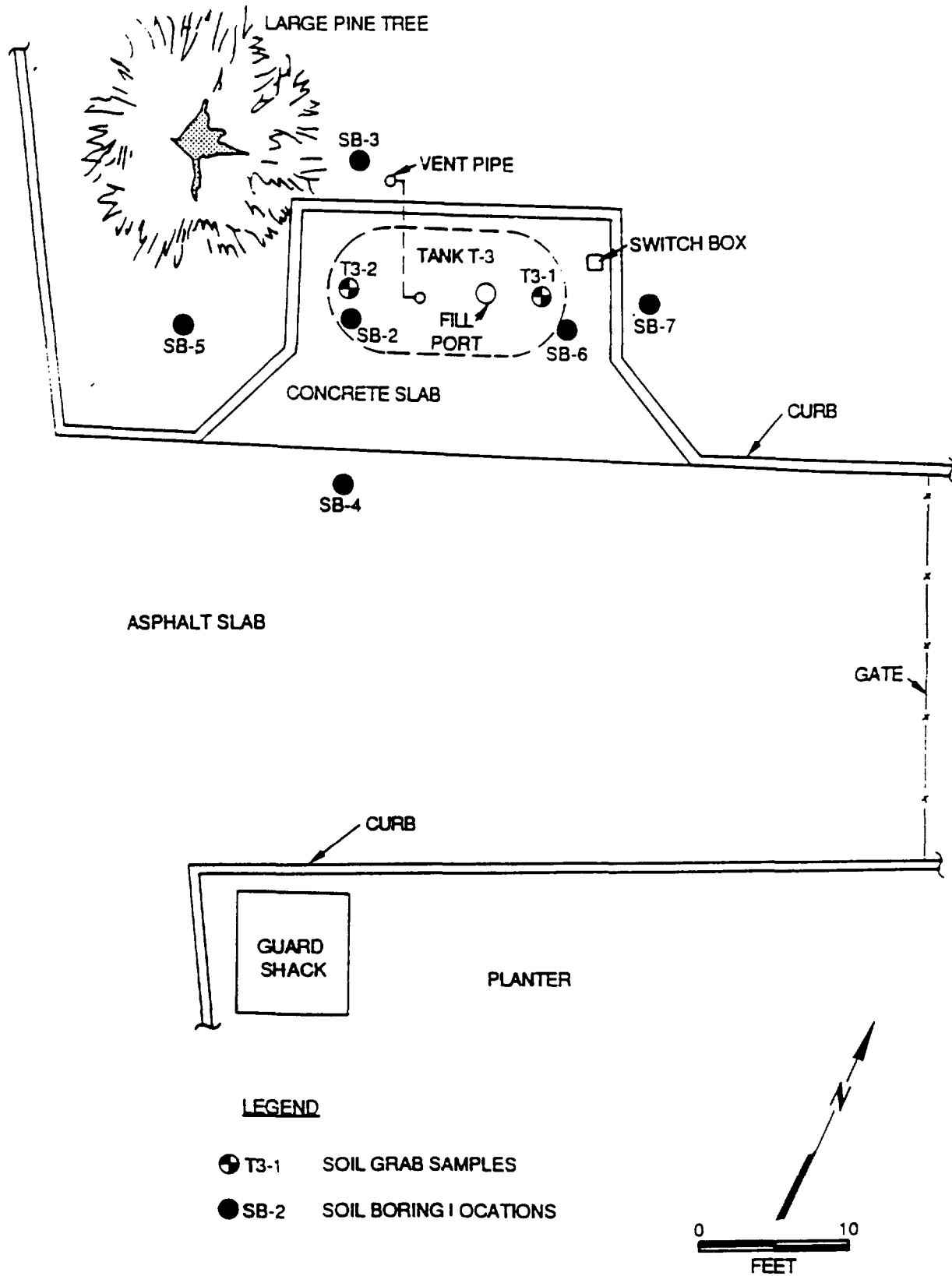
The results of soil sample analyses indicate that the tank location may have contributed VOCs, primarily 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), and 1,1,1-trichloroethane (TCA), to soil and groundwater beneath the site. The source of these chemicals appears to be incidental spillage and/or overfilling of the former tank since the tank was not found to be leaking when it was leak tested. The maximum reported concentration of 1,1-DCA, 1,2-DCA, and TCA in soil samples from B-2 were 182 ppb, 175 ppb, and 2,800 ppb, respectively (CSE, 1988). Based upon these results, Monitor Well M-1 was constructed immediately downgradient of T-3 in December 1988.

Groundwater samples from M-1 show that 1,1-DCA, 1,2-DCA, and TCA occur in groundwater beneath the T-3 site at concentrations exceeding DHS Maximum Contaminant Levels (MCLs). Perchloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (1,1-DCE) were also detected in samples from M-1.

