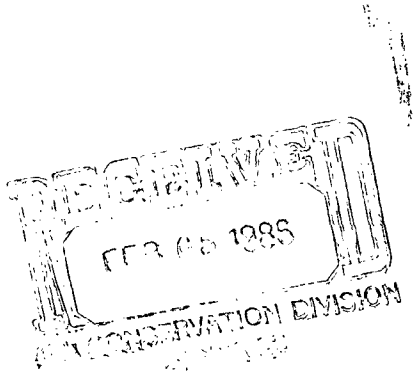
GW - 32

8/85 SLUDGE SPILL

PERMITS, RENEWALS, & MODS Application

ATTACHMENTS C, D AND E

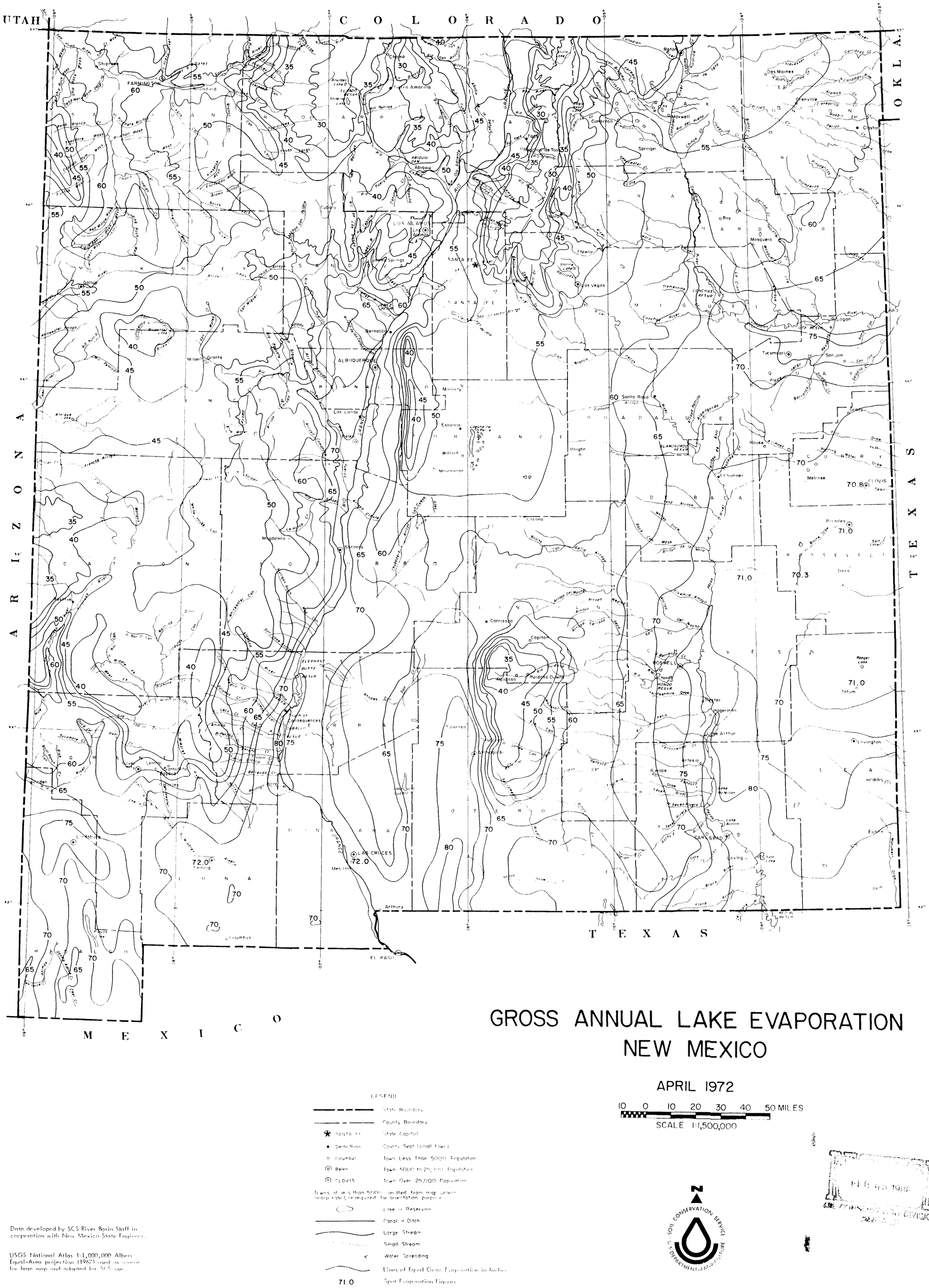
REPLY TO NMOCD COMMENTS RE:
DISCHARGE PLAN APPLICATION (GW-32)
GIANT CINIZA REFINERY



U. S. DEPARTMENT OF AGRICULTURE

NEW MEXICO

SOIL CONSERVATION SERVICE



GROSS ANNUAL LAKE EVAPORATION
NEW MEXICO

APRIL 1972

10 0 10 20 30 40 50 MILES

SCALE 1:1,500,000

Data developed by SCS River Basin Staff in cooperation with New Mexico State Engineer.

USGS National Atlas 1:1,000,000 Albers Equal-Area projection (1967) used as source for base map and adapted for SCS use.

LEGEND

- State Boundary
- County Boundary
- ★ SANTA FE — State Capital
- • Santa Rosa — County Seat (small town)
- ○ Columbus — Town Less Than 5000 Population
- ◎ Belen — Town 5000 to 25,000 Population
- ◎ CLOVIS — Town Over 25,000 Population

Towns of less than 5000 omitted from map unless appropriate for required for orientation purposes.

- Lake or Reservoir
- Canal or Ditch
- Large Stream
- Small Stream
- < Water Spreading
- Lines of Equal Gross Evaporation in Inches
- 71.0 — Spot Evaporation Figures

(Formerly M7-0-22432) 4-R-33582

ATTACHMENT D

REPORT OF AUGUST, 1985 SLUDGE SPILL

GIANT
REFINING COMPANY

ROUTE 3, BOX 7 • GALLUP, NEW MEXICO 87301
(505) 722-3833 • TWX 910-981-0504

RECEIVED SEP 0 3 1985

August 30, 1985

Mr. Peter Pache
Hazardous Waste Section
NMEID
P.O. Box 968
Santa Fe, NM 87504-0968

Dear Mr. Pache:

Enclosed is a Reporting Form which describes the July 22, 1985 release of 50 barrels (approximate quantity) of sludge from the reformer-desulfurizer charge tank (tank #339) at the Ciniza Refinery. This release occurred during normal tank-cleaning operations, and there was no incidence of fire, explosion, personal injury or excessive human exposure.

