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RCRA FACILITY ASSESSMENT
SOUTHERN CALIFORNIA CHEMICAL COMPANY, INC.
SANTA FE SPRINGS, CALIFORNIA

EPA I.D. No. CAD008488025

Working
copy

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EXECUTIVE SUMMARY

A RCRA facility assessment (RFA) was performed to identify and evaluate solid waste management units (SWMUs) and other areas of concern at the Southern California Chemical Company, Inc. (SCC) plant in Santa Fe Springs, California. This RFA utilizes a records review, data evaluation, interviews and a visual site inspection to evaluate the potential for releases of hazardous constituents from SWMUs identified during the assessment. The records review was based on information found in the RCRA and CERCLA files of EPA Region 9, and the files and reports of the California Department of Health Services (DOHS) and the Regional Water Quality Control Board (RWQCB), Los Angeles Region.

The facility has operated as an inorganic chemical manufacturer at this location since 1958. The company currently manufactures a wide variety of inorganic chemicals, including copper compounds, and proprietary and patented specialty products used in the aerospace and electronics industries. Some of these proprietary products are solder strippers, brighteners, conditioners, and etchants. Copper compounds include copper oxides and copper sulfates. Ferrous and ferric chlorides are also produced at this facility.(10)

The facility applied for RCRA interim status for a container storage area and a wastewater treatment pond in 1980. The pond was closed without an approved closure plan in 1985; the container storage area is still active.

Manufacturing processes and waste management practices have changed quite frequently since SCC has been at this site and as a result, the site layout and design have changed over time. Processing areas and waste management units have commonly been constructed over other inactive process areas and units. In addition to changing locations, waste management units, in particular the sumps, have also undergone changes in sources of wastes, points of discharge, and unit designation.

The facility has a history of poor housekeeping practices. There are numerous documented reports of accidental spills from process areas, leaking tanks and drums, improper disposal practices, discharges to a railroad right of way to

the south of the property line, and violations of sanitary sewer and storm sewer discharges.(7,18,22,28,35,37,39,49) At the time of the VSI, there was much evidence of leakage and spillage of product or waste materials. Most of the pavement and equipment in the process areas was discolored. The pavement and containment around some of the waste management units was also stained. (53,54)

There are very few records regarding facility processes, manufacturing areas, and waste management practices during the early years of operation. The designations of sumps, tanks, ponds, and storage areas have changed over time, although these changes have not been well documented in the files.

As a result of this review, a total of 60 SWMUs and one Area of Concern were identified at this facility. Possible releases to soil have occurred from the copper cement drying pond No. 7 (Unit 4.1), and rainwater holding pond No. 3 (Unit 4.2) as indicated by results of soil sampling and site inspection observations. Soil boring and groundwater monitoring results have identified the inactive Pond No. 1 (Unit 4.4), and the old chromic-sulfuric underground storage tank (Unit 4.12) as possible sources of metals contamination.

Those units with past release potentials to soil, groundwater, surface water, and air due to inadequate containment include the former three stage clarifier (Unit 4.9), the RCRA-regulated drum storage area (Unit 4.20), and the five drum storage areas (Units 4.21 through 4.25), which were identified during the VSI. The drum storage areas still have ongoing release potentials to these environmental media.

1.0 INTRODUCTION

Southern California Chemical Company, Inc. (SCC) has operated as an inorganic chemical manufacturer in Santa Fe Springs since 1958. The location of the facility is shown in Figure 1. The company currently manufactures a wide variety of inorganic chemicals, including copper compounds, and proprietary and patented specialty products used in the aerospace and electronics industries. Some of these proprietary products are solder strippers, brighteners, conditioners, and etchants. Copper compounds include copper oxides and copper sulfates. Ferrous and ferric chlorides are also produced at this facility.(10) The facility applied for RCRA interim status for a container storage area and a wastewater treatment pond in 1980. The pond was closed without an approved closure plan in 1985; the container storage area is still active.

The 1984 RCRA amendments provided authority to EPA to require comprehensive corrective action on solid waste management units (SWMUs) and other areas of concern at facilities applying for Part B permits and those with RCRA interim status. The intent of this authority is to address previously unregulated releases of hazardous constituents to air, surface water, soil, and groundwater, and the generation of subsurface gas. In order to accomplish this objective, a RCRA facility assessment is undertaken which consists of a preliminary data review, a site visit and, when warranted, sampling and analyses.

This report represents an evaluation of SWMUs at the SCC facility and, as such, summarizes the results of a records review and data evaluation performed on the facility. Primary sources of information include the RCRA and CERCLA files of EPA, Region 9; and files and inspection reports of the California Department of Health Services (DOHS) and the California Regional Water Quality Control Board (RWQCB), Los Angeles Region. A visual site inspection was conducted at the SCC facility on July 15, 1987, to verify file information and observe the current condition of the SWMUs.

Section 2.0 of this report describes the facility and its operations: In addition, a brief history of waste management practices and regulatory activities are provided. Section 3.0 provides an overview of the environmental setting.

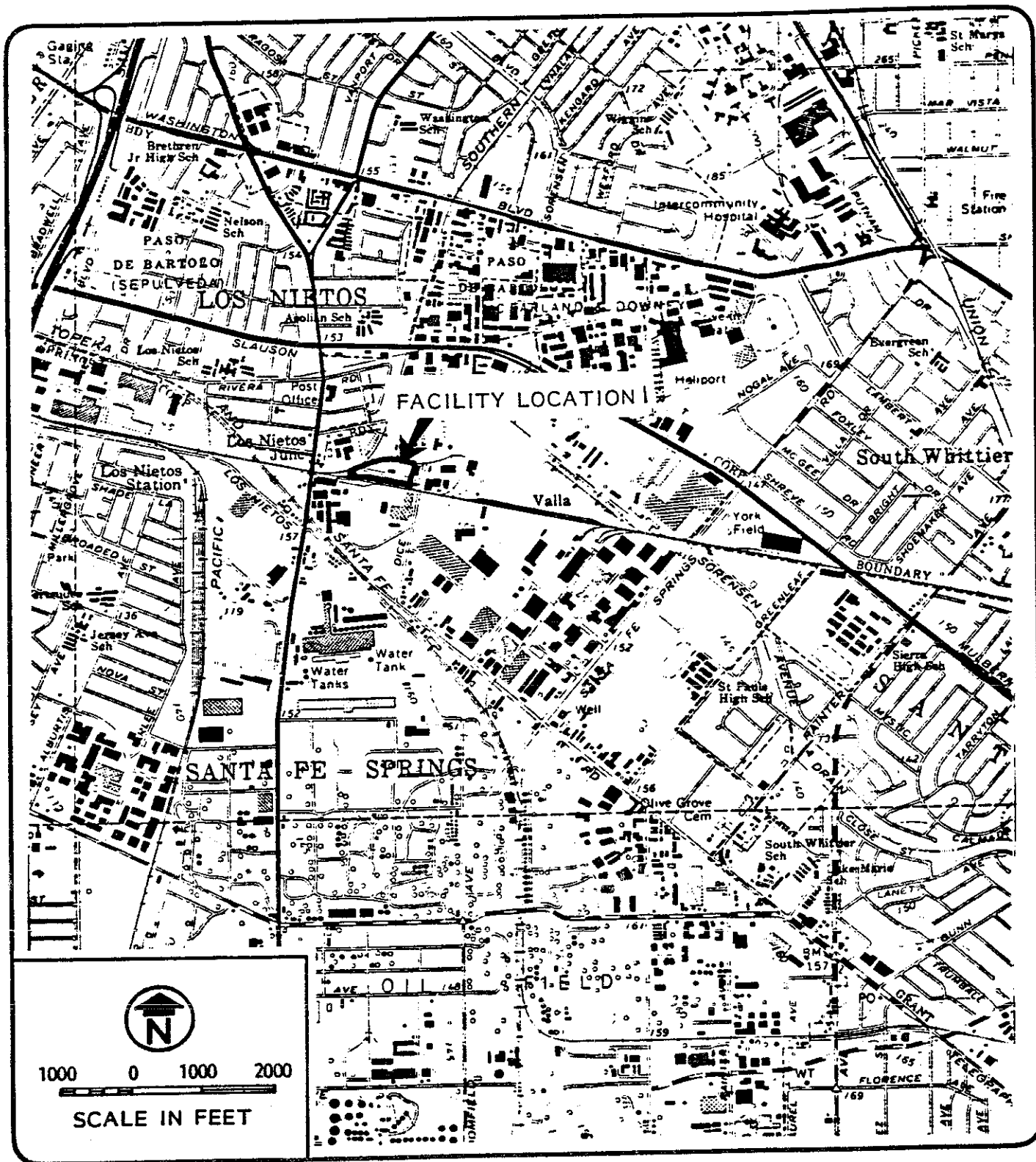


Figure 1

SITE LOCATION OF SOUTHERN CALIFORNIA CHEMICAL CO.
 SANTA FE SPRINGS FACILITY
 Source: Reference 4

The solid waste management units are individually described in detail in Section 4.0. Finally, Section 5.0 summarizes the findings of the preliminary file review and visual site inspection.

2.0 FACILITY DESCRIPTION

2.1 FACILITY OWNERSHIP

Southern California Chemical is a wholly-owned subsidiary of CP Chemicals, Inc., which is in-turn a wholly-owned subsidiary of Phillip Brothers Chemicals, Inc.(10) In 1984, SCC was reported to be owned by King Resources.(28) It is unknown how long King Resources was the owner of the facility or when ownership changed. The facility began operations at this site in 1958 as Pacific Western Chemical Company. It became Southern California Chemical Company in 1959.(39) Foundry and casting industries had occupied this three-acre site since the early 1940's. In 1958, SCC shared the site with these industries.(53)

2.2 FACILITY PROCESSES

SCC currently manufactures a variety of inorganic chemicals, including copper compounds, specialty products such as solder strippers, brighteners, conditioners, and several different types of etchants. In addition, the facility manufactures copper oxides, copper sulfates, zinc sulfates, ferrous chlorides, and ferric chlorides. Some of SCC's products are returned after use by the customers for reprocessing and reuse.(10)

Little is known regarding manufacturing processes prior to 1971. In 1957, the facility applied for a waste disposal permit for a ferric chloride manufacturing process. In 1959, some type of chromium product was made at the plant, because the facility applied for a waste discharge permit to the county sanitation district for chrome-bearing wastes. In 1961, operations included copper recovery, chrome recovery, zinc solution manufacturing, sodium aluminate manufacturing, and a dry aluminum oxide trivalent chrome sacking operation.(49)

In 1971, facility maps (Figure 2) indicate that operations included a zinc sulfate process, ferric chloride manufacture, and alkaline and solder etchant manufacturing.(1) By 1977 (Figure 3), the operations included the same processes as in 1971 (although in different areas), and the addition of a copper leaching area and acid and caustic etchant processes. In 1978, the facility

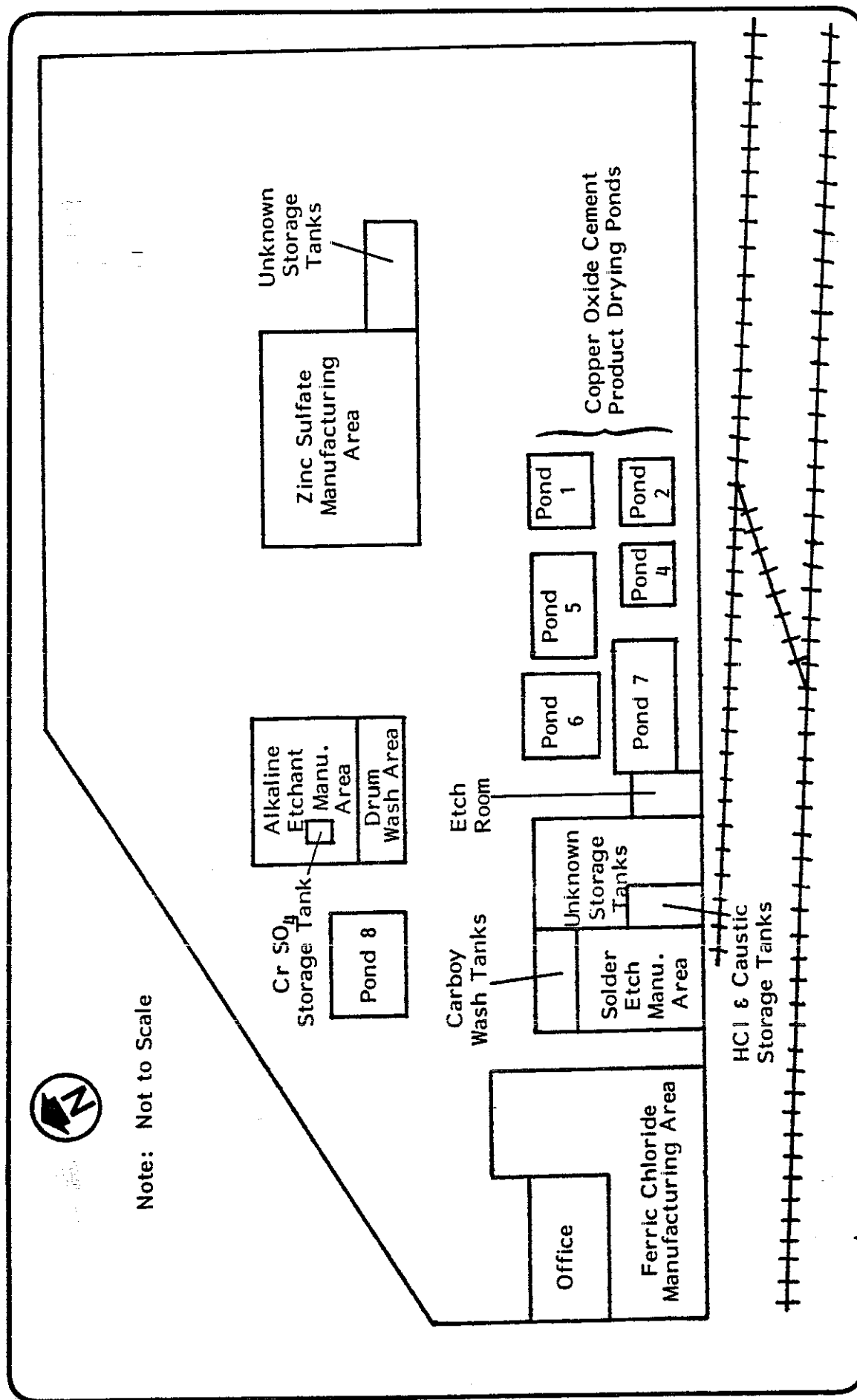


Figure 2

CONFIGURATION OF SOUTHERN CALIFORNIA CHEMICAL IN THE EARLY 1970's
Source: Reference 1, revised per VSI.

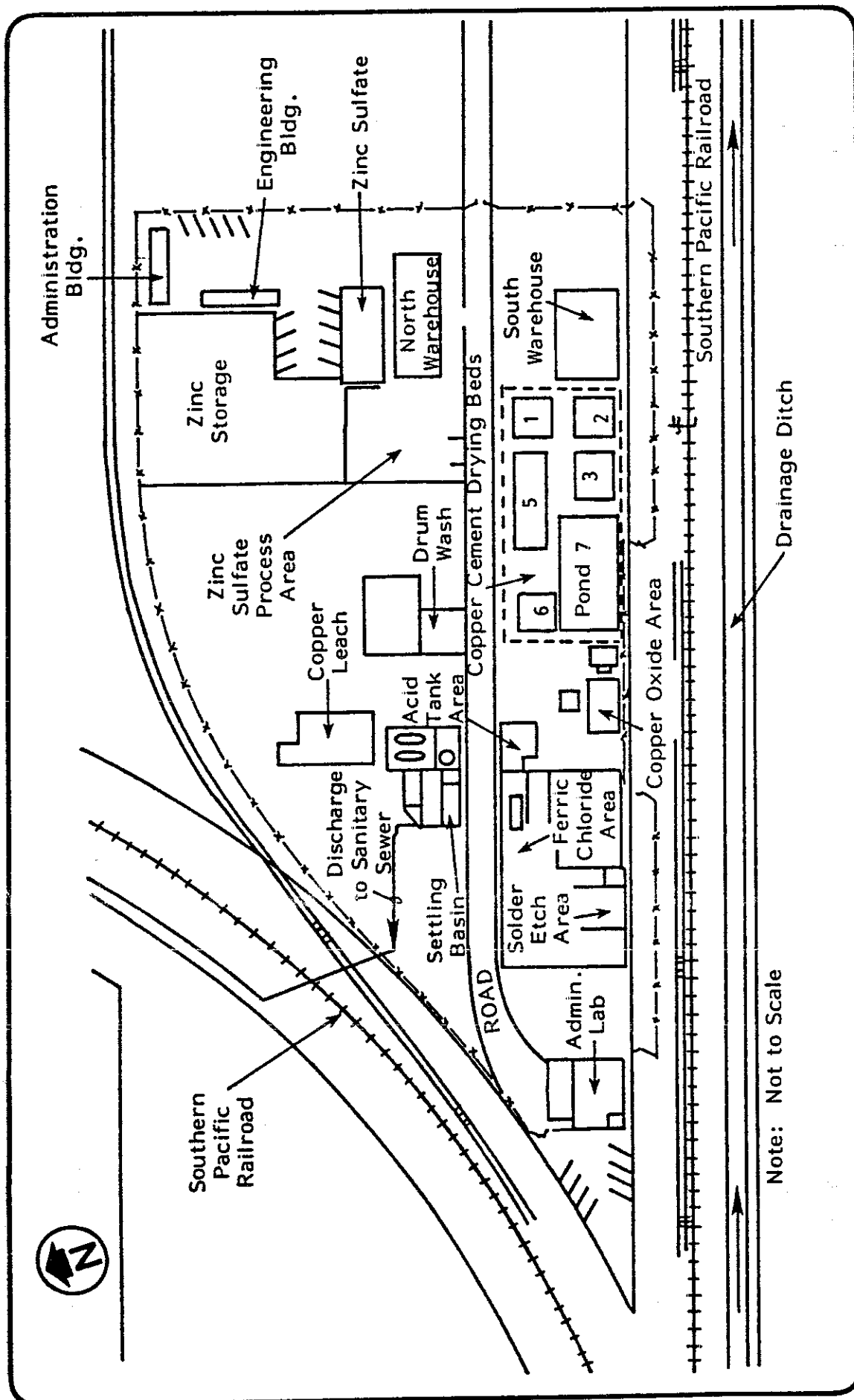


Figure 3

PLOT PLAN OF SOUTHERN CALIFORNIA CHEMICAL, CIRCA 1977

Source: Reference 9, revised per VSI.

reported that it was eliminating chromium-containing products from its manufacturing process.(24) Configuration of the facility changed again by 1984.(10)

Information available regarding manufacturing processes in 1984 includes the following:(3)

- A patented ammoniacal etchant is made from a spent ammonia etchant containing copper and virgin chemicals.
- Copper oxide is made from spent ammonia etchant, spent etchants containing copper and raw copper chloride.
- Ferric chloride etchant is made from iron, chlorine, and hydrochloric acid, sold to chemical milling facilities, bought back, copper removed, and the ferric chloride regenerated and sold back to customers.
- Copper sulfate is made from the reaction of copper oxide and sulfuric acid, using spent etchants containing copper as a raw material.
- Spent chrome-sulfuric acid solutions are reclaimed and sent back to customers.

All operations at the facility occur in tanks in outdoor process areas. Most of the plant site is paved except for an area on the southeast end of the facility that were used as copper oxide cement drying ponds in the 1970s. Another unpaved area is on the northeast end of the facility behind the trailer offices; no activity was occurring in this area at the time of the VSI. The ferric chloride processing area on the southwest end of the plant has been paved since 1973. The road dividing the facility was constructed in 1975. Other areas of the plant, including the western portion of the site were paved in 1980. The site has an outer containment curb along parts of the southern and northern boundaries, but the curb does not completely surround the site.(53)

2.3 WASTEWATER TREATMENT SYSTEM

The facility's wastewater treatment system has undergone constant change since it began operating in the late 1960's. There is incomplete information on this system prior to 1975. The units associated with the wastewater treatment system over time are listed below along with their respective dates of operation:

● Old Wastewater Treatment System (Unit 4.11)	Late 1960's - Early 1970's
● Pond No. 8 (Unit 4.3)	Prior to 1972 - 1974
● Pond No. 1 (Unit 4.4)	1975 - 1985
● Two 12,000 Gallon Holding Tanks (Unit 4.5)	1976 - 1977
● Pond No. 2 (Unit 4.6)	After 1977 - 1982/83
● Treatment Tanks W-1, W-2 (Unit 4.7)	1985 - Present
● Filter Press (Unit 4.8)	1985 - Present
● Former Three Stage Clarifier (Unit 4.9)	Early 1970's - 1984
● New Three Stage Clarifier (Unit 4.10)	1984 - Present
● Sump (Unit 4.44)	1985 - Present

The first wastewater treatment system consisted of Tank 20, Sump 5, and Tank WW-1. Process wastewaters were collected and treated in this system prior to discharge to a sanitary sewer.(1) The second wastewater treatment system consisted of Pond No. 8, which began operating around the time the old wastewater treatment system became inactive, although it is unclear if all process wastewaters were discharged to Pond No. 8. Disposition of Pond No. 8 wastes is also unknown. The third wastewater treatment system consisted of two 12,000 gallon holding tanks which served as flow equalization and retention tanks for wastewaters discharged into Pond No. 1. Pond No. 1 was constructed over Pond No. 8 to serve as a treatment pond for process wastewaters prior to discharge to the sanitary sewer via the former three stage clarifier and then to the sanitary sewer. The two 12,000 gallon tanks only operated for about one year when they were replaced by Pond No. 2, which was also used as a holding facility for wastewaters discharged into Pond No. 1.

