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July 30, 1986

Hazardous Material Management
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California Department of Health Services
LOS ANGELES

QUALITY ASSURANCE PROJECT PLAN

ON-SITE GROUNDWATER AND SOILS SAMPLING PLAN
MONTROSE SITE
TORRANCE, CALIFORNIA

HARGIS + ASSOCIATES, INC.

Consultants in Hydrogeology

HARGIS + ASSOCIATES, INC.

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TORRANCE, CALIFORNIA

July 29, 1986

Prepared by
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HARGIS + ASSOCIATES, INC.

QUALITY ASSURANCE PROJECT PLAN

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MONTROSE SITE
TORRANCE, CALIFORNIA

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1.0 INTRODUCTION/OVERVIEW

This Quality Assurance Project Plant (QAPP) has been prepared in accordance with the EPA guidance document "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80", December 29, 1980, for the on-site sampling program for the Montrose site in Torrance, California. Adherence to the quality assurance/quality control program outlined in this document will insure that the data collected are precise, accurate, complete, and representative. Quality assurance is defined as the integrated program designed for assuring reliability of monitoring and measurement data. Quality control is defined as the routine application of standard procedures to obtain prescribed standards of performance in the monitoring and measuring process.

Quality assurance procedures such as tracking, reviewing, and auditing must be implemented to insure that field and laboratory data are of high quality and that all project work is performed in accordance with professional standards, EPA and other governmental regulations and guidelines, and specific project goals and requirements. Outlined in this Quality Assurance Project Plan (QAPP) are the procedures to be followed to insure the quality and reliability of data collected in the study area.

The QAPP covers each of the following activities:

- Sample collection, control, chain-of-custody, and analysis.
- Required field instruments and sampling equipment, including containers used and methods of sample preservation.
- Types of field measurements required.
- Site-specific field testing methodology.
- Site-specific sampling methodology.

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- Decontamination procedures.
- Data requirements and analytical procedures to be used.
- Storage and shipping methods.
- Chain-of-custody procedures and document control.

2.0 PROJECT DESCRIPTION

The Montrose site occupies about 13 acres in Torrance, California (Figure 1). The area is bounded by Normandie Avenue on the east, Jones Chemical Company on the south, a vacant lot to the west, and the McDonnell-Douglas facility to the north. The surrounding area consists of mixed residential, commercial, and industrial zones. The Del Amo hazardous waste site is located about one-half mile southeast of the Montrose site.

Between 1947 and 1982, Montrose Chemical Corporation operated a DDT manufacturing facility at the site. In 1972, the use of DDT was banned in the United States. The use of DDT was not banned in other countries, and Montrose continued to manufacture and export DDT until 1982 when the facility was closed and completely dismantled. The Montrose site is now capped with asphalt.

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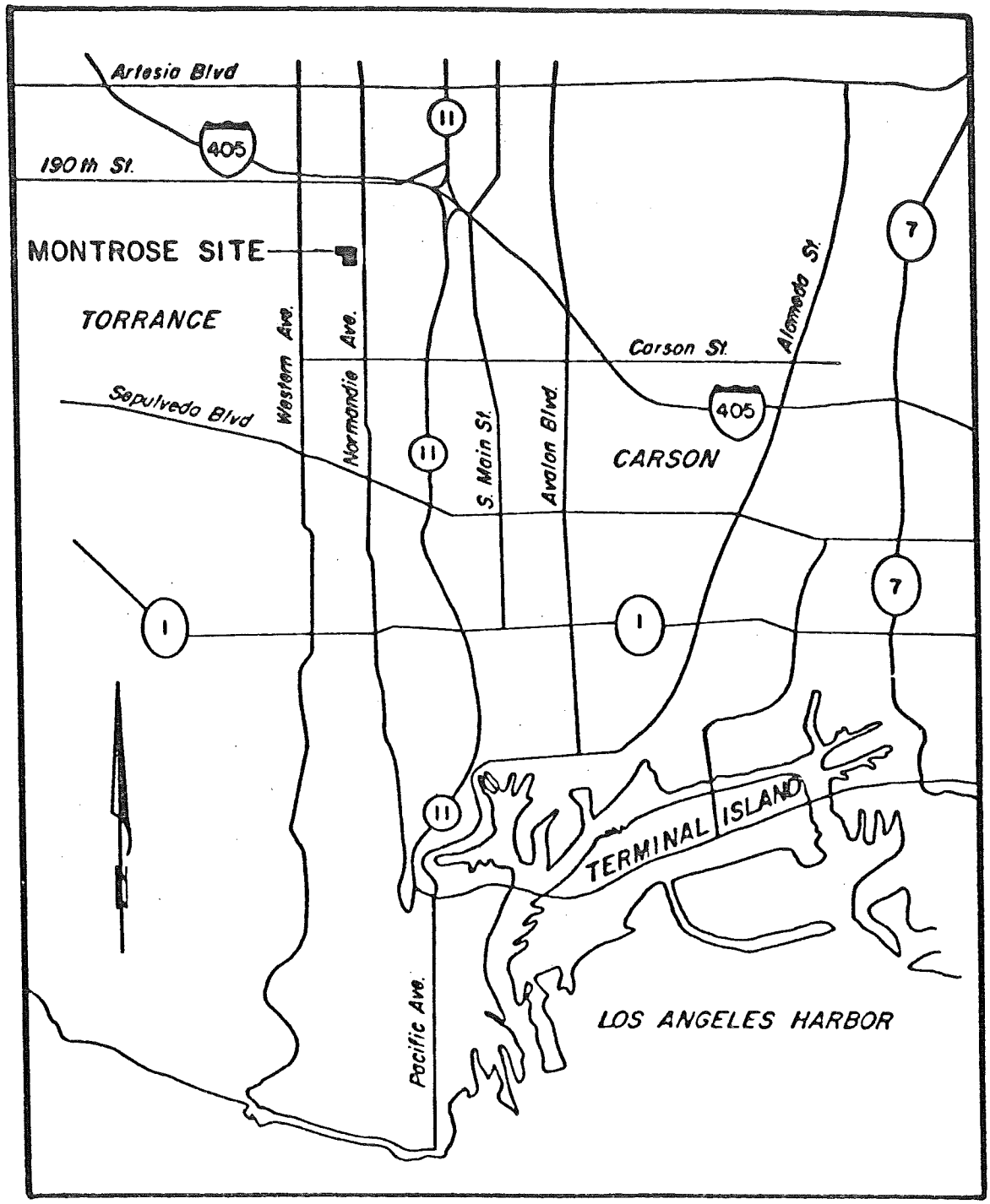

FIGURE 1. LOCATION OF MONTROSE SITE

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Previous investigations addressing the potential for contamination at the Montrose site included on- and off-site sampling of soils, groundwater, sediment, and surface water by the U. S. EPA and its contractors, the California Department of Health Services, the Regional Water Quality Control Board, and Hargis + Associates, Inc., acting on behalf of Montrose.

The EPA, through its contractors, Metcalf & Eddy, Inc., conducted an additional on-site soil investigation in June 1985. Partial preliminary analytical results of this investigation were forwarded in November, 1985.

In October 1985, a consent order between the EPA and Montrose was finalized. Tasks outlined in the "EPA Remedial Investigation/Feasibility Study Final Workplan, Montrose Facility Site (Torrance, California), Metcalf & Eddy, Inc., October 1984," as modified by Appendix A of the consent order, are designed to obtain information necessary for the performance of a feasibility study. These tasks include off-site soil, sediment, and surface water sampling, on-site soil sampling, and groundwater monitoring of the Bellflower aquitard, and Gage aquifer. Samples will be analyzed for contaminants designated by EPA as Target Chemicals.

This QAPP addresses only the on-site soil and groundwater tasks. The remedial investigation will be performed for Montrose Chemical Corporation under the direction and supervision of Hargis + Associates, Inc., subject to the review and approval of the EPA. Ecology & Environment, Inc., will act as oversight personnel for the EPA.

The objective of the remedial investigation is to further determine the extent of on-site soils and groundwater contamination which may have been caused by activities at the Montrose site, and to gather data of sufficient quantity and quality to support the feasibility study. The sampling will be conducted in phases to allow step-wise evaluation of the analytical results and to provide a basis for determining the number and location of additional sampling points, if necessary.

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Phase I sampling will consist of constructing four on-site monitor wells to be completed in the Bellflower aquitard, three on-site monitor wells to be completed in the Gage aquifer, and additional soil borings to be completed in the vicinity of the former impoundment area. Additional on-site Bellflower aquitard monitor wells and an additional Gage aquifer monitor well may be constructed during Phase I, if required.

Groundwater and soil samples collected during Phase I will be analyzed for selected Target Chemicals as identified by the EPA, including DDT and all its isomers and its metabolites DDD and DDE, acetone, benzene, BHC (alpha, beta, delta, and gamma isomers), chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene. Groundwater will also be analyzed for common ions for purposes of groundwater characterization. Common ions are listed in **Section 5.1, Types, Locations, and Numbers of Samples.**

3.0 PROJECT ORGANIZATION AND RESPONSIBILITY

The proposed Quality Assurance organizational chart for the sampling plan, presented in **Figure 2**, shows the individuals responsible for each element of the overall program. The key individual responsible for quality assurance is the QA Manager. The QA Manager for this project is Mr. Edward Nemecek of Hargis + Associates, Inc. QA activities are reviewed in biweekly meetings between the QA Manager and the Project/Task Manager. The QA team is responsible for ensuring the collection of valid measurement data and for the routine assessment of measurement systems for precision and accuracy.

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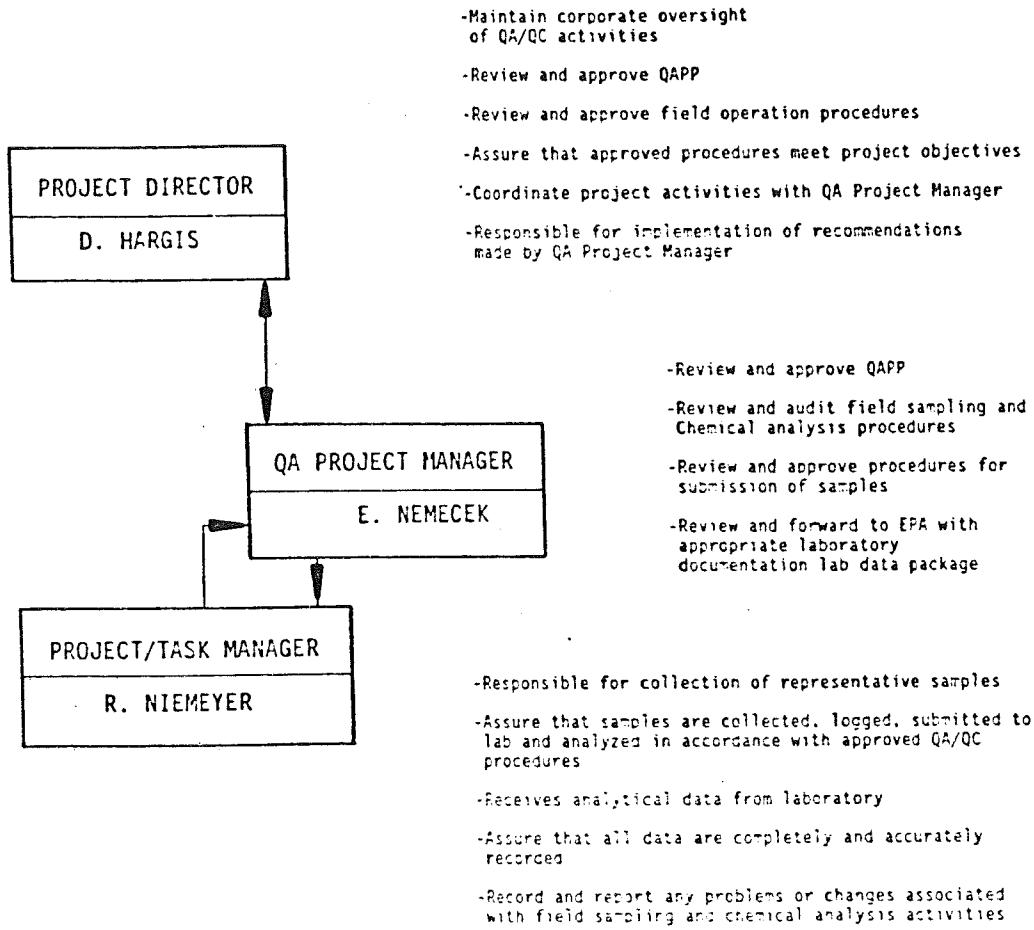

FIGURE 2. QUALITY ASSURANCE ORGANIZATIONAL CHART

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4.0 QUALITY ASSURANCE OBJECTIVES

The overall quality assurance objectives are to develop and implement procedures for obtaining and evaluating data that can be used to assess site hazards, aid in developing alternative remedial actions, and be defensible in a court of law. In order to provide defensible data, it is necessary that all measurement data have an appropriate degree of accuracy and reproducibility. All samples collected and all field measurements made must be representative of actual field conditions. Specific quality assurance objectives have been established for accuracy, precision, and completeness of analytic results. Accuracy shall be evaluated in spiked samples in terms of percent recovery; percent recovery shall be within ± 20% of the assumed total analytic concentration. Precision shall be evaluated for duplicate samples in terms of percent difference; percent difference shall be no greater than 20%. Completeness of analytic results will be evaluated by comparing the number of defective results to the actual number of analyses performed. Measurement completeness, C, shall not be less than 95%. Accuracy, precision, and completeness are defined in Section 14. Methods for determining accuracy, precision, and completeness are also defined in Section 14.

The QAPP presented herein is designed to implement the procedures necessary to maintain consistent quality of data. This consistency will be accomplished through the formal standardization and documentation of field techniques and activities. All field activities will be planned in advance to insure consistency with overall project objectives. Actual field and laboratory activities will be performed by properly trained and qualified personnel and will conform to specific procedures outlined in subsequent sections of the QAPP. Project documents resulting from these activities will be reviewed for completeness, accuracy, and conformance with specific procedures.

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5.0 SAMPLING PROCEDURES

Because data collected during Phase I will be used to determine the extent and nature of potential contamination, the procedures presented in this section are designed to insure that all samples obtained are collected in a manner consistent with project objectives, and are identified, preserved, and transported in a manner such that data are representative of the actual site conditions and no information is lost in sample transfer.

5.1 Types, Locations, and Numbers of Samples

The types, locations and numbers of samples to be collected are determined based on available data and are specified in the accompanying sample plan. The locations and numbers of proposed groundwater monitor wells and additional soil borings are intended to provide information on the horizontal and vertical distribution of contaminants at the Montrose site.

During the Phase I sampling program, four groundwater monitor wells will be completed in the Bellflower aquitard, and three groundwater monitor wells will be completed in the Gage aquifer at the Montrose site. Proposed well locations are shown in **Figure 3**. Quality Assurance Procedures for monitor well installation are discussed in **Section 5.2**.

An initial water sample will be collected from each monitor well after installation. A second water sample will be collected approximately two weeks after the initial sample. Additional samples may be collected, depending on the results of chemical analyses of the first two samples. Detailed methods for sampling groundwater are presented in **Section 5.3.1**. Site-specific requirements will be outlined in the **Sampling Plan**.

Soil samples will also be collected from additional soil borings in the vicinity of the former impoundment area. Approximately 24 samples for analysis will be obtained from an array of four 60-foot borings. Detailed

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methods for sampling soils are presented in Section 5.3.2. Site-specific requirements are outlined in the Sampling Plan.

Soil samples and groundwater will be analyzed for DDT, and all its isomers and its metabolites DDD and DDE, acetone, benzene, BHC (alpha, beta, delta, gamma isomers), chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene. These Target Chemicals were selected by the EPA based on the results of previous on-site investigations conducted both by Hargis + Associates, Inc., and by EPA through its contractor, Metcalf & Eddy, Inc. In addition, the groundwater samples will also be analyzed for the following common ions. Comparison of these analyses, trilinear plots and stiff diagrams will assist in differentiating between groundwater from the Bellflower aquitard and groundwater from the Gage aquifer:

Calcium	Carbonate	Nitrate
Magnesium	Bicarbonate	Fluoride
Sodium	Chloride	Boron
Potassium	Sulfate	Silicon
Total Dissolved Solids		

The location of each sample will be clearly defined in the Sampling Plan. The sample location and type of sample will be indicated on a site sketch and in a field notebook.

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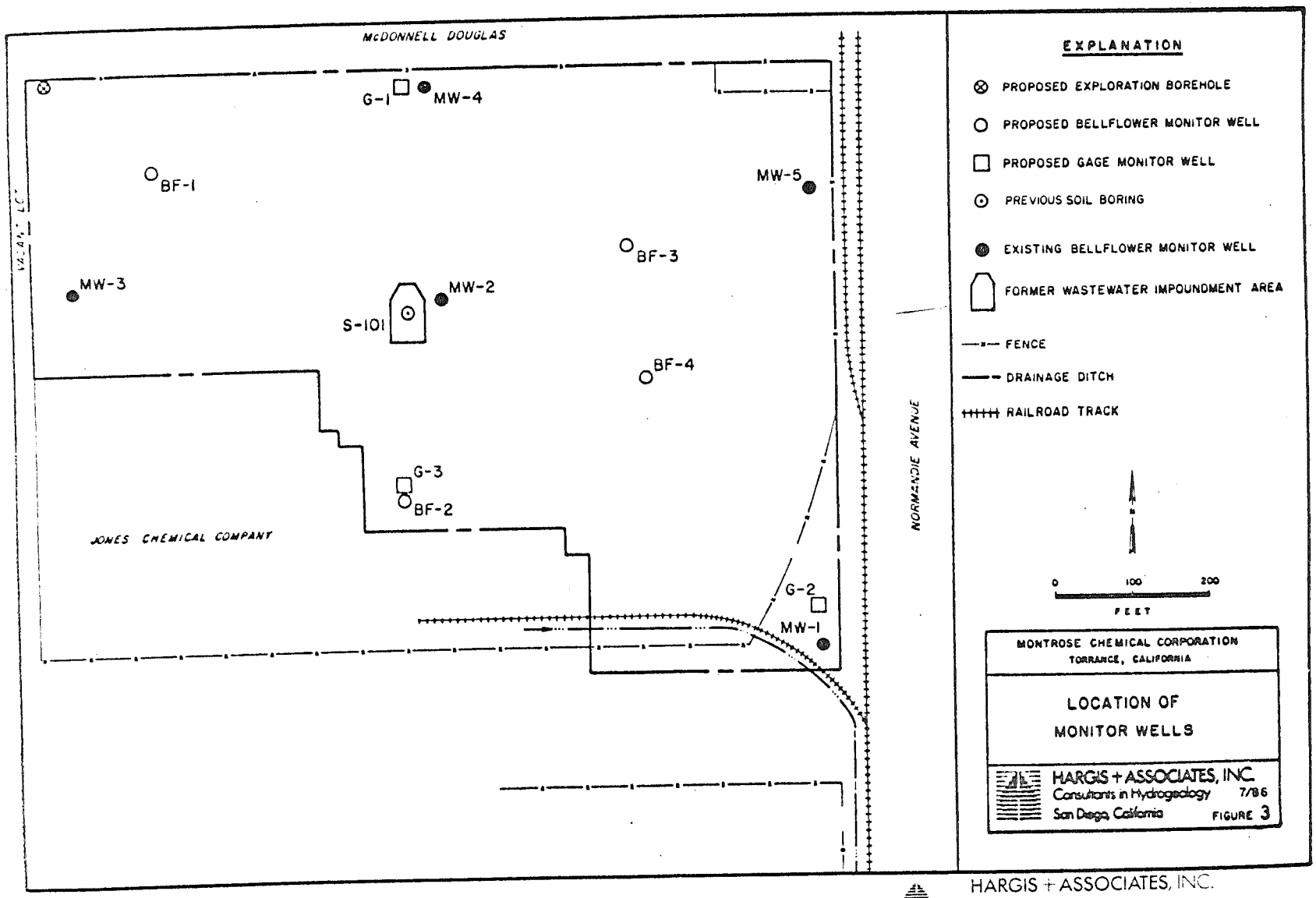

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Basis for award? low bid? Other Factors

5.2 Monitor Well Installation

The objectives for installing groundwater monitor wells are to further evaluate geologic conditions, the depth and velocity of the groundwater, and the chemical quality of the groundwater in the Bellflower aquitard and the Gage aquifer. These objectives will be achieved by conforming to standard operating procedures during well design and construction, geologic logging, water level measurement, sampling, and test activities. Quality assurance depends largely on the field observations made by personnel implementing the standard procedures.

5.2.1 Monitor Well Drilling and Construction

What California license?

Before entering the field to drill and install groundwater monitor wells all on-site personnel will be familiar with the well construction details. Bid specifications will have been submitted to qualified drillers. The most qualified bidder will have been awarded the drilling contract. A qualified driller will be one who has applicable equipment capabilities, is licensed in the state of California, and who has had experience on similar projects. This shall apply both to the individual driller in the field and to the drilling company as a whole.

Prior to entering the field, personnel will also contact applicable agencies and cities to obtain and comply with regulatory requirements regarding access, drilling, and groundwater extraction.

Bellflower aquitard monitor wells will be drilled using a bucket auger/hollow stem auger combination. Gage aquifer monitor wells will be drilled using a mud rotary and hollow stem auger combination. Any bentonite drilling muds introduced into the hole must be approved by the on-site geologist prior to use. Measures to limit buildup of "wall cake" in the borehole, including use of fine-grained on-site sediments as natural drilling mud, and circulation of fresh water in the borehole, will be

Not applicable reg requirement

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directed by the geologist. Well construction details for the Bellflower aquitard and the Gage aquifer on-site wells are summarized in Figures 4 and 5, respectively.

The Bellflower aquitard monitor wells will be drilled with bucket auger and hollow stem auger techniques to an approximate depth of 85 feet (Figure 4). Actual depths of the wells will be determined in the field pending information on geologic conditions. The upper 65 feet of the Bellflower Aquitard monitor wells will be drilled with a bucket auger and sealed using steel casing cemented in place. Use of the bucket auger will allow continuous lithologic descriptions of materials to be obtained. The final 20 feet will be drilled with a hollow stem auger. Concrete utility vaults with locking lids will be installed at the surface of each well to protect the wellhead from surface traffic. The wells will be cased to a depth of about 60 feet with four-inch flush threaded schedule 40 PVC casing. Four-inch flush threaded No. 304 stainless steel casing will be installed from about 60 to 70 feet. Approximately 15 feet of 4-inch No. 304 stainless steel well screen will be placed at the bottom of the borehole. Each well will be sand packed to approximately 5 feet above the screen and a bentonite seal will be placed above the sand pack.

The Gage aquifer monitor wells will initially be drilled with fluid rotary methods to approximately 120 feet to the top of the Gage aquifer. Steel casing will be installed and pressure grouted in place. Cement will be forced down the inside of the casing and up the annulus to land surface during the grouting process. After sufficient time has elapsed to allow the cement to set, the borehole will be advanced with a hollow stem auger until the Gage aquifer has been penetrated to a depth of approximately 135 feet. Four-inch flush threaded schedule 40 PVC casing will be installed to a depth of approximately 60 feet. Four-inch flush threaded No. 304 stainless steel casing will be installed from approximately 60 to 120 feet. Approximately 15 feet of 4-inch No. 304 stainless steel well screen will be placed at the bottom of the borehole. Each well will be sand packed to approximately 5 feet above the top of the screen and a bentonite seal will be placed on top

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of the sand pack (Figure 5). Concrete utility vaults with locking lids will be installed at the surface of each well.

The drilling and completion of each monitor well will be overseen by a geologist/hydrogeologist responsible for description of lithology, selection of perforated intervals for screens, and determination of final depth of the well. Drill cuttings will be collected continuously in the first Bellflower and Gage Wells. Sieve analyses of the screened intervals for the Bellflower and the Gage wells may be based either on drive samples from the exploratory borehole or hollow stem core samples. By conducting grain size analyses on exploratory borehole samples, some lead time is acquired for ordering the appropriate size stainless steel screen.

Following the completion of each phase of monitor well installation, the measuring points of each well will be surveyed to a vertical accuracy of 0.01 feet.

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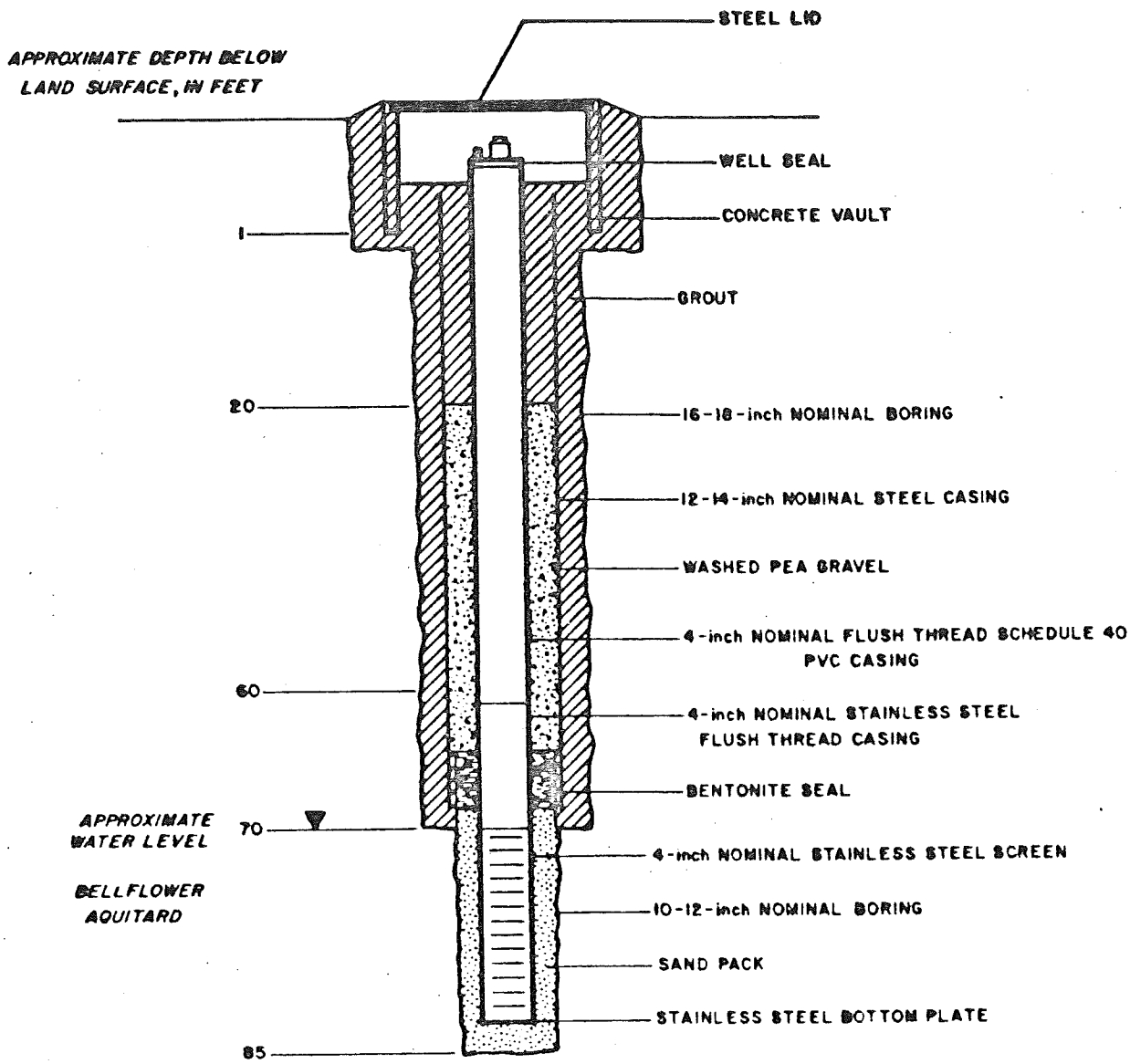

FIGURE 4. BELLFLOWER AQUITARD MONITOR WELL CONSTRUCTION DIAGRAM

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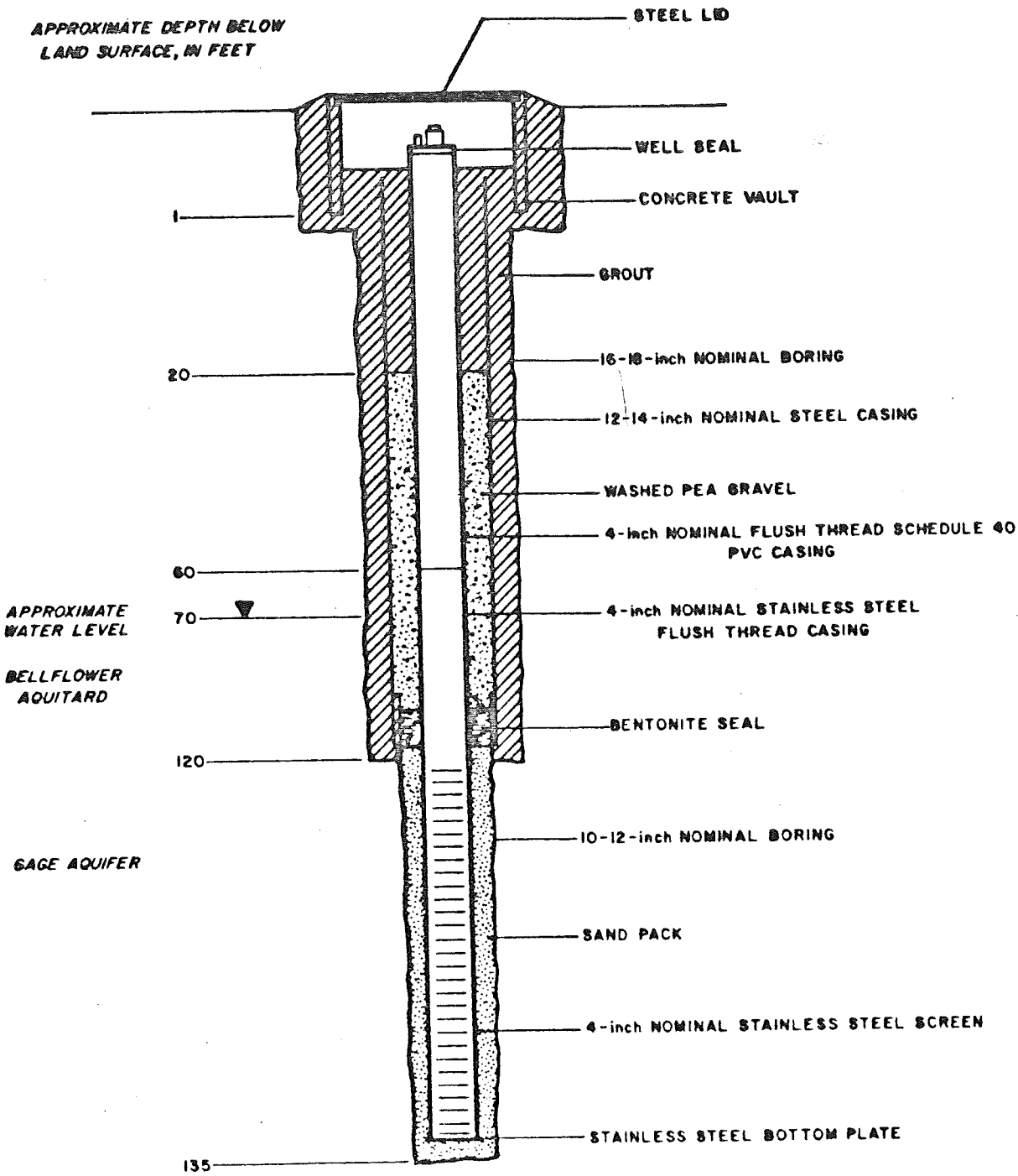

FIGURE 5. GAGE MONITOR WELL CONSTRUCTION DIAGRAM

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5.3 Sampling Techniques

Samples collected during Phase I of the remedial investigation include groundwater samples collected from Phase I monitor wells, and soil samples collected from additional borings near the former impoundment area. Specific procedures for collecting groundwater and soil samples are outlined below.

5.3.1 Groundwater Sample Collection

Groundwater samples will be collected from each monitor well installed during the Phase I investigation. Prior to sample collection, the wells will be pumped dry or until a maximum of three casing volumes of fluid is removed from the wells. The Bellflower aquitard wells may have to be bailed if they will not produce a sufficient volume of water to warrant the use of a submersible pump. The temperature, pH, and specific electrical conductance (EC) of the well discharge will be measured to ensure that these parameters have stabilized prior to collection of samples.

The following procedures will be used to obtain groundwater samples:

A. BEFORE ENTERING THE FIELD:

.. Review project objectives with all personnel and review sampling location, analytical parameters, and time of sampling.

.. Review sampling procedures, preservation methods, packing and shipping procedures.

.. Notify EPA and its contractors for purposes of collecting sample splits.

.. Review health and safety procedures with all personnel.

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- Review appropriate permits and site access procedures.

- Make sure the diameter of the well casing is known. This will aid in the calculation of the borehole water volume for determining minimum volume to be removed prior to sampling.

- Determine the total depth of the well. This will enable calculation of the well water volume.

B. IN THE FIELD

- Record background OVA measurements upwind of site every three hours.

- Record daily weather conditions and site characteristics.

- Measure depth to water with rinsed steel tape or rinsed electric sounder or both.

- Calculate the casing water volume for well evacuation purposes (or use a previously prepared table or graph).

- Pump or bail a minimum of three borehole volumes from each well.

- Collect water sample in appropriate sample container from the wellhead or from the bailer after evacuation and stabilization.

- Record the following information in the field notebook:
  - static depth to groundwater
  - the time that pumping or bailing begins
  - the time of sample collection
  - the pump discharge rate (volumetric calculation) or number of bails

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- the field parameters (pH, electric conductivity, and temperature)
- the time that pumping or bailing stops
- water level at the time pumping or bailing stops

- Rinse the non-preserved sample containers with sample water a minimum of three times to ensure that possible contaminants in the sample bottle are removed. Any pretreated sample containers such as those for pesticides shall not be rinsed with sample water. Bottle preparation is discussed in Section 5.4.1.

- When sampling for volatile organics, make sure the 40 ml sample vials have no headspace. To avoid aeration, the glass sampler should be held at an angle so that the stream of water flows down the side. Fill the vial until it overflows to eliminate any air bubbles and replace the teflon-lined cap. Two vials should be collected for each sample.

- Turn the vial upside down and tap it to check for air bubbles. If there are any bubbles, empty and refill the vial and check for air bubbles again. Repeat this procedure until an acceptable sample is obtained.

- Collect water for pesticides in one-liter amber glass bottles with teflon-lined screw cap lids and for common ions in one-liter polyethylene bottles. Collect water for nitrate analysis in 100-ml polyethylene bottles pretreated with sulfuric acid.

- Prepare one duplicate sample for every 10 samples collected for each type of sample container.

- Label each sample container with project number, well number, predetermined sample number, collector's name and company, and the analyses to be performed (Appendix B-1).

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- Record all pertinent data concerning each sample in the field notebook.

- Prepare letters of transmittal, chain-of-custody documentation (Section 7), and laboratory schedules for analyses to be performed at the end of each sampling event.

- Package the sample according to the procedures outlined in Section 5.4.

- Prepare and include one blank water sample of certified organic free water for each sample container which has volatile samples included in the shipment.

- Prepare and include one blank water sample of certified organic-free water for pesticide analysis each day groundwater samples are collected for 608 analyses.

- Place samples on ice as outlined in Section 5.4 and transport to the laboratory by vehicle at the end of each sampling day.

- Seal, label, package, and store blank water samples and duplicate samples in a manner identical to the other water samples. The identity of blank water samples and sample duplicates will not be known to the laboratory.

5.3.2 Soil Sample Collection

Soil samples will be collected using split-tube samplers fitted with brass liners. A bucket auger rig will be employed to advance the soil borings and collect the sample. Extracts from the samples obtained for analysis will be analyzed immediately for the Target Chemicals. The following procedure will be used to obtain soil samples:

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A. BEFORE ENTERING THE FIELD:

.. Review project objectives with all personnel and identify sites to be drilled, review sampling locations, sampling equipment and supplies, analytical parameters, and time of sampling.

.. Notify EPA and its contractors for purposes of collecting sample splits.

.. Review health and safety procedures with all personnel.

.. Review appropriate permits and site access procedures.

B. IN THE FIELD:

.. Cover ground surface around the immediate borehole site with plastic sheeting to prevent mixing of surface and subsurface soil.

.. Perform boring interval, describe in field book materials encountered including: color, texture, mineral composition, moisture content, odor, grain size, shape, sorting, and degree of induration.

.. Place the three clean 6" brass sample tubes into the sampler body. Assemble the split-tube sampler just prior to the sampling run. Attach sampler to drill rig and drive into the ground.

.. After the sampler is retrieved, carefully remove the sample tubes. The middle tube will be used for analyses. The other tubes will be used for analyses of splits, duplicates, and if sample recovery from the middle tube is insufficient.

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- Adjacent sampling tubes will be analyzed as duplicates for one out of every 10 soil samples for each type of analysis.

- Cap ends of sample tubes with teflon liner and plastic end cap. Secure cap with electrical tape.

- Record OVA measurements of each sample tube not packaged for analysis or taken as a split or duplicate.

- Prepare background soil sample from a remote location to be included in each sample shipment.

Where

- Each sample will be labeled with project number, hole number, depth interval, predetermined sample number, date and time of sampling, collector's name and company, and the analyses to be performed (Appendix B-1). The top and bottom of the sample will be noted on the sample tube. Place each sample in a plastic bag and immediately store in refrigerated chest.

- Label, package, and store soil background and duplicate samples in a manner indentical with other soil samples. The identity of background and duplicate samples will not be known to the laboratory.

- The following information will be entered into a field notebook each time a soil sample is collected:
  - date of sample collection
  - hole location and number
  - depth interval
  - description of sample including color, odor, moisture content, etc.
  - time of sample collection
  - OVA readings

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- any other pertinent information, including any difficulties in sampling or unusual drilling characteristics.

- Decontaminate split-tube sampler by steam cleaning, TSP detergent wash, water rinse, and de-ionized water rinse. All wash water will be stored at the Montrose site until results of soil analyses are available. The wash water will be disposed of in an appropriate manner depending on the results of the analyses. Disposal is discussed in Section 5.5.

- Complete chain-of-custody forms, laboratory analysis schedules, and appropriate transmittal letters (Section 7).

- Package samples according to the procedures outlined in Section 5.4 and deliver to the laboratory by vehicle at the end of each sampling day.

5.4 Sample Handling, Packaging, and Shipping

Contained in this section are the required sample handling, packaging, and shipping procedures to be utilized by the investigative team.

5.4.1 Groundwater Samples

At each monitor well, water samples for analysis of the volatile organic compounds (acetone, benzene, chlorobenzene, chloroform, and dichlorobenzene) will be collected in two 40-ml glass vials equipped with teflon-backed silicon septum screw caps. Correctly prepared bottles and septa are washed with detergent, rinsed with organics-free water, and dried one hour at 105°C. The containers will be rinsed with sample water before the sample is collected.

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During sample collection, all vials will be completely filled with water. The teflon liner is placed on the vial in such a manner as to expel any residual air. Zero head space in each VOA vial will be ensured by inverting the vial and gently tapping on the cap. If air bubbles appear the sample will be discarded and the process repeated until zero head space is confirmed.

Water samples for analysis of DDT and its metabolites, and the four isomers of BHC, will be collected in one-liter amber colored glass bottles sealed with teflon-lined caps. New bottles and liners prepared in the laboratory are rinsed with methylene chloride and dried by vacuum or other safe means until no solvent remains.

Water samples for common ion analyses are collected in clean one-liter polyethylene bottles. Water samples for nitrate analysis are collected in 100-ml polyethylene bottles pretreated with sulfuric acid. Containers for all analyses will be cleaned and prepared in the laboratory as specified in the EPA-approved method for each type of analysis. All water samples will be taped, labeled, and stored at 4°C by placing on blue ice or double bagged ice in plastic ice chests until the anaylses are performed.

Types and sizes of containers to be used, the recommended volume of sample to be collected, sample preservation, container preparation, and maximum laboratory holding time under EPA guidelines for groundwater samples are summarized in Table 1. For each case of samples, a trip blank will be prepared and included with the shipment of field samples. A certified organic free water sample will be included with each container containing samples for VOC analyses. For each sample collected, record the appropriate information in the field notebook and attach the sample labels to each sample container. Prepare laboratory schedules of analyses to be performed and indicate sample concentration and matrix to provide the laboratory with information determining the specific analysis protocols to be followed. For each group of samples, complete all letters of transmittal, chain-of-custody records, and laboratory schedules, pack in a waterproof bag, and include

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with the samples. Samples must be packed in plastic air bubble packing material to avoid breakage or contamination.

Provisions for split samples from the monitoring wells will be made. EPA and its contractors will be notified prior to commencement of field sampling to allow mobilization of their sampling team and selection of a laboratory. Coordination with EPA and its contractors will be maintained throughout the groundwater sampling process.

5.4.2 Soil Samples

Soil samples for analyses of target chemicals will be collected in brass sampling tubes of the split-tube sampler as outlined in Section 5.3.2. Sampling tubes will be washed in TSP detergent and rinsed with deionized water and chilled on ice before use. Immediately after the sample is taken, the tubes will be capped, labeled, and packed for shipping. Procedures for capping and labeling tubes are described in Section 5.3.2. All sampling tubes will be wrapped individually in plastic bags and placed in an ice chest. The middle tube will be used for all analyses unless sample recovery is insufficient or unless duplicate or split samples are collected. The type and size of container to be used, recommended volume of sample to be collected, preservation techniques, container preparation, and maximum laboratory holding time under EPA guidelines are summarized in Table 1.

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TABLE 1
SAMPLE HANDLING PROTOCOL

TYPE OF ANALYSIS	NUMBER, TYPE, AND SIZE OF CONTAINER	SAMPLE VOLUME	PRESERVATION	PRE-EXTRACTION HOLDING TIME	POST-EXTRACTION HOLDING TIME	CONTAINER CLEANING
			WATER SAMPLES			
Purgeable (Volatile) Organics (EPA Method 624)	Two 40-ml glass vials, teflon-backed septum	Vials filled completely, no air space	Cool to 4°C (in ice chest)	14 days	NA	Bottles and septa washed with detergent, rinsed with organic-free water, and dried one hour at 105°C
Pesticides (EPA Method 608)	Two 1-liter amber glass bottles with teflon-lined caps	Bottles filled 5/6 full	Cool to 4°C (in ice chest)	7 days	40 days	Bottles and cap liners rinsed with methylene chloride and dried by vacuum or other safe means until no solvent remains.
Common Ions	One 1-liter polyethylene bottle	Bottle filled completely (No headspace)	Cool to 4°C (in ice chest)	24 hours	NA	Container washed with detergent and rinsed with distilled water
Nitrate	One 100-ml polyethylene bottle	Bottle filled completely	Preserve sample with sulfuric acid to pH of less than 2; cool to 4°C (in ice chest)	28 days	NA	Container washed with detergent and rinsed with distilled water, pretreated with sulfuric acid
			SOIL SAMPLES			
Volatile Organics (EPA Method 8240)	One sealed brass tube sleeve with teflon-lined threaded cap	6" x 2" tube. 2 gram aliquot required	Wrap in plastic bag, cool to 4°C (ice in container)	*	*	Sampler washed with detergent and rinsed with deionized water
Pesticides (EPA Method 8080)	One sealed brass tube sleeve with teflon-lined threaded cap	6" x 2" tube. 10 gram aliquot required	Wrap in plastic bag, cool to 4°C (ice in container)	7 days	30 days	Sampler washed with TSP detergent and rinsed with deionized water

* SW-846, Test Methods for Evaluating Solid Waste, July 1982, does not list holding times for 8240 analyses. The laboratory's reported policy is to extract within 7 days of collection and analyze within 7 days of extraction. This policy will be followed pending notification to the contrary or revisions to SW-846.

For each group of samples, a background soil sample will be prepared and included with the shipment of field samples. For each sample collected, record the appropriate information in the field notebook and attach the sample labels to each sample container. Prepare laboratory schedules of analyses to be performed and indicate sample concentration and matrix to provide the laboratory with information determining the specific analysis protocols to be followed. For each group of samples, pack all corresponding letters of transmittal, chain-of-custody records, and laboratory schedules in a waterproof bag and include with the samples in the shipment. Samples must be packed in plastic air bubble packing material to avoid breakage or contamination.

Split soil samples will be provided to the EPA in the field or at the laboratory. Since true splits of soil samples are not possible, the bottom adjoining brass tubes from the split-tube sampler will be provided if sample recovery is sufficient. These samples will be handled, preserved, and stored in a manner identical to the primary sample. Coordination with EPA and its contractors will be maintained throughout the sampling process.

5.5 Sampling Safety and Decontamination Considerations

During drilling and sampling activities in potential source areas, an OVA will be utilized for detection of volatile organic emissions from the borehole. If high readings of volatiles are detected, appropriate safety actions will be taken in accordance with the specifications of the On-Site Health and Safety Plan (On-Site Health and Safety Plan, Montrose Chemical Corporation, 1986). Additional site safety requirements will be specified in the On-Site Health and Safety Plan.

Decontamination procedures for each field event are specified in the Sampling Plan and discussed in Section 5 of this document. Decontamination of personnel and protective equipment and procedures for disposal of decontamination fluids and drilling cuttings are discussed below.

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5.6 Disposal of Investigation-derived Material

Soil cuttings resulting from soil boring activity will be immediately replaced in the borehole with a bentonite slurry to 10 feet below land surface. A 10-foot cement plug will be installed over the bentonite and cuttings and the grade restored. Materials from drilling operations and decontamination operations shall be immediately placed in a container for temporary storage at the Montrose site. The container shall be labeled and stored in a location acceptable to Montrose for the period of analysis of the samples sent to the laboratory. Disposal of the wastes will be the responsibility of Montrose Chemical Corporation.

If wastes derived from investigation activities are determined by laboratory analysis to be hazardous, then disposal of those wastes will be conducted in compliance with EPA's interim policy "Procedure for Planning and Implementing Off-site Response Actions" (Federal Register Vol. 50 No. 214, Tuesday, November 5, 1985). The following procedures are intended to implement the policy. If any discrepancies should arise between these procedures and federal policy, the federal policy shall be followed.

Treatment

Treatment, reuse, or recycling of hazardous wastes shall be considered in the removal of investigation-derived hazardous materials. Removal alternatives should not be selected on cost alone, but should consider long-term effectiveness and long- and short-term costs as compared to disposal.

Selection of Off-site Treatment or Disposal Facility

Selection of an appropriate facility for off-site managment of investigation-derived hazardous wastes shall meet the following requirements:

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1. The owner or operator of any hazardous waste management facility under consideration must have a RCRA permit applicable to specific wastes and specific storage, treatment, or disposal processes.

2. A RCRA compliance inspection must be performed at the off-site facility to receive investigation-derived hazardous wastes not more than six months before receiving such wastes.

3. Any land disposal facility receiving investigation-derived hazardous wastes must meet RCRA minimum technical requirements per the Hazardous and Solid Waste Amendments of 1984. These technical requirements include groundwater monitoring and liner and leachate collection system standards.

Manifest Requirements

Investigation-derived hazardous material transported to an off-site storage, treatment, or disposal site shall be accompanied by a Uniform Hazardous Waste Manifest, in compliance with requirements in 40 CFR 262.

6.0 FIELD MEASUREMENTS

This section describes the routine procedures to be followed by all personnel performing field measurements. Sampling activities will include borehole logging, water level measurements, electrical conductivity, temperature, pH, and well discharge measurements. Forms to be used for field measurements are shown in Appendix A.

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6.1 Borehole Logging

During the drilling of soil borings, a complete log of all conditions encountered during drilling will be maintained. This includes lithologic and hydrogeologic descriptions along with notations on drilling particulars. All logging will be supervised by a qualified geologist.

Major components of the log to be completed are as follows:

- If possible, in the first Bellflower and Gage monitor wells continuous core samples will be collected when using the hollow stem auger.

- In the soil borings, beyond a depth of 20 feet, split spoon drive samples will be collected at 5-foot intervals.

- Drive sample blow counts will be recorded.

- The description of the drill cuttings shall include the following:
  - Color of cuttings
  - Grain size, shape and sorting
  - Moisture content
  - Mineral composition
  - Descriptive comments, e.g., degree of cementation, staining, odors

- Moisture content of all the cuttings will be noted along with the depth at which groundwater is first encountered.

- Drilling speed and rig behavior will be noted to help verify the nature of the material encountered by the drill bit.

- Sieve analyses of samples from the proposed Gage and Bellflower screened intervals will be conducted.

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- The on-site geologist will be responsible for writing all the above information on a lithologic log sheet (Appendix A).

6.2 Water Level Measurements

Separate measuring equipment will be used for Bellflower and Gage wells. Water levels will be measured by an electric sounder or steel tape. The electric sounder used for water level measurements will have marks on the sounder line at regular intervals (one, five, 10, or 25 feet). Each sounder will be accompanied by a calibration log book which will show:

- Time and date of last calibration (before entering the field).
- The point of calibration (either the center of a mark on the sounding line or along the extreme of the first mark near the probe).
- Who did the calibration.
- How it was accomplished.

A calibration check will be made in the field by taking a water level measurement with the sounder and checking the measurement with a steel tape. The difference between the two measurements should be less than 0.1 foot per 100 feet of depth to water. These calibration checks will be logged in the calibration log book.

A graduated steel tape will be used for water level measurements when well equipment or hydraulic conditions preclude the use of an electric well sounder. Steel tapes will also be used for quality control checks of electric well sounders. The tapes will be graduated in permanent markings of five-, ten-, 25- or 100-foot intervals.

Steel tapes will be checked for kinks and will have the first five to 10 feet chalked before each measurement.

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The following procedures will be used for measureing water levels:

A) BEFORE ENTERING THE FIELD

.. Identify the wells to be measured.

.. Identify established measuring point for a particular well.

B) IN THE FIELD

.. Sound each well twice for depth to water. The variation must be less than 0.1 foot between the two measurements. When using the steel tape, lower slowly to avoid contact with casing. Once the approximate water level is established, continue making water level measurements until a difference of less than 0.1 foot between measurements is obtained.

.. If possible, the depth of the well should be measured at the first-time water level measurement. Record measured depth (this will only be applicable to wells that provide access to the well casing without interfering with downhole equipment).

.. Record the measuring point at the well-head. The same measuring point must be used for subsequent measurements.

.. Record the distance from the measuring point to the ground level and define "ground level" at that well site, e.g., cement platform, or average ground surface (ground level elevations will be surveyed during initial stages of the Phase I sampling).

.. Record all information on Water Level Measurement Form (Appendix A).

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- Remove all equipment and proceed to next well.

- Decontaminate equipment by rinsing with distilled water.

6.3 Electrical Conductivity, pH, Temperature and Organic Vapor Measurements

A YSI model 33 conductivity meter, a Corning Model 103 pH meter, and a field thermometer will be used for measuring the field parameters, electric conductivity, temperature, and pH in water samples.

The probes on the conductivity meter and pH meter probes will be thoroughly rinsed with distilled water prior to use. Prior to each use the pH meter will be calibrated in pH 4 and pH 10 buffer solutions made up from Hydrion Buffer Chemvelopes. Ajustment for temperature differences between the buffer solution and the sample will be made. All manufacturer's instructions for use of the instruments will be followed.

A representative water sample will be placed in a glass transfer bottle, or measurements will be made directly at the well discharge point. Measurements will be made as follows:

- The transfer bottle will be rinsed with sample water prior to filling.

- Probes will be immediately submerged in the transfer bottle and measurements will be taken accordingly.

- All field measurements will be recorded in a field notebook along with the sample I.D., sample location, the time and date of measurement, and the signature of the sampler.

- After parameters are obtained, the transfer bottle and the probe(s) will be decontaminated by rinsing with distilled water.

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- The water sample in the transfer bottle will not be used to fill sample containers.

- If recalibration indicates problems with instrument probes, probes will be changed.

During all drilling operations, an organic vapor analyzer will be routinely used for detection of volatile organic emissions. Although no significant levels of volatile compounds are expected, the instrument will be employed for safety purposes. If readings of volatiles greater than 10 parts per million above background are detected, or if background concentrations indicate hazardous site conditions, appropriate safety actions will be taken in accordance with the On-Site Safety Plan.

6.4 Well Discharge Measurements

During groundwater quality sampling, field measurements will be made to determine the flow rate of the water discharging from the well. This will be accomplished as described below:

- Equipment needed is a five- to 15-gallon container and a stopwatch.

- Discharge from the well is directed into the container, and the stopwatch is started.

- The stopwatch is turned off when the container is full. This will give the time in minutes and seconds that it took to discharge the volume of water from the well.

- Convert the rate of discharge to gallons per minute and record the time this measurement was taken and the rate of flow in gallons per minute.

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At the time of measurement, atmospheric conditions or well head conditions which may ultimately affect the discharge measurement should be recorded along with the discharge data. Suggested data forms for this field measurement activity are contained in Appendix A.

7.0 SAMPLE CONTROL/CHAIN-OF-CUSTODY

This section describes standard operating procedures for sample identification and chain-of-custody required by EPA contractors and recommended for all RI/FS participants. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage prior to analysis.

7.1 Standard Operating Procedures

Sample identification documents must be carefully prepared so that identification and chain-of-custody can be maintained, and sample disposition can be controlled. The sample identification documents that will be used as part of the Phase I investigation are:

- Prepared sample labels
- Chain-of-custody records
- Sample transmittal letters
- Field notebooks
- Laboratory schedule and analytical services request forms

Examples of sample documents are presented in Appendix B.

Pre-printed and pre-numbered adhesive sample labels must be secured to the sample containers by the sampler. Sample documentation forms and labels are filled out with waterproof ink. Where necessary, the label is protected from water and solvents with clear label protection tape.

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Sample documentation forms and labels will include the following information:

- Sample Number
- Project Code/Case Number
- Sample Site Name/Code
- Sampling Date
- Sampling Personnel
- Shipping Method and Date
- Sample Description
- Sample Matrix and Concentration
- Sample Volume and Number of Containers
- Sample Destination
- Preservatives Used
- Analyses Required
- Special Handling Procedures
- Container Lot Numbers

7.2 Chain-of-Custody

Official custody of samples must be maintained and documented from the time of sample collection up to the presentation of analytical results in the final report.

To document sample possession, chain-of-custody procedures are followed as outlined in the sections below.

7.2.1. Field Custody Procedures

To the extent possible, the quantity and types of samples and sample locations are determined before the actual field work. As few people as possible should handle samples.

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The field sampler is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly. The Project Manager determines whether proper custody procedures were followed during the field work and decides if additional samples are required.

7.2.2. Transfer of Custody and Shipment

Samples are accompanied by a Chain-of-Custody Record (Appendix B). When transferring samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer.

Samples are packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate Chain-of-Custody Record accompanying each shipment (one for each field laboratory). Shipping containers will be sealed for shipment to the laboratory. The method of shipment, courier name(s), and other pertinent information are entered in the "Remarks" section of the Chain-of-Custody Record.

All shipments will be accompanied by the Chain-of-Custody Record identifying its contents. Originals and copies will be sent to the appropriate parties, as indicated on the form.

Once received at the laboratory, laboratory custody procedures will apply. However, a separate chain-of-custody record will be prepared for those samples to be split at the laboratory. At that point, it will be the laboratory's responsibility to acknowledge receipt of samples and verify that the containers have not been opened. It is then the laboratory's responsibility to maintain custody records throughout sample preparation and analysis.

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7.2.3 Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the information on the Sample Identification Label matches that on the Chain-of-Custody Records. Pertinent information as to shipment, pickup, and courier is entered in the "Remarks" section of the Chain-of-Custody Record. Additional laboratory custody procedures are described in Appendix C, Laboratory Quality Control.

7.3 Field Notebook

A record of sample identification numbers and chain-of-custody will be maintained in the field notebook. Additionally, it will include a record of significant events, observations, and measurements during field investigations: personnel present, site conditions, drilling procedures, sampling procedures, measurement procedures, and calibration records. Field measurements recorded on standardized forms will be maintained in the project notebook.

All entries will be signed and dated and kept as a permanent record. The information contained in these forms is intended to provide sufficient data and observations to enable participants to reconstruct events that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal procedings. Corrections of erroneous entries will be made by crossing a line through the error and entering the correct information. Corrections will be initialed and dated by the person making the entry.

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8.0 EQUIPMENT CALIBRATION, OPERATION, AND MAINTENANCE

Field equipment used to perform various measurements during the Phase I investigation will include an electric sounder, steel water level tape, a YSI Model 33 conductivity meter or equivalent for measuring electrical conductivity of water samples, a Corning Model 103 pH meter or equivalent for measuring pH, an organic vapor analyzer, and a field thermometer.

Proper maintenance, calibration, and operation of each instrument will be the responsibility of the field personnel and the lead equipment technician assigned to the project. All instruments and equipment used during the studies will be maintained, calibrated, and operated according to the manufacturer's guidelines and recommendations. At a minimum, all instruments will be inspected and calibrated upon receipt from a vendor or from another office. When in the field, a copy of the manufacturer's operation and calibration recommendations will accompany the instruments. The following guidelines will apply to equipment calibration:

- All equipment will be calibrated prior to a field program. This includes instruments used to measure water quality parameters, water levels, well discharge instruments, and air monitoring devices.

- The probes on the conductivity meter and pH meter will be rinsed in distilled water prior to each use. Also prior to each use, the pH meter will be calibrated in pH 4 and pH 10 buffer solutions made up from Hydrion Buffer Chemvelopes. The water sample with which pH and electrical conductivity are determined will not be used to fill sample containers. All manufacturer's instructions for use of the instrument will be followed.

Orange Tubes

- For safety purposes, an organic vapor analyzer will be routinely used during all drilling operations for detection of volatile organic emissions. The OVA is factory calibrated. Calibration

Back-up OVA?

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checks prior to field use will be conducted according to manufacturer's instructions. The instrument will be sent to the manufacturer for recalibration when indicated by calibration checks or periodically per manufacturer's specifications.

- Instruments that require frequent calibration checks, such as an electric sounder or pH meter, will be calibrated daily and after each measurement station, maintenance or repair.
- Steel tapes used for well depth measurements should be calibrated twice a year to check for kinks, stretching, or worn markings. Thermometers will be checked against other thermometers prior to field use.

- Instruments for which calibration cannot be easily checked in the field will either be tested against another recently calibrated instrument of a similar type or be returned to the manufacturer for appropriate calibration. If tested against another recently calibrated instrument capable of making the same measurements, variation between instruments must not exceed 5%. If readings vary by more than 5%, the most recently calibrated instrument will be used and the other returned to the manufacturer for calibration.

A routine schedule and record of instrument calibration will be maintained throughout the duration of the study. For instruments that require more frequent calibration, such as an electric sounder, a service manual will accompany the instrument at all times. This will enable the user to document the procedures used in verifying the accuracy of the instrument. For example, the service manual for an electric sounder will include:

- The type of marking used on the sounding wire, e.g., tape ferrels, etc.

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- The distance in feet between each mark and the code to indicate the 100-foot interval.

- The date, name of person(s) responsible, changes, or findings of each calibration check, and pertinent modifications made to the sounder, such as adding or removing sounding wire or probes.

Procedures for calibration, operation, and maintenance of laboratory equipment are presented in **Appendix C, Laboratory Quality Control.**

9.0 ANALYTICAL PROCEDURES

All samples collected during this project will be analyzed for the Target Chemicals by Brown and Caldwell's Analytical Services Division. Groundwater samples will also be analyzed for common ions for the purpose of differentiating between the water in the Bellflower aquitard and the Gage aquifer. Laboratory analyses will be in accordance with the standard analytical procedures established by the EPA. In general, the laboratory will adhere to those recommendations promulgated in 21 CFR Part 58, "Good Laboratory Practices," and to criteria described in "Methods for Chemical Analysis of Water and Wastes," 1979 (EPA-600/4-79-020).

Target chemicals and common ions in groundwater and soil samples will be analyzed by approved EPA methods. The analytical method and preparation procedures for target chemicals and common ions are summarized in **Table 2.**

In soil sample preparation, aliquots from the brass sampling tube will be obtained by reaming out the center of each sample after approximately one centimeter of sample from each end of the sleeve has been scraped off.

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TABLE 2
SUMMARY OF ANALYTICAL PROCEDURES

Target Chemicals	EPA Method Water	EPA Method Soil	Method Preparation Soil
Acetone	624	8240	5030
Benzene	624	8240	5030
BHC (alpha, beta, delta and gamma)	608	8080	3550
Chlorobenzene	624	8240	5030
Chloroform	624	8240	5030
1,2 Dichlorobenzene	624	8240	5030
1,4 Dichlorobenzene	624	8240	5030
DDT, DDD, DDE	608	8080	3550

Common Ion	EPA Method Water
Calcium	215.1
Magnesium	242.1
Sodium	273.1
Potassium	258.1
Alkalinity	310.1
Chloride	325.2
Sulfate	375.3 or 375.4
Nitrate	353.2
Fluoride	340.2
Boron	200.7 or 212.3
Silicon	APHA 303 C*
Total Dissolved Solids	160.1

*American Public Health Association, Standard Methods for the Examination of Water and Wastewater, 16th Edition

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10.0 DATA MANAGEMENT, VALIDATION, AND REPORTING

All raw data generated from project sampling tasks and field measurement activities used in preparing project reports will be appropriately identified and will be included in a separate appendix within the project reports.

10.1 Analytical Data

Validation of all analytical data will be performed by the Project Hydrogeologist at Hargis + Associates, Inc. Laboratories will submit results which are supported by sufficient back-up data and QA/QC results to enable the reviewer to determine the quality of the data. Validity of all data will be determined based on the precision and accuracy assessments outlined in Sections 11 and 14. Where test data have been reduced, the method of reduction will be described in the report.

10.2 Field Measurement Data

Validation of data obtained from field measurements will be performed by the Project Hydrogeologist. Validity of all data will be determined by checking calibration procedures utilized in the field and by comparing the data to previous measurements obtained at the specific site. Large variations (greater than 10%) will be examined in association with changes in local groundwater conditions and general groundwater trends. Variations in data which cannot be explained by local changes will be assigned a lower level of validity and will be used for limited purposes.

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11.0 QUALITY CONTROL PROCEDURES

Quality control procedures are specific field and laboratory procedures used to determine accuracy, precision, and completeness of sample data. Quality control procedures for laboratory analysis and field activities, including sample collection and field measurements, are described below.

11.1 Laboratory Quality Control Procedures

Laboratory quality control procedures are described in Appendix C, Laboratory Quality Control. Laboratory quality control procedures include the following:

- One set of calibration standards, either single point or full range, will be analyzed during each eight hour shift.
- One set of reagent and solvent blanks will be analyzed daily.
- At least one sample will be analyzed in replicate with each batch of 10 or fewer samples.
- At least least one spike sample will be analyzed with each batch of samples.
- An EPA Quality Control sample or NBS certified sample will be analyzed if available.
- Quality Control charts should be maintained.

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11.2 Field Quality Control Procedures

Quality control of field data obtained during sampling and from measurement equipment will be accomplished by following the guidelines specified in Section 5 and by performing proper calibration procedures at the intervals specified in Section 8. In addition, the quality control methods discussed below shall be implemented.

11.2.1 Quality Control Procedures for Sample Collection

Quality control procedures to be conducted during sample collection will include the following:

- One duplicate sample will be taken for every 10 samples (or for a set of fewer than 10) at each site per day. The duplicate will not be labeled as a duplicate but in a method exactly like other samples so the laboratory will not be aware of which samples are duplicates.

- A trip blank for 608 and 624 analyses will be included in each sample shipment every day samples are collected for these analyses. The blanks shall contain certified organic free water.

- Split samples will be provided to the EPA according to procedures outlined in Section 5.4.

11.2.2 Quality Control Procedures for Field Measurements

A. WATER LEVEL MEASUREMENTS

As stated in Section 6.2, water level measurements will be obtained by utilizing either an electric well sounder or a graduated steel tape. Prior

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to obtaining measurement data, field personnel should check to see that the instrument has been properly calibrated (See Sections 6 and 8).

At each location and/or time interval, a minimum of two measurements should be taken. The most accurate measurement will be noted by the experienced field technician and reasons written to jusify the selection. Both measurements will be recorded in the field notebook or on the appropriate field data form. Data should be measured to the nearest 0.1 foot.

In addition to replicate measurements, the data should be compared to previous measurements obtained at the well site. If large discrepancies exist from previous measurements which cannot be explained by local groundwater activities, changes, or trends, the equipment should be recalibrated and the measurements repeated. If possible, an alternative instrument should be utilized to verify the accuracy of the data.

B. WATER QUALITY PARAMETERS

Measurements of temperature, pH, and electrical conductance will be performed during each well water sampling event. Prior to obtaining measurement data at each sampling point, field personnel will properly calibrate the instrument (see Sections 6 and 8). For pH and electrical conductance, reference solutions can be prepared and will be utilized to properly calibrate the instrument.

When obtaining data for water quality parameters, measurements should be compared with previous data and examined for large variations. If variations greater than ±10% exist and cannot be accounted for by changes in field conditions and/or water quality stabilization, the instrument should be recalibrated and the measurements repeated. The most accurate measurement will be determined by the experienced field technician and recorded in the field notebooks or on the appropriate field data form. If possible, an

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alternative measuring device (i.e. another thermometer, pH meter, or electrical conductance meter) should be utilized to verify the data.

C. DISCHARGE MEASUREMENTS

As stated in Section 6, water well discharge measurements will be obtained during each sampling event. For low output water wells capable of being measured utilizing a properly calibrated bucket, quality control can be achieved by performing at least two measurements in succession to calculate discharge rate. If variations greater than 10% exist between the replicate measurements, additional measurements should be taken. The most accurate measurement will be determined by the experienced field technician and recorded in the field notebook or on the appropriate field data form.

In addition, the data should be compared to previous measurements taken at the well site. If variations between measurements exceed 10% and cannot be accounted for by changes in pumping or groundwater yield, the bucket should be recalibrated and the measurement repeated. If possible, an alternative measurement device should be utilized to verify the data.

Wells with large discharge rates will be measured by one of the methods outlined in Section 6. The most commonly used measurement device will be the Cox flow meter. Quality control will be achieved by performing at least two measurements. If variations between measurements exceed 10%, an additional measurement should be taken. The most accurate measurement will be determined by the experienced field technician and recorded in the field notebook or on the appropriate field data form. When possible, measurements made with the Cox flow meter will be compared to measurements made with in-line flow meters, to verify accuracy.

In addition, the data should be compared to previous measurements taken at the well site. If variations between measurements exceeds 10% and cannot be accounted for by changes in pumping or groundwater yield, the instrument will have to be recalibrated and the measurements repeated. Since the Cox

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flow meter cannot be calibrated in the field, repeat measurements will have to be performed with an alternative measuring device (see Section 6).

12.0 PERFORMANCE AND SYSTEMS AUDITS

The Quality Assurance Manager will monitor and audit the performance of the QA procedures outlined in the QAPP. The Quality Assurance Manager will conduct field and office audits which will ensure that the information being gathered is reliable and of good quality.

12.1 Field Audits

The Quality Assurance Manager may schedule audits of field activities at various times to evaluate the execution of sample identification, sample control, chain-of-custody procedures, field documentation, instrument calibration, and field measurement and sampling operation.

Field documents pertaining to sample identification and control will be examined for completeness and accuracy. Field notebooks and field data forms will be reviewed to see that all entries are dated and signed and that the contents are legible, written in ink, and contain accurate and complete documentation of project activities. Because the notebook and field data forms provide the basis for reports written later, they will contain only facts and observations. Language will be objective, factual, and free of personal interpretations or terminology that might prove inappropriate.

The auditor will also check to see that chain-of-custody procedures are being followed and that samples are being kept in custody at all times and are locked to prevent tampering.

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Sampling operations will be evaluated to determine if they are performed as stated in the project plan or as directed by the Project Manager. The auditor will check to determine that the appropriate number of samples are being collected, that the samples are being placed in proper containers, and that proper preservation, packaging, and shipment protocols are being followed.

Field measurement activities will be evaluated to determine if they are performed according to guidelines in Sections 6, 8, and 11 of this document. The auditor will spot check various instruments for proper calibration and proper frequency of calibration, and will also check to ensure that the techniques utilized with these instruments are providing accurate data.

12.2 Office Audits

Once a field project has been completed, the individual files will be assembled, organized, and securely stored. The documents will be examined to determine whether all necessary items such as signatures, dates, and project codes are included. The auditor will examine all documents and determine whether they are being handled and stored in the proper manner.

In addition to the formal audits performed, the project manager continually reviews product quality as draft documents are produced and ensures that the project is being performed in accordance with approved quality assurance procedures. Prior to the production of a draft report, all work products will receive review by senior project staff. This review will include calculation briefs, test analyses, field measurements, graphs, tables, and any document which involves information generated from the field data.

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12.3 Laboratory Audits

Internal laboratory audits are performed quarterly as part of the formal laboratory certification requirement for analyzing public drinking water systems. The laboratory audit is required to monitor the capability and performance of the total measurement system. The audit includes a careful evaluation of equipment, standard operating procedures, and quality control procedures. Additional semi-annual audits are conducted by the USEPA. Internal laboratory audit procedures are discussed in Appendix C, Laboratory Quality Control.

13.0 PREVENTATIVE MAINTENANCE

Preventative maintenance for quality assurance includes those tasks that must be carried out to minimize downtime of the measurement systems. Procedures for preventative maintenance during the Phase I investigation include the following:

- Instruments for field measurements will be calibrated and checked before use (Section 8).
- Spare parts for instruments such as probes will be on hand in case of equipment failure.
- When practical, backup equipment will be available. For example, a steel water level tape will serve as backup for an electric sounder.
- Sufficient well construction materials will be on hand to account for monitor well variability as dictated by geologic conditions.
- Sampling locations and procedures will be identified and reviewed each day prior to field work.

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- Additional materials for potential additional sample preparation such as containers, caps, and forms will be available on-site.

- Laboratory equipment downtime will be minimized by proper calibration and maintenance as discussed in Appendix C.

14.0 DATA ASSESSMENT PROCEDURES

As part of the QA Project Plan, routine procedures will be used to assess the precision, accuracy, and completeness of data for every measurement parameter. In addition, an extensive review of field and analytical data will be conducted to ensure that quality control criteria have been met. Data assessment procedures to evaluate accuracy, precision, and completeness are described below.

14.1 Accuracy

Accuracy is defined as the percent recovery for a spiked sample. A sample spike is prepared by adding a known amount of a pure compound to the environmental sample. The compound added is the same as that being assayed for in the environmental sample. These spikes simulate the background and interferences found in the actual samples; the calculated percent recovery of the spike is taken as a measure of the accuracy of the total analytical method. When there is no change in volume due to the spike, it is calculated as follows:

$$P = \frac{(T-X)\ 100}{T} = \text{Percent Recovery}$$

X = Measured value of analyte concentration in the sample before the spike is added

T = Assumed true value of analyte concentration in the sample after the

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spike is added. Percent recovery must be within ±20% of the known concentration.