5. Site Remediation

2 A soils investigation is currently underway to determine the distribution of waste constituents at the T-3 excavation.

FIGURE 1
 SOIL BORING SAMPLE
 LOCATIONS AT THE FORMER
 T-3 UNDERGROUND STORAGE TANK



The entire Hughes Canoga Park site is currently the subject of a groundwater investigation under the direction of the California Regional Water Quality Control Board (CRWQCB) due to the presence of several potential source areas. This investigation began in early 1987. As part of this investigation the CRWQCB has directed a review of historic chemical use areas at the site and the characterization of any potential source areas, including the T-3 excavation. The CRWQCB has further directed the submittal of remedial action plans for each specific source area identified. Such a remedial action plan for the T-3 excavation is now being prepared for submittal.

A certified closure report, prepared in accordance with RCRA requirements, will be submitted to the department at the conclusion of site remediation activities at T-3.

Concurrently, a remedial investigation and groundwater treatment program will be implemented under the direction of CRWQCB.

B. Phase 2 - Closure of the containerized Hazardous Waste Storage Shed

1. Waste Disposal

All containerized hazardous waste stored in the shed at time of closure will be prepared for shipment in accordance with DOT and Department of Health Services Regulations and transported by an EPA licensed hauler to an approved TSD facility for disposal.

Empty drums, having previously contained a hazardous waste, will be considered to be a hazardous waste and prepared and disposed of as described above.

2. Decontamination

The container shed will then be decontaminated.

- a. The sump floor under the corrosives storage, and the fibergrate floor will be decontaminated with a series of neutralizing washes. Water waste and residue generated will be pumped into DOT approved drums for the material and transported to the TSD for disposal as a hazardous waste.

- b. The sump floor underlying the ignitable storage area and the fibergrate floor will be decontaminated with a series of solvent washes. The wash wastes and residue generated by this operation will be pumped into approved containers and shipped to the TSD facility for disposal.

3. Waste Inventory

A maximum of 1,320 gallons (twenty-four 55-gallon drums) may be in storage in the shed at any given time.

III. Estimated Cost of Closure

- A. Former Waste Oil Storage Tank - Removed - Future remedial costs will be based on result of the soil investigation described above in II A 5. The preliminary estimate of closure costs associated with contaminated soil is \$500,000.
- B. Hazardous Waste Storage Shed - \$10,000
- C. Total Cost - Approximately \$500,000

IV. Administrative Requirements

A. Amendments

This plan will be amended, as necessary, whenever changes in facility design or operation occur.

B. Notification

The California State Department of Health Services will be notified at least 180 days prior to the expected date of closure of the remainder of the facility consisting of the containerized hazardous waste storage shed.

HUGHES


MISSILE SYSTEMS GROUP

June 18, 1991

Jennifer Eberle,
Project Manager
Ecology And Environment, Inc.
160 Spear Street
San Francisco, California
94105

Dear Ms. Eberle:

Enclosed, please find the documents that you requested during your visit to the Hughes Canoga Park facility. If you require additional information, please contact me.


Thomas P. Boxwell, Manager,
Safety, Health And Environmental Affairs

Ref. # 22

Canoga Park, CA 91304-0445
(818) 702-1000

I. WASTE STREAM PROFILES

A. CORROSIVES

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
Fluorboric Acid	Fluorboric Acid Water Lead Tin	0-10 80-90 0-5 0-5	D002 D0004 - D011	LAB-PACK QUANTITY	Corrosive Material PH - <2	Stripping, Electroplating
Ammonium Hydroxide	Ammonium Hydroxide Water	0-20 80-100	N/A	LAB-PACK QUANTITY	Corrosive Material PH (10-12)	Printing
G-4 Micro-Etch Solution	Sulfuric Acid Sodium Per-sulfate Water Copper	0-10 0-10 80-90 0-2	D002	LAB-PACK QUANTITY	Corrosive Material PH - <2	Etching Stripping
Ferric Chloride Waste	Ferric Chloride Water	0-30 70-90	D002	0 - 150	Corrosive Material	Etching
Nitric Acid Waste	Nitric Acid Water	0-30 70-90	D002	LAB-PACK QUANTITY	Corrosive Material PH - (2-4)	Cleaning, Plating
Posiclean	Hydrochloric Acid Water	0-15 85-95	D002, D008	LAB-PACK QUANTITY	Corrosive Material PH <2	Cleaning, Stripping Electroplating

