OMEGA CHEMICAL CORPORATION
12504 East Whittier Boulevard
Whittier, California 90602

Project No. 761044
Drum Storage Stabilization

Prepared for

OMEGA CHEMICAL CORPORATION
12504 East Whittier Boulevard
Whittier, California 90602

Prepared by

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February 8, 1995

1.0 Introduction

Omega Chemical Corporation (Omega) is a California corporation with corporate offices in Whittier, California. The Omega facility is located at 12504 East Whittier Boulevard, Whittier, California. Previously the one-acre site was dedicated to chemical recycling and treatment operations. Drums and bulk loads of waste solvents and chemicals from various industrial activities were processed to produce commercial products. Wastes generated from treatment activities, still bottoms, aqueous fractions, and non-recoverable solvents, were shipped off-site for treatment or disposal.

Since December 27, 1991, Omega has been closed for acceptance of off-site hazardous waste. The facility has been in the process of reducing and eliminating the hazardous waste on the site. Omega submitted a draft closure plan in August of 1992, and the Department of Toxic Substances Control approved a modified version of the plan in May of 1993.

1.1 Objective

Omega has tasked IT Corporation (IT) with stabilization of the drum storage areas at its Whittier facility. This operation plan addresses the procedures that will be implemented by IT to stabilize the site. Approximately 50 to 60 drums need to be evaluated for potential overpacking and/or Hazcating. During the February 7, 1995 job walk, no bulging drums were observed. Based on information obtained from Omega, all wastes are believed to be either D001 or F002 Waste Codes. Site stabilization operations are anticipated to take 3 working days commencing on February 9, 1995.

1.2 Site Description

The facility operated by Omega is located at 12504 East Whittier Boulevard, Whittier, California, 90602. The size of the site is approximately one acre, 200 feet in length and 220 feet in width. Adjacent properties are Cal Air Company to the north (air conditioning and mechanical contractor), New England Lead Company to the west (lead equipment manufacturer), and Skateland to the south (an inside roller skating rink). There are no buried utilities on the site. There are several above ground tanks. There are no underground tanks at the site. All areas not occupied with buildings are cemented. All access to the site is controlled by gates on the Whittier Boulevard boundary. Fences surround the entire site with no gate access except at the Whittier Boulevard location. There are two buildings located on the site, a warehouse building, 150 feet by 160 feet, and an administrative building 80 by 30 feet. The facility is located in an area which is zoned heavy industrial M-1 by the city of Whittier.

The site has been recycling and treating various forms of industrial and commercial types of chemicals since the mid-1960s. The facility was permitted under RCRA as an interim status permit in 1980 to receive various types of hazardous waste for treatment. Omega received and processed both non-hazardous and hazardous materials as classified by RCRA and California state codes. During the early years of Omega's operation, the major type of processing was halogenated industrial solvents and refrigerants. Since 1975 waste generated by the processing and recycling of chemicals was sent to Class I landfill facilities or to other permitted treatment facilities.

The recycling and treatment facility had been operating for approximately twenty years when Omega co: creted the entire site. Leaks and sp. : of various wastes have occurred at the facility, resulting in documented contamination of soil and groundwater media. Existing data indicate that the soil and groundwater have been contaminated with organic materials, including petroleum hydrocarbons and chlorinated solvents.

The waste categories are assumed to constitute the waste inventory:

- Flammable and ignitable recyclable wastes
- Halogenated recyclable wastes
- Supplementary fuel wastes
- Non-recyclable aqueous wastes
- Non-recyclable halogenated wastes
- Non-recyclable solid wastes

Waste management units located at the facility include drum storage areas, storage tanks, distillation units, thin film evaporation units and a liquid-liquid separator. The two drum storage areas contain 3,133 drums (55-gallon) storing hazardous waste. The drums presently contain some 172,315 gallons of hazardous waste. The drum storage areas consist of concrete pads, one 180 feet by 100 feet and the other 50 feet by 200 feet. Both pads are surrounded by diked berms as well as controlled slopes to contain spills. Two 8-inch berms allow forklift access into the storage area. The maximum storage capacity for these two units is 3,000 drums. The 25,000 gallon storage tank consists of five 5,000 gallon tanks identified as T-1 to T-5. The tank is presently storing 25,000 gallons of hazardous waste.

The tanks are sitting on a concrete pad for secondary containment and surrounded by walls. Five distillation columns, identified as P-1, P-2, P-3, P-4, and P-7, are storing no hazardous waste. Three thin film evaporation units and one liquid-liquid separator unit are storing no hazardous waste.