14.2 Precision

Precision is defined as the relative percent difference of matrix spike recoveries for two matrix spikes of the same sample (replicates) and is evaluated in terms of the relative percent difference. Because of the limited number of replicate samples that can be analyzed in environmental samples using gas chromatograph techniques, precision cannot be evaluated in terms of standard deviations. Consequently, outlier testing is not possible. However, the precision of an analytical method can be evaluated from internal lab and field duplicates by calculating the percent difference between the duplicate sample results:

$$PD = 2\,\frac{(D1-D2)}{(D1+D2)} \times 100$$

PD = Percent Difference

D1 = First Sample Value

D2 = Second Sample Value (duplicated)

The limit for the percent difference between duplicates should not exceed 20%. Since standard deviations cannot be calculated, adherence to standard sampling and analysis procedures will assure that samples are representative.

14.3 Completeness

Completeness is described as the ratio of acceptable laboratory results to the total number of analyses performed. A completeness value of less than 95% indicates that corrective action is necessary in order to limit the number of defective results.

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Criteria for defective results may include exceeded holding times, percent recoveries greater than 20%, or unsatisfactory supporting data such as dates, locations, or sample identity numbers. An analyses of sample completeness will be conducted after each sampling round results are returned. Completeness is defined as:

$$C = \left(1 - \frac{\text{number of defective results}}{\text{total number of requested analysis}}\right) 100$$

A C value less than 95% will indicate corrective action in order to avoid repeating similar problems in future sampling rounds.

14.4 Assessment

Field data will be assessed by evaluating adherence to guidelines outlined in Sections 5 and 11 for sampling and quality control procedures. Data collected historically in the study areas will be reviewed and used during the investigation. Since such data have been collected by a variety of contractors and agencies using different methods and quality assurance/quality control procedures, judgments as to their quality must be prior to incorporation into investigations.

The kind of data to be used may include water level measurements, chemical data on water and soil, geologic subsurface descriptions, (e.g., drillers' logs) and interpretations of the hydrologic conditions of the study areas.

Each data point used in the investigation that is not collected by Hargis + Associates, Inc., will be evaluated against the QAPP standards for a particular type of data collection. For example, a water level measurement collected during previous investigations at a particular well will be assigned a high level of confidence if the data point is accompanied by information on the type of water level measuring device, the measuring point

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identification, pumping status of the measured well, construction details of the well, and the general pumping status of adjacent wells; if any of these data should be missing, the recorded, historical water level will be assigned a lower level of confidence, and may be rejected for the analysis of historical conditions.

Historical chemical data on the nature of soil or water conditions in the study areas will be similarly evaluated against the standards developed in this document. Unless information is available on the method of sample collection, the analytical methods employed, and the quality assurance/quality control procedures used, the data point will be assigned a low level of confidence.

Information on subsurface conditions is usually obtained from drillers' logs. The quality of these logs vary from well to well and from driller to driller. On the basis of field experience in the study areas and review of existing site-specific literature on subsurface conditions, each well log to be used in interpretative evaluations will be subject to judgment by experienced hydrogeologists.

Data collected during the investigation should be collected according to the procedures outlined in this document. Any apparent data collection errors will be identified by evaluation of adherence to the QAPP procedures and evaluation of the data compared to historical trends. If a data point appears to deviate from an anticipated trend, further investigations into the collection methodology and QA/QC procedures will be initiated to resolve questionable data points; pending the conclusion of these evaluations, the data point may either be accepted with a high or low level of confidence or rejected.

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15.0 CORRECTIVE ACTION PROCEDURES

Corrective action procedures that might be implemented due to audits resulting in detection of unacceptable data will be developed on a case-by-case basis. Such actions may include altering procedures in the field, using a different batch of sample containers, resampling or reanalysis, increasing calibration and maintenance schedules of field measurement instruments, or recommending an audit of laboratory procedures. The project manager is responsible for initiating the corrective action. The Quality Assurance Manager is responsible for approving the corrective action.

16.0 QUALITY ASSURANCE REPORTS

Interim and Final Remedial Investigation reports will contain separate Quality Assurance sections that summarize data quality information collected during the project. Sampling and field measurement data will be summarized by Hargis + Associates, Inc., using standard formats for sample documentation and reporting. These data, summarized along with the raw data, will be attached to all reports.

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Appendix A

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APPENDIX A

FIELD MEASUREMENT FORMS

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HARGIS + ASSOCIATES, INC.

APPENDIX A
FIELD MEASUREMENT FORMS

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A-2	WATER LEVEL DATA FORM
A-3	WELL DISCHARGE AND PUMPING RECORD

BOE-C6-0179561

Project:_____

Date:_____

Time:_____

Well/Boring #:_____

Geologist:_____

A.1 LITHOLOGIC LOG

DEPTH INTERVAL (feet)	DESCRIPTION OF MATERIAL

TOTAL DEPTH OF BOREHOLE:

A. 2

WATER LEVEL DATA FORM

IDENTIFICATION	DATE	DEPTH TO WATER	ELEVATION OF MEASURING POINT	WATER LEVEL ELEVATION	REMARKS

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A. 3 WELL DISCHARGE AND PUMPING RECORD

WATER LEVEL RECORD SHEET

Page _____

OBSERVATION WELL _____

Measuring Point _____

_____ ft. above land surface.

Elevation of Measuring Point _____ ft above mean sea level.

STATIC WATER LEVEL: _____

Well Location: T_____, R_____, Sec_____

Well Coordinates: _____ ft N.

_____ ft E.

DATE / TIME AFTER PUMPING STARTED (MINUTES)	HOUR	DEPTH TO WATER (FEET) HELD	WET	DEPTH	PUMPING RATE			REMARKS (INCLUDE METHOD OF MEASUREMENT)

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APPENDIX B

SAMPLE CONTROL/CHAIN-OF-CUSTODY DOCUMENTS

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APPENDIX B
SAMPLE CONTROL/CHAIN-OF-CUSTODY DOCUMENTS

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B-5	LABORATORY REQUEST SCHEDULE - INORGANIC ANALYSIS

B 1

FIGURE SAMPLE IDENTIFICATION LABEL

HARGIS + ASSOCIATES, INC.
Consultants in Hydrogeology

2223 Avenida De La Playa Suite 300
La Jolla, California 92037 (619) 454-0165

Client	MONTROSE	Date	
Project #	218	Sample ID	XYZ
Initials		Time	
Analyze for			
Preservative/Special Instructions:			

Project No.	Project Name					NUMBER OF CONTAINERS						REMARKS
Samplers: (Signature)												
Sample Number	Date	Time	Comp	Grab	Station Location							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

B. 2 CHAIN OF CUSTODY RECORD

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B. 3 SAMPLE TRANSMITTAL FORM

Hargis & Associates, Inc.
CONSULTANTS IN HYDROGEOLOGY
1735 East Fort Lowell Road, Suite 5
Tucson, Arizona 85719
(602) 881-7300

Job No.: _____

Date: _____

BROWN and CALDWELL LABORATORIES
373 S. Fair Oaks Avenue
Pasadena, California 91105

Attention: Linda Brack or Ed Wilson
Please call upon Arrival: 681-4655

ATTENTION:

Transmitted herewith are _____ parcels containing _____ soil/water samples. The samples were shipped via _____ on the above date. The contents of the sample shipment are shown on the attached Chain-of-Custody Record.

The laboratory representative who accepts custody of these samples from the shipping company should, upon receipt, record the number and condition of the samples and acknowledge receipt of the samples by signing and returning the custody record.

Please perform the analyses outlined on the attached analysis request schedule(s) and include all data on sample labels in the final laboratory report. The date each sample was received by the laboratory and dates of injection, extraction, analysis, etc., should also appear on the laboratory report.

If you have any questions concerning the requested analyses, or if the integrity of a sample(s) is in question, please contact us.

Results of your analyses should be reported to our office as soon as possible.

Very truly yours,

B.4 LABORATORY REQUEST SCHEDULE

ORGANIC ANALYSES

SAMPLE IDENTIFIER	DATE SAMPLED	.....EPA ORGANIC PRIORITY POLLUTANTS..... VOLATILE ORGANICS (Method 624)	BASE/NEUTRAL ORGANICS (Method 625)	ACID ORGANICS (Method 625)	PESTICIDES (Method 625)	REMARKS

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B. 5 LABORATORY REQUEST SCHEDULE

INORGANIC ANALYSES

SAMPLE IDENTIFIER	DATE SAMPLED	GENERAL MINERAL 1/	TRACE METALS 2/	REMARKS

1/ GENERAL MINERAL:

Calcium, Sodium, Carbonate, Chloride, Nitrate, Boron, TDS, Specific Conductance
Magnesium, Potassium, Bicarbonate, Sulfate, Fluoride, Silica, pH

2/ TRACE METALS

Antimony, Beryllium, Chromium (total), Manganese, Selenium, Zinc
Arsenic, Cadmium, Copper, Mercury, Silver
Barium, Chromium(VI+), Iron, Nickel, Thallium
LEAD

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APPENDIX C

LABORATORY QUALITY CONTROL

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STATEMENT OF PURPOSE

BROWN and CALDWELL'S Quality Assurance Program is designed to ensure the accuracy and precision of all analytical results. Our philosophy is to provide our clients with service of the highest quality available. Control of analytical results is maintained by adherence to specified operating procedures, use of quality control samples and standards, and observance of sample custody requirements. The purpose of this manual is to describe the basic elements of our overall Quality Assurance program.

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SECTION I

DESCRIPTION OF ANALYTICAL SERVICES DIVISION

A. Services

Brown and Caldwell's Analytical Services Division has been providing laboratory services to industry and government for over 35 years. Laboratories located at Emeryville in the San Francisco Bay Area and at Pasadena in Greater Los Angeles perform a full range of analytical tests, including the following:

- Compliance monitoring for RCRA, NPDES, CAM, ARB
- Potable water testing
- Water and wastewater characterization
- Toxic and hazardous waste investigation
- Treatability studies
- Analytical consultation and methods development
- Priority Pollutant analysis
- Agricultural pesticide analysis
- Quality control services
- Bacteriology and Microbiology
- Toxicity bioassays
- Sample collection and on-site analysis

B. Personnel

The Division is made up of about 70 experienced chemists, biologists, and technical assistants. Half have degrees in chemistry and most of the remainder have other technical degrees. Several staff members hold advanced degrees in their primary field.

In addition to academic preparation, a formal program of training is carried out for new employees or those who change job assignments. A training outline is prepared by the supervisor and discussed with the employee and any senior analysts who may participate in the training. At the end of three months, a technical review is carried out. For this review, the new employee is asked technical questions while the supervisor observes the answers. The review board usually consists of the Technical Director, the Quality Assurance Manager, and the Laboratory Director or Supervisor.

Brown and Caldwell also provides a system for professional development away from the job. Laboratory specialists are frequently sent to training sessions and seminars presented by instrument vendors and professional societies. Dues

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reimbursement and tuition reimbursement are available to all employees to maintain and enhance their professional competence. Seminars are regularly presented at each lab by Division staff members and experts from other organizations.

C. Structure

The staff within each laboratory is organized into two primary sections: inorganic and organic (Figure 1). Each section is subdivided into departments having functional responsibilities; each is supervised by a senior analyst.

Each laboratory has a director responsible for verifying all analytical work. The laboratory-wide quality assurance program is headed by a quality assurance manager responsible for monitoring the performance of the laboratories and for taking corrective action as needed. The QA manager reports directly to the vice-president of the Analytical Service Division. He is assisted by a pair of technical directors whose responsibilities include the resolution of technical problems and the documentation of new methods. Each laboratory also maintains a sample control section staffed by a sample control officer and an assistant.

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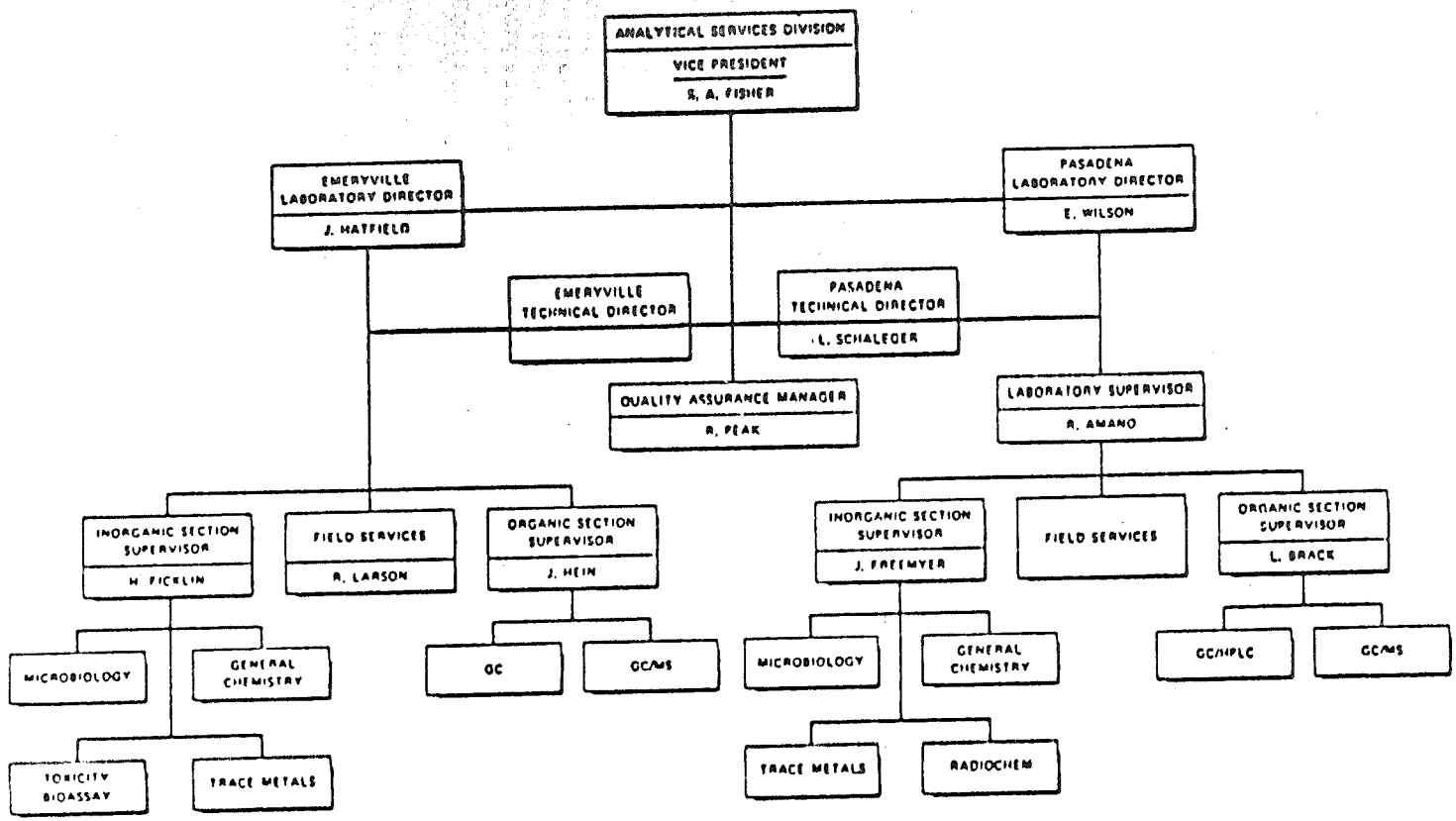
FIGURE 1



BC LABORATORY STAFF ORGANIZATION CHART

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SECTION II

SAMPLE HANDLING

A. Collection

Sampling equipment, appropriate containers and preservatives, and careful monitoring of holding times are a few of the points which must be considered to minimize possibilities for contamination or other threats to the integrity of the sample. Quality assurance begins with experienced field personnel. Sample bottles are clearly marked and all pertinent observations recorded along with the sample description, time, date of collection, and initials of the collector.

To assure proper container selection and appropriate application of preservatives, field personnel and sample control officers are provided with EPA container and preservation guidelines. The rules they follow are contained in Table II of 40 CFR Part 136 (Federal Register, Friday, October 26, 1984). Special containers, such as vials for volatile organics and amber glass bottles pretreated for organic priority pollutant analysis, are purchased from suppliers who provide certificates of compliance with EPA regulations.

B. Control and Custody

Verification of sample integrity is one of the main responsibilities of the sample control officer. The sample is inspected to see that:

1. The sample is clearly marked and dated.
2. The sample was collected in an appropriate container for the individual analysis, whether it be glass, plastic, or a special vial to avoid headspace.
3. The sample is properly preserved.
4. There is sufficient volume to do all the analyses required.

If the above conditions are met, the sample will be given a log number and the relevant information is recorded. If

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aliquots or subsamples are to be split out, care is taken to ensure that the subsamples are representative of the original. Blending or grinding may be required.

The sample control officer places the sample (or fractions if the sample requires subdivision) into designated storage areas. Most samples are stored under refrigeration at 4 degrees C; refrigerators are marked with test categories for convenient retrieval of samples. Volatile organic vials are segregated from other samples to prevent vapor-phase cross contamination.

Chain-of-custody procedures have been established to document the identity of a sample and its handling from the time of collection until its ultimate disposal. The sampling technician in the field initiates a chain-of-custody record (Figure 2) which is provided with the bottles and remains with the sample throughout its handling. This includes the transfer of samples from the field crew to the laboratory and, in some cases, to the subcontractor's laboratory.

Upon receipt at the laboratory, sample integrity is verified by the sample control officer as described above. Each sample is then assigned a discrete log number which, in addition to being attached to the sample container, is entered on the custody record, in the legally required sample log book, and onto the computerized data handling system. Besides the log number, the computerized record also contains the client name, the sample description, the sample matrix type, the required analytical parameters, and the report due date. Supplementary information such as special handling requirements may be entered as well.

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Client name	Job number
Project name	
Project manager	Sampler(s)

Sample number	Date sampled	Time sampled	Type Composite or Grab	Sample description	Number of containers	Analyses required							Hazardous sample Special handling required	Remarks

	Signature	Company	Date	Time
Relinquished by				
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

BROWN AND CALDWELL Analytical Laboratories

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (213) 681-4665

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

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SECTION III

METHODS

A. Sources

Brown and Caldwell makes extensive use of methods prescribed by the USEPA. Other methods are taken from Standard Methods for the Examination of Water and Wastewater, 16th Edition, APHA-AWWA-WPCF, 1985.

Primary USEPA sources of methods for the analysis of aqueous samples include:

Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July 1982.

Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised, March 1983.

Federal Register, 40 CFR Part 136, October 26, 1984.

Soil and other solid samples are analyzed according to the procedures of Test Methods for Evaluating Solid Waste, USEPA SW-846, July 1982.

A number of additional EPA methods are summarized in the "AB 1803 Methods Manual" issued by the California Department of Health Services, 1984.

Air analysis is based on the NIOSH Manual of Analytical Methods, 2nd and 3rd editions, issued by the National Institute of Occupational Safety and Health of the Public Health Service.

Additional methods for various sample types are taken from such sources as the United States Geological Survey (USGS), the American Society for Testing and Materials (ASTM), and the Association of Official Analytical Chemists (AOAC).

Finally, a number of special methods have been developed by Brown and Caldwell or adapted from literature sources for specialized applications. These methods are written up and maintained in a Brown and Caldwell methods reference manual.

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SECTION IV

FACILITIES AND EQUIPMENT

A. Physical Conditions

The two laboratories which constitute the Analytical Services division contain more than 22,000 square feet of work space. Both are equipped with refrigerated storage areas, fume hoods, central deionized water systems, and general utilities appropriate for modern analytical work. Common equipment such as ovens, incubators, and distillation apparatus are supplemented by specialized instruments described below.

B. Instruments

1. Laboratory Computer System

The multiuser information system is designed for sample and data tracking as well as automatic reporting and invoicing. The two laboratories operate from a shared data base. Hardware includes:

a. One ADDS Mentor 2500 computer with dual 51 megabyte disc drives and 32 available ports.

b. Two Micom 8000 twelve-channel multiplexer modems.

c. Twenty WYSE video display terminals

d. Two high-speed form printers and three letter-quality printers.

2. Gas Chromatograph/Mass Spectrometers

The three GC/MS instruments include:

a. Two Finnigan 4000 series GCMS systems interfaced with Nova 4C computers utilizing Winchester 35 megabyte disk drives for data collection. The data system employs Incos computer language. Streamer tape cartridges are used for long-term data storage. GCMS instruments are configured to function in capillary or packed column modes.

b. One Finnigan 020B GCMS interfaced with a Nova 4C computer utilizing a 10 megabyte Wanco disk drive

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for data collection. This data system also employs Incos computer language. A model 10 Perkin Elmer nine-track tape drive is used for long term data storage. The GCMS instrument can be configured in capillary or packed column modes.

c. Two stand-alone Incos data systems provide extended data-handling and record-keeping capabilities. These systems consist of Nova 4C computers with 10 megabyte Wanco and 35 megabyte Winchester disk drives, respectively.

3. Gas Chromatographs

Selective detector gas chromatography is employed to solve a variety of analytical problems in which components of a general chemical class are to be distinguished from background materials not having the class-specific properties. The 12 gas chromatographs currently in use are equipped with a wide variety of detectors, including the following:

a. Flame ionization detector. Nonselective, used for fuel fingerprinting and odor pattern matching.

b. Thermal conductivity detector. Nonselective, used for the analysis of methane, carbon dioxide, and other gases.

c. Electron capture detector. Moderately selective for electron capturing components such as organochlorine pesticides, PCB, and phthalates.

d. Flame Photometric Detector. Selective for phosphorus or sulfur-containing organics such as organophosphorus pesticides or sulfur gases.

e. Hall detector. When operated in the halogen mode, highly selective for compounds such as trihalomethanes and chlorinated solvents. It can also be operated in sulfur-selective mode.

f. Photoionization detector. Selective for photoionizable components such as aromatic solvents, esters and unsaturates.

g. Thermionic selective detector. Selective for nitrogen- and phosphorus-containing organics such as organophosphorus pesticides and amines.

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4. Liquid Chromatograph

Altex model CS4400 liquid chromatograph (LC) is equipped with a microcomputer-controlled solvent gradient system, a multichannel chromatography data system, a variable wavelength UV/VIS detector, and heads for both analytical and preparative scale work.

5. Inductively Coupled Plasma Spectrometer

The Perkin-Elmer Plasma II Inductively coupled plasma spectrometer (ICP) is equipped with a Perkin-Elmer Model 7500 Professional Computer with color graphics for full automation of sample processing and data handling. Supported with a PR 210 dot-matrix color printer, the instrument is capable of determining up to 15 different trace metals in a single analysis.

6. Atomic Absorption Spectrophotometers

The five instruments in current use include Perkin-Elmer models 5000, 2380 (2), 460, and 503 which are equipped to perform flame, graphite furnace, gaseous hydride, and cold vapor analyses. The PE 5000 has a Zeeman background correction system.

7. Ion Chromatographs

A Dionex Model 10 and a Dionex Model QIC are equipped with conductivity and electrochemical detectors. They are employed for multicomponent analysis of anions and cations in complex matrices.

8. Autoanalyzers

An Alpkem Model RFA 300 and a Technicon Model II autoanalyzers are routinely used for nutrient analyses. Manifolds available include NO_2, NO_3, PO_4, Cl, SO_4, CN, NH_3, Cr VI, and TKN.

9. Spectrophotometers

The nine spectrophotometers available for routine use include Bausch and Lomb fixed wavelength models, Perkin-Elmer models UV/VIS 283 and 137B IR, and a Coleman model 21 flame photometer.

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10. Total Organic Carbon Analyzers

Dohrmann model DC80 and Beckman models 915 and 915B are available. Selection depends on matrix type and concentration.

11. Total Organic Halide (TOX) Analyzers

Xertex (Dohrmann) model DX20 and Oceanographic Instruments model 610 TOX analyzers for RCRA groundwater compliance monitoring are also employed as rapid screening tools for selecting samples for GC or GC/MS analysis of halogenated organics.

12. Radiochemical Counter

Equipment includes an Eberline model MS-3 high voltage supply and an FC-2 internal proportional counter. Auxiliary equipment includes an alpha scintillation counter and special glassware for Radium 226 measurements.

13. Treatability Equipment

The Pasadena laboratory has a 700 square foot area designated for treatability studies. We have a broad array of laboratory scale equipment for evaluating the feasibility of various treatment processes. Equipment available includes biological reactors for activated sludge treatment; ozone generator with column contactors for oxidation treatment; various carbon, mixed-media, sand, and ion exchange columns for filtration/adsorption treatments; and paddle stirrers for flocculation treatment.

14. Bioassay Equipment

Bioassays are conducted in a 200 square foot temperature-controlled environmental chamber. Three 350 gallon aquaria provide large scale holding capacity for acclimation of test species.

Routine equipment maintenance and instrument service is performed on an appropriate service schedule basis. Major instruments such as balances, gas chromatographs, atomic absorption spectrophotometers, and the GC/MS systems are maintained under manufacturer's service contracts or by in-house service technicians. Constant calibration, sensitivity, and response checks on a daily basis establish unscheduled service needs for analytical instruments.

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Certain analytical services which are requested on an infrequent basis are maintained at only one laboratory location. This allows us to support the required expertise of that service at a much higher level than would otherwise be possible. Those services maintained in Pasadena are radiochemistry and treatability studies. Emeryville's exclusive services are ion chromatography and fish toxicity bioassays.

C. Reagents and Supplies

Reagent chemicals, purchased from reputable laboratory supply companies, are of ACS reagent grade or better. Calibration standards are either prepared in-house from high purity starting materials or purchased as standard concentrates. Commercial standards are certified by the supplier and are checked on receipt against the previous laboratory standard for the same materials. Carrier gases, solvents, acids and deionized water are checked on a batchwise basis. In this way it is possible to avoid systematic contamination of samples without repeating a set of samples as would be the case if we relied only on method blanks to detect such contamination.

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SECTION V

GENERAL QUALITY CONTROL PRACTICES

A. Blanks

1. Method Blanks

Method blanks are introduced on a daily basis or at a frequency of one-in-twenty if more than that number of determinations are run in one day. The blanks consist of organic-free or deionized water which is then carried through the analytical scheme as for real samples. They serve to locate any contamination associated with laboratory storage, laboratory instrumentation, or equipment coming in contact with the sample during processing. They provide the fundamental baseline against which the sample signal is measured.

2. Field and Travel Blanks

These closely related types of blanks find their most extensive application in analysis for volatile organic compounds. For each kind, the blank begins as organic-free reagent water in the laboratory. For a travel blank, a sample vial is filled with the reagent water at the laboratory and then carried with the sample containers out to the field and back to the laboratory. Field blanks are carried to the sample site in a separate container, with a vial being filled at the sampling location. In either case, the blank serves to identify and possibly correct for airborne contamination associated with collecting or transporting the sample.

3. Sample Blanks

These blanks come into play when native sample characteristics--most often color or turbidity--interfere with a determination. If the method in question relies on spectrophotometric detection, the sample's original absorbance at the wavelength of interest is measured and subtracted from the absorbance of the final developed color. The value is recorded in the bound bench book so both the apparent concentration and the corrected value may be calculated.

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B. Standard Curves

Spectrophotometers are standardized daily with at least three concentrations for every test. Absorbances are recorded in the bound notebook associated with each test; this step permits detection of any change in absolute performance. Indications of declining sensitivity or wavelength inaccuracy are corrected by having the unit professionally serviced.

Gas chromatograph and GC/MS determinations are standardized with three-point curves as described in the October 26, 1984 Federal Register. The curves are verified on a daily basis with a quality control standard.

Standard solutions are prepared at intervals specified in the referenced methods. Where no limit is stated, they are replaced at intervals short enough to prevent detectable deterioration during the lifetime of the material. Even when no deterioration is detected, standards are replaced at least once every six months.

C. Internal Standards and Surrogates

Internal standards are added to concentrated sample extracts of semivolatile priority pollutants and to the purging aliquots of volatile priority pollutant samples. They serve to detect losses during capillary column injection of semivolatiles or during the purging of volatile priority pollutants. They provide a means for applying corrections to individual sample results providing that such losses are not extraordinarily large.

Surrogates are typically spiked into the samples prior to extraction and thereby provide recovery data for sample workup. Although such data are typically derived from compounds closely related to the compounds under investigation, they are not compound-specific and therefore cannot be used for making corrections for recovery. Since the information is provided with every sample, however, it is very useful in detecting both sample-specific and systematic recovery problems.

Surrogates are occasionally used in trace metal analysis as a sample-specific check for recovery problems. We incorporate surrogates into the trace metal quality assurance program only if other evidence shows them to be necessary.

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D. Duplicates and Spikes

Every tenth sample is analyzed in duplicate. The duplicate aliquots are carried through the entire workup and analytical scheme. Care is taken to assure that soils and hazardous wastes are duplicated at least as frequently as waters and wastewaters. How closely the results compare with each other provides a measure of precision for the determination.

The same sample which is duplicated is also subjected to a spike analysis. In this technique, a third aliquot of the sample has added to it a known quantity of the analyte. The recovery on the resulting spiked sample relative to its theoretical value reflects the accuracy of the determination. Since percent recoveries are often strongly influenced by the sample matrix, it is more informative to spike real samples than to spike blanks.

Duplicate results and spike recoveries are sorted by matrix type for statistical analysis and calculation of control charts. If a particular determination is not carried out frequently enough on a particular matrix type for successful statistical manipulation, the results are grouped with others of similar matrices.

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SECTION VI

SPECIALIZED QUALITY CONTROL PROCEDURES

A. Organics by Gas Chromatography

Specialized quality control procedures for these analyses are typified by those used for Pesticides and PCB's by EPA method 608. For every nine samples analyzed, another three QC samples--a method blank, a duplicate, and a spike--are run. One QC control sample is analyzed for every 100 client samples. The results are compared to the acceptance criteria listed by EPA in the Federal Register. If the result for a particular parameter does not meet the criteria, the sample is reanalyzed for that parameter.

B. Organics by GC/MS

1. Volatile Organics; EPA Method 624

For every nine samples analyzed, a method blank, a duplicate, and a spike are also run. Three surrogates are added to each sample in order to monitor purging efficiency and instrument operation. A calibration standard containing a mixture of priority pollutants at the 20 ug/L level is analyzed once each shift.

Each GC/MS instrument is checked and retuned on bromofluorobenzene (BFB) for every shift. One blind QC sample is analyzed for every 100 client samples.

2. Base/Neutral and Acid Extractable Organics; EPA Method 625

Three quality control samples--a method blank, a duplicate, and a spike--are run with every batch of nine samples. Each GC/MS is calibrated daily to ensure that performance on decafluorotriphenyl phosphine (DFTPP) meets EPA criteria. Four surrogates and three internal standards are added to each sample in the batch of 12. A standard containing both base/neutral and acid priority pollutants is analyzed with each set of extracts. A daily sensitivity mixture is run in order to evaluate chromatographic column performance and a blind QC sample is analyzed for every 100 client samples.

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C. Metals Analysis

Most metals analyses are done by one of three techniques: flame atomic absorption spectrophotometry (FAA), graphite furnace atomic absorption spectrophotometry (GFAA), or inductively coupled argon plasma emission spectrophotometry (ICP). Available supplementary techniques include cold vapor and hydride generation. All sample digestions follow EPA or Standard Methods prescribed procedures. A daily method blank is run for each element. A three-point calibration curve is determined daily for each element. Calibration standards for that curve are prepared by fresh dilution of 1000 mg/L certified standards obtained from commercial sources.

When the concentration of the metal being determined exceeds the highest standard, the sample is diluted so it falls within the range of calibration. A daily laboratory control standard, generally obtained from the USEPA, is run for metals determined by GFAA. The accuracy of the analysis of metals in soils is checked periodically by analyzing a National Bureau of Standards reference material such as SRM #1646, an estuarine sediment.

D. Selected General Chemistry Procedures

1. Biochemical Oxygen Demand (BOD)

Samples for five-day BOD are stored at 4 degrees C and set within 48 hours of receipt. To test the quality of the dilution water, its dissolved oxygen is measured initially and at the end of the five-day incubation period. Three dilutions of each sample are set. The oxygen depletion of at least one of the dilutions must be at least two mg/L; the final dissolved oxygen content must be greater than one mg/L. One duplicate and one glucose-glutamic acid laboratory control standard are set with each batch of samples. Fresh BOD seed in the form of settled primary effluent from a municipal wastewater treatment facility is obtained weekly. Seed material for analysis of industrial samples is also available.

2. General Mineral Analysis

Several checks on the accuracy of the analysis of drinking water for general minerals are applied. The anion-cation balance must agree to within +/- 3%. Also, the total dissolved solids content should fall within 65 to 75% of the specific conductance.

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E. Microbiology

Certification requirements of the California Department of Health Services control the principal features of microbiology QC. These features include daily recording of all incubator temperatures, recording and filing of the autoclave performance record, sterilization of sample containers, application of a dechlorinating agent to sample containers, and monthly performance of a completed coliform test to verify routine confirmed coliform results.

An annual water suitability test is run to make sure the purified water used in media preparation contains no growth promoting or inhibitory substances. An inhibitory residue test is carried out annually on glassware to verify that routine cleaning procedures will not adversely affect results.

F. Fish Bioassay

Fish toxicity bioassays are carried out according to California Department of Fish and Game Guidelines, using specified test organisms, sample dilutions, and sample volumes. They are conducted in a constant temperature room in which fish are acclimated for seven days prior to use in tests. Checks performed before and during tests on the control tank and on all dilutions are pH, temperature, and dissolved oxygen level. Freshwater bioassays are checked for alkalinity and hardness while saline or brackish bioassays are checked for conductivity at the beginning of the test. A test is considered invalid if there is more than 10% mortality among control fish during the test. Temperatures of test solutions must be within the specified test range for the organism used. Dissolved oxygen must not fall below 70% saturation. Confidence limits are established using the Lichfield-Wilcoxon method of evaluating dose-effect experiments.

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SECTION VII

PERFORMANCE AUDITS

A. Laboratory Control Standards and Check Samples

Certified reference materials are acquired from the National Bureau of Standards for metals in tissue and sediment-like matrices. EPA provides performance evaluation standards for both metals and organics. Additional certified reference materials are provided by the American Industrial Hygiene Association as part of their laboratory certification program. Using them as laboratory control standards, our laboratories analyze these materials on a regular basis. This measure is particularly valuable in determining accuracy.

Additional reference materials are provided through laboratory exchange of standards. At least once every six months, upon preparation or purchase of a new calibration standard, each of the two Analytical Services Division laboratories sends a portion of the standard to the other laboratory. This program assures that at least four times per year both laboratories analyze exactly the same standard solution for every test. Any disagreements are resolved before the new standard is put into service.

B. Certification Programs

The laboratories are subjected to performance audits initiated several times every year. Recent audits have included:

1. USEPA semiannual drinking water performance check samples (WS series).

2. USEPA semiannual wastewater performance check samples (WP series).

3. California Department of Health Services (DOHS) certification for the analysis of priority pollutants and agricultural pesticides in well water, 1984.

4. Arizona Department of Health Services certification for the analysis of Title 22 parameters and fumigants (EDB, DBCP) in drinking water.

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5. Orange County Environmental Management Agency approval to analyze for metals, inorganics, halogenated pesticides and PCBs.

6. Submittal of applications and analysis of check samples for California DOHS certification for complete chemical analysis of hazardous wastes.

C. Brown and Caldwell Interlaboratory Comparisons

The exchange of samples between laboratories is a widely recognized quality assurance measure which provides information about procedural errors, contamination unique to a particular laboratory, and interlaboratory precision and accuracy. Since the Analytical Services Division consists of two independently operated but similarly equipped laboratories, interlaboratory studies may be carried out with particular convenience. In this way one laboratory can serve as the external quality assurance unit for the other.

The Sample Control Officer of each laboratory is in charge of splitting samples for such comparative purposes. Except for the exchange of standard solutions described earlier, the interlaboratory exchange program is usually reserved for major projects with special QA/QC requirements.

D. Round Robin Studies

The Brown and Caldwell laboratories frequently participate in studies of methods or performance among groups of well-qualified environmental laboratories. Samples for such studies have been provided by Los Angeles County Sanitation Districts, Orange County Sanitation Districts, Electric Power Research Institute, and other public agencies and trade associations.

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SECTION VIII

DATA HANDLING AND ASSESSMENT

A. Computer Management

The laboratory utilizes a computerized sample control and data management system for collecting and reporting analytical data. Upon receipt, a sample is logged into the computer to initiate the process. Associated with each sample is a unique log number, client sample description, sample matrix type, the required analytical parameters, and due date. Also included is supplementary information such as special handling requirements.

The next morning, each section supervisor receives a packet of computer-generated work sheets listing work in house arranged according to analytical parameter and due date. The sheets listing groups of samples are then distributed to the appropriate chemists. The chemist performs the necessary analysis and records the raw data in a permanently bound notebook. Calculations are carried out on a hand-held calculator and the final result is entered by hand into the appropriate blank on the computer work sheet.

That evening, the data input operator enters the day's results into the computer where they are transferred to "work awaiting approval" (WAA) status. The next morning the computer prints the previously entered results on work sheets which each analyst checks against the original data as recorded in the analytical notebook for that parameter. The analyst initials the entry to signify approval or can make corrections if necessary.

Later that day the initials are entered into the computer, which then transfers the data to the "report" file. When all the results for a particular sample have been entered and approved, a final report is printed. The printed report is reviewed by the section supervisor and signed by the Laboratory Director before being mailed to the client.

This computerized system maintains a complete audit trail for the work done on each sample. Information such as date sampled, date received, analyst's name, date completed, and the analytical method used in each determination are all retrievable from the data base.

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B. Archiving

Organic sample concentrates are sorted by project, clearly labeled and stored in a freezer for future reanalysis. Therefore, if methodological advances, changes in scope, or evidence of instrument malfunction are developed following analysis, complete reprocessing of the sample is not necessary. Where applicable, it is more convenient to ship concentrates than to ship samples. Properly applied, this measure provides a means to detect systematic errors.

Following analysis, all samples are kept for a minimum of 30 days. In this way, questions raised during the review of data can be addressed by inspection of the sample or by complete reanalysis using a different method. Analysis for components subsequently added to the list of parameters to be measured and incompatible with previous sample workup may be analyzed without resampling. The chief quality assurance feature provided by the archived samples is the ability to use the archived samples to resolve problems which may be noted only as the data are compared and interpreted.

Raw data for most procedures are kept in bound notebooks associated with the test or group of determinations. The completed notebooks are filed in the laboratory for ready reference should future comparisons be desirable. Raw chromatographic data, such as that collected in the quantitation of trace organics, are filed to permit critical reexamination at any time. Such information is particularly useful in cases where the inspection of old data may yield clues regarding the presence of newly identified species.

Raw GC/MS chromatograms are similarly archived together with the spectra of chromatographically isolated but unidentified components. In addition, raw GC/MS data are transferred to tape in an EPA-approved format in order to permit reprocessing to retroactively search for new classes of compounds or otherwise reexamine previously reported findings.

In addition to computer storage, a hard-copy printout of every sample report is filed under the client's name and saved for five years.

C. Detection Limits

The method detection limit is often defined as the minimum concentration of analyte which can be identified, measured,

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and reported with 99 percent confidence that the concentration is greater than zero. It is determined from the analysis of the analyte in question in the appropriate matrix. The procedure for establishing the method detection limit is provided in Appendix B of 40 CFR Part 136 as published in the Federal Register of October 26, 1984. Appropriate use of detection limits minimizes confusion in subsequent use of the data.

In general, the protocol for determination of the method detection limit is too laborious to permit its routine application in the laboratory. Instead, the "estimated detection limit" is determined on a daily basis by any one of the several approaches cited in the above reference. It should be noted that detection limits, no matter how estimated, are highly variable. They depend on the instrument, the analyst, reagent purity, and other factors. In many instances, the detection limit will be dictated by the nature of interferences present in the sample matrix rather than instrumental considerations.

D. Assessment

Before the significance of analytical data can be assessed, one needs to know how precise, how accurate, and how complete are the data subsets. Precision is amenable to strict definition by the analysis of replicate results according to schemes outlined in the USEPA Handbook for Analytical Quality Control in Water and Wastewater Laboratories, March, 1979, Chapter 6. Accuracy is somewhat more difficult to assess. Spike recovery determinations, regular analysis of laboratory control standards, and use of external check samples contribute to the general assurance that the accuracy of a determination is within acceptable limits. The ultimate accuracy of a determination also depends on factors external to the laborataory such as sampling and storage conditions. Completeness is the most difficult characteristic to assess, depending as it does upon such factors as representativeness of sampling and subsampling, selection of the appropriate analytical parameters, and scope of the sampling program relative to the size of the environmental question being addressed.

While ultimate assessment depends on the experienced judgment of knowledgeable individuals, statistical treatment of the data can provide some objective measure of their soundness. The Federal Register of October 26, 1984, includes required calculations for accuracy on spiked

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samples for several organics methods. The same calculation may be used for any test amenable to spiking:

$$P = 100(A - B)/T$$

Where:

P = Percent spike recovery
A = Concentration determined on spiked sample
B = Concentration determined on original uspiked sample
T = True value of spike added

Precision values may be calculated from analysis of duplicate pairs. In his manual Quality Assurance of Chemical Measurements, John K. Taylor of the National Bureau of Standards provides a formula for calculating the standard deviation based on a series of duplicates. When a sufficient number of spiked samples or duplicate pairs (at least 20) have been analyzed, control charts may be calculated. Because of the wide diversity of sample types and many different determinations, control charts have usually been calculated only in connection with special programs requiring them. However, the laboratory computer system is now being programmed to calculate and maintain charts for every test on every type of sample. For accuracy, the mean recovery and standard deviation (S) are calculated. Warning limits are set at +/- 2S and control limits at +/- 3S. For precision, since the least difference between a pair of duplicates is zero, that value forms the baseline of the chart. The standard deviation provides upper limits, with the warning limit set at 2S and the control limit at 3S.

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SECTION IX

CORRECTIVE ACTION

The control chart, predetermined acceptance limit, or EPA acceptance criteria serve as alert systems for unsatisfactory or unexpected results. The nature of corrective action may take several forms, but the first step is usually to repeat the analysis on the sample which failed. If the repeat does not replicate the failure, and prior and subsequent QC data do not indicate a systematic error, the value may be treated as a random error and disregarded.

More commonly, diagnosis and correction of an analytical problem will follow. If the repeat analysis continues to show difficulty, the analyst will bring it to the section supervisor's attention. If the required correction is not readily apparent, the supervisor will call in the laboratory technical director and the quality assurance manager. Together, they plan a series of steps to isolate and correct the problem. Based on frequency of occurrence and correctibility, the usual checking order includes:

1. Check the calculations.
2. Examine the sample for non-homogeneity or peculiar interferences.
3. Restandardize any titrating agents used in the test.
4. Check instruments for proper performance.
5. Verify that standard solutions are fresh and properly prepared.
6. Assure the purity of reagent water.
7. Closely observe the analyst to be certain no procedural errors are occuring.

During the troubleshooting process, routine analysis for that determination is discontinued. Once the problem is found and corrected, the best estimate is made of when the problem first occurred. Data collected after this critical point is discarded. If possible, all analyses since the last valid control check will be repeated. Analyses performed after the resolution of the problem must be accompanied by more

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duplicates and spikes than the regular ten percent level. The higher level of QC continues until the section supervisor and the quality assurance manager are satisfied that the problem has been completely solved.

To assist efficient resolution of problems, the QA manager maintains a test-based file of previous corrective actions. The material is readily available to both laboratories. Since some determinations may be subject to common errors, this program helps reduce the time required to correct a problem if the other Division laboratory has previously dealt with the same issue.

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D. Examples

A listing of methods used by Brown and Caldwell for priority pollutant analysis in aqueous samples and solid wastes is given in Table 1. Also included are methods for hazardous waste analysis.

TABLE 1

METHODS FOR PRIORITY POLLUTANT AND HAZARDOUS WASTE ANALYSIS

Determination	EPA Method Number Water	Soil, Waste
Volatile organics by GC/MS	624	8240
Semivolatile organics by GC/MS	625	8270
Organochlorine pesticides and PCB's by GC/ECD	608	8080
Cyanide	335.3	9010
Phenolics, total	420.1	9065
Antimony	204.2	7041
Arsenic	206.2	7060
Beryllium	210.2	7091
Cadmium	213.2	7131
Chromium	218.2	7191
Hexavalent Chromium	218.5	7196
Copper	220.2	7211
Lead	239.2	7421
Mercury	245.1	7471
Nickel	249.2	7521
Selenium	270.3	7740
Silver	272.2	7761
Thallium	279.2	7841
Zinc	289.2	7950
Ignitability	----	1010
EP Toxicity	----	1310
Chlorophenoxy Herbicides	8150	8150

Note: GC/MS is Gas Chromatography/Mass Spectrometry and GC/ECD is Gas Chromatography with Electron Capture Detection.

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HYDROGEOLOGICAL ASSESSMENT

DEL AMO SITE
TORRANCE, CA

ecology and environment, inc.

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HYDROGEOLOGICAL ASSESSMENT

DEL AMO SITE
TORRANCE, CA

TDD # R9-8310-03

November 11, 1983

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1.0 INTRODUCTION

At the request of the California Department of Health Services (DOHS), the FIT has prepared a hydrogeological assessment of the Del Amo hazardous waste site (A.K.A. Cadillac Fairview). In developing this assessment, numerous local and state agencies were contacted to obtain information regarding the hydrogeology and water quality of the study area. This assessment presents a consolidation of existing information; the conclusions and recommendations are derivative of this information and were not the result of newly generated site-specific field data. This assessment will serve as a basis for evaluating the adequacy of the proposed remedial plan being developed by Dames and Moore for Cadillac Fairview, Inc.

2.0 SITE HISTORY AND DESCRIPTION

The property located at the northwest corner of Vermont and Del Amo Boulevard was formerly the site of a synthetic rubber and chemical manufacturing plant. The manufacturing complex was constructed in the early 1940's by the U.S. Government for the WW II effort. In 1955, Shell Chemical Company purchased the property and a styrene-butadiene plant from the government. Although the specifics are unknown, other industries such as DOW, 3M, Goodyear and U.S. Rubber may have also operated facilities at this site. By 1973, Shell Chemical Co. had closed down operations and sold the property to Cabot, Cabot and Forbes who in turn sold it to Cadillac Fairview, Inc. Cadillac Fairview, Inc. subsequently sold two property parcels to Western Waste Industries (previously known as Western Refuse Hauling). However, due to the disposal of hazardous wastes in two separate locales, Cadillac Fairview, Inc. and Western Waste agreed to a conditional sale of property which served to consolidate each disposal "bog" under separate ownership. The conditions of the sale will be discussed later in this section.

The Del Amo site was originally identified in the Eckhardt Report as Shell Torrance and investigated under the DOHS Abandoned Sites Project (ASP). The ASP personnel, in cooperation with Shell Chemical Company

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representatives, identified two waste disposal locations on-site, currently referred to as Bog #1 and Bog #2. As part of the on-going investigation, state personnel collected surface soil samples from Bog #1 in February and March of 1981 for organic and inorganic analyses. Results indicated the presence of chromium, benzene, toluene, ethylbenzene and styrene in hazardous concentrations. In August 1981, DOHS notified Cadillac Fairview that hazardous wastes had been identified on the property and directed them to provide information on the type and amount of wastes present. Under contract to Cadillac Fairview, James M. Montgomery, Consulting Engineers (JMM) were hired to characterize the site. (Note: A subsurface field investigation, conducted in 1972 by Ken O'Brien Associates, was used by JMM in support of characterization activities. This subsurface investigation consisted of excavating 34 trenches and drilling 19-2' borings to physically examine such soil characteristics as color, viscosity and odor. A second subsurface investigation was conducted in 1979 by Sladden Engineering. This investigation consisted of drilling 9-20" diameter surface borings to collect undisturbed bulk samples for laboratory testing of physical properties. No chemical analyses of soils was performed for either investigation. Based on these investigations, the areal and vertical extent of contamination of both bogs was delineated.) The investigation conducted by JMM served to further define the chemical characteristics of the waste, using previous studies of surbsurface conditions to estimate the total volume of waste. Results of nine soil samples collected from Bog #2 showed concentrations of organics such as benzene, toluene, ethylbenzene and naphthalene varying from 97 mg/kg to 11,000 mg/kg.

Due to the proximity of Cadillac Fairviews' property to a "significant disposal of hazardous waste" (i.e., within 2,000' of Bog #1) and the resultant development restrictions on any border zone property, the condition of sale negotiated by Cadillac Fairview required Western Waste to excavate all of the waste materials in Bog #1 for disposal at an approved Class 1 landfill. Western Waste has since completed excavation of Bog #1 to a depth of 22' for disposal at BKK. However, an HNu reading taken by DOHS personnel of a soil boring drilled to 50' below ground surface indicated the presence of volatile organics. Western Waste and DOHS are currently negotiating the future designated use of this property.

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In a meeting between Cadillac Fairview, Inc. and DOHS on October 20, 1983, Cadillac Fairview discussed their intentions to initiate a remedial plan for cleanup of Bog #2 located on their property. Presently, Cadillac Fairview, Inc. has selected Dames and Moore, who is developing the proposed remedial plan for DOHS review and approval.

3.0 ENVIRONMENTAL CHARACTERISTICS OF THE SURROUNDING AREA

The Del Amo Site lies in the Torrance plain, a physiographic province of the coastal plain. The coastal plain is bordered by the Pacific Ocean on the west and south and by the Santa Monica Mountains, the Puente Hills, the Santa Ana Mountains and the San Joaquin Hills to the north, east and south. The Torrance plain occupies a low area of marine and continental origin between two gaps extending coastward from an uplift known as the Newport-Inglewood uplift. This uplift parallels the coast and consists of a series of hills and mesas stretching from Newport Bay, northwest to the Beverly Hills.

Historically, surface water drainage of the Torrance plain has been poor due to Recent deposits of fine grained and dense sediments flooring the plain. Prior to the development of the area, surface run-off from precipitation collected in natural depressions and evaporated, leaving a high total-solids content in the water that eventually penetrated below land surface (these depressions, in addition to saltwater intrusion, are closely related to the inferior water quality found in the shallow aquifers of the study area). Today, drainage in the Torrance plain has been improved artifically by channelization of the Dominguez Creek which passes by the site approximately 1.5 miles to the east. The average annual precipitation is 12 to 16 inches throughout the study area.

The surrounding area is densely populated and consists of mixed residential and industrial zones (see Figure 2.1). Immediately south of the site along Del Amo Avenue are single family dwellings. The northeast corner of Del Amo and Vermont Avenue is currently being graded for construction of

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what appears to be an industrial park. Similarly, the area north of the site between Normandie Avenue and Vermont Avenue is occupied by a completed industrial park.

4.0 HYDROGEOLOGY OF THE STUDY AREA

The major groundwater formations underlying the Del Amo site range in age from Recent to early Pleistocene. These formations are composed of both continental and marine sediments representing several periods of sea level advance and retreat with varying influence on depositional loads from tectonic deformation. There are three main aquifers underlying the site, separated by fine grained sediments and aquicludes which inhibit vertical percolation from one aquifer to the other. With increasing age these aquifers are the Gage, the Lynwood and the deep Silverado Aquifer. These formations are represented in the idealized geologic cross sections E-E' and J'-J" taken from DWR Bulletin No. 104, Appendix A Groundwater Geology (see Figure 2.3 and 2.4).

The stratigraphic sequence underlying the site is described below from the more recent to older deposits respectively. Parameters derived from DWR Bulletin No. 104, Appendix A, and general lithology from drillers logs are presented for each stratigraphic sequence.

4.1 Subsurface Lithology

4.1.2 Recent to Late Pleistocene Deposits

According to drillers logs and previous site work, the sediments underlying the site are a heterogeneous mixture of fine sand, brown sandy clay and clay with numerous silt lenses. These sediments are characteristic of those expected on this broad flat flood plain reflecting low energy deposition from meandering stream and river flood deposits. The permeability of this material is considered fairly low because of its extensive clay and fine grained composition. This material is roughly 60' thick and

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is underlian by the Bellflower aquiclude at an elevation of -25 feet. Groundwater within this zone occurs as unconfined and semi-perched above the Bellflower aquiclude.

4.1.3 Bellflower Aquiclude

The Bellflower aquiclude has been described as a heterogeneous mixture of fine grained continental, marine and windblown sediments consisting only of clays and silty clays with some pockets of sandy or gravelly clay. It is generally considered a non-water bearing formation which both perches water percolated through recent surface sediments and confines the Gage aquifer which it overlies. Its confining properties are confirmed by elevated piezometric heads of wells tapping the Gage aquifer.

According to the DWR Bulletin No. 104, pockets of sandy or gravelly clays may permit water to percolate slowly to the underlying aquifer or enable groundwater under high enough pressure to move upward. Logs from wells within a one mile radius indicate this formation is relatively impermeable. The following parameters describe this aquiclude:

- Elevation below site: -25 to -100 feet
- Thickness below site: 75'
- Specific yield: 00 to 03% (DWR Bulletin No. 104, Attachment 2, Table B)
- Age: Recent to Late Pleistocene
- Other names: Upper fine grained phase, Clay Cap

4.1.4 Gage Aquifer

The Gage aquifer represents the lowest member of the upper Pleistocene Lakewood Formation. It is confined by the Bellflower aquiclude and exhibits no hydraulic continuity with the underlying aquifers as it is separated by a substantial fine grained unit of sandy silts and clays. The Gage aquifer is composed of both marine and continental deposits and is characterized as a fine to medium sand with variable amounts of silt and clay. According to DWR Bulletin No. 104, wells have been drilled into the Gage aquifer only in areas where coarser materials exist. Approximately 200 wells have been

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drilled into the Gage in the vicinity of Gardena but it is generally considered unimportant as a producing aquifer in most areas. The following parameters describe this aquifer:

- o Elevation below site: -100 to -150 feet
- o Thickness below site: 50'
- o Specific yield: 12 to 16% (DWR Bulletin No. 104, Attachment 2, Table B)
- o Transmissivity: 20,000 gallons per day/ft. (DWR Bulletin No. 104, Plate 26C)
- o Groundwater flow direction: East-Southeast
- o Other names: "200 ft. sand" - meaning 200 feet below land surface

4.1.5 Lynwood Aquifer

The Lynwood aquifer is the next water-bearing formation underlying the site. It represents the uppermost member of the San Pedro Formation in the West Coast Basin. It is both confined and separated from the Gage aquifer by a unit of low permeable silts and clays 75 feet thick. The Lynwood Formation is composed of both continental and marine deposits of middle Pleistocene age. Its continental deposits exhibit yellow-brown and red coarse gravels, sands, silts and clays. Marine deposits include sand and gravel with blue-gray and black silts and clays. South of Gardena in the vicinity of Del Amo Avenue, the gravel is missing and the formation is characterized by sand and sandy silt. The following parameters describe this aquifer:

- o Elevation below site: -225 to -300 feet
- o Thickness below site: 75'
- o Transmissivity: 50,000 gallons per day/ft. (DWR Bulletin No. 104, Plate 26F)
- o Other names: "400 ft. gravel" - meaning 400 feet below land surface

A unit of fine grained silts and clays approximately 175 feet thick separates the Lynwood Formation from the main drinking water supply the Silverado aquifer.

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4.1.6 Silverado Aquifer

The Silverado aquifer represents the early Pleistocene lower San Pedro Formation. It consists of continental and marine deposits ranging from fine to coarse grained blue gray sands and gravels with discontinuous layers of relatively impermeable sandy silt, silt and clay. The Silverado aquifer is confined in the Del Amo area due to the thickness and nature of the confining layers. The piezometric surface shown on the L.A. County Flood Control District, Fall 1978, Coastal Plain Deep Aquifer Map, indicates heads up to -55 feet (410' above the top of the aquifer). The following parameters describe this aquifer:

- Depth below site: -475 to -725 feet
- Thickness below site: 250'
- Transmissivity: 125,000 gallons per day/ft. (DWR Bulletin No. 104, Plate 26G)
- Groundwater flow direction: East-Northeast (Figure 2.2)
- Other names: Silverado Water Bearing Zone

4.2 Groundwater Recharge

The major fresh water recharge to aquifers underlying the site occurs by subsurface flow, a couple of miles west of the site where the Gage, Lynwood and Silverado aquifers merge. Further to the west these aquifers are in hydraulic continuity with Santa Monica Bay where salt water intrusion occurs. The salt water barrier project, a fresh water injection process, supplies a certain amount of recharge at this point.

Subsurface inflow across the Newport Inglewood Uplift, approximately 1.5 miles east of the site, is controlled by the difference in water levels between the Central and West Coast Basin. Groundwater contour maps supplied by the Los Angeles County Flood Control District indicate that there is little or no recharge presently from the Central Basin. The Gage aquifer may receive recharge in the Dominguez Gap Area (southeast of the site between the Dominguez Hills and Signal Hill) and the Gardena area (north of the Dominguez Hills) as evidenced in unrestricted groundwater flow across

BOE-C6-0179614

these points. The Lynwood and Silverado aquifers probably receive very little recharge along this uplift except in areas where the aquifers have merged with thinner surface deposits along the anticlinal axis of the uplift. Here the recharge is presumably from surface percolation along the uplift. Fall 1978 Deep Aquifer Contours exhibit groundwater elevation differences across the uplift indicating the Central Basin has been depleted from pumping to a point where piezometric pressure is not high enough to recharge the West Coast Basin. Other factors affecting groundwater recharge of the deeper aquifer may depend on cementation along fault zones, and lithologic changes affecting permeability.

Surface replenishment of groundwater occurs via percolation from rainfall, infiltration of irrigation water from fields and lawns, industrial water, and leakage from water distribution systems. However, it is believed that the annual quantity of recharge effected by percolation of precipitation is small. Deep infiltration of surface recharge is restricted by the percolation properties of the near surface recent and upper Pleistocene deposits. Restricted surface recharge of groundwater is further indicated by large expanses of swamp and slough prior to improved street drainage and by channelization of Dominguez Creek. According to DWR Bulletin No. 104, "Surface water is restricted from moving downward by the Bellflower aquiclude and therefore, may remain within the semi-perched aquifer".

4.3 Potential for Groundwater Contamination

Although site specific data on the underlying lithology will remain unknown until deeper drilling is done, it can be assumed that the likelihood of material percolating vertically below the Bellflower aquiclude to the Gage aquifer is unlikely. It is even more unlikely that contamination has percolated through the fine grained zones separating the Gage from the Lynwood or the Lynwood from the Silverado. These formations are only in hydraulic continuity once they merge. Deposits overlying the Silverado are too thick (510' below the site) and of low enough permeability to prevent vertical percolation of fluid from the site.

BOE-C6-0179615

It is believed that the deepest effluent from the site has percolated very slowly to the semi-perched aquifer overlying the Bellflower aquiclude. Some contaminants might be found within the upper zones of the Bellflower aquiclude but it is assumed that this formation is substantial enough to prevent further vertical migration of contaminants. The major concern of contamination should not be one of vertical migration through sediments to deeper aquifers but of transport once the material has percolated to the perched water table. At present the groundwater flow direction of the perched aquifer is unknown. What should be addressed is the chance of contaminant migration within the perched zone to areas where the perched aquifer merges with the Gage and deeper water-bearing formations. Interpretation from available data indicates that areas of mergence lie approximately one mile west of the site. However, groundwater flow direction in the Gage as well as the deeper Lynwood and Silverado aquifers trend away from this zone of mergence. The groundwater flow direction in the merged zone probably creates a positive pressure on the side of fresh water recharge rather than contaminant infiltration. At this time not enough lithologic and hydrologic data is available to adequately address this problem. If further work indicates extensive contamination of the perched aquifer, this possible route of migration should be considered.

4.4 Well Inventory

The inventory presented in Table 2.1 and illustrated in Figure 2.1 consists of wells within a 1-mile radius of the site, with the exception of well numbers 813N and 836. The wells listed, as indicated by the depth of well and water level data, tap the semi-perched, Gage, and Silverado aquifers. This inventory was developed using data obtained from L.A. County Flood Control District and DWR well logs. Should further characterization of off-site downgradient deep and shallow aquifer conditions be deemed necessary, this inventory should be used to identify available wells (see Section 5.0 for a discussion of existing water quality analyses).

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TABLE 2.1

INVENTORY OF ACTIVE WELLS WITHIN 1-MILE RADIUS

L.A. Flood Control District #	Location of Well	Owner	Depth to Water	Depth of Well	Date Drilled	Use	State Well I.D. #	Perforated Depths
794B	1220' west of Normandie Ave., 1169' south of 190th St.	McDonnell Douglas Corporation	110.2'	600'	Oct. 1942	Industrial	4S/14W-1F2	477'-540'
806C	0.3 mile north of Carson St., 637' east of Normandie Ave.	L.A. County Flood Control District	59'	165'	Oct. 1956	Observation Well	4S/14W-12Q2	Not Perforated
813N	18300 South Vermont St. (across from Roosevelt Memorial Park)	Maxwell Zeigler	99.4'	664'	Jan. 1949	Domestic (private)	3S/13W-31M1	550'-574' 638'-644'
814A	19825 South Main St.	L.A. County Flood Control District	45.9'	70'	June 1937	Observation	4S/13W-6K2	Not Perforated
816	21000 S. Figueroa St.	Sunset Oil Co. ,	98.6'	580'	Oct. 1946	Industrial	4S/13W-7L1	N/A
836	600' east of Carson St. School	Dominguez Water Corp., Well #19	102'	930'	1918	Domestic Public	4S/13W-17D01S	504'-660'

N/A - Not Available

5.0 GROUNDWATER QUALITY/USES

The groundwater of the West Coast Basin in the vicinity of the site varies stratigraphically in quality from the Gage to the Silverado aquifer. As a result of extensive pumping overdrafts continuing into the 1940's, a major portion of the basin became salt-water intruded forcing the abandonment of the shallow, poorer quality wells. To remedy this situation, a series of fresh water injection barriers were constructed and are currently operated by the L.A. Flood Control District (other measures such as water imports, extraction limits and the creation of a supplemental water exchange pool were also employed to preserve groundwater resources). The injection barrier creates a pressure ridge that impedes the landward intrusion of saltwater and also serves to recharge the basin. The barrier system has effectively halted the saltwater intrusion in the West Coast Basin. According to DWR maps, the portions of the Lynwood and Silverado aquifers containing chloride ions in excess of 500 ppm are confined to those areas immediately southwest of the barrier and around the southern tip of the barrier.

The groundwater quality in the study area, however, retains some characteristics of saltwater intrusion in addition to naturally occuring characteristics imparted to the water during aquifer deposition and formation. The most shallow formations, the semi-perched aquifer and the Bellflower aquiclude, exhibit very low permeabilities, are of very poor quality and are therefore not beneficially used. The Gage aquifer, exhibiting moderate to low permeabilities, was used primarily for irrigation due to its high sodium and chloride content. With the industrialization of the Torrance area, however, agricultural uses of the Gage have diminished. According to L.A. County Flood Control District and DWR well logs, many of the wells tapping the Gage aquifer have been destroyed or are otherwise inactive.

Little information exists on the water quality of the Lynwood aquifer as wells which tap this aquifer also tap the Silverado beneath it. The Silverado is of good quality as indicated in the metals and minerals

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analyses for Dominguez Water Corporation, Well #19. As evidenced by the drillers log, this well taps the Silverado and is located approximately 1.75 miles southeast of the site (see Figure 2.1). With the exception of one domestic well located approximately 2 miles upgradient, Well #19 is the only public domestic well in the study area. Well #19 supplies approximately 10% of the drinking water for the area served by Dominguez Water Corporation, the remaining 90% is supplied by imports from the Metropolitan Water District.

In addition to metals/minerals analyses, Well #19 has been sampled twice for non-routine parameters. The first sampling occured on June 2, 1982 and was conducted by the Los Angeles Regional Water Quality Control Board (RWQCB) as part of a Regional Key-Well Monitoring Program. The RWQCB is conducting this monitoring program as a follow-up to the San Gabriel Valley sampling. According to RWQCB personnel, Well #19 was randomly chosen as being representative of aquifer conditions in that area and was not sampled in association with the Del Amo Site (see Contact Report). A priority pollutant scan performed by the DOHS Southern California Laboratory Section for volatile organics, base neutrals, pesticides and acid extractables indicated non-detection for these contaminants (see Appendix B for lab results and detection limits). The RWQCB plans to re-sample the 48 key-wells originally sampled sometime next year.

The second sampling occured as a result of concerns expressed by local citizens residing around the site. The residents' primary concerns were the potential for contaminant migration and penetration of Metro conveyance lines near the site and the contamination of groundwater, specifically Well #19 (it was unclear if the conveyance lines were PVC). In response to these concerns, Kenneth Hahn, Supervisor to the 2nd District (including Torrance), requested the Los Angeles County Health Services Department to investigate the matter further. The County Health Services Department subsequently sampled tap water from 4 houses and Well #19 for benzene, toluene, ethylbenzene, and napthalene (contaminants found in soil samples previously collected by James M. Montgomery from Bog #2). Soil samples were also taken from the backyards of homes adjacent to the south-side of the site. Results of these analyses did not detect contamination (see Appendix C for results and L.A. County Health Services Department report on their findings).

BOE-C6-0179619

6.0 CONCLUSIONS/RECOMMENDATIONS

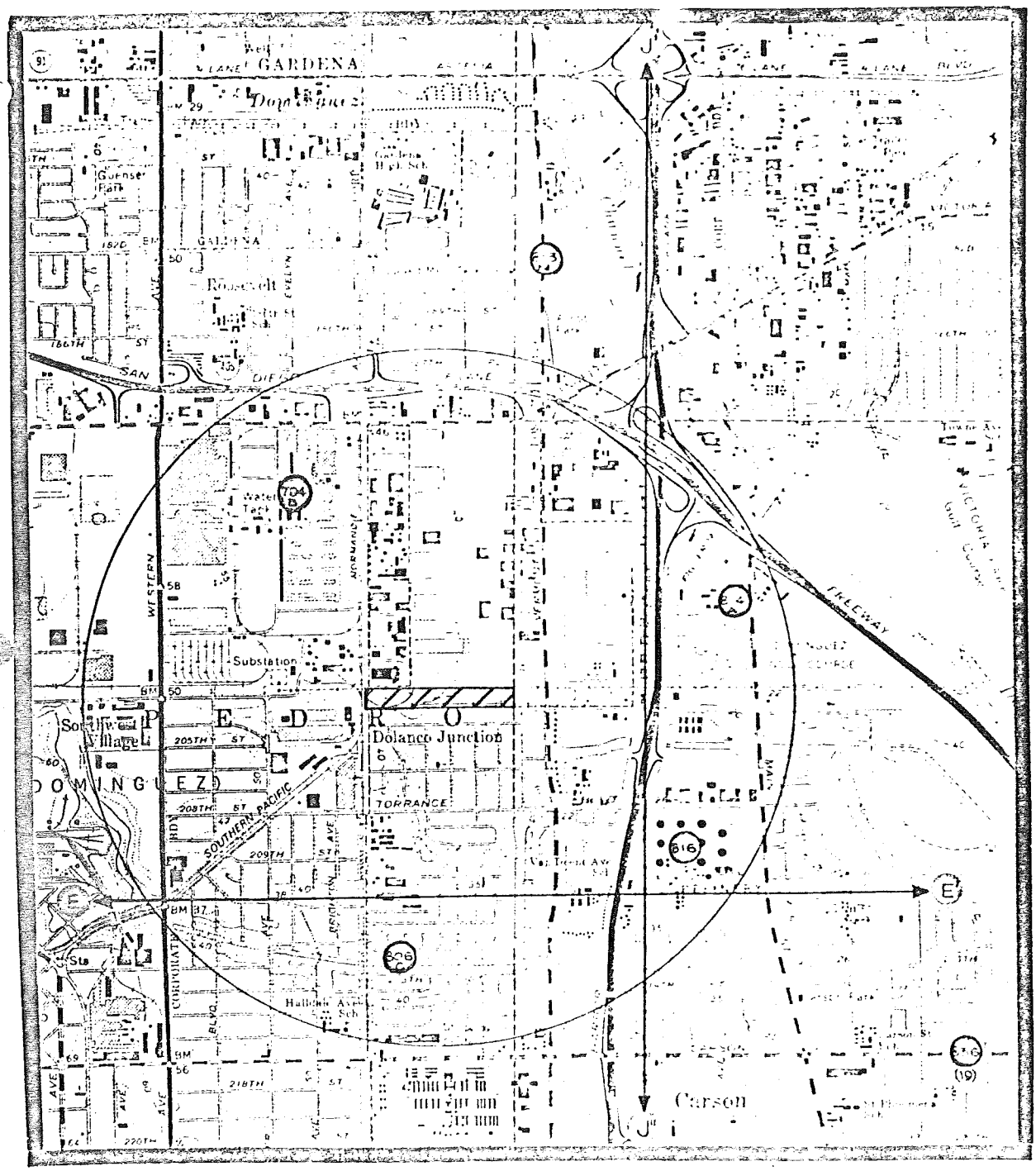
Based on available information, [illegible] nation from the site will affect the [illegible] bearing zones. It is assumed that cont[illegible] unsaturated zone below the site will move [illegible] water perched above the Bellflower aquiclude. [illegible] perties of this aquiclude, it is unlikely that [illegible] vertically beyond this zone, however, this conclusion [illegible] generalized hydrogeolic data discussed in this report. Cont[illegible] in the perched aquifer will be speculative until a more site-[illegible] surface investigation is conducted.

Further work should address the vertical extent of soil contamination and the vertical and areal extent of groundwater contamination within the perched aquifer overlying the Bellflower aquiclude and the Gage aquifer. Installation of monitoring wells and collection of borehole-soil samples for qualitative analyses will be necessary to identify the extent of contamination. Drilling of boreholes and wells will also aid in characterizing the percolative and permeable properties of soils controlling vertical contaminant movement through the unsaturated zone. Furthermore, the groundwater flow direction and dynamic parameters of the saturated perched zone should be determined with these newly constructed wells. This information will allow a determination of expected trends of contaminant movement.

In addition to monitoring wells, it is recommended that one well be drilled through the Bellflower aquiclude to the Gage to determine the actual nature and, thickness and permeability of the sediments that inhibit deep migration of contaminants. This well should be constructed to insure that the perforated screen within the Gage formation is isolated from the upper deposits of the perched aquifer. If on-site work indicates subsurface lateral movement of contaminated groundwater, further characterization of the perched and Gage aquifers will be necessary (i.e., sampling of existing wells, additional monitoring well installation).