I. WASTE STREAM PROFILES (Continued)

A. CORROSIVES (Continued)

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
Kodak 66 - Developer	Hydroquinone Potassium Hydroxide Water	0-10 0-10 90-100	D002	200	Corrosive Material PH-11	Photo Processing
Nikad Waste	Nickel Dimethyl Borane Water	0-5 5-10 90-100	N/A	LAB PACK QUANTITIES	ORM-E PH-8	Cleaning, Electroplating
Hydrochloric Acid Waste	Fluoride Salts Amines Hydrochloric Acid Water	0-10 0-10 40-60 20-40	D002	LAB-PACK QUANTITIES	Corrosive Material PH<2	Cleaning, Etching
Mixed Caustic Solution-9072	Copper Sulfate Sodium Hydroxide Formaldehyde EDTA Water	0-10 0-5 0-5 0-5 80-90	N/A	0 - 150	ORM-E PH-10	Cleaning
Kodak 22-Fixer	Acetic Acid Ammonium Thiocyanate Amm. Thiosulfate Water	0-10 0-10 10-20 70-90	D006, D001	200	ORM-E PH-(4-6)	Photo Processing

I. WASTE STREAM PROFILES (Continued)

A. CORROSIVES (Continued)

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
Waste Sulfuric Acid	Sulfuric Acid Copper Sulfate Water	0-15 0-5 80-95	D002	LAB PACK QUANTITIES	Corrosive Material PH < 2	Cleaning, Stripping
E6 - Acids	P-aminophenol l-Thioglycerol Water Formaldehyde	10-20 10-20 75-85 0-5	D011	600	ORM-E PH-(4-6)	Photo Processing
E-6 Bases	Potassium Hydroxide Water	0-30 70-95	D011	600	ORM-E PH-(10-12)	Photo Processing
EP-2	Benzyl Alcohol Triethanolamine Hydroxylamine Sulfate Lithium Chloride Potassium Hydroxide Water	0-5 0-5 0-5 0-5 0-5 80-95	D011	250	ORM-E PH-(10-12)	Photo Processing
Ammonium Chloride Solution	Ammonium Chloride Water	0-10 90-100	N/A	0 - 200	None PH-(7-10)	Photo Processing, Cleaning
Lab Packs	Variable Out-Of-Shelf Life Products	100	Variable	100	Corrosive Material	Shelf Life Expiration

(WASTE STREAM PROFILES - Continued)

B. SOLVENTS

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
1,1,1-Trichloroethane	1,1,1-Trichloroethane	100	F001	1500	ORM-A PH-(6-7)	Degreasing
Freon 11 Waste	Trichlorofluoromethane Mobil DTE Oil	10-40 60-90	F001	50 - 300	ORM-A (PH-7)	Degreasing
Freon 113 Waste	Trichlorotrifluoroethane	99	F001	0 - 100	ORM-A PH-7	Degreasing