The release has been contained by excavating and berming a shallow depression inside the tank-berm, and further migration or spreading is very unlikely. Upon receipt of the analyses of waste samples (enclosed), Giant has elected to treat the released waste, along with any contaminated soil, in the Land Treatment Area at the refinery. The alaphatic and aromatic hydrocarbons referred to in the analysis are in the sub ppm range. The total light hydrocarbons would be 1-5 ppm. This was given to us as a verbal report from ASSAIGAI Analytical Laboratories.

If you have any questions or require additional information, please contact me at (505-722-3833).

Sincerely,

Carl Shook
Refinery Manager

cc: w/enclosures: USEPA Region VI
Carlos A. Guerra, Giant
Geoscience Consultants, Ltd.

FIGURE 13.10-1

REPORTING FORM FOR EMERGENCY EVENTS

GIANT REFINING COMPANY, Route 3 Box 7, Gallup, NM 87301 AC505-722-3833
Name, address, and phone number of owner or operator

SAME
Name, address and phone number of facility

7-22-85 10AM Started removing material from tank
Date, time, and type of incident (e.g., fire, explosion, etc.

#339 Tank Bottom Sludge
Name of material involved

About 50 Barrels
Quantity of material involved

None
Extent of injuries (if any)

Minimal - Sludge handling was controlled. Area was cleaned up.
Assessment of actual or potential hazards to human health or the environment (if applicable)

About 75 barrels of dirt-sludge mix was put on Land Treatment Area
Estimated quantity and disposition of material recovered from the incident

Send to: Mr. Peter Pache
Hazardous Waste Section NMEID
P.O. Box 968, Santa Fe, NM 87504-0968

(Name) Allyn M. Davis
U.S. EPA, Region VI
Regional Administrator
1201 Elm Street
First International Building
Dallas, Texas 75270

ASSAIGAI ANALYTICAL LABORATORIES

TO: GeoScience Consultants
Attn: Jim Hunter
500 Copper N.W. Suite 325
Albuquerque,NM 87102

DATE: 22 August 1985
1019 & 1038 Revised

ANALYTE	SAMPLE ID/ANALYTICAL RESULTS	
	Desulfurizer Tank 850723	Desulfurizer Tank 850724
Ignitability	20 °C	20 °C
EP Tox:		
As	<0.050 mg/l	<0.050 mg/l
Ba	<1.0 mg/l	<1.0 mg/l
Cd	0.01 mg/l	0.01 mg/l
Cr	0.64 mg/l	0.64 mg/l
Hg	<0.2 mg/l	<0.2 mg/l
Pb	0.070 mg/l	0.050 mg/l
Se	<0.01 mg/l	<0.01 mg/l
Ag	<0.05 mg/l	<0.05 mg/l
CN	0.22 mg/l	0.13 mg/l
Sulfides	Not Present	Not Present
Aromatic Organic Screen	Large amounts of Alphatic & Aromatic hydrocarbons present, including benzene toluene, ethyl benzene and xylenes.	Large amounts of Alphatic & Aromatic hydrocarbons present, including benzene toluene, ethyle benzene and xylenes.

REFERENCE: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, N.Y., 1980.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith

Jenifer V. Smith, Ph.D.
Laboratory Director

ATTACHMENT E

PART B CONTINGENCY PLAN

TABLE OF CONTENTS

13.0 CONTINGENCY PLAN

This contingency Plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous wastes or hazardous constituents to air, soil, or surface water. The provisions of the plan will be carried out immediately whenever there is a fire, explosion, spill or release of hazardous wastes constituents which could threaten human health or the environment. In the event of a contingency not specifically addressed in this plan, the Emergency Coordinator will take whatever action is necessary and use whatever resources available to first protect human life and secondly the environment. The plan is submitted to comply with 40 CFR 264, Subpart D.

A copy of the contingency plan and all revisions to the plan are maintained at the refinery. The plan has been submitted to all the police and fire departments, hospitals and local response units that may be called on upon to provide emergency services.

This plan must be studied and understood by all refinery personnel involved with hazardous wastes to assure proper implementation in the event of an emergency.

Authorization Signature

Carl D. Shook 11/27/84

Carl D. Shook, Refinery Manager Date

13.1 Introduction

The Giant Refining Company's Ciniza Refinery is a crude oil refining facility with a nominal capacity of 18,000 barrels per calendar day (BPCD). The Ciniza Refinery is located in McKinley County, New Mexico just north of Interstate 40 about seventeen miles east of Gallup, New Mexico. The refinery includes operating crude and vacuum distillation units, a fluid catalytic cracking unit, a hydroflouric acid alkylation unit, a propane deasphalting unit, a nahptha hydrotreater, a catalytic reforming unit and a merox treating unit. The plant is supported by a boiler house which provides utility steam, water treating units, air compressors, cool towers and an extensive tank farm with a variety of tank configurations and capacities. The refinery layout is shown on Figure 13.1-1.

The Refinery's extreme distance from other emergency response agencies requires that Giant provide their own first emergency response resources. The remote location does not facilitate notification and interaction with other emergency response agencies. Giant Refining Company maintains its own firefighting force and equipment. The fire fighters attend firefighting school at Texas A & M University and conduct monthly fire fighting training at the Ciniza Refinery. The fire fighting equipment owned, operated, and kept on site by Giant Refining Company is discussed in part 13.6 of this section. Further information is available in Appendix C of the RCRA Part B permit or in the Ciniza Refinery Emergency Procedures Manual. In addition to the

equipment, Giant maintains medical transportation equipment and first aid medical supplies at the refinery. Giant also maintains security for the facility.

The intent of the EPA's hazardous wastes regulations, 40 CFR 264, Subpart D is to insure that facilities which treat, store, and dispose of hazardous wastes have established necessary planned procedures to follow in the event an emergency situation involving hazardous wastes should arise. The contingency plan should reflect the nature of the facility and assess the relative hazards associated with possible emergency situations.

The small quantities and moderate toxicity of hazardous wastes handled at the refinery pose relatively minor hazards compared to the general refinery operation. Since the refinery emergency procedures are designed to handle more serious emergencies than those credible for hazardous wastes handling, the same general procedures apply. Fire or explosions involving hazardous waste will be handled with the normal fire fighting procedures. Spills of hazardous wastes shall be handled by first containing the spill, followed by removal of the material and clean up.