BOE-C6-0179620

LOCATION OF WELLS AND CROSS SECTIONS J'-J", E-E'



0 1000 2000 3000 FEET

SCALE 1:24000

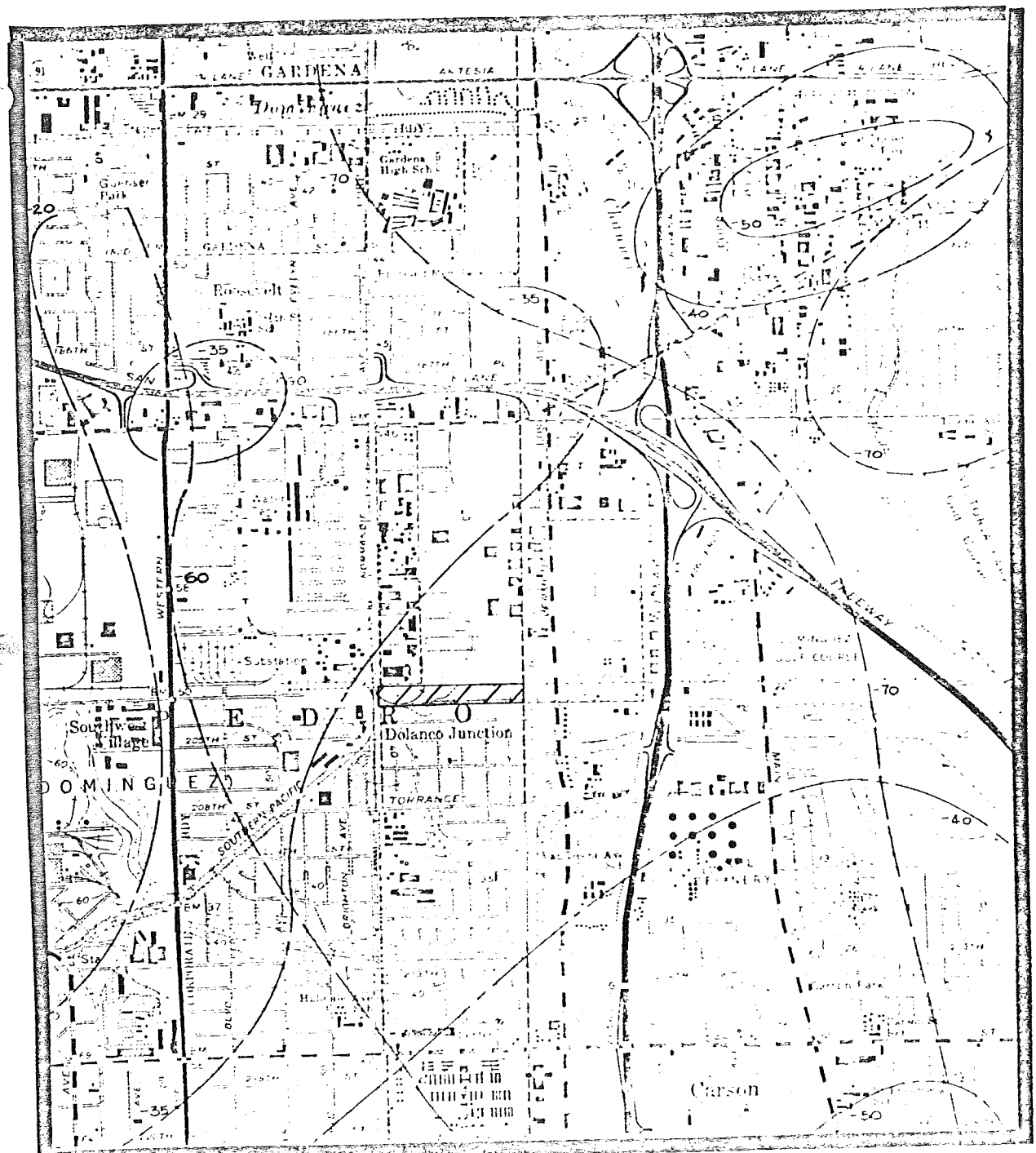
Figure 2.1

TORRANCE, CALIF
USGS

WELLS W/IN 1 MILE RADIUS

BOE-C6-0179621

DEEP/SHALLOW EQUAL ELEVATION CONTOURS



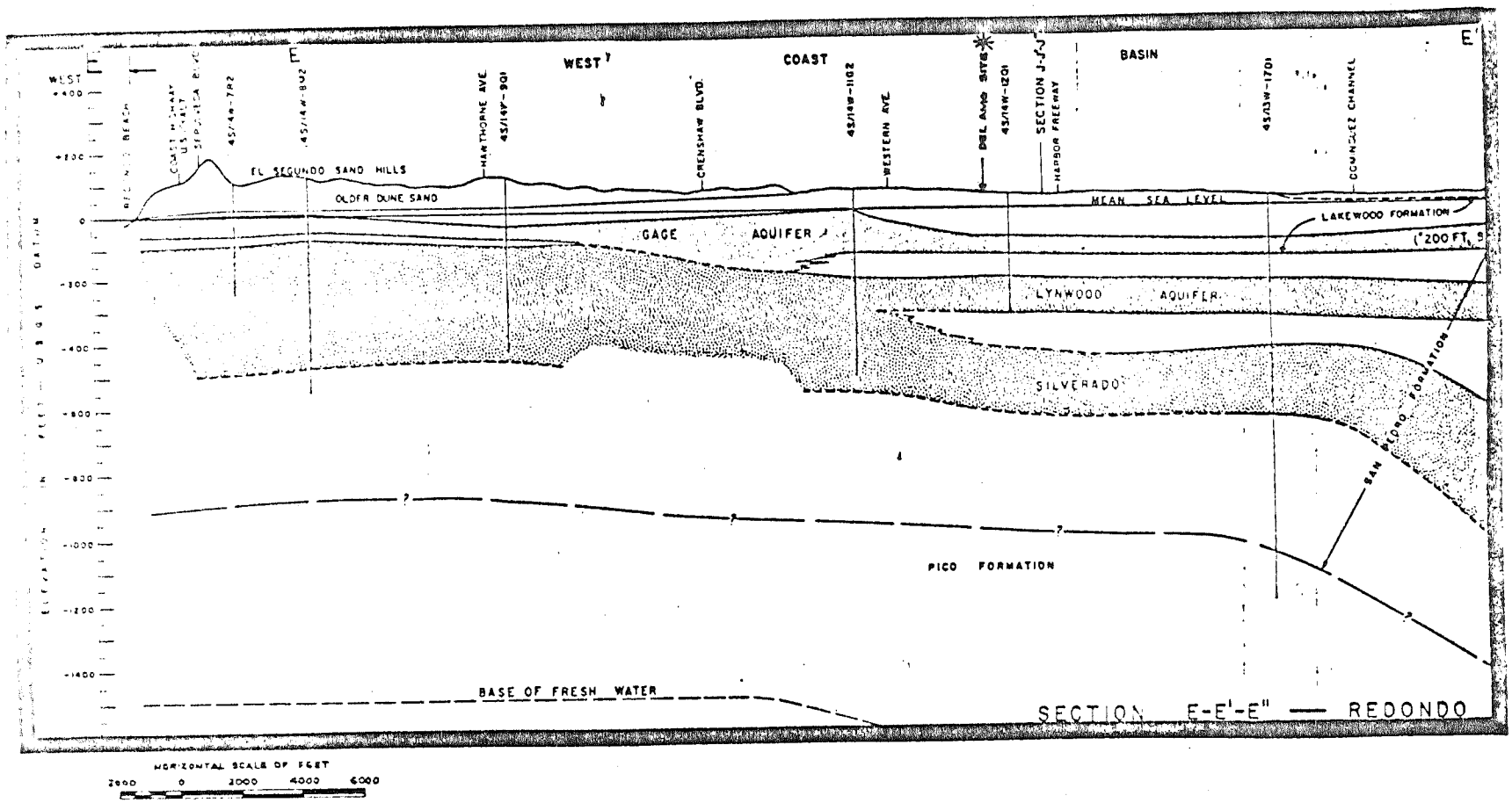
0 1000 2000 3000 FEET

SCALE 1:24000

TORRANCE, CALIF
USGS

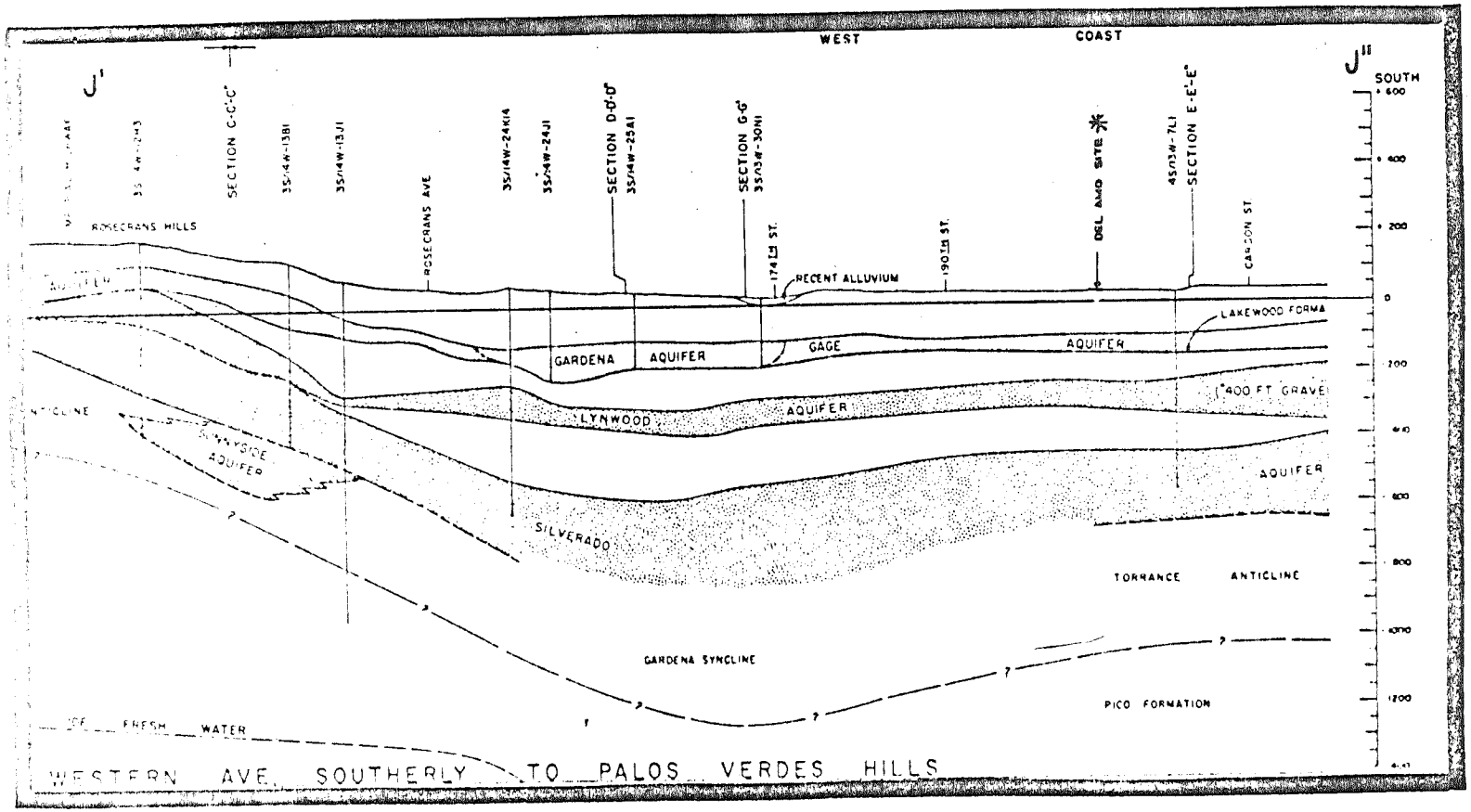
Figure 2.2

Gage aquifer
Silverado aquifer



GEOLOGICAL CROSS SECTION E-E'
Figure 2.3

BOE-C6-0179623



GEOLOGICAL CROSS SECTION J'-J"
Figure 2.4

BOE-C6-0179624

2499

REFERENCES

1. Coastal Plain, Groundwater Contours Map, Deep Aquifers, Los Angeles County Flood Control District, Fall 1978.

2. Coastal Plain, Groundwater Contours Map, Shallow Aquifer, Los Angeles County Flood Control District, Fall 1978.

3. Geology, Hydrology, and Chemical Character of Groundwaters in the Torrance-Santa Monica Area, California, U.S. Geological Survey Water-Supply Paper 1461, Government Printing Office, 1959.

4. Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County. Bulletin No. 104, Appendix A; Department of Water Resources, June 1961.

BOE-C6-0179625

APPENDIX A

CONTACT REPORTS

BOE-C6-0179626

CONTACT REPORT

AGENCY: L.A. Department of Health Services, Sanitary Engineering Branch

ADDRESS: 1449 West Temple Street, Room 202
Los Angeles, CA 90026

PERSON CONTACTED: Gary Yamamoto, Senior Sanitary Engineer

PHONE NO.: (213) 620-2980

DATE: November 3, 1983 (Meeting)

FROM: Patty Cook, George Muehleck

TO: Files

SUBJECT: Del Amo Site, Water Quality Information

The DOHS, Sanitary Engineering Branch is responsible for monitoring the water quality of domestic wells. They are primarily concerned with minerals and metals content, but are kept informed of hazardous contaminants as they affect potable groundwater. Mr. Yamamoto was familiar with this site and provided us with the following information:

- Minerals/Metal analyses on Dominguez Well #19,
- Log of Well #19,
- Results of priority pollutant analyses conducted by RWQCB on Well #19 as part of their monitoring program.

Mr. Yamamoto said that with the exception of an upgradient well located approximately 2 miles northwest of the site (DOHS #474), Dominguez Well #19 is the only other drinking well close to the study area.

CONTACT REPORT

AGENCY:	L.A. Flood Control District
ADDRESS:	2250 Alcazar Street Los Angeles, CA
PERSON CONTACTED:	Bill Young, Josef Callison, George S. Farag
PHONE NO.:	(213) 226-4382
DATE:	November 3, 1983 (Meeting)
FROM:	Patty Cook, George Muehleck
TO:	Files
SUBJECT:	Del Amo Site

Mr. Young and Mr. Farag provided us with well data (i.e., logs, water levels and well specifications) for all wells, active and destroyed, within a 5-mile radius of the site (a larger radius was used in gathering well log information).

Mr. Callison, Engineering Geologist, was also contacted for geological information. In addition to being familiar with the geology of the area, he also informed us of pertinent U.S.G.S. Water Supply Papers for the West Basin (these papers were obtained from the Division of Mines and Geology Library).

BOE-C6-0179628

CONTACT REPORT

AGENCY: City of Torrance

ADDRESS:

PERSON CONTACTED: Bob O'Kane, Water System, Superintendent

PHONE NO.: (213) 328-5310

DATE: November 4, 1983

FROM: Patty Cook

TO: Files

SUBJECT: Del Amo Site

Called to find out if City of Torrance had any wells in the study area. They operate two domestic wells approximately 2.5-3.0 miles west (upgradient) of the study area.

CONTACT REPORT

AGENCY:	Central and West Basin Water Replenishment District
ADDRESS:	303 Garnett Street Redondo Beach, CA 90277
PERSON CONTACTED:	Tom Salzano
PHONE NO.:	(213) 927-5790
DATE:	November 4, 1983
FROM:	Patty Cook
TO:	Files
SUBJECT:	Water Quality Data, Del Amo Site

Mr. Salzano said that he had water quality information on the Dominguez Water Corporation Well #19 (State Well No. 4S/13W-17D01S), information that I had already obtained from Gary Yamamoto, L.A. DOHS Sanitary Engineering Branch. Since the Replenishment District's primary concern is drinking water supply, they have water quality information on public domestic wells, e.g., well #19. However, they do not have shallow aquifer information as this water is not used for drinking.

BOE-C6-0179630

CONTACT REPORT

AGENCY: Dominguez Water Corporation

ADDRESS: Long Beach, CA

PERSON CONTACTED: John Foth, Operations Manager

PHONE NO.: (213) 834-2625

DATE: November 7, 1983

FROM: Patty Cook

TO: Files

SUBJECT: Del Amo Site, Water Quality Information

Mr. Foth was contacted to verify June 2, 1982 sampling results of Dominguez Well #19, and to determine if Dominguez Water Corporation had been involved in any groundwater monitoring as a result of the Del Amo Site. Mr. Foth was familiar with the site and proceeded to tell me about the neighborhood residents who prompted the sampling of well #19 and local tap water by contacting Kenneth Hahn, Supervisor to the 2nd District. According to Mr. Foth, the residents expressed their concerns to Mr. Hahn that waste could be migrating off-site and penetrating a Metro conveyance line which supplies 90% of the drinking water to the area. The residents were also concerned about contamination of well #19, which supplies 10% of the drinking water. Mr. Foth suggested that I call Doug Steele, Deputy Director, L.A. County Health Department for more detailed information since that agency was responsible for the sample collection and analyses.

According to Mr. Foth, Well #19 was originally sampled for priority pollutants by the Regional Water Quality Control Board (RWQCB) on June 2, 1982. This sampling was part of the 48-Key Well Regional Sampling program conducted by the RWQCB as a follow-up to the San Gabriel Valley sampling. Well #19 was choosen randomly by the RWQCB as being representative of aquifer conditions in that area and was not sampled out of any concern associated with the Del Amo Site.

Mr. Foth also said that Dominguez Water Corporation does not have shallow aquifer quality information.

BOE-C6-0179631

CONTACT REPORT

AGENCY: Regional Water Quality Control Board

ADDRESS: 107 South Broadway, Room 4027
Los Angeles, CA 90012

PERSON CONTACTED: Hank Yacoub, Senior Engineer

PHONE NO.: (213) 620-4460

DATE: November 7, 1983

FROM: Patty Cook

TO: Files

SUBJECT: Regional Key-Well Sampling Program

Called to find out details of the 48 Key-Well Sampling Program. Mr. Yacoub said that Well #19 was chosen randomly as being representative of aquifer conditions in the area, i.e., it was not sampled in connection with the Del Amo Site. He said that all 48 wells will be re-sampled for priority pollutants next year sometime as part of an on-going follow-up to the San Gabriel Valley sampling.

BOE-C6-0179632

CONTACT REPORT

AGENCY: Department of Water Resources

ADDRESS: 849 South Broadway
Los Angeles, CA

PERSON CONTACTED: Chris Nagler

PHONE NO.: (213) 620-4204

DATE: November 7, 1983

FROM: Patty Cook

TO: Files

SUBJECT: Shallow aquifer water quality in vicinity of the Del Amo Site

Mr. Nagler said that little recent data exists on the shallow aquifer quality within the study area (approximately 1 mile radius of the site). The DWR is currently conducting their bi-annual water level monitoring of the West Basin; Mr. Nagler said he would send me any information he has on State Well numbers indicated in the well inventory developed by FIT.

CONTACT REPORT

AGENCY: L.A. County Health Services Department, Public Health Department

ADDRESS: 313 North Figueroa, Room 924
Los Angeles, CA 90012

PERSON CONTACTED: Doug Steele, Deputy Director

PHONE NO.: (213) 974-7701

DATE: November 7, 1983

FROM: Patty Cook

TO: Files

SUBJECT: Results of Well and Tap Water Sampling July 7-8, 1983, Del Amo Site

At the suggestion of John Foth, Dominguez Water Corporation, I contacted Mr. Steele to request a copy of the results of water samples collected by L.A. County Public Health Department (results of soil samples collected from the backyards adjacent to the site will also be sent). This sampling was conducted at the request of Kenneth Hahn, L.A. County Supervisor representing the 2nd District. Apparently, residents of the surroundng neighborhood, led by Mrs. Samanac, contacted their representative to express their concerns about off-site waste migration and penetration of Metro conveyance pipelines which supply 90% of the water to the area. The residents were also concerned that groundwater, supplying the remaining 10%, may also be affected. Consequently, tap water (imported from Metro) from 4 houses and Dominguez Well #19 was sampled and analyzed for organic constituents believed to be present at the site. No hazardous contaminants were detected in the analyses (see Appendix B).

BOE-C6-0179634

APPENDIX B

RWQCB ANALYSES

BOE-C6-0179635

State of California Department of Health Services
Sanitation and Radiation Laboratory Section
Southern California Laboratory Section

~~SAMPLE~~ FOR CHEMICAL ANALYSIS

Purveyor and Address (include city and county): TRAMINGUEZ WATER Co.

Sampling Point: WELL NO. 19

Date Received: 6-3-82 (Leave Blank)

Lab No: 6022

System Number: 19

Serial Number: C 20254

Collected by: M. Martinez

Date and Hour Collected: 6/2/82 12:00

Type of Sample: ☐ Raw Surface Water ☒ Drinking Water ☐ Raw ☐ Treated ☐ Waste water ☐ Raw ☐ Chlorinated ☐ Trade Waste ☐ Other

Send Report To: ☒ WSS Dist # 64 ☐ County HD ☐ DOT Dist # ☐ National Park Serv ☐ RWQCB # ☐ Other

Results are expressed as mg/l unless specified

☒ GENERAL MINERAL ANALYSIS

		(mg/l as $CaCO_3$)	
☐ Ca	30.	☐ Hardness	108.
☐ Mg	8.	☐ HCO_3	185.
☐ Fe Total	<0.25	☐ CO_3	0.
☐ Mn	<0.02	☐ OH	0.
☐ Na	53.0	☐ Total Alk	185.
☐ K	36	☐ Cl	25.
☐ pH	8.1	☐ SO_4	6.
		☐ F	0.32
☐ Total Dissolved Solids	256	☐ NO_3	0.04

TRACE ELEMENTS

☐ Al	
☒ Ag	<0.001
☒ As	<0.005
☐ B	
☒ Cd	<0.001
☒ Cr	<0.[illegible]
☒ Cu	<0.02
☒ Hg	[illegible]
☒ Pb	<0.01
☒ Ni	<0.1
☒ Se	<0.005
☒ Zn	<0.02
☐	

☒ Other analyses desired (specify)

Priority Pollutants
CN⁻ = None detected
(<0.001).

76°C

Date Reported: 6-16-82

Analyst: RC [illegible] MO

☐ Turb TU	☐ NH_3 N	☐ BOD	☐ Susp. Solids	☐ PO_4
☐ Spec. Cond μmhos/cm	☐ ORG N	☐ Grease	☐ Set Solids	☐ MBAS

Form LAB-800 (2-80)

2511

BOE-C6-0179636

OF CALIFORNIA
ARTMENT OF HEALTH SERVICES
EALTH PROTECTION DIVISION

SOUTHERN CALIFORNIA LABORATORY SECTIO
1449 WEST TEMPLE STREET, ROM 10
LOS ANGELES, CALIFORNIA 90026569

2-5-12

AN ATTACHMENT TO LAB-804

SAMPLES FOR CHEMICAL ANALYSIS

LAB NUMBER : 6022

SERIAL NUMBER : C30254

ANALYST : PA

DATE REPORTED : 6/..182

Priority Pollutants (Organic)

I Volatile Organics : none detected (< 0.2 µg/l)

II Base Neutrals : " " (< 10 µg/l)

III Pesticides : " " (< 10 µg/l)

IV Acid Extractables : " " (< 20 µg/l)

Clinical Laboratory of San Bernardino, Inc.

1393 N. D ST., SAN BERNARDINO, CA
PHONE (714) 883-3216
P. O. BOX 339, SAN BERNARDINO, CA 92402

TN/

GENERAL
MINERAL ANALYSIS

SUPPLIER: Dominguez Water Corp.
ADDRESS:
SAMPLING POINT: well 19
DATE COLLECTED: 8 21 81

REPORT NO.
ORDER NO. C 52
LAB NO.
COLLECTED BY: D S

CATIONS:	MEQ/L	PPM	ANIONS:	MEQ/L	PPM
CALCIUM	1.3	25.1	HYDROXIDE	.0	less than 1
MAGNESIUM	.8	9.4	CARBONATE	.0	less than 1
SODIUM	2.2	50.2	BICARBONATE	3.5	215
POTASSIUM	.1	4	CHLORIDE	.8	29
MANGANESE	.0	.01	SULFATE	.2	10
			NITRATE (NO_3)	.0	less than 1
			FLUORIDE	.0	.3
TOTAL MEQ/L	4.4		TOTAL MEQ/L	4.5	

COPPER	less than .01	PERCENT SODIUM	50 %
IRON	.02	HYDROGEN ION ACTIVITY (pH)	7.9
ZINC	less than .01	SPECIFIC CONDUCTANCE (Kx10-6)	450
MBAS (DETERGENTS)	less than .005		
TOTAL ALKALINITY AS $CaCO_3$	176		
TOTAL HARDNESS AS $CaCO_3$	105		
TOTAL DISSOLVED SOLIDS	270		

REMARKS:

DATE RECEIVED: 8 28 81 DATE STARTED: 8 28 81 DATE COMPLETED: 8 31 81

ALL ANALYSES DONE BY "STANDARD METHODS",(14TH ED.) OF APHA OR EPA "METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE."

CHEMIST: Ray Furnas

Well # 19

Clinical Laboratory of San Bernardino, Inc.

1595 N. D ST., SAN BERNARDINO, CA
PHONE (714) 883-3216
P. O. BOX 329, SAN BERNARDINO, CA 92402

GENERAL
MINERAL ANALYSIS

PURVEYOR: Dominquez Water Corp
ADDRESS:
SAMPLING POINT: well 19
DATE COLLECTED: 7 15 81

REPORT NO.
ORDER NO. 4
LAB NO.
COLLECTED BY: D J S

CATIONS:	MEQ/L	PPM	ANIONS:	MEQ/L	PPM
CALCIUM	1.7	33.3	HYDROXIDE	.0	less than 1
MAGNESIUM	0.7	8.7	CARBONATE	.0	less than 1
SODIUM	2.2	49.7	BICARBONATE	3.7	225
POTASSIUM	0.1	4.7	CHLORIDE	0.8	29
MANGANESE	.0	0.01	SULFATE	0.1	6
			NITRATE (NO_3)	0.1	5
			FLUORIDE	.02	0.3
TOTAL MEQ/L	4.7		TOTAL MEQ/L	4.72	

COPPER	less than .002	PERCENT SODIUM	47 %
IRON	.02	HYDROGEN ION ACTIVITY (pH)	8.19
ZINC	.002	SPECIFIC CONDUCTANCE (Kx10-6)	460
MBAS (DETERGENTS)	less than .005		
TOTAL ALKALINITY AS $CaCO_3$	184	Color	<5
TOTAL HARDNESS AS $CaCO_3$	120	Turb	1.2
TOTAL DISSOLVED SOLIDS	269		

REMARKS:

DATE RECEIVED: 7 15 81 DATE STARTED: 7 15 81 DATE COMPLETED: 7 22 81

ALL ANALYSES DONE BY "STANDARD METHODS",(14TH ED.) OF APHA
OR EPA "METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE."

CHEMIST: Ray Furnas

Clinical Laboratory of San Bern...
1545 N D ST. SAN BERNARDINO, CA
PHONE (714) 888-3810
P. O. BOX 229, SAN BERNARDINO, CA 92402

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INORGANIC
CHEMICAL ANALYSIS

REPORT NO.
ORDER NO. 4
LAB NO.

PURVEYOR: Dominguez Water Corp
ADDRESS:
SAMPLING POINT: well 19
DATE COLLECTED: 7 15 81 COLLECTED BY: D J S

CONSTITUENTS	MG/L
ARSENIC	.009
BARIUM	less than .02
CADMIUM	less than .002
CHROMIUM	.028
LEAD	.019
MERCURY	less than .001
SELENIUM	less than .002
SILVER	.003
FLUORIDE	.3
NITRATE (NO_3)	5

REMARKS:

DATE RECEIVED: 7 15 81 DATE STARTED: 7 16 81 DATE COMPLETED: 7 22 81

CHEMIST: Ray Furnas

ALL ANALYSES DONE BY "STANDARD METHODS", (14TH ED.) OF APHA OR EPA, "METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE."

APPENDIX C

L.A. COUNTY HEALTH SERVICES DEPARTMENT ANALYSES

BOE-C6-0179641

CADILLAC FAIRVIEW SITE

ATTACHMENT #1

Soil Tests On Del Amo Blvd.
Samples taken 15 ft. south of fence line

LOCATION / TEST	Pole #14 Surface	Pole #14 18" Core	Pole #13 Surface	Pole #13 18" Core	Pole #6 Surface	Pole #6 18" Core	Pole #2 Surface	Pole #2 18" Core	Control 223rd & Halldale Surface	Control 223rd & Halldale 18" Core
Napthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethelbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1. All date in ppm
2. N.D. = None Detectable
3. Tests run for Major contaminants of site

2 5 1 7

BOE-C6-0179642

CADILLAC FAIRVIEW SITE
Attachment #2

WATER TESTS FOR AREA RESIDENTS AND WELL #19

TEST	951 W. 204th Street	1043½ W204th St. -	1121 W. 204th St. -	1129 W. 204th St. -	958 Del Amo Blvd. -	Well #19 400 E. Carson 2	1718 Alameda Ave. - Control
BENZENE	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND	ND	ND
DBT	ND	ND	ND	ND	ND	ND	ND

1. Taken at residents homes
2. Untreated water from Well #19.

BOE-C6-0179643

CADILLAC-FAIRVIEW SITE

Soil Tests on Del Amo Blvd.
(Samples taken 15 ft. South of site fence line)[3]

Location / TEST[1]	Telephone Pole #1 Surface	Telephone Pole #1 4" core	Telephone Pole #1 18" core	Telephone Pole #4 Surface	Telephone Pole #4 18" core	Telephone Pole #7 Surface	Telephone Pole #7 18" core	Telephone Pole #10 Surface	Telephone Pole #10 18" core	Telephone Pole #13 Surface	Telephone Pole #13 4" core	Telephone Pole #13 18" core	223rd St & Hallchle CONTROL surface	223rd St & Hallchle CONTROL 18" core	1237 Electric St. CONTROL Surface	1237 Electric St. CONTROL 18" core	Del Amo & Western Surface
PCB (ppm)	ND[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	—
DDT	3.9	3.7	ND	2.9	ND	1.4	ND	2.5	nd	1.9	1.2	ND	ND	ND	ND	ND	.80
DDE	.95	.50	ND	1.1	ND	.51	ND	.84	ND	.90	.13	ND	ND	ND	ND	ND	.52
DDD	/_1	.98	ND	ND	ND	ND	ND	ND	ND	/_1	ND	ND	ND	ND	ND	ND	ND
Total Chromium	/_10	121	ND	/_10	ND	ND	ND	/_10	ND	/_10	/_10	/_10	ND	ND	ND	ND	ND
Cadmium	/_4	/_4	/_4	/_4	/_4	/_4	/_4	/_4	10	/_4	/_4	/_4	/_4	/_4	/_4	/_4	ND
Copper	29	38	10	260	15	36	11	50	14	37	45	16	26	3	8	8	24.5
Nickel	12	19	12	22	14	20	12	20	12	20	24	17	8	1	3	10	10
Lead	106	2100[4] (700)	ND	50	ND	25	ND	50	ND	306	200	ND	87	ND	25	ND	305
Zinc	77	230	47	178	59	141	41	196	69	215	141	64	8100[5] (860)	4	54	44	90

1. All Data in PPm
2. ND = None Detectable
3. Surface and core sampling
4. Attributed to paint waste in soil
5. Unexplained anomoly
6. / = Less than

BOE-C6-0179644

2520

CADILLAC-FAIRVIEW SITE

Soil Tests for Residences Bordering Site
On Del Amo Blvd. (South of Site)

Location	Rear yard	1129 W. 204th St.	Rear yard	1121 W. 204th St.	Rear yard	1043½ W. 204th St.	Rear yard	958 Del Amo Blvd.	Rear Yard	951 W. 204th St.	2 miles north	1287 Electric St.	1.5 miles south	223rd & Halldale	Del Amo Blvd. & Western	Surface(.5 mile west)	Surface (.5 mile east)
											Control		Control		Control		Contr
TEST[1]																	
PCB (ppm)	ND		ND		ND		ND		ND		ND		ND		--		--
DDT	3.0		3.1		2.6		1.7		1.7		ND		ND		.80		0.
DDE	1.7		1.8		1.1		0.40		0.71		ND		ND		.52		/0.1
DDD	ND		0.23		/1 ppm		/1 ppm		/1 ppm		ND		ND		ND		ND
Total Chromium	ND		ND		33		ND		/10 ppm		ND		ND		ND		--
Cadmium	/4 ppm		/4 ppm		/4 ppm		/4 ppm		6		/4 ppm		/4 ppm		ND		--
Copper	24		31		99		14		43		8		26		24.5		--
Nickel	17		22		120		3		31		3		8		10		--
Lead	37		56		156		37		175		25		87		305		--
Zinc	116		156		212		126		286		54		8180[4] (860)		90		--

1. All data in part per million (ppm)
2. Composite surface soil samples
3. ND = None detectable
4. Unexplained anomoly
5. / = less than

BOE-C6-0179645

T/19 -3

ENCLOSURE

2521

CAMILLAC FAIRVIEW/WESTERN WASTE INDUSTRIES

COMMENTS ON CLEANUP PLAN/IMPLEMENTATION

1. The contamination has not been fully characterized. The first step toward resolving this issue is to reconcile the data discrepancies between the laboratories. Once approved methods have been defined which generate reliable data, then samples will be taken at the bottom and sides of the pit, in cores below the present excavation, and from surface locations on the rest of the property.

2. The community/site safety and monitoring plan is inadequate. If additional excavation is found to be necessary, then at the resumption of excavation, the site and community safety precautions will be effective only if they are based upon knowledge of the compounds present in the soil to be removed. At depths of 12 to 19 feet compounds have been found which were not described in the characterization of the surface logs. These compounds are benzene, toluene, ethylbenzene and a wide variety of polynuclear aromatic hydrocarbons (PAHs). Among these are benzo(a)pyrene, benzo(a)anthracene and benzo(b)fluoranthene, all recognized carcinogens. Because of their low volatility, these three compounds are not expected in the vapor phase at the site, but rather adsorped to particles of soil. Therefore, the appropriate control measures will be those of general dust control. The monitoring for these emissions will require high-volume sampling with periodic gravimetric analysis of filters (at least daily) as an index of the adequacy of dust control measures.

Benzene would be expected to evaporate at the site and will have to be monitored by a photoionization detector (HNU) appropriately calibrated. Since it will read out "total hydrocarbons" the expected proportion of benzene will have to be calculated and the monitored criteria for worksite precautions adjusted to this instrument. Daily calibration, either on-site or in the laboratory, will have to be performed, and a strip chart recorder attached to the HNU for a record of the output overtime.

Naphthalene is the most highly concentrated and odiferous compound present. The most relevent means of recording these off-site emissions would be to have a person trained in odor detection present downwind to notify the work crew when off-site odors are excessive, requiring further worksite precautions to be taken. It is expected that the dust control measures will help mitigate odor emissions, based on the compounds known to be present.

In addition to the above, a plan encompassing these on- and off-site safety measures must contain measures to be taken in the pit to protect the workers, including adequate safety equipment, sloping of the walls of the pit, decontamination equipment and monitoring for exposure to the volatiles (as benzene), and PAHs (as dust particles) in the pit.

The attached memo from [illegible] to Mr. [illegible] [illegible] 15, 1983, [illegible] [illegible] the details [illegible] [illegible] criteria and [illegible] precautions

BOE-C6-0179646

2522

it should be included in the site and community safety plan. Cleanup levels or site closure procedures will be those levels necessary to protect groundwater or to match the background levels of the PAH, benzene and toluene in the vicinity of the site, whichever is more stringent. Those vicinity background levels are now being determined by soil sampling and will be available soon.

3. Quality assurance/quality control (QA/QC) for soils and air data are required. The goal of the Department is to ensure that all remedial activities be verified and documented through the use of analytically valid and defensible environmental measurements of known accuracy and precision. The Department requires that WWI prepare and implement assurance/quality control (QA/QC) plans to be approved by the Department of Health Services (DOHS) and which document the quality of the data generated. As a minimum the following areas should be addressed: sampling procedures, sample custody (integrity of the sample from its origin through analysis or storage); analytical or test procedures including physical or chemical parameters; internal quality control of the measurement or test; and data processing including reduction and validation. The Department is willing to work with your consultants in the preparation of these plans.

4. Cleanup levels for the site have been reviewed.

We suggest there may be certain options regarding cleanup levels. If WWI is willing to institute appropriate deed restrictions on the future use of the property, the Department can allow higher levels of contaminants left on site than are permissible with unrestricted use. Specifically, the Epidemiological Studies and Alternative Technology Sections of the Department's Toxics Division have recommended an unrestricted use level of essentially background. With restrictions on use of the land, and with certain groundwater protection measures such as hydrologic isolation, higher levels may be allowed in the subsurface where potential for direct contact with the waste is minimal. Surface soils must be cleaned to safe levels in any case. Some method for mitigating the threat from PAH gas migration must be included in any cleanup recommendation. This is obviously an important issue for us to discuss in some detail.

5. We feel groundwater quality is a total site issue and not just an issue to be resolved by WWI.

Because contaminations have migrated vertically to a depth of at least 20 feet in some areas and are known to be generally mobile in soil, there is a potential for groundwater contamination. Therefore, we will require that a groundwater monitoring program be implemented around the entire Cadillac-Fairview/Western Waste site. We view this as a task to be carried out jointly with other responsible parties and under the direction and approval of the DOHS and Regional Water Quality Control Board.

7. Responsible party actions, interagency coordination and public participation.

The Department has some information regarding other responsible parties including past generators, haulers and owners. Western Waste agreed to supply additional responsible party information but to date we have not received it. There appears to be a number of firms who are potentially responsible to share in the cleanup. The Department will notify them of their potential responsibility for involvement in the cleanup as expeditiously as possible. Since Western Waste has contributed substantially towards cleanup, this effort will be acknowledged in discussing overall settlement of responsible party liabilities.

In order that the cleanup can proceed without unnecessary delays the Department will coordinate with your consultant and all of the other regulatory agencies. These include South Coast Air Quality Management District, Regional Water Quality Control Board, County Health, California Highway Patrol, and Cal Trans. Also, we will take the lead in the public participation process to insure adequate information is disseminated and comments are received.

BOE-C6-0179648

State of California

Department of Health Services

Memorandum

To : [illegible]
[illegible] Section
[illegible] P Street

Date : July 15, 1983

Subject : Western Waste Industries Excavation at Cadillac Fairview Site

From : Epidemiological Studies Section
[illegible] P Street --2533

The meeting on July 1, 1983 between Western Waste Industries' representatives and staff members of ISCD resulted in the need for ESS to provide recommendations on continuing the excavation at the Cadillac Fairview site. The following information contains those recommendations.

Air Monitoring Program

These items should be considered minimum requirements for assuring on-site and off-site air quality due to the excavation emissions.

1) Action Levels, based on benzene:

Level 1 - 0.5-1.0 ppm benzene for 20 minutes as measured at the perimeter would require the excavation to stop. The benzene emission would be monitored another 10 minutes. If it has not subsided, then the excavation face would be covered. The plan for continuing the excavation would have to be reassessed to control emissions.

Level 2 - 2.0 ppm or greater of benzene is measured at the perimeter would require the excavation to stop immediately and the work face would be covered. The plan would have to be reassessed as above.

2) Odor Levels, based on naphthalene:

The odor threshold for naphthalene is approximately [illegible] ppm. These categories are the SCAQMD levels for odor. Odor levels would be determined in the neighborhood.

Category 3 - Distinct, easily noticeable. If this level is reached and there are 5 or more odor complaints within 15 minutes, then the excavation would stop and measures taken to control odor.

Category 4 - Strong, offensive. If this level is reached [illegible] of complaints, then the excavation [illegible] taken to control odor.

[illegible]

BOE-C6-0179649

2) [illegible]

[illegible] stopping the excavation [illegible] the detected benzene level or the odor [illegible].

3) Monitoring for benzene:

One HNU Photoionizer (10.2 or 9.5 eV lamp) with strip chart recorder located downwind of the excavation (this seems to be usually W to NW) and at the perimeter. This unit would be mobile so as to stay downwind.

One HNU Photoionizer (10.2 or 9.5 eV lamp) located at or as near as possible to the workers. This unit would also be mobile.

Both instruments would be calibrated on benzene, and each instrument would be attended continuously during working hours by one person each.

The limit of detection of the HNU is 0.1 ppm.

4) Monitoring for particulates (total dust):

The specifics for this monitoring scheme are still being determined, including an action level. However, the company needs to be aware that ESS would recommend particulate monitoring, both for worker and community safety. Many of the compounds being found in the soil at this site are PAHs with low volatility. As a result, the hazard would be due to exposure to soil and dust contaminated with these compounds. The toxicity information on many polynuclear aromatics shows that they are carcinogenic to test animals. It is for this reason that exposures must be minimized.

Communications

There needs to be a communication system between the two people attending the instruments, the project manager on-site, and the odor expert located off-site. One person would be designated as responsible for stopping the excavation and directing the odor control measures and work-face covering.

Worker Protection

All workers would need to be equipped with the following gear.

- Boots (wash and reuse)
- Gloves (reusable or disposable)
- Hardhats (wash and reuse)
- Coveralls (disposable)
- Respirators (wash and reuse face piece) equipped with cartridges for [illegible] dust. Respirators would be [illegible] half-mask, air-[illegible]. These respirators [illegible]

2525

Worker Protection (cont'd)

In the event that the excavation would start due to benzene level, dust level, and/or odor emissions, all workers would be required to leave the work face, except for the few necessary to apply cover and/or other control measures.

The permissible exposure limits (PELs) for benzene and naphthalene are each 10 ppm for an 8-hour work shift. These limits, as well as all other applicable PELs, would be adhered to. The ceiling limit for toluene exposure is 50 ppm. This is a level that is never to be exceeded. Cal/OSHA regulations require that airborne levels be maintained at or below the limits regardless of the use of respirators.

Facilities would have to be on-site for cleaning and decontaminating the protective equipment. The equipment would preferably be stored at the site so as to limit the amount of material the workers could bring home to their families.

Meteorological Monitoring

The company had a mechanical weather station installed at the site. This would remain to give ready information on wind speed and direction.

The excavation pit itself is not correctly sloped to prevent accidental injury to workers from a cave-in. Prior to excavating the perimeter soil, a determination needs to be made on whether or not this material is hazardous. This would present a good opportunity for initiating the lateral migration sampling.

Alexander Kelter, M.D.
Medical Epidemiologist (PHMC III)

BOE-C6-0179651

Mitigation

Sec

F

Montrose

BOE-C6-0179652

TELEPHONE RECORD

Date Jan. 24, 1986 Correspondence Control Unit No.

Person Called Bob Pazia Phone No. (206) 526-6319 (Seattle, WA)

Div./Section/Representative of: Nat'l Oceanic and Atmospheric Admin (NOAA)

Person Calling John Scandura Phone No. (213) 620-2380

~~QUESTION~~ Mr. Pavia stated that NOAA and the Federal Dept. of the Interior (DOI), as trustees for natural resources, are investigating whether to sue the Montrose responsible parties for damages to natural resources. The legal grounds for this lawsuit are in CERCLA. Mr. Pavia has found that in California, ~~the~~ the trustee ~~is DHS~~ for natural resources is DHS. What Mr. Pavia would like to do is get together with all the trustees (EPA is not a trustee) and determine whether a ~~another~~ coordinated damages assessment, outside the EPA RI/FS, can be performed. However, he has made no firm meeting committments.

Pavia's primary question is who is the person in DHS that would make the final determination as to whether DHS will enter into this suit. Pavia could not get an answer from Tom Bailey and I was uncertain as to the extent of DHS involvement in Montrose. I told him I would get back to him with an answer.

cc: Nestor Acedera
Bonnie Teaford

Signed [signature]

Date 1/24/86

White - Record Information Center, Yellow - Unit Copy, Pink - Agency Copy, Blue - Health and Welfare Agency or Extra as needed

BOE-C6-0179653

NOA

Montrose Chemical Corporation of California

P. O. Box 0898
Westport, Connecticut 06881-0898 • (203) 222-1861

Hazardous Materials
JAN 13

January 10, 1986

Ms. Alexis Strauss
Chief, Superfund
Enforcement Section (T-4-2)
U.S. Environmental Protection Agency,
Region IX
215 Fremont Street
San Francisco, California 94105

Dear Ms. Strauss:

Mr. Samuel Rotrosen, President, Montrose Chemical Corporation of California, retired effective January 1, 1986. His responsibilities in this area have been assumed by D. M. Greeno, General Manager. Please address future communications regarding Montrose Chemical Corporation of California to him at the above address.

Very truly yours,

MONTROSE CHEMICAL CORPORATION
OF CALIFORNIA

D. M. Greeno
General Manager

DMG:RH

cc: A. Bellomo, DOHS
R. Ghirelli, RWQCB
T. Gioia, U.S.EPA
L. Haage, U.S.EPA
K. Lytz, Latham & Watkins
E. Nemecek, Hargis & Associates
H. Seraydarian, U.S.EPA

Smith
BT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Hazardous Materials Management Section
JAN 08 86
California Department of Health Services
LOS ANGELES

3 JAN 1986

Samuel Rotrosen, President
Montrose Chemical Corporation of California
One Metro Plaza (Suite 301)
505 Thornall Street
Edison, New Jersey 08837

BY DHL

Re: Montrose Chemical Site near Torrance, California

Dear Mr. Rotrosen:

In accordance with the terms of the Consent Order which governs the "Remedial Investigative Work" being conducted by Montrose at the above referenced site, I am hereby requesting Montrose to submit its draft Phase 1 On-site Groundwater and Soils Sampling Plan and Quality Assurance Project Plan (QAPP).

In keeping with our agreement, this request was withheld until EPA submitted its comments on the Montrose Draft Off-site Sampling Plan and QAPP; EPA's comments were submitted on January 2, 1986.

We look forward to receiving the draft Phase 1 On-site Groundwater and Soils Sampling Plan and QAPP. If you have any questions regarding this request, please contact EPA's Project Coordinator, Therese Gioia (415-974-7465).

Sincerely yours,

Julie Anderson for

Alexis Strauss
Chief, Superfund Enforcement Section

cc: E. Nemecek, Hargis & Associates
K. Lytz, Latham & Watkins
A. Bellomo, DOHS
R. Ghirelli, RWQCB

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION
107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012-4596
(213) 620-4460

BLT

Hazardous Materials Mgmt.
JAN 03 1986
California Department of Health Services
LOS ANGELES

December 31, 1985

Therese Gioia, Project Officer
U. S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

COMMENTS ON HARGIS OFF-SITE SAMPLING PLAN, MONTROSE SITE, TORRANCE

I am writing in reference to the Off-Site Sampling Plan for the former site of Montrose Chemical Corporation. I feel it is an honest attempt at investigating the extent to which the environment surrounding Montrose has been contaminated by DDT, MCB, or other pollutants.

The sampling program would benefit from at least one additional and/or modified surface water sampling station. The proposed SW-5 (cf. Figure 4 of Sampling Plan document) should not be the closest station to the confluence of Torrance Lateral and Dominguez Channel. I suggest at least one additional site immediately upstream of this confluence. Likewise, moving SW-8 upstream toward (but still downstream of) the Torrance Lateral/Dominguez Channel confluence will more closely reflect what is borne through Torrance Lateral, while a station further downstream (e.g. SW-9) will indicate whether there are pollutants not originating from the Montrose site during periods of stormwater runoff.

Thank you for this opportunity to comment on the proposed sampling plan. We look forward to the results of the remedial investigation.

ALLAN B. CHARTRAND
Environmental Specialist III

ABC:mp

cc: MaryEtta Marks, State Water Resources Control Board, Office of Chief Counsel
Angelo Bellomo, Department of Health Services, Toxic Substances Control Division

United States
Environmental Protection
Agency

Regional Administrator
215 Fremont Street
San Francisco CA 94105

Region 9
Arizona, California
Hawaii, Nevada
Pacific Islands

EPA Environmental News

MONTROSE CHEMICAL SITE

SITE INVESTIGATION PLANS AVAILABLE FOR PUBLIC REVIEW

DECEMBER 1985

The draft Part II Sampling and Quality Assurance Project Plans covering off-site sampling activities around the Montrose hazardous waste site are now available for community review and comment at the local information repositories. The Montrose Chemical Corporation submitted the Part II plans to EPA in compliance with the recently signed Consent Order between EPA and Montrose. Once EPA approves the plans, the Agency will oversee Montrose's sampling activities.

Areas on and around the Montrose site are contaminated with significant levels of DDT, a pesticide that was manufactured at the facility from 1947 to 1982. EPA designed a two-part Remedial Investigation to accurately characterize the level and extent of site contamiation. The Sampling and Quality Assurance Project Plans comprise the centerpiece of the two-part Remedial Investigation. The Part I plans covering the on-site sampling effort were recently implemented and results are expected in January 1986.

The Part II Sampling Plan provides the framework for soil sampling around the site perimeter, in nearby site drainage areas, and in adjacent neighborhoods. Also, sediment and surface water will be sampled in off-site drainage paths.

The Part II Quality Assurance Project Plan describes field collection and laboratory procedures that will be followed to ensure that samples yield data that accurately represents environmental conditions.

If you wish to comment on the plans, please submit your comments postmarked no later than JANUARY 13, 1986 to:

Therese Gioia
Remedial Project Manager (T-4-2)
U.S. Environmental Protection Agnecy
215 Fremont Street
San Francisco, CA 94105

Toll-free Information Service: (800) 231-3075

INFORMATION REPOSITORIES

Carson Public Library
Attn: Catherine O'Connell
151 East Carson Street
Carson, CA 90745
(213) 830-0901

Civic Center Library
Attn: Judy Harrington
3031 Torrance Boulevard
Torrance, CA 90503
(213) 618-5959

BONNIE T.

United States
Environmental Protection
Agency

Regional Administrator
215 Fremont Street
San Francisco CA 94105

Region 9
Arizona, California
Hawaii, Nevada
Pacific Islands

EPA Environmental News

MONTROSE CHEMICAL SITE

SITE INVESTIGATION PLANS AVAILABLE FOR PUBLIC REVIEW

DECEMBER 1985

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If you wish to comment on the plans, please submit your comments postmarked no later than JANUARY 13. 1986 to:

Therese Gioia
Remedial Project Manager (T-4-2)
U.S. Environmental Protection Agnecy
215 Fremont Street
San Francisco, CA 94105

Toll-free Information Service: (800) 231-3075

INFORMATION REPOSITORIES

Carson Public Library
Attn: Catherine O'Connell
151 East Carson Street
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(213) 830-0901

Civic Center Library
Attn: Judy Harrington
3031 Torrance Boulevard
Torrance, CA 90503
(213) 618-5959

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213) 620-2380

July 6, 1984

Ms. Alexis Strauss (T-4-2)
U.S. EPA - Region IX
Toxics and Waste
Management Division
215 Fremont Street
San Francisco, CA 94105

Dear Ms. Strauss:

MONTROSE, TORRANCE, CALIFORNIA REMEDIAL INVESTIGATION WORKPLAN

We have completed our review of subject workplan and have no significant comments. We find the plan to be comprehensive and addresses all areas of concern to us. The products of the activities under this workplan should provide the agencies good basis for making decisions concerning the site's mitigation.

We do make the following suggestions:

1. The scope of the off-site sampling should be expanded to identify the extent of migration for the target chemical contaminants.

2. The Hydrogeologic Investigation, Part I (p 2-15), should include permeability testing of the drilling cores.

3. The preliminary report of the hydrogeologic investigation (p 2-19) should include a water table and potentiometric map. A tabulation which provides information on aquifer properties such as hydraulic conductivity and transmissivity would also be helpful.

We thank you for giving us the opportunity to review this document.

Sincerely,

Néstor O. Acedera, Manager
Assessment & Mitigation Unit
Southern California Section
Toxic Substances Control Division

cc: See attached list

cc: Anastacio Medina
Los Angeles County Health
2615 South Grand Ave., 6th Floor
Los Angeles, CA 90007

Ed Camarena
South Coast Air Quality
Management District
9150 E. Flair Drive
El Monte, CA 91731

Bob Ghirelli
Regional Water Quality
Control Board
107 South Broadway, Rm. 4027
Los Angeles, CA 90012

Jan Meyer
Program Management Section
Toxic Substances Control Division
714/744 P Street
Sacramento, CA 95814

Jim Steele
California Department of
Fish and Game
Marine Research
245 West Broadway, Suite 350
Long Beach, CA 90802

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION

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

July 1 , 1984

U.S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, CA 94105

Attn: Betsy Curnow

Dear Ms. Curnow:

We have reviewed the Remedial Investigation Workplan (Second Draft), dated May 31, 1984, for the Montrose Facility Site, in Torrance, California, prepared by Metcalf and Eddy, Inc., for EPA/Office of Waste Programs Enforcement.

The draft Workplan appears to consider and treat in sufficient detail all the aspects of site characterization relevant to this facility that are of interest to this Board. Implementation of this program should result in a Final Feasibility Report that will provide a rational and well-documented selection of the most environmentally sound and cost-effective remedial measure of all alternatives to be considered.

Please be assured of our intent to continue coordination with your staff, and to assist the RI/FS program contractor(s) in securing any information he may require to complete his tasks. As we indicated at the interagency meeting on July 3, 1984, copies of all products of the remedial investigation submitted by Montrose or EPA's contractor(s) should be forwarded to the Board for review.

If you have any questions, please call Dr. Lewis A. Schinazi, of my staff, at (213) 620-5604.

Sincerely,

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

cc: Department of Health Services, Toxics Division
Attn: Mr. Angelo Bellomo
State Water Resource Control Board, Technical Services
Attn: Ed Anton
State Water Resource Control [illegible] Office of Chief Counsel
Attn: Kathy [illegible]

RPG/LAS/pl

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION

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

June 15, 1984

Dr. Gordon F. Snow
Assistant Secretary for Resources
Resources Agency
1419 Ninth Street
Sacramento, CA 95814

Dear Dr. Snow:

This is in response to the notification of the proposed Superfund project to be funded by the Environmental Protection Agency (EPA) entitled, Montrose Chemical Corp., Remedial Investigation/Feasibility Study, dated May 18, 1984, and received in this office on May 30, 1984. The investigation and study are intended to review the technical and institutional feasibility and comparative costs of clean-up alternatives for DDT-contaminated soils on Montrose property and adjacent sites in Torrance, California.

On May 6 and May 27, 1983, EPA and this Regional Board issued enforcement orders requiring Montrose to control DDT-contaminated stormwater runoff from its Torrance plant site, and to provide EPA and the Board with data on the extent of DDT-contamination on the plant site and in the vicinity, with a view toward development of appropriate remedial measures.

On March 26, 1984, the California Department of Health Services (DHS) issued a "Notice of Violation and Directive to Comply" to Montrose, directing the firm to initiate certain interim corrective measures. The DHS later submitted this site as a candidate for the Superfund National Priorities List.

We will continue to coordinate activities with EPA and DHS with respect to development and review of the proposed Remedial Investigation and Feasibility Study, and participate fully with these agencies in the determination of appropriate remedial measures.

We have enclosed a copy of our Cleanup and Abatement Order No. 83-1 for your ready reference.

Sincerely,

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

Enclosure

cc: EPA, Region 9, Attn: Betsy Curnow (T-4-2)
State Clearinghouse, Attn: Chris Goggin
SWRCB, DTS, Attn: Ed Anton
SWRCB, OCC, Attn: Kathy Keber
DHS, Toxic Substance Control Division, Los Angeles, Attn: Angelo Bellomo

LAS/sml

FEDERAL

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 — 916/445-0613

NOTICE OF COMPLETION — ENVIRONMENTAL DOCUMENT FORM

SCH # 84052572

1. Project Title: Montrose Chemical Corp. Remedial Invest./Feasibility Study
2. Lead Agency: U.S. Environmental Protection Agency. Contact Person: Betsy Cushman
3a. Street Address: 215 Fremont St. 3b. City: San Francisco
3c. County: 3d. Zip: 94105 3e. Phone: 415/974-8150
PROJECT LOCATION 4. County: Los Angeles 4a. City/Community: Los Angeles, Torrance
4b. (optional) Assessor's Parcel No.: 4c. Section: Twp.: Range:
5a. Cross Streets: 5b. For Rural, Nearest Community:
6. Within 2 miles of: a. State Hwy No.: b. Airports: c. Waterways:

7. DOCUMENT TYPE

CEQA
01 NOP
02 Early Cons
03 Neg Dec
04 Draft EIR
05 Supplement/Subsequent EIR (If Sup, prior SCH #:)

NEPA
06 Notice of Intent
07 Envir. Assessment/FONSI
08 Draft EIS

OTHER
09 Information Only
10 Final Document
11 X Other proposed Superfund Project

8. LOCAL ACTION TYPE
01 General Plan Update
02 Gen Element
03 General Plan Amendment
04 Master Plan
05 Annexation
06 Specific Plan
07 Redevelopment
08 Rezone
09 Land Division (Subdivision, Parcel Map, Tract Map, etc.)
10 Use Permit
11 Coastal Ap Preserve
12 Other

9. TOTAL ACRES:

10. DEVELOPMENT TYPE
01 Residential: Units Acres
02 Office: Sq.Ft. Acres Employees
03 Shopping/Commercial: Sq.Ft. Acres Employees
04 Industrial: Sq.Ft. Acres Employees
05 Sewer: MGD
06 Water: MGD
07 Transportation: Type
08 Mineral Extraction: Mineral
09 Power Generation: Megawatts Type:
10 X Other EPA project - Toxic Clean up.

11. PROJECT ISSUES DISCUSSED IN DOCUMENT

01 Aesthetic/Visual
02 Agricultural Land
03 Air Quality
04 Archaeological/Historical
05 Coastal Zone
06 Fire Hazard
07 Flooding/Drainage
08 Geologic/Seismic
09 Jobs/Housing Balance
10 Minerals
11 Noise
12 Public Services
13 Schools
14 Septic Systems
15 Sewer Capacity
16 Soil Erosion
17 Solid Waste
18 X Toxic/Hazardous
19 Traffic/Circulation
20 Vegetation
21 Water Quality
22 Water Supply
23 Wetland/Riparian
24 Wildlife
25 Growth Inducing
26 Irreversible Commitments
27 Cumulative Effects
28 Other

12. FUNDING (Approx.): Federal $ State $ Total $ 800,000

13. PRESENT LAND USE AND ZONING:

14. PROJECT DESCRIPTION: Notification of proposed Superfund project to be funded by EPA.

STATE CLEARINGHOUSE - 1400 TENTH STREET, RM 121 - 916/445-0613, 8/485-0613

CLEARINGHOUSE CONTACT: Chris Boggan

STATE REVIEW BEGAN: 5/24

DEPT. REVIEW TO AGENCY: 6/15

AGENCY REVIEW TO SCH: 6/20

SCH COMPLIANCE: 6/22

M/C	M/C		M/C	M/C	
		RESOURCES			CALTRANS 7
		[redacted]			[redacted]
		[redacted]			[redacted]
		FISH/GAME			CHP
		[redacted]			[redacted]
		[redacted]ORADO RIV BD			[redacted]
		[redacted]R			HEALTH SVCS
		[redacted]CLAMATION			FOOD&AG
		[redacted]RKS&REC/OHP			[redacted] WORKS
		[redacted]SC			[redacted]RRECTIONS
		[redacted]DC			[redacted] SVCS
		[redacted]ASTAL COMM			[redacted]OOLS)
		[redacted]ERGY COMM			[redacted] MON MGM
		[redacted] COMM			[redacted]EPA
		ARB			[redacted]
		[redacted]OLLED WASTE BD			[redacted] OPR
		[redacted]			[redacted]
X		REGION# [redacted]			OTHER [redacted]
		[redacted]			
		[redacted] (66418 PROJECTS)			

to CHT

(REVISED 12-83)

840572

12.5.30

State of California

Memorandum

To : Office of Planning & Research
State Clearninghouse Division
IMS A-8

Attn: Chris Goggin

Bill Loscutoff, Chief
Toxic Pollutants Branch

From : Air Resources Board

Date : June 15, 1984

Subject: Montrose Chemical Remedial Investigation (SCH 84052320)

This is in response to your request for comment on EPA's proposal to initiate remedial investigation on Montrose Chemical's pesticide manufacturing site in Torrance. The site was used to manufacture DDT from 1947 to 1982, resulting in contamination of soil, surface water and air. EPA is currently characterizing the extent of the contamination. The remedial investigation will be conducted to identify and select mitigation alternative(s).

In assessing remedial alternatives, we suggest that the issue of intermedia pollutant transfer be addressed. The air quality impact of remedial actions should be evaluated. Finally, the public health risk associated with the recommended course of action should be compared with the risk of other remedial alternatives.

I appreciate the opportunity to comment on this proposed superfund project. If you have any questions, or need assistance in evaluating the air quality aspect of the project, please contact Don Ames at (916) 322-8285.

cc: Betsey Curnow, EPA Region IX
Angelo Bellomo, DHS (Los Angeles)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

JUN 11 1984
Ca. of h.
LOS ANGELES

5 JUN 1984

To Community Residents, Businesses, Agencies, and Officials:

Please accept our apology for the delay in communicating with you with regard to the Montrose Chemical Corporation facility in Torrance, California. Our mailing list is now complete and we should be able to provide you updated status reports in a timely manner.

As you may recall, we held a public meeting on January 30, 1984, to present EPA's Technical Evaluation Report of Montrose Chemical Corporation's Proposal for Remedial Action at their Torrance, California facility. The public meeting was well attended and EPA received valuable comments from community residents, local businesses, and state and local agencies. As a result of the public comments received and the issues and concerns voiced by the community at the public meeting, EPA Region 9 has determined that reevaluation of cleanup alternatives is appropriate.

Over the past couple of months since the public meeting, EPA Region 9 has requested and received approval and funding from EPA Headquarters in Washington D.C., to complete a remedial investigation and prepare a feasibility study recommending remedial alternative(s) for final site cleanup.

EPA Region 9 has been working with Metcalf & Eddy, Inc., an engineering firm, to develop a remedial investigation/feasibility study work plan which describes the tasks to be completed during the remedial investigation/feasibility study (RI/FS). The objective of the draft RI/FS work plan is to further define the extent and location of contamination both onsite and offsite in sufficient detail to perform environmental and public health assessments and recommend the most cost-effective remedial alternative(s).

Copies of the draft RI/FS work plan are now available for public review and comment at the established community repositories listed on the following page. We encourage you to review the draft RI/FS work plan at your earliest convenience and provide us with any comments you may have. We trust that the concerns and issues of the community which were expressed at the January public meeting are reflected in the tasks proposed in the draft RI/FS work plan.

United States
Environmental Protection
Agency

Regional Administrator
215 Fremont Street
San Francisco CA 94105

Region 9
Arizona, California
Hawaii, Nevada
Pacific Islands

EPA

May 18, 1984

Huston Carlyle
Attn: Marsha Prillwitz
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Dear Mr. Carlyle:

This letter notifies you of a proposed Superfund project to be funded by the U.S. Environmental Protection Agency (EPA). This project is subject to the State intergovernmental review process. The 60 calendar day comment period on this proposed action will begin five days after the date of this letter. Please address any comments on the proposed action to Betsy Curnow, (T-4-2), Toxics and Waste Management Division, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105 and send a copy to Patti M. Post, (T-4-1). The project is outlined below.

1. Site Name: Montrose Chemical Corporation

2. Location of Site: Torrance, Los Angeles County, California

3. Site Rank: This site has been submitted by the State of California as a candidate for the National Priorities List (40 CFR Part 300, Appendix B) established by the U.S. Environmental Protection Agency pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (P.L. 96-510).

4. Nature of the Problem: Montrose Chemical Corporation manufactured the pesticide DDT from 1947 until 1982 resulting in contamination of soils, surface water and air. The site is located in a residential and commercial area. On May 6, 1983, EPA issued an Administrative Order to Montrose requiring the company to cease all discharges of DDT and to determine the nature and extent of contamination. A comprehensive EPA study is presently underway to determine all areas of contamination, both on and off-site, and its possible impact on public health and the environment.

EPA will accept public comment on the draft RI/FS work plan through June 30, 1984. Please address your comments to:

U.S. Environmental Protection Agency
Toxics & Waste Management Division
215 Fremont Street
San Francisco, California 94105
Attn: Alexis Strauss (T-4-2)

We look forward to working with the community on this project and completing the necessary remedial investigation and feasibility study for cleanup of the Montrose Chemical Corporation, Torrance, California facility.

In the meantime, please contact me at the above address or call me at (415) 974-8026 should you have any questions.

Sincerely,

Steve R. Drew

Steve R. Drew, Coordinator
Superfund Community Relations
Toxics & Waste Management Div.

Community repositories

Carson Public Library
Reference Desk
151 E. Carson Street
Carson, California 90745

Civic Center Library
Reference Desk
3031 Torrance Blvd.
Torrance, California 90503

5. Description of Proposed Activities: The proposed project is a Remedial Investigation/Feasibility Study. Portions of the Remedial Investigation (RI) may be conducted by Montrose Chemical Corporation. Based on the data from the RI, EPA will prepare a Feasibility Study (FS) to review the technical and institutional feasibility and comparative costs of clean-up alternatives. The FS work plan includes the following: identification and detailed evaluation of remedial alternatives; conceptual design of the selected alternative; development of a post-closure, long-term monitoring plan; and preparation of a preliminary and final FS report.

6. Community Relations Activities: Community relations activities have been conducted as part of this project to inform and receive comment from public officials and the affected communities. On January 3, 1984, EPA released for public review and comment a report of the Agency's review of a Montrose proposal to remedy DDT contamination at the site. The report was placed in local repositories for convenient access to the community. The four week public comment period included a public meeting held on January 30, 1984. Public notices of the meeting were published in two local newspapers. Future community relations activities will include the development and implementation of a Community Relations Plan which identifies key community issues and concerns, development of a mailing list of interested parties, distribution of press releases, speaking with concerned citizens' groups, preparing and distributing fact sheets, and holding public meetings.

7. Estimated Cost: $800,000.00

8. Projected Start Date: July 1, 1984

9. Projected Completion Date: December 1, 1985

10. State Contact: Angelo Bellomo, Toxic Substances Control Division, Department of Health Services, 107 S. Broadway, Room 7128, Los Angeles, CA 90012.

11. EPA Project Officer: Betsy Curnow, (T-4-2) Toxics and Waste Management Division, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105, (415) 974-8143.

As I have indicated, you will have 60 calendar days beginning five days after the date on this letter in which to submit your comments. However, I would very much appreciate hearing from

you at the earliest possible time so that we can proceed with the project work without any delays. Betsy Curnow, (415) 974-8143, of my staff is available to assist you during your review.

Sincerely,

John Wise

for Judith E. Ayres
Regional Administrator

cc: Angelo Bellomo, DOHS

BOE-C6-0179670

File
MIF c

2546

Memo: [illegible] 6/25

Re: [illegible] WORKPLAN FOR

Monitor [illegible] (Date [illegible] 1984)

On June 22 and 23 I [illegible] workplan submitted by METCALF & [illegible], INC. This [illegible] plan is comprehensive [illegible] the work to be done. The work [illegible] by this plan should be adequate to [illegible] and [illegible] mitigation [illegible].

[illegible] is [illegible] months. If a shorter [illegible], it would be better.

[illegible]

Montrose Chemical Corporation of California

One Metro Plaza (Suite 301)
505 Thornall Street • Edison, New Jersey 08837 • (201) 494-7522

April 4, 1984

Angelo Bellomo, Chief
Southern California Section
Toxic Substances Control Division
Department of Health Services
107 South Broadway, Room 7128
Los Angeles, California 90012

Re: Notice of Violation & Directive to Comply - Montrose Chemical, Torrance California

Dear Mr. Bellomo:

Montrose Chemical Corporation of California ("Montrose") received your letter dated March 26, 1984 regarding the above matter on March 30, 1984. Your letter states that the Department of Health Services ("DOHS") "has obtained evidence of contamination of the subject site by DDT and related waste chemicals" and further states that "such contaminants pose an immediate threat of off-site release of hazardous wastes."

We assume that the evidence you are referring to includes sampling results compiled by Montrose's consultants and submitted to EPA and the Los Angeles Regional Water Quality Control Board during the past year, along with the results of sampling previously compiled by various governmental agencies. However, Montrose does not agree that the contamination documented to date poses any threat of off-site release of hazardous waste, much less an immediate threat. Because of various interim remedial actions implemented by Montrose during the last year pursuant to the terms of EPA Order 83-01 and Regional Board Order 83-1 (including construction of a containment berm along the southern and eastern borders of the property, applying an asphaltic coating to the berm, and asphaltic coating of crushed material piles on-site), any threat of off-site release from the property has been abated on an interim basis while Montrose awaits final approval of its proposed remedial plan which was originally submitted to EPA and the Regional Board in September, 1983 and was further refined between that date and January, 1984.

Although your letter does not reference the statutory provisions under which the "Notice of Violation & Directive to Comply" is issued, Montrose reiterates that measures have been implemented for several months to prevent release of hazardous waste from the site. Moreover, the interim corrective measures referenced in your letter all have been complied with prior to Montrose's receipt of your letter. Specifically, Montrose has achieved compliance with Items a through f as listed in your letter as follows:

a. Requirement: Ensure compliance with the existing orders of the U.S. Environmental Protection Agency and the California Regional Water Quality Control Board, Los Angeles Region.

   Response: Since initial issuance of the existing orders in May, 1983, Montrose has complied with all aspects of these orders, including construction of interim containment measures to abate contaminated stormwater run-off from the site until capping can be completed, completion of a comprehensive sampling program to facilitate area characterization both on-site and off-site, and the submittal of a proposed remedial plan. Immediately upon receipt of final approval by EPA and the Regional Board of its proposed remedial plan, Montrose will implement its proposed long-term remedial plan on a timely basis. Although Montrose is prepared to proceed immediately with implementation of this plan, EPA and the Regional Board have not yet issued final approval, notwithstanding the fact that near complete agreement was reached on all major features of the on-site remedial plan in late January, 1984.

b. Requirement: Initiate immediate measures to maintain the site in a manner that prevents airborne release of fugitive dust potentially containing hazardous waste.

   Response: Immediately following a telephone conversation between yourself and David Mulliken, counsel for Montrose, on March 6, 1984, Montrose made arrangements to apply an asphaltic coating to the crushed material piles which are presently

on-site. This asphaltic cover was applied on March 16, 1984 and will eliminate any possibility of airborne release of fugitive dust from the piles. As soon as Montrose's on-site remedial plan is approved, these material piles will be leveled and graded into the crushed rock subbase to the cap which will cover the entire site.

c. Requirement: Provide 24-hour surveillance to assure compliance with item b.

Response: Surveillance and monitoring equipment is unnecessary to monitor airborne release of fugitive dust from the crushed piles, in view of the fact that the crushed piles are now completely coated with an impermeable material which will effectively supress any airborne release of fugitive dust.

d. Requirement: Immediately obtain representative samples of on-site piles of crushed rock to determine contamination by DDT and derivatives and report results within 10 working days from your receipt of this letter.

Response: Representative samples of the on-site piles of crushed rock were obtained as part of the sampling plan done by Montrose's consultants in August, 1983. Reports summarizing the results of this sampling were provided to EPA and the Regional Board in September, 1983. If EPA or the Regional Board has not already provided you with a copy of these sampling reports, please advise us and we will be happy to forward you an additional copy.

e. Requirement: Provide site access to representatives of this Department.