Pond No. 1 was eventually replaced by the 30,000 gallon treatment tanks W-1 and W-2, which are currently active. Process wastewaters, drum and truck wash water, and routine plant cleanup wastes are discharged to these tanks. Treated effluent is routed to a sump, which flows into a new three stage

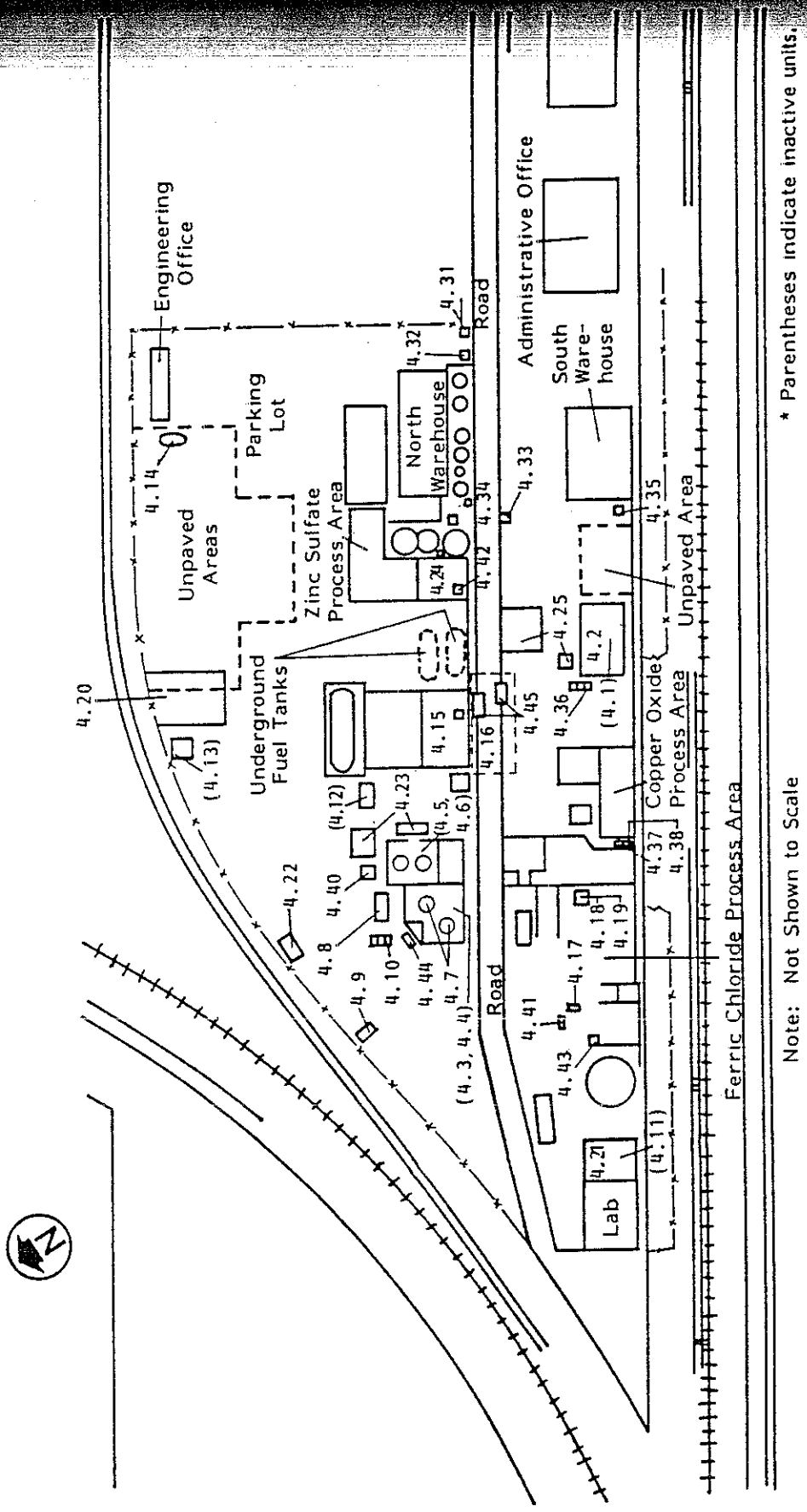
clarifier prior to discharge to the sanitary sewer. Precipitated solids and sludges are removed from the treatment tanks and routed through a filter press. Filtrate from the filter press is discharged to the sanitary sewer via the sump and three stage clarifier. Filter cake is stored in drums prior to offsite disposal.

The facility is not known to have any air permits from the South Coast Air Quality Management District.

2.4 SOLID WASTE MANAGEMENT UNITS

During the course of this review, 60 SWMUs were identified and evaluated. Numerical unit designations associated with each unit indicates the subsection of the report which describes and evaluates the unit in question. The location of identified units is shown in Figure 4.

- Unit 4.1 - Copper Cement Drying Pond No. 7
- Unit 4.2 - Rainwater Holding Pond No. 3 (a.k.a. Tank No. 3)
- Unit 4.3 - Pond No. 8 (a.k.a. Zinc Pond)
- Unit 4.4 - Pond No. 1 (a.k.a. Settling Pond, Tank No. 1) RCRA-regulated
- Unit 4.5 - Two 12,000 Gallon Holding Tanks (2 Units)
- Unit 4.6 - Pond No. 2 (a.k.a. Tank No. 2)
- Unit 4.7 - Wastewater Treatment Tanks W-1 and W-2 (2 Units)
- Unit 4.8 - Wastewater Treatment System Filter Press
- Unit 4.9 - Former Three Stage Clarifier
- Unit 4.10 - New Three Stage Clarifier
- Unit 4.11 - Old Wastewater Treatment System (3 Units)
- Unit 4.12 - Old Chromic-Sulfuric Underground Storage Tank
- Unit 4.13 - 10,000 Gallon Spent Chrome-Sulfuric Acid Tank (a.k.a. SC-1)
RCRA-Regulated
- Unit 4.14 - Disposal Pit
- Unit 4.15 - Drum Wash Area and Sump (2 Units)
- Unit 4.16 - Truck Wash Area
- Unit 4.17 - Ferric Chloride Area Drum Washing Unit
- Unit 4.18 - Ferric Chloride Area Filter Press
- Unit 4.19 - Ferric Chloride Area Filter Press Sump (a.k.a. Sump 10)
- Unit 4.20 - RCRA-Regulated Drum Storage Area



* Parentheses indicate inactive units.

Note: Not Shown to Scale

Figure 4
 LOCATION OF SOLID WASTE MANAGEMENT UNITS AT SOUTHERN CALIFORNIA CHEMICAL
 Source: Reference 53

Unit 4.21 - Drum Storage Area #1
Unit 4.22 - Drum Storage Area #2
Unit 4.23 - Drum Storage Area #3
Unit 4.24 - Drum Storage Area #4
Unit 4.25 - Drum Storage Area #5
Unit 4.26 - Pre-1975 Sump 2 (Not shown)
Unit 4.27 - Pre-1975 Sump 3 (Not shown)
Unit 4.28 - Pre-1975 Sump 4 (Not shown)
Unit 4.29 - Pre-1975 Sump 6 (Not shown)
Unit 4.30 - Pre-1975 Sump 7 (Not shown)
Unit 4.31 - Sump 1
Unit 4.32 - Sump 2
Unit 4.33 - Sump 3-C
Unit 4.34 - Sumps 3-A and 3-B (2 Units)
Unit 4.35 - Sump 4
Unit 4.36 - Sumps 5-A, 5-B, 5-C (3 Units)
Unit 4.37 - Sump 6-A
Unit 4.38 - Sump 6-B
Unit 4.39 - Sump 7
Unit 4.40 - Sump 8
Unit 4.41 - Sump 9
Unit 4.42 - Sumps 13 and 14 (2 Units)
Unit 4.43 - Sump 16
Unit 4.44 - Wastewater Treatment System Sump
Unit 4.45 - In-Road Sump
Unit 4.46 - Six Vacuum Trucks (6 Units) (Not shown)
Unit 4.47 - Area of Concern: Copper Cement Drying Ponds

3.0 ENVIRONMENTAL SETTING

3.1 LOCATION AND SURROUNDING LAND USE

Southern California Chemical is located at 8851 Dice Road in Santa Fe Springs, Los Angeles County, California. The facility occupies a three acre site, with process area occupying approximately half of the site.(27) The facility is located in a highly industrialized area of the city.(39) It is surrounded by industrial facilities to the north, east, and west, and railroad tracks to the south. Residential areas are located approximately 1000 feet to the north (Figure 1).(45)

3.2 TOPOGRAPHY AND METEOROLOGY

The facility is located in the Santa Fe Springs Plains, a physiographic feature which dips to the northeast toward the city of Whittier. The land in the vicinity of the facility is generally flat, with elevations ranging from 175 to 180 feet Mean Sea Level (MSL) from northeast to southwest across the property.(45)

The facility is located in the semi-arid climate of the Los Angeles basin. Mean annual temperature is approximately 62°F, with recorded extremes in San Bernardino 20 miles to the east being 116°F and 18°F. Precipitation averages between 13-14 inches, with most of the rainfall occurring between December and April.(13) Evaporation greatly exceeds precipitation during most of the year.(50)

3.3 SURFACE WATER AND FLOODPLAIN

The nearest surface water to the facility is the north fork of Coyote Creek located approximately one mile south and east of the facility near Telegraph Road. Storm drainage from the facility is routed to this creek. Coyote Creek is a tributary of the San Gabriel River. The facility is not known to be located in the floodplains of either Coyote Creek or the San Gabriel River.(15)

3.4 GEOLOGY AND HYDROLOGY

A hydrogeologic assessment of the facility was conducted in 1986; the following information is derived from that study.(45)

The facility is located in the Santa Fe Springs-Coyote Hills anticlinal system. It is located on an outcropping of the Lakewood Formation. This formation is 15 to 20 feet thick at the facility and is reported to consist of low permeability materials including clays, silts, and silty and sandy clays.(45) The Lakewood Formation overlies the Pleistocene San Pedro Formation. This unit is primarily composed on interbedded sands, fine gravels, silty sands, and silts. (51) It is in-turn underlain by the Pliocene Age Pico and Repetto Formations, which are formed of semiconsolidated sands, silts, and clays.(51)

According to the geohydrological study, water bearing zones in the vicinity of the facility occur in the the Lakewood and San Pedro Formations, although no water is found at the site in the Lakewood Formation or in the Gage Aquifer, the upper water bearing unit of the San Pedro Formation.(45) The bottom of the Gage Aquifer is located approximately 30-35 feet below ground surface in borings at the facility; it is underlain by a clay and silty clay layer which is approximately 15-20 feet thick. This layer forms a partial aquiclude, under which lies the Jefferson Aquifer, a layer of unknown composition where water is encountered at the site. Groundwater is encountered at approximately 65 feet below ground surface under the facility. All monitoring wells at the site are screened in this layer.(45)

According to the geohydrologic study, groundwater flow under the facility in the Jefferson Aquifer is south to southwest; flow rates were not available for this review.(45)

Twelve monitoring wells have been drilled at the facility; these are shown in Figure 5. These wells were drilled in 1985 in response to an order from the RWQCB in 1984. RCRA groundwater monitoring began in March 1985.(13) —

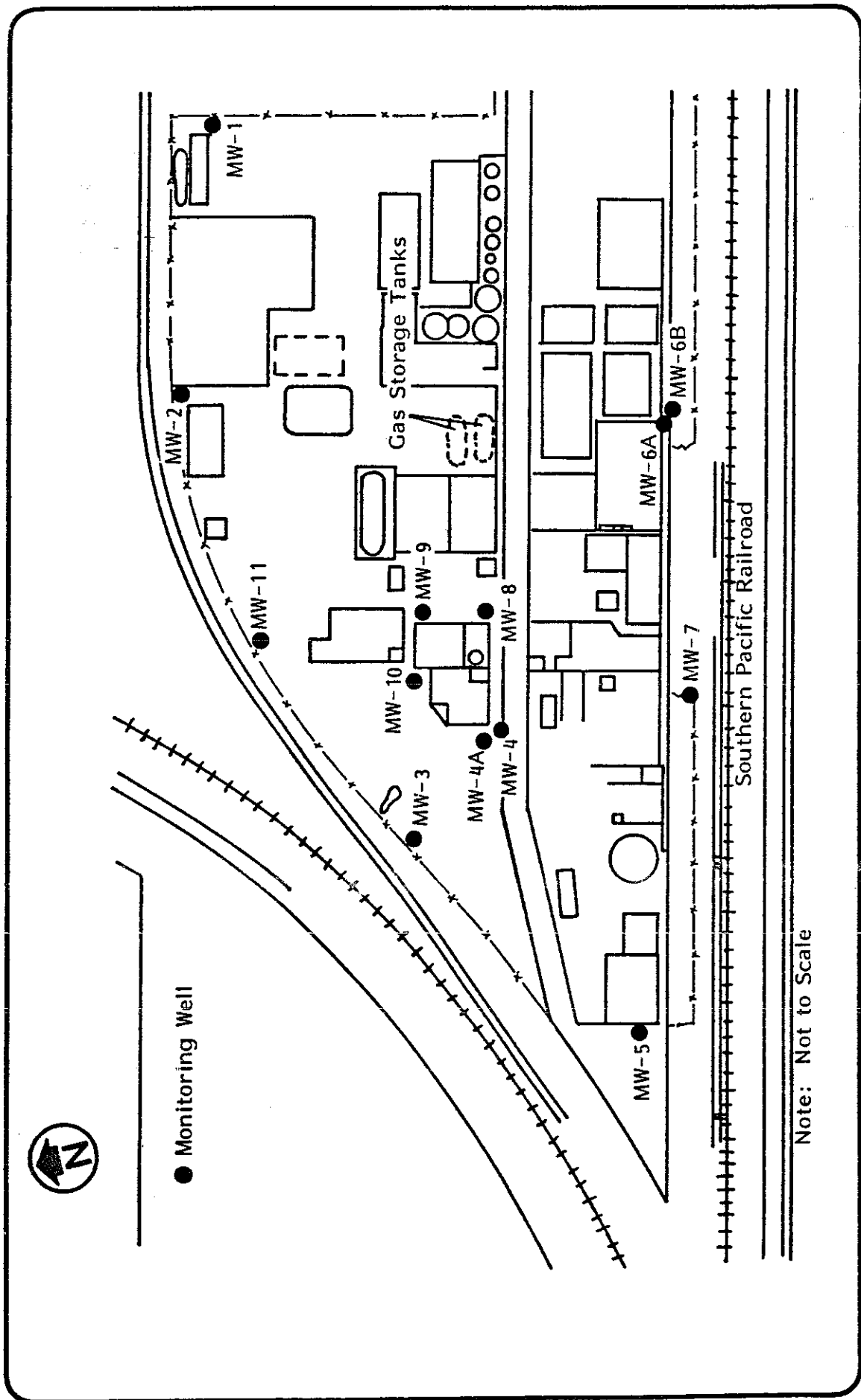


Figure 5

LOCATIONS OF MONITORING WELLS AT SOUTHERN CALIFORNIA CHEMICAL, INC.

Source: Reference 45

3.5 GROUNDWATER CONTAMINATION

Monitoring well MW-4 southeast of the settling basin (a.k.a. Pond 1)(SWMU 4.12) has shown high levels of toluene (4,500-8,300 mg/l), xylene (1,100-10,000 mg/l), ethylbenzene (2,100-3,000 mg/l), and other organic compounds since it was first sampled in 1985. In March 1986, well MW-3 also showed very high levels of ethylbenzene (95,000 ppb), toluene (15,000 ppb), and xylene (20,000 ppb).(52) While the pond and an old chromic-sulfuric sump tank are possible sources of the inorganic compounds, the facility has investigated the organics contamination and has found several possible off-site sources of contamination. SCC does not have underground tanks containing these types of compounds on-site.(52) The other monitoring wells have not shown significant elevations in organic or inorganic compounds.(45)

4.0 DESCRIPTIONS OF INDIVIDUAL UNITS

4.1 COPPER CEMENT DRYING POND NO. 7

4.1.1 Information Summary

Unit Description: This pond was located on the south end of the facility and designated as Pond No. 7 (Figure 4). The pond had a capacity of 34,600 gallons.(53) Specific details on the unit's dimensions, construction, and operating conditions were unavailable for this review.

This pond was one of six ponds used for copper oxide cement product drying ponds.(22,34) The pond was also reportedly used to store wastes that were unacceptable for delivery to the sewer system.(1) These particular wastes did not meet discharge limits for pH, copper, nickel, chromium, iron, or zinc.(1) The contents of the pond were periodically pumped out for disposal by common carrier.(1) Specific details on the types of wastes stored, waste handling practices, and length of time this pond was used for this purpose were unavailable for this review.

Pond No. 7 became inactive as a product drying pond in 1975.(53) Over a three year period, Pond No. 7 was cleaned and mastic lined in preparation for the construction of a new rainwater runoff holding pond, Pond No. 3 (Unit 4.2). (2,53) During this three year period, Pond No. 7 was used as a temporary runoff holding pond.(20,21,39)

Date of Startup: Pond No. 7 became active in the early to mid 1960's.(53)

Date of Closure: The use of Pond No. 7 for product drying discontinued in 1975.(53) From 1975 to 1978, Pond No. 7 operated as a temporary rainwater runoff holding pond.(20,21,39) In 1978, Pond No. 3 (Unit 4.2), a new rainwater runoff holding pond, was constructed over Pond No. 7.(22,25,26)

Wastes Managed: Chemical analyses of the wastes stored in this pond during its use as both a holding pond for wastes unacceptable for discharge to the sewer system and a holding pond for runoff were unavailable. However, the

pond is known to have contained wastes which had copper, nickel, chromium, iron, zinc, and possibly other heavy metals.(1)

Release Controls: The pond was lined when originally constructed, although the type of lining is unknown.(1) After 1975, the pond was lined with an unknown thickness of mastic.(2,53) Its application method is also unknown.

History of Releases: In late 1977, heavy rains caused this pond to overflow into unspecified areas of the plant property. The facility then discharged the contents of the pond into a railroad right-of-way on the south end of the property.(20,21,39) At the time, the water in the pond contained 0.5 ppm copper, 1.0 ppm nickel, and 0.6 ppm zinc.(20)

Soil sampling was conducted in July, 1978, during the construction period of Pond No. 3 in an area south of the pond. Samples were collected directly adjacent to the south side of the pond and in the drainage ditch south of the pond. High levels of zinc, copper, and nickel were found in these samples.(22)

4.1.2 Conclusions

Soil/Groundwater Release Potential: Results of soil sampling have indicated possible releases from this unit. Based on these results, there was a high potential for past releases to groundwater. There is an ongoing potential to groundwater if these contaminants still remain in the soil.

Surface Water Release Potential: Based on evidence of past soil releases to the area south of the pond and in the drainage ditch itself, there was a high potential for surface water releases during rainfall events. This drainage ditch parallels the pond at a distance of approximately 60 to 80 feet, and is a tributary to the north fork of Coyote Creek. There is an ongoing potential for releases to surface water if these contaminants still remain in the surface soils.

Air Release Potential: There was a low past potential for air releases of particulates following evaporation due to the pond's open-topped construction. The pond no longer operates as Pond No. 7, so there is no ongoing air release potential.

Subsurface Gas Release Potential: Due to the inorganic nature of wastes stored in this pond, there is no past or ongoing potential for the generation of subsurface gas.

4.2 RAINWATER HOLDING POND NO. 3 (a.k.a. Tank No. 3)

4.2.1 Information Summary

Unit Description: This pond, currently used as a rainwater runoff holding pond, is located on the south end of the facility and designated as Pond No. 3 or Tank No. 3 (Figure 4).(53) The pond is an above-grade, open-topped structure and is approximately 30 ft x 100 ft with a holding capacity of 136,000 gallons.(34,48,53) This pond was constructed in 1978 over Pond No. 7, one of six copper oxide cement product drying ponds.(22,34) The use of Pond No. 7 as a product drying pond discontinued in 1975.(53) Over a three year period, the Pond No. 7 was cleaned and mastic lined in preparation for the construction of a new rainwater runoff holding pond, Pond No. 3.(2,53) During this three year period, Pond No. 7 was used as a runoff holding pond.(20,21,39) Pond No. 3 was constructed on a concrete foundation with six-foot-high, steel reinforced, concrete filled masonry block walls.(22,34) The walls of Pond No. 3 were lined with polyurethane resin.(34)

Pond No. 3 collects and stores runoff from process areas, which may be contaminated with various chemicals produced throughout the facility.(34) The pond may also receive infrequent discharges of process wastewater, facility wash water, spillages, and truck and tank wash water.(34) The contents of the pond are routed to the facility's wastewater treatment system for treatment prior to discharge into the sanitary sewer system.(34,43) Facility discharges to the sanitary sewer system are regulated by the Los Angeles County Sanitation District with an industrial waste discharge permit. A condition of this permit requires the facility to retain all rainwater runoff for 24 hours prior to discharge into the sewer system.(34)

In 1985, the pond was used for temporary storage of copper sludges from Tanks W-1 and W-2 (Unit 4.7) during a breakdown in the wastewater treatment system. (35) As much as six months later, water in the pond was still a blue color from past storage of the sludges.(35)

Date of Startup: Pond No. 3 was constructed in 1978 over the copper cement drying Pond No. 7.(22,25,26)

Date of Closure: This pond is an active unit.(53)

Wastes Managed: Pond No. 3 is used for the storage of surface runoff from the entire property, which may be contaminated with various chemicals produced throughout the facility.(34) Chemical analyses of the runoff stored in this pond were unavailable for this review, however, based on evidence of heavy metal soil contamination throughout the site, it is likely that heavy metals are present in the surface runoff.(28,30)

Release Controls: In addition to a chemical resistant liner, this rainwater holding tank is equipped with an overflow "spout" in the northwest corner, which would overflow onto the facility property and reportedly be "contained within the facility, collected in sumps, and pumped to an appropriate storage area."(34) However, the entire facility is not bermed; concrete block walls with breaks are present along the south side of the facility.(53)

History of Releases: In 1986, soil discoloration was observed outside the pond during a DOHS inspection. A greenish-colored liquid was also observed during the 1986 inspection coming from the pond and running onto an offsite area south of the pond.(37)

At the time of the VSI, the pond contained about two feet of liquid with crusty solid material floating on the surface. Stains were also noted on the pavement surrounding the pond.(53)

4.2.2 Conclusions

Soil/Groundwater Release Potential: Releases to the soil have been observed during previous site inspections. Based on these observations, there was a potential for past releases to groundwater. Based on the past overflow problems, there is an ongoing potential for releases to soil and groundwater.

Surface Water Release Potential: Based on evidence of past soil releases, there was a high potential for surface water releases during rainfall events, as the pond is adjacent to a drainage ditch tributary to the north fork of Coyote Creek. Based on past observations of overflows off-site to the south, there is an ongoing potential for releases to surface water.

Air Release Potential: There is a no past and ongoing potential for air releases because this unit does not handle volatile constituents.

Subsurface Gas Release Potential: Due to the inorganic nature of wastes possibly stored in this pond, there is no past or ongoing potential for the generation of subsurface gas.

4.3 POND NO. 8 (a.k.a. Zinc Pond)

4.3.1 Information Summary

Unit Description: This pond was located on the northwest end of the facility and designated as Pond No. 8 or the Zinc Pond (Figure 4).(53) The pond was a below-grade concrete structure.(53) The use of this pond is unknown, although the facility indicated that it was possibly used to collect wastewater from the zinc sulfate process area.(53) Additional details on the pond's dimensions, construction, operating conditions, and disposition of the wastes were unavailable for this review.

Date of Startup: The unit was placed into service prior to 1972.(53)

Date of Closure: Pond No. 8 became inactive in 1974 when a new wastewater treatment pond, designated as Pond No. 1 (Unit 4.4), was constructed over the site.(53)

Wastes Managed: The specific types of wastes managed in this unit are unknown.

Release Controls: There was no information available concerning release controls for this unit.

History of Releases: There was no file evidence of releases from this unit.

4.3.2 Conclusions

There is not enough information available concerning the unit's construction, operating conditions, types of waste managed, release controls, and disposition of wastes to adequately evaluate the potential for release to soil, groundwater, air, surface water, and for the generation of subsurface gas at this time.

4.4 POND NO. 1 (a.k.a. Settling Pond, Tank No. 1)

4.4.1 Information Summary

Unit Description: This RCRA-regulated pond was located on the northwest end of the facility and designated as Pond No. 1, Tank No. 1, or the settling basin (Figure 4). This pond was constructed in 1975 over the former zinc pond, Pond No. 8 (Unit 4.3).(53) The construction of Pond No. 1 consisted mainly of structural modifications to the original Pond No. 8. These modifications consisted of relining Pond No. 8 with six-inch thick reinforced concrete, which was poured over the existing concrete base, and extending the height of the pond.(53) The original side and bottom slopes of the pond were maintained.(53)

Pond No. 1 was approximately 37 ft x 37 ft x 3 ft deep, with one foot of the pond below grade and two feet above grade.(5) The northwest edge of the pond was angled to accommodate a skimmer and overflow weir.(5,12) The capacity of Pond No. 1 was 36,000 gallons.(5) The pond was equipped with an air sparger and mixer.(53)

Pond No. 1 collected wastewaters generated from the various chemical processing areas. The contents of the pond were treated on a batch basis by one or more of the following processes: oxidation, neutralization, and precipitation.(53) The type of treatment chemical added depended on the characteristics of the wastes. Oxidizing agents used included hydrogen peroxide, chlorine, and perchloric acid.(11) The wastes were generally basic so neutralizing acids, such as hydrochloric, nitric, or phosphoric acid were added as needed.(11) Sodium sulfide was added as needed to precipitate metals.(11,53)

Treated effluent was discharged to a sanitary sewer on the west side of the property under a Los Angeles County Sanitation District permit.(5,13) A maximum of 27,000 gallons per day of wastewater were treated in this system.(11) The sludge in the pond was pumped out weekly and routed through a filter press which was used in the processing of copper sulfate.(53) It is unknown whether this unit is the same as Unit 4.8. No other filter press was observed in the area during the VSI. Final disposition of the filtrate and filter cake

is unknown. The sludges from the pond were also reportedly removed periodically and hauled to a Class I site by a registered hauler.(11,45) In 1976, correspondence indicates that sludge from a "neutralization pit" was removed and disposed in a "disposal pit" (Unit 4.14) on the property.(18,19) It is unknown whether the neutralization pit is referring to Pond No. 1.

