

Conoco Chemicals Company
A Division of Conoco Inc.
P.O. Box 727
Westlake, Louisiana 70669
(318) 491-5211

CERTIFIED—RETURN
RECEIPT REQUESTED

May 29, 1980

Mr. William C. Huls, Secretary
Department of Natural Resources
P. O. Box 44396
Baton Rouge, Louisiana 70804

Dear Mr. Huls:

Conoco Chemicals operates two organic chemical manufacturing facilities in Westlake, Louisiana; a Vinyl Chloride Monomer Plant and the Lake Charles Chemical Plant. These facilities submitted to the Department of Natural Resources a listing of all waste generated. Upon receiving the list, the Department of Natural Resources requested information concerning assessment of waste which were submitted as below the "degree of care" threshold (reference letter addressed to R. D. Gamblin, November 2, 1979). In accordance with this request, additional information is contained in Section I of the attached information.

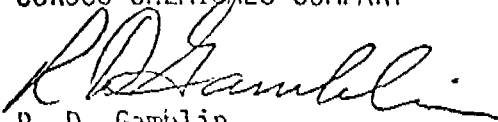
Also included is a revised classification sheet. Investigation by the Lake Charles Vinyl Chloride Monomer Plant and the Lake Charles Chemical Plant yielded information which resulted in reclassification of eight wastes as having a "degree of care" of two. Seven wastes were removed from the "Hazardous Waste" list.

Also included is the completed Hazardous Waste Management Permit for the Lake Charles Chemical Plant waste water treatment facilities. Sections 5.3.3 and 5.3.4 of the Hazardous Rules and Regulations are addressed in Sections II and III of the attached information. A check for \$7,500.00 will be forwarded under separate cover to cover the permitting cost per 5.2.10 of the "Hazardous Waste Management Plan." (See Page 10 for calculation of fee.)

Should you have any questions or need our assistance, please do not hesitate to contact Jack Neeld (318) 491-5437.

Sincerely,

CONOCO CHEMICALS COMPANY


R. D. Gamblin
Manager, Lake Charles Operations

mbr
Enclosures

CCR 000039345

bcc + enc.: JADeb GLF JCS HJH(2)

SECTION I
ADDITIONAL INFORMATION REQUESTED
CONCERNING CLASSIFICATION OF WASTE STREAMS BY
LAKE CHARLES CHEMICAL COMPLEX

CCR 000039346

Waste Number 1-01	B. Hazardous Waste Name WASTE-WATER LCCP				Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category Waste Water	EPA Designation N/A	Physical State 4	Degree of Care 2	7000 Tons/Day	
Waste Number 4-02	B. Hazardous Waste Name MISCELLANEOUS SOLIDS				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category II	EPA Designation N/A	Physical State 9	Degree of Care 2	250 Tons/Year	
Waste Number 14-03	B. Hazardous Waste Name API SEPARATOR SLUDGE				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category -B. 2911	EPA Designation N/A	Physical State 6	Degree of Care 2	350 Tons/Year	
Waste Number 14-04	B. Hazardous Waste Name ETHYLENE OILY WATER SEWER SOLIDS				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category III	EPA Designation N/A	Physical State 6	Degree of Care 2	30 Tons/Year	
Waste Number 15-05	B. Hazardous Waste Name OIL EMULSION SOLIDS				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category III	EPA Designation N/A	Physical State 6	Degree of Care 2	2000 Tons/Year	
Waste Number 514-07	B. Hazardous Waste Name ALCOHOL EMULSION				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category III	EPA Designation N/A	Physical State 2	Degree of Care 2	125.1 Tons/Year	
Waste Number 514-10	B. Hazardous Waste Name ETHYLENE FLARE DRUM LIQUID				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category III	EPA Designation N/A	Physical State 2	Degree of Care 2	10 Tons/Year	
Waste Number 514-13	B. Hazardous Waste Name COPPER CATALYST				C. Confidential Yes ☐ No ☒
D. Hazard Class					E. Amount (tons)
Waste Category III	EPA Designation N/A	Physical State 8	Degree of Care 2	45 Tons/Year	