2.0 Personal Protective Equipment

The personal protective equipment (PPE) has been selected according to the site characterization and analysis, job tasks, site hazards, intended use, and duration of potential employee exposure. The levels of protection are outlined as follows: Specific levels of protection will be changed when site conditions change. They can either be increased to the next higher level or decreased to the next lower level. The decision to change levels of protection will be made by the site supervisor with input from the project manager and the health and safety manager.

The levels of protection will be based on the following table which is also located in the HASP.

TABLE 2-1

PPE SELECTION MATRIX

Level of Protection	Contaminants	Operations
B	Halogenated and Non-Halogenated Solvents Lead & MEK	Sampling Drum handling Drum inventory Drum overpacking
C	Halogenated and Non-Halogenated Solvents	HAZCAT operations
D	None	Drum storage housekeeping

Level C consists of:

Poly-coated Tyvek
Latex boot covers
Nitrile gloves (2 pair/inner and outer)
Full face APR with organic vapor/acid gas/HEPA cartridges

Level B Consists of:

Positive pressure supplied air respirator
- Heavy PVC suit
- PVC boots
- PVC boot covers
- PVC outer gloves
- Nitrile inner gloves

2.1 Air Monitoring

Air monitoring will be conducted whenever there is a reason to suspect the airborne concentration of any hazardous material exceeds one half of the OSHA Permissible Exposure Limit or the ACGIH Threshold Limit Value. Copies of monitoring records must be submitted to the safety office. The following table indicates the site specific air monitoring requirements:

TABLE 2-2

SITE SPECIFIC MONITORING REQUIREMENTS

Operation	Contaminant	Instrument	Frequency	Analysis Method
Drum handling Drum overpacking	Halogenated and Non-Halogenated Solvents Cyanide & H_2S	PID or FID LEL/O_2 H_2S Meter Draeger	Continuous	None
Sampling	Halogenated and Non-Halogenated Solvents Cyanide & H_2S	PID or FID LEL/O_2 H_2S Meter Draeger	Continuous	None
HAZCAT	Halogenated and Non-Halogenated Solvents Cyanide & H_2S	PID or FID LEL/O_2 H_2S Meter Draeger	Every 15 minutes	None
Housekeeping	None	PID or FID	Every 30 minutes	None

2.2 Personal Sampling

After site mitigation activities have begun, hign-risk workers (i.e., those who are closest to the source of contaminant generation) will be selectively monitored as indicated by the Health and Safety Coordinator. Personal monitoring samples will be collected in the breathing zone and if workers are wearing respiratory protective equipment, outside the face piece. Those employees working closest to the source have the highest likelihood of being exposed to concentrations that potentially could exceed established exposure limits. Representative sampling of worst-case conditions (i.e., those employees with the greatest risk of exposure) is generally acceptable. However, the sampling strategy may change if site activities change or if exposure potential increases.

3.0 Existing Site Contaminants

Existing data indicate that the soil and groundwater have been contaminated with organic materials, including petroleum hydrocarbons and chlorinated solvents.

The waste categories are assumed to constitute the waste inventory:

- Flammable and ignitable recyclable wastes
- Halogenated recyclable wastes
- Supplementary fuel wastes
- Non-recyclable aqueous wastes
- Non-recyclable halogenated wastes
- Non-recyclable solid wastes

Waste management units located at the facility include drum storage areas, storage tanks, distillation units, thin film evaporation units and a liquid-liquid separator. The two drum storage areas contain 3,133 drums (55-gallon) storing hazardous waste. The drums presently contain some 172,315 gallons of hazardous waste. The drum storage areas consist of concrete pads, one 180 feet by 100 feet and the other 50 feet by 200 feet. Both pads are surrounded by diked berms as well as controlled slopes to contain spills. Two 8-inch berms allow forklift access into the storage area. The maximum storage capacity for these two units is 3,000 drums. The 25,000 gallon storage tank consists of five 5,000 gallon tanks identified as T-1 to T-5. The tank is presently storing 25,000 gallons of hazardous waste.

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Many of the drums located at the site are in various states of deterioration. Drum pallets have broken and show evidence of possible contamination. The purpose of this workplan is to establish the procedure that will be utilized to stabilize the site.

