

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-008

UPDATED WASTE DISCHARGE REQUIREMENTS FOR:

UNITED TECHNOLOGIES CORPORATION, CHEMICAL
SYSTEMS DIVISION, COYOTE CENTER,
SANTA CLARA COUNTY

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

1. United Technologies Corporation, hereinafter called the discharger, owns and operates the Chemical Systems Division in Santa Clara County as shown in Figure 1. The discharger develops, manufactures, and tests solid rocket fuels and rocket motors. The site began operating in the late 1950's and occupies 5,200 acres including 180 buildings. This Order addresses closure for three Class I surface impoundments, corrective action for groundwater contamination, wastestreams discharged to the ground, emergency containment facilities, sumps and tanks, fuel tanks and sewerage facilities. The discharger submitted a Report of Waste Discharge, dated July 30, 1987.
2. Solid rocket motors are filled with propellants designed to cause a controlled oxidation reaction which releases large amounts of energy and gas. Solid rocket propellants are typically synthetic rubber with reactive materials suspended in the rubber matrix. The typical materials used on site are polybutadiene, acrylonitrile polymers, ammonium perchlorate, aluminum powder, and di-isocyanates. HMX and nitroglycerine are added to propellants to enhance energy levels. Nonexplosive hazardous materials used in the operation include epoxies, paints, insulating materials. Chlorinated and non-chlorinated solvents are used for degreasing motor cases and subassemblies.
3. The site is located in an area of rolling hills and relatively broad valleys. The two main valleys within the developed portion of the site are Shingle Valley and Mixer Valley. Several creeks flow through the site which ultimately discharge into Anderson Reservoir. Anderson Reservoir is within one-half mile of the southern boundary of the site and is used for recreation and recharge of the groundwater basin. The basin is a major source of drinking water in the Santa Clara Valley. The creeks include Shingle Creek which flows in a southeastward direction into San Felipe Creek. An unnamed creek in Mixer Valley, (which for the purposes of the Order will be called Mixer Valley Creek) flows into Las Animas Creek which flows into San Felipe Creek.
4. The site is located over unconsolidated recent alluvial deposits which are composed of poorly sorted stiff silts, clays, sands, and gravel. Within the silts and clays are lenses and layers of more permeable clayey sand, clayey gravelly sand, and gravel. Individual beds of more permeable sediment vary in thickness from a few inches to as much as ten feet. The alluvial valley fill thickens in the downstream

direction from about 10 feet in the upper ends of the valleys to 30 feet or more in the lower portions of the valleys.

Underlying the alluvium is the Santa Clara Formation, a late Pliocene to early Pleistocene formation of alluvial fan deposits. In general, the Santa Clara Formation consists of poorly consolidated gravel beds, sand and silt beds, some clay beds, bedded silt and rare tuff layers. Within the developed portion of the site, the Santa Clara Formation dips northeastward and the valleys generally parallel the strike of the beds. The total thickness of the Santa Clara Formation is unknown, but may be as much as 4500 feet in the region.

5. The site is located in a tectonically active area and is surrounded on three sides by potentially active faults. The vertical, strike-slip, Calaveras fault cuts through the easternmost extension of the site. Over the ridge top to the southwest are the Silver Creek, Coyote, and Metcalf thrust faults. The Animas and Quimby high angle reverse faults are just north of the site boundary.
6. Groundwater investigations have focused on characterization of groundwater quality in Mixer Valley and Shingle Valley. In Mixer Valley, the shallow groundwater table is in the Recent Alluvium and occurs between 4 and 11 feet below the ground surface. The shallow groundwater flows southeast down the valleys. Groundwater in both valleys also occurs in deeper Santa Clara formation between 50 and 70 feet below the ground surface. Hydraulic conductivities in the alluvium range from 3×10^{-2} to 2×10^{-4} cm/sec and the Santa Clara formation hydraulic conductivities range from 2×10^{-3} to 1×10^{-8} cm/sec.
7. The groundwater investigation in Mixer Valley began in 1981 and detected contaminant plumes originating from many potential sources including historic locations of drummed storage of various solvents, and two surface impoundments. Investigation consisted of five phases including the installation of 65 groundwater monitoring wells to depths of 100 feet and 28 soil borings. The major plume currently contains concentrations up to 9 ppm of total volatile organic compounds and has historically contained up to 24 ppm. The plume is approximately 1400 feet in length and 500 feet in width. The major compounds detected are 1,1,1, trichloroethane, trichloroethylene, vinyl chloride, trans-1-2 dichloroethylene, 1,1-dichloroethylene, and 1,1-dichloroethane.
8. Groundwater investigation in Shingle Valley began in 1984 and identified 6 significant plumes and numerous minor plumes originating from numerous potential sources including historic drum storage areas, sumps, spills, and fuel tanks. The investigation has included soil gas sampling at 191 locations and installation of 45 wells. The maximum concentration of total volatile organic compounds in the valley is 4.5 ppm. The discharger is currently defining the extent of contamination.
9. There are four known water wells, none of which are currently being used, one-half to one mile east of the discharger's property, downgradient of Shingle Valley. There is also one known water supply well located in the alluvial deposit just east of Las Animas Creek. Two of the four water supply wells are reportedly 35-40 feet deep and

derive their water from the alluvial stream sediment in which they were completed. The other two water supply wells are agricultural wells that were abandoned in 1922.

10. The Board adopted Waste Discharge Requirements, Order No. 80-61 on December 2, 1980. The Order addressed 14 wastestreams and their respective waste management units.
11. Waste management units and waste discharges at the site consist of 1) Class I surface impoundments, 2) Tanks, 3) Burn Pits, 4) Sumps, 5) Spill Containment Facilities, 6) Wastewater Treatment Plant with storage pond and sprayfield, 7) Septic System Leachfields, 8) Sewage Tanks, 9) Drum Storage Facilities, 10) Land Discharges, and 11) Surface Water Discharges. The Order requires proper operation of ongoing waste management units, proper closure for units which have been taken out of service, groundwater and soil investigations to determine the extent of contamination, and remedial actions to limit the migration of contaminants and to initiate final cleanup. The major units are illustrated in Figure 2.
12. Three Class I surface impoundments no longer in use are:
 - a. Surface Impoundment 706 was a 42,964 gallon surface impoundment divided into four equal compartments 14.5 ft. by 22 ft. with a depth of 4.5 ft. The unit was constructed of 8 inch minimum thickness concrete and was in operation from 1962 to 1985. Prior to 1980, two of the cells were used to store waste solvents and paint sludges. The other two cells received washwater which was used to rinse out hoppers containing residual ammonium perchlorate. In addition, wastewater from oxidizer and manufacturing processes, vehicle washing, wastes from laboratory floor and sink drains, and water from emergency fire sprinklers containing solid propellant may have been discharged. The wastewater evaporated and the residual was hauled off site. All of the compartments have been hydroblasted and the liquid and sludge was removed in December 1985. The discharger submitted a closure plan in October 1985 and a revised closure plan in December 1988.

Surface Impoundment 706 is located in Mixer Valley near the highest concentrations of contaminated groundwater within the Valley.

- b. Surface Impoundment 635: was a 179,500 gallon surface impoundment 60 ft. by 104 ft. with a 5 ft. depth. The surface impoundment received approximately 2,000 gallons per day of wastewater until 1983 from a polybutadiene acrylic acid acrylonitrile (PBAN) polymer manufacturing plant. The wastewater contained sodium chloride, acrylic acid, acrylonitrile, toluene, chlorinated solvents and polymer emulsions. The wastewater had a pH of 1 to 4 and was treated in a tank with calcium hydroxide to neutralize the acrylic acid. Periodically, the sludge and concentrated wastewater was disposed of at a Class I disposal site. The surface impoundment was an earthen pond lined with Hypalon. A fire destroyed the liner and in 1981; a second hypalon liner was installed. A closure plan was submitted in October 1985 and revised in February 1988. The pond has been backfilled and a cover has been installed.