The purpose of this contingency plan is to meet the requirements of the regulations and to specify additional requirements needed to handle hazardous waste protecting human health and the environment.

13.1.1 Hazardous Wastes

As part of the Giant Ciniza Refinery operation certain hazardous wastes are generated, stored and treated at the site. These wastes include:

Hazardous Waste ID Number	Description
F001	Spent 1,1,1-trichlorethane used as a cleaning solvent in the refinery. Used solvent is collected and stored in barrels on an asphalt pad behind the warehouse. The material is shipped offsite for recovery every 90 days. Maximum solvent accumulated is 250 gallons. Since the material is not stored for more than 90 days it is not subject to review under 40 CFR 264 Subpart D of the hazardous wastes regulation. It is included here so that proper handling of the material in an emergency is guaranteed.
D007	Cooling tower filter sludge is a mixture of solids, water and small quantities of oil. The material is removed from the cooling tower filter and hauled directly to the Land Treatment Facility.

K049 Slop oil emulsion solids are a solid-oil-water mixtures generated during slop tank cleaning which occurs in five year cycles. The sludge is moved from the tanks with a vacuum truck directly to the Land Treatment Facility. The waste is considered hazardous since it can contain low concentrations of heavy metals such as chrome and lead, and trace quantities of hazardous hydrocarbons such as phenols, benzene and toluene.

K050 Heat exchanger bundle cleaning sludge is generated during major refinery maintenance events and consists of oil-water-solids mixtures. The mixture may contain small quantities of heavy metals, such as chrome and lead, and trace quantities of hazardous hydrocarbons, such as phenols, benzene and toluene. The waste is hauled to the Land Treatment Facility.

K051 API separator sludge is an oil-water-solids mixture picked up from the bottom of the API separator with a vacuum truck and hauled directly to the Land Treatment Facility. The waste may contain small concentrations of heavy metals, such as chrome and lead, and small quantities of hazardous constituents, such as phenols, benzene and toluene. API

cleaning is performed semi-annually and the resulting wastes represent the largest volume handled at the refinery.

K052 Tank bottoms from leaded tanks consists of oil-water-solids mixtures generated by cleaning leaded gasoline tanks. The waste is removed from the tank with a vacuum truck and hauled directly to the Land Treatment Facility. The waste is toxic since it contains small quantities of lead which may be present as tetra-ethyl lead. The waste may also contain small quantities of toxic hydrocarbons such as phenols, toluene and benzene. Leaded gasoline tank cleaning occurs on an approximate five year cycle.

The location of waste generation, trichloroethane storage and the Land Treatment Facility are shown on Figure 13.1-1. Quantities and disposition of wastes are shown on Table 13.1-1. Further information on the hazardous wastes, and their generation can be found in Section 1.0 of the Part B RCRA permit.

13.1.2 Health and Environmental Hazards

As with all refinery products, care should be taken in handling these wastes. Inhalation of vapors should be avoided. Protective clothing should be worn to prevent contact with the skin. When contact does occur, it should be removed by washing with soap and water. Ingestion should be avoided.

F001 Spent 1,1,1, trichloroethane

Trichloroethane is a watery, clear liquid. Inhaled vapors can cause dizziness, difficult breathing, loss of equilibrium, and loss of concentration. High concentrations can be fatal due to asphysixation. The threshold limit value (TLV) for inhilation toxicity is 350ppm and the short term inhalation limit is 1000 ppm for 60 minutes. The TLV is the concentration that can be breathed for five consecutive eight-hour work days by most people without adverse effect. Ingestion produces similar effects as inhalation and is moderately toxic. Contact with skin can cause dermatitis.

Care should be taken to avoid breathing vapors. If ingested, give water and induce vomiting. Contact with skin should be treated by removing contaminated clothing and washing the exposed area with soap and water.

Trichloroethane has a flash point above 140F but is flammable. Combustion of trichloroethane results in toxic and irritating gases including hydrochloric acid fumes. Fires involving this material should be approached from upwind. Fire fighting personnel approaching the fire should wear breathing apparatus.

Tricholoethane is heavier than and only slightly soluble in water. Spills should be immediately picked up to avoid transmission by surface run off or percolation into the soil.

D007 through K052 Sludges

The health and environmental affects of exposure to sludges is less defined because the nature of the wastes are subject to variation with generation events. The sludges are considered toxic since they may contain heavy metals such as chrome and lead. Other hazard-

ous constituents such as phenols, benzene, polynuclear aromatics and cyanides may be present. These occur as a small concentration in the wastes. More composition information is available in Section 2.0 of the Part B permit and additional data will be generated for these wastes with an ongoing analytical program. The sludges are no more toxic to human exposure than most of the hydrocarcon streams handled in the refinery. However, the repeated uncontrolled exposure of these sludges to the environment might result in contamination of subsurface water. The sludges are land treated to decompose hydrocarbons and cyanides to carbon dioxide and water by bacterial degradation and to bind the metals to the soil in safe concentration. The Land Treatment Facility provides a controlled area for this treatment to occur. Further information on the operation of the land treatment area can be found in Section 29.0 of the Part B RCRA permit.

As for all refinery products, skin contact, injestion or inhalation of the volatile portion of the sludges should be avoided. Skin

contact should be treated by removing contaminated clothing and washing the exposed area with soap and water.

The sludges are oil-water-solids mixtures. The quantity of oil present is a function of the cleaning and vacuum pickup procedure. It is possible, although unusual, to generate a sludge with light hydrocarbons which possess a flammability potential. The sludges should be handled as a flammable material and not be exposed to sources of ignition. Should a fire occur involving sludges, heavy metal oxides could be generated. These fires should be approached from up-wind and personnel entering areas where smoke or fumes from such a fire are present must wear a breathing apparatus. These procedures are consistant with normal fire fighting procedures.

The sludges are thick, viscous slurries. Given the clay nature of the soil around the refinery, transmission of contaminants to the subsurface waters is remote if spills and contaminated soils are quickly removed. Contact of sludges with low pH solutions (acids) must be avoided as the low pH increases the soil

mobility of metals. A spill occuring during precipitation should be contained in such a way as to also contain runoff from the affected area to prohibit surface migration.

13.1.3 Contingency Plan Amendment

The contingency plan shall be reviewed by the Refinery Environmental Engineer and immediately amended if determined to be inadequate to handle non-sudden and sudden releases, and whenever:

- the facility permit is revised,
- there is a significant change in the design or operation of the hazardous waste facility, (i.e. waste quantities handled, handling techniques, or final disposition),
- the list of emergency coordinators changes,
- the list of emergency equipment significantly changes,
- operating experience, drills, or technical review demonstrates the plan is unappropriate, or
- actual implementation of the plan demonstrates inadequacies.