Response: Because crushing of concrete on-site was completed in early 1984, no further activity has occurred at the site, nor will anything further occur until work commences to complete the capping of the site. A locked and gated security fence is installed around the entire property, and contractor and security personnel no longer are at

the site to provide immediate access to DOHS representatives. However, Montrose will be happy to make necessary arrangements to facilitate DOHS access to the site within a reasonable time following any request for such access.

f. Requirement: Provide notification to this Department of any on-site activities at least 10 working days prior to commencement of such activities.

Response: As noted in the response to Requirement e above, no activity presently is occurring at the site, nor is any further activity anticipated until the long-term capping program is undertaken. In the event any presently unanticipated activities occur at the site prior to that time, advance notification will be given to DOHS by Montrose.

g. Requirement: Provide this office with a report of full compliance with items a thru f within 15 working days from your receipt of this letter.

Response: This letter constitutes Montrose's report of full compliance as requested.

Montrose hopes that this response to your letter will set the tone for a timely effort by all interested parties to expedite final review and approval of Montrose's proposed remedial plan at the site. Montrose firmly believes that the on-site remedial plan which EPA, the Regional Board and Montrose had agreed to in virtually all respects in late January represents the most environmentally sound and cost-effective solution to the on-site problem. Montrose believes it is extremely important to implement this on-site program promptly to ensure that completion of capping is not delayed by the onset of yet another rainy season. Approval of the on-site remedial program in turn should facilitate reaching an accord as to appropriate off-site remedial measures.

We trust that an early meeting can be arranged with yourselves and representatives of EPA and the Regional Board to resolve any remaining questions on our proposal for

on-site remedial measures. We look forward to your early response.

Very truly yours,

Samuel Rotrosen

Samuel Rotrosen, President
Montrose Chemical Corporation
of California

cc: Alexis Strauss
U.S EPA - Region IX

Bob Ghirelli
Regional Water Quality
Control Board

P.S. Please note Montrose Chemical Corporation of California's recent change of address.

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814

Meeting Summary
Del Amo Advisory Committee
March 26, 1984
Van Deene Elementary School
826 W. Javelin
Torrance, California

1. A "DEL AMO Chronology of Site" handout was distributed to those persons who attended this meeting. This handout contains history of the Del Amo site from 1942 to the present. A copy will be mailed, with this summary, to those Advisory Committee members who did not attend.

2. The status of the Community Health Study was presented by Dr. James W. Stratton and Gayle Windham, as follows:

   a. The survey will be written in English and Spanish. It will be forwarded to Dr. Kaye Kilburn for review.
   b. There is a Memorandum of Understanding with Cal State, Dominguez Hills to hire interviewers. The surveying is expected to begin in April, 1984.
   c. Del Amo, Montrose, and a control/study community will be surveyed.
   d. The surveying is expected to be finished in June, 1984, with an analysis and report of the results to be completed by the end of this year.
   e. Maggie Johnson, OPIP, requested that a copy of the survey, after the surveying is completed, be forwarded to OPIP for inclusion in OPIP's Del Amo community relations file.
   f. The USC cancer study is not yet complete.
   g. The 1970 and 1980 vital statistics (birth/death certificates) tapes are in now. Hopefully, the analysis will be completed by summer '84; however, the household survey will take a higher priority.
   h. Shell Oil Company has expressed an interest in having their epidemiologist involved in the health study. Stratton stated that DHS policy is not to hold up the study for any outside review. Jan Meyer agreed to contact Shell's attorney to follow up on this request.

3. A Del Amo site characterization status was given by Jan Meyer, as follows:

   a. The preliminary results from Cadillac Fairview's field work on Lot 36 property, conducted between 2/8/84 and 2/22/84, had not been received from Cadillac Fairview. Cadillac Fairview was not represented at this meeting to respond.
   b. Cadillac Fairview's Remedial Investigation report is due to DHS by the first of May, 1984. Jan Meyer will request that Cadillac Fairview give a presentation of this report at the next Advisory Committee meeting.

4. A "Proposed Sampling Program for Western Waste Property - Lot 37", draft, dated March 5, 1984, prepared by Jan Meyer, handout was distributed to those persons attending this meeting. A copy of this handout will also be enclosed with this summary for those Advisory Committee members who

did not attend this meeting. This draft is still being reviewed by DHS staff. Review and comment by Advisory Committee members was invited. The reason for this sampling plan is that post-cleanup samples showed contamination in the floor of the excavated pond (1A). It is now necessary to study the extent of this waste to see how much more cleanup is needed.

5. Nestor Acedera was not present to give the Montrose status report. Maggie Johnson obtained information from Nestor just prior to this meeting and presented the following:

   a. A Notice of Violation is being mailed out, today, to the owners of Montrose site, demanding that they comply on seven points, two of which are: 1) conduct a characterization of the site, including groundwater monitoring; 2) assure for the prevention of airborne emissions.
   b. This Notice signals DHS's involvement in Montrose.
   c. EPA had been considering encapsulation. DHS is now looking at the complete picture to study all problems and alternatives.

   A group discussion ensued with respect to how community relations and/or involvement should be handled for the Montrose site. Several attendees of this meeting indicated that a Montrose advisory committee, similar to Del Amo's, would be preferred. If this is selected, it was suggested that Del Amo and Montrose advisory committee meetings be coordinated, ie., same day, same place, separate agenda. OPIP representative, Maggie Johnson, stated that these suggestions will be considered.

5. A Potential Responsible Party meeting was held in Los Angeles on March 22, 1984. Details of these meetings will not be made public at this time.

6. Additional agenda items:

   a. Linnea Samanc heard that the water table is "quite contaminated", and wanted to know if this true. Jan Meyer responded with the fact that the data is not yet available from Cadillac Fairview. This data is not coming in to DHS as it is available; instead, Cadillac Fairview will present it all in their complete Remedial Investigation report.
   b. John Lewis, from L. A. Regional Water Quality Control Board, stated that he is replacing Eugene Ramstedt, from that same agency, on the Del Amo Advisory Committee.
   c. The next Del Amo Advisory Committee meeting is scheduled for May 23, 1984, Wednesday, at 10:00 a.m.

      Agenda items will include:
      Cadillac Fairview Remedial Investigation report
      Health Study Status

      Additional agenda items should be reported to Maggie Johnson at (916) 324-1789 by May 13, 1984.

DEL AMO

Chronology of Site

1942	Dow began construction of a propane cracking facility for the U. S. Government.
1945-1955	Existence of Disposal Area #2 (2A-2F).
1955	Shell Oil Purchased facility from Federal Government.
1955-1965	Existence of Disposal Area #1 (1A-1C).
1969	All ponds covered over by Shell Oil Company.
9/22/72	"Preliminary Site Investigation" prepared by Ken O'Brien & Assoc.for Cabot, Cabot & Forbes (included deep soil borings, but no chemical analyses).
1973	Shell Oil sold property to Cabot, Cabot & Forbes.
1979	Property sold to Cadillac Fairview (CF).
9/18/79	Geological report prepared by Sladden Engineering (no chemical analysis).
2/10/81	DHS inspection.

3/18/81	DHS inspection of facility, ponded surface water sampled.
4/28/81	Site sampled by CF (included deep soil borings across entire site).
9/9/81	Site sampled by CF (included deep soil borings and trenching across site).
2/1/82	DHS directed CF to prepare site report.
3/18/82	CF proposed groundwater monitoring program.
3/23/82	Western Waste Industries (WWI) submitted proposed cleanup plan for Pond 1A.
3/24/82	Meeting to discuss CF's and WWI's proposed cleanup plans; more information needed before proceeding.
4/8/82	DHS ranked site.
4/13/82	DHS approved proposed excavation plan.
5/5/82	DHS requested additional sampling and analyses.
5/7/82	Meeting to discuss site status and additional data needs.

6/2/82	Well #19 sampled for priority pollutants.
6/11/82	WWI submitted proposed sampling and testing plan to address additional data needs.
6/21-22/82	Site sampled by WWI and DHS (included deep soil borings and trenching).
9/20/82	WWI purchased Lots 12, 13, and 37 from CF.
11/2/82	Additional sampling by WWI and DHS (Pond 1A, Zones A-J).
12/10/82	WWI submitted to DHS "Safety Plan and Air Monitoring Program for the Planned Excavation of Site, Pond 1A".
12/27/82	DHS approved excavation plan for Pond 1A.
12/30/82	WWI began excavation of Pond 1A.
1/4/83	Site (Pond 1A, 1B) sampled by DHS and WWI.
1/12/83	DHS approved excavation of zones N & R in Pond 1B.
1/17/83	Excavation ceased in Pond 1A.

2/28/83	DHS requested additional sampling in Pond 1A.
3/22/83	Meeting to discuss completion of excavation of Pond 1A.
3/23/83	WWI prepared "Air Monitoring Activities During Excavation of 1A".
3/29/83	Southern California Air Quality Management Division (SCAQMD) did not approve of land farming, and continuation of excavation of Pond 1A did not require Rule 1150.
4/6/83	WWI continued to excavate Pond 1A.
4/14/83	WWI replaced berm between Pond 1A and Pond 1B.
4/15/83	DHS approved final cleanup plan for Pond 1A.
5/3/83	Site responsibility transferred to Superfund group.
5/12/83	Epidemiological Studies Section (ESS) became involved in site.
5/19/83	CF fenced and placed signs on site fence.
5/20/83	CF placed cover over site to minimize odors.
5/23/83	First odor complaint registered.

Meeting to discuss excavation status; need for soil cover.

6/1/83 DHS received complaints about unsafe working conditions during excavation activities.

WWI proceeded with excavation of Pond 1A (western portion).

6/7/83 Excavation ceased (western portion).

Pond 1A sampled by DHS and WWI.

6/8/83 Odor complaint registered.

6/9/83 Site visit by ESS and Superfund unit.

Public meeting held.

6/16/83 Odor complaint registered.

6/17/83 Odor complaint registered.

6/24/83 County Health and DHS perform backyard sampling.

6/26/83 Odor complaint registered.

6/27/83 WWI began excavation.

Two odor complaints registered.

Excavation stopped.

Dominquez Water Corporation sampled fire hydrant water adjacent to site.

6/28/83 Odor complaint registered.

6/29/83 WWI responded to odor complaints.

7/1/83 Meeting held to discuss status of excavation.

7/17/83 SCAQMD responded to odor complaints.

7/19/83 DHS outlined inadequacies of WWI excavation plan.

7/25/83 Meeting to discuss proposed WWI sampling plan for Lots 12, 13, and 37 (Pond 1A).

8/8/83 CF supplied chain of title documents to DHS.

8/12/83 DHS responded to citizen inquiries.

8/23/83 Conference call with citizens to discuss site status.
Site data sent to EPA.

8/31/83 WWI submitted revisions to sampling plan.

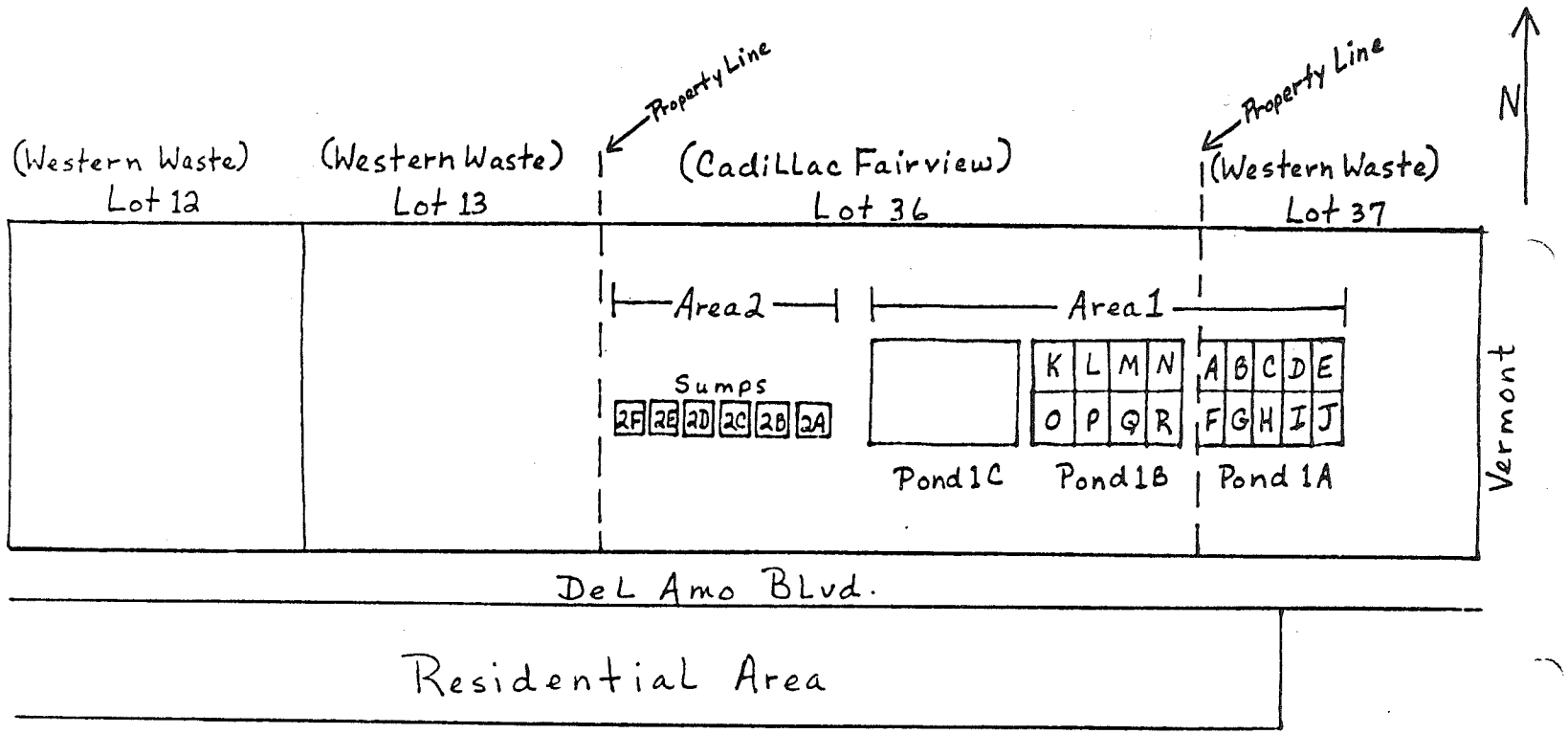
9/16/83	DHS requested additional revisions on WWI's sampling plan.
9/19/83	WWI responded to DHS comments.
9/26/83	DHS outlined data needs, procedures for sampling.
9/29/83	WWI responded.
10/5/83	Site, Lot 12, 13, and 37, sampled by WWI and DHS (deep soil borings).
10/7/83	DHS sent Potential Responsible Party (PRP) letters.
10/17/83	DHS requested Environmental Protection Agency (EPA)/Field Investigation Team (FIT) assistance.
10/20/83	DHS met with CF to discuss site characterization study.
10/22/83	DHS sent PRP letters.
11/8/83	CF submitted site characterization proposal to DHS. CF submitted draft lawsuit to DHS for review.
11/11/83	EPA/FIT prepared "Hydrogeological Assessment" of site.

11/14/83	DHS received complaints about site security/gate.
12/7/83	Meeting to discuss site status.
12/12/83	CF filed lawsuit against PRPs.
12/14/83	DHS performed backyard sampling.
12/19/83	First Del Amo Advisory Committee Meeting.
1/5/84	DHS approved CF site characterization study.
1/18/84	Meeting to discuss additional excavation of Pond 1A.
1/25/84	Lots 12, 13 given approval by DHS; DHS requested further excavation of Pond 1A.
2/2/84	Second Del Amo Advisory Committee Meeting.
2/13/84	Additional excavation at Pond 1A; sampling of Pond 1A by DHS and WWI.
2/15-28/84	CF began site characterization study on Lot 36.

2/22/84	DHS sent PRP letters.
3/5/84	CF lawsuit dismissed.
3/22/84	First PRP meeting held.
3/26/84	Third Del Amo Advisory Committee Meeting.

BOE-C6-0179687

DEL AMO Site Map



NOTE: Well #19, referenced on p.3 (6/2/82) of "Chronology" is located 1.75 miles southeast of the Del Amo site on Carson Street in the city of Carson.

BOE-C6-0179688

MONTROSE MEETING

3/12/84

DHS - Rm 1101

NAME	AFFILIATION	PHONE
A. BELLOMO	SDOHS/TSCD	6202380
N. [illegible]	" "	"
J. SMITH	" "	"
E. BENNETT	SCAQMD	(818) 572-6195
[illegible]	[illegible]	744-3435
D. GILDERSLEEVE	CRWQCB, LA	(213) 620-4460
[illegible] A. SCHINAZI (CONTACT)	CRWQCB, LA	(213) 620-4460
Betsy Curnow	EPA	(415) 974-8143
[illegible]	EPA	415 9748915

M/F-A-2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: February 27, 1984

SUBJECT: Montrose Chemical Co.-Reasons for high HRS score

FROM: Jeff Rosenbloom

TO: Keith Takata

The HRS score of 31.74 for Montrose Chemical Company is largely due to three factors:

1) I contacted the MITRE Corporation to see how they rate the toxicity and persistence of DDT. Andy Platt stated that DDT should receive a maximum score for both toxicity and persistence. Other toxicological sources such as SAX do not give DDT such a high rating, but MITRE is the final word on all HRS factors.

2) The Metcalf and Eddy report had a well defined hazardous waste quantity. This quantity was greater than originally calculated.

3) I stated that the Silverado Aquifer, which underlies the site, is an aquifer of concern since the Dominguez Water Corporation taps this aquifer as a source of drinking water. Although this aquifer is 400 feet below the surface, the potential for groundwater contamination exists and must be scored.

The highest scoring pathway is the Air route. The HRS model is not limited to the present site status, but can include previous activities such as air sampling in 1974 that indicated very high DDT aerial fallout.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION
107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012-4596
(213) 620-4460

GEORGE DEUKMEJIAN, Governor

February 10, 1984

U.S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, CA 94105

ATTN: Mr. Keith Takata

Gentlemen:

This is in reference to your telephone conversation with Dr. L.A. Schinazi on February 10, 1984, regarding the status of future action on the EPA and Regional Board's enforcement Orders on Montrose Chemical Corporation.

We met with Department of Health Services (DOHS) staff on February 10 to discuss mutual concerns stemming from comments presented at the EPA public hearing in Torrance on January 30, 1984. It is our understanding that DOHS will be submitting comments to you shortly on Montrose's proposal for capping, evaluation of off-site contamination by aerial fallout, and the analysis of the community's drinking water.

We recommend a meeting of our respective agencies at the earliest date so that we may 1) incorporate any new findings in an overall reassessment of the Montrose proposal for mitigation of DDT contamination on and off their property, and, 2) develop a coordinated plan for enforcement actions.

Please give me a call to arrange a mutually convenient meeting date.

Sincerely,

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

cc: Los Angeles Regional Board Members
Department of Health Services, Toxic Substances Control Div. A. Bellomo
Department of Health Services, Sanitary Engineering Section - G. Yammoto
State Water Resources Control Board
Office of Chief Counsel, Kathie Keter
Div. of Technical Services, Ed Anton

BOE-C6-0179691

2-8-84 M/F-C

Montrose

ED BONNETT (AQMD) said RWQCB has made Tap water tests for DDT.

RWQCB Rm. 4027

CONTACT ROY

EPA TOM SOVERINE

BOE-C6-0179692

M/F-C

3/1/84

		Location
Sample 1	C10430 C10429	1181 204th R. Ortiz
Sample 2	C10431 C 32	965 204th
Sample 3	33 34	20439 Kenwood
Sample 4	35 36	1510 Del Amo Blvd
Sample 5	37 38	1502 204th St
Sample 6	39 40	1609 Del Amo Blvd.

Resident indicated probable main break last weekend.

sample cloudy

M/F-A-2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

February 3, 1984

Angelo Bellomo
Toxic Substances Control Division
Department of Health Services
107 S. Broadway, Room 7128
Los Angeles, CA 90012

Dear Mr. Bellomo:

Thank you for meeting with us to discuss the Montrose site prior to our public meeting. Although I am concerned by the late timing of your involvement, I am sure that DOHS' participation will result in a clean up that meets the needs of all parties.

Based on our discussions and your statements at the public meeting, it is my understanding that DOHS will:

1. Send comments on Montrose's proposal for capping to both EPA and Montrose by mid-February;

2. Meet with EPA within the next few weeks to discuss our roles in the Montrose cleanup;

3. Evaluate the broader problem of the effects of DDT aerial fallout; and

4. Obtain analytic data for the community on water at the tap.

We look forward to working with you to finalize the cleanup plans at Montrose.

Please also extend our thanks to Jim and Nestor for their participation in the meeting.

Sincerely,

Keith A. Takata

Keith Takata
Chief, Superfund Programs Branch

cc: T. Bailey
CA DOHS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

ANNOUNCEMENT OF PUBLIC MEETING

On January 3, 1984, EPA Region 9 released for public review a report of the Agency's review of the remedial measures proposed by Montrose Chemical Corporation to remedy DDT contamination at its Torrance, California, facility.

EPA Region 9 will conduct a public meeting on Monday, January 30, at 6:30 p.m., to discuss its review, answer questions, and receive formal comment. The meeting will be held in the 2nd floor Board Room of the Torrance School District Educational Materials Building, at 2335 Plaza Del Amo, Torrance, CA 90509.

Copies of this report are available for review at the Carson Public Library in Carson, the Civic Center Library in Torrance, and the Toxic Substances Control Division (room 7128) of the Department of Health Services, at 107 South Broadway in Los Angeles.

Please direct any questions to Alexis Strauss, Chief of the Enforcement Section (T-4-2), at the address above, or call 415-974-8915.

STATE OF CALIFORNIA—HEALTH AND WELL AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 324-3773

JAN 5 1984

Mr. Fredrick L. Stephens, Jr.
Senior Vice President-Industrial Division
Cadillac Fairview, U.S. Western Region, Inc.
1800 Avenue of the Stars, Suite 730
Los Angeles, CA 90067

Dear Mr. Stephens:

Staff has reviewed Dames and Moore's responses to the comments made by the Department and Environmental Protection Agency's contract consultant regarding the Site Investigation and Remedial Action Study for the Del Amo Site and has concluded that the responses adequately address the Department's concerns. Therefore, I am approving the Dames and Moore proposal, subject to incorporation of our previous comments.

Be aware however, that contact with the South Coast Air Quality Management District indicates that a Rule 1150 permit must be issued by that agency prior to any site disturbance activities, i.e., waste/soil borings. Mr. Ed Bonnett of the District can be contacted at (213) 572-6195 for further information on this requirement.

As you are aware, the Department is committed to a strong public participation program at this and other hazardous waste sites. In this regard, you should plan to bring to the Del Amo Site Advisory Committee for discussion at appropriate times, your plans and proposals for key phases of the project and results as they are compelled. Fred Turner of our Office of Public Information and Participation will be assisting in arranging these meetings.

The proposed implementation schedule for the study is encouraging. To ensure that the study proceeds in a timely manner, Ms. Jan Meyer of my staff is available to assist [illegible] needed at (916) [illegible].

Sincerely,

[illegible], Chief
[illegible]

cc: See attached list

BOE-C6-0179696

cc: Tom Vickers
Dames & Moore
812 Anacapa St., Suite A
Santa Barbara, CA 93101

Ken Strom, Radian Corporation
3401 La Grande Blvd.
Sacramento, CA 95823

Tom Severins
EPA, Region IX
215 Fremont Street
San Francisco, CA 94105

Ed Bonnett
South Coast Air Quality Management District
9150 Flair Drive
El Monte, CA 91731

Del Amo Site Advisory Committee

BOE-C6-0179697

Nestor 36158 36115.1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Hazardous Materials Management Section
JAN 05 1984
California Department of Health Services
LOS ANGELES

08 JAN 1984

TO: ADDRESSEES

RE: MONTROSE CHEMICAL CORPORATION, TORRANCE, CA.

Enclosed for your review is a report of the results of EPA's review of the remedial measures proposed by Montrose Chemical Corporation to remedy DDT contamination at its Torrance, California, facility.

We will accept comments on this report until Monday, January 23. If interest is expressed in holding a public meeting, EPA will schedule a meeting for January 23, 1984, in the vicinity of the facility. Additional copies of this report are available at the following repositories.

1) Carson Public Library
Reference Desk
151 E. Carson St.
Carson, CA 90745
213-830-0901

2) Civic Center Library
Reference Desk
3031 Torrance Blvd.
Torrance, CA 90503
213-618-5959

3) Toxic Substances Control Division
Dept. of Health Services
107 South Broadway, Room 7128
Los Angeles, CA 90012
213-620-2380

Please forward any comments to Alexis Strauss, Chief of the Enforcement Section (T-4-2), at the address above, or call 415-974-8915.

Sincerely yours,

Harry Seraydarian

Harry Seraydarian
Director
Toxics & Waste Management Division

Enclosure

Raymond Hertel
Regional Water Quality Control Board
107 S. Broadway, Rm. 4027
Los Angeles, CA 90012

David W. Long
Southern Pacific Transportation Company
Southern Pacific Building
One Market Plaza
San Francisco, CA 94105

Farmers Brothers Coffee Co.
20333 S. Normandie Ave.
Torrance, CA 90502

John Mitchell
Los Angeles County Flood Control District
2250 Alcazar Street
Los Angeles, CA 90033

John Schumann
City of Los Angeles
Department of Water and Power
111 North Hope Street
Los Angeles, CA 90012

William Garber
City of Los Angeles
Bureau of Sanitation
Rm. 1410, City Hall East
200 N. Main Street
Los Angeles, CA 90012

Angelo Bellomo
Toxic Substances Control Division
Department of Health Services
107 S. Broadway, Room 7128
Los Angeles, CA 90012

Jim Steele
California Department of Fish and Game
Marine Research
245 West Broadway
Suite 350
Long Beach, CA 90802

Kathy Keber
State Water Quality Control Board
P.O. Box 100
Sacramento, CA 95801

BOE-C6-0179699

Tom Bailey
Toxic Substances Control Division
Department of Health Services
714/744 P Street
Sacramento, CA 95814

City of Torrance
3031 Torrance Blvd
Torrance, CA 90503
Attn: City Attorney

Willard Bascom
Southern California Coastal Water Research Project
646 W. Pacific Coast Highway
Long Beach, CA 90806

Carl Sjoberg
Los Angeles County Engineer
Sanitation Division
550 S. Vermont Ave.
Los Angeles, CA 90020

Mel Schreckengoust
South Coast Air Quality Management District
9150 Flair Drive
El Monte, CA 91731

L. Hearne
Los Angeles County Department of Health Services
Bureau of Environmental Protection
313 N. Figueroa
Los Angeles, CA 90012

Calvin Hurst
Port of Los Angeles
Environmental Analysis Section
P.O. Box 151
San Pedro, CA 90733

Linnea Samanc
1129 West 204th Street
Torrance, CA 90502

Barry Groveman
Deputy City Attorney
1700 City Hall East
200 North Main Street
Los Angeles, CA 90012

Mr. Kenneth Hahn
Supervisor, County of Los Angeles
500 W. Temple Street, Room 866
Los Angeles, CA 90012

BOE-C6-0179700

STATE OF CALIFORNIA—HEALTH AND WELFAR ENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 324-1826

September 26, 1983

HS 10/25

Hazard.
SEP 30 1983
California
of Health
LOS ANGE

Mr. Ralph S. Tufenkian
Vice President-Corporate Projects
Western Waste Industries
19803 S. Main Street
Carson, CA 90745-1096

Dear Mr. Tufenkian:

Staff has reviewed your letter dated September 19, 1983, which was to have addressed the Department's concerns, as expressed in our August 5 and September 16, 1983, letters, regarding the sampling program scheduled for the week of September 26, 1983, at the Cadillac-Fairview site. Again, the information submitted did not adequately address several issues, primarily site safety and QA/QC.

In order to eliminate further delays and communication difficulties, I am recommending to you the enclosed minimum procedures to be followed by your consultant and subcontractors. Without adherence to these, or equivalent protocols and procedures, you will not be able to provide the Department with the data necessary to ensure a successful and safe cleanup. Further, these procedures will aid in eliminating the unsafe working conditions which, in part, caused the Department to order cessation of activities at the site.

While I cannot stress strongly enough that the Department wishes to cooperate with Western Waste Industries to achieve a timely cleanup of the site, there are certain issues which cannot be compromised. Only if representative data is gathered in a safe, controlled matter can the Department evaluate WWI's deed restriction option clearly in a fully informed manner.

We have gone beyond the detail normally provided to contractors and consultants in providing direction. It is not our role to design the procedures you must meet. It should be the responsibility of your consultant. We have been very specific in what you need to do to proceed. To fulfill our commitment of cooperation, we have included for your consideration specific requirements, that respond to your letter date August 31, 1983, and that when implemented in concert with our previous requirements, will enable you to proceed. When you are prepared to fully implement the steps and procedures we have discussed with you and your consultant we are ready to participate in our role in the field activities. As soon as you can ensure that all procedures will be followed as specified since our first meeting on July 25, 1983, we will have someone in the field.

If you or your consultant have any further questions regarding this letter, feel free to contact Ms. Jan Meyer of my staff at (916) 324-2437 or Mr. Tom Bailey at (916) 324-3773.

Sincerely,

Richard P. Wilcoxon, Chief
Toxic Substances Control Division

Enclosure

cc: Ed Wilson, Lab Director
Brown & Caldwell
373 South Fair Oaks Avenue
Pasadena, CA 91105

Dr. Ken Hekemian
2207 Orangewood Avenue
Orange, CA 92668

L.A. Reg. office

FILE: CADILLAC - FAIRVIEW

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES

714/744 P STREET
SACRAMENTO, CA 95814

(916) 324-1793

OCT 17 1983

OCT 24 1983

OCT 18 1983

Mr. John W. Whitaker
Lillick McHose & Charles
707 Wilshire Blvd.
Los Angeles, CA 90017

Dear Mr. Whitaker:

This is in response to your letter of October 11, 1983, in which you request confirmation of nonapplicability of Section 25232, Health and Safety Code to your client's proposed project near Torrance, California.

The non-residential type construction proposed (office complex) is not a restricted land use pursuant to Section 25232.

Sincerely,

Lloyd A. Bathan, III
Site Cleanup and Emergency
Response Section
Toxic Substances Control Division

Enclosure

bcc: Tom Bailey
Reed Sato
Angelo Bellomo

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 324-1793

AUG 9 1983

AUG 15 1983
LOS ANGELES

Mr. Jake Shirvanian
Western Refuse Hauling
19803 S. Main Street
Carson, CA 90745

Dear Mr. Shirvanian:

On August 17, 1982, we asked you to confirm in writing that you wished to request a determination as to whether property known as lots 12, 13, 36, and 37 in Torrance, California might be determined to be hazardous waste property or border zone property. Portions of this property are owned by Cadillac-Fairview.

Since we have not received this written confirmation, we have removed your request from our list of requests for determination. This action should in no way affect any site cleanup activities which are either planned or in progress.

In the future, if you wish to request a determination on all or part of this property, you may notify us in writing. If you have any questions about this procedure, please feel free to call me at (916) 324-1801.

Sincerely,

Lloyd A. Batham, III
Hazardous Waste Property
Evaluation Unit
Site Cleanup and Emergency
Response Section

Certified Mail No. P 292 919 527

bcc: Thomas E. Bailey
Site Cleanup and Emergency
Response Section

John Hinton
Regional Administrator
Los Angeles Regional Office

Reed Sato
Office of Legal Services

United States
Environmental Protection
Agency

Regional Administrator
215 Fremont Street
San Francisco CA 94105

Region 9
Arizona, California
Hawaii, Nevada
Pacific Islands

EPA

CERTIFIED MAIL - RETURN RECEIPT REQUESTED 0208420

June 7, 1983

Hazardous Waste Management
JUN 23 1983
California Department of Health Services
LOS ANGELES

Mr. Samuel Rotrosen
Montrose Chemical Corporation
2401 Morris Avenue
P.O. Box E
Union, New Jersey 07083

Subject: EPA CERCLA §106/RCRA §3013 Order 83-01

Dear Mr. Rotrosen:

I am writing to confirm agreements reached with you concerning the above referenced Order at our meeting on May 24, 1983, and to confirm telephone discussions held among counsel subsequent to our meeting. The agreements reached at the May 24 meeting are the following:

1. By June 24, 1983, Montrose will submit to EPA a proposal which will describe in detail the plans that you have implemented and intend to implement to fully comply with Section I of the Order.

2. By June 24, 1983, Montrose will also submit to EPA a Proposal to conduct a comprehensive sampling and analysis program to fully comply with Section II-A of the Order. Under EPA's Order, Montrose was to comply with Section II-A on June 10, 1983, thirty days after the effective date of the Order. This fourteen day extension of time represents the only change with respect to Section II of the Order.

The items listed above are the only items to which all parties agreed on May 24, 1983. The topics discussed below confirm discussions among counsel held subsequent to the May 24 meeting.

Hazardous Waste Management Branch
JUN 14 1983
Department of Health Services
SACRAMENTO

EPA will complete its review and provide written comments on the proposal described in number one above by July 11, 1983. Montrose shall then complete the work under its proposal by August 11, 1983.

In order to be considered adequate, the sampling program described in number two above must, at a minimum, contain the following:

On-Site Sampling

a) At our meeting, you stated that recent site excavation has removed the most highly contaminated material from unpaved areas of the site. However, this program must include a sufficient amount of on-site sampling throughout the entire site in order to confirm your representation that only low concentrations remain at the site.

Stormwater Drainage Sampling

b) The program will include off-site sampling and analysis of the area southeast of your facility along the existing stormwater drainage pathway in order to determine what additional remedial measures are required to remedy the contamination which presently exists.

c) Additional sampling will be performed in the areas adjacent to your property to support your contention that contamination is limited to your property and the stormwater ditch.

By agreeing to the items described above, neither EPA nor Montrose has waived any legal rights or remedies which may be available to either party under EPA Order 83-01.

Please be advised that, except for the agreements above, EPA's Order 83-01 remains intact. If you have any questions, please contact Tom Severino of my staff at (415) 974-8136 or Ken Ramirez of EPA's Office of Regional Counsel at (415) 974-7451.

Sincerely,

John Wise

John Wise
Acting Regional Administrator

cc: Tony Garvin, Esq.
LANDELS, RIPLEY & DIAMOND
Attorneys at Law
450 Pacific Avenue
San Francisco, CA 94133

Mr. Raymond M. Hertel
Executive Officer
California Regional Water
Quality Control Board
107 South Broadway, Ste. 4027
Los Angeles, CA 90012-4596

David Mulliken, Esq.
LATHAM & WATKINS
Attorneys at Law
701 B Street, Ste. 2100
San Diego, CA 92101-8197

KRR#1-21/wmd/6/7/83

BOE-C6-0179707

MAY 1983

Los Angeles County Flood Control
District
2250 Alcazar Street
Los Angeles, CA 90033

Dear Sir/Madam:

The Environmental Protection Agency (EPA) Region 9 has investigated an ongoing release of DDT, a hazardous substance as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), from Montrose Chemical Corporation of California's facility (hereinafter "the facility") located at 20201 South Normandie Avenue, Torrance, California. This release may impact adjacent property which is owned or operated by Los Angeles County Flood Control District.

Contaminated stormwater leaves the Montrose facility to the southeast via a storm ditch, enters a catch basin at Farmers Brothers Coffee and a storm drain system at Normandie Avenue, flows through the Torrance Lateral Flood Control Channel to Dominguez Channel, Los Angeles Harbor and San Pedro Bay. In addition, EPA has found DDT contamination in soils on-site and off-site from the facility.

On May 6, 1983, EPA issued an order requiring Montrose to implement measures to eliminate the release of DDT from the facility, establish an on-site and off-site monitoring program to analyze stormwater runoff for DDT, and assess the full extent of water and soil contamination resulting from the continued [illegible] from the facility.

To facilitate this action, EPA requests Los Angeles Flood Control District to allow Montrose access or right of entry to property to assess the extent of [illegible] contamination and to [illegible].

[illegible] Inspection Report which [illegible].

BOE-C6-0179708

We appreciate your cooperation this matter. If you have any questions please contact Tom Severino at (415)974-8136 or have your attorney contact Kenneth Ramirez in our Office of Regional Counsel (415)974-7451.

Sincerely yours,

Harry Seraydarian
Director
Toxics & Waste Management Division

cc: Samuel Petrosun, Montrose Chemical Corporation California
John Kailok, Montrose Chemical Corporation of California
R. Wilcoxon, California Dept of Health Services
Regional Water Quality Control Board, Los Angeles
Jim Steele, California Dept. of Fish and Game

BOE-C6-0179709

City of Los Angeles
Department of Water and Power
111 North Hope Street
Los Angeles, CA 90012

Dear Sir/Madam:

The Environmental Protection Agency (EPA) Region 9 has investigated an ongoing release of DDT, a hazardous substance as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), from Montrose Chemical Corporation of California's facility (hereinafter "the facility") located at 20201 South Normandie Avenue, Torrance, California. This release may impact adjacent property which is owned or operated by the City of Los Angeles.

Contaminated stormwater leaves the Montrose facility to the southeast via a storm ditch, enters a catch basin at Farmers Brothers Coffee and a storm drain system at Normandie Avenue, flows through the Torrance Lateral Flood Control Channel to Dominguez Channel, Los Angeles Harbor and San Pedro Bay. In addition, EPA has found DDT contamination in soils on-site and off-site from the facility.

On May 6, 1993, EPA issued an order requiring Montrose to implement measures to eliminate the release of DDT from the facility, establish an on-site and off-site monitoring program to analyze stormwater runoff for DDT, and assess the full extent of water and soil contamination resulting from the continued release of DDT from the facility.

To facilitate this action, EPA requests that the City of Los Angeles allow Montrose access or right of entry to your property to assess the extent of DDT contamination and to conduct necessary remedial activities.

Attached please find a copy of EPA's inspection report which [illegible] the extent of contamination in the vicinity of the Montrose facility.

BOE-C6-0179710

We appreciate your cooperation this matter. If you have any questions please contact Tom Severine at (415)974-8136 or have your attorney contact Kenneth Ramirez in our Office of Regional Counsel (415)974-7451.

Sincerely yours,

Original Signed by

Barry Seraydarian
Director
Toxics & Waste Management Division

cc: Samuel Rotrosen, Montrose Chemical Corporation California
John Pallok, Montrose Chemical Corporation of California
R. Wilcoxon, California Dept of Health Services
Regional Water Quality Control Board, Los Angeles
Jim Steele, California Dept. of Fish and Game

BOE-C6-0179711

11 MAY 1983

Southern Pacific Transportation
Co., Inc.
One Market Plaza
San Francisco, Ca 94105

Dear Sir/Madam:

The Environmental Protection Agency (EPA) Region 9 has investigated an ongoing release of DDT, a hazardous substance as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), from Montrose Chemical Corporation of California's facility (hereinafter "the facility") located at 20201 South Normandie Avenue, Torrance, California. This release may impact adjacent property which is owned or operated by the Southern Pacific Transportation Co., Inc.

Contaminated stormwater leaves the Montrose facility to the southeast via a storm ditch, enters a catch basin at Farmers Brothers Coffee and a storm drain system at Normandie Avenue, flows through the Torrance Lateral Flood Control Channel to Dominguez Channel, Los Angeles Harbor and San Pedro Bay. In addition, EPA has found DDT contamination in soils on-site and off-site from the facility.

On May 6, 1983, EPA issued an order requiring Montrose to implement measures to eliminate the release of DDT from the facility, establish an on-site and off-site monitoring program to analyze stormwater runoff for DDT, and assess the full extent of water and soil contamination resulting from the continued release of DDT from the facility.

To facilitate this action, EPA requests the Southern Pacific Transportation Co., [illegible] to [illegible] property [illegible] contamination and to [illegible].

[illegible] the action report which [illegible] facility.

BOE-C6-0179712

We appreciate your cooperation this matter. If you have any questions please contact Tom Severino at (415)974-8136 or have your attorney contact Kenneth Ramirez in our Office of Regional Counsel (415)974-7451.

Sincerely yours,

Original Signed by

Harry Seraydarian
Director
Toxics & Waste Management Division

cc: Samuel Rotrosen, Montrose Chemical Corporation California
John Kallok, Montrose Chemical Corporation of California
R. Wilcoxon, California Dept of Health Services
Regional Water Quality Control Board, Los Angeles
Jim Steele, California Dept. of Fish and Game

BOE-C6-0179713

11 MAY 1983

Farmers Brothers Coffee
20323 S. Normandie Ave.,
Torrance, CA 90502

Dear Sir/Madam:

The Environmental Protection Agency (EPA) Region 9 has investigated an ongoing release of DDT, a hazardous substance as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), from Montrose Chemical Corporation of California's facility (hereinafter "the facility") located at 20201 South Normandie Avenue, Torrance, California. This release may impact adjacent property which is owned or operated by Farmers Brothers Coffee.

Contaminated stormwater leaves the Montrose facility to the southeast via a storm ditch, enters a catch basin at Farmers Brothers Coffee and a storm drain system at Normandie Avenue, flows through the Torrance Lateral Flood Control Channel to Dominguez Channel, Los Angeles Harbor and San Pedro Bay. In addition, EPA has found DDT contamination in soils on-site and off-site from the facility.

On May 6, 1983, EPA issued an order requiring Montrose to implement measures to eliminate the release of DDT from the facility, establish an on-site and off-site monitoring program to analyze stormwater runoff for DDT, and assess the full extent of water and soil contamination resulting from the continued release of DDT from the facility.

To facilitate this action, EPA requests that Farmers Brothers Coffee allow Montrose access or right of entry to your property to assess the extent of the contamination and to conduct necessary response activities.

[illegible]

BOE-C6-0179714

We appreciate your cooperation this matter. If you have any questions please contact Tom [illegible] at [illegible] or have your attorney contact [illegible] in our Office of Regional Counsel [illegible].

Sincerely yours,

Original Signed by:

[illegible]
Director
Toxics & Waste Management Division

cc: Arnold [illegible], Montrose Chemical Corporation California
Jobe Kellog, Montrose Chemical Corporation of California
[illegible], California Dept of Health Services
Regional Water Quality Control Board, Los Angeles
Jim [illegible], California Dept. of Fish and Game

BOE-C6-0179715

RECEIVED

MAY 16 1983

TOXIC SUBSTANCES
CONTROL DIVISION

[illegible] MAY 1983

City of Los Angeles
[illegible]
[illegible]
[illegible]
Los Angeles, [illegible]

[illegible]

The Environmental Protection Agency (EPA) Region 9 has [illegible] a hazardous substance [illegible] under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), from [illegible] Chemical Corporation of California's facility (hereinafter "the facility") located at [illegible] South Normandie Avenue, Torrance, California. This release may impact adjacent property which is cared or operated by the City of Los Angeles.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

BOE-C6-0179716

We appreciate your cooperation this matter. If you have any questions please contact Tom Severino at (415)974-8136 or have your attorney contact Kenneth Ramirez in our Office of Regional Counsel (415)974-7451.

Sincerely yours,

Original Signed by:

Barr, Seraydarian
Director
Toxics & Waste Management Division

cc: Samuel Petrosen, Montrose Chemical Corporation California
John Kallok, Montrose Chemical Corporation of California
S. Wilcoxon, California Dept of Health Services
Regional Water Quality Control Board, Los Angeles
Jim Steele, California Dept. of Fish and Game

2592

MONTROSE

M/F-A-1

GEORGE DEUKMEJIAN,
XXXXXXXXXXXXXXXXXX Governor

STATE OF CALIFORNIA—~~RESOURCES AGENCY~~

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

May 6, 1983

CERTIFIED NO. 838417

Montrose Chemical Corporation of California
P.O. Box E
Union, New Jersey 07083

Gentlemen:

Recent analyses of samples of rainwater runoff from your facility and affected soil samples from adjacent property have revealed the presence of dichloro diphenyl trichlorethane (DDT) in concentrations as high as 1,410 parts per billion (ppb) in water and 8,274 parts per million (ppm) in soil. Rainfall runoff from your property drains to Dominguez Channel and Los Angeles Harbor, waters of the State, and the release of such concentrations of this hazardous substance poses a substantial threat to the public health and to the environment.

Enclosed is a Clean Up and Abatement Order requiring you to (1) immediately cease the discharge of DDT-contaminated stormwater from your property, (2) conduct a sampling program to determine the extent of DDT contamination in soils at your facility and adjacent property, and (3) implement a remedial program to eliminate the contamination which has resulted from the release of DDT from your facility.

The Order calls for reports to the Board giving the details of the ordered work, and specifies that approval of the Executive Officer is required for each phase of the clean up and abatement process.

Very truly yours,

Raymond M. Hertel

RAYMOND M. HERTEL
Executive Officer

cc: See attached mailing list

Montrose Chemical Corporation of California
P.O. Box 147
Torrance, California 90507

CERTIFIED NO. 838418

ATTENTION: Mr. John L. Kallok, Plant Manager

Enclosure

Attached mailing list

cc: Montrose Chemical Corporation of California,
ATTN: Mr. John L. Kallok, Plant Manager
Environmental Protection Agency, Regional Administrator,
ATTN: Toxics and Waste Management Division
Environmental Protection Agency, ATTN: Kathleen Shimmin
Department of Fish and Game, Region 5, ATTN: Mr. Fred Worthley
Department of Fish and Game, Marine Resources Region, ATTN: Mr. John Baxter
City of Torrance, ATTN: City Attorney
City of Los Angeles, Bureau of Sanitation
Coastal Commission, South Coast District
Los Angeles Regional Board Members
State Water Resources Control Board, Executive Office
ATTN: Mr. Clint Whitney, Executive Director
State Water Resources Control Board, Office of the Chief Counsel
ATTN: Mr. William R. Attwater
ATTN: Mr. Craig Wilson,
ATTN: Mrs. Kathy Keber
Attorney General
Air Resources Board
Governor's Office
Los Angeles County Engineer, Sanitation Division
Department of Water Resources, Attn: Mr. R. Y. D. Chun
Department of Health Services, ATTN: Mr. John Hinton, Los Angeles
Department of Health Services, Berkely
Los Angeles County Health Services
Los Angeles County Flood Control District, ATTN: John Mitchell

BOE-C6-0179719

State of California

Memorandum

To : Richard P. Wilcoxon
Acting Deputy Director
Toxic Substances Control Division

Via : Angelo Bellomo, Acting Chief
Permits, Surveillance and
Enforcement Section

Via : John A. Hinton, P.E.
Regional Administrator
Southern Region
Permits, Surveillance and
Enforcement Section

From : Permits, Surveillance and
Enforcement Section
Southern Region

Date : May 12, 1983

Subject: Need for Epidemiological Study in Vicinity of Cadillac-Fairview Site

In recent days staff of this office have been contacted by residents of the area neighboring the Cadillac-Fairview site, currently the highest ranked site in southern California on the State Superfund List. These citizens are concerned about the adverse health effects that might be associated with living adjacent to the site. Media attention that was recently focused on the site and nearby residents has served to magnify the citizens' concerns.

Since no health studies that we are aware of have been conducted in the area, our staff cannot adequately answer citizen inquiries as to whether their health was or is being affected by the wastes deposited in Cadillac-Fairview. In addition, the presence of other industries in the area may also have contributed to adverse health effects, if any. Therefore, an extensive epidemiological study is needed to determine whether a health hazard exists or not, and if a health hazard exists, whether it is solely related to the waste deposits in Cadillac-Fairview or if it is due to some other sources of contamination.

Attention should be called to the fact that heavy industries associated with atmospheric pollution are situated upwind (to the northwest) of the Cadillac-Fairview area. Chief among those currently operating is a large oil refinery. In addition, the Montrose Chemical Plant, which was a major producer of DDT, is immediately to the northwest of Cadillac-Fairview. Attached for your review is a report of the Southern California Coastal Water Research Project (SCCWRP) dated March 11, 1975. That report states that high levels of DDT fallout were detected in the vicinity of the Montrose Plant. Recent EPA sampling at the site has shown that nearby soil is contaminated with as much as 1900 ppm of DDT. A copy of a recent proposed EPA enforcement order to Montrose Chemical Corporation is attached. It can be seen from these documents that an evaluation of the possible health effects resulting from DDT dust contamination should be undertaken as a part of any epidemiological study in the area.

Miller E. Chambers, P.E.
Senior Waste Management Engineer

Attachments

bcc: John Hinton
Harry Sneh

BOE-C6-0179720

Gen. File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Hazardous Waste Management Branch
MAY 10 1983
California Department of Health Services
SACRAMENTO

CERTIFIED MAIL 0416242
RETURN RECEIPT REQUESTED

06 MAY 1983

In reply T-3-3
Refer to: ERS 6-2

Hazardous Materials Branch
MAY 21 1983
California Department of Health Services
LOS ANGELES

Samuel Rotrosen, President
Montrose Chemical Corporation
of California
2401 Morris Avenue
P.O. Box E
Union, NJ 07083

Dear Mr. Rotrosen:

Enclosed please find an Order issued by the Environmental Protection Agency (EPA) to Montrose Chemical Corporation for its Torrance, California facility. The Order is issued on this date pursuant to Secion 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §9606(a), and Section 3013 of the Resource Conservation and Recovery Act, 42 U.S.C. §9606(a).

The Order sets forth certain activities to be undertaken at Montrose Chemical Corporation of California's facility located at 20201 South Normandie Avenue, Torrance, California to abate the release or threatened release of DDT and to assess the DDT contamination at and in the vicinity of the site.

Also enclosed you will find a copy of EPA's Inspection Report which documents the DDT contamination at the site.

Cordially yours,

Original Signed by:

SONIA F. CROW
Regional Administrator

Enclosures

cc: John Kallok, Montrose, Torrance, California
Angelo Bellomo, California Dept. of Health Services
Regional Water Quality Control Board, Los Angeles (Hertel)
State Water Quality Control Board (Detit)
Jim Steele, California Dept. of Fish and Game

Gen. File

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

George Deukmejian, Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213) 620-2380

April 1, 1983

Kathleen Shimmin
EPA Region IX
215 Fremont St. Mail Stop T-3
San Francisco, CA 94105

Dear Ms. Shimmin:

Please find enclosed the following information regarding Montrose Chemical Corporation, Torrance, California, in response to your request:

- RCRA Plans and Procedures - includes closure and post-closure plans
- Correspondence between Montrose and CA-DOHS regarding closure activities

If I can be of any more assistance, please call me at the letterhead telephone number.

Sincerely,

for Miller E. Chambers
John A. Hinton, P.E.
Regional Administrator
Southern Region
Permits, Surveillance and
Enforcement Section
Hazardous Waste Management Branch

Enclosure
cc: Angello Bellomo, Acting Chief
Permits, Surveillance and
Enforcement Section
714 P. Street
Sacramento, CA 95814
(with enclosure)

NOA/JAH/rr

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

George Deukmejian, Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213) 620-2380

April 15, 1983

Kenneth K. Hekimian, Ph.D., P.E.
HEKIMIAN & ASSOCIATES, INC.
One Pacific Plaza
7777 Center Avenue, Suite 500
Huntington Beach, CA 92647

Dear Mr. Hekimian:

EXCAVATION/BERM CONSTRUCTION AT CADILLAC FAIRVIEW

The purpose of this letter is two-fold.

First, your plan for the completion of the cleanup of pond 1A as outlined in your letter of April 6, 1983 is hereby approved.

Secondly, your proposal to construct a berm utilizing contaminated material from 1A is denied unless such material is below the 30 ppm cut-off already agreed to.

Finally, as indicated in our verbal discussion, this office has no objection to a small scale (approximately 6' x 6') land farming experiment utilizing contaminated material if approval for such an operation has been granted by South Coast Air Quality Management District.

Sincerely,

John A. Hinton, P.E.
Regional Administrator
Southern Region
Permits, Surveillance and
Enforcement Section
Hazardous Waste Management Branch

JAH/gd
cc: Al Danzig
SCAQMD

M/F A-1

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 324-3773

April 4, 1983

Mr. Kenneth K. Hekimian
Hekimian and Associates, Inc.
One Pacific Plaza
7777 Center Avenue, Suite 500
Huntington Beach, CA 92647

Hazardous Materials
APR 11 1983
California Department of Health Services
LOS ANGELES

Dear Mr. Hekimian:

CADILLAC FAIRVIEW SITE

Thank you for your letter of March 10, 1983, regarding the involvement of the State Superfund program at the subject site.

To date the Site Cleanup and Emergency Response Section, which administers the Superfund program, has had a limited role at Cadillac Fairview other than in preparation of the site ranking documents. However, since the site is highly ranked on the State list, we are interested in tracking the status and progress of cleanup activities in order that at some appropriate point in the future, the site may be removed from the list. In this regard, we will continue to work with John Hinton. Mr. Hinton's office has lead responsibility for cleanup activities at this site. Our interests are related to insuring consistent, effective and adequate cleanup at the site.

I hope this answers your questions. Please contact me if I can be of any further assistance.

Sincerely,

Stan Phillippe

Stan Phillippe
Site Cleanup & Emergency Response Section
Hazardous Waste Management Branch

cc: Angelo Bellomo
Hazardous Waste Management Branch
744 P Street
Sacramento, CA 95814

John Hinton
Hazardous Waste Management Branch
Los Angeles, CA

BOE-C6-0179724

STATE OF CALIFORNIA - HEALTH AND WELFARE AGENCY
DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213) 620-2380

George Deukmejian, Governor

January 12, 1983

Mr. Ralph S. Tufenkian
Vice President, Corporate Projects
W.R.H. INDUSTRIES
19803 South Main Street
Carson, CA 90745

Dear Mr. Tufenkian:

PLANNED EXCAVATION-CADILLAC FAIRVIEW

You are hereby granted permission to excavate Zones N and P in Pond 1P as non-hazardous wastes, except for the top three feet of Zone P.

[illegible]

[illegible], P.E.
Regional Administrator
Southern Region
Permits, Surveillance and
Enforcement Section
[illegible] Management Branch

[illegible]

: Kenneth [illegible], Ph.D., P.E.
[illegible]

[illegible]

2600

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213)620-2380

May 5, 1982

Hekimian & Associates, Inc.
7777 Center Avenue, Suite 500
Huntington Beach, California 92647

Attn: Dr. Kenneth K. Hekimian

Re: Plans for Cleanup, Del Amo Boulevard and Vermont Avenue, Los Angeles

Gentlemen:

Reference is made to your written proposal dated March 23, 1982 and to related discussion on or about March 24, 1982, in our office between Kenneth Hekimian of your firm and Miller Chambers and Roy Thielking of this office.

The proposed laboratory analyses for Total Organic Carbon, Chromium, and pH are not sufficient to characterize the wastes to the satisfaction of all interested agencies.

The following must be determined for all samples analyzed:

1. Base/Neutral/Acidic Extractable Organics, by GCMS
2. Heavy Metals - Chromium, Copper, Cadmium, Nickel, Lead, and Zinc

With respect to the proposed back hauling of clean fill using the same trucks as those hauling the wastes removed, provision must be made for inspection of the trucks and/or washout prior to loading with clean dirt to ensure that the return soil is not contaminated by residue left in the truck.

If you have any questions, please call me or Roy Thielking of my staff.

Sincerely yours,

Miller E. Chambers

Miller E. Chambers, P.E.
Permits, Surveillance
and Enforcement Section
Hazardous Waste Management Branch

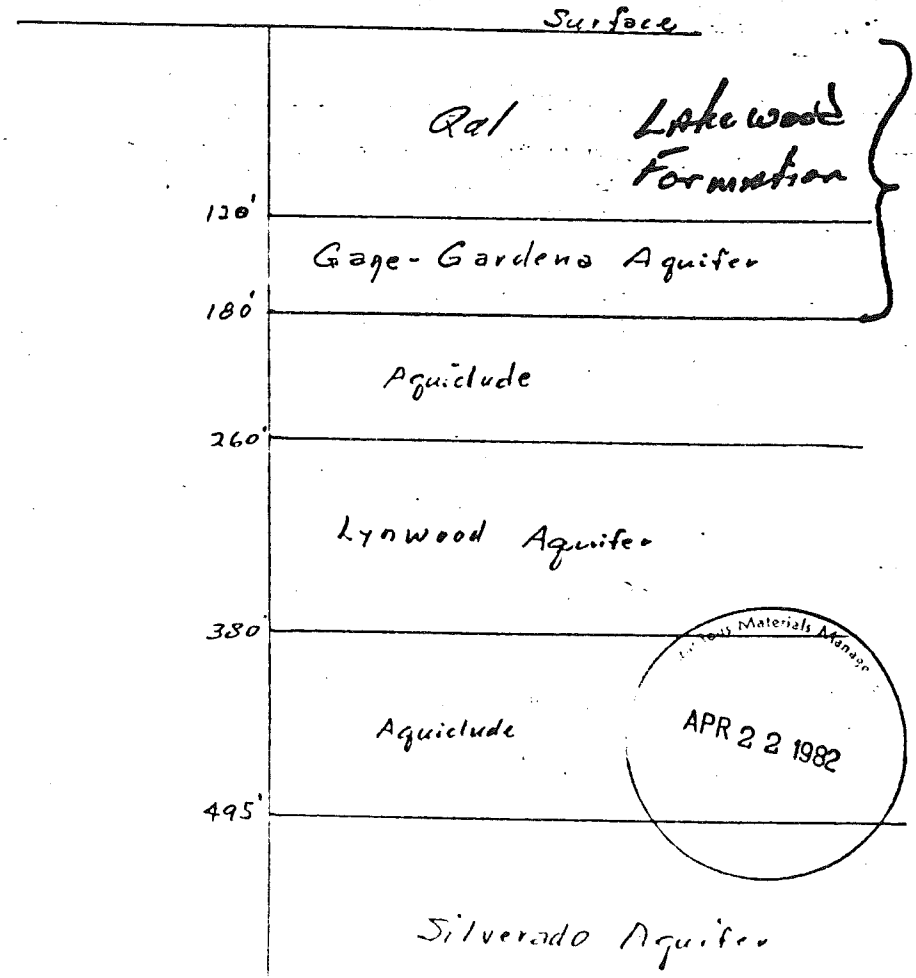
MEC:RT/cc

cc: Cadillac Fairview
Attn: Rick Stephens
James M. Montgomery
Attn: Gordon Treweek
California Regional Water Quality Control Board, Los Angeles Region
Attn: Mr. Raymond M. Hertel
Central and Western Basin Water Replenishment District
Department of Health Services, Sanitary Engineering Section
Attn: Gary Yamamoto

4-21-82 JCC

Request: Need geology Section at Vermont & Del Amo.
Thomas Guide 68 F3
T4S R14W Sec 1 or 6
± 1 mile west of Harbor Fwy.

Data Source: D.W.R. Bul 104.
Section E-E'
Well 12Q1
Section J'-J"



Hazardous Materials Management
APR 22 1982

BOE-C6-0179727

File Copy

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012
(213)620-2380

CERTIFIED MAIL
(Return Receipt Requested)

March 16, 1982

Cadillac Fairview
U.S. Western Region
2200 West Artesia Boulevard
Compton, California 90220

Attn: Rick Stephens
Executive Vice President

Re: Cleanup and Abatement of Hazardous Waste Deposits,
Lots Nos. 12, 13, 36, and 37, Del Amo Boulevard
and Vermont Avenue, Los Angeles, California

Gentlemen:

This is to confirm the March 4, 1982 telephone discussion between Rick Stephens of your company and Roy Thielking of this office.

The February 19, 1982 letter from Gordon Treweek of James M. Montgomery Consulting Engineers, Inc., which was sent in reply to our February 1, 1982 letter to Cadillac Fairview, is inadequate.

You are requested to submit to this office by March 24, 1982, over the signature of an executive officer of Cadillac Fairview, U.S. Western Region, a written report of the measures your company will take to ensure that the hazardous wastes present in or on the subject properties shall not now or in the future cause any hazard to the public health and safety.

Include in your report narrative and/or drawings describing any proposed mitigating measures together with a time schedule for implementation. Fully identify any proposed participants and their responsibilities and qualifications. Your report must address all known hazardous waste deposits on or in the subject properties.

BOE-C6-0179728

If you have any questions, please call me or Roy Thielking of my staff.

Sincerely yours,

Miller E. Chambers

Miller E. Chambers, P.E.

Permits, Surveillance
and Enforcement Section
Hazardous Waste Management Branch

MEC:cc

cc: Department of Health Services, Hazardous Waste Management Branch
Attn: John Hinton

Department of Health Services, Hazardous Waste Property Evaluation Unit
Attn: Lloyd Batham

California Regional Water Quality Control Board, Los Angeles Region
Attn: Hank Yacoub

W.R.H. Industries, Inc.
Attn: Ralph S. Tufenkian

James M. Montgomery Consulting Engineers, Inc.
Attn: Gordon Treweek

Hekimian & Associates
Attn: Ken Hekimian

Cabot, Cabot & Forbes
Attn: Jim Kenyon

Shell Corporation
Attn: Dick Dreith

P08 9229933

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO
Cadillac Fairview
STREET AND NO
2200 W. Artesia Blvd.
P.O. STATE AND ZIP CODE
Compton,CA 90220

POSTAGE		$
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢
OPTIONAL SERVICES	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY	¢
	SHOW TO WHOM AND DATE DELIVERY RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$

POSTMARK OR DATE

February 2, 1982
Attn: Mr. Royce Donkle

PS Form 3800, Apr. 1976

11/F-4

File Copy

AGENCY

EDMUND G. BROWN JR., Governor

RVICES

CERTIFIED MAIL
(Return Receipt Requested)

February 1, 1982

Boulevard
ia 90220

e

ardous Waste Disposal Site,Del Amo Boulevard
t Avenue

to our letter dated August 14, 1981, requesting information
isposal of hazardous waste on Parcels Nos. 36 and 37 on
eles Assessors Map No. 7351-34.

The requested information, contained in a series of reports transmitted to this office by James M. Montgomery Consulting Engineers Inc., confirms that extensive deposits of hazardous wastes exist not only within the boundaries of the subject parcels Nos. 36 and 37, but also extend into the adjacent parcel No. 13.

You are hereby informed that this Department considers the above mentioned properties to be potential hazardous waste property as defined in Section 25117.3, Chapter 6.5, Division 20, California Health and Safety Code.

You are directed to submit to this office within two weeks of the date of this letter, a written report detailing the measures Cadillac Fairview has taken or will take to assess the existing and potential hazards to public health and safety. Such measures must include, but are not limited to identification of the hazardous waste, determination of the location and extent of significant contamination, and appropriate mitigation measures.

Pursuant to Section 66540(d), Title 22, Division 4, Chapter 30, California Administrative Code, (copy attached) no subsurface sampling or other excavation shall be done on the subject properties without prior written approval by this office.

BOE-C6-0179730

John Hinton

If you have any questions please call me or Roy Thielking of my staff.

Sincerely yours,

Earl Margitan

Earl Margitan,P.E.
Senior Waste Management Engineer
Hazardous Waste Management Branch

EM:RT:cc

cc: California Regional Water Quality Control Board, Los Angeles Region
Attn: Hank Yacoub

James M. Montgomery Consulting Engineers,Inc.
Attn: Gordon Treweek

Department of Health Services,Hazardous Waste Property Evaluation Unit
Attn: Lloyd Batham

Department of Health Services,Hazardous Waste Management Branch
Attn: John Hinton,Regional Administrator

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 322-2337

December 18, 1981

DEC 28 1981
California Department of Health Services
LOS ANGELES

Gordon P. Treweek, Ph.D.
Project Engineer
James M. Montgomery, Consulting Engineers, Inc.
555 East Walnut Street
Pasadena, CA 91101

Dear Mr. Treweek,

This is in response to your letter of November 23, 1981 in which you request approval for your client, Western Refuse Hauling, to construct a refuse transfer and light maintenance station in the City of Carson.

The industrial project which you propose is not subject to the land use restrictions contained in Article 11, Chapter 6.5, Division 20 of the Health and Safety Code (H&SC) if it is not constructed on property containing a significant disposal of hazardous waste. Assuming the land in question is within 2000 feet of a significant disposal of hazardous wastes, there are no border zone land use restrictions based on Article 11 H&S Code applicable to your project as industrial uses are not specified in H&S Code Section 25232(b).

If you have any additional question, please feel free to contact Lloyd Batham or myself.

Sincerely,

Glenn Takeoka

Glenn Takeoka
Site Cleanup and Emergency Response Section
Hazardous Waste Management Branch

cc: See enclosed list

December 18, 1981

Mr. Gordon P. Treweek, Ph.D.

cc: Karl Sjoberg
County Industrial Waste Division
550 South Vermont
Los Angeles, CA 90020

Richard K. Gunnarson
Community Development Director
P.O. Box 6234
Carson, CA 90749

Mike Decker
Department of Real Estate
107 So. Broadway
Los Angeles, CA 90012

Walt F. Wilson, Deputy
Environmental Management
Community Health Services Agency
313 N. Figueroa Street
Los Angeles, CA 90012

Raymond Hertel
Regional Water Quality Control Board
107 S. Broadway, Room 4027
Los Angeles, CA 90012

bcc: John Boss
John Hinton
Jerry Thomas, Legal Affairs

BOE-C6-0179733

MIF-C

2609

STATE OF CALIFORNIA

OFFICE MEMO
STD. 103 (REV. 11-75)

DATE 12-2-81

TO:

Debbie Small

ROOM NUMBER

FROM

[illegible]

PHONE NUMBER

SUBJECT

[illegible]

[illegible]

[illegible]

The [illegible] site in [illegible] is contaminated with DDT and DDE

The [illegible] site in [illegible] is contaminated with DDT and DDE.

[illegible]

[illegible]

[illegible]

[illegible]

M/F 1

Montrose Chemical Corporation of California

P.O. Box 147
20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

December 2, 1981

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Hazardous Materials Mgmt.
DEC 07 1981

State of California
Department of Health Services
714/744 P Street
Sacramento, California 95814

ATTN: Ms. Beth Jines, Project Assistant
Hazardous Waste Management Branch

Gentlemen:

In response to your letter of November 10, 1981, we wish to advise that we contracted with the following companies in California for grinding of our DDT:

Depester Western, Inc., Fresno, CA
(1961-1965)

Stauffer CHemical Co., Dominguez, CA
(1958-1969)

United Heckathorn Co., Richmond, CA (1958-1960)
later know as United Chemetrics Co. (1961-1963)
later known as Chemwest, Inc. (1963-1965)

Our records do not go back prior to 1958; however, the same companies would have been the ones we would have used in earlier years.

Very truly yours,

John L. Kallok
Plant Manager

JLK:dgm

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-6043

November 10, 1981

Mr. John L. Kallock
Plant Manager
Montrose Chemical Corp of California
20201 South Normandie
Torrance, California 90502

Dear Mr. Kallock:

During a recent inspection of your plant by Beth Jines of the State Hazardous Waste Management Branch and Steve Simanonok of the Environmental Protection Agency, you indicated that prior to the construction of Montrose's mill, Montrose contracted with several companies for the grinding and milling of DDT. Please provide a list of the names, addresses and dates of use for the companies Montrose contracted with for product milling. Thank you for your cooperation.

Sincerely,

Beth Jines

Beth Jines
Project Assistant
Hazardous Waste Management Branch

cc: Judy Henley
H.W.M.B.

John Hinton
H.W.M.B.

8760199

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO
John L. Kallock
SHEET AND NO.
2021 So Normandie
P.O., STATE AND ZIP CODE
Torrance, CA 90502

POSTAGE		$
CERTIFIED FEE		¢
SPECIAL DELIVERY		¢
RESTRICTED DELIVERY		¢
SHOW TO WHOM AND DATE DELIVERED		¢
SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY		¢
SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED		¢

ULT POSTMASTER FOR FEES
TIONAL SERVICES
RECEIPT SERVICE

PS Form 3811, Jan. 1979

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)
- ☑ Show to whom and date delivered..... ¢
- ☐ Show to whom, date and address of delivery..... ¢
- ☐ RESTRICTED DELIVERY
  Show to whom and date delivered..... ¢
- ☐ RESTRICTED DELIVERY.
  Show to whom, date, and address of delivery.$ ____

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:
John L. Kallock
20201 So. Normandie
Torrance, CA 90502

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	P25 8760199	

(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE ☐ Addressee ☐ Authorized agent

4. DATE OF DELIVERY 11-16 | POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: | CLERK'S INITIALS

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

☆ GPO : 1979 300 469

...ENCY
SERVICES

M/F - C

EDMUND G. BROWN JR., Governor

2612

November 10, 1981

lock

...l Corp of California
...ndiam...

...02

...n of your plant by Beth Jines of the State
... Branch and Steve Simanonok of the Environ-
... you indicated that prior to the construction
...se contracted with several companies for
...f DDT. Please provide a list of the names,
... for the companies Montrose contracted with
...k you for your cooperation.

Sincerely,

Beth Jines

Beth Jines
Project Assistant
Hazardous Waste Management Branch

BOE-C6-0179737

M. [illegible] (1)

11-3-81

2:00 p.m.

Attending

Rich Wilson - Monsanto Director of Manufacturing.

1. John L. Karloch - Plant Manager

2. James V. Wiseman - Manager Environmental [illegible] West Stafford Chemical Co.

4. Steve Semanonek - [illegible]

5. [illegible] - [illegible]

Plant History:

1. Originally [illegible] - [illegible] [illegible]

Guadalupe [illegible] Dominguez [illegible]

Originally in the City of L.A. [illegible]

2. Hughes-Mitchell Inc. [illegible]

Paint Operation → [illegible]

Was an integrated plant: produced [illegible] muriatic & [illegible] acids. [illegible] the paint producing [illegible].

Includes some [illegible] buildings.

Then those plant of [illegible] Hughes-[illegible] [illegible] company.

Was [illegible] [illegible]

3. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

BOE-C6-0179738

(2)

[illegible]

[illegible] to present → Have only [illegible] DDT [illegible]

1. 75% H2O [illegible]
2. 100% technical [illegible]
3. [illegible]

[illegible] H2O.

Landfilled in [illegible] 1967 aerial photo.

[illegible] bought property from [illegible] (Dec 07.)

City Industrial Wat[illegible]

[illegible]

[illegible] was [illegible]

"Have no reason to be [illegible] DDT was [illegible]"

[illegible] at [illegible] plant on [illegible]

[illegible] w/ S. Wilmington [illegible] DDT [illegible]

[illegible]

[illegible]

(5)

Tuna

Unit [illegible] Tuna, Ca 93274

2-27-67 photographed

7K - 246

> 100 pallets of DDT stored on site. At least half was uncovered (Santa Ana Crisis)

2615

STATE OF CALIFORNIA—HEALTH AND WELFARE

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-6042

EDMUND G. BROWN JR., Governor

September 25, 1981

Mr. Rolf Mall
State Department of Fish and Game
350 Golden Shore
Long Beach, CA. 90802

Dear Mr. Mall:

Staff of the Hazardous Materials Management Section's Abandoned Site Project have become aware of a situation which may cause marine pollution and endangerment of wildlife. The problem is a deposit of sediment, which is 40% DDT, in a Los Angeles County Sanitation District sewer line.