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Waste Number 14-14	EDC TANK BOTTOMS			Yes ☐ No ☒
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation 40	Physical State 6	Degree of Care 2	50 Tons/Year
Waste Number 14-15	B. Hazardous Waste Name VCM WASTE WATER			C. Confidential Yes ☐ No ☒
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation N/A	Physical State 4	Degree of Care 2	3000 Tons/Day
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐
D. Hazard Class				E Amount (tons)
Waste Category	EPA Designation	Physical State	Degree of Care	
Waste Number	B. Hazardous Waste Name			C. Confidential Yes ☐ No ☐

CCR 000039348

LAKE CHARLES CHEMICAL PLANT WASTE WATER

Waste water is generated from the various production facilities which include Ethylene, Normal Paraffins, Primary Linear Alcohols, Alumina, Methyl Chloride, Ethoxylates and Poly Alphaolefins. The various process waste waters receive primary treatment by separating oils, water and solids with API Separators. The streams are then brought together for biological oxidation in an aerated lagoon system. After bio-treatment, solids are removed by a dissolved air floatation unit before discharge in accordance with NPDES Permit Number LA 0003336.

A "degree of care" of "2" is assigned to the waste water as a Special Waste.

MISCELLANEOUS SOLIDS

Waste classified by Lake Charles Chemical Plant as Miscellaneous Solids has been reclassified as having a "degree of care" of "2".

The Lake Charles Chemical Plant uses a dumpster to temporarily store (until the dumpster becomes full) various solid and semi-solid waste. Strict controls are maintained by Lake Charles Chemical Plant which regulate the materials that may be placed in the dumpster. Lake Charles Chemical Plant maintains a list containing the materials which may be placed in the dumpster. No material may be placed in the dumpster unless (1) it is on the Lake Charles Chemical Plant list for dumpster disposal, (2) the type material is recorded and (3) the quantity of material is recorded. However, because material characteristics are not always consistent, waste disposed of in this dumpster has been reclassified as having a "degree of care" of "2".

API SEPARATOR SLUDGE

Sludge is removed from the solids sump of the Lake Charles Chemical Plant API separators. Solids enter the pond at the north end. The heavier solids settle to the bottom of the pond where they are moved to the solids sump. Sludges of this type are classified as hazardous waste in the "Rules and Regulations, Hazardous Waste Management Plant" (State of Louisiana, page A-4, SIC Code 2911). This sludge has been classified as having a "degree of care" of "2".

ETHYLENE OIL WATER SEWER SOLIDS

The Lake Charles Chemical Plant Ethylene Unit is drained using a sewer system entitled the "Ethylene Oily Water Sewer." This system drains the Quench area, the compressor area, as well as individual casing drains and lube oil consoles.

This material has been assigned an overall hazardous rating of "2" by the Lake Charles Chemical Plant Lab. A classification of "2" for toxicity has been given due to the possibility of varying (pg. A-8, Rules and Regulations) levels of benzene.

A "1" rating has been given for ignitability and a "zero" rating for corrosivity and reactivity.

OIL EMULSION SOLIDS

Waste water flowing into the north end of the holding pond is a composite stream of waste from several areas of the Lake Charles Chemical Plant. As these streams mix, an emulsion forms on top of the holding pond. Key constituents of the currently highly stable emulsion are various finely divided particles, each having a solvent-organic coating. This coating lowers the density of the particle sufficiently to allow flotation, thus forming the emulsion. The emulsion is pumped into a tank where settling and chemical addition cause some of the emulsions to break apart. Water and oil are removed from the tank and the remaining emulsion is classified as waste, "Oil Emulsion Solids", and is contractor disposed of.

This material has been assigned an overall hazardous waste rating of "2" due to the possibility of varying (Pg. A-8, Rules and Regulations) levels of benzene. A rating of "1" has been given for ignitability and "zero" for corrosivity and reactivity.