In reference to the last item, following each event requiring the implementation of the hazardous waste contingency plan, the Refinery Environmental Engineer shall meet with representatives of all response functions to determine the adequancy of the response.

Amendment Records

The contingency plan shall have a cover sheet noting the date of the last amendment. Each amendment date shall be initialed by the Refinery Manager acknowledging and authorizing the changes.

Distribution

The contingency plan and amendments to the plan shall be distributed to all Emergency Coordinators, Alternate Coordinators (see Table 13.3-1) and Emergency Response Agencies (see Table 13.3-2). Amended plans shall include a cover letter briefly describing the plan changes.

13.2 Non-Sudden Releases

Non-sudden releases includes those incidences which, if uncontrolled, impact the environment over a long period of time. Such incidences include poor land treatment operation and leakage of containers.

13.2.1 Responsibility

Correction of non-sudden releases shall be the responsibility of the Refinery Environmental Engineer and can be handled with normal maintenance and management procedures.

13.2.2 Credible Non-Sudden Releases

The following situations are credible non-sudden releases and actions to correct them. Not all failures can be predicted. In general, the response should first, contain the release, secondly, correct the cause of the release and finally, clean up any release to a level required to protect health and the environment.

Trichlorethane Temporary Storage

Failure : Drum leakage

Detection : Weekly visual inspection

Correction: Transfer liquid to another drum or place leaking drum in an oversized drum. Recover standing liquid from storage pad.

Sludges

Failure: Leaking tanks (point of sludge generation-may leak product rather than sludges).

Detection : Visual inspection during daily tank gauging operation.

Correction: Repair tank using normal operating procedure. Remove contaminated soil and disperse at the land farm treatment area.

Failure: Leaking vacuum truck as transfer equipment.

Detection : Inspect prior to use and during operation.

Correction: Discontinue operation until the equipment is repaired or replace. Clean up spills and contaminated soil.

Failure: Improper land treatment operation

Detection : Soil sampling (see Section 29.6 of the Part B Permit), periodic inspection noting unusual coloration, odors

Correction: The correction depends on the nature of the problem. Poor biodegradation performance can be detected with soil samples or result in odor, or appearance changes. Such problems are corrected by adjusting the operation (ie, liming, fertilizer additions, or additional tilling or water addition). Details of corrective measures can be found in Section 29.4 of the Part B Permit and in quideline documents such as Land Treatment Practices in the Petroleum Industry, API 1983.

Failure: Non containment of hazardous constitutents and metals. Detection : Soil sampling (see Section 29.6 of the Part B Permit), ground water monitoring (see Section 30.0 of the Part B Permit).

Correction: This failure results in the transmission of hazardous constituents and metals through the soil threatening the first aquifer. The correction requirements to this event are described in detail in 40 CFR264.278 and 40 CFR 264.98.

If sampling determines there is a significant increase over background levels of hazardous constituents in the unsaturated zone (the area below the treatment zone), then

- notification of the findings shall be sent in writing to the EPA Regional Administrator within seven days; and
- within 90 days, an application for a permit modification shall be submitted to the Administrative specifying modifications to the land treatment operation procedures to maximize treatment performance.

Should the determination be made that the significant increase is caused by sources other than the land treatment or is due to sample or analytical error, reporting in accordance with 264.278(h) shall be performed.

Should changes in the operation of the land treatment be neccessated by a significant increase of hazardous constituents in the unsaturated zone, those changes shall be developed in communication with the EPA.

If sampling determines there is a significant increase over background levels of hazardous constituents in samples from water monitoring wells, then

- notification of the findings shall be sent in writing to the EPA Regional Administrator within seven days,
- all monitoring wells shall immediately be sampled to determine the concentration of Appendix VIII constituents specified by the Regional Administrator in the facility permit.
- background values for each Appendix VIII constituent developed shall be determined,
- within 90 days, an application for a permit modification to establish a compliance monitoring program shall be submitted to the Regional Administrator and shall include an identification of the concentration of any Appendix VIII constitutent found, proposed changes in the monitoring program, and a proposed concentration limit of each hazardous constituent found or a notice to seek a variance under 264.94(b), and

- within 180 day, submit to the Regional Administrator an engineering feasibility plan for a corrective action plan necessary to meet the requirements of 264.100 or a variance request under 264.94(b).

Should the determination be made that the significant increase is caused by sources other than the land treatment or is due to sample or analytical error, reporting in accordance with 264.98 (i) shall be performed.

13.3 Sudden Releases

This section deals with incidents involving sudden releases such as spills, fires or explosions.

An emergency involving one of the RCRA facilities is very unlikely. The potential exists for a fire in the drum storage area or the land treatment area. Because of the remoteness of these locations, this would not be serious and could be contained by refinery personnel. Fire fighting is covered in Sections 5 and 6 of the Ciniza Refinery Emergency Procedures Manual (EPM) (See Appendix C of the Part B Permit).

The sludges transported to the Land Treatment Facility are combustible and contain small concentration of heavy metals. Should a fire occur with these materials, there is a hazard associated with aspiration of heavy metal oxides. The initial concentration of metals is small, and further dilution occurs on combustion. Normal fire fighting proce-

dures require approaching the fire from up-wind precluding exposure to fumes generated by the fire. Where access to smoke filled areas is required, the procedure requires fire fighting personnel to wear fresh air breathing apparatus. The rural location of the refinery precludes significant exposure to inhabitants outside the refinery.

Because land treatment of wastes immobilizes the heavy metals in top soil, spills of the waste, if promptly cleaned up, present little danger of contaminating subsurface water.

13.3.1 Emergency Coordinator

The refinery is staffed 24 hours a day, 365 days per year. The Emergency Coordinator is responsible for coordinating all emergency response measures involving hazardous waste facilities. The Assistant Refinery Manager is the primary Emergency Coordinator. On weekends, the Weekend Staff Person is the Emergency Coordinator. When the primary coordinator cannot be reached, persons on the weekend staff duty list serve as alternates. Someone qualified to act as Emergency Coordinator can always be reached by contacting the refinery gate which operates 24 hours per day. A list of Emergency Coordinators can be found in Table 13.3-1.

The Emergency Coordinator shall respond to all incidents involving the release of hazardous wastes including spills, fires or explosions and assess the possible hazards to human health or the environment. The Emergency Coordinator shall use whatever refinery resources or call upon response services to control and contain the wastes.