You will find enclosed with this letter a Sanitation District report which verifies the existence of the sediment problem. Our concern, and the reason we're writing to you, is that increased use of the sewer line could result in a flushing of the DDT through the treatment plant and into the ocean. We feel it is appropriate the Department of Fish and Game be made aware of the situation and be included in any discussions about remedying the problem.

You may contact Beth Jines at (916) 323-6042 or (ATSS) 473-6042 to discuss this investigation. Thank you for your attention.

Sincerely,

Mark N. White

Mark N. White, P.E., Manager
Abandoned Site Project
Hazardous Materials Management Section

Enclosure
cc: Earl Margitan
Los Angeles
Hazardous Materials Management Section
107 South Broadway
Los Angeles, CA. 90012

File Copy

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7012
LOS ANGELES, CA 90012

(213) 620-2380

August 14, 1981

Cadillac Fairview
2200 West Artesia Boulevard
Compton, California 90220

Re: Abandoned Hazardous Waste Disposal Site,
Del Amo Boulevard and Vermont Avenue,
Los Angeles, California

Gentlemen:

In response to a complaint, a March 18, 1981, inspection of vacant lots designated Nos. 36 and 37 on County of Los Angeles Assessors Map No. 7351-34 northwest of the above named intersection, which lots are owned by your company, disclosed that soils sampled at locations indicated on the attached sketch are significantly contaminated with hazardous wastes. (See attached inspection and analysis reports).

Pursuant to Sections 25220 and 25221, Article 11, Chapter 6.5, Division 20, California Health and Safety Code (copy attached), you are directed to provide this office within 90 days of the date of this letter, a written report detailing the information referred to in the above sections.

If you have any questions, please call us.

Sincerely yours,

Miller E. Chambers

Miller E. Chambers, P.E.
Regional Supervisor
Hazardous Materials Management
Section

MEC:cc

cc: California Regional Water Quality Control Board
Los Angeles Region

Enclosures

State of California

Memorandum

Department of Health Servic

Montrose file copy

To : Miller Chambers
Los Angeles HMMS

Date : July 21, 1981

Subject: Montrose Chemical Company, 2020 South Normandie Ave.

Sue Stack

From : Sue Stack
Abandoned Site Project

Beth Tirey and I recently presented information concerning Montrose Chemical Company to Jim Stahler. Mr. Stahler shares our concern that a "slug" of DDT may be lodged somewhere in the County Sanitation District sewer lines near Montrose; he directed us to contact you so that you would in turn contact the Sanitation District.

Attached is a copy of our summary regarding this abandoned hazardous waste problem. We would appreciate your assistance resolving the question of whether contamination in the sewer line was ever cleaned up. If the Sanitation District cannot produce evidence to show the DDT slug was removed, Abandoned Site Project staff will refer the situation to the Regional Water Quality Control Board and the State Department of Fish and Game.

Thank you for your help. Please respond to either Beth Tirey or me (phone ATSS 473-6042) as soon as possible.

Attachment

BOE-C6-0179743

ROUTING SLIP

TO	CO	RW	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10

	NAME/TITLE	OFFICE SYMBOL	INITIAL	DATE
1	Sue Stack -			
2				
3	Re civil - 70-23889			
4.				
5.				

	Necessary Action		Recommendation		As Requested
	For Signature		Comment		See Me
	Concurrence		Initial and Return		Your Information
	Approval		Per Conversation		Other (Specify below)

REPLY OR INTERIM REPLY | DUE ▶ | FOR SIGNATURE OF

REMARKS

There is not an "OPINION" in this file - Attached is a copy of the Dismissal —

FROM	CO	RW	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10

NAME/TITLE: Josephine Jordan | OFFICE SYMBOL: 714 | BUILDING/ROOM NO.: 831-4220 | DATE: 7-13-81

GENERAL SERVICES ADMINISTRATION GSA FORM 14 REV. 8-8

BOE-C6-0179744

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-6042

July 10, 1981

Federal Archives and Record Center
2400 Avila Road
Laguna Nigel, CA 92677

Attention Archives Clerk:

The Department of Health Services, Hazardous Materials Management Section, wishes to procure a readable copy of the opinion issued in civil case number 70-2389 - AL, "Environmental Defense Fund vs Montrose Chemicals", U.S. District Court, Central District of California. We understand there is no charge to State agencies in such an order, however, should there be any reporduction fee please bill us with the shipment.

Sincerely,

Sue Stack

Sue Stack
Hazardous Materials Management Section

Record FALC
JUL 15 1981
Ordered

BOE-C6-0179745

File Copy

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM 7012
LOS ANGELES, CA 90012
(213)620-2380

April 17, 1981

WRH Industries
19803 South Main Street
Los Angeles, California 90745

Attn: Ralph S. Tufenkian

Re: Suspected Hazardous Waste Disposal Site, Del Amo Boulevard and Vermont Avenue, Los Angeles, California

Gentlemen:

In response to your expressed concerns as to alleged disposal of hazardous wastes at the subject site, this office staff conducted an inspection there on February 20, 1981, together with Jakob Shirvanian of your company; on March 18, 1981, staff returned to the site for further investigations and sampling of surface/near surface soils.

Laboratory analyses of the March 18, 1981, samples disclosed the presence of small amounts of benzene, tolnene, ethylbenzene, and styrene, all of which are hazardous wastes, in an area about 50 feet in diameter directly south of Department of Water and Power tower No. 1033E.

Prior to any development of the subject site the owner or lessee of the property must have necessary sampling and analyses performed to define the extent to which the site is contaminated with hazardous wastes, and any significantly contaminated soils must be removed from the site to a legal point of disposal by an agency or firm registered with this department as a hauler of hazardous wastes.

It is requested that within two weeks of the date of this letter, you provide this office with a written report containing the name and address of the present owner of the property and a statement indicating whether or not you intend to pursue development of the subject site.

If you still intend to develop the property it is requested that you submit to this office, within two weeks of the date of this letter a written report detailing what measures will be taken to ensure that any hazardous wastes on the site will be removed to a legal point of disposal in accordance with all applicable California legal codes prior to such development.

If you have any questions, please call us.

Sincerely yours,

Miller E. Chambers

Miller E. Chambers, P.E.
Regional Supervisor

RT/cc

cc: California Regional Water Quality Control Board, Los Angeles Region
Attn: Mr. Raymond M. Hertel, Executive Officer
California Solid Waste Management Board
Attn: Mr. Jakob Shirvanian

Montrose Chemical

4-13-81

Spoke to Josh Workman 213-650-4460

RWQCB has no permit for Montrose. Their wastes are stored in concrete or steel lined tanks and ponds before they are taken to a Class I disposal site.

BOE-C6-0179748

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
1417744 P STREET
SACRAMENTO, CA 95814

February 24, 1981

Counselor Handelman
Twentieth Century Fox Film Corporation
P.O. Box 900
Beverly Hills, California 90213

Dear Counselor Handelman:

The Hazardous Materials Management Section of the State of California Health Services Agency is conducting an investigation of companies in Los Angeles County whose manufacturing process involves hazardous materials. In particular, we are interested in the Montrose Chemical Company, jointly owned by Stauffer Chemical and Chrisscraft Industries.

In the course of our investigation, we were informed that similar research was conducted by the Twentieth Century Fox Film Corporation in regards to litagation with Chrisscraft Industries. We would appreciate a copy of any information your company has gathered regarding the Montrose Chemical Company. The receipt of this information would facilitate our investigation.

Sincerely,

Mark White
Director, Abandoned Site Project

BOE-C6-0179749

STATE OF CALIFORNIA—HEALTH AND WELFARE

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814

Mr. Les Rose
Industrial Waste Section
Los Angeles County Sanitation Districts
P.O. Box 4998
Whittier, California 90607

January 20,1981

Dear Mr. Rose:

The Hazardous Materials Management Section of the State Health Services Agency is conducting a survey of hazardous waste disposal sites in the Los Angeles area. It has come to our attention that the Los Angeles County Sanitation District's Industrial Waste Section is maintaining a file on a hazardous waste manufacturer that we are investigating. To facilitate our research, we would appreciate a copy of your entire file #1487 on the Montrose Chemical Company in Torrance.

I also wish to thank you for the assistance you gave during my recent visit to your office.

Sincerely,

Beth Tirey

Beth Tirey
Project Assistant

BOE-C6-0179750

M/F-C

2626

LACo San District
Montrose Chemical - #1427

Sewer Disposal:
Ph 7.2
Cyanide < 0.05
Zinc 0.24
Chlorinated hydrocarbons < 0.002
Pesticides < 0.002
temp 90°F

Haulers:
Western Refuse
Chancellor & Ogden
W.M. Hutchison

Disposal sites:
LA County Sanitation District (Sun.)
Bill I. Dutchman
LACo San. Dist. Waste Disposal St. #1.

Requested [illegible]
[illegible]
[illegible] received

BOE-C6-0179751

Twentieth Century-Fox Film Corporation
Studio 10201
West Pico Boulevard
Los Angeles, Ca. 900

Legal P.O. box, 900
[illegible]

TO
Beth Tirey
ROOM/STA. NO.

FROM
Debbie
ROOM/STA. NO.

REPRESENTING
Lesley O. Rose

DATE	TIME	PHONE
3-3-81	11.00 a.m.	(213) 699-7411

X Telephoned / Returned Call — X Please Call / Will Call Again — Was In / Wants To See You

Information / Comment / Investigate / Contact Me — Note and: Re-route / Return / File — Reply: My Signature / Copy Me / Forwarded Per Request

MESSAGE REMARKS He is from the L.A. sanitation dept. He sent you a file on Montrose Co. on 1-29-81. Is it lost?

MESSAGE

TO
Beth
ROOM/STA. NO.

FROM
Paul Blaty
EPA
ROOM/STA. NO.

REPRESENTING

DATE	TIME	PHONE

X Telephoned / Returned Call — Please Call / Will Call Again — Was In / Wants To See You

Information / Comment / Investigate / Contact Me — Note and: Re-route / Return / File — Reply: My Signature / Copy Me / Forwarded Per Request

MESSAGE REMARKS
703-487-4650 to order the publication use - order # PB 254013 cost $[illegible]

MESSAGE

TELEPHONE CONTACT RECORD

[illegible] M/C-B

[illegible] 213-[illegible]

Date	Agency	Contact	Result
-5-81	Twentieth Century Fox		
-81 -81	L.A. County Sanitation District D.J. Wash Division	[illegible] Rose 213-699-7411	Copy of file to be sent Called regarding where should of file copy. 3-23-81 file received
-81	LA Co. San Dist Operations Division	[illegible] 213-699-7411	74,000 [illegible] of DDT [illegible] [illegible] [illegible] under this jurisdiction.
30-81	PWQCb	[illegible] Lewis 213-620-4460 (Thomas Bell)	[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
-2-81	Fish / Game	[illegible]	[illegible]
0-81	LA Hazardous Materials	[illegible] Chambers	[illegible] [illegible] (sewer [illegible]) [illegible] [illegible] [illegible] system [illegible]
6-81	L.A. Co. Engineers [illegible] Dist. Division	[illegible] [illegible]	[illegible] [illegible]
81	Flood Control District	[illegible]	[illegible]

M/F-C

2629

1-12-81

Information is contained in material gathered for the Twentieth Century Fox versus Chiscraft Industries lawsuit.

Montrose Chemical:

50% owned by Stauffer Chemical Co. 50% owned by Chiscraft Industries.
(Stauffer & Chiscraft acquired Montrose in 1976.)
Manufacture DDT.

Problem: Seepage Pond.

From approximately 1966 to 1970, Montrose Chemical maintained a 75' x 50' x 15' seepage pond.

In 1970, to avoid the installation of leachate monitoring devices, Montrose lined the pond with concrete.

(Information contained in the Dept Research Report for E.M., 1975, "Wastewater Treatment Technology Documentation for DDT Manufacture."

There is an elevated liver problem in the company.

1-13-81

Spoke to Mike Roads

[illegible]

[illegible]

[illegible]

BOE-C6-0179754

STATE OF CALIFORNIA

OFFICE MEMO

STD. 100 (REV. 11-75)

DATE 1/2/81

TO: Beth

ROOM NUMBER

FROM: Sue

PHONE NUMBER

SUBJECT: tip

please call this guy (below) and ask him for more info about the site indicated. Tell him Mr. Kiado asked you to follow up on this.

MONTROSE CHEM
CONCRETE LINED
POND.
TORRENCE
DDT MANUF.
HE HAS REPORT
SHOWING DISPOSAL
OF CHLORO BENZENE
& DDT WHILE POND
UNLINED
ED KLEPINGER
(202) 488-1015
(D.C.)

P.S. you might also check w/ Salzberg, H2O Bd. etc.

BOE-C6-0179755

The Keeler, LA County Sanitation District

Montrose Chemical 20201 South Normandy
Torrance Ca.

April, 1970 - Montrose stopped most DDT discharge into the sewer system.
June, 1971 - Montrose stopped all DDT discharge into the sewer.
[illegible] District 5 [illegible] upstream from the sewer plant. In 1500 feet of the sewer line between the Montrose plant and the interceptor, there are [illegible] 74,000 lbs of DDT. The sewer line is 57" in diameter.

1970-'72 - The sewer district tried to scrape the DDT away, but it was [illegible] and [illegible] [illegible] [illegible] [illegible] treatment plant down line from the DDT deposits [illegible] the capabilities to remove the DDT from the water.

1973 - The [illegible] Sanitation [illegible] conducted a survey which [illegible] that the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

BOE-C6-0179756

Marsha [illegible] - 29431

Montrose Chemical -

The suit was filed at the end of July, 1980, in New York Federal Court, Southern Dist.
Subject - securities - Chriscraft has been buying 20th Century Stock.
Counsel: Twentieth Century Fox - Handelman.
or Stan Pottinger of Tony, Allen & Pottinger.

L.A. County engineers Carl Sjoberg told me he called him asking about Montrose
I called Kleavinger to find out why
He said we had to speak to her client first.

Marsha Conenger - [illegible]
Called Marsha [illegible]

BOE-C6-0179757

M/F-C

Montrose at bkk

Acid 1 Acid solution PH <3

base 1 base solution PH >12

4 Scrubber residual

Organic 1 Organics

2 Insecticides & Intermediates

7 Halogenated aromatics

19 Solvents halogenated aromatics

20 Oils & oil sludges

Inorganic 1 Inorganics

2 salts

BOE-C6-0179758

Montrose at Los Angeles County Sanitary Landfill 1970-1979

Organic 1 Organics
2 Insecticides & Intermediates - (DDT probably)
7 Halogenated aromatics - Halogen + hydrocarbon w/ no more rings.
19 Solvents halogenated aromatic - have a higher - about person (ratio, ethers, ketones, amines, nitrated & chlorinated hydrocarbons)
20 Oils & oil sludges -

Inorganic 1 Inorganics
2 Salts

Misc 1 Miscellaneous ← no specifics

Stauffer - "Montrose" plant
M/C-1-5-A

Beth for Montrose file

THE MERCK INDEX

AN ENCYCLOPEDIA OF
CHEMICALS AND DRUGS

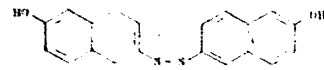
NINTH EDITION

Martha Windholz, *Editor*
Susan Budavari, *Associate Editor*
Lorraine Y. Stroumtsos, *Assistant Editor*
Margaret Noether Fertig, *Assistant Editor*

Published by
MERCK & CO., INC.
RAHWAY, N.J., U.S.A.

1976

BOE-C6-0179760

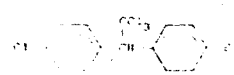


Leaflets, mp 221-222°.

Note: Not to be confused with the insecticide, *p,p'*-DDD [1,1-dichloro-2,2-bis(*p*-chlorophenyl)ethane].

USE: For determination of protein-bound sulfhydryl groups.

2822. DDT. *1,1,1-Trichloro-2,2-bis(4-chlorobenzene); 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane; α,α-bis(p-chlorophenyl)-β,β,β-trichloroethane; dichlorodiphenyltrichloroethane, chlorophenothane, dicophane, pentachlorin; p,p'-DDT, Gesarol; Neocid.* $C_{14}H_9Cl_5$; mol wt 354.50; C 47.45%, H 2.56%, Cl 50.01%. Polychlorinated nondegradable pesticide. Prepd by condensing chloral or chloral hydrate with chlorobenzene: *Zeidler, Ber.* 7, 1180 (1874). The catalyst may be fuming H_2SO_4 or chlorosulfonic acid: Rueggeberg, Torrans, *Ind. Eng. Chem.* 38, 211 (1946); Cook *et al., ibid.* 39, 555, 1683 (1947). Convenient lab procedures: Bailey, *J. Chem. Ed.* 22, 122 (1945); Ginsburg, *Science* 108, 339 (1948). Large scale production: Mosher *et al., Ind. Eng. Chem.* 38, 916 (1946). Comprehensive monograph (in English and German): *DDT*, Paul Müller, Ed., 3 vols (Birkhauser Verlag: Basel and Stuttgart, 1955).



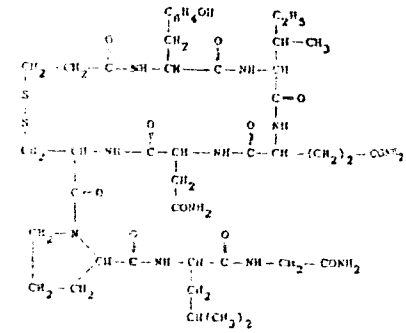
Biaxial elongated tablets, needles from 95% alc: mp 108.5-109°C; uv max (95% alc): 236 nm. Vapor pressure at 20° = 1.5 × 10⁻⁷ mm Hg. Practically insol in water, dil acids, alkalies. Sols in 100 ml of acetone = 58 g, benzene = 78 g, benzyl benzoate = 42 g, carbon tetrachloride = 45 g, chlorobenzene = 74 g, cyclohexanone = 116 g, 95% alc = 2 g, ethyl ether = 28 g, gasoline = 10 g, isopropanol = 3 g, kerosene = 8-10 g, morpholine = 75 g, peanut oil = 11 g, pine oil = 10-16 g, toluene = 61 g, tributyl phosphate = 50 g; freely sol in pyridine, dioxane. The sols in organic solvents increases slightly with a rise in temp: *cf.* D. L. H. Frear, *Chemistry of Insecticides, Fungicides, Herbicides*, 3d ed (New York, 1955). Resistant to destruction by light and oxidation. Its unusual stability has resulted in difficulties in residue removal from water, soil and foodstuffs. DDT should not be kept in iron containers and should not be mixed with iron and aluminum salts nor with alkaline substances. High storage temps should also be avoided. Technical grades of DDT are mixtures of several similar compounds and have a setting point of about 95°, *cf.* Haller *et al., J. Am. Chem. Soc.* 67, 1591 (1945). LD_{50} orally in rats: 200 mg/kg.

Human Toxicity: Poisoning may occur by ingestion or by absorption through skin or respiratory tract. *Acute:* tremors of head and neck muscles, tonic and clonic convulsions, cardiac or respiratory failure, death. Estimated oral fatal dose: 500 mg/kg body wt of the solid material. Solvents such as kerosene increase toxicity. Death occurs in 2 to 24 hrs. *Chronic:* hepatic damage, CNS degeneration, agranulocytosis, dermatitis, weakness, convulsions, coma, death.

USE: Contact insecticide (most important on *Aedes aegypti* control). P. Müller, Swiss pat 226,180 (1940); US pat 2,329,074 (1944 to Geigy); Langer *et al., Indl. Chem. Acta* 27, 892 (1944); Müller, *Sci* 29, 1563 (1945). See also the 3 vol monograph, cited by Müller, *loc. cit.*

THERAP CAT: Pediculicide; insecticide.

2823. Deamino(oxytocin). *1-(3-Mercaptopropionic acid)-oxytocin, demoxytocin; deaminooxytocin; ASD-914, Sandoport.* $C_{43}H_{66}N_{12}O_{12}S_2$; mol wt 942.19: C 52.05%, H 6.60%, N 15.54%, O 20.55%, S 6.46%. Has a potent analog of the posterior pituitary hormone oxytocin, differing in structure at the 1 position where the free amino group in the half-cystine residue is replaced by hydrogen. Synthesis and biological activity: A. Wissmann *et al., Helv. Chim. Acta* 235, PC 64 (1962); Hope *et al., J.* 237 (1962); Takashima *et al., J. Biochem.* 50, 1 (1961); Boldyreff and Pandin, Ferrier *et al., J. Biol. Chem.* 240, 4264 (1965). Structure activity correlation: Jarvis, du Vigneaud, *Science* 143, 545 (1964). Pharmacology and comparison with oxytocin: Chou, du Vigneaud, *Endocrinology* 71, 977 (1962). *Review: Advan. Exp. Med. Biol.* vol. 2, 53-104 (1968).



L-Isomer, white plate-like crystals from water, mp 179° (Ferrier), 182-183° (Takashima). For amorphous powder, $[\alpha]_D^{20}$ = 86.5° (Ferrier), $[\alpha]_D^{20}$ = 107° (Hope), $[\alpha]_D^{20}$ = 91° (Takashima); all for c = 0.5 in 1.N acetic acid. Anhydrous form is very hygroscopic.

D-Isomer, white, fluffy powder, $[\alpha]_D^{20}$ = +104° (c = 0.5 in 1.N acetic acid). Synthesis: Flouret, du Vigneaud, *J. Med. Chem.* 14, 556 (1971).

THERAP CAT: Oxytocic.

2824. Deanol. *2-(Dimethylamino)ethanol, β-dimethylaminoethyl alcohol, N,N-dimethyl-2-hydroxyethylamine.* Liquid. $C_4H_{11}NO$; mol wt 89.14: C 53.89%, H 12.44%, N 15.71%, O 17.95%. $(CH_3)_2NCH_2CH_2OH$. Prepd by equimolar amounts of ethylene oxide and dimethylamine: Kinoshita, *Ber.* 37, 3966 (1904); Hanhart, Ingold, *J. Chem. Soc.* 1927, 1012.

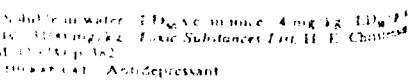
Liquid: d_4^{20} 0.8866; bp_{758} 135°; n_D^{20} 1.43. Miscible with water, alcohol, ether.

Bitartrate. *Airol, Paxanol, Dimethaen,* crystals, sol in water.

Hydroxycinnate. $C_8H_{11}NO_3$. *Tonibral.* White, hygroscopic crystalline powder. Very soluble in water, ethanol, slightly sol in chloroform, benzene.

THERAP CAT: Antidepressant.

2825. Deanol Aceglumate. *N-Acetyl-L-glutamic acid compd with 2-(dimethylamino)ethanol (1:1); dimethylaminoethanol acetylglutamate, demanol aceglumate.* $C_{11}H_{22}N_2O_6$; mol wt 278.32: C 47.47%, H 7.97%, N 10.07%, O 34.49%. Prepn: Fr. pat 1,364,837 (1964 to Interco Fribourg); *C.A.* 61, 12085c (1964).



Soluble in water. LD_{50} s.c. in mice: 4 mg/kg; LD_{50} in rats: 3.5 mg/kg. *Toxic Substances List*, H. E. Christensen, Ed., 1971, p 162.

THERAP CAT: Antidepressant.

2826. Deanol Acetamidobenzoate. *4-Acetylamino-benzoic acid compd with 2-(dimethylamino)ethanol (1:1); 2-(dimethylamino)ethyl p-acetamidobenzoate; DMAE p-acetylaminobenzoate, Deanex, Deforene.* $C_{13}H_{20}N_2O_3$; mol wt 252.31: C 61.89%, H 7.91%, N 11.10%, O 19.05%. Prepd by Britt, *J.* 879, 259 (1957); Dolinger, Lafayette, Lawson, *J. Pharm. Sci.* 48, 345 (1959).

Caution: Check this section in the index before using this section.

BOE-C6-0179761

MIF-C

January 5, 1981

Hunter Chemical Tamco - 213 - [illegible]

Ed Klepinger 202-488-1015. 2020 - E. Dunardy

Tamco

2637

LAW OFFICES
KNAPP, GILL, HIBBERT & STEVENS
829 CITY NATIONAL BANK BUILDING
606 SOUTH OLIVE STREET
LOS ANGELES 90014
TELEPHONE (213) 627-8471

THOMAS A. DORAN
JAMES G. JONES
DAVID P. CHRISTIANSON

JOSEPH C. GILL
1912-1966

HUGH GORDON
OF COUNSEL

March 19, 1971

Mr. John D. Parkhurst
Chief Engineer and General Manager
County Sanitation Districts of
Los Angeles County
2020 Beverly Boulevard
Los Angeles, California 90057

Re: Environmental Defense Fund vs. County Sanitation Districts of Los Angeles County, et al.

Dear Mr. Parkhurst:

On March 15 a continued hearing was held before Judge Stephens relative to the various pending Motions. After denying the Motion of Ocean Fish Protective Association to Intervene the court indicated informally that it was not presently disposed to rule on the other pending Motions. The court thereupon called a short recess in order to give everyone a further opportunity to consider the matter.

When the court reconvened Mr. Swafford on behalf of Montrose put forth the proposition that I discussed orally with you last week. In short, he represented to the court and counsel that within 90 days Montrose would undertake to cut all existing lines to the Districts' system. It would, in lieu thereof, construct two new lines; one from the boiler blow-down and the other from the toilets within the plant. All industrial waste would be disposed of after recycling at a Class 1 dump.

On the basis of this representation the court continued all pending matters to June 14, 1971. Mr.

J. F. Lieb 12
F. D. D.
carry / Kuner JSK
Redner R

JOHN D. PARKHURST

KNAPP, GILL, HIBBERT & STEVENS

Mr. John D. Parkhurst
March 19, 1971
Page Two

Swafford has assured me that the staff at Montrose will keep the District advised in detail of their plans.

Very truly yours,

B. Richard Marsh

B. Richard Marsh

BRM:jh

BOE-C6-0179764

M/F-A

2640

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
[illegible]
LOS ANGELES, CALIFORNIA [illegible]

[illegible] COUNTY
[illegible] OFFICE

1971 MAR 2 AM 8 43

March 1, 1971

Montrose Chemical Corporation of California
P.O. Box 147
Torrance, California 90507

ATTENTION: Mr. Max Sobelman, Vice-President

Re: Waste Discharge Requirements (File 70-118)

Gentlemen:

Reference is made to our letter dated February 16, 1971, which transmitted a draft of proposed requirements for the disposal of wastes from your Torrance facility by hauling.

Pursuant to Section 13263 of the Water Code of the State of California, this California Regional Water Quality Control Board, at its meeting held on February 24, 1971, reviewed these proposed requirements, considering all factors in the case, and adopted Order No. 71-11 (copy attached) relative to this waste discharge.

Also attached is a copy of the specifications for technical reports to be submitted by you. Please reference these reports to our Requirement File No. 5683.

Very truly yours,

Original signed by
Raymond M. Hertel

RAYMOND M. HERTEL
Executive Officer

cc: Department of Water Resources
Bureau of Sanitary Engineering
Department of Fish and Game, Region 5
Los Angeles County Health Department
Los Angeles County Flood Control District
Quality Sanitation Districts of Los Angeles County
[illegible]
[illegible]

BOE-C6-0179765

KNAPP, GILL, MOSKONY & STEVENS

Mr. John D. Parkhurst
March 29, 1971
Page two

Swafford has assured me that the staff at Montrose will [illegible] keep the District advised in detail of their plans.

Very truly yours,

B. Richard Marsh

B. Richard Marsh

BRM:jh

BOE-C6-0179766

M/F.A

2642

5-320.20.10

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
AFFILIATE OF STAUFFER CHEMICAL COMPANY
POST OFFICE BOX 147
TORRANCE, CALIFORNIA 90507

June 16, 1970

1970 JUN 17 AM 9 02

John D. Parkhurst
Chief Engineer & General Manager
Sanitation Districts of Los Angeles County
2020 Beverly Blvd.
Los Angeles, California 90057

Dear Mr. Parkhurst:

This is to confirm recent discussions concerning waste effluents entering the Los Angeles County Sewer from the Torrance Plant of the Montrose Chemical Corporation of California.

Recently your personnel have monitored our effluent discharge for DDT content and your values have been found to correspond closely to current values being obtained in our local laboratories. Our analysis has shown the total of DDT and all its isomers and metabolites to range from somewhat below 1 ppm. to about 5 ppm., which compares with your findings of slightly less than 5 ppm. Considering the complexity of the samples and sensitivity of these test procedures these results would be considered as checking each other.

During the past several years we have gradually reduced the quantity of DDT-like materials being discharged into the county sewer. This has resulted both from reducing the concentration in the water and also by reducing the quantity of water being discharged. Currently the quantity of water is about 1/3 of what it was 3 or 4 years [illegible] the concentration of DDT-like materials also [illegible]. As better analytical tools have become [illegible] we have been able to improve our monitoring and [illegible] of the problem.

At the present time we are working with the Aerojet [illegible] who is the prime contractor to the [illegible] Administration to develop chemical [illegible]. They have reported some success with [illegible] and are now proposing a plant-sized [illegible] and Aerojet General are

discussing with the Federal Water Quality Administration a plan for an overall Pilot Plant program to eliminate DDT and its isomers and metabolites. We expect that this work will continue in the same direction as during the recent past toward process modifications to place the plant on total recycle to the greatest possible degree with the substantially reduced final effluent volume treated by a system similar to that developed by Aerojet General or some other suitable procedure so that the final effluent is reduced in quantity and concentration.

I would like to point out that our effluent is currently being diluted in the order of 1,000 to 1 in the county sewer treatment plant which in itself greatly reduces the impact of final discharge. And, further DDT which is lipid-soluble and not water-soluble is concentrated in the solid sediments in the treating plant, where as part of the sludge it is subjected to anaerobic bacterial decomposition. The literature contains numerous references which point out that DDT is readily degraded under anaerobic conditions by bacteria normally present in activated sludges. This degradation further lessens the impact on the receiving waters. ?

In summary, we have made notable progress in reducing the absolute quantity of DDT-like materials being discharged into the county sewer system and are continuing an active campaign both on our own and in cooperation with Aerojet General and with the Federal Water Quality Administration to further reduce the quantity of water being discharged and to reduce the DDT content of the effluent to where it will be negligible.

We appreciate the opportunity for open discussion and look toward its continuation.

Yours very truly,

A. R. Wilcox
Vice-President,
Operations

[illegible]

[illegible], Sterling Research

M/F. B

Office of Chief Engineer

MEMORANDUM

Walter E. Garrison

Date: June 4, 1970

Franklin D. Dryden

ANOTHER MACKEREL CATCH WITH HIGH D.D.T.

Jack Betz called to advise us that the City had been contacted by Mr. Shindler of the Regional Water Quality Control Board for information concerning producers of D.D.T. in the Los Angeles area. The reason for the call was apparently another mackerel catch which was determined to be high in D.D.T. The catch was reported to have been made somewhere between the Los Angeles harbor and Catalina Island in the past several days. The City advised Shindler that the only large D.D.T. producer they knew of was Montrose Chemical, and that they discharged into the Sanitation Districts sewerage system even though they were located within the City of Los Angeles and operated on a City Industrial Waste Permit. Jack wanted us to know in case there were subsequent Regional Board or newspaper inquiries into the situation.

BOE-C6-0179769

2645

Office of Chief Engineer

County Sanitation Districts

MEMORANDUM

Date: 5/14/70

[illegible] Garrison GARRISON

[illegible] Les Haig

[illegible] Montrose Chemical Co. (DDT manufacture)

Art Martin informs me that in a recent [illegible] with Stu Busch (S/S/D) he was told that Montrose Chemical is the only DDT mfgr in [illegible] Angeles County (Montrose plant is in City of L.A.)

The attached report indicates DDT is present in all J.A. sewers but there is much higher concentration downstream of the Montrose Chem plant.

Art says acid waste was tested earlier and [illegible] to contain little DDT.

[illegible] Crustin is being delivered daily to P.V. Landfill [illegible] Montrose Chem.

[illegible] of FWPCA report indicates company [illegible]

[illegible]

[illegible]

BOE-C6-0179770

3-9111.50.2.2.0

Joint Water Pollution Control Plant
April 22, 1970

MEMO TO: Mr. John D. Parkhurst
Chief Engineer and
General Manager

ATTENTION: Mr. Franklin D. Dryden
Deputy Assistant
Chief Engineer

FROM: Raymond M. Stewart

SUBJECT: Pesticide Sampling Program - Progress Report

1970 APR 28 PM 1 15

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

The samples collected during the first week of the raw sewage pesticide study have been analyzed. The major trunks in the vicinity of JWPCP, and locations above and below Montrose Chemical Company on the District 5 Interceptor were checked. Samples were composited hourly in equal portions for six hours. The four six-hour composites representing 24 hours beginning at approximately 8:00 A.M. from each location were combined relative to the average flow for each six-hour period. The six hour samples were saved, to be analyzed independently should results from the 24-hour composite indicate the need for further investigation. In the case of the group reported in Table 1, only the four composites immediately below Montrose Chemical Company were tested individually.

Respectfully submitted,

Raymond M. Stewart
Director of Laboratories

RMS:hdm

Summary

[illegible]	"	50	ppb
[illegible]	"	5000	ppb
[illegible]	"	[illegible]	ppb

M/F-A

2647

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT USDI, FWPCA, PACIFIC SOUTHWEST REGION
760 Market Street, San Francisco, Calif. 94102

Memorandum

TO : Thomas N. Sargent, Research Sanitary Engineer
Southeast Water Laboratory, FWPCA

DATE: MAR 30 1970

FROM : Director

SUBJECT: Information on the Manufacture of DDT or DDD in California

We have recently completed the collection of information on the Montrose Chemical Corporation of California which you requested in your letter of December 31, 1969. The results of these efforts are presented below.

Located at
20201 Normandie Av.
Torrance P.O.
(Located in L.A harbor strip)
District 5
Because L.A City has IW inspection responsibility on this plant, — District inspection has been infrequent. AC control has been biggest problem to date.

In brief, there is partial treatment of the DDT wastes in the Montrose Chemical Corporation plant which results in a liquid portion being discharged to a county sewer along with domestic wastes and a solids portion being trucked away to a land disposal site.

The Los Angeles County Joint Water Pollution Control Plant receives the liquid wastes and has initiated a sampling program for DDT which includes influent and effluent sources on the Montrose Chemical Corporation property as well as various points through its own treatment plant and receiving waters of the San Gabriel, Rio Hondo, and San Jose streams, and the Pacific Ocean. The major study is to be performed during the coming summer and only preliminary data is available at the present time. These indicate higher DDT levels in the vicinity of this treatment plant than have been observed in other plants both in Los Angeles and in the San Francisco Bay area. The source of course is not presently known since many other possibilities exist besides the referenced chemical plant.

A more detailed breakdown of treatment within the Montrose Chemical Corporation plant is as follows. The numbered [illegible] refer to possible DDT waste sources with a brief description of their route.

1. [illegible] Possible DDT-bearing [illegible] acid (from [illegible]) is collected and disposed of in the following priority:

   a. Reuse within plant

[illegible]

BOE-C6-0179772

b. Resale
c. Trucked to Los Angeles County treatment plant where it is neutralized and admitted to the treatment process
d. Land disposal in an abandoned quarry

Over the past six months we are advised that all such wastes have been disposed of by a. and b. above. In other words, it is an infrequent occurence that methods c. and d are employed. We do not know the volume of this disposed acid waste.

2. Excess caustic waste liquor. Flow is approximately 10 gpm. After removal of solids and pH adjustment, it is discharged into the county sewer. Solids are collected by a combination of settling and filtration and are hauled away by a commercial waste hauler in the form of a cake. Ultimate destination is unknown. clarifier?

3. Acid vent air scrubber. Scrubber wash water is considered as being DDT-free. It is discharged into the county sewer.

4. Various fume scrubbers. Wastes are in liquid form. After pH adjustment, wastes are discharged into the county sewer.

5. Boiler blow-down. Essentially non-DDT bearing.

6. Cooling towers. Essentially non-DDT bearing.

Total flow in corporation sewer is approximately 0.5 mgd, compared to a total influent flow at the county plant of approximately 400 mgd.

Future planned improvements to in-plant treatment at Montrose Chemical Corporation include use of : DDT-preferential coagulants; activated carbon; biochemical degradation; and destruction by heat (DDT converted to HCL at about 1600°F).

If you desire information in addition to the above, please let us know, as both above parties have been very cooperative in assisting us.

Paul De Falco, Jr.

cc: Mr. J. L. Kallok, Maintenance Superintendent, Montrose Chemical Corp. of Calif., Torrance, Calif.
Mr. R. W. Stewart, Dir. of Laboratories, L. A. Co. Joint Water Pollution Control Plant, Harbor City, Calif.

BOE-C6-0179773

M/F-C

2649

Montrose

CAD008242711

has filed EPA

part A

MFC

office of corporate status
public market bldg
5-2900
have NO Montrose Chem. file
she says check w/
LA Co. clerk's
office.

974 ~~1234~~
5222

BOE-C6-0179775

M/F-C

Southwest Water

Sanitary Engineer - history of testing, water district
layout of supply lines

Gary Yamamoto:
CITYLA & DOMINGUEZ Water Corp. Long Beach

HARBOR-> SO SAND. AND AIR.
CARSON & ALAMEDA

Dominguez Water Company 21718 S Alameda Long Beach
775-2301

History (Recent) of Testing
DDT, Chlorobenzene, ZINC, PCB, Chloral
DDD
DDE pH, Alk

John Foth operations mgr.

Layout of lines

[illegible] Hamp.

[illegible] methane

METHOD.

[illegible]

M/F-C

2652

Marcha Kuninger - 29431

Montrose Chemical -

The suit was filed at the end of July, 1980, in New York Federal Court, Southern Dist
Subject - securities - Chrisscraft has been buying 20th Century Stock.
Counsel: Twentieth Century Fox - Handelman
or Stan Pettinger of Troy, Allen & Pettinger.

L.A. County engineer Carl Sjoberg told me he called him asking about Montrose
I called Kleavinger to find out why
He said we had to speak to his clients first.

Marcha Cioninger - 2-9431
Called Marcha Cioninger to [illegible]

TOXIC SUBSTANCES CONTROL DIVISION

RECORD OF PUBLIC REVIEW

Requester:	Representing:	Date:
André A. Anderson	IT Corp.	5-20-87

I have read the Department's guidelines and wish to inspect the following public record.

Complete Description of Record:

Montrose Chemical Site File

To be completed by Departmental Office:

Approved _____ Inspected by _____ Date _____

Disclosure of the requested record is prohibited by law:

_____

Department Representative:	Section/Unit:	Date:
Alma Delaque	File Room	5/20/87

EPA ID NO. _____ FILE NAME _____

ACTIVITY RECORD

DATE	INITIAL	ACTION

BOE-C6-0179779

FILE CHECKLIST

PERMIT FILE

DOCUMENT DESCRIPTION	DATE	INITIALS	LOCATION
Activity Record			
Record of Public Review			
Permit - signed			
Revocation Notice			
Modification Notice			
Denial Notice			
Variance/Exemption			
Permit Package (mailed to Sacto)			
Statement of Facts			
Facility Inventory Form			
CEQA Notice (Exemption, Negative Declaration, EIR)			
Site Inspection Forms			
Public Hearing Documents (transcript/ sign-in sheet/agenda/comment cards)			
Public Notices for Newspaper & Radio			
Draft Permit			
Financial Assurance Forms			
Notice of Operation Plan Deficiencies			
Operation Plan Review Checklist			
Operation Plan Request (Part B)			
Interim Permit			
Interim Modification			
Interim Revocation			
Part A Application			
Part A Checklist			
Cassette Tapes			

BOE-C6-0179780

TOXIC SUBSTANCES CONTROL DIVISION

RECORD OF PUBLIC REVIEW

Requester:	Representing:	Date:
Robert Edwards David Bennett	Traveler's Insurance	5/7/87

I have read the Department's guidelines and wish to inspect the following public record.

Complete Description of Record:

✓ Montrose Chemical Corp
Palos Verdes Landfill
BKK Landfill
} Files

To be completed by Departmental Office:

Approved ✓ Inspected by _____ Date 5/7/87

Disclosure of the requested record is prohibited by law:

_____

Department Representative:	Section/Unit:	Date:
[signature]	So. Calif. / AMU	5/7/87

P/C-A-1

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
POST OFFICE BOX 147
TORRANCE, CALIFORNIA 90507

December 3, 1982

DEC 0 6 1982
LOS ANGELES

Department of Health Services
107 South Broadway, Room 7128
Los Angeles, California 90012

Attn: John A. Hinton, P.E.
Permits, Surveillance and
Enforcement Section
Hazardous Waste Management Branch

Dear Mr. Hinton:

Re: CAD 008242711

We acknowledge your letter of November 18 requesting us to submit an Operating Plan for a Hazardous Waste Facility at our plant.

These facilities were closed by us last August in accordance with our Closure Plan and Procedure and notice to that effect was sent you on August 31, 1982. A copy of our letter of that date together with certification by an independent licensed professional engineer that closure was carried out in accordance with these procedures and your acknowledgement of receipt is enclosed for your information.

Very truly yours,

MONTROSE CHEMICAL CORPORATION
OF CALIFORNIA

John L. Kallok

John L. Kallok
Plant Manager

JLK/gf
encl.

DEC 0 6 1982
LOS ANGELES

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☐ Show to whom and date delivered ..... ___¢
   - ☐ Show to whom, date, and address of delivery .. ___¢
2. ☐ RESTRICTED DELIVERY ___¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $ ____

3. ARTICLE ADDRESSED TO:

Dept. of Health Services
714 "P" Street
Sacramento, CA 95814

4. TYPE OF SERVICE:
   - ☐ REGISTERED ☐ INSURED
   - ☐ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P26 9233753

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

6. DATE OF DELIVERY
SEP 1982

POSTMARK
SACRAMENTO, CA METRO STA
SEP 10 1982
USPO

8. ADDRESSEE'S ADDRESS (Only if requested)

7. UNABLE TO DELIVER BECAUSE:

RETURN RECEIPT REQUESTED CERTIFIED MAIL

Montrose Chemical Corporation of California

P.O. Box 147

20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

August 31, 1982

DEC 0 6 1982

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Department of Health Services
Hazardous Waste Management Section
714 "P" Street
Sacramento, California 95814

Gentlemen:

Further to our letter of August 12 giving notice that we proposed closure of the hazardous waste facilities at our plant at 20201 South Normandie Avenue, Torrance, California, Number CAD008242711, we now wish to advise that these facilities have been closed in accordance with our Closure Plans and Procedures, a copy of which is enclosed.

Also enclosed is certification by an independent licensed professional engineer, James O'Malley & Associates, Inc., that the closure was carried out in accordance with these procedures.

In view of the closure of these facilities prior to August 31, 1982 we will not furnish the closure and post-closure financial assurances described in your letter of August 1, 1982.

Very truly yours,

MONTROSE CHEMICAL CORPORATION
OF CALIFORNIA

John L. Kallok
Plant Manager

August 30, 1982

DEC 06 1982
Section
ment
ices
LES

Montrose Chemical Corporation of California
20201 South Normandie Avenue
Torrance, California 90502

REFERENCE: Three Acid Storage Tanks: one 100,000 gal., two 50,000 gal.; two Alkaline Storage Tanks: one 100,000 gal., one 50,000 gal.

Gentlemen:

I hereby certify that the above-reference tanks have been closed in accordance with the methods outlined in "RCRA Closure Plans and Procedures" prepared by Montrose Chemical Corporation of California, EPA I.D. No. CAD008242711, last revised April 1982.

Very truly yours,

JAMES O'MALLEY & ASSOCIATES, INC.

James O'Malley
PE27217

JO:dgm

JAMES O'MALLEY & ASSOCIATES, INC./CIVIL & ENVIRONMENTAL ENGINEERS ☐ LAND PLANNERS ☐ SURVEYORS
1215 POMONA ROAD ☐ SUITE E ☐ CORONA, CA 91720 ☐ (714) 734-0633

P/2-4-1

Montrose Chemical Corporation of California

Torrance, California

RCRA PLANS AND PROCEDURES

November, 1980
Rev. 1 - May, 1981
Rev. 2 - April, 1982

BOE-C6-0179786

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Closure Procedure - Acid Tanks 7
Closure Procedure - Alkaline Waste Tanks 7
Closure Cost - Acid Tanks 7
Closure Costs - Alkaline Waste Tanks 8
Contingency Plans and Emergency Procedures 10

EXHIBITS

A-1 California Hazardous Waste Manifest - Strong Acid Waste Sample Copy
A-2 California Hazardous Waste Manifest - Dilute Acid Waste Sample Copy
B California Hazardous Waste Manifest - Alkaline Waste Sample Copy
C Tank Data Sheet - 100,000-Gallon Recovered Sulfuric Acid Storage Tank
D Tank Data Sheet - E. 50,000-Gallon Recovered Sulfuric Acid Storage Tank
E Tank Data Sheet - W. 50,000-Gallon Recovered Sulfuric Acid Storage Tank
F Tank Data Sheet - 100,000-Gallon Alkaline Waste Storage Tank
G Tank Data Sheet - 50,000-Gallon Contaminated Alkaline Waste Storage Tank

BOE-C6-0179787

General Statement

The Montrose-Torrance plant being a generator and storer of hazardous waste has filed EPA Form 1 General Information and the EPA Hazardous Waste Permit Application (Form 3 RCRA) as required under the EPA Permits Program (40 CFR Part 122). The following acknowledgment has been received from EPA:

EPA

ACKNOWLEDGEMENT OF NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act *(RCRA)*. Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

RECEIVED
DEC 18 1980
MONTROSE-TOR

EPA I.D. NUMBER → CAD008262711

MONTROSE CHEMICAL CORP OF CALIF
PO BOX 187
TORRANCE CA 90507

INSTALLATION ADDRESS → 20201 SOUTH SOPRANOS AVENUE
TORRANCE CA 90507

EPA Form 8700-12A (4-80)

In order to comply with the RCRA program as a generator and storer of hazardous wastes the following procedures have been developed and activities implemented.

Manifest System

All shipments of hazardous wastes offsite must be accompanied by a California Hazardous Waste Manifest. When a load of hazardous waste is shipped, the white copy marked "Generator" in the lower right hand corner will be sent to the office. At the end of each month Xerox copies of each report will be sent to DOHS (California Department of Health Services) and the original white copy will be held until the yellow copy marked "To Generator" in lower right corner is received. Check the yellow copy to verify that both the transporter and TSD facility have filled it out certifying that the waste was disposed of properly. If everything is in order both copies are to be filed together and retained on file for a minimum of three years. If the yellow copy is incomplete or isn't received within 35 days after the date of shipment, Bernie Bratter, Nick Leonovich, or John Kallok must be so informed. The load will be traced to determine what happened. If the problem is not resolved by the end of 45 days an Exemption Report will be filed with EPA and the State Department of Health Services by one of the persons named above.

Sample copies of the manifests for our alkaline waste and sulfuric acid illustrating how they are to be completed are included below.

An annual summary of all offsite shipments of hazardous wastes will be compiled and filed with E.P.A. and the State Department of Health Services by March 1 for the preceding calendar year.

EXHIBIT A-1

CALIFORNIA HAZARDOUS WASTE MANIFEST

State Department of Health Services
HAZARDOUS MATERIALS MANAGEMENT SECTION
744 P Street, Sacramento, CA 95814

(1) Manifest Number 009-0083

...e for this ... print clearly ...ress Hard

GENERATOR (Generator Must Complete)

MONTROSE CHEMICAL CORP. OF CALIF.
CAD 008 242 711
20201 S. Normandie Phone No 328-5469
Torrance, CA 90502

(3) Designated TSD Facility (Authorized to operate under an approved state program or federal program)
Name BKK LANDFILL
EPA NO. CAD 067 786 749
Address 2210 S. Azusa Avenue
City, State, Zip W. Covina, CA 91792

(4) Alternate TSD Facility
Name LIQUID WASTE DISPOSAL KETTLEMEN HILL SITE
EPA NO. CAT 000 646 117
Address 4 mi. SW of Kettlemen City
City, State, Zip CA 93239

U.S. DOT PROPER SHIPPING NAME	U.S. DOT HAZARD CLASS	UN/NA ID NO.	WEIGHT OR VOLUME	UNITS
SULFURIC ACID SPENT CORROSIVE MATERIAL	02 CORROSIVE	1832	2,800	gals.

CONTAINERS NUMBER:
TYPE: ☐ DRUMS ☐ BAGS ☐ CARTONS XX TANK TRUCK ☐ DUMP TRUCK ☐ OTHER

WASTE CATEGORY Acid Solution (7) EX. HAZ. WASTE PERMIT NO -- (8) GENERATING PROCESS DDT Production

COMPONENTS	CONC. UPPER	RANGE LOWER	UNITS
Sulfuric Acid	80	74	XX % ☐ ppm.
DDT & Derivatives	50	15	☐ % XX ppm.
Chloro-Benzene Sulfonic Acid	6	2	XX % ☐ ppm.
Balance Water			☐ % ☐ ppm.

	CONC. UPPER	RANGE LOWER	UNITS
E.			☐ % ☐ ppm.
F.			☐ % ☐ ppm.
G.			☐ % ☐ ppm.

Non Hazardous Material ____ %

WASTE PROPERTIES pH 0 ☐ Toxic ☐ Flammable XX Corrosive/Irritant ☐ Reactive ☐ Sensitizer ☐ Carcinogen/Mutagen

PHYSICAL STATE ☐ Solid XX Liquid ☐ Sludge ☐ Slurry ☐ Gas ☐ Other

SPECIAL HANDLING INSTRUCTIONS. XX Gloves XX Goggles ☐ Respirator ☐ Other

GENERATOR CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked, labeled, and are in proper condition for transportation according to applicable regulations of the Department of Transportation and EPA.

IN THE EVENT OF A SPILL, CONTACT THE NATIONAL RESPONSE CENTER, U.S. COAST GUARD 1-800-424-8802

(13) Signature of Authorized Agent and Title ____ Date Shipped ____

ACID WASTE SAMPLE COP

TRANSPORTER (HAULER MUST COMPLETE)
NAME CHANCELLOR & OGDEN, INC.
CAD 048 498 463
ADDRESS 3031 East "I" Street PHONE NO (213) 432 8461
CITY, STATE, ZIP Wilmington, California 90744

(15) PICK-UP DATE ____
TIME ____ ☐ AM ☐ PM

(16) Signature of Authorized Agent and Title ____ Date ____

TSD FACILITY (FACILITY OPERATOR MUST COMPLETE)
NAME
CAD NO
PHONE NO

18 QUANTITY (If Measured) ____
19 STATE FEE (If Any) ____

(21) HANDLING OR DISPOSAL METHOD:
☐ Surface Impoundment ☐ Landfill
☐ Injection Well ☐ Land Treatment
☐ Treatment (Specify) ____
☐ Recovery or Reuse ☐ Storage/Transfer

INDICATE ANY SIGNIFICANT DISCREPANCIES BETWEEN MANIFEST AND
...MENT

WASTE IS HELD FOR DELIVERY ELSEWHERE, SPECIFY THE DESIGNATED TSD FACILITY:
NAME
CAD NO

(23) Signature of Authorized Agent and Title ____ Date Accepted ____

GENERATOR

2965

BOE-C6-0179790

REVISED 11-80

CALIFORNIA HAZARDOUS WASTE MANIFEST

See reverse side for Instructions.
Please type or print clearly. Press Hard.

State Department of Health Services
HAZARDOUS MATERIALS MANAGEMENT SECTION
744 P Street, Sacramento, CA 95814

(1) Manifest Number 009 - 106700

GENERATOR (Generator Must Complete)

(2) Name MONTROSE CHEMICAL CORP. OF CALIF.
EPA NO. CAD008242711
Address 20201 S. Normandie Phone No. 328-5469
City, State, Zip Torrance, CA 90502
Order Placed By _____ ORDER DATE _____
P.O. _____
CONTRACT NO. _____

(3) DESIGNATED TSD FACILITY
Name BKK LANDFILL
EPA NO. CAD067786749
Address 2210 S. Azusa Ave.
City, State, Zip W. Covina, California 91722
Phone No. (213) 965-0911

(4) ALTERNATE TSD FACILITY (AUTHORIZED TO OPERATE UNDER AN APPROVED STATE OR FEDERAL PROGRAM)
Name LIQUID WASTE DISPOSAL KETTLEMAN HILLS SITE
EPA NO. CAT000646117
Address 4 Mi. SW of Kettleman City
City, State, Zip CA 93239
Phone No. _____

(5) U.S. DOT PROPER SHIPPING NAME	U.S. DOT HAZARD CLASS	UN/NA ID NO.	WEIGHT OR VOLUME	UNITS
WASTE SULFURIC ACID SPENT	02	1832	4,000	gals.
XXXX CORROSIVE MATERIAL	CORROSIVE			

CONTAINERS: NUMBER ---
TYPE: ☐ DRUMS ☐ BAGS ☐ CARTONS XX TANK TRUCK ☐ DUMP TRUCK ☐ OTHER _____

(6) WASTE CATEGORY Acid Solution (7) EX. HAZ. WASTE PERMIT NO. --- (8) GENERATING PROCESS DDT Production

LIST COMPONENTS:	CONC. RANGE UPPER	CONC. RANGE LOWER	UNITS
(9) A Sulfuric Acid	36	22	XX% ☐ ppm.
B DDT & Derivatives	2,300	87.5	☐ % XX ppm.
C Chlorobenzene Sulfonic Acid	1.5	0.4	XX% ☐ ppm.
D NaMCBS	.75	0.075	XX% ☐ ppm.
E.			☐ % ☐ ppm.
F.			☐ % ☐ ppm.
G.			☐ % ☐ ppm.

Non Hazardous Material _____ %

(10) WASTE PROPERTIES: pH 1.0 ☐ Toxic ☐ Flammable XX Corrosive/Irritant ☐ Reactive ☐ Sensitizer ☐ Carcinogen/Mutagen
(11) PHYSICAL STATE ☐ Solid XX Liquid ☐ Sludge ☐ Slurry ☐ Gas ☐ Other _____
(12) SPECIAL HANDLING INSTRUCTIONS: XX Gloves XX Goggles ☐ Respirator ☐ Other _____

GENERATOR CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked, labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and EPA.

IN THE EVENT OF A SPILL, CONTACT THE NATIONAL RESPONSE CENTER U.S. COAST GUARD 1-800-424-8802

(13) _____ Signature of Authorized Agent and Title _____ Date Shipped

WASTE ACID SAMPLE COPY

TRANSPORTER (HAULER MUST COMPLETE)

(14) NAME CHANCELLOR & OGDEN
EPA NO CAD048498463
ADDRESS 3031 East "I" Street PHONE NO. (213) 432-8461
CITY, STATE, ZIP Wilmington, California 90744
JOB NO. _____
UNIT NO. _____
(15) PICK-UP DATE _____
TIME _____ ☐ AM ☐ PM
(16) _____ Signature of Authorized Agent and Title _____ Date

TSD FACILITY (FACILITY-OPERATOR MUST COMPLETE)

(17) NAME BKK LANDFILL
EPA NO CAD067786749
PHONE NO. (213) 965-0911
NAME _____
EPA NO. _____
PHONE NO. _____

(18) QUANTITY (If Measured) _____
(19) STATE FEE (If Any) $ _____
(21) HANDLING OR DISPOSAL METHOD:
☐ Surface Impoundment ☐ Landfill
☐ Injection Well ☐ Land Treatment
☐ Treatment (Specify) _____
☐ Recovery or Reuse ☐ Storage/Transfer

(20) INDICATE ANY SIGNIFICANT DISCREPANCIES BETWEEN MANIFEST AND SHIPMENT: _____

IF WASTE IS HELD FOR DELIVERY ELSEWHERE, SPECIFY THE DESIGNATED TSD FACILITY:

(22) NAME _____
EPA NO. _____

(23) _____ Signature of Authorized Agent and Title _____ Date Accepted

EXHIBIT A-2

REORDER FROM: DATAFORM, INC. / (213) 583-8081

BOE-C6-0179791

CALIFORNIA HAZARDOUS WASTE MANIFEST

State Department of Health Services
HAZARDOUS MATERIALS MANAGEMENT SECTION
744 P Street, Sacramento, CA 95814

(1) Manifest Number 009-098354

See reverse side for instructions
Please type or print clearly. Press Hard

GENERATOR (Generator Must Complete)

(2) Name: MONTROSE CHEMICAL CORP. OF CALIF.
EPA NO: CAD008242711
Address: 20201 S. Normandie Phone No. 328-5462
City, State, Zip: Torrance, CA 90502

(3) Designated TSD Facility (Authorized to operate under an approved state program or federal program)
Name: BKK LANDFILL
EPA NO.: CAD067786749
Address: 2210 S. Azusa Avenue
City, State, Zip: W. Covina, CA 91792

(4) Alternate TSD Facility
Name: LIQUID WASTE DISPOSAL KETTLEMEN HILL SITE
EPA NO.: CAT000646117
Address: 4 Mi. SW of Kettlemen City
City, State, Zip: CA 93239

EXHIBIT B

(5) U.S. DOT PROPER SHIPPING NAME	U.S. DOT HAZARD CLASS	UN/NA ID NO.	WEIGHT OR VOLUME	UNITS
WASTE CORROSIVE LIQUID NOS	02	1760	4,200	gal.
XXXXX CORROSIVE-SODIUM HYDROXIDE	CORROSIVE			

CONTAINERS NUMBER: ____
TYPE: ☐ DRUMS ☐ BAGS ☐ CARTONS ☒ TANK TRUCK ☐ DUMP TRUCK ☐ OTHER

(6) WASTE CATEGORY: Alkaline Solution (7) EX. HAZ WASTE PERMIT NO. ____ (8) GENERATING PROCESS: DDT Production

(9) LIST COMPONENTS:

		CONC. UPPER	RANGE LOWER	UNITS
A	NaOH	2.5	0.3	XX % ☐ ppm
B	Na_2SO_4	10	2	XX % ☐ ppm.
C	NaMCBS	1	0.1	XX % ☐ ppm.
D	DDT & Derivatives	3,000	100	☐ % XX ppm.
	Balance Water, %	86.5	97.6	
	pH	11.0		

	CONC. UPPER	RANGE LOWER	UNITS
E.			☐ % ☐ ppm
F.			☐ % ☐ ppm
G.			☐ % ☐ ppm.

Non Hazardous Material ____ %

(10) WASTE PROPERTIES: ☐ Toxic ☐ Flammable XX Corrosive/Irritant ☐ Reactive ☐ Sensitizer ☐ Carcinogen/Mutagen

(11) PHYSICAL STATE: ☐ Solid XX Liquid ☐ Sludge ☐ Slurry ☐ Gas ☐ Other ____

(12) SPECIAL HANDLING INSTRUCTIONS: XX Gloves ☒ Goggles ☐ Respirator ☐ Other ____

GENERATOR CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked, labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and EPA.

IN THE EVENT OF A SPILL, CONTACT THE NATIONAL RESPONSE CENTER, U.S. COAST GUARD 1-800 424-8802

(13) Signature of Authorized Agent and Title ____ Date Shipped ____

TRANSPORTER (HAULER MUST COMPLETE)

(14) NAME: CHANCELLOR & OGDEN, INC.
EPA NO: CAD048498463
ADDRESS: 3031 East "I" Street PHONE NO. (213) 432-8461
CITY, STATE, ZIP: Wilmington, California 90744

(15) PICK-UP DATE ____
TIME ____ ☐ AM ☐ PM

(16) Signature of Authorized Agent and Title ____ Date ____

TSD FACILITY (FACILITY OPERATOR MUST COMPLETE)

(17) NAME ____
EPA NO ____
PHONE NO ____

18 QUANTITY (If Measured) ____
19 STATE FEE (If Any) ____

(21) HANDLING OR DISPOSAL METHOD:
☐ Surface Impoundment ☐ Landfill
☐ Injection Well ☐ Land Treatment
☐ Treatment (Specify) ____
☐ Recovery or Reuse ☐ Storage/Transfer

(20) INDICATE ANY SIGNIFICANT DISCREPANCIES BETWEEN MANIFEST AND SHIPMENT ____

IF WASTE IS HELD FOR DELIVERY ELSEWHERE, SPECIFY THE DESIGNATED TSD FACILITY

(22) NAME ____
EPA NO ____

(23) Signature of Authorized Agent and Title ____ Date Accepted ____

TO TRANSPORTER

ALKALINE WASTE SAMPLE COPY

2687

BOE-C6-0179792

Waste Analysis Plan

In order to comply with RCRA regulations to store hazardous wastes the following Methods of Analysis for Hazardous Wastes will be followed by the control laboratory at the Montrose-Torrance plant. The analytical values obtained by the control laboratory will be recorded on the manifest accompanying each load of hazardous waste shipped offsite for disposal.

Methods of Analysis for Hazardous Wastes

I. Analytical Methods for Waste Acid:

A. Acidity, as H_2SO_4, by total titre . . . . . report percent by wt.
Scott's Standard Methods of Chemical Analysis; (Vol. 6) Page 540ff

B. Chlorobenzene Sulfonic Acid, by hydrolysis . . .report percent by wt.
Montrose Standard Laboratory Procedures

C. Water Content, by K. Fischer . . . . . report percent by wt.
Aquametry, Mitchell & Smith (1948) Page 245

D. DDT Isomers & Primary Analogs by GC (FID) . . . report ppm by wt.
Guide to Analysis of Pesticide Residue, U.S. Dept. H.E.W.
(Environmental Health Division)

Frequency: Daily for acidity and sulfonic acid residue;
other tests periodically as required

II. Analytical Methods for Alkaline Waste:

A. Alkalinity, as NaOH, by total titre . . . . . .report percent by wt.
Scott's Standard Methods of Chemical Analysis; (Vol. 6) Page 600 ff

B. Chlorobenzene Sulfonate, by hydrolysis . . . ..report percent by wt.
Montrose Standard Laboratory Procedures

C. Water Content, by K. Fischer . . . .report percent by wt.
Aquametry, Mitchell & Smith (1948) Page 252

D. DDT Isomer & Primary Analogs, by GC (FID) . . .report ppm by wt.
Guide to Analysis of Pesticide Residues; U.S. Dept. of H.E.W.
(Environmental Health Division)

Frequency: Daily for alkalinity; other tests as required - report pH.

III. Other hazardous wastes that may be generated and stored prior to offsite disposal will be analyzed by the control laboratory and the values recorded on the manifest prior to shipment offsite. Standard recognized analytical procedures will be used by the control laboratory in evaluating the components of the waste material.

Sampling

1. The day shift acid recovery operator will draw a representative sample of the alkaline waste being shipped. If none is being shipped, a composite sample should be drawn from one or both of the waste liquid hold tanks. This sample is to be labeled as alkaline waste, dated and sent to the laboratory for analysis.

Analysis

1. The lab will determine the pH of the sample and record the results on the daily acid recovery analysis sheet.

2. The daily samples will be retained and composited each month for a complete analysis. The results will be recorded on the acid recovery analysis sheet and a copy made for Mr. Bratter. If the results are significantly different, Mr. Bratter will have the analysis shown on the manifest adjusted to correspond with the results obtained by the lab.

R/1

Inspection Plan

The hazardous wastes generated by the Montrose-Torrance plant are identified and listed in the Federal Register as Corrosive - E.P.A. Hazardous Waste Number D002.

The two types of wastes generated are stored in above-ground storage tanks and have been an integral part of the manufacturing process for many years. Therefore the storage tanks are and will continue to be under the control of the production department in regards to operation, inspection, maintenance and record-keeping.

The following general inspection information pertains to these storage tanks:

A. Recovered sulfuric acid storage tanks:

1. One 100,000 gallon flat bottom, mild steel vertical storage tank.
2. Two 50,000 gallon mild steel horizontal storage tanks.
3. Installed piping and pumps used in handling, storing and loading the sulfuric acid.

B. Alkaline waste storage tank:

1. One 100,000 gallon flat bottom mild steel vertical storage tank.
2. One 50,000 gallon flat bottom mild steel vertical storage tank.
3. Installed piping and pumps used in handling, storing and loading the alkaline liquid waste.

General inspection requirements:

It is the responsibility of the acid recovery plant operator to inspect the tanks, piping and pumps used in storing the sulfuric acid and alkaline wastes on a daily basis. He looks for leaks in the tank, pipelines and pumps. If any leaks or other problems are discovered he is instructed to report the problem to his supervisor. The supervisor, after checking into the problem, issues a work request to the maintenance department for corrective measures based on his findings. The maintenance department then takes whatever action is necessary to correct the problem.

Training

All new personnel will be trained in accordance with existing procedures and Job Analyses. All personnel will take part in an annual review and training session conducted by a member of management trained in the proper hazardous waste management procedures. The last training session was held on January 22, 1982.

R/2

Closure and Post-Closure Plans

The Montrose-Torrance Plant, in compliance with RCRA requirements, has formulated the following Closure and Post-Closure Plans:

Although there are no plans to close the plant in the immediate future, it is estimated that within 90 days after a decision to close the facility is announced the following plans will be put into effect:

1. Description of Storage Tanks

   There are two hazardous waste streams that are collected and stored in five above-ground steel tanks described on the following tank data sheets:

EXHIBIT C

TANK DATA SHEET

Date: May 7, 1981

Plant Montrose-Torrance

Tank Tag No: ---

Tank Name 100,000-gallon Recovered Sulfuric Acid Storage Tank

Capacity: 100,000-gallons Material of Construction Mild Steel

Maximum usually stored: 80,000-gallons

Above grade	XX	Open	
Below grade		Covered	XX
Diked		Vented	XX

Condition of Tank:

Good - was installed new.

Nature of contents:

Recovered Sulfuric Acid of 75% titre, containing an average of 5% MCBS with traces of tar and MCB plus 15-50 ppm of DDT and derivatives.

How is tank unloaded:

Piping, gear pump and loading rack are installed and in operation. Also, by vacuum truck from bottom nozzle.

CERTIFICATION

I certify that the 100,000-gallon storage tank described above is properly designed and constructed for the storage of 75% sulfuric acid.

Engineer Guy A. Dimichele

Signature Guy A. Dimichele

Certificate No. CH 1630 State CA

Date 5/7/82

R/2

BOE-C6-0179797

EXHIBIT D

TANK DATA SHEET

Date: May 7, 1981

Plant Montrose-Torrance

Tank Tag No: _____

Tank Name E. 50,000-gallon Recovered Sulfuric Acid Storage Tank

Capacity: 50,000-gallons Material of Construction Mild Steel

Maximum usually stored: 45,000-gallons

Above grade [XX] Open [ ]

Below grade [ ] Covered [XX]

Diked [ ] Vented [XX]

Condition of Tank:

Good - used tank.

Nature of contents:

Recovered sulfuric acid of 75% titre, containing an average of 5% MCBS with traces of tar and MCB plus 15-50 ppm of DDT and derivatives.

How is tank unloaded:

Piping, pump and loading rack are installed and in operation. Also, by vacuum truck from bottom nozzle.

CERTIFICATION

I certify that the 50,000-gallon storage tank described above is properly designed and constructed for the storage of 75% sulfuric acid.

Engineer Guy A. Dimichele

Signature Guy A. Dimichele

Certificate No. CH 1630 State CA

Date 5/7/82

R/2

BOE-C6-0179798

EXHIBIT E

TANK DATA SHEET

Date: May 7, 1981

Plant Montrose-Torrance

Tank Tag No: _____

Tank Name W. 50,000-gallon Recovered Sulfuric Acid Storage Tank

Capacity: 50,000-gallons Material of Construction Mild Steel

Maximum usually stored: 45,000-gallons

Above grade [XX]

Below grade [ ]

Diked [ ]

Open [ ]

Covered [XX]

Vented [XX]

Condition of Tank:

Good - used tank.

Nature of contents:

Recovered sulfuric acid of 75% titre, containing an average of 5% MCBS with traces of tar and MCB plus 15-50 ppm of DDT and derivatives.

How is tank unloaded:

Piping, pump and loading rack are installed and in operation. Also, by vacuum truck from bottom nozzle.

CERTIFICATION

I certify that the 50,000-gallon storage tank described above is properly designed and constructed for the storage of 75% sulfuric acid.

Engineer Guy A. Dimichele

Signature Guy A. Dimichele

Certificate No. CH 1630 State CA

Date 5/7/82

R/2

EXHIBIT F

TANK DATA SHEET

Date: May 7, 1981

Plant Montrose-Torrance

Tank Tag No: _____

Tank Name 100,000-gallon Alkaline Waste Storage Tank

Capacity: 100,000-gallons Material of Construction Mild Steel

Maximum usually stored: 50,000-gallons

Above grade [XX]

Below grade [ ]

Diked [ ]

Open [ ]

Covered [XX]

Vented [XX]

Condition of Tank:

Good - used tank.

Nature of contents:

Alkaline waste water containing 0.3-2.5% NaOH, 2-10% Na_2SO_4, 0.1-1% NaMCBS and 100-3,000 ppm DDT and derivatives.

How is tank unloaded:

By vacuum truck from bottom nozzle.

CERTIFICATION

I certify that the 100,000-gallon storage tank described above is properly designed and constructed for the storage of alkaline waste.

Engineer Guy A. Dimichele

Signature Guy A. Dimichele

Certificate No. CH 1630 State CA

Date 5/7/82

R/2

EXHIBIT G

TANK DATA SHEET

Date: May 7, 1981

Plant Montrose-Torrance

Tank Tag No: _____

Tank Name 50,000-gallon Contaminated Alkaline Waste Storage Tank

Capacity: 50,000-gallons

Material of Construction Mild Steel

Maximum usually stored: 25,000-gallons

Above grade [XX]

Below grade [ ]

Diked [ ]

Open [ ]

Covered [XX]

Vented [XX]

Condition of Tank:

Good - used tank.

Nature of contents:

Alkaline waste water of about 11 pH, containing Na_2SO_4, Na_2SO_3, NaMCBS, $CaSO_3$, $CaSO_4$, $Ca(OH)_2$, tar and trace of free MCB.

How is tank unloaded:

By vacuum truck from bottom nozzle.

CERTIFICATION

I certify that the 50,000-gallon storage tank described above is properly designed and constructed for the storage of alkaline waste.

Engineer Guy A. Dimichele

Signature Guy A. Dimichele

Certificate No. CH 1630 State CA

Date 5/7/82

R/2

2. Closure Procedure - Acid Tanks

As soon as possible after closure, the acid contents will be transferred to tank trucks by a Stauffer-approved contractor and disposed of at a Class I disposal site - BKK Landfill, West Covina, California.

After the tanks have been emptied, they will be neutralized with waste alkaline water from the 50M or 100M alkaline waste storage tanks, then washed with industrial recirculating water. Washing will be consolidated with waste liquid in tank trucks for contractor disposal at the above listed Class I disposal site.

The washed tanks will then be sold as surplus used tanks or cut up and sold as scrap iron. The tanks rest on concrete foundations that will be cleaned and decontaminated as needed.

A professional engineer will certify completion of the closure.

3. Closure Procedure - Alkaline Waste Tanks

As soon as possible after closure the alkaline waste contents will be transferred to tank trucks by a Stauffer-approved contractor and disposed of at a Class I disposal site - BKK Landfill, West Covina, California.