Use of the pond was discontinued in July, 1985.(5,13) At that time, the pond was drained, cleaned, and inspected for damage.(45) Approximately 20,000 gallons of wastewater were discharged to the sewer system.(5) The rinse waters and sludges were neutralized with sulfuric acid and hauled to a Class I disposal site.(5,13) The facility indicated that no visible signs of leakage or chemical degradation were observed when the wastes were removed.(45) However, during a joint DOHS/RWQCB RCRA CME inspection on March 26, 1986, several cracks were noted in the pond's concrete base.(7) The facility submitted a closure plan for this pond on July 30, 1985. The closure plan proposed removal of standing liquids and sludges for off-site disposal and use of the pond as a containment area for tanks W-1 and W-2 (Unit 4.7).(13) These closure activities were completed prior to written approval by EPA or DOHS of the closure plan.(13,33,38,43) These closure activities also did not meet the closure certification requirements of 40 CFR 265.111, Subpart G.(13,43)

Following closure of Pond No. 1 in 1985, two 30,000-gallon neutralization tanks (Unit 4.7) were placed in this unit, using the concrete pond as secondary containment for the tanks.(32,43,53)

Date of Startup: The pond was placed into service in 1975.(45)

Date of Closure: The pond was closed in July, 1985.(5,13)

Wastes Managed: The composition of waste streams entering this pond throughout the life of the unit are shown in Table 1.(11) The pH of these wastewaters was generally in the range of 12-14.(5,42)

Release Controls: The pond was lined with reinforced concrete when constructed. After the pond was closed, however, several cracks were found in the concrete liner of the pond during a joint DOHS/RWQCB RCRA CME inspection on

March 26, 1986.(7) The pond was designed for overflow to the sanitary sewer; it was operated with less than two feet of freeboard.(12) The pond was equipped with a roof constructed of corrugated fiberglass panels.(12)

History of Releases: Monitoring wells have been placed around this unit.(11) There is evidence of elevated levels of copper, chromium, and iron in the wells downgradient of Pond No. 1. The pond is considered by the RWQCB to be a potential source of these metals.(7,38)

The current location of Tanks W-1 and W-2 within Pond No. 1 made it difficult to observe the condition of the concrete structure during the VSI. However, some discoloration and minor cracks in the concrete were observed in portions of the pond that were readily visible.(53)

4.4.2 Conclusions

Soil/Groundwater Release Potential: Groundwater monitoring results have indicated that the pond was a potential source of groundwater contamination by heavy metals. Based on the current construction and use of the unit, there is an ongoing potential for releases to soil and groundwater.

Surface Water Release Potential: The potential for surface water releases was low due to the overflow weir which routed wastewater to the sanitary sewer system. The pond is no longer operational, and as such, there is no potential for ongoing releases to surface water.

Air Release Potential: The pond was equipped with a roof, thereby reducing the potential for past releases to air. As this pond is no longer in service, there is no ongoing potential for releases to air.

Subsurface Gas Release Potential: There is no past or ongoing potential for the generation of subsurface gas from this unit due to the inorganic nature of wastes managed in this pond.

Table 1

COMPOSITION OF WASTEWATER ENTERING POND NO. 1

Ammonium Sulfate Solution (1-2%)
Sodium Chloride Solution (10%)
Ferrous Hydroxide Solution (8%)
Copper Ammonium Chloride Solution
Sodium Hydroxide (1-2%)
Sodium Sulfide Solution
Chromic-Sulfuric Acid Solution (20%)
Sulfuric Acid Solution
Ammonium Chloride (< 1%)
Free Ammonia (< 1%)
Copper Sulfide
Iron Sulfide
Chrome Sulfide
Nickel Sulfide
Zinc Sulfide
Lead Sulfide

Source: References 11, 32

4.5 TWO 12,000 GALLON HOLDING TANKS

4.5.1 Information Summary

Unit Description: These two fiberglass holding tanks were located on the northwest end of the facility (Figure 4) and each had a holding capacity of 12,000 gallons. These two tanks were installed in 1976 as part of the facility's wastewater treatment system conversion from a batch to continuous operational mode.(53)

Wastewaters generated from the various chemical processing areas were routed to these tanks for retention or treatment by neutralization and precipitation of metals. Contents of these two tanks were then routed to Pond No. 1 (Unit 4.4).(2,53) The continuous treatment process did not operate effectively and the facility converted back to a batch operational mode in late 1977. As a result, the two tanks were taken out of service and removed from the site.(53) Pond No. 2 (Unit 4.6) was then constructed at this location.(53)

Date of Startup: These tanks were placed into service in 1976.(53)

Date of Closure: The use of these two tanks discontinued in late 1977.(53) The tanks were removed from the site and replaced by Pond No. 2 (Unit 4.6).(53)

Wastes Managed: The tanks stored and treated wastewaters generated from the process areas. Although chemical analyses of the wastes managed in these tanks were unavailable, it is likely that these waste were similar to those discharged into Pond No. 1. The composition of Pond No. 1 wastewaters is presented in Table 1.(11) These wastewaters had a pH between 12 and 14.(5,42)

Release Controls: Information on release controls for this unit were unavailable for this review.

History of Releases: There was no file record of releases from these tanks. The area formerly occupied by these tanks could not be inspected during the VSI as Tank No. 2 and Tanks W-3 and W-4, which were not on-line at the time of the VSI, were constructed over the site.

4.5.2 Conclusions

Soil/Groundwater Release Potential: There is not enough information available at this time concerning the unit's construction, operation, and release controls to adequately evaluate the past release potential to soil and groundwater. There is no ongoing release potential to these environmental media as the tanks have been removed from the site.

Surface Water Release Potential: There is not enough information available at this time concerning the unit's construction, operation, and release controls to adequately evaluate the past release potential to surface waters. There is no ongoing release potential to surface waters as the tanks have been removed from the site.

Air Release Potential: There is not enough information available at this time concerning the unit's construction, operation, and release controls to adequately evaluate the past release potential to air. There is no ongoing release potential to air as the tanks have been removed from the site.

Subsurface Gas Release Potential: Based on the inorganic nature of wastewaters generated on site and potentially discharge into this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.6 POND NO. 2 (a.k.a. Tank No. 2)

4.6.1 Information Summary

Unit Description: This pond was located on the northeast end of the facility, adjacent to Pond No. 1. The pond was designated as Pond No. 2 or Tank No. 2 and constructed over the site of the two former 12,000 gallon holding tanks (Unit 4.5).(53) Pond No. 2 was an aboveground concrete structure, approximately 22 ft x 38 ft x 6 ft deep, and had a capacity of 20,000 to 26,000 gallons.(4,5,47,53) The pond was used as a holding pond for Pond No. 1 (Unit 4.4), collecting wastewaters generated from the chemical processing areas.(53)

Pond No. 2 has not been used since about 1982 or 1983. Since that time, the pond has been cleaned and now serves as bermed containment for Tanks W-3 and W-4, new wastewater treatment tanks which were not on-line at the time of the VSI.(53)

Date of Startup: The exact startup date of this pond is unknown, although it replaced the two 12,000 gallon holding tanks (Unit 4.5) which were taken out of service in late 1977.(53)

Date of Closure: This pond became inactive in 1982 or 1983.(53)

Wastes Managed: The pond stored wastewaters generated from the chemical processing areas. Although chemical analyses of the wastes managed in this pond were unavailable, it is likely that these waste were similar to those discharged into Pond No. 1. The composition of Pond No. 1 wastewaters is presented in Table 1.(11) These wastewaters had a pH between 12 and 14.(5,42)

Release Controls: Information on release controls for this pond were unavailable for this review.

History of Releases: There was no file evidence of releases from this unit. The current location of Tanks W-3 and W-4 within Pond No. 2 made it difficult to observe the condition of the concrete structure during the VSI. However, some discoloration and minor cracks in the concrete were observed in portions of the pond that were readily visible.(53)

4.6.2 Conclusions

Soil/Groundwater Release Potential: Additional information needs to be obtained concerning the pond's operation and release controls prior to evaluating the potential for past releases to soil and groundwater. There is no ongoing potential for releases to soil and groundwater as this unit is no longer in service.

Surface Water Release Potential: There is not enough information at this time concerning the pond's operation and release controls to adequately evaluate the past release potential to surface water. The pond is no longer in operation, so no ongoing potential for release exists.

Air Release Potential: Additional information needs to be obtained concerning the pond's operation and release controls prior to evaluating the potential for past releases to air. There is no ongoing potential for releases to air as this unit is no longer in service.

Subsurface Gas Release Potential: Based on the inorganic nature of wastewaters generated on site and potentially discharged into this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.7 WASTEWATER TREATMENT TANKS W-1 AND W-2 (a.k.a. Tanks WW-1 and WW-2)

4.7.1 Information Summary

Unit Description: These two tanks are located on the northwest end of the facility, within the inactive Pond No. 1 (Unit 4.4) (Figure 4). These two tanks were placed into service for wastewater treatment by neutralization and metal precipitation when Pond No. 1 was closed in July, 1985.(5,8,53) The concrete structure of Pond No. 1 is used as secondary containment for the tanks.(32,43,53) These units are aboveground, fiberglass reinforced plastic (FRP) spun woven tanks.(32,34,53) Each tank is 18 ft in diameter and 16 ft high with a capacity of 30,000 gallons.(32,34,43,53) Each tank is equipped with a mechanical mixer.(41)

The tanks collect wastewaters from process areas, drum and truck washing operations, and routine plant cleanup.(34) Approximately 20,000 to 25,0000 gallons per day of treated wastewater from these units are discharged to the sanitary sewer system under permit.(32) Precipitated solids and sludges are removed weekly from the tanks and routed to a filter press (Unit 4.8) for dewatering.(53)

Date of Startup: These units were installed in 1985.(32,43)

Date of Closure: These tanks are active units.(53)

Wastes Managed: Although chemical analyses of the wastes managed in these tanks were unavailable, it is likely that these waste were similar to those discharged into Pond No. 1. The composition of Pond No. 1 wastewaters is presented in Table 1.(11) These wastewaters had a pH between 12 and 14.(5,42) The sludges formed in these tanks are metal sulfides and hydroxides.(34)

Release Controls: The tanks were constructed with corrosion resistant linings.(32,53) The tanks are also equipped with level-activated pumps to control overfilling.(41) The concrete structure of inactive Pond No. 1 (Unit 4.4), the concrete base of which which has an emulsion liner, provides secondary containment for the tanks.(34)

History of Releases: There was no file evidence of releases from these tanks. The tanks were observed to be in good condition at the time of the VSI. The concrete containment structure had minor discolorations and cracks. Some liquids were present on the bottom of the concrete containment structure.(53)

4.7.2 Conclusions

Soil/Groundwater Release Potential: There is a low potential for past and ongoing releases to soil and groundwater based on the tanks' construction and release controls, and observed cracks and standing liquids seen during the VSI.

Surface Water Release Potential: The potential for past and ongoing releases to surface water is low due to the tanks' construction and release controls.

Air Release Potential: There is low potential for past and ongoing releases to air as the tanks are closed to the atmosphere.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in these tanks, there is no potential for past or ongoing generation of subsurface gas.

4.8 WASTEWATER TREATMENT SYSTEM FILTER PRESS

4.8.1 Information Summary

Unit Description: This filter press is located on the northwest end of the facility, adjacent to wastewater treatment tanks W-1 and W-2 (Unit 4.7) (Figure 4). This plate and frame filter press is approximately 25 ft long and elevated about 10 ft above the ground surface. The filter plates are approximately 4 ft x 4 ft.(53) A concrete trough below the unit collects filtrate. This below grade trough is 27 ft long, 5 ft wide, and 1 ft deep, and is surrounded by a 6 inch high, 6 inch wide concrete curb.(53) A concrete trough collects filtrate below the filter press, which is gravity-fed to a sump (Unit 4.44).(53)

Precipitated solids and sludges from the wastewater treatment tanks (Unit 4.8) are removed weekly and routed through this filter press. The filtrate collected in the trough is gravity fed to a sump (Unit 4.44) where is pumped to the sanitary sewer system or pumped back to the wastewater treatment tanks. (41,53) Filter cake is stored in drums in the RCRA storage area (Unit 4.20) prior to offsite disposal or may be reused in the copper sulfate process area.(53)

Date of Startup: The filter press was placed into service in 1985.(53)

Date of Closure: The filter press is an active unit.(53)

Wastes Managed: The filter press receives precipitated solids and sludges from the wastewater treatment Tanks W-1 and W-2. The sludges consist of metal sulfides and metal hydroxides. These metals may include copper, chromium, zinc, iron, lead, nickel, and tin.(34)

Release Controls: A concrete trough collects filtrate below the filter press, which is gravity fed to a sump (Unit 4.44). The area surrounding the filter press and trough is concrete paved.(53) The west side of the facility is bordered by an earthen berm.(53)

History of Releases: A 1986 DOHS inspection of the facility indicated that spillage had occurred in the area of the filter press.(35) Some liquids were present in the trough at the time of the VSI, although no indications of spillage outside of the trough were observed.(53)

4.8.2 Conclusions

Soil/Groundwater Release Potential: There is a low potential for past and ongoing releases to soil and groundwater based on the collection trough and concrete pavement surrounding the unit.

Surface Water Release Potential: The potential for past and ongoing releases to surface water is low based on the collection trough and concrete pavement surrounding the unit. Spillage observed in 1986 is not expected to drain off-site due to the location of the unit within the plant borders, and the presence of a berm along the west side of the facility.

Air Release Potential: There is a low potential for past and ongoing particulate releases to air as this unit is open to the atmosphere.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.9 FORMER THREE STAGE CLARIFIER

4.9.1 Information Summary

Unit Description: This unit was located on the western side of the property (Figure 4). This clarifier was an aboveground concrete structure, which was divided into three sections to provide for solids removal.(12,53) The dimensions and capacity of this unit are unknown. The clarifier received treated wastewater from the Pond No. 1 (Unit 4.4) and served as a final clarification step for the wastewater prior to discharge to the sanitary sewer under permit.(53) Disposition of the settled solids is unknown.

Date of Startup: This clarifier was placed into service in the early 1970's.(53)

Date of Closure: This unit was taken out of service and removed from the site in 1984.(53)

Wastes Managed: The unit received wastewater from Pond No. 1 (Unit 4.4), which had been neutralized and precipitated for metals removal. Although the concentration of metals (copper, iron, chromium, nickel, lead, and zinc) in the wastewater was reduced by precipitation as hydroxides and sulfides, some trace amounts of these metals remain in the treated wastewater discharged into the clarifier.

Release Controls: The clarifier was equipped with an outlet weir and discharge pipe to control discharges to the sanitary sewer.(12) The area surrounding the unit was paved after 1980.(53)

History of Releases: There is no file evidence of release from this unit. This unit is no longer at the site and therefore was not observed during the VSI.

4.9.2 Conclusions

Soil/Groundwater Release Potential: The efficiency of the outlet weir in preventing overflows is unknown. Since the area surrounding the unit has been unpaved for most of the unit's active life, there was a low potential for past

releases due to overflow to soil and groundwater. As this unit has been removed from the site, there is no ongoing potential for soil and groundwater releases.

Surface Water Release Potential: The efficiency of the outlet weir in preventing overflows is unknown. Since the area surrounding the unit has been unpaved for most of its active life, there may have been a potential for past releases due to overflow via surface runoff to Coyote Creek. This unit has been removed from the site, so there is no ongoing potential for releases to surface water.

Air Release Potential: Based on the the dilute concentrations of the inorganic wastes managed in this unit, there is no past potential for air release. There is no ongoing potential for release as the unit is inactive.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there was no past potential for the generation of subsurface gas. As this unit is no longer onsite, there is no potential for the ongoing generation of subsurface gas.

4.10 NEW THREE STAGE CLARIFIER

4.10.1 Information Summary

Unit Description: This unit is located on the northwest end of the facility, adjacent to wastewater treatment tanks W-1 and W-2 (Unit 4.7) (Figure 4).(53) The clarifier receives treated effluent from the wastewater treatment tanks W-1 and W-2 and serves as a final clarification step for the wastewater prior to discharge to the sanitary sewer under permit.(53) This unit replaced the old three stage clarifier (Unit 4.9).(53)

This clarifier is a below-grade concrete structure, divided into three sections to provide for solids removal. Each section is approximately 3 ft x 3 ft x 3 ft deep and covered with a steel plate.(53) It is equipped with an outlet weir and pump to control discharges to the sanitary sewer.

Date of Startup: This clarifier was placed into service in 1984, replacing the former three stage clarifier (Unit 4.9).(53)

Date of Closure: This is an active unit.(53)

Wastes Managed: The clarifier receives treated wastewater from tanks W-1 and W-2 (Unit 4.7), which has been neutralized and precipitated for metals removal. Although the concentration of metals (copper, iron, chromium, nickel, lead, and zinc) in the wastewater was reduced by precipitation as hydroxides and sulfides, some trace amounts of these metals remain in the treated wastewater discharged into the clarifier.

Release Controls: The clarifier was equipped with an outlet weir and pump to control discharges to the sanitary sewer. The clarifier is covered with steel plates. The area surrounding the unit is paved.(53)

History of Releases: There was no file record of releases from this unit. There were no indications of overflow from this unit observed during the VSI. Liquids were present in the clarifier at the time of the VSI, so the structural integrity of the unit could not be evaluated.(53)

4.10.2 Conclusions

Soil/Groundwater Release Potential: The integrity of this unit could not be verified during the VSI. Based on the outlet controls and relatively new condition of the unit, there is a low potential for past and ongoing releases to soil and groundwater.

Surface Water Release Potential: There is a low potential for past and ongoing releases to surface water by overflow conditions based on the unit's outlet controls.

Air Release Potential: Steel plates cover the clarifier. Thus, there is a low potential for past and ongoing air releases.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no potential for the past or ongoing generation of subsurface gas.

4.11 OLD WASTEWATER TREATMENT SYSTEM (at least 3 units)

4.11.1 Information Summary

Unit Description: The old wastewater treatment system was located east of the laboratory building in the southwest corner of the property.(22) In 1971, the system consisted of Tank 20, Sump 5, and Tank WW-1. No construction details are available for these units. Wastewater was reportedly pumped to Tank 20 from Sump 4; caustic was added and mechanical mixing took place. Then wastewater overflowed to Sump 5. Sump 5 is described as having a 7,200 gallon capacity, and contained three weirs for solids settling. Following sampling of the wastewater from Sump 5 (for pH, copper, chrome, nickel, iron, and zinc), the wastewater was transferred to Tank WW-1. This tank is described as a 3,000 gallon surge tank. It was used for metering treated water into the sanitary sewer system.(1) Water not suitable for discharge to the sewer was transferred to "Pond 7 for disposal by common carrier".(1)

Date of Startup: The unit was placed into service in the late 1960's.(53)

Date of Closure: This unit was taken out of service in the early 1970's.(53) The tanks were removed from the site and the sump was filled in with concrete at that time.(53)

Wastes Managed: This unit received all process wastewater from the facility. These wastes included various heavy metals including copper, nickel, lead, iron, and zinc.(1)

Release Controls: There is no file information regarding release controls for this unit.

History of Releases: There is no file evidence of release from this unit.

4.11.2 Conclusions

Soil/Groundwater Release Potential: There is not enough information available at this time concerning the operation of the wastewater treatment system and its associated release controls to adequately evaluate the potential for past releases to soil and groundwater. There is no ongoing potential for releases to soil and groundwater as this system has been removed from the site.

Surface Water Release Potential: There is not enough information available at this time concerning the operation of the wastewater treatment system and its associated release controls to adequately evaluate the potential for past releases to surface water. There is no ongoing potential for release to surface water as this system has been removed from the site.

Air Release Potential: There is not enough information available at this time concerning the operation of the wastewater treatment system and its associated release controls to adequately evaluate the potential for past releases to air. There is no ongoing potential for release to air as this system has been removed from the site.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there was no past potential for the generation of subsurface gas from this unit. As this unit has been removed from the site, there is no ongoing potential for the generation of subsurface gas.

4.12 OLD CHROMIC-SULFURIC UNDERGROUND STORAGE TANK

4.12.1 Information Summary

Unit Description: This underground storage tank was located in the northwest corner of the alkaline etch manufacturing area, and northeast of Pond No. 1 (Unit 4.4) (Figure 4).(42) Its construction materials, dimensions, and capacity are unknown. The tank was used for the storage of spent chromic-sulfuric etchant.(42)

Date of Startup: The tank was placed into service in the early 1960's.(53)

Date of Closure: The tank became inactive in 1974. At that time, the tank was removed from the site.(53)

Wastes Managed: The tank was used for the storage of spent chromic-sulfuric acid etching solution wastes.(11) The pH of these wastes has been reported in the range of 1-2.(5,42) These wastes contained chromium, copper, sulfates, chlorides, and nitrates.(42)

Release Controls: There is no information regarding release controls for this unit.

History of Releases: The facility indicates that this unit may be the source of copper (480-1,200 mg/kg) and chromium (550-16,000 mg/kg) found in soil boring B-4 and monitoring wells (MW-3 and MW-4) to the southwest of the unit.(5,7,11,42)

4.12.2 Conclusions

Soil/Groundwater Release Potential: Results of soil borings and groundwater sampling have indicated that releases to the soil and groundwater have occurred from this tank due to leakage. Although the tank has been removed from the site, these contaminants still remain in the soil and groundwater.

Surface Water Release Potential: There was a low past potential for direct surface water releases from this tank as it was located underground.

Air Release Potential: Based on the underground location of this tank, there was no past potential for air releases. As this tank has been removed from the site, there is no ongoing release potential.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no past potential for the generation of subsurface gas. As this unit has been removed from the site, there is no ongoing potential for the generation of subsurface gas.

4.13 10,000 GALLON SPENT CHROME-SULFURIC ACID TANK (a.k.a. Tank SC-1)

4.13.1 Information Summary

Unit Description: This tank is located on the north end of the facility (Figure 4). This aboveground tank is constructed of fiberglass reinforced plastic and lined with a thin layer of titanium for corrosion control.(53) This 10,000 gallon tank was used for the storage of spent chromic-sulfuric acid etchant solution.(31,35) The tank is situated on a concrete pad surrounded by a six-inch-thick two-foot high concrete containment wall.

Wastes were allowed to accumulate in the tank for approximately two months, until there was a sufficient volume to be treated. The wastes were then routed to Pond No. 1 (Unit 4.4) or the wastewater treatment tanks W-1 and W-2 (Unit 4.7) for neutralization and metals precipitation.(53) Sludges accumulating in this tanks were trucked offsite to an approved disposal facility.(53)

Date of Startup: The tank was placed into service in 1979 or 1980.(53)

Date of Closure: The tank became inactive in 1987, as the process that generated the spent etchant has been discontinued.(53) The inactive tank still remains onsite.(53) The facility did not indicate what they intend to do with this tank.

Wastes Managed: This tank stored spent chromic-sulfuric acid etchant solution.(31) This solution had a pH of approximately 2.(53) The spent etchant contained chromium, copper, sulfates, chlorides, and nitrates.(42) It is unknown whether wastes are still present in the tank.