13.3.2 Coordination Agreements

Table 13.3-2 lists the organizations that could possibly be contacted by the Emergency Coordinator in the event of an emergency and gives a brief definition of the coordination agreement. Existing documentation of the agreements can be found in Appendix H.

All coordinating organizations are provided a copy of the contingency plan. Informal meetings with McKinly General Hospital staff have been held to discuss treating special problems associated with the refinery operation. The Gallup Fire Department and the Fort Wingate Fire Department have had general refinery fire fighting training.

The refinery attempts to handle emergencies internally and therefore maintains fire fighting equipment, fire fighting crews, and an ambulance. Fire fighting crews receive onsite training through drills and instruction, and offsite training by attending fire schools specializing in training refinery fire fighting.

13.4 Implementation of the Contingency Plan

The decision to implement the contingency plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The following guidelines shall be used by the Emergency Coordinator in making the decision whether or not to institute the contingency plan.

The contingency plan shall be implemented in the following situations involving hazardous wastes:

13.4.1 Fire and Explosions*

a. A hazardous waste fire spreads and could ignite hazardous waste at other locations onsite or could cause heat-induced explosions.
b. The hazardous waste fire could spread to offsite areas.
c. An imminent danger exists that an explosion involving hazardous wastes could occur.
d. An explosion involving hazardous wastes has occured.
e. A refinery fire or grass fire threatens to ignite hazardous wastes.

13.4.2 Spills

a. A hazardous wastes spill cannot be contained on-site.
b. A hazardous wastes spill causes the release of flammable material creating a fire or explosion hazard.
c. Precipitation accumulations at the land treatment area threatens to over flow the containment dikes.

*Response to nonhazardous waste refinery fires is described in the Emergencies Procedures Manual (EMF)-Ciniza Refinery.

13.4.3 Emergency Coordinator Actions

Immediately upon discovery of an imminent or actual incident involving hazardous wastes, the Emergency Coordinator will be notified first. In the case of a fire involving hazardous wastes, this is superceded by the refinery fire alarm system since any refinery fire must be controlled rapidly to restrict the area affected. In the case of fire, the personnel first noticing the fire shall notify the boiler house by dialing "111" on the refinery telephone or notifying the boiler house by radio. The "111" number simultaneously rings emergency telephones in the boiler house, control room, laboratory, refinery gate, switch board and safety office. The emergency telephones are separate telephones accessible from the regular telephone system and only used in an emergency or emergency drill. The boiler house operator will manually operate the refinery whistle sounding two 5 second blasts. The boiler operator will then announce the location of the fire on the radio and the PA system. The Emergency Coordinator will report to the fire site in accordance with the fire call procedure.

Upon notification of an incident, the Emergency Coordinator shall:

- proceed directly to the site,
- assess the nature of the incident, and quantities and type of hazardous wastes involved, and
- based on the guidelines in Section 13.4 determine if implementation of the contingency plan is warranted.

Upon the decision to implement the contingency plan, the Emergency Coordinator shall perform in this order, the following actions:

1. Notify required response personnel by phone, refinery radio, or the PA system in the case of a spill or incident other than fire. In the case of fire, since the fire fighters have already responded, he shall confirm that the Fire Chief is aware of the hazardous waste involvement and the special hazards associated with the wastes.
2. Notify the New Mexico Environmental Improvement Division (505)827-9329, and the National Response Center (800)424-8802.
3. Warn the remaining refinery personnel of imminent or actual hazards using the refinery radio and/or the refinery PA system.
4. Identify the character, exact source, amount, and extent of contamination either by surface flow or aerial dispersion. The accessment will be made by review of facility records, or if necessary, by chemical analysis.
5. Assess the hazards to the environment and human health.
6. Determine if evacuation of the local area is advisable.
7. Advise the response personnel as needed to minimize personnel exposure to hazards and expidite control.

Once control of the emergency is established, the Emergency Coordinator shall:

1. Arrange for site cleanup.
2. Provide for treating, storing, or disposing of recovered wastes, contaminated soil or contaminated surface waters.
3. Provide for decontamination of equipment as needed.
4. Conduct testing as needed to verify successful cleanup.
5. Within 15 days of the incident submit to the Regional Administrator and Environmental Improvement Division the reporting form described in Section 13.10.

13.5 Emergency Response Procedures

13.5.1 Fire/Explosion Response

The potential exists for a fire during loading, transport of sludge, or in the solvent storage. A fire in these circumstances would be handled using normal fire fighting procedures. Should a fire occur with these sludges, there is a hazard associated with aspiration of heavy metal oxides. The initial concentration of metals is small, and further dilution occurs on combustion. Normal fire fighting procedures require approaching the fire from up-wind precluding exposure to fumes generated by the fire. Where access to smoke filled areas is required, the procedure requires fire fighting personnel to wear fresh air breathing apparatus. The rural location of the refinery precludes significant exposure to inhabitants outside the refinery. Small quantities of spent chlorinated solvents may be stored for less than

90 days in the wastes storage area. For this reason the Fire Chief must be informed that trichoroethane fires generate toxic and hydrochloric acid fumes and the fire crew should use proper breathing protection.

Copies of the refinery fire fighting procedure, equipment list and inspection list can be found in the Emergency Procedure Manual located in Appendix C of the Part B Permit.

All refinery personnel are trained to fight fires. As a minimum, the refinery is staffed to make available immediately a fire brigade of six people. A call out procedure can be instituted by the Emergency Coordinator to provide more personnel. A copy of the call out procedure can be found in Appendix C of the Part B Permit.

In fighting a hazardous waste fire, steps should be taken to control fire fighting water run off to assure hazardous wastes are contained on site. Contaminated water can be picked up with a vacuum truck and applied to the land treatment area. Affected soils shall be tested to determine if they are above background values and if so, treated in compliance with the regulations. Clean up procedures can include removal of affected soil and transport to the Land Treatment Facility, land treatment in place, or removal and shipment to a permitted hazardous waste disposal facility. Clean up operations shall be coordinated with state and federal hazardous wastes agencies.

13.5.2 Spill Response

Spills can occur in the trichloroethane storage area. Sludges can be spilled during loading and transport.

Trichloroethane is stored in 55 gallon drums on a sloped pad. Spills are contained on the pad and can be picked up and placed in sound drums, the area then cleaned to remove residual material.