WASTE STREAM PROFILES - Continued

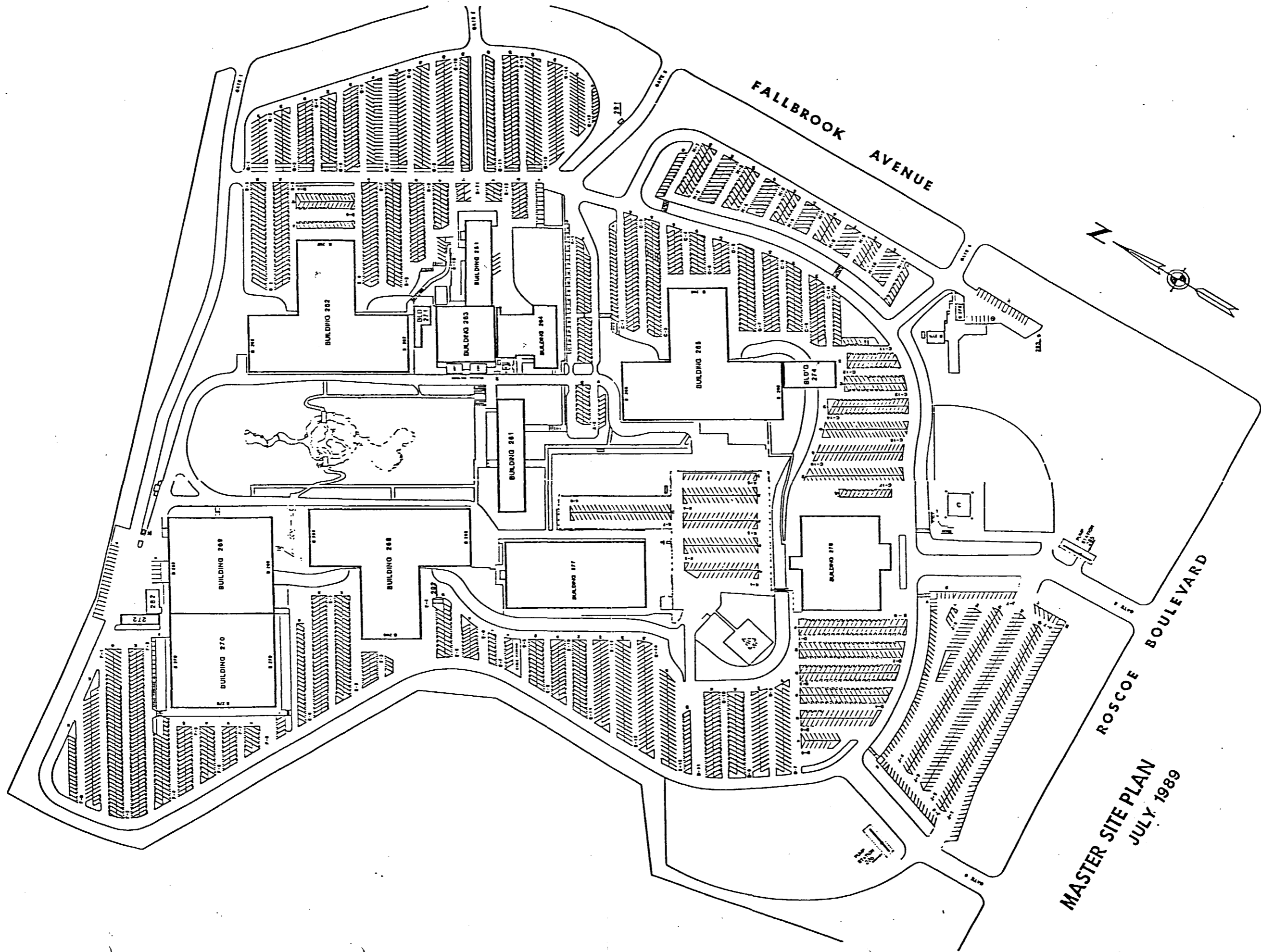
C. FLAMMABLES

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
Flux and Isopropanol Wipes	Wipes Contaminated W/Flux and Isopropanol	100	D001	75	Flammable Solid PH-N/A	Cleaning, Silkscreening
Mixed Flammable Waste	Petroleum Naptha Paint Thinner Acetone Isopropanol Rosin Flux Paint Sludge Toluene Methyl Ethyl Ketone	0-20 0-20 10-20 10-20 5-15 5-15 0-10 0-10	F003, F005	600	Flammable Liquid PH-N/A	Cleaning, Etching, Painting
Lab Packs	Variable	100	Variable	200	Flammable Solid/Liquid PH-N/A	Shelf Life Expiration

(WASTE STREAM PROFILES - Continued)

D. NON-FLAMMABLES

WASTE NAME	COMP.	%	EPA WASTE CODE	EST. ANNUAL QNTY. (GALS.)	HAZARD CLASS	PROCESS(ES)
Clarifier Waste	Mud and Trace Heavy Metals Water	0-10 90-100	D006-D009	200	ORM-E PH-(7-10)	Rinse Water From Cleaning and Stripping
Asbestos DEBRIS	Asbestos Fibers	100	N/A	200	ORM-C PH-7	Insulation Removal
Coolant Oils/ Water Base	Coolant Oil	100	N/A	600	Combustible PH-7	Machining, Cleaning
Petroleum Oils	Petroleum Oil	100	N/A	400	Combustible PH-7	Lubricating, Mechanical
Beryllium Contaminated DEBRIS	Gloves, Swabs, Finger Cots Beryllium	99.9 0.1	P015	<1	Polson B PH-N/A	Assembly Operation
PCB Light Ballasts	Ballast (metal) PCB Fluid	99 <1	TSCA	50 - 100	ORM-E PH-N/A	Removal of old Fluorescent Light Fixtures



MASTER SITE PLAN
JULY 1989

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION**

101 Centre Plaza Drive
Monterey Park, California 91754-2156
(213) 266-7500



March 18, 1991

**Mr. Thomas Boxwell
Hughes Aircraft Co.
Missile Systems Group
8433 Fallbrook Avenue
Canoga Park, CA 91304-0445**

APPROVAL FOR EXCAVATION AND DISPOSAL OF CONTAMINATED SOIL, HUGHES MISSILE SYSTEMS GROUP, CANOGA PARK.

Reference is made to your reports dated April, 1990, December, 1990 and your letter of February 5, 1991.

Your report prepared by McLaren dated April, 1990 proposed that soils excavated from the T-3 underground tank area be transported to class I and III landfills for disposal. However, your December, 1990 Corrective Action Plan report prepared by your consultant, ENSR proposed to spread portion of the contaminated soil on Hughes property instead of hauling to offsite landfills.

After a telephone consultation with Board staff, in a letter dated February 5, 1991, you reconfirmed the offsite disposal of all contaminated soil as originally proposed in your April, 1990 report.