Surface Impoundment 635 is located in Mixer Valley. There are chlorinated solvents in the groundwater near the pond.

- c. Surface Impoundment 250 was a 110,540 gallon concrete circular surface impoundment 62 feet in diameter 6 feet in depth. The surface impoundment received metal finishing wastewater from the metal finishing shop until 1983. The surface impoundment treated 6,000 gallons/month of wastewater bearing heavy metals, nitric, sulfuric and acetic acids containing high concentrations of hexavalent chromium, nitrates, sulfates, phosphates, aluminum, nickel and iron and had a pH from 2-12. Ferrous sulfate was added to decrease the hexavalent chromium prior to precipitation with lime. Following pH adjustment and settling, the treated effluent was pumped to another Station 250 pond if the water met drinking water standards. A closure plan was submitted in March 1985, the liquid and sludge removed in April 1985 and the impoundment was backfilled and covered with asphalt. The closure plan has not been approved.

Surface Impoundment 250 is adjacent to the highest concentrations of volatile organic compound contamination in Shingle Valley.

13. There are a number of additional waste management units or areas at the site that are not subject to the provisions of Subchapter 15 which may cause the threat of pollution or pollution of the groundwater. The threat of pollution from these units and areas should be investigated. These units are described below.
14. There are two tanks and two unclassified units located at the facility:
 - a. Containment Tank 1319 is a concrete unit 22 ft. by 22 ft. by 7 ft. deep with a capacity of approximately 25,000 gallons. The structure was designed for emergency containment of chemicals used during thrust tests. The unit may have contained nitrogen tetroxide.
 - b. Containment Tank 1713 is an above ground 2,800 gallon concrete structure which was used until 1984 for the handling of waste solid propellant and for storage of ammonium perchlorate and water. The tank has been hydroblasted to remove any residual.
 - c. Containment Unit 1810 is an out of service below ground 28,000 gallon concrete storage structure 30 ft. by 30 ft. with a 6 ft. depth. The unit was used for emergency containment of spilled chemicals associated with liquid fuel ramjet motor tests and could have contained inhibited red fuming nitric acid. The unit is concrete and does not have any secondary containment.
 - d. Containment Unit 1811 is an out of service below grade 28,000 gallon concrete unit 30 ft. by 30 ft. by 6 ft. deep used for the storage of contaminated water from the ramjet motor test area. The waste could have contained red fuming nitric acid. The unit has not been used since 1980.

15. Burn Pit 0891 covers 3,600 square feet and is comprised of six bermed areas each of about 20 ft. by 30 ft. The burn pits thermally treat solid rocket propellant, explosive scraps, excess reactive propellant related materials, propellant contaminated rags, sample residuals, and oxidizer salts. Wastes are burned approximately every week and the pits are cleaned approximately once every three years and the residual ash is separated from any remaining metal scraps. Ash is placed in containers for hauling off-site to a Class I disposal site. The burn pits handle between 1.5 to 15 tons of wastes per month. Prior to 1963, the discharger used a Burn Pit site between stations 460 and 470 in Shingle Valley.
16. The discharger uses various sumps which are listed and described below.
 - a. Sump 635 is a concrete circular sump 5 ft. in diameter, 4 ft. deep which received wastewater through the floor drains from within the PBAN polymer plant which was subsequently discharged to Surface Impoundment 635. Soil sampling at the sump detected total volatile organic compounds.
 - b. Sumps 1860 and 1861 were two below ground 130 gallon concrete storage sumps 43 in. by 30 in. by 24 in. used until 1985 for the storage of production waste chemicals. The chemicals known to be discharged to the Station 1860 sump include Freon 113, various alcohols, methyl ethyl ketone, methyl isobutyl ketone, acetone, and Stoddard solvent. Chemical known to be discharged to the Station 1861 sump include Freon 113, trichloroethane, 1,1,1, trichloroethane, and various alcohols. At the time they were taken out of service, they were hydroblasted to remove any residual materials and subsequently filled in with concrete.

The groundwater downgradient of the sumps contain Freon 113 at 13 ppb, trichloroethylene at 810 ppb, and total volatile organic compounds at 1,821 ppb.

- c. Sump 1920 is a below ground 1,800 gallon concrete storage sump 7.5 ft. by 4 ft. by 8 ft. The sump has no secondary containment. The sump has stored laboratory wastes for less than 60 days. The waste has historically contained benzene, methylene chloride, 1,1,1-trichloroethane, toluene, and chloroform with concentrations of 5 to 20 ppm volatile organic chemicals. Currently the waste contains concentrations of volatile organic compounds of less than 0.2 ppm and isopophorone at less than 5 ppb. Approximately 12,000 gallons of wastewater are removed from the sump each year and hauled off site to a Class I disposal site.
- d. Sump 1950 is a two compartment below ground 2,010 gallon concrete sump 4 ft. by 12 ft. by 5.6 ft. The sump does not have secondary containment. The sump is used for the storage of laboratory wastewater contaminated with chlorinated solvents for less than 60 days. The chemicals constituents known to be stored in this unit have included TCE, TCA, methylene chloride, Freon 113, various alcohols, acetone, and semi-volatiles. Approximately 5,000 gallons per year are discharged to this tank.

17. Containment Facilities 0501, 0505, 0531, 0561, 0571, 0585, 0630, 0705, 1820, 1830, 1862, 1960, 1971, are used for emergency containment of propellants, raw ingredients, and miscellaneous chemicals which may be accidentally spilled. Emergency concrete spill collection curbs and tanks exist in areas where these materials are stored, manufactured, and tested. Wastes discharged to the spill containment structures are pumped out and disposed off site as hazardous waste, if not explosive, or treated on site if explosive.

18. The site treats and discharges sanitary sewage on site. The sewerage facilities are described below.

- a. Wastewater Treatment Plant 2100 is a secondary treatment plant which receives sanitary sewage from approximately 1,500 employees. In addition, an unknown quantity of flows from industrial discharges such as boiler blowdown, cooling towers, compressor condensate, and heating/air conditioning condensate are directed to the treatment plant. In 1987 the maximum flow to the plant was 65,200 gpd. The monthly average wet weather flow is 31,000 gallons per day and monthly average dry weather flow is 23,000 gallons per day. The design capacity of the treatment plant is 40,000 gallons per day. In addition, the design capacity of the plant is 68 lbs/day for BOD and suspended solids. During a 7-day test period in 1985 the plant had 30% overload for BOD.

Effluent from the treatment plant is sprayed onto approximately four acres of hillsides for disposal by evaporation onto Sprayfield 2100. Excess water drains from the hillsides to a four pond holding system (Storage Pond 2100:P1-P4), which has a storage capacity of approximately 1.8 million gallons and is recirculated back to the spray field. Sludge is discharged to drying ponds next to the treatment plant.

In 1982, 1983, and 1986, excessive rains led to overflows of the holding pond system. In late 1986, a 2.3 million gallon pond (Storage Pond 2120) was added to provide additional storage capacity for emergency situations.

Pond SA-4 was the original sewage system taken out of service in 1963 and used thereafter only as an overflow pond until the new pond was built in 1986.

Leachfields 0080, 0460, 0530, 0560, 0570. A total daily average of 2,150 gallons is discharged to five septic tanks with leach fields. Domestic sewage and minor amounts of water resulting from boiler blow downs and condensate from vacuum pumps and compressors are also discharged.

Sewage Tanks 1319, 1372, 1711 hold domestic and industrial wastewater which is hauled off site.

19. Water Treatment Plant Pond 2215 is an earthen pond which receives about 2100 gallons per day of zeolite backwash water from the drinking water plant supplied by the well field on the discharger's property.