Sludges are generated during equipment cleaning operations and are loaded and hauled with contract vacuum trucks. These vacuum trucks are inspected by the safety department on entry to the refinery to assure they have a proper and maintained exhaust system to prevent ignition of flammable materials, to assure that they are equipped with a fire extinguisher, and to assure that the vacuum tank, piping, and valves are maintained in good order.

The vacuum truck hauls approximately 200 barrels of sludge at one time. This relative small volume minimizes the impact of spills while in transit. Loading of tank sludges occurs within diked areas or areas services by a sewer system affording containment.

Should a spill occur, the Emergency Coordinator shall use his best judgement to institute actions to, first, contain the spill and secondly pickup the waste and contaminated soil. The Coordinator has at his disposal the refinery earth moving equipment as well as an all emergency or refinery maintenance equipment.

The coordinator may call on the fire brigade or institute the fire call procedure to provide manpower for cleanup if there is imminent danger to personnel or the environment. Personnel shall wear protective equipment including rubber gloves, long sleeves, and eye protection while cleaning up spills. Breathing protection is recommended should the spilled matter include 1,1,1 trichlorethane.

Once containment is established, the Emergency Coordinator shall initiate cleanup operations, picking up the spilled material and spreading at the land treatment area. Contaminated soil shall also be removed and hauled to the land treatment area. Soil samples shall be taken and analyzed for oil, lead, and chrome contamination to assure the clean up is successful. Should the volume of soil affected prohibit its removal, the Emergency Coordinator shall contact the state and federal hazardous wastes agencies to determine the acceptability of inplace land treatment.

13.6 Emergency Equipment

The Emergency Coordinator shall have at his disposal all refinery emergency equipment and maintenance equipment as needed to respond to emergency situations involving hazardous wastes.

13.6.1 Fire and Emergency Equipment

The location of fire and emergency equipment is shown on the drawing "General Fire Protection Area Location Plan Piping and Flow Arrangement" DWG.No. EZ-86-09-101. A copy of this drawing shall be included with all copies of the contingency plan. Additional information an fire equipment can be found in the Ciniza Refinery Emergency Procedures Manual (Appendix C of the Part B Permit). A list of fire extinguishers and their locations can also be found in Appendix C. Major equipment includes:

Quantity	Description
1	Ambulance equipped with first aid equipment
1	National Air-O-Foam Fire Truck
1	Pierce Attack Pumper Fire Truck
1	Fire Water Storage and Distribution Hydrant System
1	Diesel Driven Pond Fire Water Pump
1	Waukesha Natural Gas Engine Fire Water Pump
1	Steam Turbine Driven Fire Water Pump
21	5# CO_2 Fire Extinguishers
12	10# Foray Fire Extinguishers
14	15# CO_2 Fire Extinguishers
82	20# Purple K Fire Extinguishers
45	30# Purple K Fire Extinguishers
7	150# Purple K Fire Extinguishers
11	30 minute Scott Air Packs

1000 ft	Additional Fire Hose
1000 gal	Spare XL 3% Foam
2	Proximity fire entry suits
	Miscelleanous first aid equipment
	Miscelleanous fire fighting equipment

Ambulance: The ambulance is located at the Fire House (Building 11). The ambulance is radio equipped to allow communication with the local hospital. The vehicle is a 3/4 ton van capable of carrying three injured personnel. The ambulance is equipped with first aid equipment including oxygen and burn treatment materials.

National Aer-O-Foam Fire Truck:

This fire truck is located in the Fire House (Building 11). It is a mobil foam house which can be used as a water pumper, a foam pumper or in combination to deliver simultaneous water and foam streams. The rated capacity of the water pump is 1000 gpm at 150 psi from draft. Capacities and pressures may be increased when water is supplied from hydrants.

The truck is capable of drafting from static water sources such as the evaporation ponds and can supply up to six discharge hoses. The truck carries a tank containing 1000 gallons of XL 3% foam, 1000 feet of 3"

fire hose and 500 feet of 1-1/2" fire hose as well as other miscellaneous fire fighting equipment. The truck is capable of cross county operation.

Pierce Attack Pumper Fire Truck:

This fire truck is located in the Fire House (Building 11). It is water and/or foam pumper with a rated capacity of 500 gpm at 150 psi from draft. The truck carries a tank containing 50 gallons of A.F.F.F. foam, a second tank containing 250 gallons of water and 700 feet of 3" hose as well as miscellaneous fire fighting equipment. The truck is equipped with a cab mounted monitor. The truck is a rural 4 wheel drive design capable of cross county operation.

Fire Water Storage and Distribution Hydrant System:

The hydrant system is shown on the General Fire Protection Drawing. Primary fire water storage is located in two tanks, Z86-T1, the 5000 gallon fire water tank, and Z91-T1, the 5000 gallon raw water tank, located near the boiler house. These tanks are directly fed by two artesian wells, Water Supply Well No. 1 and Water Supply Well No. 2, which can deliver 800 gpm. The Waukeshaw natural gas driven fire water pump and the steam driven fire water pump take suction on on these tanks and discharge to the hydrant system. The No. 2

The pond holds an estimated 1-1/2 million gallons. The diesel fire water pump takes suction on the pond and discharges to the hydrant system.

Supply wells No. 1 and No. 2 are equipped with valved flanges at the well site to allow fire trucks to take suction directly from the wells.

The hydrant system includes not only fire water supply hydrants, but also turret monitors, steamers, hose reels, fog nozzles, foamite air chambers and foamite air foam aspirators. The locations of this equipment are shown on the General Fire Drawing. In general, the tank farm is protected with foam generation equipment. The process area is protected with hose reels, hydrants, turrent monitors and fog nozzles.

Diesel Driven Pond Fire Water Pump:

This pump is located at the No. 2 evaporation pond taking suction from the pond and discharging to the hydrant system. The diesel engine drives a Goulds pump capable of delivering 1300 gpm.

Waukeshaw Natural Gas Engine Driven Fire Water Pump:

This pump is located at the boiler house and takes suction on the raw water and fire water tanks discharging to the hydrant system. The pump can deliver 1000 gpm.

Steam Turbine Driven Fire Water Pump:

This pump is also located at the boiler house, and takes suction from the raw water and fire water storage tank discharging to the hydrant system. The pump can deliver 1000 gpm.

Fire Extinguishers:

The location of fire extinguishers are shown on the General Fire Protection drawing. The distribution of extinguishers allows rapid response and control of small fires.

In addition to mounted extinguishers, refinery vehicles and vacuum trucks are required to have fire extinguishers. A complete listing of extinguishers and their locations is given in Appendix C of the Part B Permit.