We have no objection to the implementation of the latest proposal as only applying to the T-3 source area, and provided that the following conditions are complied with:

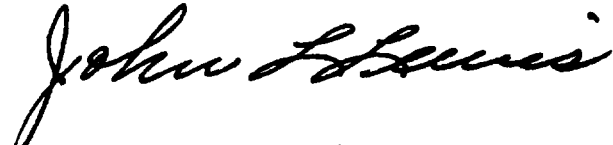
1. Contaminated soil equal to or in excess of the chemical concentration levels specified in your February 5, 1991 letter shall be hauled and disposed of at a Class I disposal site.
2. The balance of the tested soil with concentrations less than the specified levels may be disposed of at a Class III landfill with the concurrence of the site operator.
3. Soil samples for segregation and disposal purposes shall be properly tested as proposed and shall be representative of the entire volume.

Ref. # 23

Mr. Thomas Boxwell
Hughes Aircraft Co.
Page 2

4. Thirty days after completion of the cleanup, Hughes must file, as proposed, a technical report detailing the specific activities and test results of implementing the cleanup plan including but not limited to:
 - a. Soil sampling and testing protocol, laboratory data, segregation methodology and disposal of excavated soils.
 - b. Quantities of soil disposed of at Class I and III landfills, respectively, and the names and locations of the landfills.

If you have any questions, please call Mr. E. G. Solomon at (213) 266-7574.



JOHN L. LEWIS, Unit Chief
Technical Support Unit

cc: Ms. Cecilia Rosana, DOHS Burbank
Mr. Randy Ellis, ENSR



MISSILE SYSTEMS GROUP

February 5, 1991

Hank H. Yacoub
Supervising Water Resources Control Engineer
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-0445

*John - O.K.
This is the same
I talked about. Conc.
Numbers indicated are
for Class III disposal.
Is it okay? stamp
H.H.*

Dear Mr. Yacoub:

As I indicated in our telephone conversation last week,
Hughes plans to use the following clean-up levels for the
T-3 excavation:

- * 100 ppm for TPH's,
- * 6 ppm for 1,1-DCE, and
- * 20 ppm for total VOC's.

Excavated soils exceeding these concentrations will be
disposed of in a Class I landfill. It is estimated that
approximately 400 to 600 cubic yards of soil will fall into
this category. Soils with concentrations less than the
clean-up levels, estimated at approximately 700 to 900 cubic
yards, will be disposed of in a Class III landfill as
recommended by the Water Board.

Other details of the T-3 remedial activity can be found in
ENSR's Corrective Action Plan dated December 7, 1990. That
plan references the McLaren Remedial Action Plan dated
October 20, 1989.

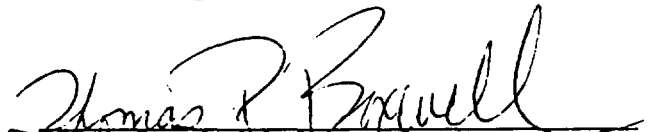
Ref. # 24

Canoga Park, CA 91304-0445
(818) 702-1000

If this information satisfies the Water Board's requirements, Hughes would appreciate receiving approval to proceed as soon as possible. If appropriate, Hughes would appreciate verbal notification of your approval to be followed by an approval letter.

Thank you for your assistance in this matter.

Sincerely,


Thomas P. Boxwell, Manager,
Safety, Health And Environmental
Affairs



May 14, 1991

Mr. Ejigu Solomon
Water Resource Specialist
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

SUBJECT: PURGE WATER STORED IN BAKER TANK NUMBER TWO AT HUGHES MISSILE SYSTEMS GROUP, CANOGA PARK, CALIFORNIA

Dear Mr. Solomon:

As we discussed on the phone this morning, Thomas Boxwell of the Hughes Missile Systems Group notified me that the referenced water, which was generated during the development of monitor wells, will be handled by Chemical Waste Management, Inc.

If you have any questions, please call me at (818) 841-0606.

Sincerely,

Kenneth Patton
Senior Geologist

B1:ihh/1083

cc: Thomas Boxwell
Bob Lewis
Richard Surynt

Ref. # 25



October 29, 1990

Mr. Ejigu Solomon
Water Resource Specialist
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Dear Mr. Solomon:

PRE-DISPOSAL SOIL SAMPLE ANALYTICAL RESULTS FOR THE 21,000 GALLON BAKER TANK AT HUGHES MISSILE SYSTEMS GROUP FACILITY

Enclosed as Attachment I are the analytical results for the contents of the 21,000 gallon Baker tank located at the Hughes Missile Systems Group (HMSG) facility in Canoga Park. Currently, the tank contains approximately 2,500 gallons of drilling mud generated during the installation of four groundwater monitor wells. These wells were constructed in accordance with the Los Angeles Regional Water Quality Control Board (RWQCB) "Underground Storage Tank Leak Investigation" requirements, dated October 5, 1989.