4.0 Hazard Categorization Testing

Hazard Categorization Testing (Hazcat) will be executed on site to determine the general hazard category of the material being handled. The objectives of the Hazcat will be to determine waste streams with compatible characteristics for potential bulking operations later and to determine appropriate packaging material to be used during site stabilization procedures. Where feasible, sample dip tubes will be utilized, if multiple phase product exists.

4.1 Hazcat Testing

Testing will be done to determine whether the sample exhibits the characteristics of any of the following:

- Air reactive
- Water solubility
- pH
- Peroxide
- Cyanide
- Halogen
- Water reactive
- Density
- Hexane solubility
- Flammability
- Sulfide
- Oxidizer

Hazcat testing procedures, and associated QC measures, used on this project to determine the above listed characteristics are presented in the following subsections.

4.1.1 Air Reactive

Air reactivity will be evident during sample collection, if when exposed to air the drum contents undergo a reaction (production of bubbles and/or heat). If the sample is air reactive further testing will be discontinued.

4.1.2 Water Reactive

Water solubility will be determined by placing a small aliquot of sample (ml of liquid or lg of a solid) into a culture tube containing 1 ml of deionized water. The sample will then be thoroughly mixed and observed as to whether the sample is soluble in water, partially soluble in water of insoluble in water. This test and subsequent test will only be performed if the sample is determined not to be air or water reactive.

4.1.3 Water Solubility

Water solubility will be determined by placing a small aliquot of sample (1 ml of liquid or lg of a solid) into a culture tube containing 1 ml of deionized water. The sample will then be thoroughly mixed and observed as to whether the sample is soluble in water, partially soluble in water or insoluble in water. This test and subsequent test will only be performed if the sample is determined not to be air or water reactive.

4.1.4 Density

Density of the sample will be determined during the water solubility tests. If the sample sink it is denser than water (or >1), and if the sample floats then it is less dense than water (or <1).

4.1.5 pH

Testing for pH is done by dipping pH test paper into the aqueous phase of the water solubility test culture tube and comparing the test strip to the color chart provide on the package.

4.1.6 Hexane Solubility

Hexane solubility will be determined in the same manner described for the water solubility test, except instead of water, 1 ml of hexane is placed in a culture tube. Observation of the mixture will determine if the sample is soluble or insoluble in hexane.

4.1.7 Peroxide

Peroxide presence is determined using peroxide test strips and can be done simultaneously with the hexane solubility test as follows: Immerse a peroxide test strip in the hexane extract for a second, add a drop of distilled water to the reaction zone on the strip and compare the reaction zone with the color scale on the test strip container.

4.1.8 Flammability of Head Space Vapors/Combustibility

Flammability of a sample will be determined using a combustible gas meter. The instrument prove is placed into the head space area, if the indicator needle moves then the test is positive for flammability.

If the head space vapors do not indicate that the material is flammable then the material will be tested for combustibility. For a liquid, if the material can be ignited with a flame and continues to burn, then it is a combustible liquid. A positive test for a solid is a rapid, sustained burning of the material after being ignited with a flame.

4.1.9 Cyanide

The presence of cyanide is determined by adjusting the pH of an aqueous solution of the sample to 12 or higher by adding a 1N Sodium Hydroxide solution. Then approximately 0.5 ml of the Rhodamine Dye Solution (0.02g/100ml Acetone) is added to the pH adjusted sample solution. Next, 1-3 drops of the stock Silver Nitrate solution is added to the sample solution. A change in the sample solution color from yellow to orange indicates that no cyanide is present. No color change indicates the cyanide is present.

4.1.10 Sulfide

Sulfide(s) presence is determined by adjusting the pH of the aqueous sample or aqueous extract to 2 and holding a wetted (w/deionized water) strip of lead acetate paper over the sample. A brown discoloration indicates the presence of sulfides.

4.1.11 Halogen

Halogen presence is determined using the bielstein test which consists of burning a small aliquot of sample on a copper wire and observing the color of the flame. A green flame indicates the presence of a halogenated compound in the sample.

4.1.12 Oxidizer

The presence of an oxidant will be determined by wetting KI starch paper with HCL and applying three drops of the aqueous a sample to the test paper. Dark blue or black discoloration indicates that an oxidizer is present.

4.2 Documentation of Hazcat and Compatibility Testing

Each unknown drum sampled will be thoroughly documented from the time of collection through the hazcat, compatibility and packaging. The Field Chemist will document the Hazcat results using the IT Hazcat form. Results of compatibility testing will be documented and will include, at a minimum, the following information:

- Sample number
- Sample's hazard characteristics as determined by the Hazcating (Flammable, corrosive, etc.)
- Sample type (liquid or solid)
- Waste Stream Designation Number - arbitrary ID given to a group of waster, documented as being compatible, through compatibility testing.