20. The discharger currently operates one permitted hazardous drum storage facility. In the past, the discharger had numerous areas throughout the site where they stored drums. The drum storage areas are described below.
- a. Drum Storage Facility 2233 is an 89 ft. by 100 ft. reinforced concrete slab covered by a steel weather cover. The facility has the capacity for storage of 1,000 drums or 55,000 gallons. The unit also contains two 1,000 gallon storage tanks used for spill containment. The site was opened in 1984.
 - b. Drum Storage Facility 1233 was a 290 ft. by 180 ft. storage area for drummed wastes with a capacity of fifteen hundred drums. All substances used at the site, except propellant or explosive components may have been stored in this area. The unit was earthen without curbs or berms except for a concrete pad in the center. DOHS closed this unit under RCRA on October 4, 1984.
 - c. Drum Storage Area 706 was located in the vicinity of Surface Impoundment 706 and was used for the storage of waste solvents. This drum storage area consisted of an earthen base with no known containment devices. The drum storage area was located in the area of the highest concentration of volatile organic compounds in the groundwater and significant concentrations in the soil.
 - d. Drum Storage Area 0321 was located adjacent to Surface Impoundment 250. The size of the storage area and the number of drums stored in this area is not known. The storage area was contained on a concrete pad which was curbed on three sides. The drum storage area was not used after 1983 and the concrete was removed in 1987. Groundwater in the area is contaminated with volatile organic compounds.
21. The Discharger currently discharges various waste streams to the ground via drainage ditches. These waste streams amount to about 19,000 gallons per day (gpd) and include water generated by boiler blowdown (about 4,450 gpd), condensate (about 4,700 gpd), floor drains, non-contact cooling water from hydraulic units (about 9,600 gpd), and vehicle fleet wash water (about 110 gpd). These average estimates can vary significantly depending upon building usage.

In Mixer Valley during the summer when the natural baseflow in the streams is very low or zero, the cooling water will tend to sustain the baseflow in the streams and underflow in sediments below the streambeds. In dry years or in the summer season the cooling water may increase the natural subsurface flow by 50% or more.

Water generated during rocket motor tests is also discharged to the ground. This wastestream consists of contact cooling water for rocket motors after testing firings up to 12,000 gallons per year, non-contact water for hydraulic units up to 3,000 gallons/year, water used for burst testing of motor cases 1,870 gallons/year, boiler blow down and condensate from heat transfer and pressure accumulation units during high altitude ramjet tests. All this water is discharged to the ground during 8-12 tests per year.

22. The discharger currently has two point source discharges to Shingle Valley Creek. The discharges are described below.
 - a. Surface Water Discharge 0021 consists of about 16,000 gpd of treated groundwater that has been collected in a French Drain, treated in an air stripper and discharged over an 18 hour period each day. In January 1988 the discharger installed the french drain system after detecting an area of contaminated seeps entering Shingle Valley Creek.
 - b. Surface Water discharger 1230 consists of about 11,000 gpd of treated groundwater that has been pumped to accommodate a subterranean building. The groundwater is treated in an air stripper and discharged over a 10 hour period.
23. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. This Order implements the water quality objectives stated in the Basin Plan.
24. The beneficial uses of Shingle and Las Animas Creeks which are tributary to Anderson Reservoir, and Anderson Reservoir, located approximately one half mile downgradient of the discharger's property, include:
 - a. Municipal supply
 - b. Groundwater recharge
 - c. Recreation
 - d. Fish habitat
 - e. Wildlife habitat
25. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:
 - a. Industrial process water supply
 - b. Industrial service water supply
 - c. Municipal and Domestic water supply
 - d. Agricultural water supply
26. Section 13227 of the Water Code requires the Board to review closure plans submitted pursuant to Section 25246 of the Health and Safety Code for hazardous waste facilities in order to assure adequate protection of water quality. The Board may condition its approval of these closure plans. Regulations contained in Title 22, California Code of Regulations which implement the Health and Safety Code, set a closure standard (Section 67211, Title 22) that includes minimization of migration of waste constituents to State waters. The Board finds that substantial compliance with the siting and construction standards contained in Subchapter 15 of Title 23 constitutes adequate minimization of waste migration for sites being closed.
27. Onsite interim containment and cleanup measures need to be expanded to alleviate the threat to the environment posed by the continued migration of organic solvents and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.

28. The action to issue waste discharge requirements for continued operation of existing waste management units and for closure of waste management units is exempt from the California Environmental Quality Act (Public Resources Section 2100 et. seq.) in accordance with Section 15301 of the California Code of Regulations.
29. The Board notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
30. The Board, in a public hearing held on January 18, 1989 heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger shall meet the applicable provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall comply with the following:

A. Prohibitions

1. The discharge, storage, or treatment of waste, or materials which may impact the beneficial uses of the ground and surface water, shall not be allowed to create a condition of pollution or nuisance as defined in Sections 13050 (l) and (m), respectively, of the California Water Code.
2. Significant migration of pollutants through subsurface transport to waters of the State is prohibited.
3. There shall be no discharges of wastes to surface waters.
4. Prohibitions for Wastewater Reclamation
 - a. There shall be no bypass or overflow of sewage from the collection, treatment, or disposal system to waters of the State.
 - b. The average dry weather flow shall not exceed 40,000 gpd. Average flow shall be determined over three consecutive dry weather months each year.
 - c. The waste shall not be allowed to escape from the effluent disposal area into waters of the State via surface flow, resurfacing after percolation, or airborne spray.
 - d. Wastewater ponding which could provide a breeding area for mosquitoes is prohibited.
 - e. Wastewater effluent shall not be applied to the effluent disposal area whenever Specifications B.4(a) and (b) are not being met.
 - f. The collection, treatment, and disposal of wastewater shall not impair ground water quality.

B. Specifications

The following specifications apply as set forth in the provisions. Unless otherwise noted, any references to Sections and Articles refer to portions of Subchapter 15 of Title 23 California Code of Regulations.

1. General Specifications

- a. During waste disposal, handling, or treatment, no wastes shall be placed in a position where they can be carried into waters of the State.
- b. The units shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water, throughout the operation, closure, and post-closure periods.
- c. The containment structures shall be designed by, and constructed directly under the supervision of and certified by, a registered civil engineer or a certified engineering geologist.
- d. The integrity of containment structures shall be maintained at all times.

2. Surface Impoundment Closure Specifications

For Class I surface impoundments remove all liquid wastes. Following removal and proper disposal of liquid wastes, all residual wastes and contaminated liners and soils shall be removed or it shall be demonstrated by the discharger that removal is not feasible. If wastes, contaminated liners or soils, are left in place the surface impoundment shall be closed in a manner that minimizes the potential for migration of waste constituents, their degradation products, or leachate to State waters. Compliance with Articles 3 and 4 of Subchapter 15 to the extent feasible and necessary shall be deemed adequate containment for minimization of potential migration. Engineered alternatives that provide equivalent protection of water quality may be used as substitutes for requirements contained in Articles 3 and 4.

3. Specifications for Plume Definition

The Discharger shall conduct monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of plume migration, additional plume characterization of pollutant extent may be required.

4. Specifications for Wastewater Reclamation

- a. Waste at any place within one foot of the holding pond surface shall not exceed the following limits:

In any grab sample:

| | |
|--------------------|----------------------------|
| Dissolved Sulfides | 0.1 mg/l maximum |
| pH | 6.0 minimum 9.0 maximum |

- b. Waste effluent, as discharged to the effluent spray disposal area, shall meet the following limit at all times:

In any grab sample:

| | |
|------------------|-----------------|
| 5-day BOD | 40 mg/l maximum |
| Dissolved Oxygen | 2 mg/l minimum |

- c. A minimum freeboard of two feet shall be maintained in P1, P4 and Station 2120 holding ponds at all times. A minimum freeboard of one foot shall be maintained in P2 and P3 holding ponds.
- d. Wastewater disposal shall be limited to the area specified in Finding 18 of this Order.
- e. The public shall be effectively excluded from the treatment plant, holding pond, and effluent disposal area. These areas shall be clearly identified with posted notices to the public. The method and form of notification and exclusion shall be subject to the review and approval of the Executive Officer.
- f. All equipment including pumps, pipings, valves, etc. which may at any time contain effluent shall be adequately and clearly identified with warning signs and the discharger shall make all necessary provisions, in addition, to inform the public that the liquid contained therein is wastewater effluent and is unfit for human consumption.
- g. The treatment plant and holding pond shall be protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.
- h. The holding pond shall have sufficient capacity to contain all wastewater generated from the facility during the period from November 1 through March 31 during the wettest rainfall period expected once in ten years.
- i. The disposal area shall have sufficient capacity to dispose, during the period from April 1 through October 30, of all waste received during the wettest year in ten years.