Release Controls: The tank is situated on a concrete pad surrounded by a six-inch-thick concrete containment wall. The containment wall is approximately 12 ft x 15 ft x 3.5 ft deep, of which 1.5 feet of the depth are below grade.(53)

History of Releases: Samples of soil taken in 1984 "behind" (unknown location) this unit showed 10.5 ppm cadmium, 1490 ppm chromium, 0.67% copper, 453 ppm nickel, 946 ppm lead, and 3140 ppm zinc.(30) The specific origin of this

contamination is not known. The facility indicated that these soil samples were taken around MW-9 in an effort to locate the old chromic-sulfuric underground storage tank (Unit 4.12).

At the time of the VSI, the bottom of the tank was discolored and showed signs of corrosion. A dark sludgy material was leaking from the outlet pipe onto the floor of the concrete containment.(53) The titanium-lined concrete base did not appear corroded.

4.13.2 Conclusions

Soil/Groundwater Release Potential: The potential for past releases to soil and groundwater is low based on the concrete containment structure surrounding the tank. There is no ongoing potential for releases to soil and groundwater as the tank is inactive. Observations of tank leakage during the VSI did not appear to present a potential risk of soil release because the concrete containment was in good condition.

Surface Water Release Potential: Based on the concrete containment structure surrounding the tank, there was a low potential for releases to surface water. There is an unknown ongoing potential for releases to surface water as it is unknown whether the tank still contains waste materials.

Air Release Potential: Based on the closed construction of the tank, there was no past or ongoing potential for air releases.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this tank, there is no potential for the past or ongoing generation of subsurface gas.

4.14 DISPOSAL PIT

4.14.1 Information Summary

Unit Description: In 1976, the RWQCB found that sludges from the neutralization pit (thought to be Pond No. 1, Unit 4.4) were being deposited in a disposal pit behind the trailer offices on the property.(18,19) The dimensions of the pit are not known. The pit is not a constructed unit, merely a depression in the ground. No dimension or construction details are available for this unit. In May 1976, 720 cubic yards of material were removed from this area and hauled to a Class I site.(49)

Date of Startup: The date of startup is unknown; the unit was present in 1976.(18)

Date of Closure: The unit was reportedly cleaned out in May, 1976.(49)

Wastes Managed: Sludges from the neutralization pit were disposed here. Although no chemical characterization of these sludges was available for this review, it is expected that the wastes would contain high levels of heavy metals.

Release Controls: There were no known release controls associated with this unit.

History of Releases: There is no file evidence of release from this unit. The exact location of this unit could not be verified during the VSI. The area behind the trailer offices has been regraded.(53)

4.14.2 Conclusions

Soil/Groundwater Release Potential: Additional information regarding the unit's operation and exact location needs to be obtained prior to evaluating the potential for releases to soil and groundwater.

Surface Water Release Potential: Additional information regarding the unit's operation and exact location needs to be obtained prior to evaluating the potential for release to surface water.

Air Release Potential: Additional information regarding the unit's operation and exact location needs to be obtained prior to evaluating the potential for releases to air.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there was no past potential for the generation of subsurface gas. As this unit is no longer active, there is no ongoing potential for the generation of subsurface gas.

4.15 DRUM WASHING AREA AND SUMP

4.15.1 Information Summary

Unit Description: This drum washing area is located in the approximate center of the facility (Figure 4). The area is 25 ft x 30 ft, concrete paved, and surrounded by a 6-in high, 4-in wide concrete curb.(9,53) Drums that have contained spent alkaline etchants are rinsed in this area.(9,53)

A subgrade concrete sump, designated as Sump 11, is located in the southeast corner of this area to collect wastewater generated by drum washing operations.(53) Contents of the sump are pumped out by vacuum truck and routed back to the copper oxide manufacturing process.(53) The dimensions and capacity of the sump could not be determined during the VSI.

Date of Startup: This drum washing area was placed into service in 1972 or 1973.(53)

Date of Closure: The unit is still in operation.(53)

Wastes Managed: Wash waters from this drum washing operation consist of copper, iron, chromium, and ammonia cations, and chloride and sulfate anions.(9)

Release Controls: The area is concrete paved and surrounded by a 6-in high, 4-in wide concrete curb.(53) A roof, constructed of corrugated fiberglass panels, covers the entire drum washing area and assists in minimization of evaporation.(12,53) Release controls for the sump could not be determined during the VSI.

History of Releases: There is no file evidence of releases from this unit. The concrete pavement and curb appeared to be in good condition at the time of the VSI.(53)

4.15.2 Conclusions

Soil/Groundwater Release Potential: Based on the concrete pavement and curb, there is a low potential for past and ongoing releases to soil and groundwater. Because the integrity of the sump could not be determined during the VSI, there is a low potential for release to soil via this route.

Surface Water Release Potential: There is a low potential for past and ongoing surface water releases based on the unit's concrete pavement and curb, and the collection of wash waters in the sump rather than allowing them to overflow the unit.

Air Release Potential: There is a low potential for past and ongoing air releases as the washing operation produces dilute wastewaters which are not expected to be volatile.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.16 TRUCK WASHING AREA

4.16.1 Information Summary

Unit Description: The truck washing area is located in the roadway in the central portion of the facility, adjacent to the south side of the Drum Washing Area (Unit 4.15) (Figure 4). Tank trucks that contained spent alkaline etchants are washed out in this area.(9,53) Wash waters generated from this operation are collected in an in-road sump (Unit 4.45) and routed to the wastewater treatment system.(53) This unit has no specific dimensions and is not surrounded by a curb or berm.(53)

Date of Startup: This truck washing area was placed into service in 1975 or 1976, when the road through the central portion of the facility was constructed.(53)

Date of Closure: This is an active unit.(53)

Wastes Managed: Wash waters generated by this operation were similar to those generated by the spent alkaline etchant drum washing operations. These wash waters consist of copper, iron, chromium, and ammonia cations, and chloride and sulfate anions.(9)

Release Controls: There are no known release controls for this unit, other than collecting wash waters in the sump.

History of Releases: There was no file evidence of releases from this unit. The pavement in this area was stained and had a few minor cracks at the time of the VSI. Liquids were observed draining to the in-road sump.(53)

4.16.2 Conclusions

Soil/Groundwater Release Potential: The concrete pavement in this area would tend to reduce the potential for past and ongoing releases to soil and groundwater. However, based on the cracks observed during the VSI, there is a low potential for soil releases from this unit.

Surface Water Release Potential: There is a low potential for past and ongoing releases to surface water, as wash waters generated by this operation are collected in the in-road sump (Unit 4.45).

Air Release Potential: There is some potential for past and ongoing air releases by evaporation from this operation.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.17 FERRIC CHLORIDE AREA DRUM WASHING UNIT AND SUMP

4.17.1 Information Summary

Unit Description: This drum washing area is located in the ferric chloride processing area in the southwest portion of the facility (Figure 4). The area is approximately 10 ft x 5 ft and concrete paved. A subgrade concrete sump, approximately 6 ft x 3 ft x 2.5 ft deep, is located in the center of this area. Drums that contained ferric chloride wastes are washed directly over the sump. The wash water collected in the sump is routed back to the ferric chloride manufacturing process.(53) The area is not curbed.(53)

Date of Startup: The unit was placed into operation in 1970.(53)

Date of Closure: This drum washing area is an active unit.(53)

Wastes Managed: Chemical analyses of wastes managed in this unit were unavailable at the time of this review. However, these wastes are expected to be corrosive.

Release Controls: The area is paved with concrete and sloped to a concrete sump.(53) It is not curbed.

History of Releases: There was no file evidence of releases from this unit. The pavement in this area was heavily stained by oxidized ferric materials at the time of the VSI.(53)

4.17.2 Conclusions

Soil/Groundwater Release Potential: There is a low potential for past and ongoing releases to soil and groundwater based on the pavement and collection of wastewaters in the sump. Because the integrity of the sump could not be evaluated during the VSI, there is a potential for release to soil via this route.

Surface Water Release Potential: Based on the pavement and collection of wastewater in the sump, there is a low potential for past and ongoing releases to surface water.

Air Release Potential: There is a low potential for past and ongoing releases to air as the washing operation produces dilute wastewaters which are not expected to be volatile.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this unit, there is no past or ongoing potential for the generation of subsurface gas.

4.18 FERRIC CHLORIDE AREA FILTER PRESS

4.18.1 Information Summary

Unit Description: This filter press is located on the south end of the facility in the ferric chloride manufacturing area (Figure 4). The unit is a plate and frame filter press, approximately 2 ft x 2 ft x 4 ft long.(53) The filter press is used to dewater a ferric hydroxide/ferric oxide floc that is formed in the processing of ferric chloride.(53)

Filtrate is collected in a sump (Unit 4.19), located directly below the filter press, prior to offsite disposal. For a period of time, the filter cake was transferred to Pond No. 8 (Unit 4.3) and later to Pond No. 1 (Unit 4.4). Filter cake is now hauled offsite for disposal by a contractor.(53)

Date of Startup: The unit was placed into service in about 1973.(53)

Date of Closure: This filter press is an active unit.(53)

Wastes Managed: Ferric hydroxide and ferric oxide flocs are dewatered in this unit. It is unknown at this time if these wastes are characteristic hazardous wastes or contain hazardous constituents, particularly other trace heavy metals.

Release Controls: Aside from the sump collecting filtrate, there are no other release controls for this unit.

History of Releases: There was no file record of releases from this unit. At the time of the VSI, some of the piping to the filter press was disconnected.

4.18.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, particularly pH and trace heavy metals, needs to be obtained to determine if release potentials to environmental media exist.

4.19 FERRIC CHLORIDE AREA FILTER PRESS SUMP (a.k.a. Sump 10)

4.19.1 Information Summary

Unit Description: This sump is located in the ferric chloride process area, on the south end of the facility (Figure 4). The sump is approximately 3.5 ft x 8 ft x 3 ft deep and constructed of acid brick and lead-lined steel.(12,53) The sump is covered with a fiberglass grating.(12)

This sump collects filtrate from a filter press (Unit 4.18), which is located directly above the sump. Drainage from the ferric chloride processing area is also collected in this sump.(53) Wastewaters collected in the sump are pumped out by a contractor every 6 to 8 weeks and transferred to an offsite disposal facility.(53)

Date of Startup: The sump has been active since about 1973.(53)

Date of Closure: This is an active unit.(53)

Wastes Managed: Filtrate consisted of ferric chlorides, ferric hydroxides, ferric oxides, and ferrous chlorides.(53) It is unknown at this time if these wastes are characteristic hazardous wastes or contain hazardous constituents, particularly other trace heavy metals.

Release Controls: The sump has an acid brick and lead and steel lining.(53)

History of Releases: There is no file record of releases from this sump. During the VSI, the sump was overflowing with a greenish-yellow liquid. The pavement surrounding the sump was heavily stained and deteriorated.(53)

4.19.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, particularly pH and trace heavy metals, needs to be obtained to determine if release potentials to environmental media exist.

4.20 RCRA-REGULATED DRUM STORAGE AREA

4.20.1 Information Summary

Unit Description: The RCRA-regulated hazardous waste container storage area is located on the northeast perimeter of the property along the fence line. (43) Only part of the storage area is paved.(53) The north side of the area has a concrete curb, the rest of the area is uncurbed.(43,53) The facility's Part A notification indicates that the storage area has capacity for 3,000 gallons, equivalent to 55 fifty-five gallon drums.(47) As observed during the VSI, the area used for drum storage was approximately 40 ft x 60 ft. At the time of the VSI, approximately 100 drums were stored in this area. The drums were stacked two high, although not all the layers were separated by pallets.

Date of Startup: This storage area has been active since the beginning of plant operations in the late 1950's, although the area wasn't paved until the early 1970's.(53)

Date of Closure: This is an active unit.(53)

Wastes Managed: A large variety of wastes have been stored in this unit. In 1984, spent acid etchant, nickel sulfate, spent solder etch, cupric sulfate, peroxide, sludges from product storage, and nickel rinse were reported here. (43) At the time of the VSI, the facility indicated that the following types of wastes were stored in this area: copper sulfate filter cake, copper sulfate crystals, spent chromium-sulfuric etchants, copper oxides, and cuprous ammonia acetate.(53)

Release Controls: The area is partially paved and has a concrete curb on the north side.(43,53) The facility has indicated that the pavement has been coated with a bitumastic sealant numerous times during the past year.(53)

History of Releases: There are numerous reports of leaking drums and stained soil in the area of this unit.(28,43) Drums marked peroxide were seen bubbling during one inspection; stains were noted all along the bermed area on the north side of the unit.(43) Another inspection noted that a drum containing blue-green soil had spilled its contents.(28)

At the time of the VSI, approximately 100 drums were stored in this area. The drums were stacked two high, although not all the layers were separated by pallets. Most of the drums appeared to be in good condition. A few of the drums were dented and showed evidence of spillage. Stains on the pavement and soil were observed throughout this area.(53)

4.20.2 Conclusions

Soil/Groundwater Release Potential: Some evidence of soil release was observed at the time of the VSI. There is a potential for past and ongoing soil and groundwater releases from this storage unit as only part of the area is paved.

Surface Water Release Potential: There is a potential for past and ongoing releases to surface water via surface runoff as only part of this storage area is paved and curbed.

Air Release Potential: Although the drums stored in this area had lids, there is a potential for past and ongoing air releases if spillage occurs on the ground surface.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.21 DRUM STORAGE AREA #1

4.21.1 Information Summary

Unit Description: This drum storage area is located on the southwest end of the facility adjacent to the laboratory building and borders the south property fence line (Figure 4). This drum storage area was identified during the VSI. The area contained at least 150 drums of waste ferric chloride solution awaiting processing. The drums were stacked three high in this area, with no pallets separating the layers. There was no aisle space between the drums. (53,54)

Date of Startup: It is unknown when this area began accumulating drums.

Date of Closure: This is an active unit.(53)

Wastes Managed: The drums contained waste ferric chloride solution (EPA Waste Code D002) awaiting processing.(53,54)

Release Controls: The area is paved but not curbed. In addition, all of the drums had lids, although it could not be determined how many of the lids were secure.(53)

History of Releases: There was no file evidence of releases from this storage area. At the time of the VSI, there was evidence of leakage such as discolored drums and staining on the pavement.(53,54)

4.21.2 Conclusions

Soil/Groundwater Release Potential: There is a high potential for past and ongoing releases to soil and groundwater since the area is uncurbed. As this area borders the south property line, contaminated surface runoff from this unit could reach offsite unpaved areas to the south.

Surface Water Release Potential: There is a high potential for past and ongoing surface water releases as this area is uncurbed. Contaminated surface runoff could reach the drainage ditch to the south of this unit.

Air Release Potential: Although the drums stored in this area had lids, there is a low potential for past and ongoing air releases if spillage occurs on the ground surface, due to the corrosive nature of the wastes and the potential for particulate release.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.22 DRUM STORAGE AREA #2

4.22.1 Information Summary

Unit Description: This drum storage area is located on the northwest end of the facility near the wastewater treatment system, and borders the north property fence line (Figure 4). This drum storage area was identified during the VSI. The area contained at least 110 drums of waste nickel sulfate solution that were being accumulated from offsite sources prior to being processed onsite. The drums were stacked two high in this area, with pallets separating the layers. There was no aisle space between the drums.(53,54)

Date of Startup: It is unknown when this area began accumulating drums.

Date of Closure: This is an active unit.(53)

Wastes Managed: The drums contained waste nickel sulfate solution (EPA Waste Code D002) awaiting processing.(53,54)

Release Controls: The area is paved but not curbed. In addition, all of the drums had lids, although it is not known how many of the lids were secure.(53)

History of Releases: There was no file evidence of releases from this storage area. At the time of the VSI, there was evidence of leakage such as discolored drums and staining on the pavement.(53,54)

4.22.2 Conclusions

Soil/Groundwater Release Potential: There is a high potential for past and ongoing releases to soil and groundwater since the area is uncurbed. As this area borders the north property line, contaminated surface runoff from this unit could reach offsite unpaved areas to the north.

Surface Water Release Potential: There is a high potential for past and ongoing surface water releases as this area is uncurbed. Contaminated surface runoff could reach offsite drainage channels.

Air Release Potential: There is a low potential for past and ongoing air releases if spillage occurs on the ground surface.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.23 DRUM STORAGE AREA #3

4.23.1 Information Summary

Unit Description: This drum storage area is located on the central portion of the facility adjacent to the inactive Pond No. 2 (Unit 4.6) (Figure 4). This drum storage area was identified during the VSI. The area contained at least 40 drums of waste copper chloride solution awaiting processing. Some of the drums were stacked two high in this area, and not all of the layers were separated with pallets. There was no aisle space between the drums.(53,54)

Date of Startup: It is unknown when this area began accumulating drums.

Date of Closure: This is an active unit.(53)

Wastes Managed: The drums contained waste copper chloride solution (EPA Waste Code D002) awaiting processing.(53,54)

Release Controls: The area is paved but not curbed. In addition, all of the drums had lids, although it is not known how many of them were secured.(53)

History of Releases: There was no file evidence of releases from this storage area. At the time of the VSI, the pavement in this area was stained, although it is unknown if leaking drums are the source, since other activities have taken place in this area.(53,54)

4.23.2 Conclusions

Soil/Groundwater Release Potential: There is a high potential for past and ongoing releases to soil and groundwater since the area is uncurbed. Contaminated surface runoff from this unit could reach offsite unpaved areas.

Surface Water Release Potential: There is a high potential for past and ongoing surface water releases as this area is uncurbed. Contaminated surface runoff could reach offsite drainage channels.

Air Release Potential: There is a potential for past and ongoing air releases if spillage occurs on the ground surface.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.24 DRUM STORAGE AREA #4

4.24.1 Information Summary

Unit Description: This drum storage area is located in the central portion of the facility adjacent to the zinc sulfate processing area (Figure 4). This drum storage area was identified during the VSI. The area contained at least 100 drums of waste cupric sulfate solution that were being accumulated from offsite sources prior to being processed onsite. Some of the drums were stacked two high in this area, and not all of the layers were separated with pallets. There was no aisle space between the drums.(53,54)

Date of Startup: It is unknown when this area began accumulating drums.

Date of Closure: This is an active unit.(53)

Wastes Managed: The drums contained waste cupric sulfate solution (EPA Waste Code D002) awaiting processing.(53,54)

Release Controls: The area is paved but not curbed. Most of the drums had lids, although it is not known how many of them were secured.(53)

History of Releases: There was no file evidence of releases from this storage area. At the time of the VSI, some of drums were open and some of the drums had lids that were not properly secured.(53) There was evidence of leakage such as discolored drums and staining on the pavement. In addition, discolored water was accumulating underneath some of drums.(53,54)

4.24.2 Conclusions

Soil/Groundwater Release Potential: There is a high potential for past and ongoing releases to soil and groundwater since the area is uncurbed. Contaminated surface runoff from this unit could reach offsite unpaved areas.

Surface Water Release Potential: There is a high potential for past and ongoing surface water releases as this area is uncurbed. Contaminated surface runoff could reach the offsite drainage channels.

Air Release Potential: There is a potential for past and ongoing air releases since some of the drums were open or had unsecured lids and spillage was observed on the ground surface.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.25 DRUM STORAGE AREA #5

4.25.1 Information Summary

Unit Description: This drum storage area is located on the southeast end of the facility adjacent to Pond No. 3 (Unit 4.2) in the area formerly occupied by the copper cement drying ponds (Figure 4). This area is also near the south property fence line (Figure 4). This drum storage area was identified during the VSI. The area contained at least 50 drums of miscellaneous wastes that were accumulating from offsite sources prior to being processed onsite. Some of the drums were stacked two high in this area, with pallets separating the layers. There was no aisle space between the drums.(53,54)

Date of Startup: It is unknown when this area began accumulating drums.

Date of Closure: This is an active unit.(53)

Wastes Managed: The wastes stored in this area included a lead solution (EPA Waste Code D008), corrosive wastes (EPA Waste Code D002) which are possibly a zinc solution, waste acids and alkalies, and hydrogen peroxide (EPA Waste Code D001).

Release Controls: The area is paved but not curbed. Some of the facility property just south of this unit is unpaved. All of the drums had lids, although it is not known how many of them were secured.(53)

History of Releases: There was no file evidence of releases from this storage area. At the time of the VSI, the drums appeared to be in good condition. The pavement in this area was stained, although it is unknown if leaking drums are the source, since other activities have taken place in this area.(53,54)

4.21.2 Conclusions

Soil/Groundwater Release Potential: There is a high potential for past and ongoing releases to soil and groundwater since the area is uncurbed. As this area is near the south property line, contaminated surface runoff from this unit could reach both onsite and offsite unpaved areas to the south.

Surface Water Release Potential: There is a high potential for past and ongoing surface water releases as this area is uncurbed. Contaminated surface runoff could reach the drainage ditch to the south of this unit.

Air Release Potential: There is a potential for past and ongoing air releases if spillage occurs on the ground surface.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes stored in this unit, there is no potential for past or ongoing generation of subsurface gas.

4.26 PRE-1975 SUMP 2

4.26.1 Information Summary

Unit Description: This unit was identified in a 1971 engineering evaluation of the process areas at the facility.(1) In 1971, all process water from the zinc sulfate manufacturing area was reported to drain to Sump 2.(1) The exact location of the unit is not known. Construction details, waste management practices, waste characteristics, and points of discharge are all unknown for this unit. It is also unknown if this unit is inactive or has changed number designation. Facility representatives had no knowledge of a sump with this number.

Date of Startup: Unknown; however, the unit was present in 1971.(1)

Date of Closure: The status of this unit is unknown.

Wastes Managed: This unit is reported to have stored process water from the zinc sulfate manufacturing area, which may contain various trace metals and sulfuric acid.(1)

Release Controls: No information was available concerning release controls for this unit.

History of Releases: There is no file information regarding releases from this unit.

4.26 Conclusions

Additional information is needed concerning the unit's location, construction, operation, waste management practices, waste characteristics, points of discharge, and release controls to adequately evaluate the potential for releases to environmental media.

4.27 PRE-1975 SUMP 3

4.27.1 Information Summary

Unit Description: This unit was identified in a 1971 engineering evaluation of the process areas at the facility.(1) In 1971, all process water from the alkaline etchant manufacturing area, wash water from the tank truck wash area, and process water from the zinc sulfate manufacturing area were reported to drain to Sump 3.(1) The exact location of the unit is not known. Construction details, waste management practices, waste characteristics, and points of discharge are all unknown for this unit. It is also unknown if this unit is inactive or has changed number designation. Facility representatives had no knowledge of a sump with this number.

Date of Startup: Unknown; however, the unit was present in 1971.(1)

Date of Closure: The status of this unit is unknown.

Wastes Managed: This unit is reported to have stored process water from the alkaline etchant manufacturing area, wash water from the tank truck wash area, and process water from the zinc sulfate manufacturing area, which may contain various trace metals.(1)

Release Controls: No information was available concerning release controls for this unit.

History of Releases: There is no file information regarding releases from this unit.

4.27 Conclusions

Additional information is needed concerning the unit's location, construction, operation, waste management practices, waste characteristics, points of discharge, and release controls to adequately evaluate the potential for releases to environmental media.

4.28 PRE-1975 SUMP 4

4.28.1 Information Summary

Unit Description: This unit was identified in a 1971 engineering evaluation of the process areas at the facility.(1) In 1971, all process water and wash water from the ferric chloride manufacturing area, and wastewater from the carboy wash area (Unit 4.17) were reported to drain to Sump 4.(1) Process water in Sump 3 was also reportedly pumped to Sump 4.(1) The exact location of the unit is not known. Construction details, waste management practices, waste characteristics, and points of discharge are all unknown for this unit. It is also unknown if this unit is inactive or has changed number designation. Facility representatives had no knowledge of a sump with this number.

Date of Startup: Unknown; however, the unit was present in 1971.(1)

Date of Closure: The status of this unit is unknown.

Wastes Managed: This unit is reported to have stored process water from the ferric chloride manufacturing area and wastewater from the carboy wash area, which may contain various trace metals.(1)

Release Controls: No information was available concerning release controls for this unit.