All hazcat and compatibility test results will be given to Omega for review and forwarding to the USEPA and DTSC Region III.

5.0 Field Operations

5.1 Project Supervision

The drum stabilization operation will be supervised by an IT operations supervisor. The supervisor will be responsible for coordination with Omega personnel, and in addition, will oversee all drum stabilization activity and implement the site specific Health and Safety Plan.

An IT field chemist will assist the operations supervisor with the drum stabilization activity. The chemist will provide Hazardous Characterization (Hazcat) of unknown or suspect materials. The chemist will verify that materials are compatible with the overpack drum. Also, the chemist will insure that the overpacked containers are labeled. Hazcat procedures are detailed in Section 4.0 of this plan.

On February 7, 1995, IT's project team toured the Omega site and determined which drums may require repackaging. IT's operation supervisor will visually inspect all drums to verify their integrity. Any drums deemed to be in substandard condition will be overpacked.

5.2 Health and Safety

A site specific Health and Safety Plan (HASP) has been developed for this project. All site activities will be governed by the HASP and IT safe work practices. The HASP includes information on materials that may be encountered at the site and the proper personal protective equipment required. In addition, the plan will include emergency procedures and emergency contacts. The HASP is incorporated into this workplan by references and is attached to this workplan as Appendix A.

5.3 Mobilization

IT will mobilize to the site from IT's Wilmington facility. One operations supervisor, one field chemist, one leadman, and three environmental technicians will be mobilized to the site. Also, one forklift, remote drum handling equipment, PPE, and an equipment truck will be mobilized.

IT will prepare for the drum stabilization operation by establishing a hot zone, contamination reduction zone, and clean zone. A decontamination area will be setup to clean equipment and personnel leaving the contamination area. The work area will be designated by caution tape.

Also, emergency spill containment equipment will be staged near the work area. This equipment will consist of absorbent, shovels, and drums to hold the cleanup material.

5.4 Drum Stabilization

IT will stabilize drums at the site in accordance with instructions provided by Omega, the reconnaissance completed by IT on February 7, 1995, the Department of Toxic Substances Control, and the U.S. Environmental Protection Agency. All potential physically unstable materials will be overpacked or secured per the following general operating procedures. A non-sparking drum bung wrench will be used to gain access to the drums.

5.4.1 Leaking and Damaged Drums

All leaking drums will be overpacked into certified salvage drums provided by Omega. The drum contents will be tested to insure that they are compatible with the overpack material prior to overpacking (see Section 4.0, Hazcat). IT personnel will move the drums to an established overpacking area. The area will be lined with polysheeting, secondary containment, and emergency spill supplies available. The drum to be overpacked will be lifted with a drumsling via the forklift. The overpack will be slid under the elevated drum and the drum will be lowered into the over pack. Any drum visually observed to have questionable integrity will be overpacked. If the drum cannot be safely lifted via the sling, an inverted overpack will be placed over the suspect drum. The overpack will then be manually turned over, thus containing the damaged drum inside.

5.4.2 Unstable Drums

All drums that are resting on broken or unsecured pallets will be moved and restaged in a secure position. Also, all leaning drums will be restacked to provide the necessary isle clearance and insure that the drum stacks are secure. Drums will be positioned such that appropriate ingress and egress is established. Broken or contaminated pallets will be replaced. Pallets indicating visual contamination will be stockpiled on 4 mil polyethylene sheeting in an area to be designated on-site. The potentially contaminated pallets will be covered with a double layer 4 mil polyethylene to prevent exposure to the elements of run off.

5.4.3 Roll-off Containers

Two roll-off containers will be Hazcated to determine the category of materials contained. An inspection of the roll-off containers will be completed to insure the contaminates are not and will not, be released to the environment. In the event actual or potential releases are detected,

5.5 Container Labeling

Repackaged containers will be labeled, based on determinations made during Hazcating operations. A review of any existing drum labels will also be done to verify correlation to the Hazcat testing. Standard yellow 6 inch square hazardous waste labels will be attached to each repackaged drum. As much information as can be accurately determined will be completed on the new label. IT will also assign each repackaged drum a unique number for tracking purposes. This unique number will be transferred to the Hazcat log for tracking and submitted to Omega. This plan does not include the transport of any materials off-site.

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