Pursuant with RWQCB requests, one sample from the Baker Tank was collected for analysis of the following parameters:

- EPA Method 8240 (Volatile Organic Compounds)
- Modified EPA Method 8015 (Total Petroleum Hydrocarbons)
- EPA Method 413.2 (Total Recoverable Oil and Grease)
- Trace Metals
 - Antimony: EPA Method 7041
 - Arsenic: EPA Method 7060
 - Cadmium: EPA Method 7131
 - Chromium: EPA Method 6010
 - Copper: EPA Method 6010
 - Lead: EPA Method 7421
 - Mercury: EPA Method 7471
 - Selenium: EPA Method 7740

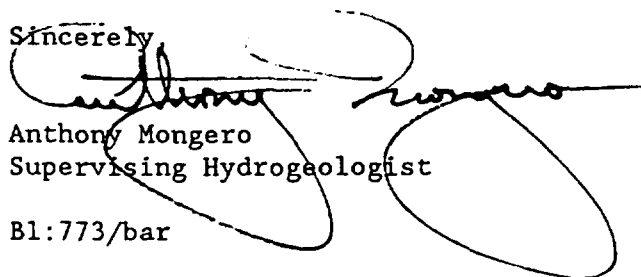
A summary of these results is presented in Table 1. Volatile organic compounds (VOCs) were not detected in the sample. Total petroleum hydrocarbons (TPHs) in the motor oil range were detected at 20 parts per million (ppm), and total recoverable oil and grease (TROG) were detected at 9 ppm. All eight metals were detected at concentrations below both the respective Total Threshold Limit Concentrations (TTL) and the respective Soluble Threshold Limit Concentrations (STLC) of California Code of Regulations (CCR) Title 2, Section 66699.

Mr. Ejigu Solomon
October 29, 1990
Page 2

Based on these analytical results, we request RWQCB permission to dispose of the drilling mud at the Liquid Waste Management, Inc., disposal facility in McKittrick, California.

If you have any questions, please call me at (818) 841-0606.

Sincerely



Anthony Mongero
Supervising Hydrogeologist

B1:773/bar

Attachments



TABLE I

SUMMARY OF DRILLING MUD WASTE BIN ANALYTICAL RESULTS
(ALL RESULTS REPORTED IN PARTS PER MILLION)

<u>ANALYSES</u>	<u>CONCENTRATION</u>	<u>STLC</u>	<u>TTLIC</u>
Volatile Organic Compounds:			
Soil	<0.005	NE	NE
Water	<0.005	NE	NE
Total Petroleum Hydrocarbons	20	NE	NE
Total Recoverable Oil and Grease	9	NE	NE
Metals:			
Antimony	0.006	15	500
Arsenic	0.032	5	500
Cadmium	<0.2	1.0	100
Chromium	0.43	5	500
Copper	0.21	25	2,500
Lead	0.028	5.0	1,000
Mercury	<0.001	0.2	20
Selenium	<0.001	1.0	100

NE - Not established.

DEPARTMENT OF HEALTH SERVICES

714/744 P STREET
SACRAMENTO, CA 95814



Facility:	Hughes Aircraft Company)
	8433 Fallbrook Avenue)
	Los Angeles County)
	Canoga Park, CA 91304)
)
)
)
Operator:	Hughes Aircraft Company)
	8433 Fallbrook Avenue)
	Canoga Park, CA 91304)
)
)
)

INTERIM STATUS DOCUMENT

Number: CAD 041162124

Effective Date: April 6, 1981

Pursuant to Section 25200.5 of the California Health and Safety Code,
this Interim Status Document is hereby granted to Hughes Aircraft
Company subject to the conditions set forth in Attachment A which by
this reference is incorporated herein.

Harvey F. Collins
 Harvey F. Collins, Ph.D., Chief
 Environmental Health Branch

CONTINUED FROM THE FRONT

X EXISTING ENVIRONMENTAL PERMITS (Continued)

- P 56896 Underground Gasoline Storage (SCAQMD)
- P 63957 Underground Gasoline Storage (SCAQMD)
- P 27359 Paint and Solvent Spray Booth (SCAQMD)
- P 53216 Paint and Solvent Spray Booth (SCAQMD)
- P 53217 Oven, Curing and Baking (SCAQMD)
- P53218 Oven, Coating and Baking (SCAQMD)
- P 23046 Boiler (SCAQMD)
- P 23045 Boiler (SCAQMD)
- M 05727 Vapor Degreaser (SCAQMD)
- 3-1258 California Extremely Hazardous
Waste Permit.
- 09-24-80 California Extremely Hazardous
Waste Disposal Permit.