CLEANING CAUSTIC FOR 201 DRUM

This drum is located at the Lake Charles Chemical Complex Alcohol Plant. Cleaning of the drum was done in 1979 for the first time since 1961. One option for this cleaning was to use caustic washes. However, this was never used. Instead, the drum was solvent washed and steamed. Use of caustic for cleaning is not anticipated for future cleanings; therefore, this item should be removed from the Lake Charles Chemical Complex list of hazardous waste.

ALCOHOL EMULSION

The Lake Charles Chemical Complex Alcohol Plant contains an acid holding pit. Presently the pit is used as a water-alcohol separator. Surface drainage from one-half of the Alcohol Plant drains to the acid holding pit. Also, hydrolysis water remaining from the hydrolysis section of the plant enters the pit. Formation of an alcohol emulsion occurs frequently in this pit. This emulsion is composed of water and the following linear alcohols; ethanol, 1-butanol, 1-hexanol.

This material has been given a hazardous waste rating of "2" due to the presence of these alcohols.

WASTE ETHOXYLATE WATER

The manufacture of Ethoxylate begins with the addition of linear alcohols to a reactor. The alcohol is circulated from the reactor to an exchanger, where it is steam heated, and then back to the reactor.

A specified amount of caustic is then pumped into a metering pot. The caustic is dropped into the reactor and the mixing and heating continues. At this point, nitrogen stripping is begun on the reactor. Stripped material is piped to a knock-out pot and is drummed and disposed of under the title, "Waste Ethoxylate Water." When the stripping is finished, the process is continued to its completion. No further material is stripped to the "Waste Ethoxylate Water" drums.

This material has been assigned an overall hazardous rating of "1". The possible presence of linear alcohols causes this material to be classified as having a 1 rating in ignitability and toxicity. Linear alcohols used in this process are 1-decanol, 1-dodecanol, 1-tetradecanol, 1-hexadecanol, 1-octadecanol, and 1-eicoganol. A rating of "zero" has been given for corrosivity and reactivity. Therefore, because of this rating, the item should be dropped from the "Hazardous Waste" classification.

ALUMINA SLURRY

Alumina Slurry is produced in the final section of the Lake Charles "ALFOL" Alcohol Plant. Aluminum Alkoxide is pumped from a previous section of the plant into the hydrolysis section in which aluminum alkoxide is reacted with water to form a mixture containing alcohols and alumina. This alcohol and alumina mix is fed to a fractionation tower which removes the alcohols. These alcohols must be removed to avoid an unacceptable carbon content in the alumina which is the final product. The bottoms from the tower are pumped to the Alumina Slurry Surge Tank. The alcohol content of the slurry in the surge tank must be very low due to low carbon specifications for the alumina product. If the alcohol content increases above this level, the slurry must be recycled or disposed of as a waste material under the title "Alumina Slurry."

This material has been assigned an overall hazardous rating of "1" by the Lake Charles Chemical Plant Lab. The presence of small amounts of alcohol in this slurry generate characteristics which cause the slurry to be given a rating of "1" for ignitability and toxicity. A rating of "zero" has been assigned for corrosivity and reactivity. Therefore, because of this rating, this item should be dropped from the "Hazardous Waste" classification.

ETHYLENE FLARE DRUM LIQUID

The Ethylene Plant emergency flare line has a knock-out drum which is to prevent liquids from reaching the flare. The drum is emptied once per two years. Totals for the last two drainings were about 40 barrels per draining. A sample was unavailable for analysis. Examination of the process and evaluation of operations information show the following substances may be present in this liquid:

1. Spent Caustic
2. Mirox-Disulfide
3. Light Aromatics
4. Lubricating Oils

Due to the possibility of the presence of these substances and the unavailability of a sample for lab analysis, this substance has been reclassified as having a "degree of care" of "2".