C. PROVISIONS

Unless otherwise noted, any references to Sections and Articles refer to portions of Subchapter 15 of Title 23 California Code of Regulations.

1. The Discharger shall comply with Prohibitions A.1, A.2, and Specification B.1 (General Specifications) immediately upon adoption of this Order.
2. Surface Impoundment 706
 - a. Achieve full compliance with Specification B.2 according to the closure, post-closure monitoring and maintenance plan, and groundwater monitoring plan as approved by the Executive Officer.
COMPLIANCE DATE: October 31, 1989 or in accordance with the timeschedule established for RCRA closure.
3.

| | |
|-------------------------|-------------|
| <u>Containment Tank</u> | <u>1319</u> |
| <u>Containment Tank</u> | <u>1713</u> |
| <u>Containment Unit</u> | <u>1810</u> |
| <u>Containment Unit</u> | <u>1811</u> |
| <u>Sump</u> | <u>1920</u> |
| <u>Sump</u> | <u>1950</u> |

 - a. Submit a technical report acceptable to the Executive Officer demonstrating whether containment units 1810 and 1811 are constructed of materials which provide structural support and can be classified as tanks.
REPORT DUE: May 15, 1989
 - b. Submit a technical report acceptable to the Executive Officer which evaluates whether there have been any discharges of waste constituents from the above units to the groundwater or soil.
REPORT DUE: September 1, 1989
 - c. If it is determined by the Executive Officer based on the information generated for Provision 3.b that the waste constituents have been or are being released to the groundwater from any of these units, the discharger shall define the extent of the waste constituents in the soil and groundwater and submit a proposal for corrective action.
REPORT DUE: June 15, 1990
 - d. Submit a report acceptable to the Executive Officer to either close the units in accordance with applicable regulations or to demonstrate that the units are constructed to prevent the discharge of contaminants to waters of the State. The report shall include a comparison of proposed actions with requirements of Santa Clara County Health Department and other applicable regulations.
REPORT DUE: October 1, 1989

- e. Submit a technical report acceptable to the Executive Officer documenting closure or completion of the necessary tasks identified in the technical report submitted for Task 3.d.
REPORT DUE: May 1, 1990

4. Burn Pit 0891

The Discharger shall comply with Prohibition A.1(Pollution and Nuisance) according to the following tasks and timeschedule:

- a. Submit a proposal acceptable to the Executive Officer to determine the source and extent of contamination in the burn pit area. The proposal shall contain a time schedule for a status report to be submitted prior to the final report.
REPORT DUE: February 15, 1989
- b. Submit the site investigation report in accordance with the proposal submitted for Provision 4.a as approved by the Executive Officer. This report shall include a proposal for corrective action.
REPORT DUE: March 15, 1990

5. Emergency Containment Facilities:

Containment Pond 630

Containment Pond 705

Containment Facilities 0501, 0505, 0531, 0561, 0571, 0585, 0630, 1820, 1830, 1862, 1960, 1971

Submit a technical report acceptable to the Executive Officer detailing emergency containment practices which prevent discharges to groundwater or surface water. The report shall include 1) current facility drawings providing construction details, 2) a description of operations requiring the containment facilities, 3) procedures for prevention of contamination of ground and surface water from these facilities, and 4) information on all releases from these facilities during the period 1978 or construction date (if after 1978) to the present.
REPORT DUE: October 1, 1989

6. Wastewater Treatment Plant 2100

The Discharger shall comply with Prohibition 4 and Specification B.4 (Wastewater Reclamation) according to the following tasks and time schedule. The Discharger shall comply with Prohibition 4 except Prohibition 4.e immediately upon adoption of this Order.

- a. Submit a proposal acceptable to the Executive Officer to characterize and identify all domestic and industrial wastestreams which constitute the wastewater treatment plant influent. The proposal shall include a plan to chemically characterize the influent and effluent that will provide representative results of the influent and effluent quality.
REPORT DUE: April 1, 1989
- b. Submit the report in accordance with the proposal submitted for Provision 6.a.
REPORT DUE: September 1, 1989

- c. Submit a proposal acceptable to the Executive Officer for interim measures to be undertaken that will improve the plant's treatment efficiency.
REPORT DUE: April 1, 1989
- d. Achieve full compliance with the interim measures in accordance with the proposal submitted for Provision 6.c.
REPORT DUE: September 1, 1989
- e. Submit a proposal to increase the treatment capacity of the wastewater treatment plant. The proposal shall include plans for a system that can accommodate the current plus anticipated future flows.
REPORT DUE: October 15, 1989
- f. Achieve full compliance with Prohibition 4.e and Specification B.4.b in accordance with the proposal submitted for Provision 6.e as approved by the Executive Officer.
COMPLIANCE DATE: September 1, 1990
- g. Submit a proposal acceptable to the Executive Officer to investigate the impact of the wastewater treatment plant effluent on the spray field and the septic system effluent on the leachfields. The proposal shall include plans to sample the soils in the spray field and the waste in the septic system to determine the potential for groundwater contamination.
REPORT DUE: May 1, 1989
- h. Submit the report in accordance with the proposal submitted for Provision 6.g as approved by the Executive Officer.
REPORT DUE: October 31, 1989
- i. Submit a technical report which demonstrates that the treatment plant and storage ponds shall be in compliance with Specifications B.4(g) and (h) (100 year flood and 10 year rainfall).
REPORT DUE: September 15, 1989
- j. Submit a groundwater monitoring plan acceptable to the Executive Officer to monitor for potential releases from the storage ponds, treatment plant and spray field.
REPORT DUE: March 1, 1990
- k. Submit the results from the first round of sampling and analysis according to the groundwater monitoring plan approved by the Executive Officer.
REPORT DUE: July 1, 1990

7. Discharges to Ground

The Discharger shall comply with Prohibition A.1 (Pollution or Nuisance) according to the following tasks and time schedules:

- a. The Discharger shall submit a proposal acceptable to the Executive Officer to chemically characterize all the wastestreams currently being discharged to the ground.
REPORT DUE: July 1, 1989
- b. The Discharger shall submit a report of the results in accordance with the proposal submitted for Provision 7.a. The report shall include an evaluation of the threat to water quality of the ground discharges.
REPORT DUE: May 1, 1990
- c. Submit a management plan for vehicle washwater which will not create an adverse effect on water quality. The plan shall identify a strategy for the containment, treatment, discharge or disposal of the wastestream.
REPORT DUE: July 1, 1989
- d. Achieve full compliance with the plan as approved by the Executive Officer submitted for Provision 7.c.
COMPLIANCE DATE: October 1, 1990

8. Discharges to Surface Water

- a. The Discharger shall submit a technical report acceptable to Executive Officer which includes a proposal for interim measures that shall be taken to increase the reliability that the surface water discharges do not contain particular characteristics of concern. The proposal shall include an inventory of all surface water discharges.
REPORT DUE: May 15, 1989
- b. Achieve full compliance with the interim measures as specified in the report submitted for 8.a. and as approved by the Executive Officer.
COMPLIANCE DATE: November 15, 1989
- c. The Discharger shall take steps toward compliance with Prohibition A.3 (Surface Water Discharge Prohibition) by submitting a plan acceptable to the Executive Officer for achieving compliance or justifying an exception to the prohibition consistent with the Basin Plan and Regional Board Resolution No. 88-160 (Disposal of Extracted Groundwater From Groundwater Cleanup Projects).
REPORT DUE: September 1, 1989
- d. Achieve full compliance with the plan as approved by the Executive Officer submitted for Provision 8.c.
COMPLIANCE DATE: October 1, 1990