Scott Air Pack:

The location of the 11 air packs are shown on the General Fire Protection drawings. Two air packs are located on the Aer-O-Foam fire truck. The remaining air

packs are located in control rooms and various building to allow operator response prior to arrival of the fire truck and to allow access to the air pack should they be needed for escape.

Fire Hose: In addition to the fire hose maintained on the fire trucks, and reel hoses in the process area, 1000 feet of hose is stored at the Fire House. A major portion of this hose is kept on a trailer to facilitate movement.

XL 3% Foam: In addition to the 1000 gallons XL3% Foam on the Are-O-Foam Fire Truck and the 50 gallons of A.F.F.F. foam on the Pierce Attack Pumper, 1000 gallons of XL 3% foam is stored in the Fire House.

Proximity Fire Entry Suits:

The two entry suits are located on the fire truck.

13.6.2 Spill Control Equipment

Major equipment available for spill control includes:

Quantity	Description
1	Road Patrol (Grader)
1	D6 Bulldozer

1	Front End Loader
1	2.5 yard dump truck
	miscellaneous shovels, picks, and hand equipment

This equipment is available from the maintenance department and may be in use during day shifts. The Emergency Coordinator should contact the Maintenance Supervisor or foreman by radio to obtain the equipment during day shifts. During other hours, the equipment is stored near the shop and may be operated by any qualified operator.

13.7 Communication System

The refinery communication system includes an internal telephone system, a public address system, a two way radio system and a fire whistle.

The internal telephone system allows contact with control rooms and offices using a three digit number. The "111" line to the emergency phones at the boiler house, laboratory, refinery gate, switch board, control room and saftey office is dedicated for emergency calls. The telephone system can be used to make announcements over the refinery public address system.

The two way radio base station is located in the main refinery control room. The control room, including the base station, is supported by an emergency generator during power failures. Refinery operators and maintenance supervisors have hand held radio units. Refinery vehicles are equipped with radios as is the boiler house and selected offices.

The fire whistle is manually operated by the boiler firemen in response to emergency calls on the "111" telephone line or on the two-way radio. The fire whistle is used for all emergencies and is answered by the fire response team.

13.8 Evacuation

There are no foreseeable credible incidents involving hazardous wastes that will result in evacuation of the refinery or surrounding area. However, a major uncontrolled refinery fire may result in evacuation.

Visitors: Visitors are signed in at the desk. Unescorted visitors are not allowed in the refinery operating area. In the event of an emergency, visitors are instructed to return to the front office where they are accounted for against the sign-in register. Should evacuation be necessary, visitors are instructed to leave via the access road to I-40.

Contractors: Contractors are logged in and out at the front gate for each entry and departure. Contractors are given safety instructions during their first visit to refinery. They are required to report to the front gate during emergencies and are warned of such by the refinery fire whistle. Should evacuation be necessary, contractors are instructed to leave via the access road to I-40.

Employees: All employees are assigned specific duties during emergencies. The employees form the emergency response crews. Each crew leader has a radio and is responsible for communication with team members.

Should evacuation be necessary, notification to employees is made via radio and the refinery PA system. On the order to evacuate, the employees report to the access road at I-40 for head count and further instructions.

Local citizens: Due to the rural nature of the site, it is doubtful that evacuation of citizens will be required. The nearest non-refinery related residence is one mile south-south west, the second nearest being two and one half miles northwest. Should evacuation be deemed necessary, the refinery management shall contact the County Sheriff to provide assistance.

13.9 Refinery Access

The refinery gate is manned around the clock. In the event of a refinery emergency, the access of non refinery personnel is prohibited. The refinery gate is equipped with an emergency "111" telephone.

13.10 Emergency Reports

Any emergency event that requires implementing the contingency plan will be reported in writing within 15 days to the EPA Regional Administrator. A reporting form for emergency events is shown in Figure 13.10-1.

13.11 Amendments to the Spill Prevention Control and Containment (SPCC) Plan

The Ciniza refinery is located such that oil spills from the facility could not reasonably threaten navigable waters. A SPCC plan is therefore not required for the facility.

TABLE 13.1-1

QUANTITIES AND DISPOSITION OF HAZARDOUS WASTES

WASTE ID	DESCRIPTION	SOURCE	TREATMENT	MAX. QUANTITY STORED	EST. QUANTITIY GENERATED PER YEAR	HAZARDOUS COMPOUND
F001	Spent 1,1,1 Trichlorethane	General Refinery	Shipped Off Site	250 Gal (less than 90 days	5000 pounds	Trichloro-ethane
D007	Sludge Oil-water-solids	Cooling tower filter cleaning	Land treat-ment	None	12,600 pounds	Heavy metals such as chrome, lead, hydro-carbons such as phenol benzene, toluene
K049	Emulsion Solids Oil-water-solids	Slop oil tank cleaning	Land treat-ment	None	800 pounds	As D007
K050	Sludge Oil-water-solids	Heat exchanger cleaning	Land treat-ment	None	400 pounds	As D007
K051	Sludge Oil-water-solids	API Separator cleaning	Land treat-ment	None	500,000 pounds	As D007
K052	Sludge Coil-water-solids	Leaded tanks cleaning	Land treat-ment	None	1600 pounds	As D007 but can include tetraethyl lead

TABLE 13.3-1

EMERGENCY COORDINATORS

PRIMARY COORDINATORS			
Monday-Friday			
Assistant Refinery Manager	J.J. Stokes	1410 S. Grandview Gallup, NM 87301	(505)722-3833 Ext. 203
Refinery Manager[a] (7am-5pm)	C.D. Shook	Rt. 3 Box 7 Gallup, NM 87301	(505)722-3833 Ext. 202 or 30
Staff duty person (other hours)			
Saturday-Sunday: Staff duty person	Contact Refinery Gate		(505)722-3833
ALTERNATE COORDINATORS			
Logistics Manager	M.S. Mexal	3409 Chee Dodge Gallup, NM 87301	(505)722-6815 Ext. 260
Shift Supervisor	K.E. Patton	Rt. 3 Box 7 Gallup, NM 87301	(505)722-3833 Ext. 306
Maintenance Supervisor	A.J. Rodriquez	701 Julie Dr. Gallup, NM 87301	(505)722-2614 Ext. 207
Technical Services	E.F. Stalcup	Rt. 3 Box 7 Gallup, NM 87301	(505)722-3833 Ext. 302
Refinery Environmental Engineer	R.C. Anderson	Rt. 3 Box 7 Gallup, NM 87301	(505)722-3833 Ext. 303
Technical Services	B.E. Reed	1702 Holena Dr. Gallup, NM 87301	(505)722-4055
Safety Inspector	E.H. Taylor	Rt. 3 Box 7 Gallup, NM 87301	(505)722-3833 Ext. 300
Engineering Foreman	C.A. Childs	W. of Gallup Gallup, NM 87301	(505)863-6920 Ext. 270
Engineering Foreman	R. P. Craig	501 McKee Dr. Gallup, NM 87301	(505)722-5982 Ext. 270

[a]Assistant Refinery Manager acts for the Refinery Manager as required.