SPENT F1 ALUMINA CATALYST

Alumina Catalyst is used in a diol reactor in the Lake Charles Chemical Complex Alcohol Plant. Long chain alcohols enter the reactor where the catalyst removes secondary alcohol (hydroxyl) groups from the chain. As the catalyst continues this process, it does not maintain its selectivity and begins to dehydrate both secondary and primary carbon hydroxyls. An increase in reactor temperature delays this dehydration of primary carbon hydroxyls; however, eventually the catalyst must be removed. At this time it is steam treated and disposed of under the title "Spent F1 Alumina Catalyst". Linear Alcohols charged to this reactor range from 1-dodecanol (C₁₂) to C₂₂+

This material has been assigned an overall hazardous rating of "1" by the Lake Charles Chemical Plant Lab. The presence of heavy alcohols which will burn when preheated causes this waste to obtain a classification of 1 for ignitability. A rating of "zero" has been assigned for corrosivity, reactivity, and toxicity. Therefore, because of this rating, the item should be dropped from the "Hazardous Waste" classification.

MISCELLANEOUS SOIL CLEAN-UP

The Lake Charles Chemical Plant ships linear alcohol (C₂₀+) by truck to the Conoco Refinery adjacent to the Lake Charles Chemical Complex. The linear alcohols are pumped from the trucks, through hoses, into a storage tank. During these transfer operations, some product may be spilled due to hose ruptures, draining of hoses and other unloading operations. These spills are disposed of under the title "Miscellaneous Soil Clean-Up."

CCR 000039352

This material has been assigned a hazardous rating of "1" by the Lake Charles Chemical Plant laboratory. The presence of large concentrations of linear alcohol (C₂₀+) causes this waste to receive a classification of "1" for toxicity, reactivity, ignitability, and corrosivity.

COPPER CATALYST

Production of ethylene dichloride is an intermediate step in production of vinyl chloride monomer. The Lake Charles Vinyl Chloride Monomer Plant uses an ethylene oxychlorination process based on the vapor phase reaction of ethylene, anhydrous hydrogen chloride, and oxygen in the presence of solid copper catalyst to form ethylene dichloride and water. Oxygen is obtained by the direct use of air as a feed stream and four oxychlorination reactors, with copper catalyst in each, are used in series for ethylene dichloride production. The copper catalyst is replaced regularly. After some regeneration procedures for reactors and catalyst, the catalyst is removed and disposed of under the title "Copper Catalyst".

Copper catalyst has been assigned an overall hazardous rating of "2". Ratings of "2" for toxicity, "1" for corrosivity, and "zero" for ignitability and reactivity have been assigned by the Lake Charles Chemical Complex. Therefore, the "degree of care" rating has been raised to "2" for this material.

EDC (ETHYLENE DICHLORIDE) TANK BOTTOMS

Ethylene dichloride is an intermediate product of the Lake Charles Vinyl Chloride Monomer Plant. Six tanks are used as intermediate storage tanks used in various stages of washing, drying and purification of EDC prior to cracking to prepare vinyl chloride monomer (VCM). Bottoms from these tanks are periodically removed and disposed of under the title, "EDC Tank Bottoms."

This material has been assigned an overall hazardous waste rating of "2" by the Lake Charles Vinyl Chloride Monomer laboratory. A rating of "2" was given for ignitability (flash point over 140°F) and for toxicity (may cause skin irritation). A rating of "1" was given for corrosivity and for reactivity.

LAKE CHARLES VINYL CHLORIDE MONOMER WASTE WATER

Waste water is generated by various areas in the production of vinyl chloride monomer. All plant waste water flows through neutralization pits and is then introduced into an activated sludge unit composed of lagoons and a system of aerators. Solids are removed using a gravity clarifier. Remaining water is discharged in accordance with NPDES Permit Number LA 0003476.

A "degree of care" of "2" is assigned to the waste water as a special waste.

ALUMINUM CATALYST

The Lake Charles Vinyl Chloride Monomer Plant uses alumina catalyst in a "clean-up" reactor. In this process residual vinyl chloride monomer and chlorine, remaining from production of ethylene dichloride, are reacted in the presence of a solid alumina catalyst to form 1, 1, 2 trichloroethane.

The alumina catalyst is replaced regularly. After completion of regeneration procedures for the reactor vessel and the catalyst, the catalyst is removed and disposed of under the title "Aluminum Catalyst."

This material has been assigned an overall hazardous rating of "1" by the Lake Charles Vinyl Chloride Monomer laboratory. A rating of "1" was assigned for toxicity and "zero" for ignitability, corrosivity and reactivity.