9. Mixer Valley and Shingle Valley Groundwater Contamination
The Discharger shall comply with Specification B.3(Plume Definition) according to the following tasks and time schedules:

a. ONSITE

- (1) **TASK: IMMEDIATE RESPONSE ACTIONS:** Submit a technical report acceptable to the Executive Officer containing an assessment and implementation time schedule for immediate response actions. The report shall include a proposal to evaluate the wells which are most highly suspected of crossing the Santa Clara formation and alluvium and a plan to destroy the wells interconnecting the aquifers as well as other appropriate immediate response remediation. The report shall include a description of the methods to be used for well destruction.
REPORT DUE: February 15, 1989
- (2) **TASK: COMPLETION OF IMMEDIATE RESPONSE:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for 9.a.1
REPORT DUE: July 1, 1989
- (3) **TASK: COMPLETION OF GEOLOGIC CHARACTERIZATION AND WELL EVALUATION:** Submit a technical report acceptable to the Executive Officer which hydrogeologically characterizes the site. The report shall include geologic mapping, development of adequate cross sections, an evaluation of the competency of all existing wells, and define the horizontal and vertical extent of the onsite groundwater pollution. The report shall also include an evaluation of the potential effects of the recharge-discharge regime of Shingle and Mixer Creeks and the discharges to ground on surface water contamination and plume migration.
REPORT DUE: August 15, 1989
- (4) **TASK: DOWNGRAIENT REMEDIAL ACTION EXPLORATION-SHINGLE VALLEY:** Submit a technical report acceptable to the Executive Officer which contains a proposal to assess potential remedial actions at the downgradient area of the contamination in Shingle Valley. The proposal shall include actions necessary to complete a remediation system design.
REPORT DUE: March 15, 1989
- (5) **TASK: COMPLETION OF DOWNGRAIENT REMEDIAL ACTION EXPLORATION IN MIXER VALLEY AND SHINGLE VALLEY:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 9.a.4 and the Mixer Valley Workplan as approved by the Executive Officer.
REPORT DUE: October 16, 1989

- (6) **TASK: DOWNGRAIENT INTERIM REMEDIAL ACTION DESIGN-MIXER VALLEY AND SHINGLE VALLEY:** Submit a technical report acceptable to the Executive Officer which evaluates interim remedial actions for the downgradient edge of contamination in both Shingle and Mixer Valley and proposes a recommended interim remediation alternative.
MIXER VALLEY REPORT DUE: December 15, 1989
SHINGLE VALLEY REPORT DUE: January 15, 1990
- (7) **TASK: COMPLETION OF DOWNGRAIENT INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical reports submitted for Task 9.a.6.
REPORT DUE: October 15, 1990
- (8) **TASK: a) EVALUATE INTERIM DOWNGRAIENT REMEDIAL ACTION:** In the quarterly progress reported required under Provision 12 include an evaluation of the effectiveness of the interim downgradient remedial action. QUARTERLY REPORT DUE: December 15, 1990
- (9) **TASK: MODIFICATION TO INTERIM ACTIONS:** Specific modifications to the system and an implementation time schedule shall be proposed in the event that the downgradient interim remediation is demonstrated not to be effective in containing and removing the onsite pollutants.
REPORT DUE: September 15, 1991
- (10) **TASK: COMPLETION OF MODIFICATIONS TO INTERIM ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 9.a.9
REPORT DUE: March 15, 1992
- (11) **TASK: IDENTIFY SOURCES AND CHARACTERIZE SOIL POLLUTION:** Submit a technical report acceptable to the Executive Officer containing a proposal to identify all pollution sources onsite and to define the horizontal and vertical extent of soil pollution onsite. Surface impoundments 706, 635, and 250, Sumps 635, 1860, 1861, 1920, 1950, Drum Storage areas 1233, 0321, and 706, abandoned burn pit, containment facilities, and fuel tanks as well as any other potential sources shall be included in the report. The report shall also include a compilation of all the soil sampling previously done at potential sources. The potential sources shall be prioritized based on known information. REPORT DUE: April 15, 1989
- (12) **TASK: COMPLETION OF IDENTIFICATION AND CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 9.a.11. The report shall contain proposals for source

remediation where needed and an implementation timeschedule.

REPORT DUE: November 15, 1989 (for half of the sources)

REPORT DUE: June 15, 1990 (for remaining half of the sources)

b. OFFSITE

- (1) **TASK: INITIAL GROUNDWATER POLLUTION CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting sampling results from 1) property boundary wells, 2) offsite downgradient wells, and 3) offsite drinking water supplies. The report shall also include the field well survey which was conducted to determine the locations of all downgradient private wells identified in the Findings.
REPORT DUE: February 15, 1989
- (2) **TASK: GROUNDWATER POLLUTION CHARACTERIZATION:** If it is determined by the Executive Officer based on the information generated for Task 9.b.1, that waste constituents has migrated offsite, the discharger shall submit a technical report acceptable to the Executive Officer containing a proposal to define the horizontal and vertical extent of offsite groundwater pollution.
REPORT DUE: June 1, 1989
- (3) **TASK: COMPLETION OF GROUNDWATER CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 9.b.2.
REPORT DUE: May 1, 1990
- (3) **TASK: INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer which contains an evaluation of offsite interim remedial alternatives, a recommended plan for offsite interim remediation, and an implementation time schedule. This report shall evaluate the removal and/or cleanup of polluted soils and evaluate alternative hydraulic control systems to contain and to initiate cleanup of polluted groundwater.
REPORT DUE: August 1, 1990

10. The submittal of technical reports evaluating immediate, interim and final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study shall consider the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; RCRA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

11. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer and the Board shall consider revision to this Order.
12. Technical reports on compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted quarterly to the Board commencing on March 15, 1989 and covering the previous quarter. On a quarterly basis thereafter, these reports shall consist of a letter report that, (1) summarizes work completed since submittal of the previous report, and work projected to be completed by the time of the next report, (2) identifies any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles, and (3) includes, in the event of non-compliance with any Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

On a semi-annual basis, commencing with the June quarterly report due June 15, 1989, the quarterly reports shall include, but need not be limited to, updated water table and piezometric surface maps for all affected water bearing zones, cross-sectional geological maps describing the hydrogeological setting of the site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures.

13. The discharger shall submit to the Board according to the schedule shown below technical reports acceptable to the Executive Officer containing Quality Assurance Project Plans and Site Safety Plans, The Quality Assurance Project Plans and Site Safety Plans format and contents shall consider RCRA regulations and guidance documents.

| <u>Technical Report</u> | <u>Date Due</u> |
|-----------------------------------|-----------------|
| a. Quality Assurance Project Plan | July 1, 1989 |
| b. Site Safety Plan | July 1, 1989 |

14. The Discharger shall submit a copy of the application filed with the Bay Area Air Quality Management District for the groundwater treatment system.
15. The Discharger shall file with the Regional Board self-monitoring reports performed according to any self-monitoring program issued by the Executive Officer. The Discharger shall include in the June self-monitoring report an evaluation of the current groundwater monitoring system and propose modifications as appropriate.

16. All hydrogeological plans, specifications, reports, and documents except quarterly progress and self-monitoring reports shall be signed by or stamped with the seal of a registered geologist, engineering geologist, or professional engineer.
17. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
18. The discharger shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
19. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, specifications, and Provisions of this Order, shall be provided to the following agencies:
 - a. Santa Clara Valley Water District
 - b. Santa Clara County Health Department
 - c. State Department of Health Services/TSCD
20. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:
 - a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy and records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
21. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.
22. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours, or ownership of the disposal areas.
23. The discharger shall maintain a copy of this Order at this site so as to be available at all times to site operating personnel.
24. The Board considers the property owner and site operator to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this

waste discharge or water applied to this property during subsequent use of the land for other purposes.