TABLE 13.3-2

COORDINATION AGREEMENTS

Police: New Mexico State Police
Telephone (505) 863-9353

Agreement: Provide assistance in isolating the refinery, controlling traffic in an emergency, and evacuating local residents.

McKinley County Sherrif Office (Thoreau Substation)
Telephone (505) 862-7155

Agreement: Provide assistance in isolating the refinery, controlling traffic in an emergency, and evacuating local residents.

Fire: Gallup City Fire Department
Telephone (505) 863-3801

Agreement: To respond to emergencies such as fires or explosions when called to support refinery fire fighting forces.

Fort Wingate Depot
Telephone: (505) 488-5411

Agreement: To respond to emergencies such as fires or explosions when called to support refinery fire fighting forces.

Thoreau Volunteer Fire Department
Telephone: (505) 862-7440

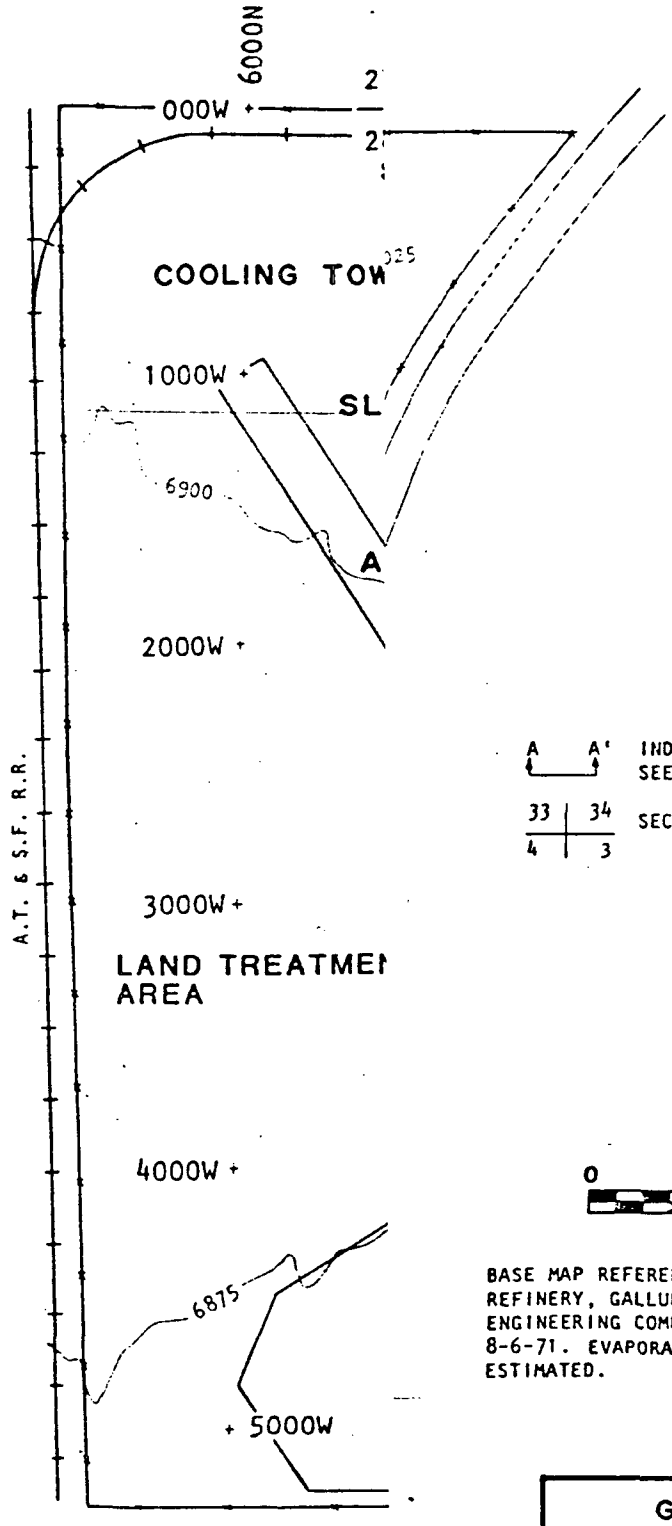
Agreement: To respond to emergencies such as fires or explosions when called to support refinery fire fighting forces and to provide ambulance service.

Ambulance: Thoreau Volunteer Fire Department
Telephone (505) 862-7440

Agreement: To respond to emergencies such as fires or explosions when called to support refinery fire fighting forces and to provide ambulance service.

Hospital: Rehoboth McKinley Hospital
Telephone: (505) 863-6831

Agreement: To provide treatment of refinery personnel injured during emergencies.



A A' INDICATES CROSS SECTION LINE
SEE PLATES 5A AND 5B

33 | 34
4 | 3 SECTION CORNER

SCALE
0 500 1000
FEET

BASE MAP REFERENCE: MASTER PLAN, CINIZA REFINERY, GALLUP, NEW MEXICO, SOUTHWESTERN ENGINEERING COMPANY, ZZ-02-122-EP, REVISION 8-6-71. EVAPORATION POND BOUNDARIES ARE ESTIMATED.

GIANT REFINING CO.	
FIGURE 13.1-1 REFINERY SITE MAP HAZARDOUS WASTES LOCATIONS	
ENGINEERS: DELTA H ENGINEERING, LTD.	
SCALE: 1:9000	DATE: 11-16-84

FIGURE 13.10-1

REPORTING FORM FOR EMERGENCY EVENTS

Name, address, and phone number of owner or operator

Name, address and phone number of facility

Date, time, and type of incident (e.g., fire, explosion, etc.

Name of material involved

Quantity of material involved

Extent of injuries (if any)

Assessment of actual or potential hazards to human health or the environment (if applicable)

Estimated quantity and disposition of material recovered from the incident

---

Send to: (Name)
U.S. EPA, Region VI
Regional Administrator
1201 Elm Street
First International Building
Dallas, Texas 75270