History of Releases: There is no file information regarding releases from this unit.

4.28 Conclusions

Additional information is needed concerning the unit's location, construction, operation, waste management practices, waste characteristics, points of discharge, and release controls to adequately evaluate the potential for releases to environmental media.

4.29 PRE-1975 SUMP 6

4.29.1 Information Summary

Unit Description: This unit was identified in a 1971 engineering evaluation of the process areas at the facility.(1) In 1971, all process water from the solder etch manufacturing area was reported to drain to Sump 6.(1) The exact location of the unit is not known. Construction details, waste management practices, waste characteristics, and points of discharge are all unknown for this unit. It is also unknown if this unit is inactive or has changed number designation. Facility representatives had no knowledge of a sump with this number.

Date of Startup: Unknown; however, the unit was present in 1971.(1)

Date of Closure: The status of this unit is unknown.

Wastes Managed: This unit is reported to have stored process water from the solder etch manufacturing area, which may contain various trace metals.(1)

Release Controls: No information was available concerning release controls for this unit.

History of Releases: There is no file information regarding releases from this unit.

4.29 Conclusions

Additional information is needed concerning the unit's location, construction, operation, waste management practices, waste characteristics, points of discharge, and release controls to adequately evaluate the potential for releases to environmental media.

4.30 PRE-1975 SUMP 7

4.30.1 Information Summary

Unit Description: This unit was identified in a 1971 engineering evaluation of the process areas at the facility.(1) In 1971, all wastewater from Sump 6 and wash water from the carboy wash area (Unit 4.17) were reported to drain to Sump 7.(1) The exact location of the unit is not known. Construction details, waste management practices, waste characteristics, and points of discharge are all unknown for this unit. It is also unknown if this unit is inactive or has changed number designation. Facility representatives had no knowledge of a sump with this number.

Date of Startup: Unknown; however, the unit was present in 1971.(1)

Date of Closure: The status of this unit is unknown.

Wastes Managed: This unit is reported to have stored process water from the alkaline etchant manufacturing area, wash water from the tank truck wash area, and process water from the zinc sulfate manufacturing area, which may contain various trace metals.(1)

Release Controls: No information was available concerning release controls for this unit.

History of Releases: There is no file information regarding releases from this unit.

4.30.2 Conclusions

Additional information is needed concerning the unit's location, construction, operation, waste management practices, waste characteristics, points of discharge, and release controls to adequately evaluate the potential for releases to environmental media.

4.31 SUMP 1

4.31.1 Information Summary

Unit Description: This sump was a yard drain sump located along the entrance road to the facility (Figure 4). The sump was constructed of concrete and was approximately 2 ft x 4 ft x 3 ft deep.(12) The sump collected rainwater and diverted it a storm drain south of the property.(9)

Date of Startup: The sump became active in 1975 or 1976.(9,12,44)

Date of Closure: This sump became inactive at an unknown date. The sump has been filled in with concrete.(53)

Wastes Managed: This sump collected runoff from the entrance road and administration building parking lot. Chemical analyses of these wastes were unavailable for this review.

Release Controls: Information on release controls for this sump is unknown.

History of Releases: There is no file evidence of releases from this sump. No observations indicating past releases were seen during the VSI.

4.31.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media existed. As this sump is no longer active, there is no ongoing potential for releases.

4.32 SUMP 2

4.32.1 Information Summary

Unit Description: This sump was a yard drain sump located along the entrance road to the facility (Figure 4). The sump was constructed of concrete and was approximately 3 ft x 3.75 ft x 3 ft deep.(12) The sump collected rainwater and diverted it a storm drain south of the property.(9)

Date of Startup: The sump became active in 1975 or 1976.(9,12,44)

Date of Closure: This sump became inactive at an unknown date. The sump has been filled in with gravel.(53)

Wastes Managed: This sump collected runoff from the entrance road and administration building parking lot. Chemical analyses of these wastes were unavailable for this review.

Release Controls: Information on release controls for this sump is unknown.

History of Releases: There is no file evidence of releases from this sump. No observations indicating past releases were seen during the VSI.

4.32.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

4.33 SUMP 3-C

4.33.1 Information Summary

Unit Description: This sump is located along the south side of the road that divides the facility, across from the zinc sulfate processing area (Figure 4). The sump is constructed of concrete and is approximately 3 ft x 3.67 ft x 1.67 ft deep.(12) The sump collected rainwater from the roadway. There is conflicting file information as to the discharge of this wastewater. One source indicated that the sump contents were diverted to a storm drain south of the facility.(9) Another source indicated that the sump contents were diverted by gravity to Sump 5-A via Sump 3-B.(12,44) Facility representatives could not specifically clarify the disposition of sump contents.

Date of Startup: The sump became active in 1975 or 1976.(9,12,44)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: This sump collected runoff from the roadway. Chemical analyses of these wastes were unavailable for this review.

Release Controls: Information on release controls for this sump is unknown.

History of Releases: There is no file evidence of releases from this sump. No observations indicating past releases were seen during the VSI.

4.33.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

4.34 SUMPS 3-A AND 3-B

4.34.1 Information Summary

Unit Description: These sumps are located in the zinc sulfate processing area (Figure 4). Sump 3-A is 3 ft x 2 ft x 3 ft deep. Sump 3-B is 2.5 ft x 2.5 ft x 3 ft deep.(12) Both sumps are constructed of concrete and collect drainage from the zinc sulfate processing area.(12,44) There is conflicting file information as to the discharge of this wastewater from these sumps. One source indicated that the sump contents are diverted to a storm drain south of the facility.(9) Another source indicated that the Sump 3-A and 3-C (Unit 4.33) discharge to Sump 3-B. The contents of Sump 3-B are then diverted by gravity to Sump 5-A.(12,44) Facility representatives could not specifically clarify the disposition of sump contents. These sumps could not be found during the VSI.

Date of Startup: The sumps became active in 1975 or 1976.(9,12,44)

Date of Closure: These sumps are active units.(53)

Wastes Managed: These sumps collected drainage from the zinc sulfate processing area. Chemical analyses of these wastes were unavailable for this review.

Release Controls: Information on release controls for these sumps is unknown.

History of Releases: There is no file evidence of releases from these sumps.

4.34.2 Conclusions

Additional information on the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

4.35 SUMP 4

4.35.1 Information Summary

Unit Description: This sump is located on the south end of the facility, adjacent to the south warehouse (Figure 4). The sump is constructed of concrete and is approximately 4 ft x 6 ft x 5 ft deep.(12) The sump collects rainwater runoff from the inactive copper oxide pond area. There is conflicting file information as to the discharge of this wastewater. One source indicated that the sump contents are diverted to a storm drain south of the facility.(9) Another source indicated that the sump contents are diverted by gravity to Sump 5-A (Unit 4.36) via Sumps 3-C and 3-B (Units 4.34 and 4.33).(12,44) Facility representatives could not specifically clarify the disposition of sump contents. These sumps could not be found during the VSI.

Date of Startup: The sump became active in 1975 or 1976.(9,12,44)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: This sump collects runoff from southeast part of the facility. Chemical analyses of these wastes were unavailable for this review.

Release Controls: Information on release controls for this sump is unknown.

History of Releases: There is no file evidence of releases from this sump.

4.35.2 Conclusions

Additional information on the sump's location and the characteristics of wastes managed in this unit, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

4.36 SUMPS 5-A, 5-B, AND 5-C

4.36.1 Information Summary

Unit Description: These sumps are located in the southeast portion of the facility in the copper oxide manufacturing area, adjacent to Pond No. 7 (Unit 4.2) (Figure 4). Sumps 5-A and 5-B are each 15 ft x 4.33 ft x 4 ft deep and constructed of concrete.(12) Dimensions of Sump 5-C are unknown.

Sump 5-A collected overflow from the wastewater holding tanks (Unit 4.5) while they were in operation. The contents of Sump 14 (Unit 4.2), Sump 3-B, and the sump in the truck washing area (Unit 4.16) are also diverted to this sump.(44)

The contents of Sump 5-A are routed to Pond No. 3 (Unit 4.2). Overflow from Pond No. 3 flows to Sumps 5-B and 5-C. Contents of Sump 5-C are routed to Sump 5-B. Wastewaters in Sump 5-B are pumped to the wastewater treatment system (Units 4.4 and 4.7). (44) Sump 5-A has a 5 HP pump; sump 5-B has a 2 HP pump.(12) It is unknown if Sump 5-C has a pump.

Date of Startup: These sumps became active in 1975 or 1976.(9,12,44)

Date of Closure: These sumps are active units.(53)

Wastes Managed: Chemical analyses of wastes managed in these sumps were unavailable for this review.

Release Controls: The sumps are covered by wooden boards.(53) Sump 5-A is equipped with a 5 HP pump, Sump 5-B has a 2 HP pump.(12)

History of Releases: There was no file evidence of releases from these sumps. Stained pavement was observed in the area around the sumps at the time of the VSI, although it is not known if the staining resulted from past sump overflows or copper oxide manufacturing operations.

4.36.2 Conclusions

Additional information on the characteristics of wastes managed in these sumps, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

4.37 SUMP 6-A

4.37.1 Information Summary

Unit Description: This sump is located in the copper oxide processing area on the south end of the facility (Figure 4). Sump 6-A is 4 ft x 4.5 ft x 5.5 ft deep and constructed of concrete and covered with a fiberglass grating.(12) This sump collects rainwater from this area and diverts it to a storm drain south of the property via a 2 HP pump.(9,12)

Date of Startup: This sump became active in 1975 or 1976.(9,12,44)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: Chemical analyses of wastes managed in this sump were unavailable for this review.

Release Controls: The sump is covered with a fiberglass grating and equipped with a 2 HP pump.(12)

History of Releases: There was no file evidence of releases from this sump. Stained pavement was observed in the area around the sumps at the time of the VSI, although it is not known if the staining resulted from past sump overflows or copper oxide manufacturing operations.

4.37.2 Conclusions

Additional information on the characteristics of wastes managed in this sump, with respect to the presence of hazardous wastes or hazardous constituents, needs to be obtained to determine if release potentials to environmental media exist.

SUMP 6-B

Information Summary

Description: This sump is located in the copper oxide processing area on south end of the facility (Figure 4). Sump 6-B is 4 ft x 6 ft x 5.5 ft and constructed of concrete.(12) This sump collects process wastewater from the copper oxide area. Sump contents are routed to the current wastewater treatment system (Unit 4.7) for treatment.(9,12,44)

of Startup: This sump became active in 1975 or 1976.(9,12,44)

of Closure: This sump is an active unit.(53)

Managed: Chemical analyses of wastes managed in this sump were unavailable for this review.

Controls: The sump is covered with a fiberglass grating and equipped with a 5 HP pump.(12)

of Releases: There was no file evidence of releases from this sump. Stained pavement was observed in the area around the sumps at the time of the inspection, although it is not known if the staining resulted from past sump overflows or copper oxide manufacturing operations.

Conclusions

Additional information on the characteristics of wastes managed in this sump, with respect to the presence of hazardous wastes or hazardous constituents, should be obtained to determine if release potentials to environmental media

4.43 SUMP 16

4.43.1 Information Summary

Unit Description: This sump is located in the ferric chloride processing area on the south end of the facility (Figure 4). Sump 16 dimensions and materials of construction are unknown at this time. This sump collects process wastewater from the ferric chloride manufacturing operations. Sump contents are routed to the current wastewater treatment system (Unit 4.7) for treatment.(44)

Date of Startup: This sump became active in 1975 or 1976.(44)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: Although chemical analyses of wastes managed in this sump were unavailable for this review, it is likely that wastes are corrosive.

Release Controls: Information on release controls for this unit were unavailable at this time.

History of Releases: There was no file evidence of releases from this sump. Stained pavement was observed in the area around the sumps at the time of the VSI, although it is not known if the staining resulted from past sump overflows or ferric chloride operations.

4.43.2 Conclusions

Additional information on the construction materials and integrity of this sump, as well as the chemical characteristics of wastes needs to be obtained to determine if release potentials to environmental media exist.

4.44 WASTEWATER TREATMENT SYSTEM SUMP

4.44.1 Information Summary

Unit Description: This sump is located on the northwest end of the facility, adjacent to the wastewater treatment tanks W-1 and W-2 (Unit 4.7) (Figure 4). The sump is constructed of concrete with a metal grate and pump, although its dimensions are unknown at this time. Wastewater from the wastewater treatment tanks W-1 and W-2 (Unit 4.7), and filter press (Unit 4.8) filtrate are routed to this sump prior to discharge to the three stage clarifier (Unit 4.10).(53)

Date of Startup: The sump was constructed in 1985 at the time the wastewater treatment tanks were installed.(53)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: The sump receives treated effluent from Tank W-1 and W-2, which was neutralized and precipitated for metals removal. Although the concentration of metals (copper, iron, chromium, nickel, lead, and zinc) in the wastewater was reduced by precipitation as hydroxides and sulfides, some trace amounts of these metals remain in the treated wastewater discharged into the sump. These metals are also present in the filter press filtrate.

Release Controls: The sump is equipped with a level activated pump to discharge wastewaters into the clarifier. The sump is covered with a metal grate and pump equipment.(53)

History of Releases: There was no file evidence of releases from this sump. No indications of overflow were observed during the VSI.(53)

4.44.2 Conclusions

Soil/Groundwater Release Potential: Based on the sump's overflow controls, there is a low potential for past and ongoing releases to soil and groundwater.

Surface Water Release Potential: Based on the sump's overflow controls, there is a low potential for past and ongoing releases to surface water.

Air Release Potential: There is no potential for past and ongoing air releases from this sump as it is not known to manage volatile wastes.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this sump, there is no past or ongoing potential for the generation of subsurface gas.

4.45 IN-ROAD COLLECTION SUMP

4.45.1 Information Summary

Unit Description: This sump is located in the central portion of the facility underneath the roadway that divides the facility. The sump has two openings on either side of the road that collects yard drainage and wash water from truck washing operations (Unit 4.16). Contents of the sump are routed to Sump 5-A (Unit 4.36), with eventual discharge to the current wastewater treatment system (Unit 4.7).(53) Sump capacity and dimensions are unknown at this time. The sump is covered with a metal grate and pumping equipment.(53)

Date of Startup: This sump was constructed in 1975 or 1976 when the road through the central portion of the facility was constructed.(53)

Date of Closure: This sump is an active unit.(53)

Wastes Managed: Wash water from truck washing operations consist of copper, iron, chromium, and ammonia cations, and chloride and sulfate anions.(9) Yard runoff consists of contaminants picked up from the process areas and could include of variety of metals.

Release Controls: The sump is equipped with a pump to route excess wastewater to Sump 5-A. The sump is covered with a grate and pumping equipment.(53)

History of Releases: There was no file record of releases from this sump. At the time of the VSI, liquids were observed draining to the south opening of the sump.(53)

4.45.2 Conclusions

Soil/Groundwater Release Potential: Based on the sump's overflow controls, there is a low potential for past and ongoing releases to soil and groundwater.

Surface Water Release Potential: Based on the sump's overflow controls, there is a low potential for past and ongoing releases to surface water. -

Air Release Potential: There is no potential for past and ongoing air releases from this sump as it is not known to handle volatile wastes.

Subsurface Gas Release Potential: Based on the inorganic nature of wastes managed in this sump, there is no past or ongoing potential for the generation of subsurface gas.

4.46 SIX VACUUM TRUCKS

4.46.1 Information Summary

Unit Description: SCC owns six vacuum trucks that are kept onsite for spill cleanups and cleaning out sumps. Four of the trucks are licensed for liquid waste hauling.(8) Depending on the type of waste, the truck contents are discharged into the wastewater treatment system, routed back to the processes, or transported offsite to a disposal facility.(9,53) These trucks were not present at the site during the VSI.

Date of Startup: It is unknown when these trucks were placed in service.

Date of Closure: These trucks are active units.

Wastes Managed: Different wastes are cleaned up by these trucks depending on source of the spill or sump location. It is unknown whether the trucks are designated to handle specific waste types.

Release Controls: Other than the normal pumping equipment associated with vacuum trucks, there are no other known release controls for these trucks.

History of Releases: There was no file evidence of releases from these units. These trucks were not present at the site during the VSI.

4.46.2 Conclusions

Soil/Groundwater Release Potential: Typical operation of a vacuum truck is to remove spilled wastes and discharge them at a designated location. Normally no wastes are stored over a period of time in these trucks. Thus, there is a low potential for past and ongoing releases to soil and groundwater.

Surface Water Release Potential: Typical operation of a vacuum truck is to remove spilled wastes and discharge them at a designated location. Normally no wastes are stored over a period of time in these trucks. Thus, there is a low potential for past and ongoing releases to surface water.

Air Release Potential: Typical operation of a vacuum truck is to remove spilled wastes and discharge them at a designated location. Normally no wastes are stored over a period of time in these trucks. Thus, there is a low potential for past and ongoing releases to air.

Subsurface Gas Release Potential: Based on the inorganic wastes managed in these trucks, there is no potential for past and ongoing generation of subsurface gas.

4.47 AREA OF CONCERN: COPPER CEMENT DRYING PONDS

North and west of Pond No. 7 (Unit 4.1) were located an additional five ponds which were used for drying copper cement product in the 1960s, 1970s and 1980s. These below grade ponds were designated 1, 2, 4, 5, and 6. Ponds 1, 5, and 6 were constructed of concrete; Ponds 2 and 4 were constructed of a mat material covered with asphalt and a sealant.(1,53) The ponds were all put into service in the 1960s. The use of Ponds 2 and 4 was discontinued in the mid-1970s; the use of Pond 6 was discontinued in 1972 or 1973. Ponds 1 and 5 were used until 1986.(53) Ponds 1 and 5 were eliminated in 1986, and the area was graded and paved. Ponds 2 and 4 were eliminated in 1986, and were reportedly dug out and the area graded, but not paved.(53) These ponds are of concern because of the potential for metal bearing waters and sludges to have seeped from them into soil or groundwater. Soil sampling south of the adjacent Pond No. 7 (Unit 4.1) has shown high concentrations of copper, nickel and zinc in soils.(22) It is unknown whether the metal contamination is the result of the use of Pond No. 7 as a cement drying pond or as a rainwater holding pond.

5.0 CONCLUSIONS

A RCRA facility assessment (RFA) was performed to identify and evaluate solid waste management units (SWMUs) and other areas of concern at the Southern California Chemical Company, Inc. (SCC) plant in Santa Fe Springs, California. The RFA utilizes a records review, data evaluation, and interviews to evaluate the potential for releases of hazardous constituents from SWMUs identified during the assessment. The records review was based on information found in the RCRA and CERCLA files of EPA Region 9; and the files and reports of the California Department of Health Services (DOHS) and the Regional Water Quality Control Board (RWQCB), Los Angeles Region. The visual site inspection was performed on July 15, 1987.

The facility has operated as an inorganic chemical manufacturer at this location since 1958. The company currently manufactures a wide variety of inorganic chemicals, including copper compounds, and proprietary and patented specialty products used in the aerospace and electronics industries. Some of these proprietary products are solder strippers, brighteners, conditioners, and etchants. Copper compounds include copper oxides and copper sulfates. Ferrous and ferric chlorides are also produced at this facility.(10)

The facility applied for RCRA interim status for a container storage area and a wastewater treatment pond in 1980. The pond was closed without an approved closure plan in 1985; the container storage area is still active.

Manufacturing processes and waste management practices have changed quite frequently since SCC has been at this site and as a result, the site layout and design have changed over time. Processing areas and waste management units have commonly been constructed over other inactive process areas and units. In addition to changing locations, waste management units, in particular the sumps, have also undergone changes in sources of wastes, points of discharge, and unit designation.

The facility has a history of poor housekeeping practices. There numerous documented reports of accidental spills from process areas, leaking tanks and

drums, improper disposal practices, discharges to a railroad right of way to the south of the property line, and violations of sanitary sewer and storm sewer discharges. (7,18,22,28,35,37,39,49) At the time of the VSI, there was much evidence of leakage and spillage of product or waste materials. Most of the pavement and equipment in the process areas were discolored. The pavement and containment around some of the waste management units was also stained. (53,54)

There are very few records regarding facility processes, manufacturing areas, and waste management practices during the early years of operation. The designations of sumps, tanks, ponds, and storage areas have changed over time, although these changes have not been well-documented in the files.

A total of 60 SWMUs and one Area of Concern were identified and evaluated at the SCC facility in the course of this assessment. These SWMUs are shown in Figure 4.

The evaluation of each individual SWMU for their release potentials to environmental media was presented in Section 4.0. All of the SWMUs identified in this report manage only inorganic wastes. As a result, there is no potential for the generation of subsurface gas from any of these units. Release potentials from these SWMUs are summarized below.

Copper Cement Drying Pond No. 7 (Unit 4.1)

Results of soil sampling have indicated releases to soil have occurred from the inactive Copper Cement Drying Pond No. 7 (Unit 4.1) thus creating a potential for past releases to groundwater and surface water. If these contaminants remain in the soil, an ongoing release potential to these environmental media exists.

Rainwater Holding Pond No. 3 (Unit 4.2)

Site inspection observations have indicated possible soil releases from the active Rainwater Holding Pond No. 3 (Unit 4.2), thus creating a past and ongoing potential for releases to groundwater and surface water.

Pond No. 1 (Unit 4.4) and Old Chromic-Sulfuric Underground Tank (Unit 4.12)

Soil boring and groundwater monitoring results have identified the inactive Pond No. 1 (Unit 4.4) and the old chromic-sulfuric underground storage tank (Unit 4.12) as potential sources of metals contamination of groundwater. These contaminants still remain in the groundwater.

Former Three Stage Clarifier (Unit 4.9)

The former three stage clarifier had a potential for past releases to soil, groundwater, and surface water due to overflow conditions as the area surrounding the unit was unpaved for most of the unit's active life.

RCRA-Regulated Drum Storage Area (Unit 4.20)

This storage area has a past and ongoing potential for releases to soil, groundwater, surface water, and air due to spillage as only part of the area is paved and curbed.

Drum Storage Areas #1 through 5 (Units 4.21 - 4.25)

These storage areas are inadequately contained, and as a result, have past and ongoing potentials for releases to soil, groundwater, surface water, and air due to spillage.

Units 4.7, 4.8, 4.10, 4.13, 4.15, 4.16, 4.44, 4.45, and 4.46

Based on unit construction, operation, and release controls, the following SWMUs have low potentials for releases to soil, groundwater, surface water, and air: wastewater treatment tanks W-1 and W-2 (Unit 4.7), wastewater treatment system filter press (Unit 4.8), new three stage clarifier (Unit 4.10), spent chromic-sulfuric acid storage tank (Unit 4.13), drum wash area and sump (Unit 4.15), truck wash area (Unit 4.16), wastewater treatment system sump (Unit 4.44), in-road sump (Unit 4.45), and the six vacuum trucks (Unit 4.46).

Units 4.3, 4.5, 4.6, 4.11, 4.14, 4.26, 4.27, 4.28, 4.29, and 4.30

Additional information is needed concerning unit construction, operation, waste management practices, points of discharge, and release controls to adequately evaluate release potentials for Pond No. 8 (Unit 4.3), the two 12,000

gallon holding tanks (Unit 4.5), Pond No. 2 (Unit 4.6), the old wastewater treatment system (Unit 4.11), the disposal pit (Unit 4.14), and the pre-1975 Sumps 2, 3, 4, 6, and 7 (Units 4.26 through 4.30).

Units 4.17, 4.18, and 4.31 through 4.43

The types of wastes managed in some of the units with respect to the presence of hazardous wastes or hazardous constituents were unknown; thus, release potentials could not be evaluated. These units included the ferric chloride area drum washing unit (Unit 4.17) and filter press (Unit 4.18), and the Sumps 1, 2, 3-A, 3-B, 3-C, 4, 5-A, 5-B, 5-C, 6-A, 6-B, 7, 8, 9, 13, 14, and 16 (Units 4.31 through 4.43).