HYDROGENATION CATALYST

The Lake Charles Vinyl Chloride Monomer Plant uses a hydrogenation catalyst (palladium) in the preparation of ethylene and ethane which are used in production of vinyl chloride monomer.

Hydrogen chloride and hydrogen are mixed and flow into a reactor containing the hydrogenation catalyst. The acetylene content in the HCl stream is continuously monitored and the HCl and hydrogen streams are metered to maintain the correct ratio of hydrogen to acetylene. As the gases flow through the palladium catalyst bed, the hydrogen reacts with acetylene to produce ethylene and ethane.

Periodically the catalyst is replaced. After some regeneration procedures for the reactor and catalyst, the catalyst is removed and sold for regeneration.

This reclamation process excludes the catalyst from being a waste material; and, therefore, is dropped from the "hazardous Waste" list.

SECTION II

5.3.3 - HAZARDOUS RULES AND REGULATIONS
FOR LAKE CHARLES CHEMICAL COMPLEX
WASTE WATER TREATMENT FACILITIES

CCR 000039355

Hazardous Waste Facilities ... Permit Application

FOR DEPARTMENT USE

Pg. 9

1. DATE RECEIVED

2. NOTIFICATION NO.

GD-514

ORGANIZATIONAL INFORMATION

3. FACILITIES NAME: Conoco Chemicals Company, A Division of Conoco Inc.

4. LOCATION: P. O. Box 727, Westlake, LA 70669

PARISH: Calcasieu

OPERATOR

OWNER (if different)

5. NAME:

R. D. Gamblin

Conoco Inc.

6. ADDRESS:

Same as Location

Same

7. CONTACT:

H. J. Neeld

Same

8. TELEPHONE:

(318) 491-5437

Same

OPERATIONS INFORMATION

9. PURPOSE:

Treat ☒Store ☐Dispose ☐

10. SITE STATUS:

Owned ☒

Leased

Lease Term _____ years.

Property Owner

Optioned

To:

Date

11. OPERATION STATUS:

Existing ☒To Be Modified ☐Proposed ☐Under Const. ☐

12. ENVIRONMENTAL PERMITS: (List)

NPDES-LA 0003336

NPDES-LA 0003476

13. OTHER COMPANY HAZARDOUS WASTE OPERATIONS: Conoco Inc. operates other facilities throughout the United States, most of which generate some wastes. However, the identification or "hazard" level is not known by the Lake Charles Management.

14. OPERATIONS IN OTHER STATES:

Conoco Inc. operates other facilities throughout the United States.

15. ZONING:

Yes ☒No ☐Requested ☐

Zoning

Heavy Industrial

Issued by:

Parish ☒Municipality ☐

16. HAZARDOUS WASTE FACILITIES OR TECHNIQUES INCLUDED:

Thermal Treatment ☐Chemical Treatment ☐Physical Treatment ☒Biological Treatment ☒Injection Well ☐Landfarm ☐Burial ☐Storage ☐Other ☐

(List)

17. ORGANIZATIONAL STRUCTURE: Applicant is: Individual ☐Partnership ☐Corporation ☒

Applicant is controlled directly or indirectly by the following corporation or legal entity: (name and address) Conoco Inc., High Ridge Park, Box 1050, Stamford, Conn. 06904

If company is closely held (less than 10 stockholders) or if one individual controls more than 50% of the stock, list the major owners or stockholders owning more than 10% of the company:

CERTIFICATION

CERTIFICATION:

I have personally examined and am familiar with the information submitted in the attached document, and I hereby certify under penalty of law that this information is true, accurate and complete to the best of my knowledge. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

18.

SIGNATURE: Conoco Chemicals Company, A Division of Conoco Inc.