25. These requirements do not authorize the commission of any act causing injury to the property of another or of the public, do not convey any property rights, do not remove liability under federal, state or local laws, and do not authorize the discharge of waste without the appropriate federal, state or local permits, authorizations, or determinations.
26. The discharger shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.
27. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it its, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to 1) this Regional Board at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and 2) to the Office of Emergency Services at (800) 852-7550. A written report shall be filed with the Regional Board within five working days and shall contain information relative to: the nature of waste or pollutant, quantity involved duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.
28. The Board will review this Order periodically and may revise the requirements when necessary.
29. This Order supersedes Order No. 80-61. Order 80-61 is hereby rescinded.

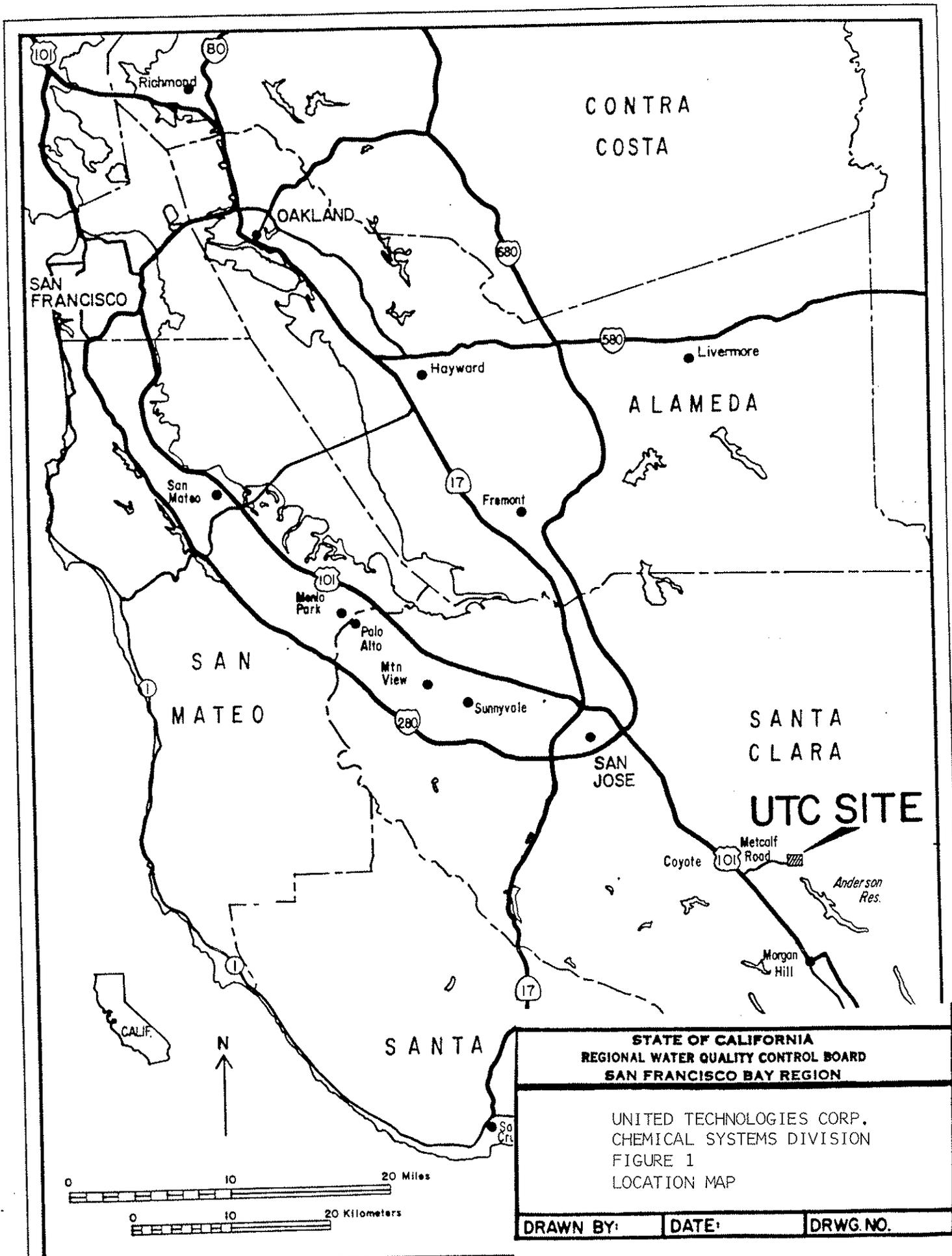
I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 21, 1988.



Steven R. Ritchie

Attachments:

Figure 1: Location Map
Figure 2: Site Map
Self Monitoring Program
Regional Board Resolution No. 88-160



CONTRA
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OAKLAND

SAN
FRANCISCO

ALAMEDA

SAN
MATEO

SANTA
CLARA

UTC SITE

SAN
JOSE

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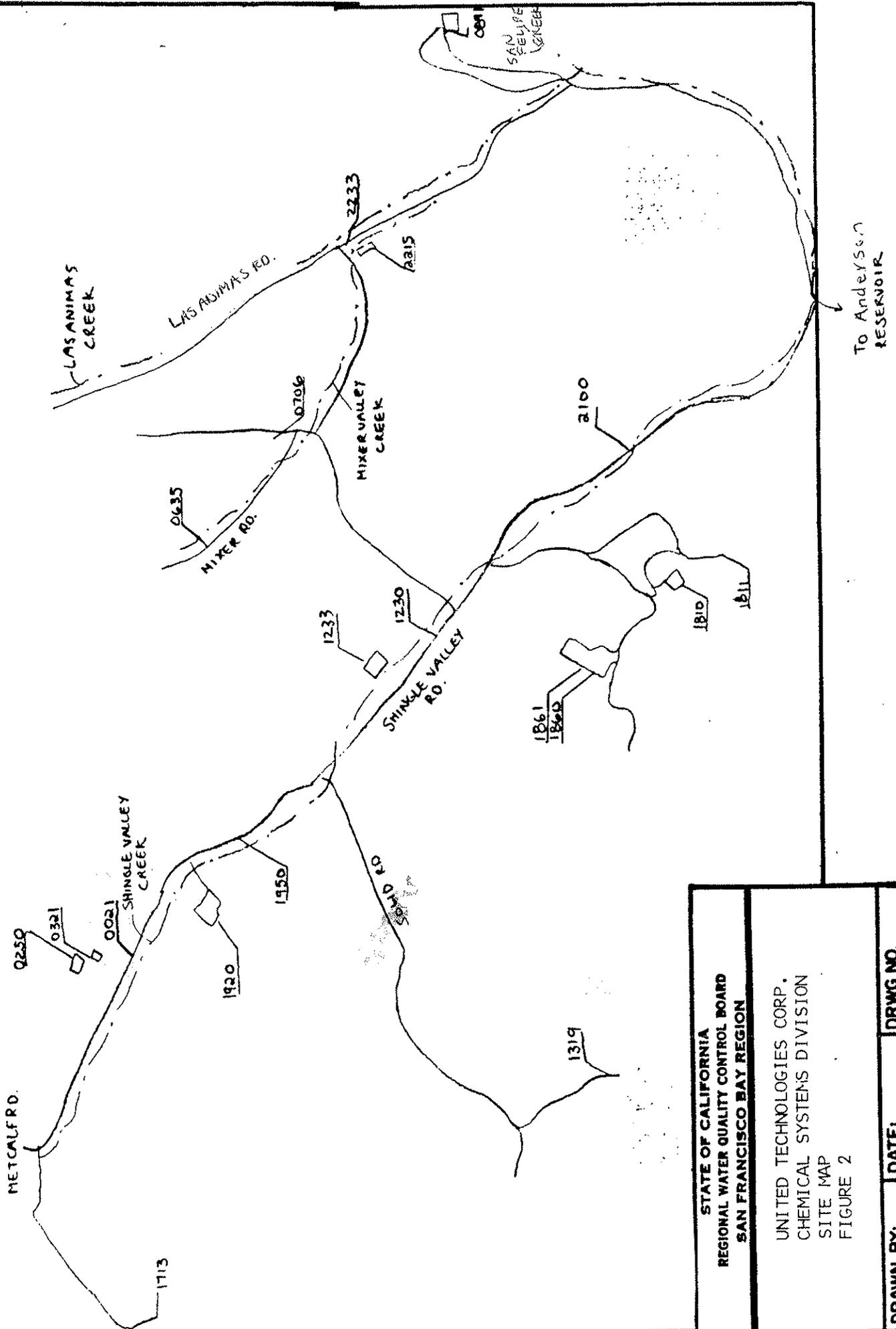
STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