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6.0 SUGGESTIONS FOR FURTHER ACTION

A RCRA facility assessment was performed at the Southern California Chemical Company, Inc. (SCC) facility in Santa Fe Springs, California. During the course of this assessment, 60 SWMUs and one Area of Concern were identified and evaluated for their environmental release potential of hazardous wastes or constituents. Of the units evaluated, no further action is suggested at this time for the following units, based on a lack of problems identified during the VSI:

- Unit 4.5 - Two 12,000 Gallon Holding Tanks (2 Units)
- Unit 4.7 - Wastewater Treatment Tanks W-1 and W-2 (2 Units)
- Unit 4.8 - Wastewater Treatment System Filter Press
- Unit 4.9 - Former Three Stage Clarifier
- Unit 4.10 - New Three Stage Clarifier
- Unit 4.12 - Old Chromic-Sulfuric Underground Storage Tank
- Unit 4.13 - 10,000 Gallon Spent Chrome-Sulfuric Acid Tank (a.k.a. SC-1)
RCRA-Regulated
- Unit 4.14 - Disposal Pit
- Unit 4.15 - Drum Wash Area and Sump (2 Units)
- Unit 4.16 - Truck Wash Area
- Unit 4.44 - Wastewater Treatment System Sump
- Unit 4.45 - In-Road Sump
- Unit 4.46 - Six Vacuum Trucks (6 Units)

In addition, no further action is suggested at this time for Pond No. 1 (Unit 4.4) and the Old Chromic-Sulfuric Underground Tank (Unit 4.12) because of the ongoing effort through soil sampling and groundwater monitoring to identify and remediate contamination in this area.

Suggestions for further action for other SWMUs identified at this facility are as follows:

- The entire site needs to be adequately contained to prevent contaminated rainwater runoff from leaving the site. Containment should include paving of the entire site, curbing around the facility perimeter, and proper operation of rainwater collection sumps. In addition, each individual process area should be adequately contained with chemical resistant pavement and curbing. The operation and maintenance of sumps within these process areas should also be adequately addressed.
- Information should be obtained regarding each of the process areas to determine which, if any, utilize spent materials as feedstock, and to determine exactly what processes occur to reclaim or otherwise manufacture each of the products made by the facility.
- The hazardous waste drum storage areas (Units 4.20 - 4.25) need to be adequately contained with pavement and curbing. These storage areas must also comply with appropriate 40 CFR 270 requirements.
- For all active and inactive sumps (Units 4.31 - 4.43) onsite, the facility should verify structural integrity, sources of wastes, points of discharge, and release controls. Waste characterizations should also be provided to determine if hazardous wastes or hazardous constituents are present.
- Historical information is needed for waste management units prior to the mid-1970's, such as unit operation, sources of waste, points of discharge, and release controls. Information was particularly lacking for the pre-1975 sumps (Units 4.26 - 4.30), Pond No. 8 (Unit 4.3), Pond No. 2 (Unit 4.6), and the old wastewater treatment system (Unit 4.11).
- Soil sampling should be conducted in the vicinity of the Copper Cement Drying Pond No. 7 (Unit 4.1) and other cement drying ponds (Area of Concern) to determine the extent and nature of soil contamination under these ponds. Additional action should be based on the results of this sampling.
- The facility should ensure that adequate freeboard is maintained in Pond No. 3 (Unit 4.2) and that overflow controls are operated adequately in this unit to prevent any overflows.

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54. Levy, J., EPA. 7/15/87. Southern California Chemical Company, VSI Trip Report.

Appendix A

VSI SUMMARY TRIP REPORT AND PHOTOGRAPHS

SUMMARY TRIP REPORT

A visual site inspection (VSI) was performed at the Southern California Chemical Company (SCC) facility in Santa Fe Springs, California, on July 15, 1987. The weather was sunny and dry with temperatures in the 90's. Winds were mild. Janice Wenning and Jill Kiernan of the A.T. Kearney Team, inspected the facility and conducted personal interviews with Tere King, Manager of Environmental Affairs for SCC. Jonathan S. Leo and Dan Marmalefsky, attorneys representing SCC were also present at the VSI. Jim Levy, representing EPA, Region 9, Suwan Sonkprasha, representing the California Department of Health Services, and Athar Kahn, representing the California Regional Water Quality Control Board, Los Angeles Region, also participated in the facility site inspection.

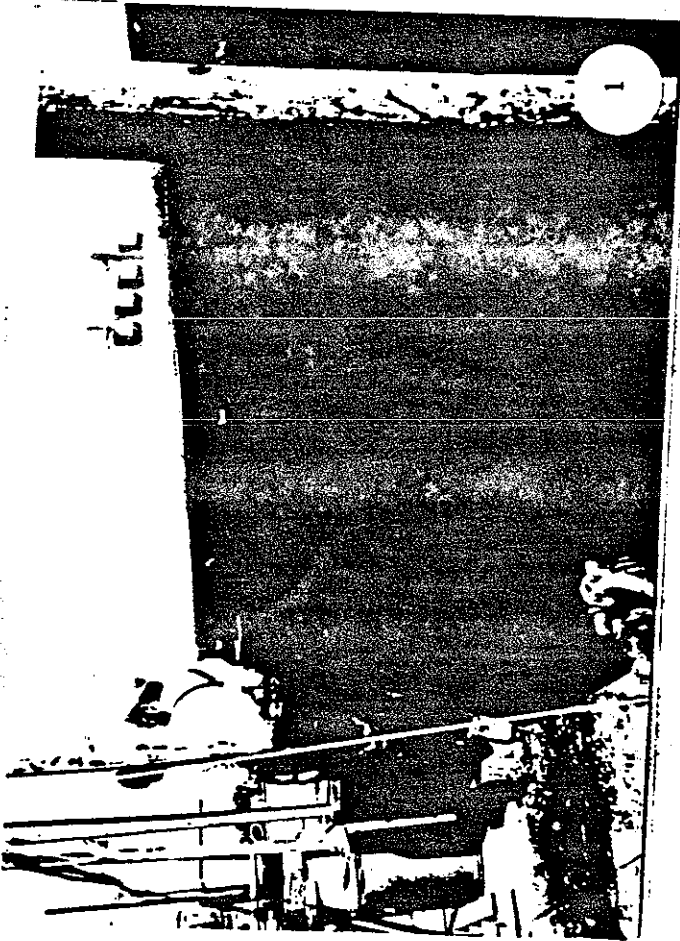
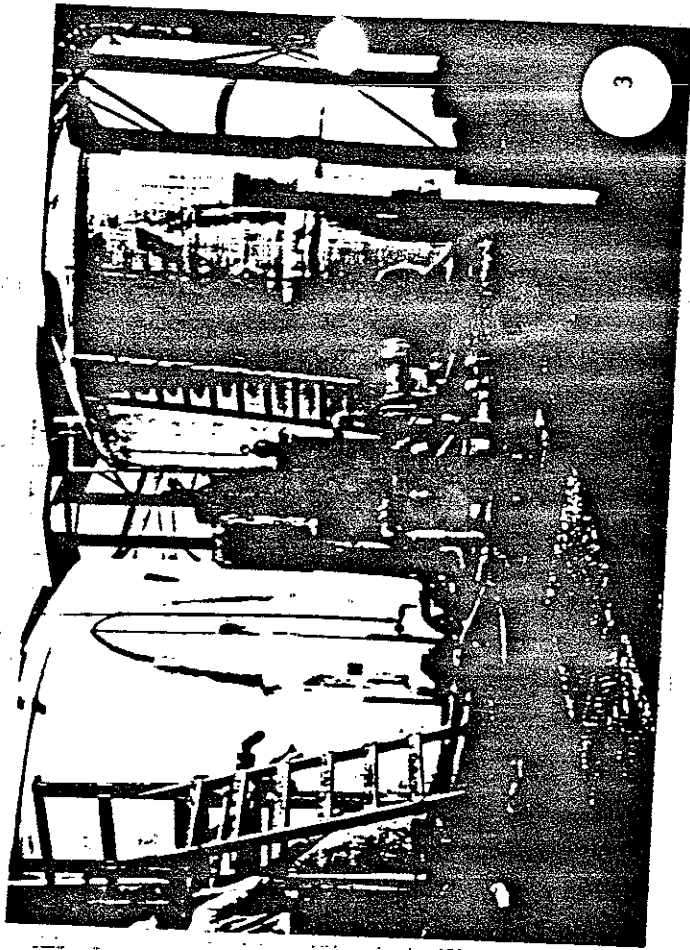
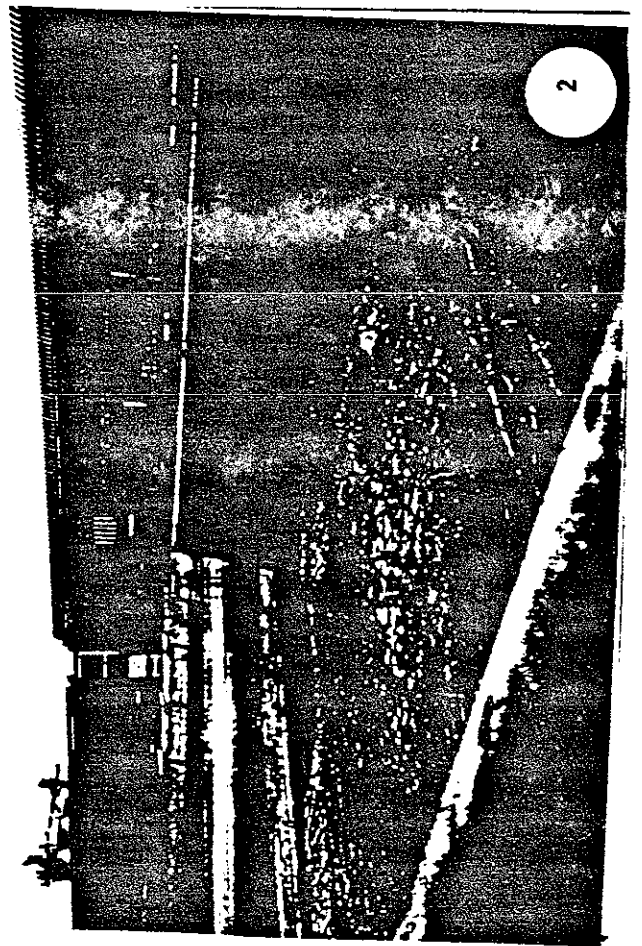
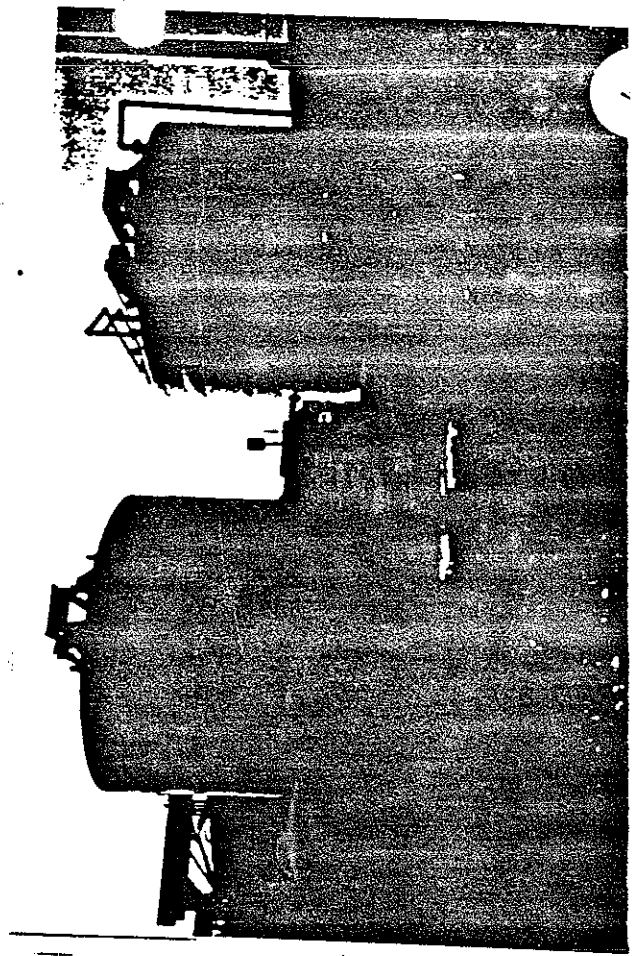
The inspection commenced at approximately 9:00 a.m. in the conference room of the Engineering Building. Agency staff explained the purpose of the VSI to the facility representatives. The A.T. Kearney Team then interviewed the facility representatives regarding the history, operational procedures, and waste management practices of the SCC facility. Facility plot plans from the 1970's were also reviewed at this time. Following the discussion, a site tour of the entire facility was conducted. Permission was required from the facility for each photo taken at the site, and the facility representative took a polaroid shot at the same location. Photos were not allowed in all process areas. All SWMUs identified in the preliminary file review that were still present at the site were inspected. Process areas and product storage areas were also inspected. Five waste drum storage areas were identified during the VSI.

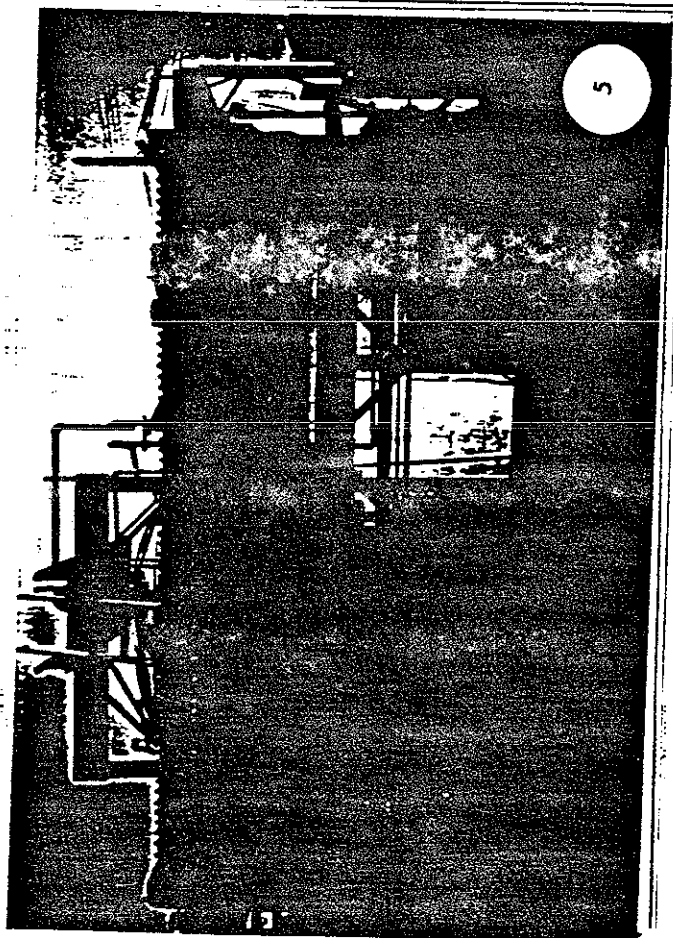
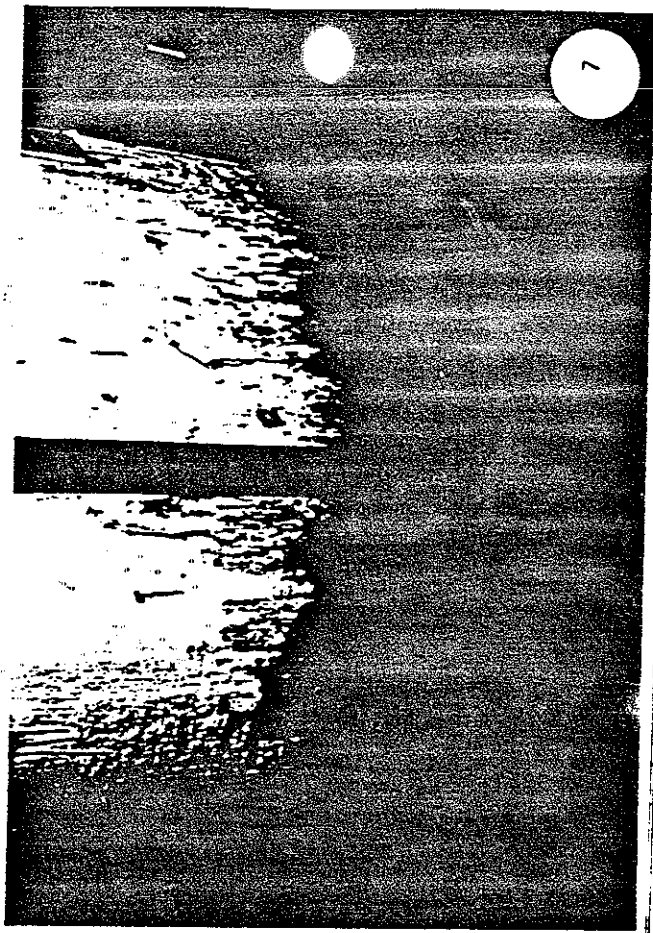
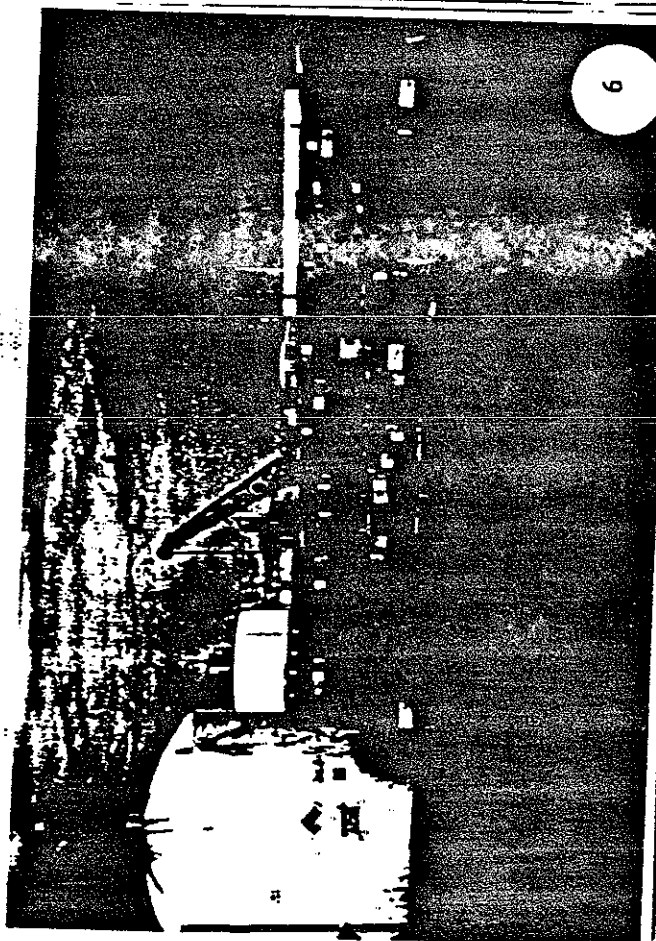
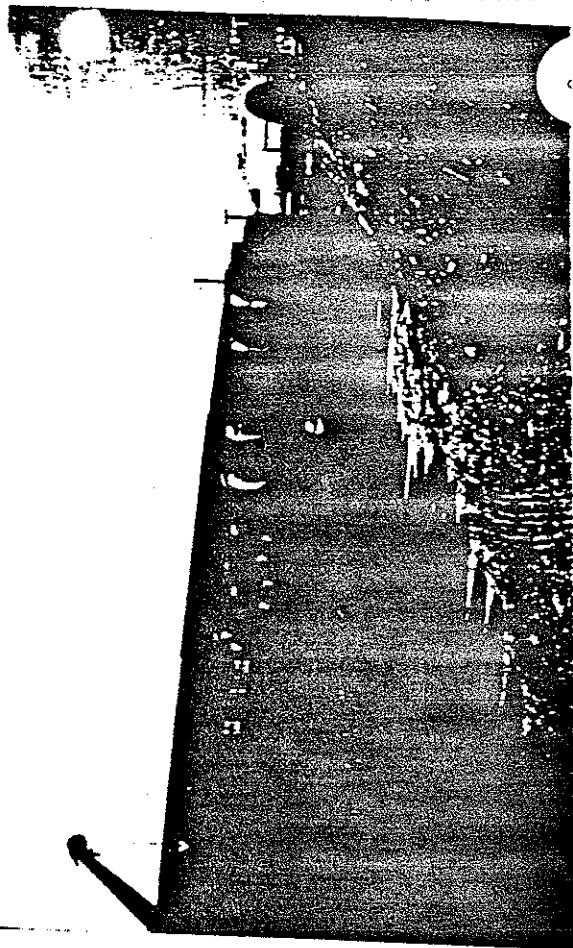
The site tour, which was completed in approximately two hours, was followed by a debriefing meeting. The A.T. Kearney Team asked questions of the facility representatives to confirm or clarify information obtained during the site tour. Agency staff then explained the next stage of the assessment to the facility representatives.