By:

R. D. Gamblin, District and Area Mgr., Lake Charles Operations

Date Signed

5-29-80

CALCULATION OF FEE

SITE SIZE (ACRES) \$250/ACRE

Vinyl Chloride Monomer = 5 Acres = \$1,250

Lake Charles Chemical Plant = 11 Acres = \$2,750

NUMBER OF FACILITIES - \$500/FACILITY

1. Vinyl Chloride Monomer Facility = \$500
2. Lake Charles Chemical Plant Facility - Lagoon System = \$500
3. Lake Charles Chemical Plant Facility - Holding Pond = \$500

FLAT FEE FOR PROCESS AND PLAN ANALYSIS = \$1,000

FLAT FEE FOR MANAGEMENT ANALYSIS = \$1,000

SUMMARY

ACRES = \$4,000

FACILITIES = \$1,500

PROCESS AND PLAN ANALYSIS = \$1,000

MANAGEMENT ANALYSIS = \$1,000

TOTAL \$7,500

SECTION III.

5.3.4 - HAZARDOUS RULES AND REGULATIONS
FOR LAKE CHARLES CHEMICAL COMPLEX
WASTE WATER TREATMENT FACILITIES

CCR 000039358

5.3.4 3-6) Excluded - Refer to Section 5.3.5 - Hazardous Rules and Regulations

5.3.4 7)a) In accordance with section 4.2.1 of the "Rules and Regulations for Hazardous Waste Management Plan," the industrial waste waters treated at the Lake Charles Chemical Plant and the Lake Charles Vinyl Chloride Monomer Plant have been classified as "Special Waste" with "degrees of care" of two (2). A total of 5.808×10^8 gallons per year is treated by the Lake Charles Chemical Plant. The Lake Charles Vinyl Chloride Plant treats 2.32×10^8 gallons per year.

Biological treatment is used by the Lake Charles Chemical Plant. A total of 22,000 yd³ per year biological solids is produced by this treatment. The Lake Charles Vinyl Chloride Plant uses activated sludge treatment for waste water treatment. A total of 5,600 yd³ per year activated sludge bio-solids is produced during waste water treatment. Both biological sludge and activated sludge bio-solids have been classified as non-hazardous waste. (See Notification Form October 24, 1979.)

- b)i) The Lake Charles Plant facilities have a maximum waste water treatment capacity of 2,000 gallons per minute. The Lake Charles Vinyl Chloride Monomer Plant waste water treatment facilities have a maximum waste water treatment capacity of 1,200 gallons per minute.
- ii) Lake Charles Chemical Plant waste water is generated from the various production facilities which include Ethylene, Normal Paraffins, Primary Linear Alcohols, Alumina, Methyl Chloride, Ethoxylates and Polyalpha-olefins. The waste waters receive primary treatment by separating oils, water and solids with A.P.I. Separators. pH control is maintained by using neutralization pits when needed. The streams are then brought together in a holding pond for further settling time and oil separation (Refer Section IV, Fig. I). The total waste stream is then routed to a system of aerated lagoons for biological oxidation. After bio-treatment, solids are removed by a Dissolved Air Floatation Unit before discharge (Refer Section IV, LCCP-UTIL-380-JCS-1).

Lake Charles Vinyl Chloride Monomer Plant waste water is generated by various areas in the production of vinyl chloride monomer. Plant waste water is combined and receives "pH" control treatment in neutralization pits. Waste water is then introduced into a series of basins for primary settling, equalization, activated sludge treatment and re-aeration (Refer Section IV, Fig. II). Remaining water is then discharged.

- c)i) All wastes generated by the various processes are piped together after primary oil removal, solids settling, and pH adjustment. The wastes are sampled, analyzed, and controlled according to normal operating procedures of the biological systems.