UNITED TECHNOLOGIES CORP.
CHEMICAL SYSTEMS DIVISION
FIGURE 1
LOCATION MAP

DRAWN BY:

DATE:

DRWG. NO.



| | |
|---|-------|
| STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION | |
| UNITED TECHNOLOGIES CORP. CHEMICAL SYSTEMS DIVISION SITE MAP FIGURE 2 | |
| DRAWN BY: | DATE: |
| DRWG. NO. | |

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

UNITED TECHNOLOGIES CORPORATION

CHEMICAL SYSTEMS DIVISION

SANTA CLARA COUNTY

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Self-Monitoring Program is issued in accordance with Section of Regional Board Order No. 88-

The principal purposes of a self-monitoring program by a waste discharger are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sampling

Sample collection, storage, and analyses shall be performed according to the most recent version of Standard Methods for the Analysis of Wastewater, and Test Methods for Evaluating Solid Waste EPA Document SW-846, or other EPA approved methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis (except total suspended solids) shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. A composite sample is a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate of waste flow corresponding to each grab sample collected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the period of discharge or 24 consecutive hours, whichever is shorter.
3. Receiving waters refers to any water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils.

4. Standard observations refer to:
 - a. Receiving Waters-Creek Monitoring
 - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
 - 2) Discoloration and turbidity: description of color, source, and size of affected area.
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 4) Evidence of beneficial use: presence of water associated wildlife
 - 5) Depth of water in creek.
 - 6) Weather conditions: total precipitation during the previous five days and on the day of observation.
 - b. Perimeter of the waste management unit-as specified in Part B.1.a.
 - 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted waste.
 - c. The waste management unit-as specified in Part B.1.a
 - 1) Evidence of ponded water at any point on the waste management facility.
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted refuse.
 - d. Sprayfield (in addition to the above observations)
 - 1) Description of vegetative cover
 - 2) Sprinkler Maintenance
5. Duly authorized representative is one whose:
 - a. Authorization is made in writing by a principal executive officer of ranking elected official;

- b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

D. SPECIFICATIONS FOR SAMPLING AND ANALYSES-Wastewater Treatment Plant 2100

The discharger is required to perform sampling and analyses according to the schedule in Part B in accordance with the following conditions:

1. Influent

- a. Composite samples of influent shall be collected on varying days selected at times which are most representative of the influent quality and shall not include any plant recirculation or other sidestream wastes. Deviation from this must be approved by the Executive Officer.

2. Effluent

- a. Composite samples of effluent shall be collected on days coincident with influent composite sampling unless otherwise stipulated. At least one sampling day in each seven shall reflect one day of weekend discharge, one day of peak loading and if applicable during major unit operation shutdown or startup. The Board may approve an alternative sampling plan if it is demonstrated to the Board's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.
- b. Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.
- c. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.
- d. If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

- e. When any type of bypass occurs, composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

E. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the requirements in Article 5 of Subchapter 15.

F. RECORDS TO BE MAINTAINED BY THE DISCHARGER

1. Written reports shall be maintained by the discharger for groundwater monitoring and wastewater sampling, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:
 - a. Identity of sample and sample station number.
 - b. Date and time of sampling.
 - c. Method of composite sampling (See Section C-Definition of Terms)
 - d. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
 - e. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory.
 - f. Calculation of results.
 - g. Results of analyses, and detection limits for each analyses.
 - h. Chain of custody forms for each sample.
2. A tabulation shall be maintained showing the following flow data for influent and effluent stations and disposal areas at the Wastewater Treatment Plant 2100:
 - a. Total waste flow or volume for each day.
 - b. Maximum and minimum daily flows for each month.
3. A tabulation shall be maintained showing the following information for all other disposal areas and waste management units as specified in Part B.1.a.
 - a. Total monthly volume of grit, skimmings, and undigested sludge (in cubic yards or cubic feet) from each treatment unit and the

disposal site location.

- b. Total monthly volume and solids content of dewatered sludge from each treatment unit (in cubic yards or cubic feet) and the disposal site location.
4. A tabulation reflecting bypassing and accidental waste spills shall be maintained showing information items listed in Sections E-1 and E-2 for each occurrence.
 5. A chronological log for each month shall be maintained of the effluent bacterial analyses, showing the following:
 - a. Date and time each sample is collected and waste flow rate at time of collection.
 - b. Coliform count for each sample.
 - c. Moving median coliform of the number of samples specified by waste discharge requirements.

G. REPORTS TO BE FILED WITH THE BOARD

1. Written self-monitoring reports shall be filed by the 15th day of the month following the report period. The report period shall be quarterly except for surface water discharges monitoring which shall be monthly. For quarterly groundwater monitoring reports, written reports shall be filed regularly each quarter within forty-five days from the end of the quarter monitored. In addition an annual report shall be filed as indicated in G.3. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- b. Each monitoring report shall include a compliance evaluation summary sheet. Until the Order's amended to specify groundwater protection standards, the following shall apply and the compliance sheet shall contain:
 - 1) The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
 - 2) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; the chain of custody record.
- c. A summary of the status of the Corrective Action work performed during that quarter. This shall be a brief and concise summary of the work initiated and completed 1) as interim corrective action measures, and 2) to define the extent and rate of migrations of waste constituents in the soil and groundwater at the site.
- d. The discharger shall describe, in the quarterly report, the reasons for significant increases in a pollutant concentration at a well onsite. The description shall include:
 - 1) the source of the increase,
 - 2) how the discharger determined or will investigate the source of the increase, and
 - 3) what source removal measures have been completed or will be proposed.

- e. On a semi-annual basis, a map or aerial photograph showing observation and monitoring station locations, and plume contours for each chemical in each aquifer shall be included as part of the quarterly Self-Monitoring Report.
- f. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
 - 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review.
 - 2) In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- g. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
- h. The quantity and types of wastes disposed of at the waste management units specified in Part B.1.a during the past quarter. The locations of the disposal operations shall be noted.

2. CONTINGENCY REPORTING

- A. A report shall be made by telephone of any seepage from any disposal area immediately after it is discovered. A written report shall be filed with the Board within five days. This report shall contain the following information:
 - 1) a map showing the location(s) of discharge;
 - 2) approximate flow rate;
 - 3) nature of effects; i.e. all pertinent observations and analyses; and
 - 4) corrective measures underway or proposed.

3. By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:
 - a. Tabular and graphical summaries of the monitoring data obtained during the previous year.
 - b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
 - c. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

4. Reports of Plant Bypass, Treatment Unit Bypass and Permit Violation

In the event the discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

- a. Maintenance work, power failures, or breakdown of waste treatment equipment, or
- b. accidents caused by human error or negligence, or
- c. other causes, such as acts of nature,

The discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification. The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day. Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. Sampling Stations- Waste Management Units

| STATION | DESCRIPTION | OBSERVATIONS | FREQUENCY |
|----------------------------------|---|--|-----------|
| V-1 thru V-'n' | Located on the waste disposal area as delineated by a 500 foot grid network. | Standard observations for the waste management unit. | Weekly |
| P-1 thru P-'n' (perimeter) | Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit. | Standard observations for the perimeter. | Weekly |

A map showing visual and perimeter compliance points (V and P stations) shall be submitted by the discharger in the quarterly monitoring report.