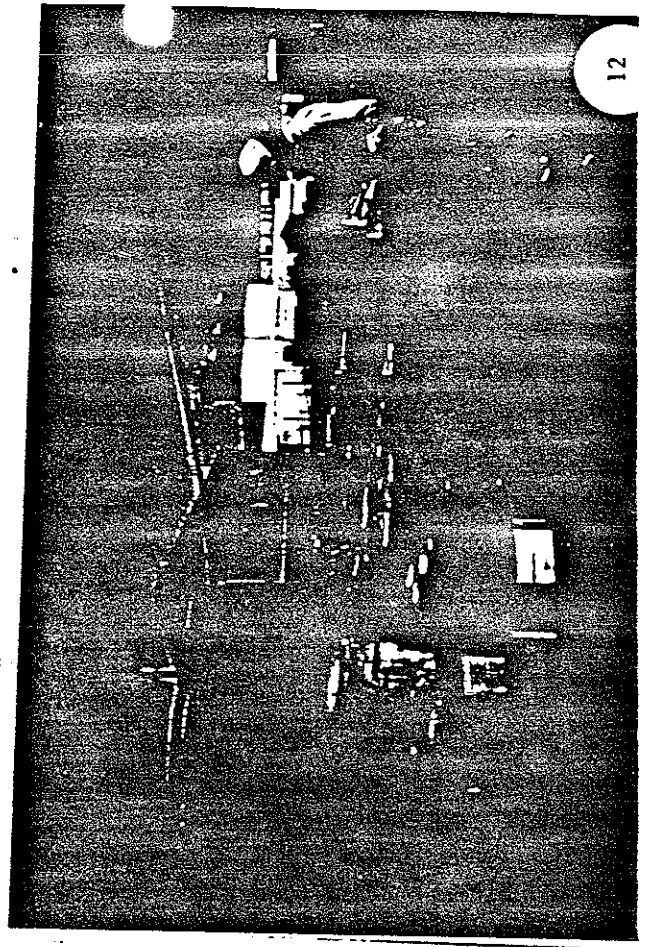
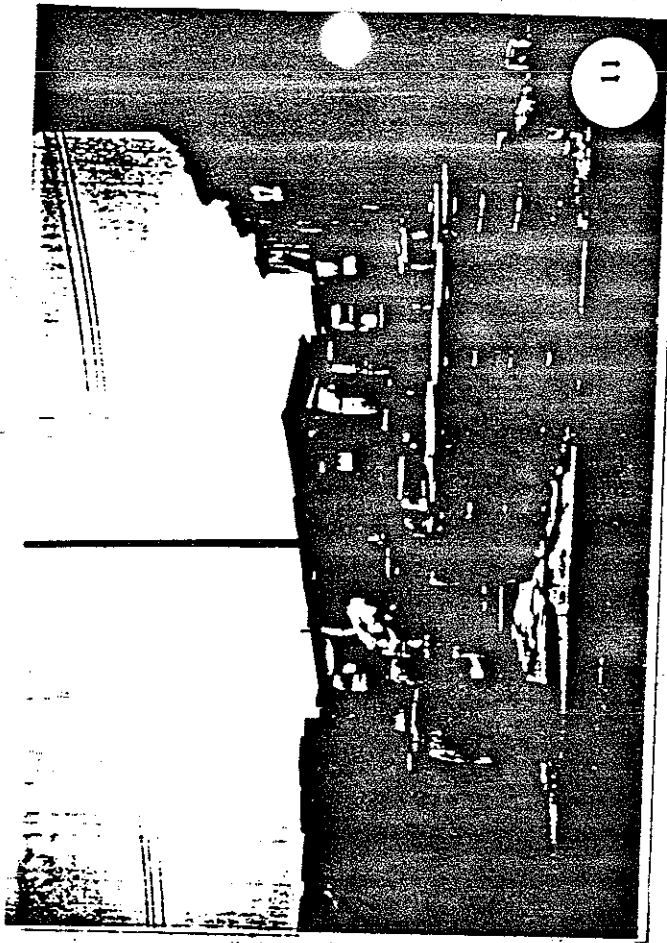
VSI PHOTO LOG
SOUTHERN CALIFORNIA CHEMICAL
7/15/87

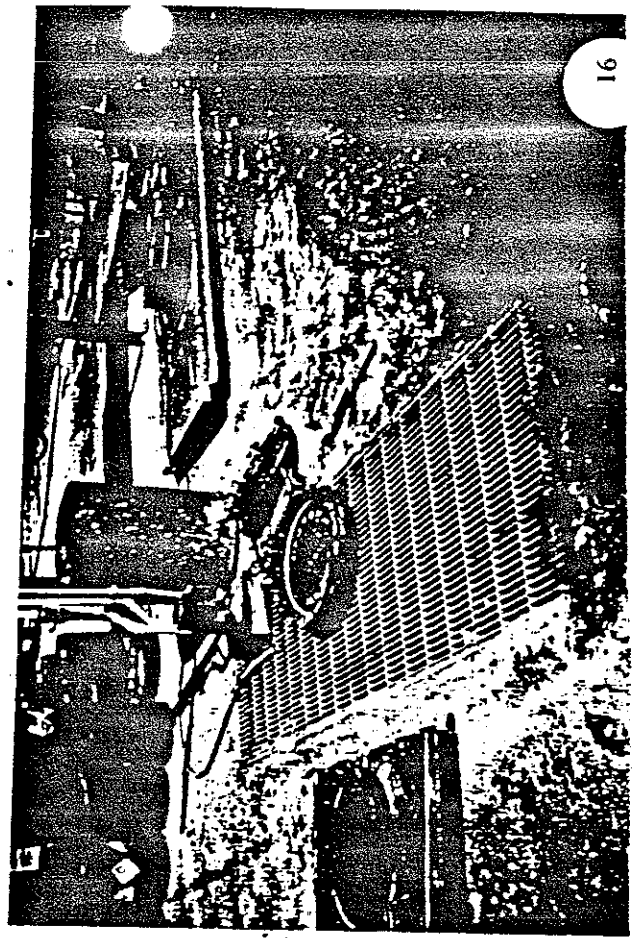
1. Rainwater Holding Pond (Unit 4.2) - east wall.
2. Rainwater Holding Pond (Unit 4.2). Note floating crust on surface.
3. Wastewater Treatment Tanks, W-1 and W-2 (Unit 4.7) (background). Wastewater Treatment System Sump (Unit 4.44) (in front of tanks). New Three Stage Clarifier (Unit 4.10) (metal covers in left foreground).
4. Pond No. 2 (Unit 4.6) containment wall. New Wastewater Treatment Tanks W-3 and W-4 (not on-line yet) within Pond No. 2 (background). Drum Storage Area No. 3 (Unit 4.23) (foreground).
5. Wastewater Treatment System Filter Press (Unit 4.8).
6. Spent Chromic-Sulfuric Storage Tank (Unit 4.13) (left).
7. Spent Chromic-Sulfuric Storage Tank (Unit 4.13). Note leaking outlet pipe and corrosion on tank bottom.
8. RCRA-Regulated Drum Storage Area (Unit 4.20), east side of area. Note absence of pavement and curbs.
9. Drum Storage Area No. 1 (Unit 4.21) - adjacent to lab building. Photo looking southwest.
10. Drum Storage Area No. 2 (Unit 4.22). Photo looking north.
11. Drum Storage Area No. 4 (Unit 4.24). Photo looking northeast.
12. Drum Storage Area No. 5 (Unit 4.25). Photo looking south.
13. Former site of Copper Cement Drying Ponds. Product storage in background. Drum Storage Area No. 5 (Unit 4.25) (left).
14. Former site of Copper Cement Drying Ponds - unpaved area.
15. Drum Wash Area (Unit 4.15).
16. Ferric Chloride Drum Washing Area (Unit 4.17) on right. Sump 9 (Unit 4.41) in center foreground.
17. Ferric Chloride Area Filter Press and Sump 10 (Unit 4.19). Note overflowing sump.
18. Ferric Chloride Area Process Tanks.
19. Sumps 6A and 6B in Copper Oxide Processing Area (Units 4.37 and 4.38).

20. Sump 5 (Unit 4.36) covered with boards (background). In-Road Sump (Unit 4.45) (foreground).
21. Former location of Inactive Copper Leach Area and Sump 8 (Unit 4.40) (foreground right). Drum Storage Area No. 3 (Unit 4.23) in background.
22. Unpaved northeast area of facility.
23. Inactive Sump 1 (Unit 4.31) (dark metal plate in background) and Sump 2 (Unit 4.32) (gravel area in foreground).
24. Former location of Inactive Copper Leach Area.

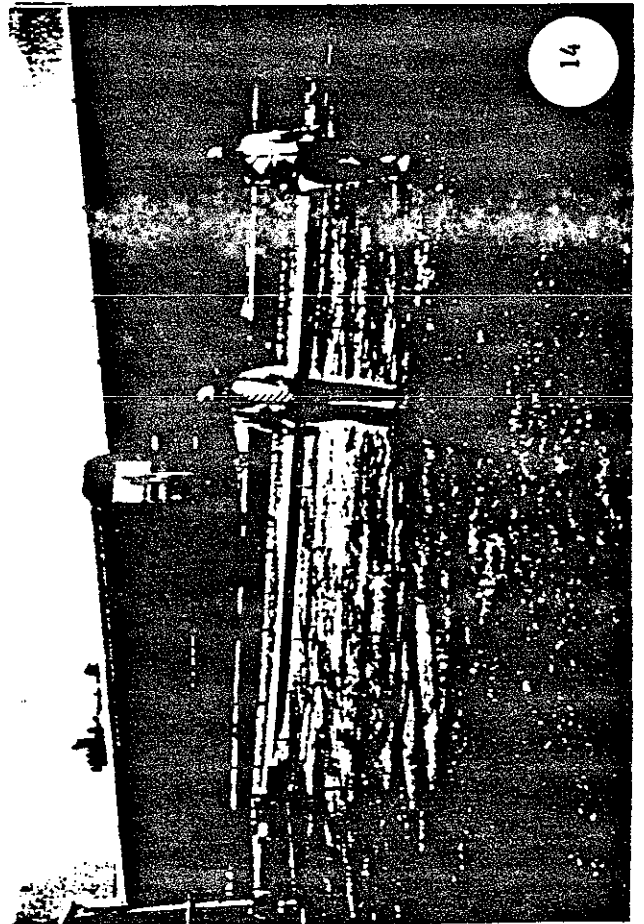




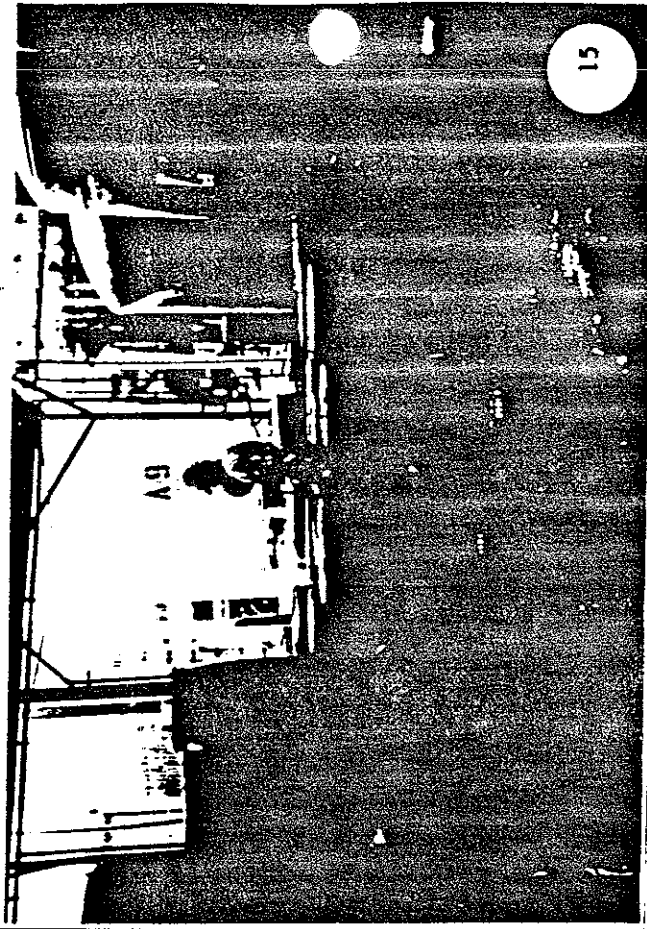




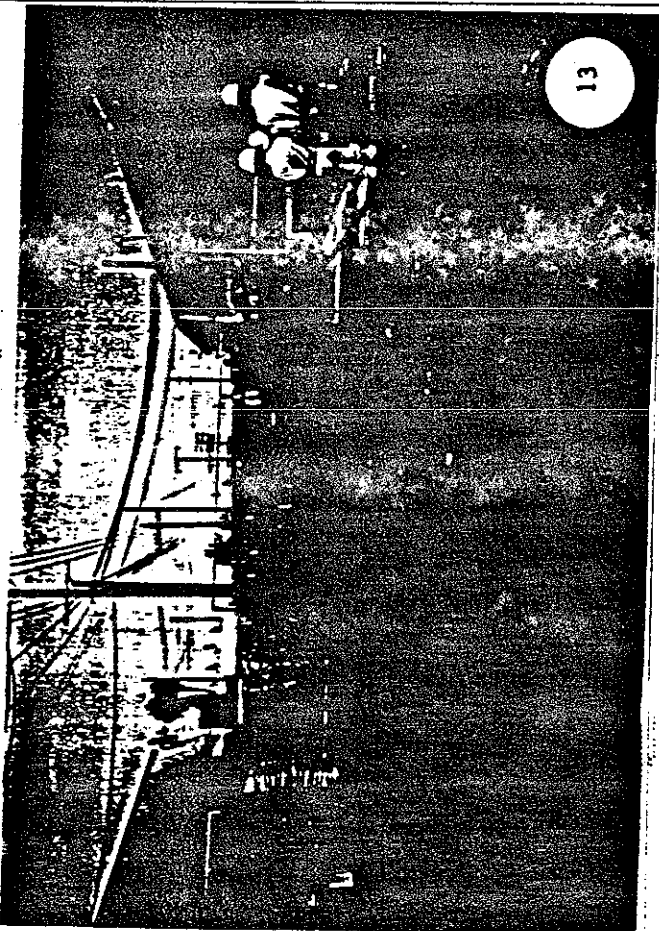
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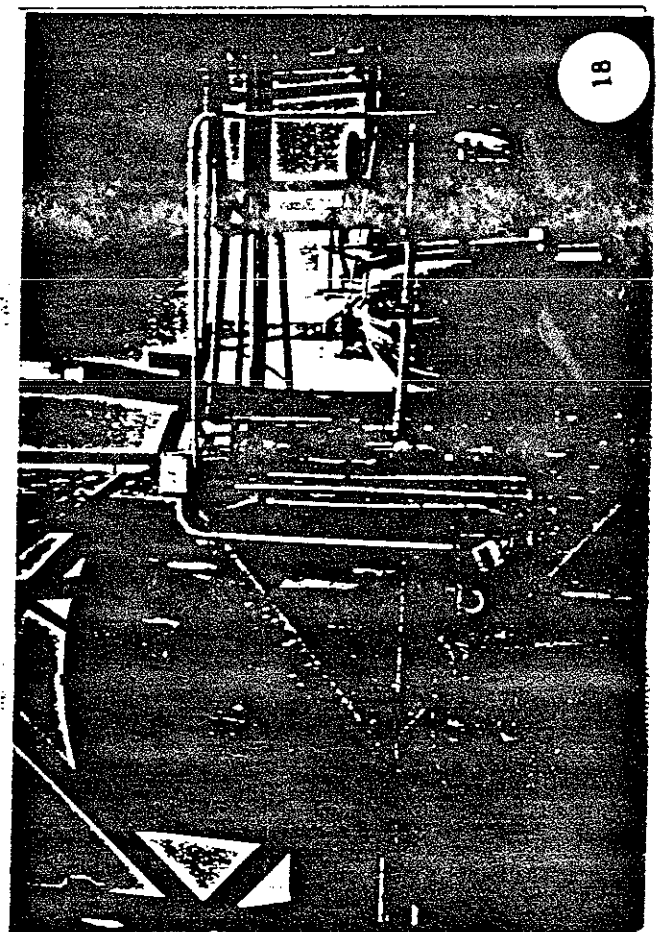
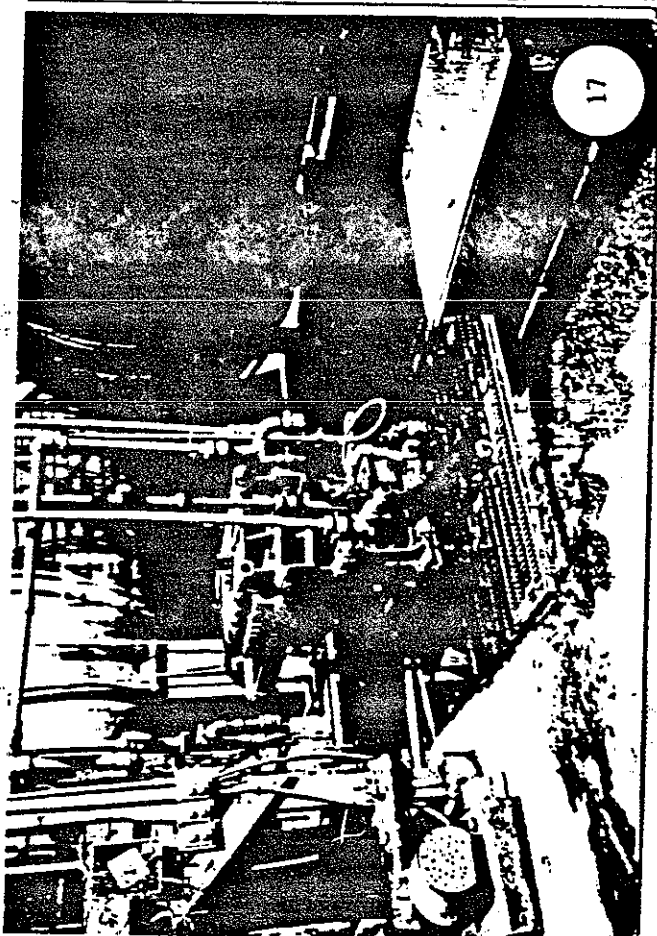
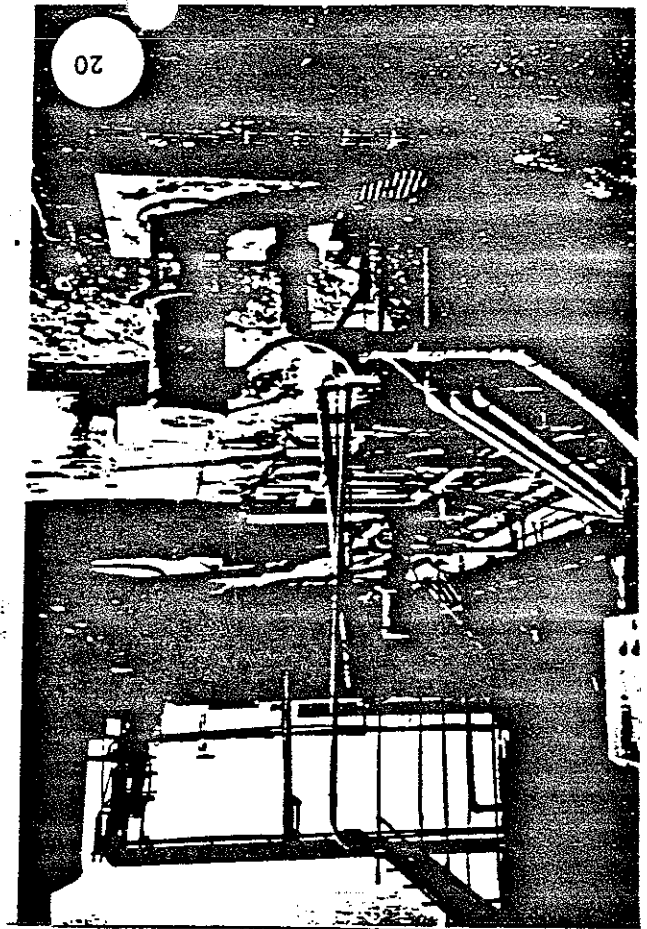
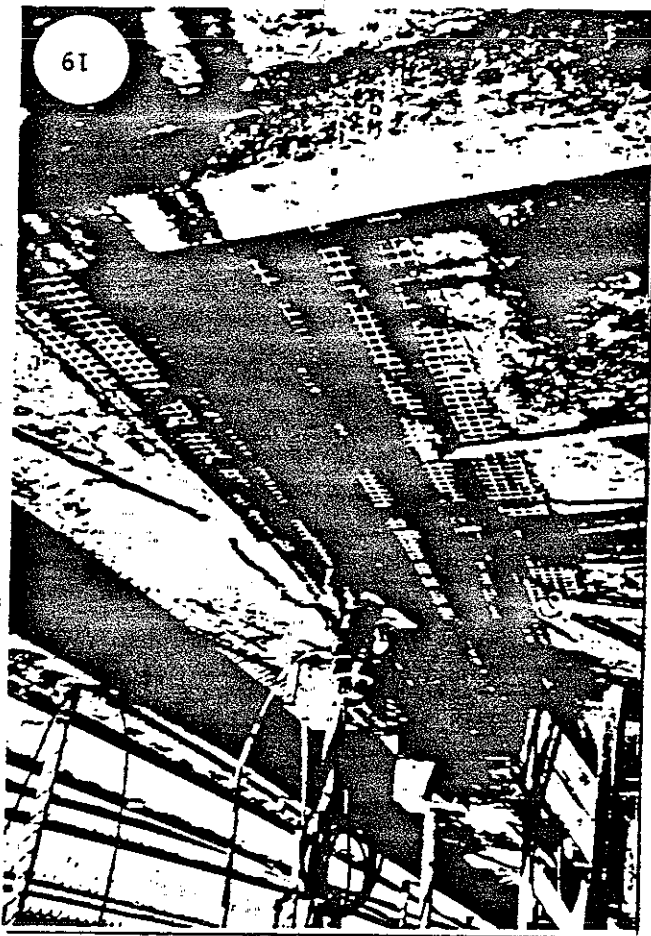
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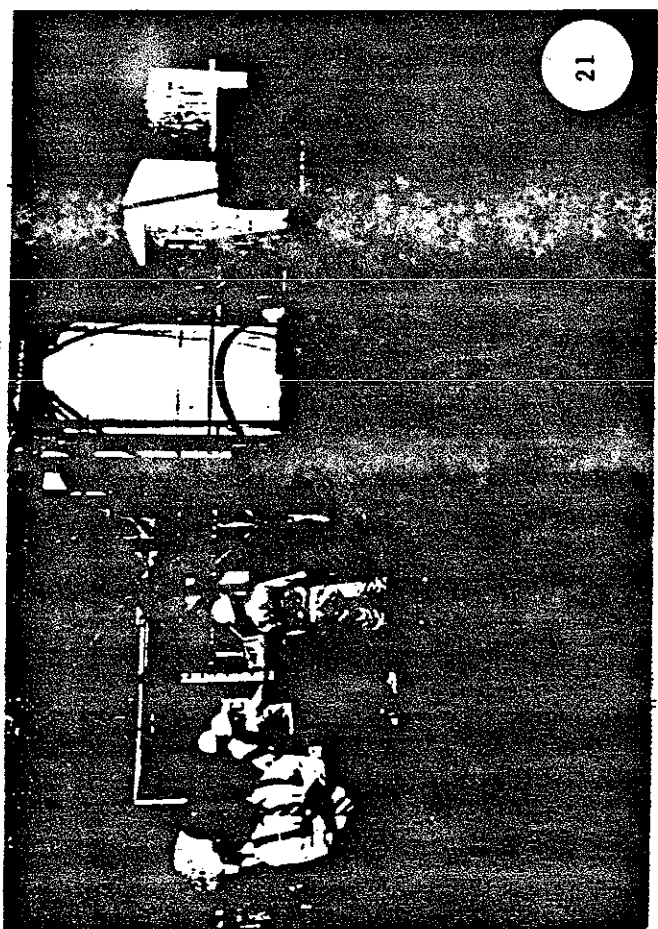
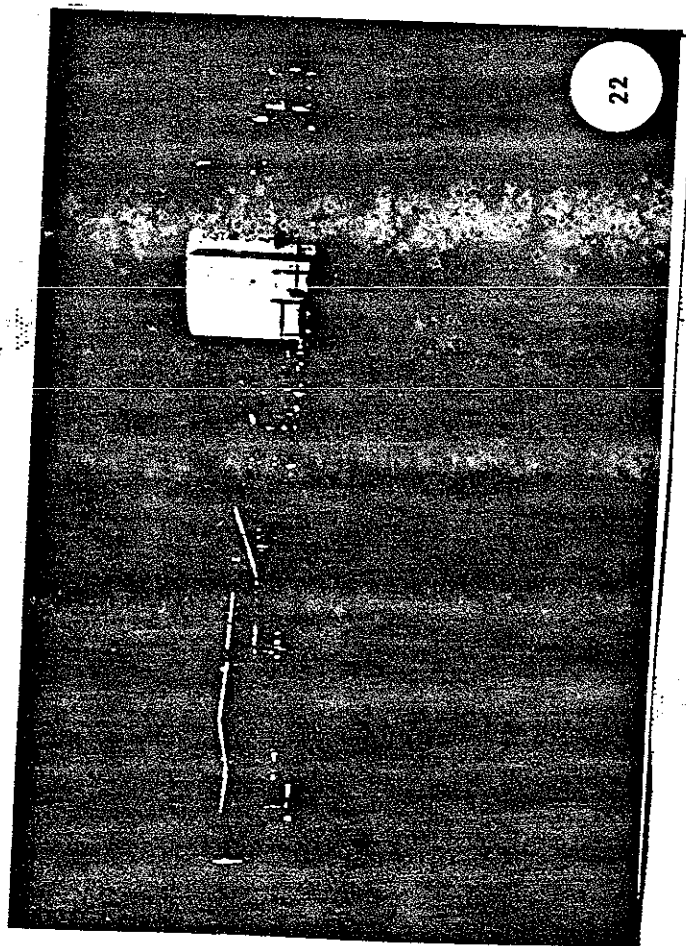
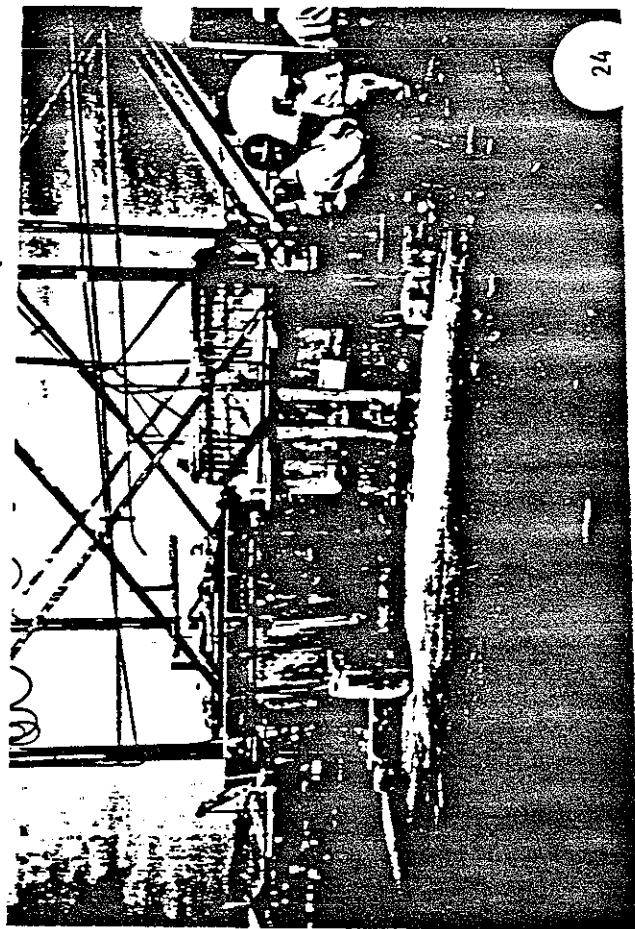