If any solids remain in these tanks, they will be washed with industrial recirculating water until neutral. Washing will be augmented with air sparging. The remaining solids will be removed either manually or by skip-loader, depending upon the amount. All washings and solids will be disposed of by contractor at the above listed Class I disposal site.

The empty tanks will then be steamed out with live steam until completely decontaminated. After cooling, they will be sold as surplus used tanks or cut up and sold as scrap iron. The tanks rest on concrete foundations that will be cleaned and decontaminated as required.

A professional engineer will certify completion of the closure.

4. Closure Cost - Acid Tanks

Assume: 130,000 gallons of waste acid on hand to be disposed of at the BKK Landfill:

BKK Costs: (assume 3 to 1 dilution of the acid)

$\frac{130{,}000 \text{ gals.} \times 3}{4{,}200/\text{load}} \times \$1{,}000/\text{load} =$ $93,000

a. Tank Clean-Outs (3)

2 operators @ 10 shifts each @ $170/shift 7,000

$100,000

R/2

BOE-C6-0179802

b. Demolition of Decontaminated Tanks (3)

100M Tank - 2 men @ 10 days = $175 x 10 =	$1,750
E 50M Tank - 2 men @ 5 days = $175 x 5 =	875
W 50M Tank - 2 men @ 5 days = $175 x 5 =	875
	$3,500

c. Clean-Up Costs

Approximately	$1,250
	$4,750

It is estimated that the surplus or scrap value of the tanks will offset the cost of demolition or removal of the tanks and the clean up costs for the foundations.

Therefore, the closure cost for the acid storage tanks using 1982 cost data would be:

$100,000

5. Closure Costs - Alkaline Waste Tanks

Assume: 75,000 gallons of alkaline waste on hand
Assume: All of the 75,000 gallons to BKK Landfill

a. BKK Costs:

$\frac{75,000 \text{ gals.}}{4,200 \text{ gals./load}}$ x $700/load = $12,500

b. Tank Clean-Outs (2)

2 operators @ 5 shifts @ $200/shift = $2,000

c. Skip Loader for Contaminated Alkaline Waste Tank

(Spent lime and tar accumulation) = $2,000

d. BKK Charges for Eight Bins of Solid Waste = $6,000

Total $22,500

e. Demolition of Decontaminated Tanks (2)

100M Tank - 2 men @ 10 days = $200 x 10 =	$2,000
50M Tank - 2 men @ 5 days = $200 x 5 =	1,000
	$3,000

f. Clean-Up Costs

Approximately	$750
	$3,750

R/2

It is estimated that the surplus or scrap value of the tanks will offset the cost of demolition or removal of the tanks and the clean up costs for the foundations.

Therefore, the closure costs for the alkaline storage tanks using 1982 cost data would be:

$22,500

The total costs for closure of the entire hazardous waste storage facility would then be as shown:

Waste Acid Storage Tanks		$100,000
Waste Alkaline Storage Tanks		22,500
	Total	$122,500

It is estimated that it would take approximately 90 days to complete the work described for closure of the facility.

R/2

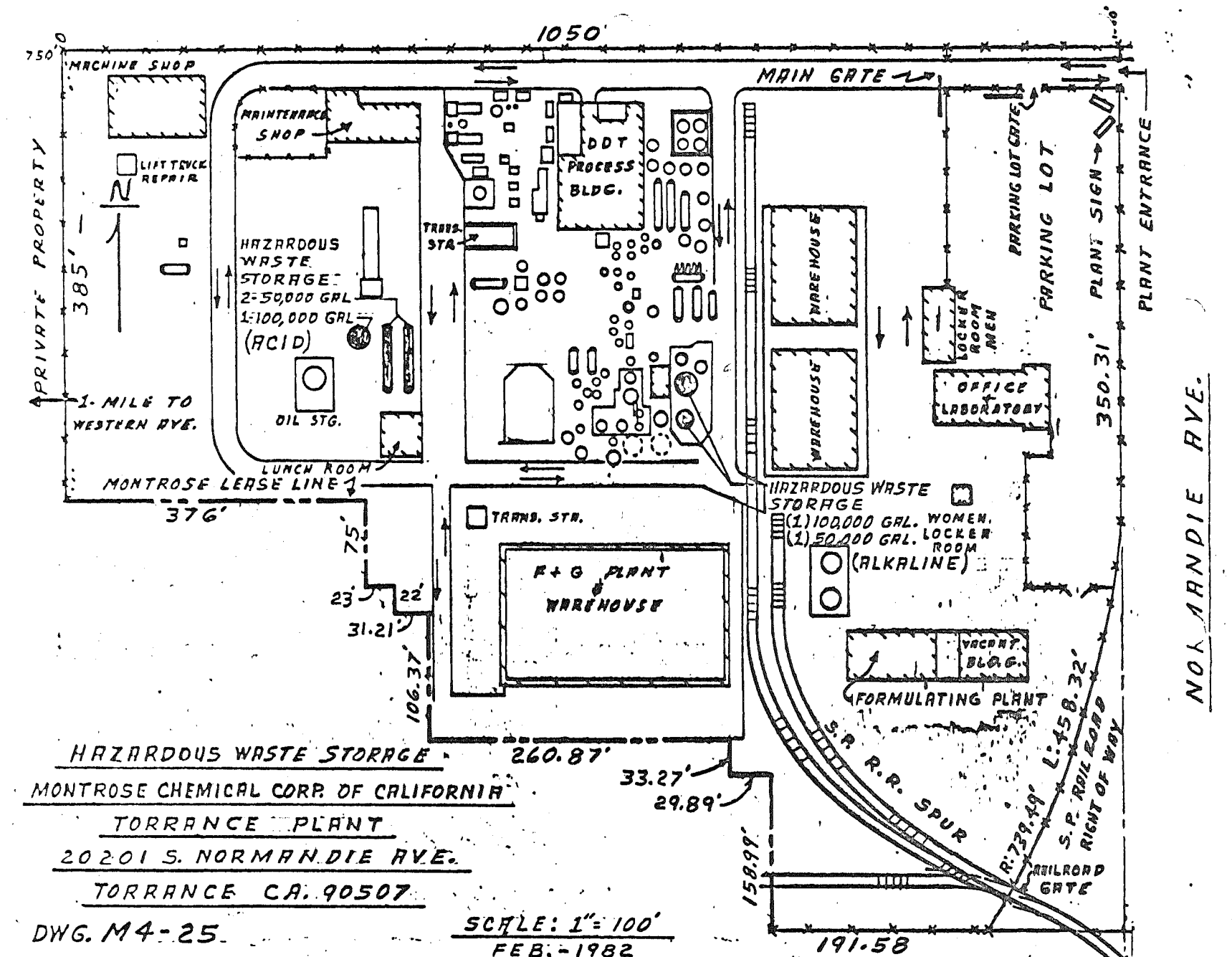
Contingency Plans and Emergency Procedures

The Montrose-Torrance plant has developed and has available the following contingency plans covering employee safety and actions to be taken in the event of fire, explosion or other emergency occurrence:

Title	Date
Safety Manual	May 1982
Environmental Compliance Operating Plan	April 1982
Hazardous Substance Spill Control and Counter-Measure Plan	April 1982
Oil Spill Prevention Control and Counter-Measure Plan	April 1982
Emergency Action and Fire Prevention Plan	September 1981
Respiratory Protection Manual	February 1982

R/2

BOE-C6-0179805



HAZARDOUS WASTE STORAGE

MONTROSE CHEMICAL CORP. OF CALIFORNIA

TORRANCE PLANT

20201 S. NORMANDIE AVE.

TORRANCE CA. 90507

DWG. M4-25

SCALE: 1" = 100'

FEB. - 1982

BOE-C6-0179806

P/B-A-11

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
107 SOUTH BROADWAY, ROOM ~~848~~ 7128
LOS ANGELES, CA 90012
(213) 620-2380

November 18, 1982

Mr. John L. Kallok, Plant Manager
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
20201 South Normandie Avenue
Torrance, CA 90507

Dear Mr. Kallok:

Our records indicate that you or your representative applied to the California State Department of Health Services (DHS) and/or the U.S. Environmental Protection Agency, (EPA) for a Hazardous Waste Facility Permit. In response to that application, you received Interim Status Document (ISD) No. CAD 008242711 from the DHS. Part I, Item 3 of that ISD states that you will be required to submit an operation plan to the DHS within six months after receiving specific written notice from the DHS to do so. Please consider this letter to be that written notice. You will expedite receipt of your final permit if you submit the operation plan before May 19, 1983.

Enclosed is a copy of our instructions for preparing the operation plan for your facility. Please follow those instructions carefully when preparing your plan. The instructions were extensively revised to include the permit application requirements of EPA because two permit programs are presently operating in California: EPA's program and the DHS' program. To minimize duplication of effort, the two agencies have agreed to combine their permit application requirements and to issue jointly one permit for those facilities which are subject to both permit programs.

If you have questions concerning the operation plan, please write or call.

Sincerely yours,

John A. Hinton, P.E.
Permits, Surveillance and
Enforcement Section
Hazardous Waste Management Branch

Enclosure

P 362 559 420

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. John . Kallok MONTROSE CHEMICAL	
Street and No. 20201 S Normandie Avenue	
P.O., State and ZIP Code Torrance, CA 90507	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 11/18/82 gd	

PS Form 3800, Feb. 1982

P/3-B-1

Montrose Chemical Corporation of California

P.O. Box 147
20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

September 21, 1981

MCL 9/23

Hazardous Waste ... SEP 23 1981 California Dept. of Health Services LOS ANGELES

CERTIFIED - RETURN RECEIPT REQUESTED

E.P.A. Region IX
Attention: A-3-2
215 Fremont Street
San Francisco, Ca. 94105

Re: Interim Permit
Montrose Chemical Corporation of California
CAD008242711

Dear Sir:

Enclosed is our revision to our Hazardous Waste Permit Application filed in November, 1980. The revision is shown on Form 3, page 1; Form 3, page 5 and Attachment II - E.P.A. Form 3510-3. All other pages and information will remain the same.

This revision was made for the following reasons:

1. Modifications in our process and operating procedure made it necessary to increase our alkaline waste (D002) storage capacity from 50,000 gallons to 150,000 gallons with the addition of a 100,000 gallon steel storage tank. The addition of this tank will not effect the annual volume of alkaline waste generated or disposed of.

2. Additional storage capacity was needed to provide flexibility in our operation due to restrictions imposed by our disposal site in accepting our waste material at certain times.

Please confirm at your earliest convenience receipt of this revision. If you have any questions regarding this submittal please contact us.

Yours very truly,

Richard G. Wilson

Richard G. Wilson
Director of Manufacturing

cc: Miller Chambers
Revisions - State of California
Department of Health Services
Hazardous Waste Management Section
107 S. Broadway, Room 7128
Los Angeles, California 90012

encl.

EPA

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

RCRA

EPA I.D. NUMBER: F C A D 0 0 8 2 1 2 7 1 1 1

2635

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)*

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

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
6 0	0 6	1 5

[ ] 2. NEW FACILITY *(Complete item below.)*

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

YR.	MO.	DAY

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

[X] 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.
1. AMOUNT – Enter the amount.
2. 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	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
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

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
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

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

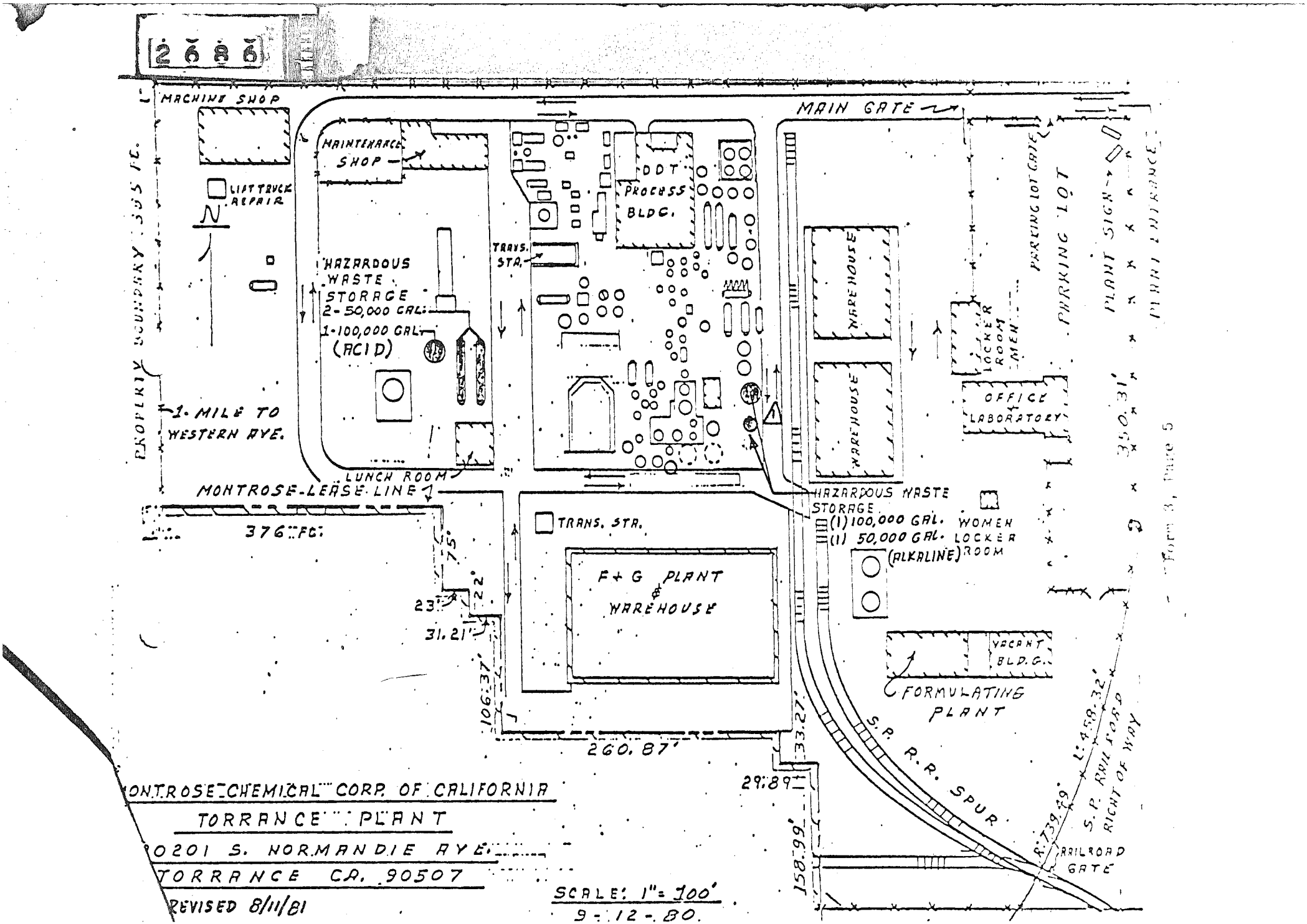
EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G	
X-2	T 0 3	20	E	
1	S 0 2	350,000	G	
2		N/A		
3		N/A		
4		N/A		
5		N/A		
6		N/A		
7		N/A		
8		N/A		
9		N/A		
10		N/A		

BOE-C6-0179810

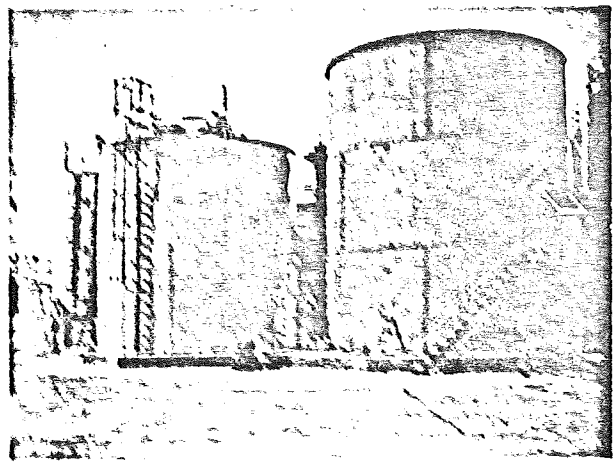
BOE-C6-0179811



Form 3, Page 5

Existing
50,000 gal. tank

New
100,000 gal. tank



Hazardous Waste Steel Storage Tank
[illegible]
100,000 gallons (new addition)
Installed 8-81

BOE-C6-0179812

2688

DATE_____

TIME_____

INSPECTOR_____

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA

TORRANCE PLANT

HAZARDOUS STORAGE TANK INSPECTION AND LOG

Inspection Guide	100M RA St. Tk.	E. 50M RA St. Tk.	W. 50M RA St. Tk.	100M Tk. Alkaline Waste Water	50M Tk. Alakline Waste Water
MONITORING EQUIPMENT (Manometers, gages, etc)					
SECURITY DEVICES (Blinds, locks, etc)					
OPERATING & STRUCTURAL EQUIPMENT (Pumps, agitators, motors, valves, beams, etc.)					
DISCHARGE CONTROL EQUIPMENT (Loading racks, piping, loading arms)					
SURFACE IMPOUNDMENT (Condition of dikes, etc)					
SAFETY & EMERGENCY EQUIPMENT (Safety showers, ladder, stairways, etc)					

REPAIRS REQUIRED

DATE OF REPAIR

ADDITIONAL REMARKS

5/13/82

BOE-C6-0179813

TANK TRUCK LOADING CHECKLIST

_____ 1. The tank truck Hazardous Waste Permits are current and up to date.

_____ 2. Chocks are in place under wheels while loading.

_____ 3. Placards are in place with proper four digit number on all four sides. (Waste sulfuric acid #1832 and alkaline liquid waste #1719.)

_____ 4. Key provided to unlock correct unloading line and was returned.

_____ 5. Tank truck return vent has been connected when loading acid.

_____ 6. The tank truck dome covers are bolted and are not leaking.

_____ 7. A California Hazardous Waste Manifest has been filled out and signed for each load.

_____ 8. A stamp reading "This carrier certifies that the cargo tank supplied for this shipment is an authorized container for this commodity and has been properly loaded, marked, placarded, and in proper condition for transportation" should be signed on each bill of lading or service order by the driver.

DATE _____ TIME _____

INSPECTED BY _____

P/B-B-1

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814

Facility: Montrose Chemical Corporation of California 20201 South Normandie Ave. Los Angeles County Torrance, CA 90502	INTERIM STATUS DOCUMENT Number: CAD 008242711 Effective Date: March 30, 1981
Operator: Montrose Chemical Corporation of California P. O. Box 147 Torrance, CA 90507	

Pursuant to Section 25200.5 of the California Health and Safety Code, this Interim Status Document is hereby granted to Montrose Chemical Corporation of California 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

ATTACHMENT A

Interim Status Document

Montrose Chemical Corporation of California
20201 South Normandie Avenue
Los Angeles County
Torrance, CA 90502

I. GENERAL CONDITIONS

1. Identification and general responsibilities of operator.

Montrose Chemical Corporation of California, hereinafter called the operator and/or owner, shall comply with the provisions of the California Health and Safety Code, including Chapter 6.5 of Division 20, and with the Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes (Chapter 30, Division 4, Title 22 of the California Administrative Code). The following requirements set forth in Chapter 30, Division 4, Title 22, California Administrative Code, should be particularly noted:

(a) The owner or operator shall ensure that the operation of the facility will not imperil public health and safety, wildlife, domestic livestock, or the environment.

(b) The owner or operator shall allow the California State Department of Health Services or the local health agency to inspect the facility, take samples of wastes, and inspect pertinent records.

(c) The owner or operator shall maintain the qualified personnel and the equipment necessary to provide for the safe operation of the facility.

(d) The owner or operator shall notify the California State Department of Health Services of a proposed change in ownership of the facility, in the method of operation of the facility, or of proposed closure of the facility 30 days prior to such event.

(e) The operator shall report to the California State Department of Health Services, within 24 hours after occurrence, all accidents involving hazardous wastes which resulted in, or could have resulted in, a hazard to public health and safety, wildlife, domestic livestock, or to the environment.

2. Records.

The owner or operator shall file this Interim Status Document at the facility and at his place of business.

3. Operation plan.

   Unless he has already done so, the owner or operator shall submit to the California State Department of Health Services within six months of the effective date of this document, an operation plan in accordance with Section 66376, Title 22 of the California Administrative Code.

4. Prohibited acts.

   The owner or operator shall not do any of the following acts:

   (a) Treat, store, or dispose of hazardous wastes which are not identified.

   (b) Employ processes not described in the application.

   (c) Make substantial modifications or additions to the facility.

5. Limitation.

   The owner or operator shall comply with the conditions of this document and with any new or modified conditions which the California State Department of Health Services deems necessary to protect public health or the environment. A new interim status condition or a modification of an existing interim status condition shall become effective on the date that written notice of such change is received by the owner or operator.

NOTE: Unless explicitly stated otherwise, all cross references to items in this Interim Status Document shall refer only to items occurring within the same Part. All Parts are identified by Roman numerals. The items set forth in each Part shall apply to the owner, operator, and/or facility in addition to the items set forth in any preceding and/or following Part of this document.

II. SPECIAL CONDITIONS

1. Storage in tanks.

   (a) Each hazardous waste storage tank situated above ground shall have a spill confinement structure (e.g., dike or trough) capable of holding the entire contents of the tank plus sufficient freeboard.

   (b) Hazardous waste storage tanks shall be constructed of materials which are compatible with the wastes to be contained or shall be protected by liners which are compatible with those wastes.

   (c) Prior to use, hazardous waste storage tanks and their appurtenances shall be certified by an engineer registered in California to be structurally sound and of adequate construction for the intended use.

   (d) Each hazardous waste storage tank and storage area shall be individually marked with the internationally recognized hazard identification system placards developed by the National Fire Prevention Association (NFPA).

   (e) Valves on hazardous waste storage tanks shall be kept locked when the facility is unattended.

2. Storage in containers.

   (a) Containers used for storing hazardous waste shall be in a condition such that the containers can be safely transported, handled or moved.

   (b) Areas used for storing containers of hazardous waste shall be widely separated, or physical barriers shall be provided to ensure that commingling of incompatible hazardous wastes cannot occur if a container on one pad ruptures.

   (c) A label shall be maintained on all containers in which hazardous wastes are stored for 90 days or more and records for the storage of all hazardous wastes shall be maintained pursuant to Section 66545, Title 22 of the California Administrative Code. Labels shall include the following information:

      (1) Composition and physical state of the waste;

      (2) Special safety recommendations and precautions for handling the waste;

(3) Statement or statements which call attention to the particular hazardous properties of the waste;

(4) Amount of waste and name and address of the person producing the waste; and

(5) Date of acceptance at the storage facility.

(d) Empty containers contaminated with hazardous materials shall be stored, handled, processed and disposed of as hazardous wastes.

3. Recycling.

(a) The mixing or blending of potentially incompatible materials and wastes for purposes of recovering resources, neutralizing wastes, or detoxifying wastes shall be carried out under controlled conditions to ensure that violent reactions, extreme heat, or fire do not occur and that toxic or flammable gases and vapors are not discharged into the atmosphere. DOT

(b) If requested by the California State Department of Health Services in accordance with Article 12, Chapter 30, Division 4, Title 22, California Administrative Code, the owner or operator shall submit a written statement justifying having not recycled a waste which the Department has determined to be recyclable.

4. Management of powdered wastes.

To prevent hazardous waste from being blown by the wind, hazardous waste in the form of powder, dust or a fine solid shall be handled, treated, stored and disposed of in covered containers or, if the waste is not water reactive, shall be wetted as a slurry.

5. Hazardous wastes described below shall not be handled at the facility:

(a) Extremely hazardous wastes as defined in Sections 66064 and 66685, Title 22, California Administrative Code, unless specifically approved by a written permit from the California State Department of Health Services.

(b) Flammable wastes and water-reactive wastes as defined in Sections 66072 and 66236, respectively, Title 22 of the California Administrative Code.

(c) Wastes such as organic solvents or sludges containing volatile, toxic substances in excess of 10 percent by weight.

(d) Burning wastes.

(e) Forbidden and Class A explosives as defined in Sections 173.51 and 173.53, Title 49, Code of Federal Regulations.

6. Management of incompatible wastes.

Each of the following categories of incompatible hazardous wastes shall be adequately separated during all handling, storage, and disposal operations:

(a) Alkalies and cyanides.

(b) Acids.

(c) Toxic wastes, pesticides and flammable wastes.

7. Management of pesticide wastes.

The operator shall store, handle, treat and dispose of emptied pesticide containers in accordance with the requirements of Chapter 30, Division 4, Title 22 of the California Administrative Code, and Article 10, Group 3, Subchapter 3, Chapter 4, Title 3 of the California Administrative Code.

8. Nonpotable water supply.

If an onsite water supply is used for controlling dust and fires, cleaning equipment or other purposes, and does not meet all health standards for drinking water, all faucets or taps connected to that supply shall be clearly labeled in English, "Polluted-Not Safe For Human Use", and Spanish, "Peligro, Contaminacion, No Usar".

9. Public water supply.

If a public water supply is used at the facility, the service connection shall be protected from contamination as specified in Section 7604, Title 17 of the California Administrative Code.

10. Fencing.

The perimeter of the hazardous waste area of the facility shall be secured by a well-maintained fence, capable of preventing the intrusion of livestock and of discouraging entry by unauthorized persons. If the entire facility is appropriately fenced, if the general public does not have access to the hazardous waste area, and if the hazardous waste area is posted with warning signs as described elsewhere in this document, no additional fence shall be required around the

hazardous area unless the absence of such a fence could result in a hazard to health, safety, or the environment.

11. Operation at night.

When the facility is operated during hours of darkness, the operator shall provide sufficient lighting to ensure safe, effective management of hazardous wastes.

12. Warning signs.

Signs indicating that the facility, or the hazardous waste area of the facility, contains hazardous waste shall be placed on the perimeter fence at locations where it is anticipated that hunters and other trespassers may enter the facility such as at trails, major drainages, and ridges. Wording of the signs shall be in English, "Caution-Hazardous Waste Area-Unauthorized Persons Keep Out", and Spanish, "Cuidado! Zona de Residuos Peligrosos. Prohibida la Entrada a Personas No Autorizadas".

13. Telephone or radio communications.

A telephone or radio for summoning aid in the event of an emergency shall be in workable condition and available for immediate use by personnel working in the hazardous waste area of the facility.

14. Safety showers.

The owner or operator shall provide to personnel working in the hazardous waste area of the facility adequate numbers of safety showers. The safety showers shall be in workable condition and available for immediate use.

15. Eyewashes.

The owner or operator shall provide to personnel working in the hazardous waste area of the facility adequate numbers of eyewashes. The eyewashes shall be in workable condition and available for immediate use.

16. First-aid kit.

The owner or operator shall provide to personnel working in the hazardous waste area of the facility adequate numbers of industrial-type first-aid kits. The kits shall be maintained and available for immediate use.

17. Warning alarm system.

If at any time there is a sole employee on the premises, the employee shall have immediate access to an alarm or other communication device capable of summoning external emergency assistance.

18. Protective clothing.

The owner or operator shall provide to personnel working in the hazardous waste area of the facility adequate numbers of the following National Institute of Occupational Safety and Health (NIOSH) approved equipment if appropriate:

(a) Protective head gear and face masks.

(b) Chemically resistant apparel and gloves.

(c) Self-contained breathing apparatus and respirators with the approved cartridges.

III. SAFETY, EQUIPMENT, AND EMERGENCY RESPONSE

1. Identification number.

The facility owner or operator shall have an identification number issued by the U.S. Environmental Protection Agency (EPA).

2. Notices.

(a) If the owner or operator has arranged to receive hazardous waste from a foreign source, he shall notify the California State Department of Health Services in writing at least four weeks in advance of the date that the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) Before transferring ownership or operation of the facility during its operating life or during the post-closure care period, the owner or operator shall notify the new owner or operator in writing of the conditions of this document.

3. Analysis of waste.

(a) (1) Before the owner or operator treats, stores, or disposes of a particular type of hazardous waste for the first time, he shall obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis shall contain all the information which must be known to treat, store, or dispose of the waste in accordance with the conditions of this document.

(2) The analysis may include data developed for other purposes, and existing published or documented data on the hazardous waste or on waste generated from similar processes.

(3) The analysis shall be repeated as necessary to ensure that it is accurate and up-to-date. At a minimum, the analysis must be repeated when the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed.

(b) Upon the effective date of this document, the owner or operator shall follow a written waste analysis plan which describes the procedures which will be used to comply with Item 3 (a). The plan shall be subject to approval by the California State Department of Health Services and shall be kept at the facility. At a minimum, the plan shall specify:

(1) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters;

(2) The test methods which will be used to test for these parameters;

(3) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(i) One of the sampling methods described in Appendix I, Part 261, Title 40, Code of Federal Regulations; or

(ii) An equivalent sampling method approved by the California State Department of Health Services.

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date;

(5) Where applicable, the methods which will be used to meet any additional waste analysis requirements for specific waste management methods as specified elsewhere in this document.

4. Security.

(a) The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility.

(b) The facility shall have:

(1) A 24-hour surveillance system which continuously monitors and controls entry onto the active portion of the facility; or

(2) (i) An artificial or natural barrier which completely surounds the active portion of the facility and which would prevent unauthorized entry; and

(ii) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

(c) Upon the effective date of this document, a sign with the legend, "Caution - Hazardous Waste Area - Unauthorized Persons Keep Out," shall be posted at each entrance to the active portion of the facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend shall be written in Engligh and Spanish, "Cuidado! Zona De Residuous Peligrosos. Prohibida La Entrada A Personas No Autorizadas", and shall be legible from a distance of at least 25 feet. Existing signs with a legend other than "Caution - Hazardous Waste Area - Unauthorized Persons Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

5. Inspections.

(a) The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing--or may lead to--release of hazardous waste constituents to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(b) (1) The owner or operator shall follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(2) The schedule shall be subject to approval by the California State Department of Health Services.

(3) He shall keep this schedule at the facility.

(4) The schedule shall identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(5) The frequency of inspection may vary for the items on the schedule. However, it shall be based on the rate of

possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas shall be inspected daily when in use. At a minimum, the inspection schedule shall include the items and frequencies called for elsewhere in this document.

(c) The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which shall be subject to approval by the California State Department of Health Services and which shall ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.

(d) The owner or operator shall record inspections in an inspection log or summary. He shall keep these records for at least three years from the date of inspection. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

6. Personnel training.

(a) (1) Facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the conditions of this document. The owner or operator shall ensure that this program includes all the elements described under Item 6 (a)(3).

(2) This program shall be directed by a person trained in hazardous waste management procedures, and shall include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to ground-water contamination incidents; and

(vi) Shutdown of operations.

(b) Facility personnel shall have successfully completed the program required in Item 6 (a) by the effective date of this document or within six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of this document shall not work in unsupervised positions until they have completed the training requirements of Item 6 (a).

(c) Facility personnel shall take part in an annual review of the initial training required in Item 6 (a).

(d) The owner or operator shall maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

(2) A written job description for each position listed under Item 6 (d)(1). This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but shall include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under Item 6 (d) (1); and

(4) Records that document that the training or job experience required under Items 6 (a), (b), and (c) has been given to, and completed by, facility personnel.

(e) Training records on current personnel as required in Item 6 (d) 4 shall be kept until closure of the facility. Training records on former employees shall be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

7. Ignitable, reactive, or incompatible wastes.

(a) The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall be separated and protected from sources of ignition or reaction. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) The treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials shall be conducted so that it does not:

(1) Generate extreme heat or pressure, fire or explosion, or violent reaction;

(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) Damage the structural integrity of the device or facility containing the waste; or

(5) Through other like means threaten human health or the environment.

8. Maintenance and operation of facility.

The facility shall be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

9. Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, shall be tested and maintained as necessary to ensure its proper operation in time of emergency.

10. Required aisle space.

The owner or operator shall maintain aisle space as needed to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency.

11. Arrangements with local authorities.

(a) Upon the effective date of this document, the owner or operator shall attempt to make the following arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations:

(1) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

(2) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

(3) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(4) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(b) Where State or local authorities decline to enter into such arrangements, the owner or operator shall document the refusal in the operating record.

12. Purpose and implementation of contingency plan.

(a) Upon the effective date of this document, the owner or operator shall have a contingency plan for the facility. The contingency plan shall be subject to approval by the California State Department of Health Services and shall be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan shall be carried out immediately wherever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

13. Content of contingency plan.

(a) The contingency plan shall describe the actions facility personnel shall take to comply with Items 12 and 17 in response to fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the owner or operator has already prepared some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the conditions of this document.

(c) The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services pursuant to Item 13.

(d) The plan shall list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see Item 18), and this list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates.

(e) The plan shall include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list shall be kept up to date. In addition, the plan shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall describe signal(s) to be used to begin evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous wastes or fires).

14. Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan shall be:

(a) Maintained at the facility; and

(b) Submitted to the California State Department of Health Services and to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

15. Amendment of contingency plan.

The contingency plan shall be reviewed, and immediately amended, if necessary, whenever:

(a) Applicable regulations are revised;

(b) The plan fails in an emergency;

(c) The list of emergency coordinators changes; or

(d) The list of emergency equipment changes.

16. Emergency coordinator.

At all times, there shall be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

17. Emergency procedures.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) shall:

(1) Immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel;

(2) Immediately notify appropriate State or local agencies with designated response roles if their help is needed; and

(3) Notify the California State Department of Health Services by telephone or telegraph within 24 hours of occurrence.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials. This may be done by observation or review of facility records or manifests and, if necessary, by chemical analysis.

(c) Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the findings shall be reported as follows:

(1) The emergency coordinator shall immediately notify either the government official designated as the on-scene coordinator for that geographical area (in the applicable regional contingency plan under Part 1510, Title 40, Code of Federal Regulations), or the National Response Center (using their 24-hour toll free number: 800/424-8802). The report shall include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health, or the environment, outside the facility.

(2) If his assessment indicates that evacuation of local areas may be advisable, appropriate local authorities shall be notified immediately. The emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

(e) During an emergency the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous

waste at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(f) If the facility stops operations in response to a fire, explosion or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(h) The emergency coordinator shall ensure that, in the affected area(s) of the facility:

(1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(i) The owner or operator shall notify the California State Department of Health Services and local authorities, that the facility is in compliance with Item 17 (h) before operations are resumed in the affected area(s) of the facility.

(j) The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 30 days after the incident, he shall submit a written report on the incident to the California State Department of Health Services. The report shall include:

(1) Name, address, and telephone number of the owner or operator;

(2) Name, address, and telephone number of the facility;

(3) Date, time, and type of incident (e.g., fire, explosion);

(4) Name and quantity of material(s) involved;

(5) The extent of injuries, if any;

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(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(7) Estimated quantity and disposition of recovered material that resulted from the incident.

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IV. RECORDKEEPING

1. Operating record.

(a) The owner or operator shall keep a written operating record at the facility.

(b) The following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(1) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility;

(2) The location of each hazardous waste within the facility and the quantity at each location. This information shall include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

(3) Records and results of waste analyses and trial tests performed;

(4) Summary reports and details of all incidents that require implementing the contingency plan;

(5) Records and results of inspections (except these data need be kept only three years);

(6) Monitoring, testing or analytical data where required; and

(7) All closure cost estimates.

2. Availability, retention, and disposition of records.

(a) All records including plans, required in this document shall be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or respresentative of the California State Department of Health Services who is duly designated by the Director;

(b) The retention period for all records required in this document is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the California State Department of Health Services;

(c) A copy of records of waste disposal locations and quantities in Item 1 (b)(2) shall be submitted to the California State Department of Health Services and local land authority upon closure of the facility.

3. Annual report.

The owner or operator shall prepare and submit a single copy of an annual report to the California State Department of Health Services by March 1 of each year beginning March 1, 1982. The annual report shall cover facility activities during the previous calendar year and shall include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) A description and the quantity of each hazardous waste the facility received during the year;

(d) The method of treatment, storage, or disposal for each hazardous waste;

(e) Monitoring data where required;

(f) The most recent closure cost estimate;

(g) The certification signed by the owner or operator of the facility or his authorized representative.

4. Additional reports.

In addition to submitting the annual report required in Item 3, the owner or operator shall also report to the California State Department of Health Services:

(a) Releases, fires, and explosions;

(b) Ground-water contamination and monitoring data;

(c) Facility closure.

V. CLOSURE

1. Closure.

The owner or operator shall close his facility in a manner that: (a) minimizes the need for further maintenance, and (b) controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground water, or surface waters, or to the atmosphere.

2. Closure plan and amendment of plan.

(a) The owner or operator shall have a written closure plan. This plan shall be subject to approval by the California Regional Water Quality Control Board and shall be kept at the facility. This plan shall identify the steps necessary to close the facility completely at any point during its intended life and at the end of its intended life. The closure plan shall include, at least:

(1) A description of how and when the facility will be partially closed, if applicable, and ultimately closed. The description shall identify the maximum extent of the operation which will be unclosed during the life of the facility, and how Item 1 and other applicable conditions of this document will be met;

(2) An estimate of the maximum inventory of wastes in storage or in treatment at any given time during the life of the facility;

(3) A description of the steps needed to decontaminate facility equipment during closure; and

(4) A schedule for final closure which shall include, as a minimum, the anticipated date when wastes will no longer be received, the date when completion of final closure is anticipated, and intervening milestone dates which will allow tracking of the progress of closure. (For example, the expected date for completing treatment or disposal of waste inventory shall be included, as must the planned date for removing any residual wastes from storage facilities and treatment processes.)

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(3) A description of the steps needed to decontaminate facility equipment during closure; and

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(b) The owner or operator may amend his closure plan at any time during the active life of the facility. (The active life of the facility is that period during which wastes are periodically received.) The owner or operator shall amend his plan any time changes in operating plans or facility design affect the closure plan.

(c) The owner or operator shall submit his closure plan to the California Regional Water Quality Control Board at least 180 days before the date he expects to begin closure. The California Regional Water Quality Control Board will modify, approve, or disapprove the plan within 90 days of receipt and after providing the owner or operator and the affected public (through a newspaper notice) the opportunity to submit written comments.

3. Time allowed for closure.

(a) Within 90 days after receiving the final volume of hazardous wastes, the owner or operator shall treat all hazardous wastes in storage or in treatment, or remove them from the site, or dispose of them on-site, in accordance with the approved closure plan.

(b) The owner or operator shall complete closure activities in accordance with the approved closure plan and within six months after receiving the final volume of wastes. The California Regional Water Quality Control Board may approve a longer closure period under Item 2 (c) if the owner or operator can demonstrate that: (1) the required or planned closure activities will, of necessity, take him longer than six months to complete, and (2) that he has taken all steps to eliminate any significant threat to human health and the environment from the unclosed but inactive facility.

4. Disposal or decontamination of equipment.

When closure is completed, all facility equipment and structures shall have been properly disposed of, or decontaminated by removing all hazardous waste and residues.

5. Certification of closure.

When closure is completed, the owner or operator shall submit to the California Regional Water Quality Control Board certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

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VI. FINANCIAL RESPONSIBILITY

1. Cost estimate for facility closure.

   (a) The owner or operator shall have a written estimate of the cost of closing the facility in accordance with the applicable closure requirements of this document. The owner or operator shall keep this estimate, and all subsequent estimates, at the facility. The estimate shall equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

   (b) The owner or operator shall prepare a new closure cost estimate whenever a change in the closure plan affects the cost of closure.

   (c) On each anniversary of the effective date of this document, the owner or operator shall adjust the latest closure cost estimate using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its *Survey of Current Business*. The inflation factor shall be calculated by dividing the latest published annual Deflator by the Deflator for the previous year. The result is the inflation factor. The adjusted closure cost estimate shall equal the latest closure cost estimate (see Item 1(b)) times the inflation factor.

BOE-C6-0179840

VII. TANKS

1. Operation.

   (a) Treatment or storage of hazardous waste in tanks shall comply with Item 7 (b), Part III of this document.

   (b) Hazardous waste or treatment reagents shall not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

   (c) Uncovered tanks shall be operated to ensure at least 60 centimeters (2 feet) of freeboard, or the tank shall be equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank.

   (d) If hazardous waste is continuously fed into a tank, the tank shall be equipped with a means to stop this inflow (e.g., a waste feed-cutoff system or by-pass system to a stand-by tank).

2. Analysis of waste and trial tests.

   (a) If a tank is to be used for:

      (1) Chemically treating or storing a hazardous waste which is substantially different from waste previously treated or stored in that tank; or

      (2) Chemically treating hazardous waste with a substantially different process than any previously used in that tank; the owner or operator shall before treating or storing the different waste or using the different process:

         (i) Conduct waste analyses and trial treatment or storage tests (e.g., bench scale or pilot plant scale tests) to document that this proposed treatment or storage will comply with Items 1(a) and (b); or

         (ii) Obtain written information on similar storage or treatment of similar waste under similar operating conditions to document that this proposed treatment or storage will comply with Items 1 (a) and (b).

3. Inspections.

(a) The owner or operator of a tank must inspect, if applicable:

(1) Discharge control equipment (e.g., waste feed cut-off systems, and drainage systems), at least once each operating day, to ensure that it is in good working order;

(2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the tank is being operated according to its design;

(3) The level of waste in the tank, at least once each operating day, to ensure compliance with Item 1 (c);

(4) The construction materials of the tank, at least weekly, to detect corrosion or leaking of fixtures or seams; and

(5) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

4. Closure.

At closure, all hazardous waste and hazardous waste residues shall be removed from tanks, discharge control equipment, and discharge confinement structures.

5. Ignitable or reactive waste.

(a) Ignitable or reactive waste shall not be placed in a tank, unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the tank so that the resulting waste, mixture, or dissolution of material is no longer ignitable or reactive and Item 7 (b), Part III of this document is complied with; or

(2) The waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react; or

(3) The tank is used solely for emergencies.

(b) If the owner or operator treats or stores ignitable or reactive waste in covered tanks, he shall comply with the National Fire Protection Association's (NFPA's) buffer zone requirements for tanks, contained in Tables 2-1 through 2-6 of the "Flammable and Combustible Code--1977".

6. Incompatible Wastes.

(a) Incompatible wastes, or incompatible wastes and materials, shall not be placed in the same tank, unless Item 7 (b), Part III of this document is complied with.

(b) Hazardous waste shall not be placed in an unwashed tank which previously held an incompatible waste or material.

VIII. STORAGE OF CONTAINERS

1. Condition.

   If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the conditions of this document.

2. Compatibility of waste.

   The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

3. Management.

   (a) A container holding hazardous waste shall remain closed during storage, except when it is necessary to add or remove waste.

   (b) A container holding hazardous waste shall not be opened, handled, or stored in a manner which might rupture the container or cause it to leak.

4. Inspections.

   The owner or operator shall inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.

5. Ignitable or reactive waste.

   Containers holding ignitable or reactive waste shall be situated at least 15 meters (50 feet) from the property line of the facility.

6. Incompatible wastes.

   (a) Incompatible wastes, or incompatible wastes and materials, shall not be placed in the same container, unless the requirements of Item 7 (b), Part III of this document are met.

   (b) Hazardous waste shall not be placed in an unwashed container that previously held an incompatible waste or material unless the requirements of Item 7 (b), Part III of this document are met.

(c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments shall be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

FACILITY: MONTROSE CHEMICAL CORP OF CAL
TORRANCE, CA

ID No. CAD008242711

Lead _____

Permit type:

New, existing or modification: _____

RCRA or non-RCRA _____

Type of facility _____

I. Permit Preparation

	Initials	Date
A. Pre-application meeting		
B. Receipt of application		
C. Review of application for completeness		
1. Additional information requested		
2. Additional information received		
D. Interim Status document issued (Modifications & existing facilities only)	NA	

II. Permit Review

A. Technical review initiated		
B. Site inspection		
C. Site inspection report prepared		
D. Technical review completed		
E. Preliminary draft permit prepared		
F. Preliminary draft permit sent for review to: HMMS-Sacto		
RWQCB		
Other		

	Initials	Date
G. Concurrence on preliminary draft received from: HMMS - Sacto	_____	_____
RWQCB	_____	_____
Other	_____	_____
H. Meet with applicant to review preliminary draft permit	_____	_____
I. Finalize draft permit	_____	_____
III. Permit Issuance		
A. Hearing Notice Published	_____	_____
B. Fact Sheet prepared	_____	_____
C. Public hearing held	_____	_____
D. Comments evaluated	_____	_____
E. Final permit developed	_____	_____
F. Final permit issued	_____	_____

INTERVIEWER: Clyde Kelly

CAD008242711

FAC MONTROSE CHEMICAL CORP OF CAL*
KALLOK JOHN L PLANT MANAG
CON PO BOX 147
ADD TORRANCE CA 90507

EPA ID NO:

CONTACT PERSON: John Kallok

PHONE: 213-775-2565

Date: Feb 2, 1981

	YES	NO	NA
1. Does the facility engage in any of the following:			
Storage			
- tanks	✓		
- ponds or lagoons		✓	
- nonstationary containers (bags, bins, bottles, cans, cartons, drums) (empty) bags	✓		
Transfer Station (waste temporarily stored, waste is not generated nor disposed of at the site) (Receive DDT → Return (Solid))		✓	
Treatment			
Incineration			
- solids			
- liquids			
- slurries			
- sludges			
Disposal			
- landfarm/landspreading		✓	
- landfill		✓	
- underground injection well		✓	
- ponds or lagoons		✓	
- disposal cell for specific wastes		✓	
Recycling/Resource Recovery	✓		
2. Does the facility handle:			
- toxic waste	✓		
- extremely hazardous waste		✓	
- flammable waste		✓	
- water reactive wastes		✓	
- strong oxidizers		✓	
- volatile wastes		✓	

Send Check Sheet to John Kallok

BOE-C6-0179848

FACILITY: _____ EPA ID NO: _____

	YES	NO	NA
- liquid wastes, in bulk	✓		
- liquid wastes, in containers		✓	
- waste in powder or dust form	✓		
- asbestos		✓	
- explosive waste		✓	
- alkalies	✓		
- acids	✓		
- cyanides		✓	
- pesticides	✓		
- PCB		✓	
3. Does the facility have on site:			
- nonpotable water	✓		
- public water supply	✓		
- private water supply		✓	
4. Is the facility			
- fenced	✓		
- operating at night	✓		
5. Is the facility equipped with:			
- warning signs in English and in Spanish	✓		
- telephone or radio transmitter	✓		
- safety shower	✓		
- eyewash	✓		
- first aid supplies	✓		
- protective clothing	✓		
- warning/alarm system	✓		
6. Is this facility handling only wastes generated by the company owning or operating the site?	✓		

NO

Use phone

BOE-C6-0179849

FACILITY: _____ EPA ID NO: _____

	YES	NO	NA
7. Longest period of time any of the hazardous wastes is stored:			
- less than 60 days	—	—	—
- more than 60 days	✓	—	—
- greater than 72 hours if waste originated at another facility of this company Chandler & Ogden's Waste Management.		—	—
8. Since when has hazardous waste been handled at this facility?			
- prior to Nov. 14, 1977	✓	—	—
- since Nov. 14, 1977	—	—	—
- since 1947 (date)			
9. Were hazardous wastes being disposed at your facility on August 6, 1980?	—	✓	—
10. What are the land uses and zoning outside of the facility and within 2000 feet of the perimeter of the facility? N - Industrial S - N	—	—	—

RWQCB #4

BOE-C6-0179850

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch)

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F CAD008242711 3 D

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.

I. EPA I.D. NUMBER: CAD008242711

III. FACILITY NAME: MONTROSE CHEMICAL CORP OF CAL*

V. FACILITY MAILING ADDRESS: 20201 S. NORMANDIE
TORRANCE, CA 90507

VI. FACILITY LOCATION: 20201 S. NORMANDIE
TORRANCE, CA 90507

19 NOV 1980

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' 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	
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*		
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	X		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	
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	

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
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	
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	
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	
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	
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 MONTROSE CHEMICAL CORP OF CALIFORNIA

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 KALLOK JOHN L PLANT MANAGER	213 775 2565

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P O BOX 147

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 TORRANCE	CA	90507

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 20201 SOUTH NORMANDIE AVENUE

B. COUNTY NAME

LOS ANGELES

*See Attachment A

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE
6			

EPA Form 3510-1 (6-80)

CONTINUE ON REVERSE

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CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
7 2869 *(specify)* DDT Manufacture	7 2879 *(specify)* DDT Formulated
C. THIRD	**D. FOURTH**
7 *(specify)* N/A	7 *(specify)* N/A

VIII. OPERATOR INFORMATION

A. NAME: 8 MONTROSE CHEMICAL CORP. OF CALIFORNIA

B. Is the name listed in Item VIII-A also the owner? [X] YES [ ] NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other", specify.)*
F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*
P *(specify)*

D. PHONE *(area code & no.)*: A 201 964 3250

E. STREET OR P.O. BOX: P O BOX E

F. CITY OR TOWN: B UNION

G. STATE: NJ

H. ZIP CODE: 07083

IX. INDIAN LAND
Is the facility located on Indian lands? [ ] YES [XX] NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
9 N ~~NA~~	9 P ~~NA~~
B. UIC *(Underground Injection of Fluids)*	**E. OTHER** *(specify)*
9 U ~~NA~~	9 ~~NA~~ *(specify)*
C. RCRA *(Hazardous Wastes)*	**E. OTHER** *(specify)*
9 R	9 SO COAST AIR QUALITY MANAGEMENT DISTRICT-Air Pol.Control Permits *

XI. MAP F9: A/50

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. 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.

XII. NATURE OF BUSINESS F9: A/51 *(...ription)*

Manufacture of DDT (dichloro-diphenyl-trichloroethane), formulate and grind DDT into water dispersible and dusting powders.

*See Attachment B

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
Max Sobelman Vice-President, Operations	[signature]	November [illegible]

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (6-80) REVERSE

2727

BOE-C6-0179852

3 RCRA

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

F C 1 D 0 0 8 2 4 2 7 1 1 1

2728

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)*

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

[ ] 2. NEW FACILITY *(Complete item below.)*

C S | YR. 6 0 | MO. 0 6 | DAY 1 5 — 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)*

[X] 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.

1. AMOUNT — Enter the amount.
2. 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	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
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

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
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

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

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.

C | DUP | T/A | C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5		N/A		
X-2	T 0 3	20	E		6		N/A		
1	S 0 2	350,000	G		7		N/A		
2		N/A			8		N/A		
3		N/A			9		N/A		
4		N/A			10		N/A		

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Please print or type in the unshaded areas only.
(Fill-in areas are spaced for elite type, 12 characters per inch.)

Form Approved OMB No. [illegible]

FORM 3 RCRA

EPA

ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA)

I. EPA I.D. NUMBER: C A D 0 0 8 2 4 2 7 1 1 1

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)*

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

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*: YR. 60 MO. 06 DAY 15

[ ] 2. NEW FACILITY *(Complete item below.)*

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

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.

1. AMOUNT – Enter the amount.
2. 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	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE FILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
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

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
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

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.

C	DUP	1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5		N/A		
X-2	T03	20	E		6		N/A		
1	S02	250,000	G		7		N/A		
2		N/A			8		N/A		
3		N/A			9		N/A		
4		N/A			10		N/A		

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Continued from the front

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:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
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 waste: 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:

1. 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.
2. 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.
3. 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 HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 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				included

BOE-C6-0179855

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W CAD008242711 T/A C 1	W DUP T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	D002	50,000	T	S02	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
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25					
26					

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Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

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

NONE

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

F C A D 0 0 8 2 4 2 7 1 1 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)*	LONGITUDE *(degrees, minutes, & seconds)*
3 3 5 0 5 4 N	1 1 8 1 7 4 5 W

VIII. FACILITY OWNER

[X] 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	

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F	G		

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
Max Sobelman Vice President, Operations	Max Sobelman	November 11, 1980

X. Owner of Land Only 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	B. SIGNATURE	C. DATE SIGNED
Wayne C. Jaeschke Vice President, Env. Services		

EPA Form 3510-1 (6-80)

BOE-C6-0179857

P.D-B

2.7.3.1

EXISTING INDUSTRY

PERMIT FOR INDUSTRIAL WASTEWATER DISCHARGE
SANITATION DISTRICTS OF LOS ANGELES COUNTY
2020 Beverly Blvd., Los Angeles, Calif. 90057
John D. Parkhurst, Chief Engineer and General Manager

PERMIT NO. 1487

Torrance, Calif. 3 / 29 / 74 (MO DAY YR.)

Name of Industry Wastewater Producer: Montrose Chemical Corporation of California (PRINT FIRM NAME)

Address: 500 S. Virgil (STREET) Los Angeles (CITY), California (STATE) 90005 (ZIP)

Tenant (OWNER, TENANT, ETC.) of the property located at:

20201 S. Normandie Ave. (ADDRESS OF PROPERTY PRODUCING WASTEWATER DISCHARGE) Torrance (City) California (Zip) 90507

Tax Map Book No. 7351 Page No. 003 Parcel No. 010-0012 (LEGAL ADDRESS OF PROPERTY PRODUCING WASTEWATER DISCHARGE)

20201 S. Normandie Torrance, California (LOCATION OF POINT OF WASTEWATER DISCHARGE TO SEWERAGE SYSTEM)

Industrial Wastewater Discharge to the sewerage system

Product(s): See attached sheet (GENERAL DESCRIPTION) S.I.C. 2879 (GENERAL SIC NO.S)

No. of Employees (Full Time) 163 (Part Time) none

Raw Materials Used: Chloral, Monochlorbenzene, oleum, caustic soda (GENERAL DESCRIPTION - ADD ADDITIONAL SHEETS AS NEEDED)

Products Produced DDT (GENERAL DESCRIPTION - ADD ADDITIONAL SHEETS AS NEEDED)

Wastewater Producing Operations All industrial wastes are hauled by contractor to a Class 1 landfill. Boiler blowdown, water softener backwash and sanitary sewage from washrooms are discharged to sewer. (ADD ADDITIONAL SHEETS AS NEEDED)

Hours of Discharge: 8:30 A.M. to 4:50 A.M. / 4:40 AM to 4:50 AM / 12:30 A.M. to 12:50 A.M. Days per Week: M T W Th F S S (CIRCLE DAYS)

Wastewater Flow Rate 2700 (Gallons Per Day)

Constituents of Wastewater Discharge Steam boiler blowdown is alkaline with high dissolved solids, softener backwash contain sodium & calcium chlorides. (GENERAL DESCRIPTION - ATTACH CHEMICAL ANALYSES RESULTS TO THIS APPLICATION)

Person in company responsible for industrial wastewater discharge:

John L. Källok (NAME) Plant Manager (POSITION) 328-~~6469~~ 5462 (TELEPHONE NUMBER)

I hereby certify that all information furnished is true and correct and that the applicant will comply with the conditions stated on the back of this permit form.

3/29, 1974

Signature for Applicant John L. Källok (COMPANY ADMINISTRATIVE OFFICIAL - NAME) Plant Manager (POSITION)

Approved by City or County Official

Date April 2, 1974 No city permit required

Approved by County Engineers ☐

Approved by Los Angeles ☑ Connection to LACSD

Approved by Sanitary Engineer

Approved by Sanitation Districts of Los Angeles County

Date June 5, 1974

John D. Parkhurst, Chief Engineer and General Manager

by L.D. Rose

Position Indust. Waste Eng'r.

A permit fee may be required by the local City or County Agency.

This form when properly signed shall be a valid permit unless suspended or revoked.

RETURN THIS COPY TO APPLICANT WHEN APPROVED

BOE-C6-0179858

I.W. COPY

3-00.05-00/7
Montrose

STATE OF CALIFORNIA—RESOURCES AGENCY

RONALD REAGAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
107 SOUTH BROADWAY, SUITE 9026
LOS ANGELES, CALIFORNIA 90012

1971 MAR 2 AM 8 43

March 1, 1971

Montrose Chemical Corporation of California
P.O. Box 147
Torrance, California 90507

ATTENTION: Mr. Max Sobelman, Vice-President

Re: Waste Discharge Requirements (File 70-118)

Gentlemen:

Reference is made to our letter dated February 16, 1971, which transmitted a draft of proposed requirements for the disposal of wastes from your Torrance facility by hauling.

Pursuant to Section 13263 of the Water Code of the State of California, this California Regional Water Quality Control Board, at its meeting held on February 24, 1971, reviewed these proposed requirements, considering all factors in the case, and adopted Order No. 71-11 (copy attached) relative to this waste discharge.

Also attached is a copy of the specifications for technical reports to be submitted by you. Please reference these reports to our Requirement File No. 5688.

Very truly yours,

Original signed by
Raymond M. Hertel

RAYMOND M. HERTEL
Executive Officer

cc: Department of Water Resources
Bureau of Sanitary Engineering
Department of Fish and Game, Region 5
Los Angeles County Health Department
Los Angeles County Flood Control District
County Sanitation Districts of Los Angeles County
City of Los Angeles Bureau of Sanitation
Central and West Basin Water Replenishment District

Enclosure

P.O-B-3

2735

July 17, 1970

File: 5-320.20.20

Montrose Chemical Corporation
of California
Post Office Box 147
Torrance, California 90507

Attention: Mr. A. R. Wilcox
Vice President, Operations

16?

Gentlemen:

This is in reply to your letter of June 11, 1970, in which you discussed the problems facing your plant in controlling the discharge of pesticide residuals from your manufacturing process.

For the past few months the laboratory personnel at the Districts' Joint Water Pollution Control Plant have been continuously sampling the treated discharge and measuring the chlorinated hydrocarbon pesticide concentration. Results to date have indicated that the concentration of these materials in the discharge from the Districts' plant is considerably higher than for similar municipal treatment plants serving other communities.

A comprehensive investigation of the pesticide concentration in the raw sewage tributary to the treatment plant now indicates rather conclusively that your firm is the primary source of observed pesticide concentration in the plant effluent.

Even though the Los Angeles Regional Water Quality Control Board has not set permissible concentrations of pesticides in the plant effluent, prudence indicates that your company must immediately take whatever means are available to you to essentially eliminate pesticides from your plant discharge. If, in the coming months, the level of pesticide concentration in the treated water from the Districts' treatment plant is not drastically reduced, there is every indication that the discharge from your plant may not be acceptable for discharge into the Districts' sewerage system.

It would be appreciated if you would advise this office of the progress which you are able to achieve in pretreating your industrial waste prior to discharge to the Districts' sewerage system.

V[illegible] yours,

[illegible]

IW Copy.
[illegible] 7/[illegible] Sterling [illegible]

BOE-C6-0179860

State of California

The Resources Agency

Memorandum

To : California Regional Water Quality Control Board
Los Angeles Region
107 South Broadway, Room 9026
Los Angeles, California 90012

Attention: Mr. Raymond M. Hertel
Executive Officer

From : Department of Water Resources
Los Angeles, California 90055

Date : FEB 22 1971

File No.: 282.42

Subject: Industrial Waste Discharge, Montrose Chemical Corporation of California

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

FEB 23 1971

In answer to your letter of February 16, 1971, we concur in your proposed Requirements for the above waste discharge.

The discharger disposes up to 16,000 gpd of concentrated waste caustic liquor from the manufacturer of DDT at a Class I landfill. The manufacturing facility is at 20201 South Normandie Avenue, Los Angeles, in the West Coast hydrologic subarea.

Paul E. Hood
For James J. Doody
District Engineer
Southern District

cc: Bureau of Sanitary Engineering
Department of Fish and Game

RICHARD A. HARRIS

FEB 22 1971

BOE-C6-0179861

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

JOHN D. PARKHURST
Chief Engineer and General Manager

FILE: 5-00.05-00/76-1487M

DATE: April 23, 1976

Industrial Wastewater
Discharge Permit No 1487

Ruey J. Lai, Ph. D.
Environmental Science & Engineering, Inc.
P. O. Box 13454, University Station
Gainesville, Florida 32604

Attention: Dr. Lai

Subject: Reference your letter dated April 12, 1976

Subject Company: Montrose Chemical Corporation of California
Post Office Box 147
Torrance, California 90507

We are transmitting herewith the following:

- ____ Application for Permit to Discharge Industrial Waste
- ____ Additional Information Questionnaire
- X Critical Parameter Report Form
- ____ Drawings
- ____ Reports
- X Engineering Information
- ____ Other
- ____ Surcharge Instructions
- ____ Permit Instructions
- X Additional or Revised Permit Infor.

For the following Action:

- ____ For Necessary Action
- ____ For Your Approval
- ____ For Your Comments
- X For Our Conversation
- ____ Other
- ____ For Your Review & Signature
- ____ Please Complete & Return
- ____ Please Complete & Submit to City or to Dept. of County Engineer

Additional Remarks:

JGK:JIM:gkb
cc: Montrose Chemical Corp.
Attn: Mr. Max Sobelman, Vice President Operations

John D. Parkhurst
Chief Engineer and General Manager

By Jay G. Kremer
Jay G. Kremer
Head, Industrial Waste Section

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
POST OFFICE BOX 147
TORRANCE, CALIFORNIA 90507

December 29, 1970

Mr. Raymond M. Hertel, Exec. Officer
Calif. Regional Water Quality Control Board
107 So. Broadway, Room 9026
Los Angeles, California 90012

Dear Mr. Hertel:

Thank you for your letter of December 18, 1970 regarding filing of a waste discharge report.

Enclosed are seven copies of the report and our check for $100 to cover the filing fee.

I should like to add, however, that I'm a little puzzled at this request. Section 13260(a) of the Water Code reads: "Any person discharging wastes or proposing to discharge wastes within any region that could affect the quality of the waters of the State other than into a community sewer system, etc."

My understanding of this is that since our effluent is being hauled to a Class I dump, it could not affect the quality of the waters of the State, and, therefore, would not come within the purview of the Water Code.

Yours very truly,

Max Sobelman
Vice-President

MS:cg

BOE-C6-0179863

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd: _____

Duty Fee: _____

Letter to Discharger: _____

Report Rec'd: _____

Effective Date: _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

DEC 30 1970

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
~~20201 S. Normandie Ave.~~
Torrance, California 90507

Telephone No. 328-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (XX)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I dump, Crenshaw Blvd., Palos Verdes, California.

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) Existing facilities were modified for recycling of water within the plant and disposal of concentrated wa~~stes to Class I dump.~~

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (XX)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd) _____
3. Present population _____
4. Design population _____
5. Solid waste disposal site (in cubic yards) _____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount _____
2. Name of Stream _____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (XX (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date 12/29/70

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

BOE-C6-0179864

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd: _____

Duty Fee: _____

Letter to Discharger: _____

Report Rec'd: _____

Effective Date: _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION

DEC 30 1970

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
20201 S. Normandie Ave.
Torrance, California 90507

Telephone No. 323-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (XX)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I dump, Crenshaw Blvd., Palos Verdes, California.

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) Existing facilities were modified for recycling of water within the plant and disposal of concentrated wastes to Class I dump.

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (XX)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd) _____
3. Present population _____
4. Design population _____
5. Solid waste disposal site (in cubic yards) _____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount _____
2. Name of Stream _____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (XX) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date 12/29/70

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd: _____

Duty Fee: _____

Letter to Discharger: _____

Report Rec'd: _____

Effective Date: _____

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
~~20201 S. Hermandie Ave.~~
Torrance, California 90507

Telephone No. 328-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (XX)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I dump, Crenshaw Blvd., Palos Verdes, California.

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) Existing facilities were modified for recycling of water within the plant and disposal of concentrated ~~wastes to Class I dump.~~

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (XX)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd) _____
3. Present population _____
4. Design population _____
5. Solid waste disposal site (in cubic yards) _____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount _____
2. Name of Stream _____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (XX) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date 12/29/70

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

BOE-C6-0179866

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd:_____

Duty Fee:_____

Letter to Discharger:_____

Report Rec'd:_____

Effective Date:_____

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
~~20201 W. Crenshaw Ave.~~
Torrance, California 90507

Telephone No. 323-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (X)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I dump, Crenshaw Blvd., Palos Verdes, California.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
DEC 30 1970

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) Existing facilities were modified for recycling of water within the plant and disposal of concentrated ~~wastes to Class I dump.~~

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (X)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd)_____
3. Present population_____
4. Design population_____
5. Solid waste disposal site (in cubic yards)_____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount_____
2. Name of Stream_____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (X) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date 12/29/70

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

BOE-C6-0179867

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd: _____

Duty Fee: _____

Letter to Discharger: _____

Report Rec'd: _____

Effective Date: _____

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
~~20301 W. Normandie Ave.~~
Torrance, California 90507

Telephone No. 328-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (XX)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I dump, Crenshaw Blvd., Palos Verdes, California.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

DEC 30 1970

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) Existing facilities were modified for recycling of water within the plant and disposal of concentrated wastes to Class I dump.

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (XX)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd) _____
3. Present population _____
4. Design population _____
5. Solid waste disposal site (in cubic yards) _____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount _____
2. Name of Stream _____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (XX) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date 12/20/70

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd:_____

Duty Fee:_____

Letter to Discharger:_____

Report Rec'd:_____

Effective Date:_____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

[illegible] 1970

(A) REPORT FROM:

Name Monsanto Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
20201 S. Wilmington Ave.
Lawrence, California 90507

Telephone No. 323-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (X)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste caustic liquor is disposed of at the L. A. County Sanitation Land Fill Class I Dump, Crenshaw Blvd., Palos Verdes, California.

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) [illegible] were modified for recycling of water within the plant and disposal of concentrated wastes to Class I Dump.

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (X)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd)_____
3. Present population_____
4. Design population_____
5. Solid waste disposal site (in cubic yards)_____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount_____
2. Name of Stream_____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (X) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [illegible]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date [illegible]

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

BOE-C6-0179869

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD

WRCB Form 200 Rec'd:_____

Duty Fee:_____

Letter to Discharger:_____

Report Rec'd:_____

Effective Date:_____

(A) REPORT FROM:

Name Montrose Chemical Corporation of California
(Owner of Facility, Municipality, County, District, Firm or Individual)

Mailing Address P.O. Box 147
20201 [illegible] Ave.
[illegible], California 90507

Telephone No. [illegible]-5469

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge . . . . . ( )
2. Existing discharge . . . . . ( )
3. Increase in quantity of discharge . . . . . ( )
4. Change in character of waste . . . . . ( )
5. Change in place or method of disposal . . . . . (X)
6. Exact location of point of disposal (describe) (attach map or sketch)

Concentrated waste [illegible] liquor is disposed of at the L. A. County [illegible] Class I [illegible], Crenshaw Blvd., Palos Verdes, [illegible].

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

[illegible] 1970

II. WASTE TREATMENT FACILITIES: (check)
1. Construction of entirely new facilities . . . . . ( )
2. Enlargement of existing facilities . . . . . ( )
3. Other (explain) [illegible] facilities were modified for recycling of water within the plant and disposal of concentrated wastes to Class I [illegible].

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only . . . . . ( )
2. Industrial wastes only . . . . . (X)
3. Mixed sewage and industrial wastes . . . . . ( )
4. Solid wastes . . . . . ( )

(D) QUANTITY OF WASTES:
1. Present flow (in mgd) .016 mgd.
2. Design flow (in mgd)_____
3. Present population_____
4. Design population_____
5. Solid waste disposal site (in cubic yards)_____

(E) SOURCE OF WATER SUPPLY:
1. Surface ( ) Ground ( ) Amount_____
2. Name of Stream_____
3. Type - Water Rights Riparian ( ) Appropriation ( ) Permit or License ( )
4. Municipal or utility service (X) (Dominguez Water Co.)

(F) AMOUNT OF FILING FEES - (See attached Fee Schedule)
Amount of fee accompanying Preliminary Waste Discharge Report $ 100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON [signature]

Title Vice-President
(Manager, Clerk, Engineer, Consultant, etc.)

Date [illegible]

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200 (12-69)

2745

BOE-C6-0179870

State of California

Department of Public Health

Memorandum

To : California Regional Water Quality Control Board
Los Angeles Region
107 South Broadway, Room 9026
Los Angeles, California, 90012

Attention: Mr. Raymond M. Hertel
Executive Officer

From : Bureau of Sanitary Engineering

Date : February 22, 1971

Subject : Proposed Waste Disposal Requirements - Montrose Chemical Corp. of Calif. Torrance (File 70-118)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

FEB 23 1971

We have received your request of February 16, 1971 asking for our comments regarding the disposal of up to 16,000 gallons of concentrated waste caustic liquor at a Class I. landfill.

We have reviewed your proposed requirements and conclude that they protect public interests in this matter.

W. J. MacPherson cc

W. J. MacPherson
Senior Sanitary Engineer

WJM/GAR:ss

cc: Los Angeles County Health Department
Department of Water Resources
Department of Fish and Game

RICHARD A. HARRIS

FEB 22 1971

BOE-C6-0179871

STATE OF CALIFORNIA—RESOURCES AGENCY

RONALD REAGAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION
107 SOUTH BROADWAY, ROOM 9026
LOS ANGELES, CALIFORNIA 90012

Telephone (213) 620-4160

MR. ARTHUR E. BRUINGTON, Chairman, San Gabriel
MR. W. DAVID WIGLEY, Vice Chairman, Santa Paula
MR. THOMAS H. GAINES, Culver City
MRS. ELLEN STERN HARRIS, Beverly Hills
MR. EDWARD J. LeCLAIR, La Mirada
MR. LESTER L. LOUDEN, Los Angeles
MR. JOHN W. LOWERY, Los Angeles
DR. [illegible], Pasadena
MR. BURTON J. GINDLER, Woodland Hills

Address Correspondence to: RAYMOND M. HERTEL, Executive Officer

2777

January 4, 1971

Montrose Chemical Corporation of California
P. O. Box 147
Torrance, California 90507

ATTENTION: Mr. Max Sobelman, Vice President

RE: Your letter of December 29, 1970 (File 70-118)

Gentlemen:

This is in receipt of your report of waste discharge on December 30, 1970, and accompanying filing fee in the amount of $100. This constitutes a complete report and correct fee in accordance with the California Water D Code. Your prompt response is appreciated.

The question raised in your transmittal letter covers a very important point. As you state, your effluent is being hauled to a Class I dump and does not, therefore, affect the waters of the state.

The point is, of course, that at present this method of waste disposal is voluntary and due to good management and housekeeping on your part. The purpose of waste discharge requirements is to regulate the storage of wastes prior to disposal and to ensure that disposal will at all times be made to a legal site, in this case a Class I dump.

We are investigating this case and upon completion of the investigation will prepare proposed requirements relative to your waste discharge. You will be sent a copy of the proposed requirements at that time and will be notified of the time and place of the Board meeting where they will be considered. Meanwhile, feel free to contact us if you have any other questions.

Very truly yours,

RAYMOND M. HERTEL
Executive Officer

By
LAWRENCE A. MEYERSON
Senior Water Quality Control Engineer

LAM:fd

Following Board meeting:

	Initials	Date
Assign Resolution No. _____ Stamp on resolution	_____	_____
Transmit resolution to proponent & mailing list	_____	_____
Assign requirement No._____	_____	_____
Open compliance file	_____	_____
Close case file	_____	_____
Close case file card	_____	_____
Enter Board action in case file book	_____	_____
File copies of resolution in reqt. file and resolution file	_____	_____

Rol-o-dexes (staff engineer to draft)

Alpha rol-o-dex	_____	_____
Hydro rol-o-dex	_____	_____
Compliance insp. rol-o-dex	_____	_____
Monitoring rol-o-dex	_____	_____

BOE-C6-0179873

NEW CASE CHECKLIST

Name: Montrose Chem. Corp. of Calif. Date received: 12/30/70

Street or Box:

City:

Type: A. ✓ B.