- ii) The Lake Charles Chemical Plant and Lake Charles Vinyl Chloride Monomer Plant waste water treatment facilities have an expected life of fifty (50) years from January 1, 1980.
 - d)i) The Lake Charles Chemical Plant waste water treatment facilities are equipped with a flow integrator and a circular recording chart to measure waste water entry into the lagoon system (Refer Section IV, LCCP-UTIL-380-JCS). The Lake Charles Vinyl Chloride Monomer Plant is equipped with a capacitance probe and strip chart which measures flow out of the system (Refer Section IV, LCCP-UTIL-380-JCS-1). This value may be extrapolated in order to obtain the flow entering the system. Samples are analyzed for key parameters daily to ensure proper operations.
 - ii) Each pond and basin is lined with concrete (Refer Section III, Table I). Soil studies in this area indicate the presence of a shell marker bed with a permeability between 1.7×10^{-4} CM/Sec and 2.0×10^{-7} CM/Sec which extends approximately ten to twenty feet below the surface. Also, a clay area begins below this bed and extends to a depth of at least seventy feet, which was the deepest level sampled. This clay level has a permeability of 7.7×10^{-9} CM/Sec at a depth of sixty-four feet. In conjunction with the natural clays, the use of concrete liners (Refer Section III, Table I) and careful monitoring of the materials entering the basins, these facilities are judged to be adequate for ground water protection.
- Future 1980 plans include installation of two ground water monitoring wells (Refer Section IV, LCCP-UTIL-380-JCS-1). These wells will be located north of the Lake Charles Plant north lagoon, and south of the Lake Charles Vinyl Chloride Monomer facilities. Sampling of these wells will be done quarterly, with complete records to be maintained by the Lake Charles Chemical Complex.
- iii) All waste water treatment facilities are located on land owned by Conoco inside the Lake Charles Chemical Complex. The Lake Charles Vinyl Chloride Monomer Plant treatment facilities are fenced and have secured gates with operations controlling access by key (Refer Section IV, Fig. III). The Lake Charles Chemical Plant treatment facilities are located inside the fenced Lake Charles Chemical Plant. The Lake Charles Chemical Plant has gates with secure locking devices at each entry point and a gatehouse for guards at the main entrance.
 - iv) No systems are contemplated for monitoring water or air pollution affecting the areas outside the site. It is felt that no discernible pollution exists as a result of these facilities.
 - e)i) Both the Lake Charles Vinyl Chloride Monomer Plant and the Lake Charles Chemical Plant operate 24 hours per day and seven days per week.

CCR 000039360

- ii) All waste treatment facilities are located in the Lake Charles Chemical Complex and are shielded from adjoining land not owned by Conoco by fencing on property owned by Conoco Chemicals. Also, public property adjoining Conoco owned land is separated by fencing to prohibit public entrance.

The Lake Charles Vinyl Chloride Monomer Plant treatment facilities are fenced further, with operations controlling gate access by key control. The Lake Charles Chemical Plant facilities are located inside the Lake Charles Chemical Plant which is equipped with gates with secure locking devices at each entry point and a gatehouse for guards at the main entrance. This gatehouse is manned 24 hours per day.

A clear lighted area is maintained inside the treatment facilities barriers. This allows vehicular and foot patrol of the area.

- iii) Operation of the Lake Charles Vinyl Chloride Monomer Plant and Lake Charles Chemical Plant treatment facilities are closely monitored in order to control water treatment during breakdowns, inclement weather or other abnormal conditions. All equipment is visually inspected each day to insure proper operations. Equipment that is subject to mechanical failure is periodically shut down and checked for wear. The entire Lake Charles Chemical Plant is serviced by a surge basin used for storm water containment to eliminate hydraulic overloading of the treatment system, mishaps or surges. All water routed to this basin is re-routed through the Lake Charles Chemical Plant's treatment facilities unless deemed suitable for direct discharge in accordance with storm water discharge criteria.
- iv) Daily lab analysis are performed on samples removed at several points of the Lake Charles Chemical Plant waste treatment facilities. Results from these analysis are published daily in a plant laboratory sheet. Copies of this sheet are supplied to personnel responsible for waste water facility operation.

The Lake Charles Vinyl Chloride Monomer Plant Lab performs daily laboratory analysis on samples from several points in the water treatment facilities. Analysis of chemical oxygen demand, ammonia present, pH, TSS, and other parameters allow operations to evaluate waste water treatment needed to insure discharge compliance. A list containing results from these analysis is supplied to personnel responsible for waste water treatment. A monthly report compiled of all laboratory analysis is maintained and available to key personnel.