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Appendix B

VSI FIELD NOTES

So Cal Chem

7/15/87

1971 - discharge to sanitary sewer? check on

1958 - in operation since - operated partially on site
foundry & casting operations also on site - early 1940 - 1950's
railroad - prior to that time - SF

1950's - TCE detected in gw

2000, stagnant storage tank - ^{taken} out in 1974. - verify locations
since 1960's

1970's

Product drying ponds - cement copper waste-ponds - 7 ponds
1, 2, 4, 5, 6 No #3 20% elemental - (chemical intermediates)

Pond 5 115,205 gal - 8" rebar concrete

Pond 6 no capacity listed

Storage tanks HCl, ammonia chloride

Pond 1, 5, 6 - concrete - possible 7

4, 2 - mat - asphalt - sealant - discontinued in mid 1970's

6 - 1970-73 discontinued

7 - 1975 " when Pond 3 136,000 gal which was
constructed over pond 7

1 & 5 eliminated in 1986 - graded

2 & 4 " 1986 - dug out & graded

Ponds placed into service early-mid 1960's

Ponds not used for anything else

Copper cement now stored in drums

Copper oxide decant pit - concrete-rebar reinforced

brine - pumped to waste treatment system
every six weeks - cleaned

late
1960's - 1985

cleaned out and filled

most of facility area paved - 2/25/71 for Fuchs 200' x 100' & NE 200'

Feb 12 - 1972 - concrete
Road 1975 - 1976 - concrete
West end - 1977 - concrete

2/6

Waste char - copper oxide, NH_4 , NH_4Cl , $NaOH$, $(Cu)NH_3$, $NH_4_2(CO_3)$, $(NH_4)_2SO_4$
4, 488 gal, 5 1/2" thick - different liners
copper ammonia chloride
pH 12 - 14

Copper precipitation recovery operation - now gone
4 ss tanks

Filter press - for ferric chloride - since 1973 - present
associated sump - lead lined steel - acid brick - concrete
[collected filtrate → pumped out for offsite disposal - 6-8 wks
contain ferric Cl, OH, oxides, ferrous chloride
designated sump 10 - possibly every 6-8 wks]

Wastes from $FeCl_3$ process area - floor drainage - filter out off-
for product clarification

Other sump - collected $FeCl_3$ - Cr_2O_3 clean up wastes
possible lab drain sump -
Sump 9

Solids from filter press - mine pond, Tank 1
→ pumped out by contractor 6-8 wks

Pond 8 - was Zn pond

Discharges from $FeCl_3$ area closed in 1984 - became closed loop system

Other sump (9) - 7 x 15 x 4'
concrete - fiberglass - lead - concrete - steel
still in use - in service ~ 1960's
used to be open trench (concrete w/grate) to lab - closed ~ 1980's
w/ pavement

No 1 Dryer - catalyst recovery - until 1978-1979, ? into service ~ 1960's
Evaporation - catalyst to refinery

Pond 8 - Zn Pond [used prior to 1972, 1973] was possibly from $ZnSO_4$ process
relined ^{renew} in 1974 - poured over existing concrete → Pond 2
WWT pond → 1985 closed
w1 & w2 tanks placed in pond for containment

11/2

Pond 1 - oxidation, neutralization, precipitation
3' deep

used Na_2CO_3 to ppt metals
air sparging & mixing

sludge \rightarrow weekly cleared out \rightarrow filter press which was used for CuSO_4 press.
top decanted \rightarrow pump to sewer - line installed 1972
prior to 1972 to NPLC discharge

FeCl_3 was - and from main collection sump (check #)

Copper Leach Area - printed circuit board wastes - trimmings - etchant
Cu was recovered
plastic - hauled off site
discontinued in 1980 - started mid 1970's - 1971

Pad before 1974 - palladium process? possibly
in Cu leach area

Drum washing area (2) - currently used
one in FeCl_3 area & ^{collected} sump (10) - put into 1970 cleaned out as needed
alkaline etchants and 2 sumps - put in about 72-73 back into FeCl_3
back to ^{Copper} ~~spike~~ m.m.w.f. still in service

Truck wash sump - main collection sump - 1975-1976

Zn SO_4 storage area -

North warehouse - storage & packaging copper oxide - mid 1970's

South warehouse - maintenance

unpaved area - zinc raw material storage

Tank cleanouts stored - 700 cu yd material removed - copper waste:
1975-1976

some soil removed & ^{lim. clay area} used for fill for Ponds 1 & 2
in 1986 - most was concrete boulders - 5-10 yd³ soil.

Sumpsmid
1970's
map

Filter press sump - #10

Sump #9 in $FeCl_3$ area

Sump #8 Cu bath area

#6 Cu oxide area

#7

#16 in solder etch area

Cr-SO₄ (Unit 4.22) - #16

#11 drum wash area

Continuous waste - acid tank area - dates 1976-1977
 fiberglass tanks - pH adjustment - sulfide, apt
 taken out of service = removed in
 now where Pond 2 is where tanks were
 polymer tank also in this area

Pond 2 -

Pond 7 taken out - Pond 3 [Tank 3] constructed over it
 Pond 1 - constructed over Pond 8

Ponds 4 & 5 - not removed until after 1977

Pond 7 24,000 gal Tank 3 = 136,000 gal (1975)

Pond 3 - contaminated RO. collection -

Pond 7 - cement copper of Ni chloride or sulfate drying

Pond 3 - polyurethane liner - concrete

Pond 2 - not use since 1982-1983 - was holding pond for Pond 1
 now bermed containment for WWT units (W-3, W-4) concrete above ground

New Wastewater Treatment Tanks

Tanks FFF - fiberglass reinforced plastic - 3 mil sealant (corrosion barrier)
Sources - Sumps 5a, b, c.
- truck wash area sumps
No 3 pond
copper slide area
piping from Sump 10 → 5 now closed
Sump 3a via 3c → Pond 2 →
Sump 4
draining from copper beach - sump ?

20-25,000 gal/day a
gen

Filter Press - 11 of Pond 2 - online when tanks installed
once a wk solids removed from Tanks → drums → filter press
filtrate → Treatment system
cake - drums → recovery step CuSO_4

Sludge: from CuSO_4 to drum storage & offsite disposal

3 stage clarifier - now gone (1981 out of service, early 70's in service)
above-ground tank concrete - replaced by in-ground clarifier
WW from pond → holding tank - prior to discharge to indust sewer

Look at new clarifier -

2 12000 gallon holding tanks - part of continuous process -
fiberglass tanks
one smaller tank since if the process polymer tank

Old WWTs -

Late 1960's - concrete, subgrade structure - had 3 weirs NPDES discharge
removed early 70's clean out & filled w/ concrete

1.22

SCI - above ground fiberglass - FRP
 source-spent chrome sulfonic etchant ~ pH 2
 accumulation ~ 2 months until treatment → Class I
 metals & neutral

1980 - 1987 (reactor - process discontinued)

sludge → offsite, deep well injection or incineration
 water → W1 & W2 tank

No soil sampling they are aware of
 Soil sampling was done south of that in

RCCA Unit

Placed into service - forever

Painted - sealant bituminous put on 5000 times last year

Wastes - filter cake from CuSO₄ area
 CuSO₄ crystals
 spent chrome, H₂SO₄
 Cu oxides
 cuprous ammonia acetate

Dryer No. 1 - replaced by oven 1 & oven 2 - to drive oxides off Cu &
 filter cake

early 1960s - 1977

wet scrubber - (1973 drawing located)

On-site

Sump 1

gated - filled in

Sump 2 - covered

Cu SO₄ storage area - spent ^{dry-generated offsite} material ^{90% Cu solid} awaiting processing
drums stacked 2 high - liquids on pavement - not bermed
some on pallets

Processed to make ~6% solution

Ponds 2 & 4 not there - leveled

Ponds 1 & 5 paved w/ returned product drums stored

Hydrogen peroxide drums - 4 marked H₂O₂ - stored where Pond 5 is
on pallet



Pond 3 ~ 5' high wall ~ 2' watery sludge in

H₂O₂ also stored near Pond 5 - waste acids & alkalis

Pond 6 - now covered by pilot plant process area

Sump 5 - all covered w/ wood

2m - round sumps - both full of aly water

Desert pit - in process area - concrete berm ~ 2' high 8" thick

^{rich about} Scrubber sump - ^{bermed containment area} recently installed part 6 mo - ^{drainage from scrubbers} next to sump 6 ^{pumped to} sump 5
gated - concrete capacity 100 gal

Fac 3 area - messy

shredded can storage area - source of Fe

Sump 10 - flooded w/ greenish liquid
filter press

acid caps $FeCl_3$ HW drums ~ 3 stored in F area

Sump 7 - w/ liquid in it - concrete, lead fiberglass lined 7' x 3'

Ferric area drum wash - 6' x 3' x 2 1/2' deep
grated deck

HW drum storage area - adjacent lab building $FeCl_3$

Can - w/ trash - crushed drums

3 ^{new one} stage clarifier - presently using

Large filter press ~ 25' long elevated
liquids collected below in pit ~ 1' deep 5' wide to berm

Main sump ^{w/ pump} collects ^{from} 3 stage clarifier, ^{granular feed} filter press, &
wash & 2 tank containment! 6' x 1' - liquids p. vent

WWT 1 & 2 - 4' high containment

Pond 2 - ^{empty} now contain w 3:1 - future waste treatment tanks
6' deep

HW storage - in front of pond 2

SC1 - leaking sludgy oil - contained
in berm 3 1/2' deep x 12' x 15' concrete - lined w/ titanium/concrete coating

Regulated HW ^{storage} area - a mess

Excavated area - still ongoing to be regraded for expansion of P.R.A storage area

Drum wash area - concrete berm - $6' \times 4'$ wide

covered area 60' long wide \times 80' long

drums are unloaded near WWT tanks - sucked out - transferred to drum wash area

GW monitoring quarterly

①

So. Cal. Chem.

2/15/87

Send authorization letter

Tere King, C.P.M. Managers - Env. Affairs
Dan Marmalefsky lawyer Hufstetter, Miller, Carson
* Beardsley -

(rep. Co. in one specific manner)

Jonathan Sebastian Leo - Attorney - Heller, Ehrman,
White, McAuliffe

(rep. Comp. over all)

6-27-92 CSDLAC * NOV for heavy metals in 12/91
to Los Coyotes WRP

1958 SCC in existence - So Pac RR owned
property until 1984
prior to SCC a foundry/casting in late 40's
to early 50's
before that a RR switching station

early 50's - aquifer closed for TCE

use to have underground storage for chromium
etchant - 1974-75 tank was taken out
Cr₂SO₄ - under anhydrous tank

2

Shanghai material
Copper
Inches

copied over
back over
trimming's from IPRs


 Multiple
 applications
 functions

predator 1992
early 1990's

Time
Storage

Zn Prod. & Usage
(gms. row)

Old - 76 Sanibel
Off - 3 Stage cleaner
Box 1, 10

25/11/20

Zinc

Alkaline Ocean Group
Ordovician
Massachusetts

in road
sumps

And means of still
to preserve
2 objects

cupric chloride

6



5

一

—

5.102010
maine

1000 700
Cup 7
Subota
Fe 13
furno

As: Warehouse

Frank

10-11-1964

不

[illegible]

#24 eliminated - no longer Surf-imps. 1980 - quite using for supper ^{1/2} pond #3
 pond #1 most used
 place in 1981
 trunk-wink

Ponds constructed
#1, 5, 6 ~~and 7~~

~~11~~ Concrete (images #7)

4,2 - mod material w/aph of w/ sealant

(quit using in mid 80's)

#4 discord. in 1972, 73

#7 " 1975 when built Pond #3

#5, 11 in 1 file - contains storage area over that - covered.

#5, 11 in 1 file - contains storage area over that - covered.

(3)

Ponds put in operation
all empty at least 2 yrs ago.
removed concrete & some retained

80% elemental Cu = Copper solvent
(interm. element) = a product, not a
waste

ponds not used for anything else
store in drum now - "cement Cu"

Decant pit = never known as pond
used to decant off brine in copper
production - used to re
concrete/rebar reinforced - cleaned every
6 wks - put bk into reactors

decant pumped to treatment unit
operated a late 60's to 1985-86
removed filled w/ concrete
4~~5~~, 488 gal 5 1/2" thick walls, fiberglass lined

* cupric oxide, H₂O, —, NaCl, aquia ammon
sod. ash, ammon. carbonate, NH₄Cl
caustic soda, cupric amm. chloride, ammon. sulf
amine complex of cupric amm. chloride
pH 12-14

(5)

in process of concreting whole plant -
& putting berm around entire site to keep in
contam. runoff

- peric area - fully concreted 1993
- road in - '75, '76
- yard area - in front of office in '80

areas still unpaved

- ponds 4 & 2^{area} - dug up & graded - will put in new pond #4
- area bet. MW 1 & 2

MW - 6A, 6B showing Cu contamination
but no downward migration from track
loading area

#1 dryer - old - used to be for catalyst drying/regeneration
taken out in '78, '79 - don't know when in
service - dated from 60's
driving off H_2O , SO_2 , SO_3 - evap.

Pond #8 - when it was a zinc pond.
prior to early '70s used - in 1974 relined
w/ concrete/reinforced - half in/out ground
increased ht/retained slope - old pond 8 in grd.
then it became #1 used for oxidation, ppt & neutraliz^{pond}

done as batch
treatments
#1 was 3' deep
#1 Closed in 1985 w/ a closure plan
became berm area w/ #1 & #2 waste treatment
tank (Not RCRA units by definition)

(6)

sludge blanket build up in #1 - ~~leached~~^{pumped} off line
to sewer; sludge cleaned out - run thru filter press
line installed in 1970 ~~used~~ for Cu Sulph. process
NOV for Fall 1971 → prior to dischg to CSDLAC - think was NPDES
ferric chl^{waste}, main collect. sump to pond #1
add H₂SO₄ to Pond #1 -

when #8 zinc pond in use - not sure where all
process waste came from - predstd 1973 for
start up - by late 70's shut zinc oper. down

~~leach area~~ Copper trimmings of IPCBs manuf. - etched off
Cu - hard plastics hauled off-site
Cu used in process
started mid 70s, ~~discomb~~, 1981, 82
(1973, 74)

prior to Cu leach - This area may have had
been part of palladium process - not sure
or maybe NiSO₄

2 in road sumps - trucks washed off in road
to sump a - 75' x 6 - when road built - also
collects yd. runoff -

Alk. drum wash - in in same lined alk etch.
(1972, 73?)

(7)

drum wash into copper oxide process

empty drum storage next to wash area

drum wash in FeCl_3 area - started in early '80s
wash collected in sump ~~410~~

vacuum trucks used on-site to clean out
sumps & transp. to storage/process

N. Warehouse

Cu oxychloride screening & packaging
started ^{mids} 1970s & present

Tanks by N Warehouse - storage tanks used to
store Zn sulfate final prod.
now Copper sulf & FeCl_3 final prod.

Zinc Storage area

100 cubic yds material removed from zinc
storage area - zinc from tank cleans. put
here - startup 3 -
some of ~~the soil~~ ^{from this area} moved to fill in
Ponds #2 and #4 in 1976 - thought to be clean - proved
not to be - a dump truck full at the most

Hauled off in 1976 to BKK

(8)

Sumps

MAR - Nov. - mid 70's

Sump	10	-	Felt ₃ filter
Sump	9	-	one we called Sump 10 earlier
Sump	8	-	Copper leach area
"	6	-	Copper oxide area
"	7	=	HCl acid storage
	16	=	Chromium sulf. area
	5	=	corner pond?
	11	=	cover drum ^{AK} wash area
	13	=	Zinc sulf. area
	3a	=	N. Warehouse
	3b	=	" " "
	3c	-	by road
	1	=	No longer
	2	=	No longer
	4	=	S. Warehouse
	14	=	Zinc uff. area
	15	=	doesn't exist
where?	17	=	settling tank drain?

⑨

1976, 77 - continuous wastewater treatment - didn't
work (only in for 1 or 2 yrs)
Acid tank area Settling basin area - taken
out
Acid tank area became Pond 2 20-26 K
gal. -
~~was~~ paved area over - for Pond 2 on top of
ground
went back to batch in late '77 -

Pond 2 taken out same time - built pond 3
on top - for runoff

Settling Basin became pond 1
This use to be pond 8 area of
Zinc pond

12/15/1984 ✓ meets definition of tank
Pond No 3) above grd. tank 136,000 gal.
(on site of No 7 surf. impoundment)

Pond 3 - contaminated runoff to here
before release to treatment
RCRA exempt

4.13

FRP = Fiberglass reinforced plastic tanks

Source of wastewater:

Sump 5a, b, c, in road center collect
sumps (truck wash)~~sump~~ #3 pond

copper oxide area

• Sump 3a, b, → 3c

3c goes to Pond 3

• Sump 4

• Copper leach - Sump 8

The Waste Tanks w-1/w-2 in No. 1

filter cake from filter press goes to drums -
go to recovery step

filtrant goes back into treatment system

filter presses on-line when w-1, w-2 on line

Sludges from Copper Sulfate tanks are dewatered
& hauled off-site

20 - 25 K gpd of wastewater discharged

- 3 stage Clarifier - gone - dated early 90's - above grd.

corroded - taken out in 1984

replaced by a clarifier (in grd) - doesn't
work to well -treated process wastewater prior to dischg. to the
industrial sewer (owned by C&D&C)4.16 from continuous treatment system - one tank
broke - only in operation for 1-2 yrs - only 2 tanks
another smaller tank for polymers
(tried)

4.18 $\frac{3}{4}$ in ground - late 60's - ferric chloride use to be
in this area - east of lab begin

4.23 - above ground - constructed of FRP - thin layer titanium
SC1 contains spent chrome - sulfuric solvent - accumal
until suff. Volume to treat - then ship out
drop out metals
takes ~ 2 mos. to fill tank
in service 1980 - present.
1979 or

Sludge removed:

① Hauled to TX for deepwell injection
Now ② goes to Caswellia

Water pumped to w-1, w-2

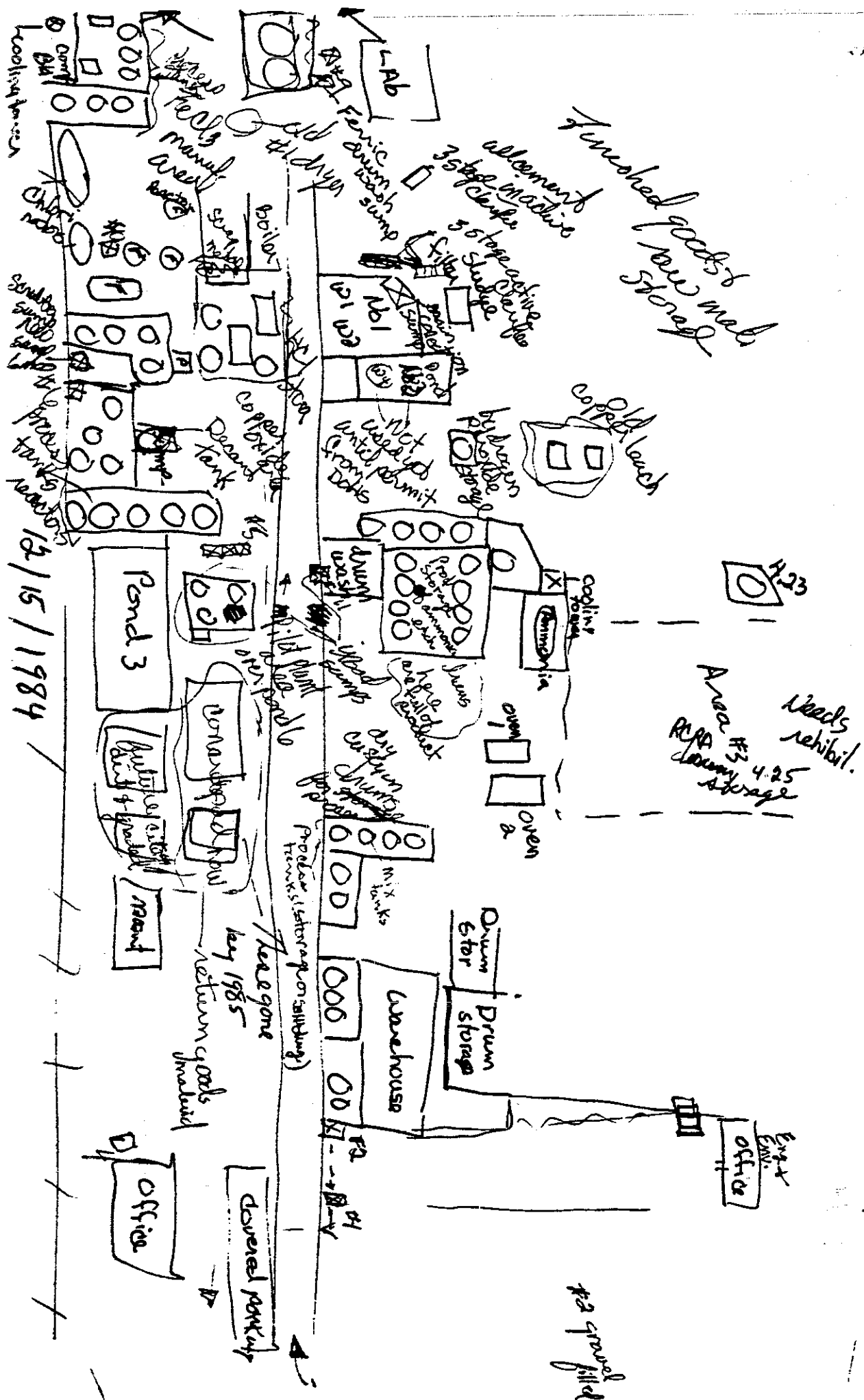
Soil borrowings around mw 9 - to locate old
chromic acid tank.

4.25 - in use for life existing facility * freq. applied
paved area - w/ sealant - but very old -
Need rehab

- Cu Sulfate crystals
- Cu oxide
- Cuprous ammonium acetate

4.26 - gone - replaced ~~for~~ oven - ^{- dryer 1} 172 (called dryer 2)
to dry filter cakes & drive water off oxides

Dryer No 1 - early 60's to 1977
Scrubber next to it - on 1973 drawing } all gone!



USEPA SMU INSPECTION - - - JULY 15, 1987

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