The units that shall be monitored include: Leachfields 0080, 0530, 0560, 0570, 1310, Spray Field 2100, Storage Ponds 2100 and 2120, Water Treatment Plant Pond 2215, Burn Pit 0891, and Class I surface impoundments.

B. Influent and Effluent Monitoring- Wastewater Treatment Plant 2100

Station

| | |
|---------------|---|
| I | At a point in the pipe immediately before the treatment plant |
| E | At a point between the sewage treatment plant and the sprayfield. |
| H | At a point in one of the holding ponds P1-P4 and 2120 within 1 foot of the surface and at least 25 feet from the discharge from the treatment plant. Pond P1 will be sampled only if Ponds P2-P4 do not contain effluent. |
| L1 thru LN | Every 200 feet along the down slope side of the spray area. |
| PI thru P4 | At each corner of the sewage treatment plant. |

The schedule of sampling and analysis shall be that given as Table I.

- C. Receiving Water Stations-Creek Monitoring
Creek samples shall be taken from the midpoint of the creek and at mid-depth.

| <u>Station</u> | <u>Description</u> |
|----------------|---|
| C-1 | Shingle Creek at Metcalf Rd. |
| C-2 | Shingle Creek above San Felipe Creek near the property boundary. |
| C-3 | Las Animas near building 0150 |
| C-4 | Las Animas below confluence of drainage way which runs along Manufacturing and Mixer Roads and above San Felipe Creek. |
| C-5 | Upgradient of French Drain 0021 |
| C-6 | Downgradient of French Drain 0021 |
| C-7 | Mixer Valley Creek-upgradient location to be identified by discharger. |
| C-8 | Mixer Valley Creek-downgradient location to be identified by discharger. |
| C-N | Additional creek monitoring stations shall be established to include areas of groundwater discharge to the creeks upon completion of the geologic characterization. |

The schedule of sampling and analysis shall be that given as Table I.

- D. Surface Water Discharges

Station

Surface Water Discharge 0021: Effluent from air stripper

Surface Water Discharge 1230: Effluent from air stripper

The schedule of sampling and analysis shall be that given as Table I.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 89-008.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the discharger.

1/18/89
Date Ordered


Steven R. Ritchie
Executive Officer

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

| Sampling Station | I | E | H | LI-LN | P1-P4 | C1-CN | 0021 | 1230 |
|---|------|-----|---|----------------|-------|----------------|------|------|
| TYPE OF SAMPLE | C-24 | G | | O | O | G | G | G |
| Mercury (mg/l & kg/day) | Q/A | | | | | | | |
| Nickel (mg/l & kg/day) | Q/A | | | | | | | |
| Zinc (mg/l & kg/day) | Q/A | | | | | | | |
| PHENOLIC COMPOUNDS (mg/l & kg/day) | | | | | | | | |
| All Applicable Standard Observations | | | D | D ¹ | D | M | | |
| Bottom Sediment Analyses and Observations | | | | | | | | |
| Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day) | | | | | | | | |
| PURGEABLE ORGANICS (624) | | Q/A | | | | Q ² | 2W | 2W |
| SEMI-VOLATILES (625) | | Q/A | | | | Q ² | | |
| ELECTRICAL CONDUCTIVITY | | | | | | Q ² | | |
| TOC | | | | | | Q ² | | |
| SELENIUM | Q/A | | | | | | | |

LEGEND FOR TABLE

TYPES OF SAMPLES

- G = grab sample
- C-24 = composite sample - 24-hour
- C-X = composite sample - X hours
(used when discharge does not continue for 24-hour period)
- Cont = continuous sampling
- DI = depth-integrated sample
- BS = bottom sediment sample
- O = observation

TYPES OF STATIONS

- I = intake and/or water supply stations
- A = treatment facility influent stations
- E = waste effluent stations
- C = receiving water stations
- P = treatment facilities perimeter stations
- L = basin and/or pond levee stations
- B = bottom sediment stations
- G = groundwater stations

FREQUENCY OF SAMPLING

- E = each occurrence
- H = once each hour
- D = once each day
- W = once each week
- M = once each month
- Y = once each year

- 2/H = twice per hour
- 2/W = 2 days per week
- 5/W = 5 days per week
- 2/M = 2 days per month
- 2/Y = once in March and once in September
- Q = quarterly, once in March, June, Sept. and December

- 2H = every 2 hours
- 2D = every 2 days
- 2W = every 2 weeks
- 3M = every 3 months
- Cont = continuous

Q/A QUARTERLY FOR A YEAR THEN ANNUALLY

1) ON EACH DAY WHEN SPRAY APPLICATION OCCURS.

2) C-2, C-6, and C-8 shall be monitored monthly

California Regional Water Quality Control Board
San Francisco Bay Region

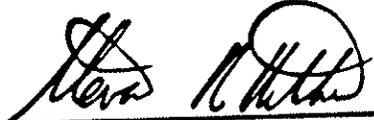
RESOLUTION NO. 88-160

REGIONAL BOARD POSITION ON THE DISPOSAL OF EXTRACTED GROUNDWATER
FROM GROUNDWATER CLEANUP PROJECTS

- I WHEREAS, the investigation and cleanup of groundwater contamination resulting from solvent and fuel leaks has been and will continue to be a high priority task for this Regional Board, and
- II WHEREAS, cleanup of such problems is normally accomplished by pumping polluted groundwater from the ground, thus creating a waste requiring environmentally acceptable disposal methods, and
- III WHEREAS, the alternatives for disposal of such wastes are reclamation, discharge to publicly owned treatment works (POTW's), or treatment with discharge to local receiving waters under an NPDES permit, and
- IV WHEREAS, policies of the State of California, its Water Resources Control Board, and this Regional Board all favor reclamation of water whenever feasible, and such policies apply to extracted groundwater, and
- V WHEREAS, when reclamation is not technically and economically feasible, POTW's are:
- A. Capable of providing treatment and disposal of extracted groundwater where appropriate pretreatment limits are met and where sufficient capacity exists,
 - B. Generally able to provide a higher degree of environmental protection in the treatment and disposal of pumped groundwater as compared to treatment and discharge on-site,
 - C. The disposal alternative which involves a lesser drain on regulatory resources and the simplest administrative procedures for the discharger, and
- VI WHEREAS, according to a recent Board survey, most POTW's are either accepting groundwater cleanup discharges or willing to accept such discharges if capacity exists in the collection system and in the treatment plant and if pretreatment limits are met, and

- VII WHEREAS, problems of groundwater pollution and the disposal of groundwater extracted as part of cleanup efforts are of concern to the community at large including the local POTW.
- VIII THEREFORE BE IT RESOLVED, that this Regional Board urges the dischargers of extracted groundwater from groundwater cleanup projects to reclaim their effluents to the extent technically and economically feasible, and
- IX BE IT FURTHER RESOLVED, that this Board finds that when reclamation is not technically and economically feasible, discharge to POTW's is in the public interest, and therefore urges:
- A. Dischargers of extracted groundwater from groundwater cleanup projects to pursue this method of disposal, and
 - B. POTW's in the Region to adopt policies for the acceptance of such groundwater discharges when collection and treatment capacity exist, and
- X BE IT FURTHER RESOLVED, that when this Regional Board finds neither reclamation nor discharge to a POTW is technically and economically feasible, it is the intent of this Board to adopt NPDES permits authorizing the discharge of extracted groundwater, and
- XI BE IT FURTHER RESOLVED, that the Executive Officer is hereby instructed to prepare for Board consideration a modification to the exception provisions to its discharge prohibitions so as to directly address discharges of extracted groundwater.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a true, full, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 19, 1988.



Steven R. Ritchie
Executive Officer