permits

*SCAQMD
9150 Plaine Dr.
El Monte
818-572-6200*

STATE OF CALIFORNIA
HEALTH AND WELFARE AGENCY
DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM

In the matter of:)	Docket No. HWCA 89/90-001
)	
HUGHES AIRCRAFT COMPANY)	CONSENT AGREEMENT AND ORDER
MISSILE SYSTEMS GROUP)	
8433 Fallbrook Avenue)	
Canoga Park, California 91304)	
)	
Respondent.)	
<hr style="border-top: 1px solid black;"/>		

1. Introduction

On or about July 6, 1989, the Department of Health Services ("the Department") filed a Corrective Action Order and Complaint for Penalty ("the Complaint") pursuant to Section 25187 of the Health and Safety Code ("the HSC") against Hughes Aircraft Company, Missile Systems Group ("Respondent") for violations of the HSC at its facility at 8433 Fallbrook Avenue, Canoga Park, California ("Fallbrook facility"). The Department and Respondent now settle this action on the terms set forth in this Consent Agreement and Order ("Agreement and Order").

2. Complaint

The Complaint in this case (attached hereto as Exhibit A) alleges that Respondent violated provisions of the Hazardous Waste Control Act (hereinafter "the HWCA"), HSC sections 25100 et seq. and the regulations thereunder, California Code of Regulations, Title 22, Division 4 ("Title 22") with respect to its hazardous waste operations at the Fallbrook facility, and orders certain corrective action.

/

3. Settlement of Disputed Claim

The parties enter into the Agreement and Order pursuant to a compromise and settlement of disputed claims for the purpose of avoiding prolonged and complicated litigation and furthering the public interest. For the purposes of this Agreement and Order, Respondent does not admit the allegations made in the Order and/or Complaint. If, however, the Department institutes an enforcement action against Respondent within five (5) years of the date of this Agreement and Order pursuant to the HWCA, HSC section 25186, the Department may, without prejudice, include all of the facts supporting the allegations set forth in Exhibit A, in that action. Respondent hereby waives all defenses regarding laches or statutes of limitations that relate to such allegations.

4. Waiver of Hearing

By signing this Agreement and Order, Respondent waives its right to a hearing on the allegations of the Complaint.

5. Civil Penalty

Respondent agrees to pay the Department a total of \$5,500 in settlement of the Department's claims alleged in Exhibit A within thirty (30) days of the execution of this Agreement and Order. Respondent shall make its payments payable to the Department of Health Services, Toxic Substances Control Program and shall include on the face of each payment the docket number for this proceeding. Payments shall be delivered to: Cashier, TSCP Accounting, Department of Health Services, Toxic

Substances Control Program, P. O. Box 942732, Sacramento,
California 94234-7320.

6. Compliance Schedule

Recognizing that the Respondent had a closure plan at the time of the removal of the underground tank, which is referenced in the Complaint; that soil sampling conducted at the time of the tank removal and thereafter disclosed levels of hazardous waste and hazardous waste constituents in the soil in excess of expected cleanup levels; that in November 1989, a Revised Closure Plan was provided to the Department which showed the removal of the underground tank; that a Remedial Action Plan was submitted by the Respondent to the Regional Water Quality Control Board for approval; and that the Regional Water Quality Control Board has forwarded the Remedial Action Plan to the Department for comment and concurrence, the Respondent shall take the following actions as a condition of this Agreement and Order:

6.1 Respondent shall continue to work with the Regional Water Quality Control Board to develop and implement a site characterization plan to determine the extent of the groundwater and soil contamination.

6.2 Respondent shall submit to the Department reports and plans developed with respect to the site characterization and incorporate any comments the Department may have as to those documents.

6.3 Respondent shall submit to the Department within 60 days after the site characterization is completed, a revised

closure plan and post closure plan, if necessary.

6.4 Upon the effective date of this Agreement and Order, Respondent shall review and immediately amend the contingency plan, if necessary, whenever the list of emergency coordinators changes.

6.5 Respondent shall comply with the orders of the Regional Water Quality Control Board including but not limited to orders regarding groundwater monitoring and site mitigation.

6.6 If the Department determines that any report, plan, schedule, or other document submitted for approval with respect to site characterization and/or remediation of the Fallbrook facility fails to comply with this Agreement and Order or fails to protect public health and safety or the environment, the Department may: (a) return the document to the Respondent with recommended changes and date by which Respondent must submit to the Department a revised document incorporating the recommended changes; (b) in cases where the document fails to comply with this Order, make a determination of noncompliance; or (c) modify the document as deemed necessary and approve the document as modified.

7. Matters Covered by This Agreement and Order

This Agreement and Order settles all violations alleged in the Complaint filed against Respondent, its officers, directors, employees, and agents. The provisions of this paragraph are expressly conditioned on full and complete performance by Respondent of all of the terms and conditions of

this Agreement and Order.