Subject: Industrial waste

NEW	Initials	AMENDED	Initials
✓ Assign Report on Waste Discharge No.	fd		
✓ Open new case file 70-118	fd	Reopen case file	
✓ Make case file card	fd	Put case file card in active section	

Assigned to: JAM

Jurisdiction:
Board 4 ✓ City of L.A. Co. of L.A. Other

Permit Number I Number

Permit Number

Make Extracts

Mailing list:

Report	Tentatives & Finals only	

Form P-2

BOE-C6-0179874

5-320.20.10

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
AFFILIATE OF STAUFFER CHEMICAL COMPANY
POST OFFICE BOX 147
TORRANCE, CALIFORNIA 90507

June 16, 1970

1970 JUN 17 AM 9 02

John D. Parkhurst
Chief Engineer & General Manager
Sanitation Districts of Los Angeles County
2020 Beverly Blvd.
Los Angeles, California 90057

Dear Mr. Parkhurst:

This is to confirm recent discussions concerning waste effluents entering the Los Angeles County Sewer from the Torrance Plant of the Montrose Chemical Corporation of California.

Recently your personnel have monitored our effluent discharge for DDT content and your values have been found to correspond closely to current values being obtained in our local laboratories. Our analysis has shown the total of DDT and all its isomers and metabolites to range from somewhat below 1 ppm. to about 5 ppm., which compares with your findings of slightly less than 5 ppm. Considering the complexity of the samples and sensitivity of these test procedures these results would be considered as checking each other.

During the past several years we have gradually reduced the quantity of DDT-like materials being discharged into the county sewer. This has resulted both from reducing the concentration in the water and also by reducing the quantity of water being discharged. Currently the quantity of water is about 1/3 of what it was 3 or 4 years ago and the concentration of DDT-like materials also considerably reduced. As better analytical tools have become available we have been able to improve our monitoring and understanding of the problem.

At the present time we are working with the Aero General Corporation who is the prime contractor to the Federal Water Quality Administration to develop chemical systems to degrade DDT. They have reported some success with synthetic mixtures and are now proposing a plant-sized demonstration unit. Montrose and Aerojet General are

E.C. w
Hang
F.D.D.

JOHN D. PARKHURST

discussing with the Federal Water Quality Administration a plan for an overall Pilot Plant program to eliminate DDT and its isomers and metabolites. We expect that this work will continue in the same direction as during the recent past toward process modifications to place the plant on total recycle to the greatest possible degree with the substantially reduced final effluent volume treated by a system similar to that developed by Aerojet General or some other suitable procedure so that the final effluent is reduced in quantity and concentration.

I would like to point out that our effluent is currently being diluted in the order of 1,000 to 1 in the county sewer treatment plant which in itself greatly reduces the impact of final discharge. And, further DDT which is lipid-soluble and not water-soluble is concentrated in the solid sediments in the treating plant, where as part of the sludge it is subjected to anaerobic bacterial decomposition. The literature contains numerous references which point out that DDT is readily degraded under anaerobic conditions by bacteria normally present in activated sludges. This degradation further lessens the impact on the receiving waters. ?

In summary, we have made notable progress in reducing the absolute quantity of DDT-like materials being discharged into the county sewer system and are continuing an active campaign both on our own and in cooperation with Aerojet General and with the Federal Water Quality Administration to further reduce the quantity of water being discharged and to reduce the DDT content of the effluent to where it will be negligible.

We appreciate the opportunity for open discussion and look toward its continuation.

Yours very truly,

A. R. Wilcox
Vice-President,
Operations

ARW:cg

cc: Mr. Sterling Buesch

Rough draft

July 6, 1970

File: 5-370.20.10

Montrose Chemical Corp. of Calif.
P. O. Box 147
Torrance, California 90507

Attention Mr. A. R. Wilcox
Vice President, Operations

DRAFT

Dear Mr. Wilcox:

DDT Discharged to Sewer System
Your Letter of June 16, 1970

Thank you for subject letter confirming discussion of June 11, 1970 concerning the topic of minimizing DDT discharges to the public sewer.

Keeping significant quantities of DDT, DDD and DDE from Districts' sewer system is the objective of all concerned. In common with all controversial matters, subjective definitions of what constitutes a significant quantity abound, tend toward extremes and may be unrealistic. ~~Further, a truly objective definition of what constitutes a significant quantity is is impossible in that that would constitute another type of unrealistic extreme.~~ In the light of information at hand and in the absence of compelling reasons to do otherwise, an arbit[illegible] definition of an excessive discharge of DDT plus related chlorinated hydrocarbons from your plant as being anything greater than 3 pounds per day (1mg [illegible] ent flow rates) is being considered. Such a definition is intended to b[illegible] promise between the no DDT position and that which is technologically feasible. Pending development of chemical systems to degrade DDT and related [illegible] tances to innocous products, it is proposed that you make every reasonable effort to reduce the DDT, DDD, DDE content of wastes discharged to the sewer from your plant to 3 pounds per day or less.

BOE-C6-0179877

The remarks in your letter concerning lipid solubility of DDT and concentration in solid sediments in sewage treatment plants is supported by analyses made in Districts' laboratory. In the activated sludge process wherein waste water is aerated in the presence of an aerobic biomass, DDT and related substances are substantially removed from the water by the biomass. The relative abundance of DDT, DDD and DDE isomers was unchanged in the process, suggesting physical transfer only through lipid solubility. When the sewage treatment process is limited to primary separation of sludges, followed by anaerobic digestion of the sludge, transfer of DDT and related substances from the waste water is much less complete. Anaerobic digestion converts DDT to DDE and destroys some of the DDE. However, the concentration of DDT, DDD and DDE in digested sludge is still many times higher than the sewage from which it was derived. In order to reduce distribution of DDT to the environment in consequence of the Sanitation Districts' normal functioning, the quantity of DDT allowed to enter the sewer system must be decreased. In brief, dilution is not the solution to pollution.

Analytical data being accumulated by the Districts indicate occasional discharges of DDT from your plant take place one or two magnitudes higher than the range reported. Actual frequency is not known, but appears to be often enough to merit serious consideration. Your comments concerning immediate steps that could be taken to eliminate, or at least minimize, such occurrences is solicited.

Very truly yours,

John D. Parkhurst

By
Lester A. Haug

c. Mr. Sterling Buesch

BOE-C6-0179878

Form IW 0-2
Part 1 — Bur. of Sanitation
Part 2 — Bur. of Accounting
Part 3 — Bur. of Engineering

City of Los Angeles
DEPARTMENT OF PUBLIC WORKS
Bureau of Sanitation

W422792

APPLICATION FOR INDUSTRIAL WASTE PERMIT (IWBCIS)

(SUBMIT IN TRIPLICATE)

OFFICE USE ONLY — KEYPUNCH INFORMATION				
CT	REFERENCE NO.	PERMIT NO.	DATE	AMOUNT
1 4 1	11 R 0 1 6 1 0 1 0 1 2 1 / 1 2	19 4 3 2 7 9 2	25 0 5 3 2 4 8 1	31 1 1 1 7 4 0 0

APPLICANT BEGIN HERE

GENERAL INFORMATION

FIRM NAME: Jones Chemicals, Inc.

TYPE OF BUSINESS: Chemical manufacturing and packaging

TELEPHONE: 328-6383

LOCATION ADDRESS (NO. AND STREET): 1401 W. Del Amo Blvd

(CITY): Los Angeles (STATE): CA (ZIP CODE): 90501

MAILING ADDRESS (NO. AND STREET): P.O. Box 275 1401 W. Del Amo Blvd.

(CITY): Torrance (STATE): CA (ZIP CODE): 90507

INDUSTRIAL WASTE INFORMATION

PROCESSES (DESCRIBE) 1)Sodium Hypochlorite Mfg-mixing of Chlorine in Sodium Hydroxide Solution 2)Repackaging of Acids and Alkalies in drums and carboys 3)Ammonium Hydroxide Mfg-mixing of Anhydrous A monia in water

CHARACTERISTICS OF WASTEWATER DISCHARGE (CHEMICAL AND PHYSICAL) Neutralized waste discharged at ambient temperature PH range 6-9.0 containing salts, Chlorides, Sulfates, Phosphates, Nitrates, Fluorides, and Ammonia derived from rinsing containers containing Acid and Alkalies

ESTIMATED GALS. PER DAY (GPD)	ESTIMATED MAX GALS. PER MIN (GPM)	PLAN SUBMITTED
200 GPD	20 GPM	YES ☒ NO ☐

FIRM AUTHORIZATION

NAME AND TITLE (PLEASE PRINT)	SIGNATURE AND DATE
G. J. Derthick-Division Operations Manager	Gerald J. Derthick 3/12/81

FOR OFFICE USE ONLY — BUREAU OF SANITATION APPROVALS

SR. INSPECTOR	CHIEF INSPECTOR	PLAN APPROVED
Robert P. Dalbeck		YES ☐ NO ☐ By ..... Date .....

Harbor

MAKE CHECK PAYABLE TO: "DEPARTMENT OF PUBLIC WORKS"
AND MAIL WITH APPLICATION TO:
ADMINISTRATIVE OFFICE, INDUSTRIAL WASTE OPERATIONS
2714 Doris Place, Los Angeles, California 90031

SAVE for their File

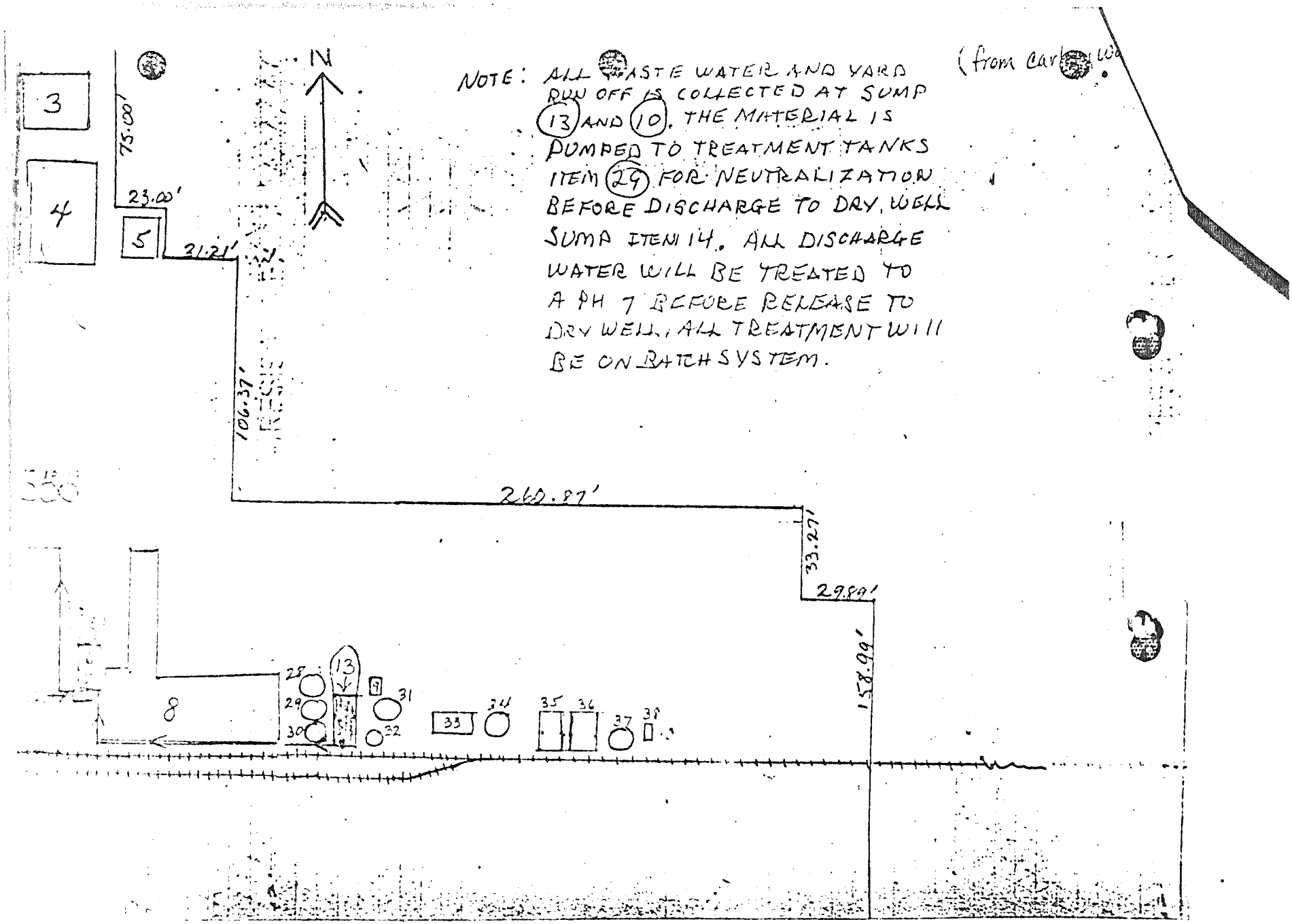
TEST DATA

Metal Results, (mg/L)

Sample Identification	pH	Ag	Cd	Cr	Cu	Ni	Pb	Zn	Cyanides Free	Cyanides Total
JONES CHEMICALS, INC. 1400 W. Del Amo Boulevard Harbor District 2-24-81	-	0.00	0.060	0.57	4.05	0.82	1.25	3.14	LT 0.1	-
L.A.-GLENDALE TREATMENT PLANT 2-23-81 2355 hours	-	0.00	0.139	0.35	2.06	1.65	0.01	0.719	3.0	6.3
IDFS #4478 CALIFORNIA South District DORAN 2-24-81	-	0.00	0.002	0.27	55.	0.18	0.00	0.924	40.0	-
UPPER BURBANK GAUGING STATION 2-23-81 2150 hours	-	0.00	0.161	0.11	5.3	1.97	0.03	0.366	8.0	7.7
CERTIFIED CADMIUM PLATING 1901½ San Fernando Road W-39581 Four hour composite 250 ml/15 min 2-25-81 Sampled by Anachem Labs	*	0.00	1.49	0.18	0.50	0.32	0.04	10.6	-	-
CERTIFIED CADMIUM PLATING 1901½ San Fernando Road W-39581 Twenty-four hour composite 2-26-81 7:48 AM to 2-27-81 8:00 AM	8.9	0.00	1.69	0.09	0.10	0.20	0.00	1.59	-	-

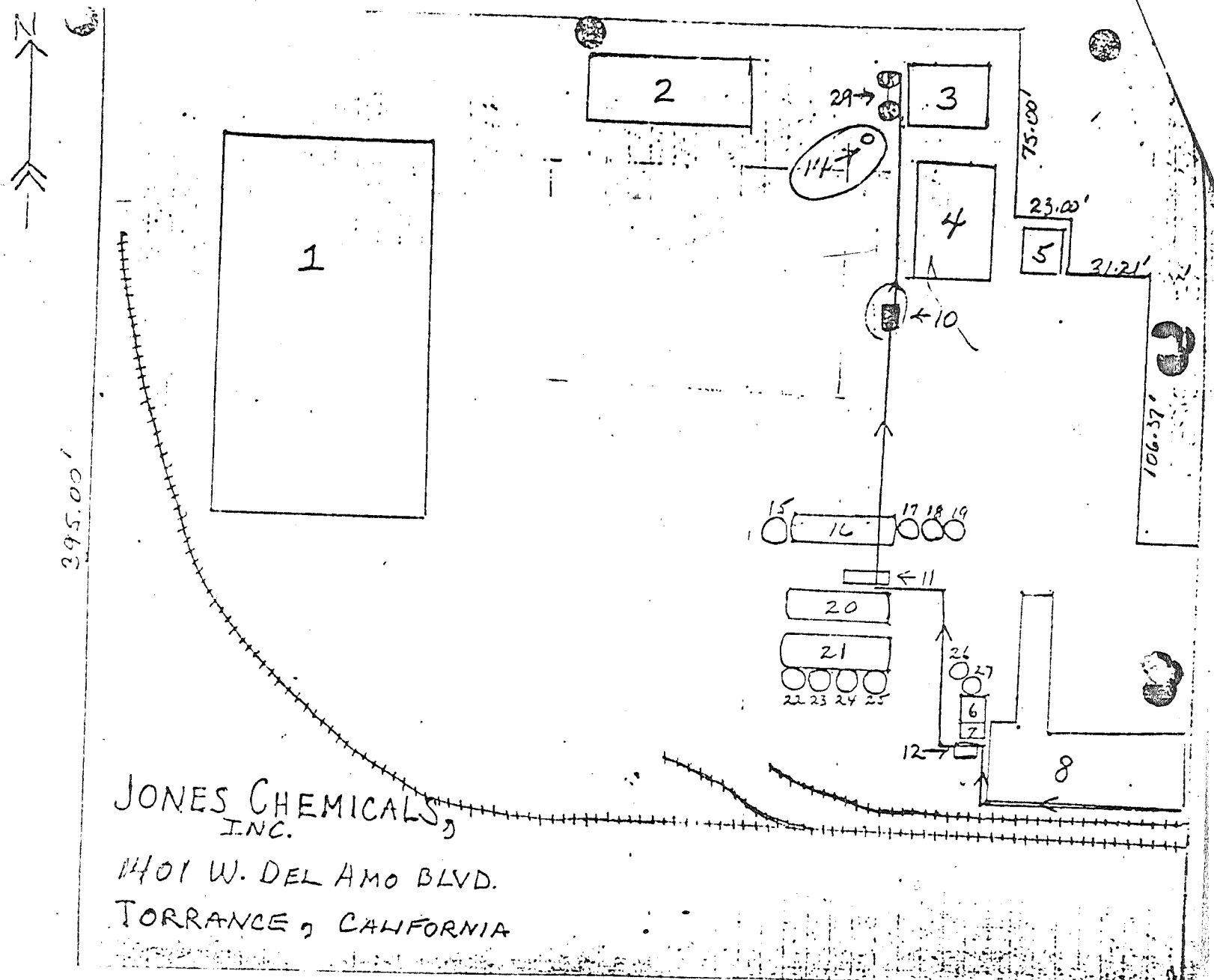
2755

BOE-C6-0179880



2756

BOE-C6-0179881



2757

BOE-C6-0179882

PLD C-3

State of California
Resources Agency
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

ORDER NO. 71-11

WASTE DISCHARGE REQUIREMENTS
FOR
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
(File 70-118)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. Montrose Chemical Corporation of California filed a Report of Waste Discharge (our Report No. 950) dated December 30, 1970.

2. Montrose Chemical Corporation of California is disposing of up to 16,000 gallons per day of concentrated waste caustic liquor at a Class I (unlimited) landfill. These wastes result from the manufacture of dichlorodiphenyltrichloroethane (DDT) at a facility located at 20201 South Normandie Avenue, in the City of Los Angeles. Prior to disposal these wastes are stored in uncovered concrete-lined and/or steel tanks at that location.

3. This manufacturing facility is in West Coast Hydrologic Subarea, for which subarea the Board has not yet adopted a water quality control plan.

4. These wastes are extremely pollutionable and would affect the beneficial uses of any receiving waters, surface or underground, and consequently must be isolated from such waters.

5. Sanitary wastes from this facility are discharged to the community sewer system. Other industrial wastes, of non-processing origin including boiler blowdown and fume scrubber water, are also discharged to the sewer.

6. The Board has transmitted a draft of this proposed order and attachments to the discharger and to the interested agencies and persons and has notified them of its intent to prescribe waste discharge requirements for this discharge at a public meeting to be held on February 24, 1971.

7. At that public meeting the Board heard and considered the comments and correspondence pertaining to the discharge.

IT IS HEREBY ORDERED, that Montrose Chemical Corporation of California shall comply with the following:

A. Waste Discharge Requirements

1. Industrial wastes from the site shall not be discharged to ground or to [illegible] in any manner which would affect, directly or indirectly, waters of the state.

BOE-C6-0179883

2. Industrial wastes stored at the site shall be held in impervious containers as proposed and shall not be allowed to escape therefrom.

3. Wastes transported from the site shall be confined in impervious containers and shall not be permitted to leak or otherwise escape to the ground or to affect waters of the state. Final disposal of these wastes shall be at a legal point of disposal, and in accordance with the provisions of Division 7.5 of the Water Code. For the purpose of these requirements, a legal disposal site is a Class I disposal site for which requirements have been established by a California Regional Water Quality Control Board and which is in full compliance therewith.

4. Neither any treatment nor disposal of wastes shall cause pollution or nuisance.

B. Provisions

1. Waste disposal tanks shall have adequate freeboard to accept and retain direct rainfall and wastes without overtopping.

2. Means shall be provided to divert storm runoff from waste pits and to preclude their being overtopped.

3. A copy of this Order shall be maintained at the site so as to be available at all times to operating personnel.

4. In the event of any change in name of operator or in control or ownership of land or waste disposal facilities presently owned or controlled by the discharger, the discharger shall:

   a. Notify this Board of such change; and
   b. Notify the succeeding owner or operator by letter, a copy of which shall be filed with this Board, of the existence of this Order.

5. Montrose Chemical Corporation of California shall submit technical reports to the Board in accordance with specifications prepared by the Executive Officer.

I, [illegible] P. Hertel, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the Santa Ana Regional Water Quality Control Board, Los Angeles Region, on January 14, 1971.

BOE-C6-0179884

DISCHARGER MAILING ADDRESS AND LOCATION

see also
File H-5688

NPDES No. _____

Case File No. 76-118

CI No. 5688

Discharger Name Montrose Chemical Corp. of Cal.

Mailing Address P.O. Box 117
Torrance, Cal. 90507

Location or Address of Discharge 20201 South Normandie Avenue
City of Los Angeles

BOE-C6-0179885

STATE OF CALIFORNIA—RESOURCES AGENCY

RONALD REAGAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION
107 SOUTH BROADWAY, SUITE 9026
LOS ANGELES, CALIFORNIA 90012

March 1, 1971

Montrose Chemical Corporation of California
P.O. Box 147
Torrance, California 90507

ATTENTION: Mr. Max Sobelman, Vice-President

Re: Waste Discharge Requirements (File 70-118)

Gentlemen:

Reference is made to our letter dated February 16, 1971, which transmitted a draft of proposed requirements for the disposal of wastes from your Torrance facility by hauling.

Pursuant to Section 13263 of the Water Code of the State of California, this California Regional Water Quality Control Board, at its meeting held on February 24, 1971, reviewed these proposed requirements, considering all factors in the case, and adopted Order No. 71-11 (copy attached) relative to this waste discharge.

Also attached is a copy of the specifications for technical reports to be submitted by you. Please reference these reports to our Requirement File No. 5688.

Very truly yours,

RAYMOND M. HERTEL
Executive Officer

cc: Department of Water Resources
Bureau of Sanitary Engineering
Department of Fish and Game, Region 5
Los Angeles County Health Department
Los Angeles County Flood Control District
County Sanitation Districts of Los Angeles County
City of Los Angeles Bureau of Sanitation
Central and West Basin Water Replenishment District

Enclosure

RAH:sdf

BOE-C6-0179886

State of California
Resources Agency
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

ORDER NO. 71-11

WASTE DISCHARGE REQUIREMENTS
FOR
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
(File 70-118)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. Montrose Chemical Corporation of California filed a Report of Waste Discharge (our Report No. 950) dated December 30, 1970.

2. Montrose Chemical Corporation of California is disposing of up to 16,000 gallons per day of concentrated waste caustic liquor at a Class I (unlimited) landfill. These wastes result from the manufacture of dichlorodiphenyltrichloroethane (DDT) at a facility located at 20201 South Normandie Avenue, in the City of Los Angeles. Prior to disposal these wastes are stored in uncovered concrete-lined and/or steel tanks at that location.

3. This manufacturing facility is in West Coast Hydrologic Subarea, for which subarea the Board has not yet adopted a water quality control plan.

4. These wastes are extremely pollutionable and would affect the beneficial uses of any receiving waters, surface or underground, and consequently must be isolated from such waters.

5. Sanitary wastes from this facility are discharged to the community sewer system. Other industrial wastes, of non-processing origin including boiler blowdown and fume scrubber water, are also discharged to the sewer.

6. The Board has transmitted a draft of this proposed order and attachments to the discharger and to the interested agencies and persons and has notified them of its intent to prescribe waste discharge requirements for this discharge at a public meeting to be held on February 24, 1971.

7. At that public meeting the Board heard and considered the comments and correspondence pertaining to the discharge.

IT IS HEREBY ORDERED, that Montrose Chemical Corporation of California shall comply with the following:

A. Waste Discharge Requirements

1. Industrial wastes from the site shall not be discharged to ground or to watercourses or in any manner which would affect, directly or indirectly, waters of the state.

BOE-C6-0179887

2. Industrial wastes stored at the site shall be held in impervious containers as proposed and shall not be allowed to escape therefrom.

3. Wastes transported from the site shall be confined in impervious containers and shall not be permitted to leak or otherwise escape to the ground or to affect waters of the state. Final disposal of these wastes shall be at a legal point of disposal, and in accordance with the provisions of Division 7.5 of the Water Code. For the purpose of these requirements, a legal disposal site is a Class I disposal site for which requirements have been established by a California Regional Water Quality Control Board and which is in full compliance therewith.

4. Neither any treatment nor disposal of wastes shall cause pollution or nuisance.

B. Provisions

1. Waste disposal tanks shall have adequate freeboard to accept and retain direct rainfall and wastes without overtopping.

2. Means shall be provided to divert storm runoff from waste pits and to preclude their being overtopped.

3. A copy of this Order shall be maintained at the site so as to be available at all times to operating personnel.

4. In the event of any change in name of operator or in control or ownership of land or waste disposal facilities presently owned or controlled by the discharger, the discharger shall:

   a. Notify this Board of such change; and
   b. Notify the succeeding owner or operator by letter, a copy of which shall be filed with this Board, of the existence of this Order.

5. Montrose Chemical Corporation of California shall submit technical reports to the Board in accordance with specifications prepared by the Executive Officer.

I, Raymond M. Hertel, 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, Los Angeles Region, on February 24, 1971.

RAYMOND M. HERTEL, Executive Officer

BOE-C6-0179888

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,
LOS ANGELES REGION

Monitoring and Reporting Program
for
Montrose Chemical Corporation of California
(File 70-118)

1. Montrose Chemical Corporation of California shall file a monthly report with this Board, beginning in March 1971. These reports shall be submitted by the 15th day of the following month. For any month that no waste disposal is made, a statement to that effect shall be submitted.

   Each report shall contain the following information:

   a. Total volume of wastes discharged from the facility during the report period and average discharge in gallons per day;

   b. Dates of offsite transfer of wastes;

   c. Names and addresses of all waste haulers;

   d. Locations of the ultimate points of disposal of all wastes;

   e. Quantity of wastes hauled during reporting period;

   f. Quantity of wastes stored at plant at end of reporting period;

   g. Storage capacity remaining at end of reporting period.

2. Any violation of waste discharge requirements during the reporting period shall be reported by the discharger. If a violation occurs, the discharger shall submit a complete statement of the circumstances which caused the violation and of the actions undertaken or proposed to prevent recurrence and to achieve complete compliance with the requirements.

3. By January 30 of each year the discharger shall submit an annual report to this Board. The report shall contain tabular and graphical summaries of monitoring data obtained during the previous year.

4. Each report shall contain the following completed declaration:

   "I declare under penalty of perjury that the foregoing is true and correct.

   Executed on the _____ day of _____ at _____

   _____.

   _____(Signature)

   _____(Title)"

Ordered by: Raymond H. Hansel
RAYMOND H. HANSEL
Executive Officer

February 24, 1971

BOE-C6-0179889

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA
POST OFFICE BOX 147
TORRANCE, CALIFORNIA 90507

December 3, 1982

DEC 06 1982

Department of Health Services
107 South Broadway, Room 7128
Los Angeles, California 90012

Attn: John A. Hinton, P.E.
Permits, Surveillance and
Enforcement Section
Hazardous Waste Management Branch

Dear Mr. Hinton:

Re: CAD 008242711

We acknowledge your letter of November 18 requesting us to submit an Operating Plan for a Hazardous Waste Facility at our plant.

These facilities were closed by us last August in accordance with our Closure Plan and Procedure and notice to that effect was sent you on August 31, 1982. A copy of our letter of that date together with certification by an independent licensed professional engineer that closure was carried out in accordance with these procedures and your acknowledgement of receipt is enclosed for your information.

Very truly yours,

MONTROSE CHEMICAL CORPORATION
OF CALIFORNIA

John L. Kallok

John L. Kallok
Plant Manager

JLK/gf
encl.

DEC 06 1982

LOS ANGELES

2766

on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).

☐ Show to whom and date delivered ..... ___¢

☐ Show to whom, date, and address of delivery .. ___¢

2. ☐ RESTRICTED DELIVERY ___¢

(The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $_____

3. ARTICLE ADDRESSED TO:

Dept. of Health Services
714 "P" Street
Sacramento, CA 95814

4. TYPE OF SERVICE:

☐ REGISTERED ☐ INSURED
☐ CERTIFIED ☐ COD
☐ EXPRESS MAIL

ARTICLE NUMBER

P26 9233753

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

5. DATE OF DELIVERY

SEP 1982

POSTMARK

SACRAMENTO, CA METRO STA.
SEP 10 1982
USPO

6. ADDRESSEE'S ADDRESS (Only if requested)

7. UNABLE TO DELIVER BECAUSE:

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

BOE-C6-0179891

Montrose Chemical Corporation of California

P.O. Box 147

20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

August 31, 1982

DEC 06 1982

LOS ANGELES

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Department of Health Services
Hazardous Waste Management Section
714 "P" Street
Sacramento, California 95814

Gentlemen:

Further to our letter of August 12 giving notice that we proposed closure of the hazardous waste facilities at our plant at 20201 South Normandie Avenue, Torrance, California, Number CAD008242711, we now wish to advise that these facilities have been closed in accordance with our Closure Plans and Procedures, a copy of which is enclosed.

Also enclosed is certification by an independent licensed professional engineer, James O'Malley & Associates, Inc., that the closure was carried out in accordance with these procedures.

In view of the closure of these facilities prior to August 31, 1982 we will not furnish the closure and post-closure financial assurances described in your letter of August 1, 1982.

Very truly yours,

MONTROSE CHEMICAL CORPORATION
OF CALIFORNIA

John L. Kallok
Plant Manager

August 30, 1982

DEC 0 6 1982

Montrose Chemical Corporation of California
20201 South Normandie Avenue
Torrance, California 90502

REFERENCE: Three Acid Storage Tanks: one 100,000 gal., two 50,000 gal.; two Alkaline Storage Tanks: one 100,000 gal., one 50,000 gal.

Gentlemen:

I hereby certify that the above-reference tanks have been closed in accordance with the methods outlined in "RCRA Closure Plans and Procedures" prepared by Montrose Chemical Corporation of California, EPA I.D. No. CAD008242711, last revised April 1982.

Very truly yours,

JAMES O'MALLEY & ASSOCIATES, INC.

James O'Malley
PE27217

JO:dgm

JAMES O'MALLEY & ASSOCIATES, INC./CIVIL & ENVIRONMENTAL ENGINEERS □ LAND PLANNERS □ SURVEYORS
1215 POMONA ROAD □ SUITE E □ CORONA, CA 91720 □ (714) 734-0533

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-6043

EDMUND G. BROWN JR., Governor

Registered Mail # 9029898

May 14, 1981

Mr. Dick Dreith, Environmental Officer
Shell Corporation
One Shell Plaza
Houston, Texas 77001

Dear Mr. Drieth,

The Department's Hazardous Materials Management Section operates an Abandoned Site Project, to locate and evaluate abandoned hazardous waste disposal sites. Staff of this Project, attempting to research historical disposal practices at two Shell facilities in Los Angeles County, California met with Mr. Dick O'Hare of the Watson Refinery and requested from him certain information about waste generation and disposal prior to 1972. Mr. O'Hare indicated that Shell's response to this request will come through your office. Hence, this letter is, pursuant to California State Law Health and Safety Code Section 25185, to request that you provide the following:

Regarding the former Shell Rubber Plant at Del Amo and Hamiltons Streets.

Were wastes disposed, evaporated or stored in unlined sumps at this facility? If so, what waste types and quantities were disposed or stored, and during what periods of time? What were the dimensions and locations of waste disposal areas? What, if any, waste disposal site closure or cleanup measures were performed when Shell abandoned this facility? If the disposal site was cleaned up, was the remaining soil analyzed to determine if cleanup was complete? If it was analyzed, please provide a copy of the report of results.

Regarding the Shell Manufacturing Complex on Dominguez St.

Did waste disposal occur onto the property corresponding to the address of 21200 South Vera St? If so, what was the chemical composition of the waste, the quantity, and the method of disposal?

Have wastes from the chemical plant ever been disposed on Shell property? If so, what waste types and quantities? Where did disposal occur?

Were refinery wastes disposed or stored in unlined sumps or evaporated at this facility? What was the chemical composition and quantity of wastes thus handled? Where did disposal occur? Were wastes from the manufacturing complex disposed on property formerly but no longer owned or controlled by Shell? If so, where? What waste types and quantities were thus handled?

because of its obligation to protect public and environmental health the Hazardous Materials Management Section is anxious to [illegible] the investigation and see any potential hazard reduced. [illegible] your response to this request by [illegible].

Sincerely,

Sue Stack for

Mark White, Director
Abandoned Site Project
Hazardous Materials Management Section

cc: Mr. Dick O'Hare
Environmental Conservation Manager
Shell Oil Co.
P.O. Box 6249
Carson, CA 90739

SENDER: Complete items 1, 2, and 3.
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one).
- [x] Show to whom and date delivered ____¢
- [ ] Show to whom, date, and address of delivery ____¢
- [ ] RESTRICTED DELIVERY
  Show to whom and date delivered ____¢
- [ ] RESTRICTED DELIVERY
  Show to whom, date, and address of delivery $____
  (CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:
Mr. Dick Dreith
One Shell Plaza
Houston, Texas 77001

3. ARTICLE DESCRIPTION

REGISTERED NO	CERTIFIED NO	INSURED NO
	902 9878	

4. (Always obtain signature of addressee or agent)
I have received the article described above.
SIGNATURE [x] Addressee [ ] Authorized agent

DATE OF DELIVERY	POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE | CLERK'S INITIALS

RETURN RECEIPT REGISTERED, INSURED AND CERTIFIED MAIL

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-6041

February 27, 1981

Sent 3-2-81

Mr. Richard O'Hare
Environmental Conservation Manager
Shell Oil Company
P O Box 6249
Carson, CA 90749

Dear Mr. O'Hare:

During our recent visit to your facility, Sue Stack and I had several questions regarding the Shell Plant at 19821 Hamilton Avenue, Torrance, California:

A. When was the plant built?
B. What products were manufactured at the site from its' construction to its' closure in 1974?
C. What wastes and what quantities of these wastes, were produced at the site from its' construction until its' closure?
D. Where were these wastes disposed? (Please include on-site disposal).
E. Were there ever any pits, ponds or sumps on the property?
   1. Were they lined?
   2. Where were they?
   3. What did they contain?
F. Who presently owns the land?

Regarding the chemical plant on the premises of the Wilmington Manufacturing Complex at 20945 South Wilmington Avenue, Carson:

A. When was the plant built?
B. What products have been manufactured at the site from its' construction to present operation?
C. What wastes and what quantities of these wastes, have been produced at the chemical plant from its' construction until the present?
D. Where were these wastes disposed? (Please include on-site disposal).
E. Were there or are there now any pits, ponds, lagoons or sumps at the chemical plant?
   1. Were/are they lined?
   2. Where were/are they located?
   3. What did/do they contain?

Complete answers to these questions would facilitate our research. Thank you for the information and tour of the facility, any additional assistance you may give towards answering the proceeding questions would be appreciated.

Sincerely,

Beth Tirey

Beth Tirey
Project Assistant
Abandoned Site Project
Hazardous Materials Management Section

BOE-C6-0179897

State of California—Health and Welfare Agency

P/F B

Department of Health Services
Hazardous Materials Management Section

2773

MEMO OF CALL

Name: Mary Cooper

Date: 12-10-82

Firm: Sacto

Time:

Address:

Person Taking or Making Call: R. McCowhan

Telephone No.:

EPA No.

Subject: Montrose chemical

Message:

Mary will search for notice of closure and closure plan and call when she finds them

STATE OF CALIFORNIA—RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

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

JAN 06 1983

FILE 70-118

Mr. Harry Seraydarian,
Acting Director
Toxic & Waste Management Division
U.S. EPA, Region IX
215 Fremont Street
San Francisco, CA 94105

ATTN: Mr. Tom Severino

RE: Montrose Chemical Corporation of California
(File No. 70-118)

Dear Mr. Seraydarian:

We have received a copy of your December 23, 1982, letter to Montrose Chemical Corporation of California (Addressee -Max Sobelman, Vice-President, Operations) relating to the possible release of hazardous substances at their facility in Torrance, California.

Please furnish us copies of any information which you may receive in response to Items II, A, B and D of your letter.

Very truly yours,

Raymond M. Hertel

RAYMOND M. HERTEL
Executive Officer

cc: Montrose Chemical Corporation

DL:ta

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

23 DEC 1992

Certified Mail No. P364179203
Return Receipt Requested

Rec'd 12/27/92

Max Schelman
Vice President, Operations
Montrose Chemical Corporation of California
P. O. Box 1
Union, New Jersey 07083

Dear Mr. Schelman:

The Environmental Protection Agency (EPA) has initiated an investigation of your facility located at 20301 South Normandie Avenue in Torrance, California (hereinafter referred to as your facility). EPA has sufficient reason to believe that a release of hazardous substances (as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act) may have occurred. EPA also believes that there may continue to exist the threat of additional releases of such substances to the environment.

Under the provisions of Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9604(e), and Section 3007(a) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927(a), as amended by the Solid Waste Disposal Act Amendments of 1980, the Administrator of the Environmental Protection Agency has the authority to require any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes and substances to furnish information related to such wastes and substances. Pursuant to this statutory provision, Montrose Chemical Corporation is hereby requested to provide the following information:

I. All information regarding potential and actual releases of hazardous substances, including but not limited to DDT isomers and their metabolites, from your facility.

II. The information referred to in I.(above) shall include but is not limited to:

A. Water, soil and air sampling data including specific information regarding sample date, location, analysis performed, and supporting documentation [illegible].

BOE-C6-0179900

B. [illegible] communications such as: [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], and any other relevant documents.

C. [illegible] of the pathway of known or [illegible] and the [illegible] release. This [illegible] water, surface and [illegible] soils and air.

D. Information regarding:

1. Amounts of surface water flowing onto your facility,

2. Amounts of water generated by rainfall onto your facility, and

3. Amounts of runoff water leaving your facility.

III. Information related to I. and II. above which has been provided to, or received from, all federal, state, or local agencies.

IV. In your Consolidated Permits Program application to EPA which was signed and dated on November 11, 1980, you made the following statement in Attachment A: "[illegible] runoff discharges possibly subject to NPDES requirements. The extent to which such storm water discharges should be subject to permitting requirements is presently under discussion with EPA" Please provide EPA with:

A. All information regarding these runoff discharges.

B. All records of discussion with EPA, State, or local agencies regarding these discharges.

C. Information regarding the current status of these discussions.

The information requested must be sent to EPA within 14 calendar days of your [illegible]. Section [illegible] of [illegible] provides for civil [illegible] for failure to respond, or for [illegible] material statement or representation in your [illegible].

2776

EPA regulations governing confidentiality of business information are set forth in Part 2, Subpart B of Title 40 of the Code of Federal Regulations. For any portion of the information submitted which is entitled to confidential treatment, please assert a confidentiality claim in accordance with 40 CFR §2.203(b). If EPA determines that the information so designated meets the criteria set forth in 40 CFR §2.2[illegible], the information will be disclosed only to the extent, and by means of the procedures, specified in 40 CFR Part 2, Subpart B. EPA will construe the failure to furnish a confidentiality claim with your response to this letter as a waiver of that claim, and information may be made available to the public by EPA without further notice.

If you have any questions concerning this matter, please contact Mr. Tom Severino of the Toxics and Waste Management Division at (415)974-[illegible] or Mr. Ken Ramirez of EPA's Office of Regional Counsel at (415)974-7451.

Sincerely yours,

Original Signed by:

Harry Seraydarian
Acting Director
Toxics & Waste Management Division

cc: Mr. John Kallok, Montrose Chemical Corporation of California
Mr. John Hinton, Calif. Dept. of Health Services, Los Angeles
Mr. Tom Bailey, Calif. Dept. of Health Services, Sacramento
Regional Water Quality Control Board, Los Angeles
Mr. Jim Steele, Calif. Dept. of Fish and Game

2777

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

23 DEC 1982

Certified Mail No. [illegible]
Return Receipt Requested

Materials Management Section
MCL 12/27
DEC 27 1982
California Department of Health Services
LOS ANGELES

Max Sobelman
Vice President, Operations
Montrose Chemical Corporation of California
P. O. Box E
Union, New Jersey 07083

Dear Mr. Sobelman:

The Environmental Protection Agency (EPA) has initiated an investigation of your facility located at [illegible] South Normandie Avenue in Torrance, California (hereinafter referred to as your facility). EPA has sufficient reason to believe that a release of hazardous substances (as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act) may have occurred. EPA also believes that there may continue to exist the threat of additional releases of such substances to the environment.

Under the provisions of Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9604(e), and Section 3007(a) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927(a), as amended by the Solid Waste Disposal Act Amendments of 1980, the Administrator of the Environmental Protection Agency has the authority to require any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes and substances to furnish information related to such wastes and substances. Pursuant to this statutory provision, Montrose Chemical Corporation is hereby requested to provide the following information:

I. All information regarding potential and actual releases of hazardous substances, including [illegible] but limited to DDT isomers and their metabolites, [illegible] facility.

II. The information referred to in I.([illegible]) shall include but is not limited to:

A. Water, soil and air [illegible]
[illegible]
[illegible]
[illegible]

2779

[illegible]. Internal and external communications such as: technical documents, reports, studies, letters, meeting and telephone notes, memoranda, and any other relevant documents.

[illegible]. Detailed description of the pathway of known or suspected releases to the environment and the ultimate destination of each release. This includes surface and ground water, surface and subsurface soils and air.

[illegible]. [illegible]

1. Amount of surface water flowing onto your facility,

[illegible]

[illegible]

[illegible]

III. [illegible] above which [illegible] or received from, [illegible] local agencies.

[illegible]. [illegible] "There may be rain runoff discharges possibly subject to NPDES requirements. The extent to which such storm water discharges should be subject to permitting requirements is presently under discussion [illegible] Please provide [illegible] with:

[illegible]

[illegible]

[illegible]

[illegible]

BOE-C6-0179904

EPA regulations governing confidentiality of business information are set forth in Part 2, Subpart B of Title 40 of the Code of Federal Regulations. For any portion of the information submitted which is entitled to confidential treatment, please assert a confidentiality claim in accordance with 40 CFR §2.203(b). If EPA determines that the information so designated meets the criteria set forth in 40 CFR §2.208, the information will be disclosed only to the extent, and by means of the procedures, specified in 40 CFR Part 2, Subpart B. EPA will construe the failure to furnish a confidentiality claim with your response to this letter as a waiver of that claim, and information may be made available to the public by EPA without further notice.

If you have any questions concerning this matter, please contact Mr. Tom Severino of the Toxics and Waste Management Division at (415)974-[illegible] or Mr. Ken Ramirez of EPA's Office of Regional Counsel at (415)[illegible].

Sincerely yours,

Original Signed by:

Harry Seraydarian
Acting Director
Toxics & Waste Management Division

cc: Mr. John Kallok, Montrose Chemical Corporation of California
Mr. John Hinton, Calif. Dept. of Health Services, Los Angeles
Mr. Tom Bailey, Calif. Dept. of Health Services, Sacramento
Regional Water Quality Control Board, Los Angeles
Mr. Jim Steele, Calif. Dept. of Fish and Game

BOE-C6-0179905

for REGIONAL OFFICE P

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

November 13, 1981

Hazardous Materials Management Section
NOV 16 1981
California Department of Health Services
SACRAMENTO

William F. Jopling, Acting Chief
Permit, Surveillance and Enforcement Section
Division of Toxic Substance Control
Department of Health Services
744 P Street
Sacramento, CA 95814

RE: Modification of Montrose Chemical, Torrance Facility (EPA I.D. No. CAD008242711)

Dear Mr. Jopling:

Enclosed is a request for approval of additional storage capacity at the Montrose Chemical, Torrance Facility. My staff has reviewed this request and based on information submitted by Montrose Chemical, has determined the modification does not amount to reconstruction. I therefore am referring this request to you for action, as per our July 1, 1981 agreement.

I would like to receive a copy of the disposition of this modification request. This will assist us in keeping our Part A files current. If you have any questions, please contact Susi Jackson (415)974-8253.

Cordially yours

Philip L. Bobel

Philip L. Bobel, Chief
Hazardous Materials Branch

cc: Richard G. Wilson
Montrose Chemical Corp
of California

Enclosure

Montrose Chemical Corporation of California

P.O. Box 147

20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

September 21, 1981

CERTIFIED - RETURN RECEIPT REQUESTED

E.P.A. Region IX
Attention: A-3-2
215 Fremont Street
San Francisco, Ca. 94105

Re: Interim Permit
Montrose Chemical Corporation of California
CAD008242711

Dear Sir:

Enclosed is our revision to our Hazardous Waste Permit Application filed in November, 1980. The revision is shown on Form 3, page 1; Form 3, page 5 and Attachment II - E.P.A. Form 3510-3. All other pages and information will remain the same.

This revision was made for the following reasons:

1. Modifications in our process and operating procedure made it necessary to increase our alkaline waste (D002) storage capacity from 50,000 gallons to 150,000 gallons with the addition of a 100,000 gallon steel storage tank. The addition of this tank will not effect the annual volume of alkaline waste generated or disposed of.

2. Additional storage capacity was needed to provide flexibility in our operation due to restrictions imposed by our disposal site in accepting our waste material at certain times.

Please confirm at your earliest convenience receipt of this revision. If you have any questions regarding this submittal please contact us.

Yours very truly,

Richard G. Wilson
Director of Manufacturing

cc: Miller Chambers
Revisions - State of California
Department of Health Services
Hazardous Waste Management Section
107 S. Broadway, Room 7128
Los Angeles, California 90012

encl.

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

F C 4 D 0 0 5 2 4 2 7 1 1

FOR OFFICIAL USE ONLY

APPLICATION RECEIVED	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)*

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

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

C S	YR.	MO.	DAY
	5 0	0 6	1 5

[ ] 2. NEW FACILITY *(Complete item below.)*

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

YR.	MO.	DAY

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.

1. AMOUNT – Enter the amount.
2. 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	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
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

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
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

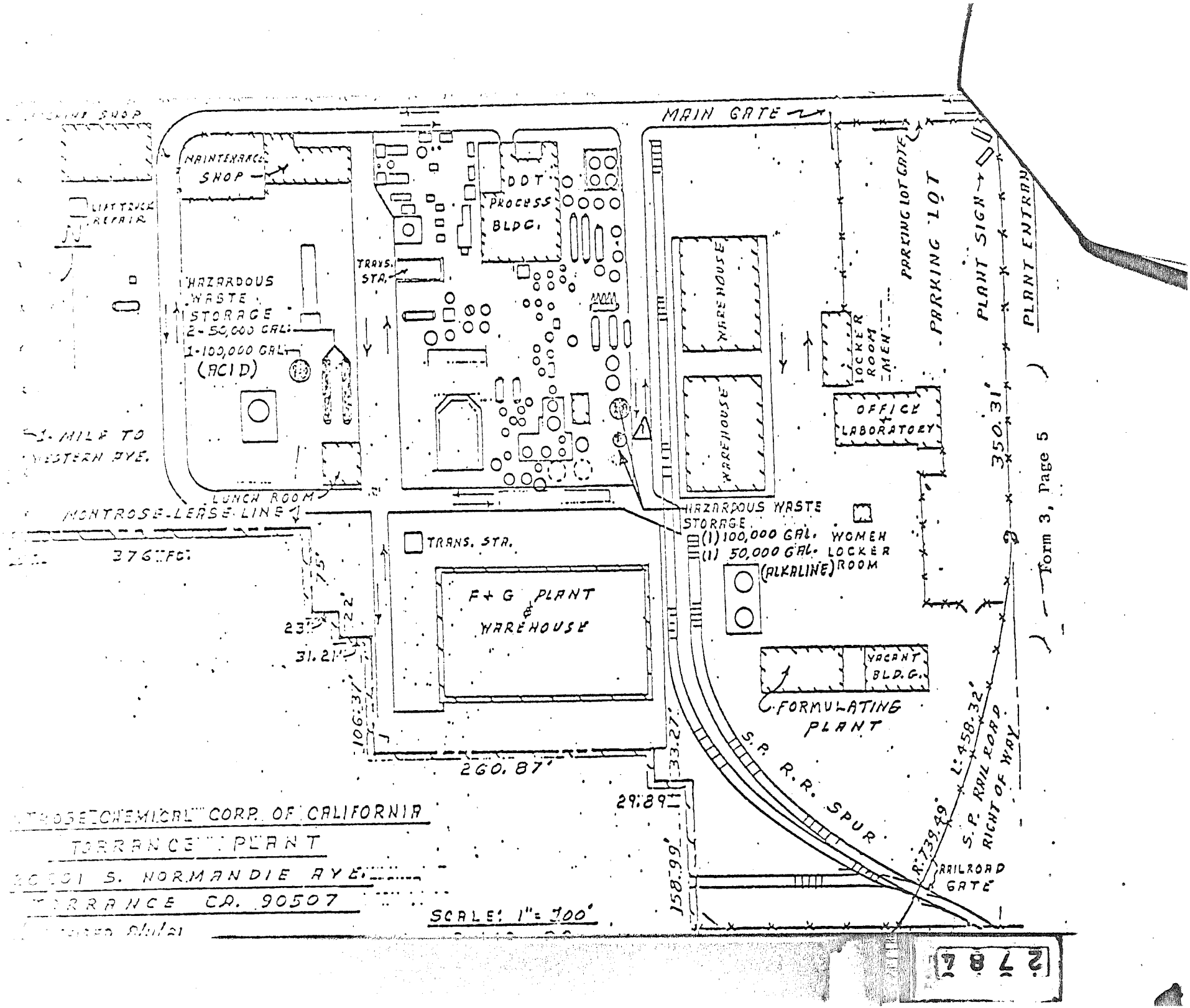
UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	G
GALLONS PER DAY	U	LITERS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

C DUP 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5		N/A		
X-2	T 0 3	20	E		6		N/A		
1	S 0 2	350,000	G		7		N/A		
2		N/A			8		N/A		
3		N/A			9		N/A		
4		N/A			10		N/A		

BOE-C6-0179908

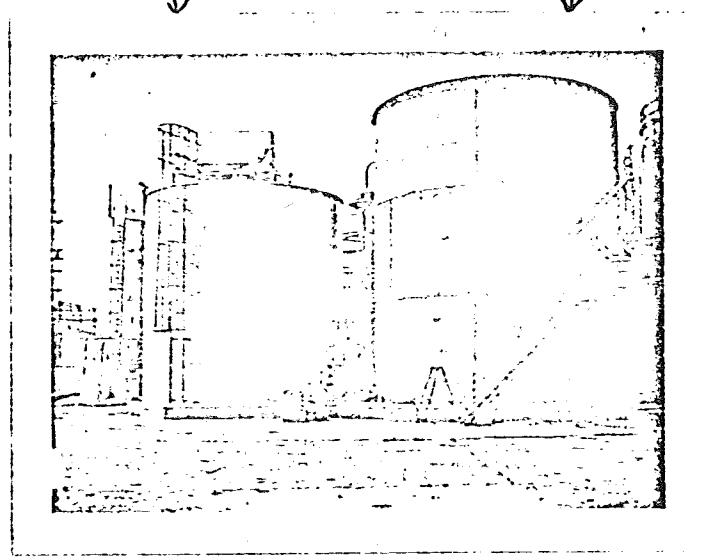


Form 3, Page 5

BOE-C6-0179909

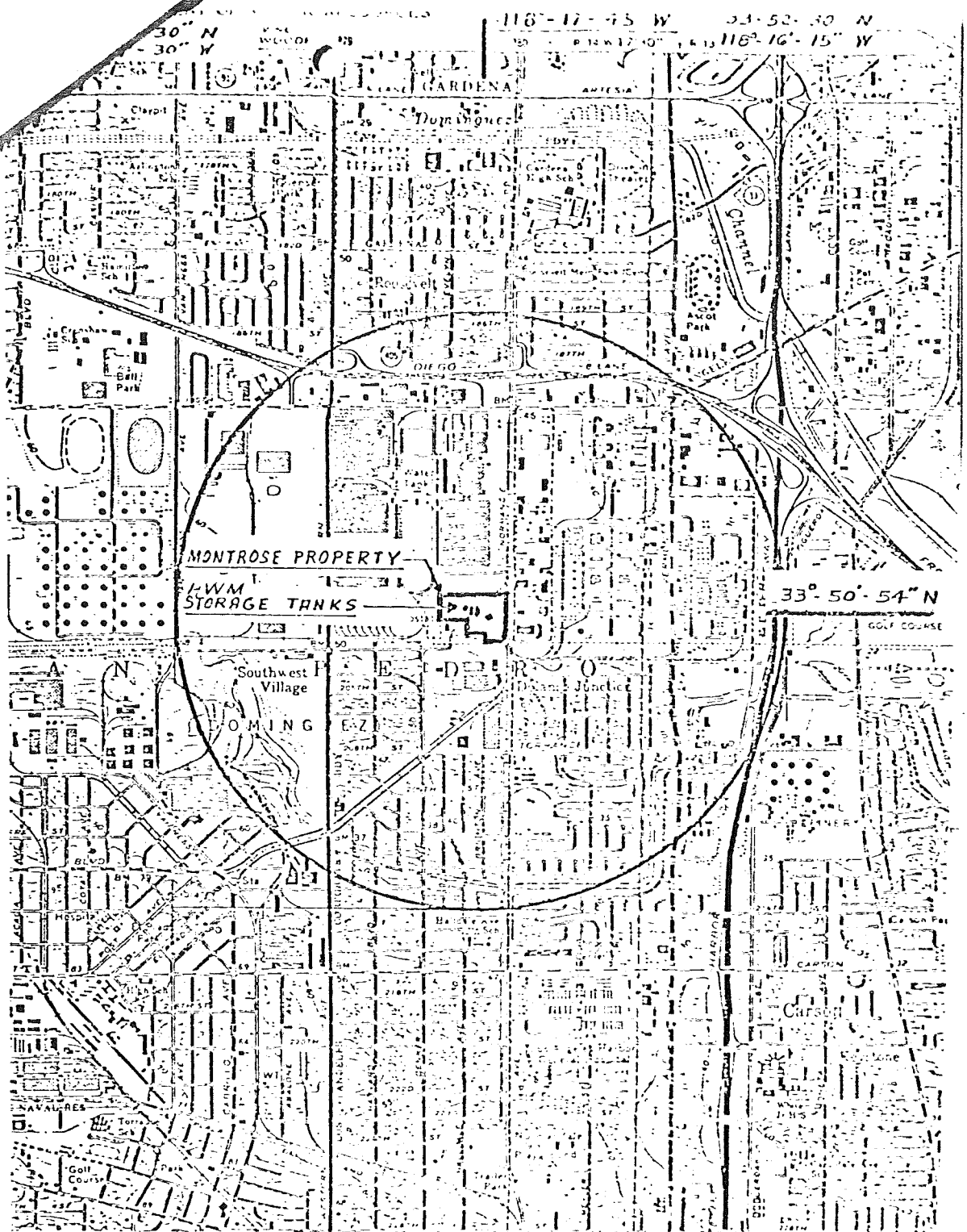
Existing
50,000 gal. tank

New
100,000 gal. tank



Hazardous Waste Steel Storage Tank
RCRA-D002
100,000 gallons (new addition)
Installed 8/81

BOE-C6-0179910



118°-19'-30" W

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

TORRANCE QUADRANGLE
CALIFORNIA-LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
N3345 -- 11815/7.5
(PORTION TAKEN FROM MAP)

GN MN
15°
267 MILS
0° 44'
13 MILS

UTM GRID 1972
MAGNETIC NORTH

2786

BOE-C6-0179911

UNITE. .TATES ENVIRONMENTAL PROTECTIC .GENCY

reading file: A-3-3 x9868 SJackson: Blandim 10-8-81 D26
ltr/Wilson draft; Rdraft 10-14 CB; Final 10-15 CB

Richard G. Wilson
Montrose Chemical Corporation
of California
P.O. Box 147
Torrance, CA 90507

OCT 16 1981

RE: Modification of the Montrose Chemical, Torrance Facility
(CAD008242711)

Dear Mr. Wilson:

Your September 21, 1981 letter informed us of the construction of additional hazardous waste storage capacity at the Montrose, Torrance facility. The permitting regulations allow for approval of modifications to facilities with interim status.

> "122.23(c) Changes during interim status....(2) increases in the design capacity of processes used at a facility may be made if the owner or operator submits a revised Part A permit application prior to such a change (along with a justification explaining the need for the change) and the Director approves the change because of a lack of available treatment, storage, or disposal capacity at other hazardous waste management facilities; "

Approval of this additional storage should have been obtained prior to its construction. Also prior to approval, a demonstration that modifications do not amount to reconstruction can be required. Section 122.23(c)(5) does not allow modifications which amount to reconstruction without a RCRA permit. Reconstruction occurs when the capital investment in the changes to the facility exceeds fifty percent (50%) of the capital cost of a comparable entirely new hazardous waste management facility.

Upon submittal of a demonstration that the reconstruction cost of the additional storage did not amount to reconstruction, we can make a determination as to the need for a RCRA permit. If a RCRA permit is not required, EPA will forward your letter to DOHS for their action on the modification. If you have any questions please contact Susi Jackson at (415)556-9868.

Sincerely,

Philip L. Rohel, Chief
Hazardous Materials Branch

CONCURRENCES								
SYMBOL								
SURNAME								
DATE		10/16						

EPA Form 1320-1 (12-70)

OFFICIAL FILE

BOE-C6-0179912

Montrose Chemical Corporation of California

P.O. Box 147

20201 South Normandie Avenue • Torrance, California 90507 • (213) 775-2565 • 328-5462

November 6, 1981

Mr. Philip L. Bobel, Chief
Hazardous Materials Branch
United States Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, California 94105

Subject: Modification of Montrose Chemical Corporation of California, Torrance Facility, ID No. CAD008242711, Interim Permit

Dear Mr. Bobel:

This is in reply to your October 16, 1981 letter requesting additional information relating to increased waste storage capacity at the Montrose-Torrance facility.

Unfortunately, we were misinformed and proceeded to construct prior to approval of this modification under our interim status RCRA permit. As you instructed, however, we submit the following documentation requested in Section 122.23(c) in order to obtain proper approval for the modification:

1. Justification and Need for Additional Storage:

   a. Modifications in our process and operating procedure made it necessary to increase our alkaline waste (D002) storage capacity from 50,000 gallons to 150,000 gallons with the addition of a 100,000 gallon steel storage tank. The addition of this tank will not affect the annual volume of alkaline waste generated or disposed of.

   b. Additional storage capacity was needed to provide flexibility in our operation due to restrictions imposed by our disposal site in accepting our waste material at certain times.

      Our primary disposal site (BKK Corp. in West Covina, California) has been known to restrict our shipments of waste material during periods of rainy weather, during politically sensitive times, and during periods when residents near the landfill site complain of odors. Even after approval of the use of our new 100,000 gallon tank, we will endeavor to keep all our tankage as empty as possible at all times to maximize our operating flexibility.

Mr. Philip L. Bobel
November 6, 1981

2. Modification Costs versus Capital Cost of an Entirely New Hazardous Waste Storage Facility:

a. Cost of modification to existing waste storage facility (includes cost of tank, foundation and piping). Installed cost of 100,000 gallon vertical alkaline storage tank, 1/4" thick steel shell $45,000

b. Estimated capital investment of an entirely new hazardous waste storage facility (includes cost of tanks, foundations and piping):

1 - 100,000 gallon vertical waste acid storage tank, 1/2" thick steel shell (installed);	$ 65,000
1 - 50,000 gallon horizontal waste acid storage tank, 5/8" thick steel shell (installed);	65,000
1 - 50,000 gallon horizontal waste acid storage tank, 5/8" thick steel shell (installed);	65,000
1 - 50,000 gallon vertical waste alkaline storage tank, 1/2" thick steel shell (installed);	36,000
1 - 100,000 gallon vertical waste alkaline storage tank, 1/4" thick steel shell (installed)	45,000
TOTAL INVESTMENT:	$276,000

Cost data was developed by Mr. G. A. Dimichele, Chemical Engineer P.E. No. CH001630.

Modification cost versus cost of an entirely new hazardous waste storage facility would be as follows:

Cost of Modification	$ 45,000
Cost of complete new facility	276,000

$$\frac{45,000}{276,000} \times 100 = 16.3\%$$

Based upon the above information, it appears that a new RCRA permit is not required, and we request approval of this modification under our interim status permit.

Very truly yours,

Richard G. Wilson

Richard G. Wilson
Director of Manufacturing

RGW:wt

REPORT ON THE EVALUATION OF THE

CASE NO.: SAS1765Y

MONTROSE CHEMICAL COMPANY

DATA

by

DATA MANAGEMENT TEAM

LABORATORY SUPPORT SECTION

ENVIRONMENTAL SERVICES BRANCH

U.S. ENVIRONMENTAL PROTECTION AGENCY
215 Fremont Street
San Francisco, California 94105

November 7, 1985
Date

Reviewer
FTS Tel. No. 454-0923
Commercial Tel. (415) 974-0923

BOE-C6-0179915

Case No.: SAS 1765Y
Site: Montrose Chemical Co.
Lab: California Analytical
Date of Report: 11/7/85
Reviewer: F. Schuette

DDE, DDD, DDT
Mono-& Dichlorobenzenes
TOC
52 Samples

I. INTRODUCTION

A. Fifty-two soil samples were submitted for analyses of DDE, DDD, and DDT, for monochlorobenzene and total dichlorobenzenes, and for total organic carbon (TOC).

II. VALIDITY

A. Results reported for DDD in the following samples are considered to be due to probable laboratory contamination, as described below in Section III.A.: Samples 1765Y-70, 1765Y-71, 1765Y-77, 1765Y-78, and 1765Y-81.

B. Results reported for DDT in the following samples are considered due to probable laboratory contamination, as described below in Section III.A.: Samples 1765Y-70, 1765Y-71, 1765Y-78, and 1765Y-81.

C. Results reported for monochlorobenzene and for the dichlorobenzenes are considered to be usable for limited purposes because of the holding times for these samples, as described below in Section III.A. In addition, the accuracy of analyses for a majority of these samples is considered unacceptable, as described in Section III.E. Therefore, the results for monochlorobenzene and for dichlorobenzene are flagged "J", for estimated, in accordance with the Functional Guidelines for Evaluating Organic Analyses.

D. Results reported for all other analytes are considered to be valid for all purposes from the viewpoint of their meeting quality control criteria for laboratory analysis. The variability that appears among sample replicates - both field replicates and laboratory replicates - appears to be due to the nonhomogeneous nature of these soil samples.

III. COMMENTS

A. Method 8020, which was used to analyze these samples for chlorobenzene and dichlorobenzenes, specifies that all samples must be analyzed within 14 days of collection. Analyses of these samples ranged from 23 to 30 days after collection. Therefore, the results reported may tend to underestimate the amounts of volatile aromatic compounds contained in the samples at the time of their collection.

B. DDE and DDT were detected in the laboratory blank for Samples 1765Y-67 through 1765Y-87, as follows:

Analyte	ug/Kg
DDE	21
DDT	50

In accordance with Functional Guidelines for Evaluating Organic Analyses, levels of DDE and DDT in Samples 1765Y-67 through 1765Y-87 which are less than 5 times the concentrations found in the blank are rated as being not detected and are flagged "UJ".

C. The results for field duplicate samples are tabulated as follows:

Sample Pairs	DDE ug/Kg	DDD ug/Kg	DDT ug/Kg	Mono chloro benzene ug/Gm	Di chloro benzene ug/Gm	TOC %
1765Y-49	20U	40U	40U	0.05U	0.25U	0.05
-50	11000	5800	6300	0.33	0.31	0.16
RPD	NC	NC	NC	NC	NC	105
1765Y-58	200000	52000	880000	1.1	0.37	0.80
-59	550000	100000	2×10^6	7.1	1.5	1.1
RPD	93	63	78	146	121	32
1756Y-64	820000	180000	3.1×10^6	2800	66	0.83
65	240000	88000	1.2×10^6	2900	42	0.41
RPD	109	69	88	3.5	44	68
1765Y-75	340000	36000	1.4×10^6	0.44	0.25U	0.93
-76	250000	26000	1.2×10^6	2.9	0.73	0.99
RPD	31	32	15	147	NC	6.3
1765Y-90	20U	40U	40U	0.05U	0.25U	0.05U
91	20U	40U	40U	0.05U	0.25U	0.05U
RPD	NC	NC	NC	NC	NC	NC
1765Y-93	50000	5900	180000	0.57	0.53	0.64
-97	20U	40U	40U	0.05U	0.25U	0.21
RPD	NC	NC	NC	NC	NC	NC

RPD = Relative Percent Difference
NC = Not calculated when one or both results are less than the detection limit.

The differences between the results of field duplicates, as measured by their relative percent difference (RPD) indicates that, in addition to the analytical variability as discussed below, there appears to be considerable variability due to the probable nonhomogeneous nature of the field samples. This suggests that the analytes may be present in clumps in these soil samples.

D. In its cover letter for this data package, the laboratory remarks on the high levels of analytes, in some cases obscuring the matrix spikes addid to the samples, and that in instances the sample result and its two matrix spikes results are essentially triplicate laboratory analyses. The laboratory further suggests that poor agreement of replicates may be due to the nonhombgeneous nature of the soil samples. The laboratory's replicates are tabulated as follows:

Sample Replicates	DDE ug/Kg	DDD ug/Kg	DDT ug/Kg	Monochloro benzene ug/Gm	Dichloro-benzenes ug/GM
Amt. Spike	500	500	500	0	0
1765Y-47	30	40u	210	0.05u	0.25u
MS	300	280	350	0.05u	0.25u
MSD	440	410	430	0.05u	0.25u
RPD	41	37	44	NC	NC
1765-67	19000	6000	120000	29	2.2
MS	17000	6000	100000	98	3.8
MSD	91000	24000	670000	1200	30
RSD	100	87	100	149	130
1765Y-88	97000	17000	530000	1.4	0.89
MS	92000	18000	490000	1.8	4.3
MSD	69000	14000	390000	1.1	0.54
RSD	17	13	15	49	109

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RSD = Relative standard deviation
RPD = Relative percent difference of duplicates (MS and MSD)
NC = Not calculated when one or more of the replicate determinations are less than the detection limit.

E. The percent recovery of toluene, the surrogate compound used for the analysis of the chlorobenzenes, exceeds criteria of 50% to 160% for soil samples, except for the following samples: 46, 49, 52, 53, 59, 74, 79, 82, 83, 84, 85, 87, 88, and 90 through 97.

F. All other quality control criteria are considered acceptable.

Case No. SAS 1765Y
Site Montrose Chemical Co.
Lab California Analytical
Type of Analysis As shown below
Units of Concentration As shown below
Date Samples Collected 6/25-26/85
Date Samples Rec'd at Lab 6/27/85
Date Data Package Rec'd at Region 9 9/18/85
Date of this Report 11/7/85
Reviewer F. Schuette

MAXIMUM HOLDING TIMES, ORGANICS	Contract
Volatile Organics, Water	7 days
Volatile Organics, Soil	10 days
ABN Extraction, Water	5 days
ABN Extraction, Soil	10 days
ABN Analysis	40 days
Pesticide Extraction, Water	5 days
Pesticide Extraction, Soil	10 days
Pesticide Analysis	40 days

Sample #	DDE µg/kg		DDD µg/kg		DDT µg/kg		Chloro-benzene µg/g		Total Dichlorobenzene µg/g		Total Organic Carbon %	
1765Y-46	1700		310		4200		11	J	0.55	J	0.64	
47	30		40U		210		0.05U		0.25U		0.40	
48	20U		40U		40U		0.05U		0.25U		0.19	
49(1)	20U		40U		40U		0.05U		0.25U		0.05	
50(1)	11000		5800		63000		0.33		0.31		0.16	
51	20U		40U		42		0.05U		0.25U		0.06	
52	440		40U		980		3.2		0.25U		1.0	
53	1100		430		7100		3.7		0.25U		0.84	
54	57000		35000		580000		0.31		0.45		0.83	
55	78000		22000		450000		0.48		0.64		0.79	
56	45		40U		510		0.29		0.25U		0.44	
57	20U		40U		40U		0.33		0.25U		0.32	
58(2)	200000		52000		880000		1.1		0.37		0.80	
59(2)	550000		100000		2×10^6		7.0		1.5		1.1	
60	120000		53000		1.2×10^6		7.1		0.69		0.78	
61	20U		40U		40U		0.26		0.25U		0.41	
62	100		40U		300		2.7		0.3		0.53	
63	2.2×10^6		260000		4.2×10^6		16000		370		2.1	
64(3)	820000		180000		3.1×10^6		2800		66		0.83	
65(3)	240000		88000		1.2×10^6		2900		42		0.41	
66	1.9×10^6		200000		6.5×10^6		3300		65		1.0	
67	19000		6000		120000		29		2.2		0.25	
68	220000		51000		1.2×10^6		1.6		0.25U		1.3	
69	210000		70000		1.7×10^6		1.1		0.25U		1.0	
70	36	UJ	40U		86	UJ	0.13		0.25U		0.29	
71	34	UJ	40U		120	UJ	0.05U		0.25U		0.13	

Actual	MAXIMUM HOLDING TIMES	VORGANICS Contract	Actual
days	Cyanide	14 days	days
days	Mercury	30 days	days
days	Other Metals	6 mos.	days
days			
days	VALIDITY OF DATA		
days	~~R~~ - Indicates value reported is considered valid for all purposes.		
days	R ~~R~~ - Indicates value reported is considered invalid for all purposes		
days	J ~~R~~ - Indicates value reported is considered usable for limited purposes.		

(1) = Samples 1765Y-49 and 1765Y-50 are field duplicates.
(2) = Samples 1765Y-58 and 1765Y-59 are field duplicates.
(3) = Samples 1765Y-64 and 1765Y-65 are field duplicates.
(4) = Samples 1765Y-75 and 1765Y-76 are field duplicates.
(5) = Samples 1765Y-90 and 1765Y-91 are field duplicates.
(6) = Samples 1765Y-93 and 1765Y-97 are field duplicates.