CCR 000039361

- 7)e)v) All operating personnel are trained in operation and problem solving of the waste water treatment systems. These personnel are capable of decision making for day-to-day operations and are closely supervised to insure environmentally sound operating procedures.

5.3.4 8) CLOSURE PLANS

The estimated date of proposed closure for the Lake Charles Chemical Plant and the Lake Charles Vinyl Chloride Monomer Plant waste treatment facilities is January 1, 2030. At this time all movable equipment will be removed and decontaminated. All sludge build-ups or undrained water remaining in the facilities will be disposed of. Total amount to be disposed of is estimated at 16,500 yd³. The total cost of closure at 1980 dollar values is estimated to be \$50,300.

ADMINISTRATIVE AND MONITORING PROCEDURES

- i) All waste treatment facilities are included in the Lake Charles Chemical Complex which is fenced at boundaries with public property. A clear area is maintained around the facilities to allow visual surveillance of the area.
- ii) The site will be inspected at regular intervals to insure continued compliance with closure regulations.
- iii) Routine and Emergency Plans - Not applicable.
- iv) Monitoring wells are planned to be installed in 1980. (Refer Section IV, LCCP-UTIL-380-JCL-1.) The well points will be set according to the underlying geology. Exact location and description of the wells will be supplied to the "Department" after completion. Quarterly sampling of these wells will continue to insure proper evaluation of the area. A less frequent sampling schedule may be adopted if no deterioration is demonstrated and the new schedule is approved through the "Department."
- v) Data from regular site inspection and from monitoring wells will be recorded and stored at the Lake Charles Chemical Complex to insure availability of this material. This material will be maintained for a minimum of 20 years from closure. (This is the minimum period for which the Secretary will conduct annual evaluation of the site.)

POST-CLOSURE PLANS

- i) No use has been developed for this area after closure.

- ii) All waste treatment facilities are located inside the Lake Charles Chemical Complex which is fenced at all boundaries with public property. The site will be inspected at regular intervals to insure safety.
- iii) No use has been developed for the site after closure.
- iv) Installation of monitoring wells is planned for 1980. These wells will be sampled quarterly until such time no ground water deterioration, at which time a new monitoring schedule will be requested of the "Department."
- v) Conoco Chemicals will continue ownership of the waste treatment sites and will continue to assume responsibility. Any change of ownership will be governed by Section 8.6.6 of the Rules and Regulations - Hazardous Waste Management Plan.

FINANCIAL RESPONSIBILITY

The Lake Charles Chemical Complex is owned by Conoco Inc. Attached is a copy of the Conoco Inc. 1979 financial statement. It is requested that this document serve to qualify Conoco as a self-insured in terms of financial responsibility during operations and closure. Yearly financial statements will be supplied to update the "Department" as to Conoco's financial stability.

TABLE I

LINERS FOR PITS, LAGOONS AND BASINS

LAKE CHARLES CHEMICAL COMPLEX

LAKE CHARLES CHEMICAL PLANT

1. North Lagoon - 4 inch concrete
2. South Lagoon - 4 inch concrete
3. Holding Pond - 4 inch concrete

LAKE CHARLES VINYL CHLORIDE MONOMER PLANT

1. West Equilization Basin - 4 inch reinforced concrete
2. South Equilization Basin - 4 inch reinforced concrete
3. Activated Sludge Unit - 4 inch reinforced concrete
4. Re-Aeration Basin - 4 inch reinforced concrete
5. Clarifier - 8 inch heavily reinforced concrete

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NOTE: All maps or drawings for the site description, site layout and facility layout are located in Section IV of this information. The following is a list of maps and drawings included:

LCCP-UTIL-380-JCS-1 - LCCP Waste Water Facilities
NO. PT-178-42-41-L - Topography
NO. R8453-42-23-L - Grid System for Photo Mapping
NO. PT-178-42-20-L - Topography
NO. R-8867-42-18A-L - Topography Area 17
Figure I - Lake Charles Chemical Plant Waste Water Facility
Figure II - VCM Plant, Secondary, Wastewater Treatment Facility
Process Flow
Figure III - Transportation Flow, Lake Charles Chemical Complex
Wastewater Facilities