Except as expressly provided in this Agreement and Order, nothing in this Agreement and Order is intended nor shall it be construed to preclude the Department or any state agency, department, board or entity from exercising its authority under any law, statute, or regulation, other than its authority to seek relief for the violations alleged in the Complaint, and specifically, nothing herein shall be construed to preclude the Department or any state agency, department, board or entity from exercising its authority under any law, statute or regulation to seek recovery of penalties and response and oversight costs in connection with Respondent's removal and closure of the underground waste oil tank as alleged in the Complaint.

8. Requirement of the Department

The duties imposed on Respondent by this Agreement and Order shall be construed to be requirements of the Department issued pursuant to HSC chapter 6.5, division 20. Any violation of this Agreement and Order is separate and in addition to any violation of any provision of HSC chapter 6.5, division 20.

9. Sampling, Data, and Document Availability

Respondent shall permit the Department and its authorized representatives to inspect and copy all sampling, testing, monitoring, and other data generated by Respondent or on its behalf in any way pertaining to work undertaken pursuant to this Agreement and Order.

10. Notice

All submissions and notices required by this Agreement and Order shall be sent to:

Dennis Dickerson
Department of Health Services
Toxic Substances Control Program
1405 No. San Fernando Blvd #300
Burbank, California 91504
Attention: Paul Baranich

All approvals and decisions of the Department regarding any matter requiring approval or decision under the terms of this Agreement and Order shall be communicated in writing to Respondent. No advice, guidance, suggestions or comments by employees or officials of the Department regarding submissions or notices shall be construed to relieve Respondent of its obligation to obtain the final written approvals required by this Agreement and Order.

11. Department Not Liable

The Department shall not be liable for any injury or damage to persons or property resulting from acts or omissions by Respondent, its directors, officers, employees, agents, representatives or contractors in carrying out activities pursuant to this Agreement and Order, nor shall the Department be held as a party to or guarantor of any contract entered into by Respondent, its directors, officers, employees, agents, representatives or contractors in carrying out activities required pursuant to this Agreement and Order.

12. Modification of Agreement and Order

This Agreement and Order may be modified upon written

approval of the parties hereto.

13. Extensions

Respondent may request in writing an extension of the compliance schedule provided herein prior to the date compliance is due. If the Department determines that good cause exists for an extension, it will grant the request and specify in writing a new compliance schedule. Where feasible, the Department will respond to the request within seven days of receipt. Silence does not constitute approval of the extension and Respondent is not authorized to violate the compliance schedule herein unless and until the Department agrees in writing.

14. Application of Agreement and Order

This Agreement and Order shall apply to and be binding upon the Department and Respondents, its directors, officers, employees and agents and the successors or assigns of either of them.

15. Authority to Enter Agreement and Order

Each signatory to this Agreement and Order certified that he or she is fully authorized by the party he or she represents to enter into this Agreement and Order, to execute it on behalf of the party represented and legally to bind that party.

16. Integration

This Agreement and Order constitutes the entire agreement between the parties and may not be amended or supplemented except as provided for herein.

IT IS SO STIPULATED:

DEPARTMENT OF HEALTH SERVICES

Dated:

By:

KENNETH W. KIZER, M.D., M.P.H.
Director
Department of Health Services

Approved as to Form and Content:

JOHN K. VAN DE KAMP, Attorney General
of the State of California
ANDREA SHERIDAN ORDIN,
Chief Assistant Attorney General
THEODORA BERGER,
Assistant Attorney General

Dated: August 20, 1990

By:

Richard Tom

RICHARD TOM
Attorney for Department of
Health Services

HUGHES AIRCRAFT COMPANY

Dated:

By:

J. J. Hony

Title: Senior Vice President & Group President
Hughes Aircraft Company

rt4:Hughes.cao



MISSILE SYSTEMS GROUP

August 1, 1988

Mr. John A. Hinton
California Department of Health Services
107 South Broadway, Room 7011
Los Angeles, CA 90012

Dear Mr. Hinton:

REFERENCE: Hughes Aircraft Company, Missile Systems
Group's Hazardous Waste Storage Facility, Operation
Plan, Permit No. CAD 041162124.

The attached proposed revision of our Plan referenced above, is submitted for your review and approval. This revision deals with the removal of the oil waste tank, which was an element of the Facility, and minor operational changes.

As you know, we had previously submitted to you for review and approval, two other revisions of the Plan dated 8 January 1987 and 28 September 1987. We have yet to learn from you whether or not the revisions have been approved. Several telephone calls were made by me to you and Mr. Plaza regarding the delay in processing these revisions. I was informed that action would be taken as soon as possible to process the revisions.

Of immediate concern is our January revision in which requested modification of the Facility permit to include the addition of a hazardous waste storage building. This building stores the bulk of our hazardous wastes. Not being permitted at this time, storage therein is limited to 90 days.

Ref. # 11