U = Indicates analyte was analyzed for but not detected. The number is the minimum detection limit of the analyte for that sample.

J = Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identifed compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets indentification criteria but the result is less than the specified detection limit but greater than zero.

Actual	MAXIMUM HOLDING TIMES, ORGANICS	Contract	Actual
days	Cyanide	14 days	days
days	Mercury	30 days	days
days	Other Metals	6 mos.	days
days			
days			
days			
days			
days			

VALIDITY OF DATA

- - Indicates value reported is considered valid for all purposes.
R - Indicates value reported is considered invalid for all purposes
J - Indicates value reported is considered usable for limited purposes.

(1) = Samples 1765Y-49 and 1765Y-50 are field duplicates.
(2) = Samples 1765Y-58 and 1765Y-59 are field duplicates.
(3) = Samples 1765Y-64 and 1765Y-65 are field duplicates.
(4) = Samples 1765Y-75 and 1765Y-76 are field duplicates.
(5) = Samples 1765Y-90 and 1765Y-91 are field duplicates.
(6) = Samples 1765Y-93 and 1765Y-97 are field duplicates.
U = Indicates analyte was analyzed for but not detected. The number is the minimum detection limit of the analyte for that sample.
J = Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identifed compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets indentification criteria but the result is less than the specified detection limit but greater than zero.

Case No. SAS 1765Y
Site Montrose Chemical Co.
Lab California Analytical
Type of Analysis As shown below
Units of Concentration As shown below
Date Samples Collected 6/25 - 26/85
Date Samples Rec'd at Lab 6/27/85
Date Data Package Rec'd at Region 9 9/18/85
Date of this Report 11/7/85
Reviewer F. Schuette

MAXIMUM HOLDING TIMES, ORGANICS	Contract
Volatile Organics, Water	7 days
Volatile Organics, Soil	10 days
ABN Extraction, Water	5 days
ABN Extraction, Soil	10 days
ABN Analysis	40 days
Pesticide Extraction, Water	5 days
Pesticide Extraction, Soil	10 days
Pesticide Analysis	40 days

Sample #	DDE µg/Kg		DDD µg/Kg		DDT µg/Kg		Chloro-benzene µg/g		Total Dichloro-benzenes µg/g		Total Organic Carbon %	
1765Y-72	20U		40U		46		0.05U	J	0.54	J	0.14	
73	650000		35000		1.6×10^6		0.26		0.34		1.0	
74	230000		28000		1.2×10^6		0.61		1.1		1.1	
75 (4)	340000		36000		1.4×10^6		0.44		0.25U		0.93	
76 (4)	250000		26000		1.2×10^6		2.9		0.73		0.99	
77	79	UJ	40U		610		0.05U		0.25U		0.21	
78	23	UJ	40U		100	UJ	0.05U		0.25U		0.05U	
79	60000		9900		270000		0.87		0.25U		0.71	
80	23000		4700		310000		0.05U		0.25U		0.15	
81	29	UJ	40U		110	UJ	0.05U		0.25U		0.08	
82	20U		40U		40U		0.05U		0.25U		0.09	
83	160000		18000		740000		0.44		0.25U		1.01	
84	1300		2900		80000		0.34		0.25U		0.82	
85	20U		40U		67		0.05U		0.25U		0.06	
86	20U		40U		40U		0.05U		0.25U		0.05U	
87	600000		80000		3.2×10^6		0.72		1.9		2.1	
88	97000		17000		530000		1.4		0.89		1.5	
89	20U		40U		40U		0.05U		0.25U		0.05U	
90 (5)	20U		40U		40U		0.05U		0.25U		0.05U	
91 (5)	20U		40U		40U		0.05U		0.25U		0.05U	
92	140000		21000		670000		0.43		0.25U		1.8	
93 (6)	50000		5900		180000		0.57		0.53		0.64	
94	20U		40U		40U		0.05U		0.25U		0.05U	
95	20U		40U		40U		0.05U		0.25U		0.05U	
96	20U		40U		40U		0.05U		0.25U		0.05	
97 (6)	20U		40U		40U		0.05U	Y	0.25U	Y	0.21	
Detection Limits	20		40		40		0.05		0.25		0.05	

California Analytical Laboratories, Inc.
2544 Industrial Boulevard • West Sacramento, CA 95691 • (916) 372-1393

July 31, 1985
CAL Lab IDS: S6402-S6453
Received: 6/27/85
SAS 1765Y (Part 2)

rec'd 9-18-85
already entered on RSCC status report

AUG 2 1985

Linda H. Boynton
Viar and Company
300 N. Lee Street Suite 200
Alexandria, VA 22314

Dear Linda:

Enclosed are the results of our analysis of fifty-two soil samples for DDT/DDE/DDD, clororbenzene, dichlorbenzenes and TOC. The correspondence between CAL Lab ID's and EPA ID's are given in the attached results tables.

METHODS

A. DDT/DDE/DDD. The samples were analyzed by EPA Method ~~8080~~. please ignore

B. Chlorobenzene and total dichlorobenzenes. Subsamples were combined with methanol, immediately spiked with toluene as a surrogate at 0.50 ug/g (ppm), and extracted by shaking for two hours. Aliquots were diluted with water and then analyzed by purge/trap GC-PID (EPA Methods 8020/602). Since no analyte spike samples were run, selected samples were instead analyzed in triplicate.

C. TOC. Percent organic carbon was determined by the Walkley-Black Method (dichromate oxidation, ferrous sulfate titration).

Results. Results are given in Tables I, II and III.

Comments: As with the first set of samples reported July 23, high levels of DDT/DDE/DDD obscured the 500 ppb spikes. Toluene surrogate recoveries were somewhat lower than before. Part of the problem was that the batch of methanol used for this sample set was contaminated with toluene, equivalent to about 0.2 ug/g in the samples. This background was subtracted from all sample toluene values (added at 0.5 ug/g) to give the recoveries listed in Table II. Replicate samples S6423, S6423 duplicate and S6423 triplicate gave poor agreement for chlorobenzene and total dichlorobenzenes. The sample extracts were reanalyzed by GC-PID with essentially the same results. Apparently, the original soil is not homogeneously contaminated with chlorobenzenes.

No additional problems were encountered.

Sincerely,

Charles J. Soderquist
Vice-President

Ben N. Buechler
Manager of GC Services

AUG 2 1985

TABLE I
Results for DDE/DDD/DDT
(SAS 1765Y, Part 2)

CAL ID	EPA ID	ug/Kg(ppb) found DDE	DDD	DDT
S6402-MB	METHOD BLANK	<20	<40	<40
S6402	1765Y-46	1700	310	4200
S6403	1765Y-47	30	<40	210
S6403-MS	500 ppb spike	300	280	350
S6403-MSD	500 ppb spike dup.	440	410	430
S6404	1765Y-48	<20	<40	<40
S6405	1765Y-49	<20	<40	<40
S6406	1765Y-50	11000	5800	63000
S6407	1765Y-51	<20	<40	42
S6408	1765Y-52	440	<40	980
S6409	1765Y-53	1100	430	7100
S6410	1765Y-54	57000	35000	580000
S6411	1765Y-55	78000	22000	450000
S6412	1765Y-56	45	<40	510
S6413	1765Y-57	<20	<40	<40
S6414	1765Y-58	200000	52000	880000
S6415	1765Y-59	550000	100000	2000000
S6416	1765Y-60	120000	53000	1200000
S6417	1765Y-61	<20	<40	<40
S6418	1765Y-62	100	<40	300
S6419	1765Y-63	2200000	260000	4200000
S6420	1765Y-64	820000	180000	3100000
S6421	1765Y-65	240000	88000	1200000
S6422	1765Y-66	1900000	200000	6500000
S6423-MB	METHOD BLANK	21	<40	50
S6423	1765Y-67	19000	~6000	120000
S6423-MS	500 ppb spike	17000	~6000	100000
S6423-MSD	500 ppb spike dup.	91000	24000	670000
S6424	1765Y-68	220000	51000	1200000
S6425	1765Y-69	210000	70000	1700000
S6426	1765Y-70	36	<40	86
S6427	1765Y-71	34	<40	120
S6428	1765Y-72	<20	<40	46
S6429	1765Y-73	650000	35000	1600000
S6430	1765Y-74	230000	28000	1200000
S6431	1765Y-75	340000	36000	1400000
S6432	1765Y-76	250000	26000	1200000
S6433	1765Y-77	79	<40	610

table I cont.

AUG 2 1985

CAL ID	EPA ID	ug/Kg(ppb) found DDE	DDD	DDT
S6434	1765Y-78	23	<40	100
S6435	1765Y-79	60000	9800	270000
S6436	1765Y-80	23000	4700	310000
S6437	1765Y-81	29	<40	110
S6438	1765Y-82	<20	<40	<40
S6439	1765Y-83	160000	18000	740000
S6440	1765Y-84	1300	2900	80000
S6441	1765Y-85	<20	<40	67
S6442	1765Y-86	<20	<40	<40
S6443	1765Y-87	600000	80000	3200000
S6444-MB	METHOD BLANK	<20	<40	<40
S6444	1765Y-88	97000	17000	530000
S6444-MS	500 ppb spike	92000	18000	490000
S6444-MSD	500 ppb spike dup	69000	14000	390000
S6445	1765Y-89	<20	<40	<40
S6446	1765Y-90	<20	<40	<40
S6447	1765Y-91	<20	<40	<40
S6448	1765Y-92	140000	21000	670000
S6449	1765Y-93	50000	5900	180000
S6450	1765Y-94	<20	<40	<40
S6451	1765Y-95	<20	<40	<40
S6452	1765Y-96	<20	<40	<40
S6453	1765Y-97	<20	<40	<40

Prepared by: KY

Approved by: BWB Date: 7-31-85

AUG 2 1985

TABLE III
Results for TOC
(SAS 1765Y, Part 2)

CAL ID	EPA ID	Percent TOC found
S6402	1765Y-46	0.64
S6403	1765Y-47	0.40
S6404	1765Y-48	0.19
S6405	1765Y-49	0.05
S6406	1765Y-50	0.16
S6407	1765Y-51	0.06
S6408	1765Y-52	1.0
S6409	1765Y-53	0.84
S6410	1765Y-54	0.83
S6411	1765Y-55	0.79
S6412	1765Y-56	0.44
S6413	1766Y-57	0.32
S6414	1767Y-58	0.80
S6415	1765Y-59	1.1
S6416	1765Y-60	0.78
S6417	1765Y-61	0.41
S6418	1765Y-62	0.53
S6419	1765Y-63	2.1
S6420	1765Y-64	0.83
S6421	1765Y-65	0.41
S6422	1765Y-66	1.0
S6423	1765Y-67	0.25
S6424	1765Y-68	1.3
S6425	1765Y-69	1.0
S6426	1765Y-70	0.29
S6427	1765Y-71	0.13
S6428	1765Y-72	0.14
S6429	1765Y-73	1.0
S6430	1765Y-74	1.1
S6431	1765Y-75	0.93
S6432	1765Y-76	0.99
S6433	1765Y-77	0.21
S6434	1765Y-78	<0.05
S6435	1765Y-79	0.71
S6436	1765Y-80	0.15

M/D-B-0

2803

Facility name: MONTROSE CHEMICAL CORPORATION

Location: TORRANCE, CA

EPA Region: 9

Person(s) in charge of the facility: SAMUEL RPTRPSEN, PRESIDENT

Name of Reviewer: JEFF ROSENBLOOM Date: JUNE 13, 1984

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The Montrose Chemcial Co. manufactured, formulated, ground, and distributed DDT from this location from 1947 to 1982. Documented contamination of surface water and air by DDT exists. The facility is in close proximity (500 feet) to a residential area

Scores: S_M = ~~34.55~~ 33.85 (S_{gw} = ~~17.35~~ 12.52 S_{sw} = 19.3~~5~~ 0 S_a = 53.85)

S_{FE} = 0

S_{DC} = 0

FIGURE 1
HRS COVER SHEET

Q A'd
A Plants
6/26/84

MONTROSE CHEMICAL CORP.
Torrance, California

Montrose Chemical Corp. manufactured the pesticide DDT on a 17-acre site in Torrance, Los Angeles County, California, from 1947 until 1982. The site is located in a light industrial/residential area. About 3,000 people live and work within 0.25 miles of the site.

The company's operations included formulation, grinding, packaging, and distribution of the pesticide. According to analyses conducted by EPA, Montrose, and various State and local agencies, on- and off-site soils and surface water are contaminated with DDT. The major transport mechanisms identified are storm water run-off and aerial emissions.

On May 6, 1983, EPA issued an Administrative Order under CERCLA Section 106 requiring Montrose Chemical to cease all discharges of DDT and to initiate a study to determine the nature and extent of contamination. To date, most of the requirements of the order have been undertaken. In addition, the final workplan for the remedial investigation/feasibility study is being prepared. This second phase of investigation will assess all areas of contamination, both on-and off-site, and the possible impact on public health and the environment. This project is proceeding with the participation of Montrose and various State and local agencies.

BOE-C6-0179929

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	(0) 1 2 3	2	0	6	
Net Precipitation	0 (1) 2 3	1	1	3	
Permeability of the Unsaturated Zone	(0) 1 2 3	1	0	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			4	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			23	26	
5 Targets					3.5
Ground Water Use	0 1 (2) 3	3	6	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 (20) 24 30 32 35 40	1	~~30~~ 20	40	
Total Targets Score			~~36~~ 26	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5		~~9~~ 7	~~936~~ 176	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = ~~17.33~~ 12.52			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

BT 8/26/84

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	45	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	5	8	
Total Waste Characteristics Score			23	26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 3	2	6	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			12	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			12420	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	19.3		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

AP
6/26/84

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	45	45	5.1
Date and Location: 6 week period during 1974 Torrance Area					
Sampling Protocol: Extract aerial fallout-mineral oil plate.					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1	0	3	
Toxicity	0 1 2 3	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	5	8	
	Total Waste Characteristics Score		14	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1	27	30	
Distance to Sensitive Environment	0 1 2 3	2	0	6	
Land Use	0 1 2 3	1	3	3	
	Total Targets Score		30	39	
4 Multiply 1 x 2 x 3			18900	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 53.85			

FIGURE 9
AIR ROUTE WORK SHEET

AP
6/20/84

	S	S^2
Groundwater Route Score (S_{gw})	12.52 ~~17.33~~	156.7504 ~~300.33~~
Surface Water Route Score (S_{sw})	19.3~~5~~0	372.49
Air Route Score (S_a)	53.85	2899.~~32~~ 8225
$S_{gw}^2 + S_{sw}^2 + S_a^2$		3429.0629 ~~3572.21~~
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		58.5582 ~~59.77~~
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		33.85 ~~34.55~~

FIGURE 10
WORKSHEET FOR COMPUTING S_M

AP
6/26/84

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1		45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1		3	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} =				

FIGURE 12
DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of informaton should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Montrose Chemical Company

LOCATION: Torrance, California

QA'd
A P/a
6/26/84

BOE-C6-0179936

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Rationale for attributing the contaminants to the facility:

***

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

(Ref.1) The Silverado Aquifer is the aquifer of concern since it is tapped by the Dominguez Water Corporation.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

(Ref.2) The Silverado Aquifer is approximately 400 feet below ground level (in the vicinity of the site).

Depth from the ground surface to the lowest point of waste disposal/ storage:

(Ref.7) The DDT contamination is seen at depths of 5 feet.

Depth from waste to aquifer is:
400 ft. - 5 ft = 395 ft. SCORE = 0

A P
6/26/84

BOE-C6-0179937

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Rationale for attributing the contaminants to the facility:

***

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

(Ref.1) The Silverado Aquifer is the aquifer of concern since it is tapped by the Dominguez Water Corporation.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

(Ref.2) The Silverado Aquifer is approximately 400 feet below ground level (in the vicinity of the site).

Depth from the ground surface to the lowest point of waste disposal/ storage:

(Ref.7) The DDT contamination is seen at depths of 5 feet.

Depth from waste to aquifer is:
400 ft. - 5 ft = 395 ft. SCORE = 0

AP 6/26/84

BOE-C6-0179938

Net Precipitation

Mean annual or seasonal precipitation (list month for seasonal):

Ref.3) Precipitation in December averaged from 1931 to 1955 is 4.25 inches.

Mean annual lake or seasonal evaporation (list months for seasonal):

Ref.3) Evaporation in December averaged from 1947 to 1973 is 1.77 inches..

Net precipitation (subtract the above figures):

Net precipitation in December is ~~2.58~~ 2.48 inches

SCORE = 1

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Ref.4) Fine sand, brown sandy clay, clay and silt lenses

Permeability associated with soil type:

The least permeable materials is clay.

SCORE = 0

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Ref.5) The DDT was disposed of in both a liquid and powder form. The higher score will be for liquid disposal.

SCORE = 3

***

AP 6/26/84

BOE-C6-0179939

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Ref.5) There is no observed means of waste contaminent. DDT seems to have been spread over the site.

Method with highest score:

No contaminent

SCORE = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

ef.7) DDT

Compound with highest score:

ef.6,7) DDT. Toxicity and Persistence both score a three (maximum).

SCORE = 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

ef.7) 340 ~~cubic yards~~ tons of DDT

SCORE = 5

Basis of estimating and/or computing waste quantity:

~~See References~~ Calculation by McLeod and Eddy, Inc., based on DDT concentrations in on-site soils.

***

AP 6/26/84

BOE-C6-0179940

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

(Ref.1) The Dominguez Water Corp. uses the Silverado Aquifer (via Well No. 19) as ~~an alternative~~ a primary water (drinking) supply. However, alternative supplies are available. SCORE = 2

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

(Ref.8) Well No. 19 is on Carson Street, just west of Grace Avenue

Distance to above well or building:

Well No. 19 is approximately 2 ~~1.99~~ miles from the site

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

(Ref.1) Well No. 19

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

Total population served by ground water within a 3-mile radius:

(Ref.1) Well No. 19 water is blended into this system. There are 26,000 connections. At 3.8 people/conn. - total population served is 98,800

SCORE = ~~30~~ 20

AP 6/26/84

BOE-C6-0179941

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maxiumum):

(Ref.9) DDT - detected by the Los Angeles Regional Water Quality Control Board

SCORE = 45

Rationale for attributing the contaminants to the facility:

(Ref. ~~7~~ 9, 10) ~~DDT was found on the site in very high concentratins. There is no background levels of DDT in the surface water run-off this water is the result of rain and the run-off originiates on the site.~~ Sewer sediments at two stations downstream of Montrose contained DDT at 16.5 and 13 ~~---~~ percent, respectively, compared to 0.03 percent upstream of Montrose. DDT contamination has been detected in Dominguez Canal and Los Angeles Harbor.

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Name/description of nearest downslope surface water:

Average slope of terrain between facility and above-cited surface water body in percent:

Is the facility located either totally or partially in surface water?

AT 6/26/84

BOE-C6-0179942

Is the facility completely surrounded by areas of higher elevation?

1-Year 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

AP 6/26/84

BOE-C6-0179943

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

SEE GROUNDWATER

Compound with highest score:

SEE GROUNDWATER

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

SEE GROUNDWATER

Basis of estimating and/or computing waste quantity:

SEE GROUNDWATER

***

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 mile downstream of the hazardous substance:

ef.10) The surface water run-off is easily accesible by the public - as
ef.13) seen in photo. ~~The water is not used as a drinking water source~~.
This run-off ends up in the Dominguez channel and the L.A. Harbor
which are both used for recreation SCORE = 2

AP
6/26/84

BOE-C6-0179944

Is there tidal influence?

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

(Ref.13) DDT from the Montrose facility ends up in the Dominguez channel and then to the L.A. Harbor. Both the harbor and channel contain wildlife and rare species.

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

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BOE-C6-0179945

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Total population served:

Name/description of nearest of above water bodies:

Distance to above-cited intakes, measured in stream miles.

AP
6/26/8"

BOE-C6-0179946

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

(Ref.11) DDT, ~~[illegible]~~ DDE, DDD

SCORE = 45

Date and location of detection of contaminants

~~Six week period during 1978. Air sampling was done on the site and over an extensive area - see map in Reference 11.~~
Soil samples taken 12/14/83 in nearby residential areas compared to control/background sample 2½ miles to the south

Methods used to detect the contaminants:

~~Mineral oil plates were used for detection~~

Off-Site Soil sampling

Rationale for attributing the contaminants to the site:

Site was the only place where DDT was manufactured. DDT was banned from use in 1972, but Montrose Chem. Co continued production until 1982. ~~Landfills show high levels of DDT because soil from the site was taken to these landfills.~~

***

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

DDT

Most incompatible pair of compounds:

None

SCORE = 0

AP 6/26/84

BOE-C6-0179947

Toxicity

Most toxic compound:

Ref.6) DDT

SCORE = 3

Hazardous Waste Quantity

Total quantity of hazardous waste:

SEE GROUNDWATER

Basis of estimating and/or computing waste quantity:

SEE GROUNDWATER

***

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Ref.12)

McDonald Douglas employees	2300	
Farmer Bros. employees	350	
1/2 of houses within 1/4 mile	380	(100 houses at 3.8 people/house)
	3030	

This figure does not include workers to the west of the facility.

SCORE=27

Distance to a Sensitive Environment

Distance to a 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

AP 6/24/89

BOE-C6-0179948

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

(Ref.12) Industrial park is located 500 feet from the site

SCORE = 3

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

AP 6/26/84

BOE-C6-0179949

MONTROSE CHEMCIAL COMPANY-REFERENCES

REFERENCE	SOURCE
1	ROC-Dominguez Water Corporation
2	Hydrogeological Assessment Ecology and Environment TDD #R9-8310-01 November 11, 1983
3	Department of Water Resources Bulletin 73-1 Weather Atlas of the United States Department of Commerce
4	See 2
5	ROC-Field Investigations Section
6	ROC-MITRE Corporation
7	Metcalf and Eddy Transmittal June 13, 1984
8	Review of Proposed Response to EPA Enforcement Order No.83-01 Metcalf and Eddy November 1983
9	See 8
10	Investigation Report-Montrose Chemical Corporation EPA-Region 9 C(83)E002
11	~~See 10~~
12	Photographic Analysis of Four California Hazardous Waste Study Sites TS-AMD-81070 September 1981
13	See 10

California Department of Health Services, Hazardous Materials Laboratory, Laboratory Report, 12/29/83.

F.C. DIST. FORM 108 REV. 2M 11-67

SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

LAC FCD # 795

Owner: Stauffer Chemical Co.
Tenant: Jones Chemical-9-26-67

Location and Description: In open on concrete base; 75' SO. & 25' E. of SE corner of Acid Plant bldg.; ~~630'~~ W of ℄ of Normandie Ave; 0.10 mile No. of Del Amo St 654' W. of west curb of Normandie Ave.

Use: Industrial Supply. None (Capped) 9-21-67. Recapped-4-30-69

Elev. of average grd. at well: 46 ± U.S.G.S. Datum

Elev. of grd. adjacent to well: 45.3 ±'-4-30-69 U.S.G.S. Datum

Water surface reference points:

(a) From ____ To ____ Elev. ~~46.0~~ 46.5 How det. ~~Topo. DWR~~ Rel. to R.P.(b)
Description: ~~ground surface~~ Airgage (S'ly side of pumpbase), 0.5' above grd.

(b) From ____ To ____ Elev. 46.5 How det. Topo.-DWR
Description: Hole at airgage (S'ly side of pumpbase), 0.5' above grd.

(c) From 9-26-67 To ____ Elev. 46.0 How det. Rel. to R.P.(b)
Description: Slot in side of 16" casing cover at grd. surface.

(d) From 4-15-68 To ____ Elev. 46.0 How det. Rel. to R.P.(c)
Description: 1/2" hole in top of capped casing, at grd. surface

Type of well: (e) (See below) Size ~~10"~~ 16"

Original depth: 727'. Plugged @ 722' Soundings:

Pumping equipment: Removed-9-21-67

Power used:

Capacity: 1060 GPM Drawdown: 20' - test

Date drilled: ~~July 1943~~ 6-10-43 By Barber & Bridge Drilling Co.

Artesian characteristics:

Quality of water:

Remarks: Data from DWR - 7/6/48 AAT
R.P.(e) 4-30-69 Top of 8" dia. pipe riser (with hinged lid) (under removable steel cover plate, in pipe vault); 0.2 ±' below top of vault & graded level of asphalted parking lot.
Elev. 45.1' How det. Rel. to R.P.(d).

(OVER)

Well Numbers | Owner | D.W.R. No. 45/HW-48 | D.W.R. Loc. | F.C. 795

Hazardous Materials

APR 22 1982

2826

BOE-C6-0179951

2827

LOG OF WELL NO. 795

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS
		Upper Pleistocene Deposits			
0	3	Black adobe			
3	32	Clay yellow			
32	53	Cemented shells			
53	71	Sand dry			
71	102	Clay yellow			
102	121	Clay blue			
		"200-foot sand," from 121 to 174 feet			
121	126	Coarse sand, dirty yellow			
126	137	Clay blue sandy			
137	161	Coarse sand, dirty yellow			
161	174	Coarse sand, dirty blue			
		San Pedro Formation			
174	187	Sea Mud			
187	248	Clay blue			
		"400-foot gravel," from 248 to 282 feet			
248	262	Coarse sand blue			
262	271	Sand and gravel 1/16"			
271	282	Sand and gravel 1/8"			
282	398	Clay blue			
398	413	Cemented sand			
413	458	Gravelly clay			
458	486	Cemented gravel			
		Silverado zone, from 486 to over 727 feet			
486	519	Gravel tight dirty 1"			
519	560	Gravel loose 1/2"			
560	599	Clay blue			
599	650	Gravel 1"			
650	714	Gravel 3/4"			
714	727	Clay blue sand			

Hazardous Materials Management Section
APR 22 1982
California Department of Health Services
LOS ANGELES

Perforations 486' – 560';
603' – 650';
673' – 714'.

Struck water at 71'

Water level before perf. _____ after perf. 77'

Remarks Cement plug placed in casing @ 722' – 727'.
Above log data copied from DWR's West Basin Referee's Report.
9-25-67

(OVER)

BOE-C6-0179952

76W355 107 Gb 2-54

SHEET No. 2

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL MEASUREMENTS

WELL No. 795

Ref. Point (8) Elev. ~~460~~ 46.5 (airgage) From _____ To _____

" " ( ) " _____ " _____ " _____

" " ( ) " _____ " _____ " _____

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1949 11-17		105	-58.5	Owner	
1950					
4-13		105	~~-59~~ -58.5	Owner	
1954					
12-6	1540	—	—	T.E. Moon	Pumping@1615 this well pumps 24 hrs. per day.
1955					
6-30		127.	-80.5	~~Owner~~/DWR	
7-13		147.	—	"	ppq Kw'd by phone from DWR 9-6-55 - APK
7-15		146.	—	"	ppq
7-20		120.		"	
7-25		120.		"	
7-25		137.5	—	"	ppq
8-1		145.	—	"	"
8		122.5		"	
9-30		120.0		"	
10-20		—	~~-66.5~~	"	"
11-1		112.5	~~-76.5~~	"	
12-1		—	—		"
-30		—	—	"	"
1956					
1-3		116		"	
2-5		—	—	"	"
-25		120	~~-68.5~~	"	
4-2		115	~~-69~~		
-30		116	~~-70~~		
6-1		115		"	
7-2		120		"	
8-1		125		Owner/DWR	
10-1		125		"	
11-1		126.1	~~-80.1~~ -79.6	"	
12-31		125	~~-79~~	"	
1957					
2-1		120		"	
2-31		115		"	
5-1		120	~~-74~~ ~~-86~~	"	
6-1		121	-78.5	"	

APR 22 1982

WELL NO. 795

(OVER)

BOE-C6-0179953

WELL NO. 795

REF. POINT (a) ELEV. ~~46.0~~ 46.5 (Airgage) FROM _____ TO _____

" " ( ) " _____ " _____ " _____

" " ( ) " _____ " _____ " _____

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS Pumping Distance
1957					
9-3		126	~~-80~~	~~Owner~~ DWR	
10-1		125	-79	"	
-31		118	~~-72~~	"	
12-3		—	~~-71.5~~	"	126'
1958					
1-2		—	—	"	126'
2-1		117			
14		—	—	"	"
3-3		115	~~66.5~~	"	
4-2		113	~~-67~~	"	
21		115	-	"	
5-1		—	—	"	125'
6-2		120		"	
7-1		125	~~-38.5~~	"	
9-2		125	~~-19~~	"	
-5		—	—	"	pmpG 130'
1959					
3-23		120	~~-73.5~~	"	
4-7		120	~~-74~~	"	
5-29		—	—	"	Plg @ 120'
6-3		120	-74	"	
4		—	—	"	Plg @ 120'
7-22		120		"	
8-11		120	-73.5	"	
1960					
2-12		113		"	
3-1		120		"	
22		125	~~-68.5~~	"	
4-1		115	~~-69~~	"	
5-2		120		"	
6-1		120		"	
7-1		120		"	
8-1		120		"	
9-1		120		"	
10-1		120	~~-73.5~~	"	
11-7		120	~~-74~~	"	
12-8		120		"	
1961					
1-3		125		"	

(OVER)

Hazardous Materials Management Section
APR 22 1982
California Department of Health Services
LOS ANGELES

WELL NO. 795

BOE-C6-0179954

76W355 107 Gib 7-60

SHEET No. 3

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
Water Conservation Division
WELL MEASUREMENTS

WELL No. 795

Ref. Point (a) Elev. ~~46.0~~ 46.5 (Airgage) From _____ To _____

" " (b) " 46.5 (Tape) " _____ " _____

" " (____) " _____ " _____ " _____

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1961					
2-1		115.0		Owner/DWR	
3-1		115.0		"	
23		120.0	-71.0	"	Ppg @ 122.0'
23		117.5	~~-71.5~~	DWR	
4-5		116.0	-69.5	Owner/DWR	
5-1		130.0		"	
31		130.0		"	
6-1		130.0		"	
6-30		120.0		"	
11-1		125.0	~~-79~~	"	11-20-61 124.4 = 77.9 DWR
12-4		125.0	-78.5	"	
1962					
2-1		126.0		"	
3-1		125.0	-82.3	"	
4-16		128.8 ~~138.8~~	~~-92.8~~	DWR	pumped recently
30		136.0	~~-90.0~~	Owner/DWR	
5-31		136.0	~~-90.0~~	"	
8-2		127.0		"	
9-4		126.0		"	
10-5		137.0		"	
25		117.8	-71.3	DWR	
31		123.0		Owner/DWR	
11-30		—	—	"	Ppg. @ 122.0'
12-31		123.0	-76.0	"	
1963			-75.5		
1-31		—	—	"	Ppg. @ 127.0'
2-28		127.0	~~-81.0~~ -80.5	"	
3-27		—	—	DWR	Ppg. @ 129.5'
4-1		—	—	Owner/DWR	Ppg. @ 129.0'
5-3		—	—	"	" " 127.0'
7-31		—	—	"	" " 130.0'
8-30		—	—	"	" " 128.0'
9-30		—	—	"	" " 130.0'
10-24		124.0	-77.5	DWR	
30		—	—	Owner/DWR	" " 130.0'

(OVER)

WELL NO. 795

Materials Management
APR 22 1982

BOE-C6-0179955

WELL NO. 795

REF. POINT	( )	ELEV.		FROM		TO	
" "	(c)	"	46.0	"	9-26-67	"	
" "	(d)	"	46.0	"	4-15-68	"	

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1967					
3-27		117.2	-70.7	[illegible]	[illegible]
9-5[illegible]	[illegible]	117.7	-70.7	[illegible]	[illegible]
					Temp [illegible]
10-17			-70.3	DWR	
11-13	1350	116.[illegible]	-70.5	MLS	Casing wet
1968					
4-4		—	—	DWR	[illegible]
4-15		114.7		MLS	[illegible]
10-17		—	—	DWR	Sent [illegible]
11-12		11[illegible]	[illegible]	[illegible]	[illegible]

(OVER)

WELL NO. 795

Hazardous Materials Man
APR 22 1982
Ca
of
LCS

BOE-C6-0179956

76W355 107 Cdb 6-64

SHEET No. 4

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
Water Conservation Division
WELL MEASUREMENTS

WELL No. 795

REF. POINT (d) ELEV. 46.0 FROM 4-15-68 TO
" " (e) " 45.1 " 4-30-69 "
" " (___) " " "

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1969					
4-7		113.5	-67.5	DWK	
4-15		113.4	-67.4	N-5	Casing wet
4-30		—	—	[illegible]	APK R.P.(e) Cut off 20" of 16" well casing, capped with 1/4" plate; installed 9" length of 8" tin pipe riser with hinged lid. Poured conc. collar over capped casing. Set pine vault with tin cover plate 0.2' above top of riser.

Hazardous Materials Management
APR 22 1982
Calif. Dept. of Health
LOS ANGELES

WELL No. 795

(OVER)

FCD 805

F.C. Dist. Form 106 US 7-29

600' W. of Vt. Av. } L.A.W.D.
100' N. East Rd. }

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDROGRAPHIC DEPARTMENT
WELL DATA

Location and description 130' (DWR) 200' N. of East Rd. bet. Walnut and Oak Sts. 50' W. East Rd. 130' W. of New Hampshire 130' W. of Walnut Av. E. of TORRANCE

Description of reference point (a) Top of 6"x6" blocks over casing (b) 6-11-35 (Top casing 1.0 above grd. L.A.W.D.)

R. P. elev. above sea level (a) 36.6 36' (b) 36.13 Datum USGS. 10359

How determined Topog. map L.A.W.D. Levels

R. P. elev. above ~~below~~ ground (b) 1.0' (L.A.W.D.) (a) 1.47

Owner F.S. Austin

Use Not in use except with hand pump.

Capacity of well

Depth of well 200' Sounded 99.9' USGS 1943

Size of well 7" Type Drilled

Power used

Type of motor, engine Make HP

Type of pump Make

Capacity of pump

Year drilled or dug 1924 Driller

Depth to water when drilled

Salinity of water

Temperature of water

Artesian when drilled Yes No

Artesian on date Yes No

805

Well Number

2833

BOE-C6-0179958

LACFCD # 806

2834

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDROGRAPHIC DEPARTMENT
WELL DATA

Location and description 2 mi. north of Carson St.
~~300~~ 200' E. of Normandie St. E of TORRANCE
350' E of P.E. R/R TRACKS

Description of reference point Top casing at grid (L.A.W.D.)

R. P. elev. above sea level ~~40~~ 43.79 Datum USGS.
L.A.W.D. Levels

How determined ~~DWR~~ at (LAWD)

R. P. elev. ~~above, below~~, ground

Owner J. M. Carson (Estate) Donald BAKER, Eng

Use Not used since 1911

Capacity of well

Depth of well 377'

Size of well Type

Power used

Type of motor, engine Make HP

Type of pump Make

Capacity of pump

Year drilled or dug Sept. 1902 Driller A. L. McSwain

Depth to water when drilled

Salinity of water

Temperature of water

Artesian when drilled Yes No

Artesian on date Yes No

2835

LOG OF WELL No. 241

Drilled by A.L. McSwain

Date drilled Sept 1902

Depth from ground surface 377'

Struck water at ..... ft. from ground.

Water rose to ..... ft. from ground.

FROM	TO	CLASSIFICATION OF MATERIALS
0	126	soil, sand
126	132	black clay
132	190	sea mud
190	200	cemented sand
200	258	clay
258	276	fine gravel
276	305	sand
305	335	gravel
	348	sand
	368	gravel
	377	sand

APR 2

BOE-C6-0179960

F. C. DIST FORM 107 1M 1 54

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDROGRAPHIC DEPARTMENT

SHEET NO. 2

ELEVATION REFERENCE POINT 43.~~88~~ .79 WELL NO. 806

DATE	TAPE READINGS: REFERENCE POINT	TAPE READINGS: WATER SURFACE	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
						RECORDS 4-1-1930 - 1935 Available DWR
1935						
4-15			65.00		L.A.W.D.	~~Confidential File~~ Released
10-24			70.20		"	"
1936						
3-5			64.25		"	"
11-16			67.50		"	"
1937						
4-14			63.80		"	"
12-3			65.05		"	"
1938						
4-18			63.65		"	"
1940						
4-3	66.0	1.7	64.3	-20.51	Moon	Checked
11-4	70.0	2.6	67.4	-23.61	"	2:18P
1941						
5-6			64.0	-20.21	"	315P
11-3			66.3	-22.51	"	1245P
1942						
4-15			64.2	-20.41	"	950a
11-9			67.0	-23.21	"	1100a
1943						
4-26			65.9	-22.11	"	1130A
11-23			70.6	-26.81	Bollinger	1:15P
1944						
4-18			—	—	"	1:50P - No meas.
12-5			74.15	-30.36	"	11:05A
1945						
4-12			74.4	-30.61	Moon	3:00P
11-20			78.0	-34.21	"	11:10A
1946						
4-17			78.0	-34.21	"	12:25P
12-16			78.10	-34.31	Bollinger	9:40P
1947						
4-14	9:00A		—	—	"	Destroyed
9-23			—	—	DWR	"
10-8-56	1135		—	—	MLS	well destroyed - No well has been drilled to replace it.

(OVER)

806

2836

76W333 107 Gb 7-60

SHEET NO. 2

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
Water Conservation Division
WELL MEASUREMENTS

(a) 20.5 10-1-56 WELL NO. 806 C

Ref. Point		Elev.	From	To
" "	(b)	20.5	4-17-59	
	(c)	27.00	10-1-59	
" "	(d)	24.9	9-14-61	
" "	(e)	25.6	9-20-61	

Date	Time	Dist. R.P. to Water Surface	Elev. Water Surface	Observer	Remarks
1956					
10-1	1220	—	-59.7	PNH	
2	0835	—	-50.5	"	
16	0815	—	-43.04	"	
11-28	1400	62.8	-42.3	MLS	
1957					
4-15	1545	62.73	-42.23	MLS	
10-28	1240	63.31	-48.81	MLS	
1958					
4-22	1440	63.94	-43.44	MLS	
11-19	0955	63.74	-43.24	MLS	
1959					
4-13	1205	63.67	-43.17	MLS	
17		—	—	HFRyle	Casing extended 11.43' - RP(b)
		—	—		same elev. as RP(a) - obs. @ 40'
24	1620	—	—	MLS	Dry @ 4000'
10-1	—	—	—	HFR	4.05' of extended casing re-
		—	—		moved. RP(c). obs. @ 45'
11-5	—	—	—	HFR	Bailed, removed obst. & cleaned
		—	—		to 176'
6	—	—	—	CCG	Sounded to silt level, 150'.
		—	—		Bailed silt to 176'.
9		73.5	-43.62	CCG	sounded to silt level, 159'.
					Bailed to 176'. Added 2 cuft
					3/4 rock, bailed above rock. Then
					sounded bottom @ 171'.
10	1630	76.75	-48.87	MLS	sounded @ 159.5'
1960					
4-13		—	—	MLS	Top of casing found lying
					in channel. Probably sheared off
1961					
9-14	1425	69.4	45.0	WRY	Located well with ski-
					loader. Sounded to bottom
					148'. RP(d)
20		70.65	-48.05	WRY/GLW	Casing extended 1.2' & located
					and installed RP(e)

WELL NO. 806 C

(OVER)

BOE-C6-0179962

806 C FCD Sampled semi-mnly

76WD40 100 REV. 6-2-58

SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

Owner: L.A.C.F.C.D. 0.3± mile No. of Carson St.

Location and Description: 600± E. of Normandie Ave; 50'± No. of 212 St. Storm Drain produced 637' E. of ℄ Normandie Ave; 42.2' N. of ℄ proposed LACFCD easement & R/W; 27' E.-S.E. of F.C. monument } 3-26-59

Use: G.W. Observation

Elev. of average grd. at well: ~~18~~ 25.1 U.S.G.S. Datum

Elev. of grd. adjacent to well: U.S.G.S. Datum

Water surface reference points:

(a) From 10-1-56 To Elev. 20.5 How det. topo.
Description: Top of capped casing, 2.5' above grd.

(b) From 4-17-59 To Elev. 20.5 How det. Rel. to RP(a)
Description: 1/2" slot in side of extended well casing (same level as RP(a)). (Casing extend 11.43' topped with hinged lid.)

(c) From 10-1-59 To Elev. 27.88 How det. Rel. to RP(a)(b)
Description: Top of casing with hinged lid. 2.78' above grd.

(d) From 9-14-61 To 9-21-76 Elev. 24.4' How det. LACo. Eng. Map File # 299-FL2
Description: Top of 8" casing, 0.7 ft. below top of ground & top of dirt roadway

*(e) Type of well: Cable Tool Size 8"

Original depth: 165' Soundings: 1595 11-10-59 171' - 11-9-59

Pumping equipment: None

Power used:

Capacity: Drawdown:

Date drilled: 10-1-'56 By Peck & Son

Artesian characteristics:

Quality of water:

Remarks: RP(e) 9-20-61 elev. 25.6' rel. to RP(d) Top of 8" casing extended 62 ft above RP(d). 0.5 ft. above ground.

~~* R.P. e Top of~~

(over)

Well Number | Owner NC1 | D.W.R. No. 4/14-12Q2 | Loc. | F.C. 806 C

2838

BOE-C6-0179963

LOG OF WELL NO. 806 C

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS
0	11	Clay; dark gray with brown spots max. 1/8"; firm caliche nodules to 1/8", hard scattered straw filaments.	72	88	Medium to coarse sand, some fine 20%± 1/4" cemented sand aggregations, numerous sand size shell fragments. At 81' only few sand aggregations, at 86' color change to gray.
11	15	Sandy clayey silt; brown; 20% medium grained well sorted loose sand.	88	96	Sand, fine to medium, 10%± coarse, medium olive gray. shell fragments.
15	19	Silty clay; olive-brown with rust brown streaks about 3/4" long; firm, friable when dry.	96	99	Clayey silt grading to silty clay, olive with minute orange streaks, some embedded shells.
19	53	Clayey silt, some fine sand, mottled tan and gray, some mica at 42'; few decomposed shells.	99	106	Clay, dark greenish gray, few sand stringers, few shells.
53	56	Very silty fine sand; tan; loose; 30% gravel 1/4"-2"; 10% fragments of shells; considerable mica (biotite).	106	112	Silt, sandy, clayey, firm, dark greenish gray; numerous shells.
56	60	Gravel; clean, 1/8"-1/2", moderately well sorted; 10% shell fragments.	112	118	Clayey silts and silty sands interbedded, gray; fossils.
60	62	Large gravel made up of cemented shells. Pebble size to 3". Pitted.	118	125	Sand and silt, very fine, gray, probably friable.
62	64	Very silty fine sand, tan; 30%± 1/8" to 1 1/2"; loose. Biotite present.	125	132	Sand, very fine, loose, gray, much biotite mica.
64	66	Cemented shells 1/8" to 3" pebbles. Pitted. 5% silt and fine sand.	132	142	Sand, fine to medium, loose, well sorted, much mica, few shell pieces, gray.
66	68	Sand, fine to medium, some silt; pieces of cemented sandstone; shells.	142	158	Sand, fine, loose, much mica, gray.
68	72	Gravel made of 1/4" pieces of cemented sand; shell fragments.	158	164	Sand and silt, fine, loose, gray; with carbon matter.
			164	165	Sand, medium, gray, with many shells and pieces.

Perforations

Not perforated

Struck water at 56'

Water level before perf. _____ after perf. _____

Remarks

(over)

806 C

BOE-C6-0179964

WELL NO. 806C

REF. POINT		ELEV.	FROM	TO
" "	(d)	24.4	9-14-61	
" "	(e)	25.6	9-20-61	"
" "	( )	"	"	"

DATE	TIME	DIST. R.P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1961					
9-21	1150	70.58	-44.98	Gonnerman	sounded bottom 148'
11-28	1705	70.65	-45.05	GLW	
12-18	0850	68.85	-43.25	Gonnerman	sounded @ 148.1 before bailing. sounded @ 134.1 after bailing.
27	1640	72.4	-96.80	WBY	Bottom feels silty. Plopper used. sounder says bottom @ 162.5'
1962					
4-10	0818	71.1	-45.5	GLW	
11-20	1410	62.79?	-37.39?	MLS	[illegible] El -47.39 [illegible]
1963					
3-20	1405	71.68	-46.08	MLS	
11-12	1530	72.29	-46.69	"	
27	0952	72.25	-46.65	RAP	
1964					
4-8	1600	72.34	-46.74	RAP	
1965					
5-18	0830	72.7	-47.1	MLS	
1970					
4-15		66.4		ES	

WELL NO. 806C

(OVER)

2840

F. C. Dist. Form 106—1M 5-36 Sheet 1

Tight Cavity

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DEPARTMENT
WELL DATA

Well Numbers USGS 4/13-6K2

Location and description #19825 S. Main St., 100' ± W. of Main St. ℄ and 550' ± S. of Where Main and Moneta intersect. Under ~~[illegible]~~ yellow green stack back of residence.

Description of reference point (a) Irregular hole in hand pump column 1.3' above floor ~~(b) SE corner of concrete step into pump house [illegible]~~ ?

R. P. elev. above sea level (a) 24.51 ~~(b) 21.96~~ Datum USGS

How determined Relation with well 814 ~~(b) DWR levels~~

R. P. elev. above, ~~below,~~ ground (a) 2.0

Owner GEORGE BARNING ~~Mr. Corbown~~

Use Domestic and Irrigation (8/56)

Capacity of well

Depth of well 70' from USGS

Size of well 5" X" according to neighbor Type drilled

Power used Elev.

Type of motor, engine Make HP

Type of pump Hand w/elec. motor Make

Capacity of pump

Year drilled or dug June 1937 Driller

Depth to water when drilled

Salinity of water

Temperature of water

Artesian when drilled Yes No

Artesian on date Yes No

Old 8" casing about 15' W. in yard, seems filled up.

DWR B108-E
Mon DWR 45/13W6K2
45/13W6Q1

F. C. Well No. 814A

2841

BOE-C6-0179966

DWR sampled Semi annual

VOWBAG 100 REV. Cdb 10-57 SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

Owner: 814A

Location and Description: #19825 So Main St., 470' So. intersection of Moneta Ave & Main St, 115' W. of ℄ Main St.; in yellow green shack in back of residence, 100# So. of well 814.

Use: Domestic & Irrig.

Elev. of average grd. at well: _____ U.S.G.S. Datum

Elev. of grd. adjacent to well: 21.5 - U.S.G.S. Datum

Water surface reference points:

(a) From _____ To _____ Elev. 24.51' How det. rel. to well 814
Description: Irregular hole in hand pump column, 1.3' above floor

(b) From 2-10-48 To _____ Elev. 22.0 How det. rel. to DWR levels 10-6-49
Description: 2-10-48 top of casing 0.5' above grd. & 0.2 above pump house floor.

(c) From _____ To _____ Elev. _____ How det. _____
Description: _____

(d) From _____ To _____ Elev. _____ How det. _____
Description: _____

Type of well: _____ Size 5"

Original depth: 70' Soundings: _____

Pumping equipment: Berkeley Jet

Power used: G.E elec motor 0.5HP.

Capacity: _____ Drawdown: _____

Date drilled: June 1937 By _____

Artesian characteristics: _____

Quality of water: _____

Remarks: _____

(over)

Well Number | Owner | USGS-4/13-6K2 | D.W.R. No. 4S/13W-6Q1 | D.W.R. Loc. | P.C. 814A

2842

76W340 100 REV. 6-2-55

SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

LACFCD #815

Owner: Ward dump

Location and Description: 200' W. of Main St.
450' N. of 208 th. St.

Use: Test

Elev. of average grd. at well: + 3.5' U. S. G. S. Datum

Elev. of grd. adjacent to well: U. S. G. S. Datum

Water surface reference points:

(a) From ____ To ____ Elev. ____ How det. ____
Description: ____

(b) From ____ To ____ Elev. ____ How det. ____
Description: ____

(c) From ____ To ____ Elev. ____ How det. ____
Description: ____

(d) From ____ To ____ Elev. ____ How det. ____
Description: ____

Type of well: Auger hole Size ____

Original depth: 13.5' Soundings: ____

Pumping equipment: none

Power used: ____

Capacity: ____ Drawdown: ____

Date drilled: 9-20-'56 By K.H. Wiebe - DWR

Artesian characteristics: ____

Quality of water: ____

Remarks: Sampled by DWR 9-20-'56 #5860

(over)

Well Numbers

Owner WD #21

D.W.R. No. 45/13N 781

Loc.

D.W.R.

F.C. 815

APR 22 1982

LOS ANGELES

2843

LOG OF WELL NO. 815

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS
0	3	Dark gray sandy clay fine to med.			
3	3.5	Dark gray sand & clay.			
3.5	4.0	Dark gray fine to medium clayey sand.			
4.0	5.5	Dark gray fine to medium silty sand.			
5.5	7.0	Brown fine sand and silt.			
7.0	7.5	Yellow brown fine sandy clay.			
7.5	8.5	Yellow brown clayey fine sand & silt.			
8.5	11.0	Yellow brown silty fine sand with stringers of silty clay.			
11.0	13.0	Yellow brown fine sand & silt.			
13.0	13.5	Yellow brown silt & clay.			
		Log by Don McCann			

Perforations

Struck water at

Water level before perf. after perf.

Remarks

(over)

RECEIVED APR 22 1982 LOS ANGELES

BOE-C6-0179969

76W340 100 REV. 6-2-55

SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA LAC FCD #815A

Owner: Ward dump

Location and Description: 180' W. of Main St.
600' N. of 208th St.

Use: Test hole

Elev. of average grd. at well: + 4.0' U. S. G. S. Datum

Elev. of grd. adjacent to well: U. S. G. S. Datum

Water surface reference points:

(a) From ____ To ____ Elev. ____ How det. ____
Description: ____

(b) From ____ To ____ Elev. ____ How det. ____
Description: ____

(c) From ____ To ____ Elev. ____ How det. ____
Description: ____

(d) From ____ To ____ Elev. ____ How det. ____
Description: ____

Type of well: Auger hole Size ____

Original depth: 8.5' Soundings: ____

Pumping equipment: ____

Power used: ____

Capacity: ____ Drawdown: ____

Date drilled: 9-20-'56 By K.H. Wiebe DWR

Artesian characteristics: ____

Quality of water: ____

Remarks: Sampled by DWR 9-20-56 #5859

(over)

Well Numbers

Owner WD #2

D.W.R. No. 45/13W 783

D.W.R. Loc.

F.C. 815A

2845

28466

LOG OF WELL NO. 815 A

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS
0	3.5	Dark brown fine sandy clay.			
3.5	5.0	Blue to black fine sandy clay.			
5.0	8.5	Gray blue fine sandy clay with stringers of green sticky clay.			
	E/W	W.L. +1.2'			

Perforations

Struck water at

Water level before perf. after perf.

Remarks

(over)

APR 22 1982
California Department of Health Services
LOS ANGELES

TRIPLICATE
File Original, Duplicate and 1 copy with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert if applicable number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)
STATE OF CALIFORNIA

Do Not Fill
No. 2937
State Well No.
Other Well No.

(1) OWNER:
Name: Dominguez Water Company
Address: Los Angeles County, California.

(2) LOCATION OF WELL:
County: Los Angeles Owner's number, if any: #25
R. F. D. or Street No.: Near Chemical Company Plant (Shell) approx 1/4 mile East of Figueroa Street on Del Amo, Los Angeles, Calif. (County)

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	33	33" x 1/4" conductor casing	
33	39	18" x 1/4" blank casing	
39	334	14" x 1/4" blank casing	
334	710	14" x 1/4" perforated casing	

Type and size of shoe or well ring
Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:
Type of perforations used: Machine louvers (shutter)
Size of perforations: 1/8 in., length, by 3 in.
From 334 ft. to 710 ft. Perf. per row 2-2/3 Rows per ft. 6

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing

(9) WATER LEVELS:
Depth at which water was first found ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom? M. B. Peck & Sons
Yield: 2700 gal./min. with ft. drawdown after hrs.
Temperature: 73° Was a chemical analysis made? ☐ Yes ☒ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth: 710 ft. Depth of completed well
Formations: *Describe by color, character, size of material, and structure.*

From ft.	to ft.	Description
0	10	Soil
10	40	Brown sandy clay, streaks of gravel
40	60	Blue clay, sand, gravel and sea shells
60	85	Brown sandy clay, streaks of sand and gravel
85	125	Blue clay and shells
125	140	Blue sandy clay
140	204	Sand, gravel shells and clay streaks
204	216	Blue clay
216	248	Blue sandy clay and shells
248	298	Blue clay
298	363	Hard gravel and clay streaks
363	405	Sandy blue clay
405	532	Sandy blue clay, rocks and gravel
532	645	Sand, gravel and rocks
645	680	Blue sandy clay
680	704	Sand and gravel
704	710	Blue clay

CONFIDENTIAL
In Accordance With
Section 7076.1 of the Water Code
State of California

APR 22 1982

REGIONAL WATER POLLUTION CONTROL BOARD
FEB 14 1957
Los Angeles

Work started 12-17-56 19 Completed 12-26-56 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME: Roscoe Moss Company (Typed or printed)
Address: 4360 Worth Street
Los Angeles, California
[Signed] Well Driller Secretary
License No. 434 Dated 2-13-57 19

DWR Form No. 248 (Rev. 5-54)

2847

BOE-C6-0179972

76WB40 100 REV. 6-2-55

SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

LAC FCD #815B

Owner: Dominguez Water Corp.

Location and Description: 660' E. of ℄ Figueroa St. 105' N of ℄ Del Amo Blvd. extended east.

Use:

Elev. of average grd. at well: 25.0 ±' U. S. G. S. Datum

Elev. of grd. adjacent to well: U. S. G. S. Datum

Water surface reference points:

(a) From ____ To ____ Elev. 22.0 How det. ____
Description: ?

(b) From ____ To ____ Elev. 27.2 How det. DWR
Description: Hole in measuring pipe 2.2' above ground

(c) From ____ To ____ Elev. 28.2 How det. DWR
Description: Air gage 3.2' above ground

(d) From ____ To ____ Elev. ____ How det. ____
Description:

Type of well: ____ Size ____

Original depth: ____ Soundings: ____

Pumping equipment: ____

Power used: ____

Capacity: ____ Drawdown: ____

Date drilled: ____ By ____

Artesian characteristics: ____

Quality of water: ____

Remarks: data from D.W.R.

APR 22 1982

(over)

Well Numbers

Owner #25

D.W.R. No. 4S/13W-7C1

D.W.R. Loc.

F.C. 815B

2848

76W355 107 Gib 7-60

SHEET No. 2

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
Water Conservation Division
WELL MEASUREMENTS

WELL No. 815 B

REF. POINT (a) ELEV. 22.0 FROM _____ TO _____
" " (b) " 27.2 (tape) " _____ " _____
" " (c) " 28.2 (airline) " _____ " _____

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1958					
7-9		—	—	ESB	Pmp.
1959					
2-3		—	—	EAP/RLB	Pmp.
6-17		—	—	owner/GSB	No. Meas.
1961					
3-23		100.0	-78.0	DWR	
23		103.6	-81.6	"	
6-20		—	—	owner/[illegible]	No. Meas.
11-28		95.5	-73.5	DWR	
28		102.7	-80.7	"	
1962					
4-19		—	—	"	Pmp.
10-24		73.6	-46.4	"	
1963					
2-1				owner/DWR	Pmp. @ 217'
3-1		—	—	"	Pmp. @ 218'
25		—	—	DWR	No Meas.
29		—	—	owner/[illegible]	Pmp. @ 217'
5-1		—	—	owner/AJF	No Meas.

WELL NO. 815 B

(OVER)

2870

LOG OF WELL NO. 815B

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS

Perforations

Struck water at

Water level before perf. after perf.

Remarks Well log & other data in confidential well log files 8-20-57

(over)

2850

BOE-C6-0179975

2851

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

Owner: Sunset Oil Co.
1724 E. Spring St. Long Beach

Location and Description: 0.2 Mi. So. of the intersection of Figueroa & East Road and 810' E. E Figueroa In oil company yard.

Use: Industrial

Elev. of average grd. at well: ~~25~~ 27 ±' U. S. G. S. Datum

Elev. of grd. adjacent to well: U. S. G. S. Datum

Water surface reference points:

(a) From ____ To 1" Elev. ~~26.0~~ 28.0 How det. Top 0
Description: Lip of ~~1½~~ "hole in pump base N side ~~10~~ 1.0' above ground

(b) From ____ To ____ Elev. ____ How det. ____
Description:

(c) From ____ To ____ Elev. ____ How det. ____
Description:

(d) From ____ To ____ Elev. ____ How det. ____
Description:

Type of well: ____ Size 12"

Original depth: 580' Soundings:

Pumping equipment:

Power used: 15 HP Serial 6C8061

Capacity: ____ Drawdown:

Date drilled: Oct. 18, 1946 By Van Noy of Long Beach

Artesian characteristics:

Quality of water:

Remarks: Data from D.W.R. by phone Benadiman, 1-12-54, field date, added & revised above.

(over)

D.W.R. No. 43/13W-7L1

D.W.R. Loc.

F.C. 816

APR 22 1952

2852

LOG OF WELL NO. 816

FROM	TO	CLASSIFICATION OF MATERIALS	FROM	TO	CLASSIFICATION OF MATERIALS
0	76	Clay			
76	226	Streaks of sand, blue clay and sea shells	200' sand		San Pedro Formation
226	270	Clay			
270	308	Coarse sand			
308	409	Shale and streak of sand			
409	471	Sandy shale			
471	549	Sand and small pebbles	Silverado		
549	565	Sand			
565	567	Shale			
567	580	Sand			

Perforations 528-580 - wire mesh

Struck water at

Water level before perf. after perf.

Remarks

(over)

APR 22 1982

BOE-C6-0179977

WELL NO. 816

REF. POINT (a) ELEV. 28.0 FROM 8-5-49 TO

" " ( ) " " "

" " ( ) " " "

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1963					
3-25		101.2	-73.2	DWR	
1972					
4-24		—	—	LACHD/AVK	A permit was issued to owners of well to cut 12" casing 6 feet below grd surface and fill total depth with 5-sack mix cement, with approx. one yard conc. around top.

WELL NO. 816

(OVER)

2853

76W355—107—1-53

SHEET No. 2

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL MEASUREMENTS

WELL No. 816

REF. POINT (a) ELEV. ~~26.8~~ 28.0 FROM 8-5-49 TO

" " ( ) " " "

" " ( ) " " "

DATE	TIME	DIST. R. P. TO WATER SURFACE	ELEV. WATER SURFACE	OBSERVER	REMARKS
1949					
8-5		89.5		DWR	
12-5		87.7		"	
1950					
4-26		81.9		"	
1954					Raise W.S elevation by 2feet
1-12	1150	98.2	-72.2	ESB	
4-21		101.9	75.9	DWR	
1955					
3-17		99.5	-73.5	DWR	well stopped pumping just prior to measu.
1956					
8-6		—	—	DWR	
11-13		—	—	DWR	Airgage doesn't work
1957					
1-28		—	—	DWR	ppg. copied 8-28-57 ECH
10-8		104.9	-78.9	"	
1958					
3-10		102.2	-76.2	"	
10-22		121.7	-95.7	"	
1959					
4-6		—	—	"	ppg
8		96.5	-70.5	"	Meas. checked
10-20		107.6	-81.6	"	pump off 10 min
1960					
3-17		98.1	-67.8	"	" " 15 "
10-25		98.9	-66.9	"	
1961					
3-23		—	—	"	ppg @ 108.4
27		—	—	"	" " 108.4
27		99.1	-73.1	"	
5-3	0850	107.87	~~-75.87~~	MLS	11-21 99.3 -71.3 DWR
1962					
4-11		103.2	-75.2	DWR	
10-23		98.8	-72.1	"	

(OVER)

WELL NO. 816

APR 22 1982

BOE-C6-0179979

2855

TOWNSEND 100 REV. Cab 10-57 SHEET 1

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION
WELL DATA

Owner: GOLDEN EAGLE REFINING CO. INC. Carson Oil Co.
#21000 SO Figueroa St., Torrance/Carson City

Location and Description: 0.2 mi. So. intersection Figueroa & 208th St; 810' E. ℄ Figueroa St.

Use: INDUSTRIAL SUPPLY

Elev. of average grd. at well: 27' ± U.S.G.S. Datum

Elev. of grd. adjacent to well: U.S.G.S. Datum

Water surface reference points:

(a) From 8-5-49 To Elev. 28.0' How det. Topo.
Description: LIP OF 1" HOLE IN PUMPBASE (No. SIDE), 1.0' ABOVE GROUND

(b) From To Elev. How det.
Description:

(c) From To Elev. How det.
Description:

(d) From To Elev. How det.
Description:

Type of well: 580' Size 12"

Original depth: Soundings:

Pumping equipment:

Power used: 15 H.P. SERIAL 6C8061

Capacity: Drawdown:

Date drilled: 10-18-46 By VAN NOY OF LONG BEACH

Artesian characteristics:

Quality of water:

Remarks:

(over)

Well Number | Owner | D.W.R. No. 45/18W-7L1 | D.W.R. Loc. | F.C. 816

BORING LOG

BORING NO. 7

PROJECT: Vermont & Normandie

DATE: 9-18-79

SOIL CLASSIFICATION (TYPE COLOR & CONSISTENCY)	DEPTH-FEET	LEGEND	SAMPLE NO.	DRY DENSITY LBS/CU FT	MOISTURE CONTENT - %
Artificial Fill, Sandy Silt, Dry, Loose	0				
Lean Clay, Dk. Brown, Med. Stiff					
Brown			1	106	16
Clayey Silt, Lt. Brown, Med. Compact	5				
Sandy Silt, Lt. Brown, Med. Compact					
Sandier	10				
	15				

BORING LOG

BORING NO. 8

PROJECT: Vermont & Normandie

DATE: 9-18-79

SOIL CLASSIFICATION (TYPE COLOR & CONSISTENCY)	DEPTH-FEET	LEGEND	SAMPLE NO.	DRY DENSITY LBS/CU FT	MOISTURE CONTENT - %
Artificial Fill, Lean Clay, Loose Trace of Gravel	0				
Lean Clay, Dk. Brown, Med. Stiff					
	5		1	115	14
Clayey Silt, Brown, Med. Compact					
Sandy Silt, Lt. Brown, Med. Compact					
	10				
Silty Fine Sand, Lt. Brown, Med.Comp.					
Sandy Silt, Lt. Brown, Med. Compact Some Clay			2	105	20
	15				

slidden engineering

BOE-C6-0179982

BORING LOG

BORING NO. 9

PROJECT: Vermont & Normandie

DATE: 9-18-79

SOIL CLASSIFICATION (TYPE COLOR & CONSISTENCY)	DEPTH-FEET	LEGEND	SAMPLE NO	DRY DENSITY LBS/CU FT	MOISTURE CONTENT - %
Artificial Fill, Lean Clay, Loose	0				
Lean Clay, Dk. Brown, Med. Stiff					
Clayey Silt, Brown, Med. Compact	5		1	103	15
Sandy Silt, Lt. Brown, Med. Compact	10				
	15				

[illegible] engineering

DEPARTMENT OF WATER AND POWER - CITY OF LOS ANGELES
Water Quality Division

Analyses of Major Los Angeles City Water Sources
1982-1983 Averages

	Units	MCL (1)	RM (2)	Owens River Aqueduct	River Supply Conduit	METROPOLITAN WATER DISTRICT to Eagle Rock Reservoir	METROPOLITAN WATER DISTRICT from Palos Verdes Reservoir
Primary Standards							
Inorganics/Physical							
Arsenic (As)	mg/L	0.05		0.02	0.01	0.003	-
Barium (Ba)	mg/L	1		< 0.1	< 0.1	0.048	-
Cadmium (Cd)	mg/L	0.010		< 0.003	< 0.002	< 0.001	-
Chromium (Cr)	mg/L	0.05		< 0.01	< 0.01	0.005	-
Fluoride (F)	mg/L	1.4-2.4		0.57	0.47	0.23	-
Lead (Pb)	mg/L	0.05		< 0.01	< 0.01	< 0.001	-
Mercury (Hg)	mg/L	0.002		< 0.0001	< 0.0001	< 0.002	-
Nitrate (NO_3)	mg/L	45		0.4	9.3	1.3	1.9
Nitrogen, Nitrate (N)	mg/L	10		0.08	2.1	0.29	0.43
Selenium (Se)	mg/L	0.01		< 0.002	< 0.003	< 0.002	-
Silver (Ag)	mg/L	0.05		< 0.01	< 0.01	< 0.005	-
Turbidity(3)	NTU	1		1.9	0.8	0.11	-
Organics							
Endrin	mg/L	0.0002		< 0.0002	< 0.0002	-	-
Foaming Agents (MBAS)	mg/L		0.5	< 0.05	< 0.05	-	-
Lindane	mg/L	0.004		< 0.00003	< 0.00003	-	-
Methoxychlor	mg/L	0.1		< 0.0005	< 0.0005	-	-
Toxaphene	mg/L	0.005		< 0.001	< 0.001	-	-
Trihalomethanes, Total	mg/L	0.1		System-wide average = 0.04			
2, 4-D	mg/L	0.1		< 0.0003	< 0.0003	-	-
2, 4, 5-TP	mg/L	0.01		< 0.0001	< 0.0001	-	-
Radio Chemistry							
Gross Alpha	pCi/L	15		3.6	2.5	-	-
Gross Beta	pCi/L	50		6.3	5.0	-	-
Hydrogen 3	pCi/L	20000		< 110	150	-	-
Strontium 90	pCi/L	8		0.3	0.4	-	-

(1) Maximum Contaminant Level (2) Recommended Maximum

(3) DWP has exemption from turbidity regulation until 1986 by which time we expect to have a filtration plant constructed.

Form 727 (Rev 1/84) 50

BOE-C6-0179984

DEPARTMENT OF WATER AND POWER - CITY OF LOS ANGELES
Water Quality Division

Analyses of Major Los Angeles City Water Sources
1982-1983 Averages

	Units	MCL (1)	RM (2)	Owens River Aqueduct	River Supply Conduit	METROPOLITAN WATER DISTRICT to Eagle Rock Reservoir	METROPOLITAN WATER DISTRICT from Palos Verdes Reservoir
Bacteriological							
Coliform Group Portions Positive	%	10		System-wide value =		0.6	
Samples, 3 or more Portions Positive	%	5		System-wide value =		0.4	
Secondary Standards							
Inorganic/Physical							
Chloride (Cl)	mg/L		250	16	32	60	58
Color, Apparent	units		15	5	3	< 5	-
Conductivity	µ mho/cm		900	295	628	693	602
Copper (Cu)	mg/L		1.0	< 0.01	0.08	<0.005	-
H+ Concentration	pH		6.5-8.5	8.01	7.59	8.17	8.21
Iron (Fe)	mg/L		0.3	0.02	0.01	<0.01	-
Manganese (Mn)	mg/L		0.05	< 0.01	< 0.01	<0.005	-
Sulfate (SO_4)	mg/L		250	23	109	161	99
TDS, Calculated	mg/L		500	186	402	422	-
Zinc (Zn)	mg/L		5.0	0.02	0.01	0.005	-
Organics							
Carbon Tetrachloride	mg/L		0.005	-	-	-	-
Trichloroethene (TCE)	mg/L		0.005	-	0.004	-	-
Tetrachloroethene (PCE)	mg/L		0.004	-	0.001	-	-
Unregulated Parameters/Constituents							
Aldrin	mg/L			< 0.00005	< 0.00005	-	-
Alkalinity as $CaCO_3$	mg/L			89	148	88	92
Average Standard Plate Count	CFU/ml			System-wide value = 15			
Boron (B)	mg/L			0.40	0.40	0.14	-
Bromide (Br)	mg/L			0.18	0.38	-	-
Calcium (Ca)	mg/L			21	60	49	38
Carbon Dioxide (CO_2)	mg/L			8	7	-	-
Chlordane	mg/L			< 0.00007	< 0.00007	-	-
Dieldrin	mg/L			< 0.00007	< 0.00007	-	< 0.00007
COD	mg/L			5.7	4.6	-	-
SOC	mg/L			2.6	1.8	-	-
TOC	mg/L			-	-	2.8	-

(1) Maximum Contaminant Level (2) Recommended Maximum

Form 227 (Rev 1/84) 3C

BOE-C6-0179985

DEPARTMENT OF WATER AND POWER - CITY OF LOS ANGELES
Water Quality Division

Analyses of Major Los Angeles City Water Sources
1982-1983 Averages

	Units	MCL (1)	RM (2)	Owens River Aqueduct	River Supply Conduit	METROPOLITAN WATER DISTRICT to Eagle Rock Reservoir	METROPOLITAN WATER DISTRICT from Palos Verdes Reservoir
Heptachlor	mg/L			< 0.00003	< 0.00003	-	-
Heptachlor Epoxide	mg/L			< 0.00005	< 0.00005	-	-
Iodide (I)	mg/L			0.01	0.02	-	-
Magnesium (Mg)	mg/L			4.3	17	18	16
Nitrogen, Ammonia (N)	mg/L			0.02	0.009	-	-
Nitrogen, Nitrite (N)	mg/L			< 0.001	< 0.001	-	-
Nitrogen, TKN (N)	mg/L			0.20	0.07	-	-
O, P' DDT	mg/L			< 0.0003	< 0.0003	-	-
P, P' DDT	mg/L			< 0.0003	< 0.0003	-	-
O, P' DDE	mg/L			< 0.00007	< 0.00007	-	-
P, P' DDE	mg/L			< 0.00007	< 0.00007	-	-
Oxygen, Dissolved (O_2)	mg/L			9.1	9.6	-	10.8
Phosphate as PO_4	mg/L			0.1	0.1	0.02	-
Potassium (K)	mg/L			3.4	4.1	3.0	3.3
Radium 226	pCi/L			< 0.1	< 0.1	-	-
Saturation Index				-0.78	-0.49	0.1-0.2	-
Silica (SiO_2)	mg/L			20	23	11.2	-
Sodium (Na)	mg/L			31	43	65	54
Stability Index				9.56	8.57	-	-
Temperature	°C			14	17.3	16.1	15.2
Total Hardness as $CaCO_3$	mg/L			61	220	196	161
2, 4, 5-T	mg/L			< 0.0002	< 0.0002	-	-

There are no groundwater wells belonging to DWP in the "Harbor Strip". The [illegible] is fed by water from the aqueduct except during high demand periods when the water is supplemented by water from MWD and Palos Verdes Reservoir via the Wilmington area [illegible] Conduit in the area north of Artesia Blvd. The water supplied to residents in areas south of the "Harbor Strip" of the City of Los Angeles is most likely from the Torrance [illegible] Water Co. This water is most likely composed of [illegible] water and [illegible] water.
The Palos Verdes reservoir belongs to MWD, and therefore MWD may have [illegible] sources to that reservoir.

The closest DWP groundwater wells to the [illegible] are the operational wells in the Wilmington area. These wells have been [illegible] intent to reactivate these wells. There are [illegible] 99th Street wells both of which are [illegible] These wells may be reactivated [illegible]

(1) Maximum Contaminant Level (2) Recommended Maximum

Form 227 (Rev 1/84) 5C

BOE-C6-0179986